SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Final Environmental Impact Report
FEIR Volume 2: Comments on the Draft EIR and Responses

Prepared for
California Department of Fish and Game

August 2009

ESA

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CHAPTER 1
Introduction

After completion of a draft environmental impact report (EIR), the California Environmental Quality Act (CEQA) requires the Lead Agency to consult with and obtain comments from public agencies that have legal jurisdiction with respect to the project being proposed, and to provide the general public with opportunities to comment on the Draft EIR. The Lead Agency for the Shasta River Watershed-wide Permitting Program (Program) EIR is the California Department of Fish and Game (CDFG or Department). CEQA also requires the Lead Agency to evaluate comments on environmental issues received from persons who reviewed the Draft EIR and prepare written responses.

The Program's Draft EIR (State Clearinghouse #2006102093) was released for public review and comment in October 10, 2008. CDFG circulated the Draft EIR for review by public agencies, interested parties, and organizations for a 60-day public comment period, which ended on December 9, 2008. During the comment period, CDFG held Public Hearings in Siskiyou County on November 18 and 19, 2008 to take public comment on the Draft EIR. CDFG received numerous comment letters in addition to oral testimony at the Public Hearings.

In accordance with CEQA *Guidelines,* § 15132, this Final EIR contains a list of those agencies, organizations, and individuals who commented on the Draft EIR (**Table 1-1**), copies of the comments received, CDFG's responses to significant environmental points, and the revisions to the Draft EIR and Appendices made in either response to comments or as CDFG staff-initiated changes. CDFG has also responded to comments on the Program which did not raise significant environmental points as a means of providing additional Program information and clarification.

Chapter 2 contains CDFG's responses to the comments and to the testimony received at the Public Hearings. Responses are referenced using the same numeric system as the comment letters and Public Hearing testimony. Some comments on the Draft EIR or Program were raised multiple times. For many of these a "Master Response" has been prepared and where appropriate, the responses to these individual comments are cross-referenced to the applicable Master Response. Master Responses are found at the beginning of Chapter 2 followed by the individual responses to each Comment Letter.

Some of the comments have prompted CDFG staff to revise the Draft EIRs and Appendices, which include the Program's Incidental Take Permit (ITP) (Appendix A), streambed alteration agreement (SAA) Memorandum of Understanding (MOU) and the Master List of Terms and Conditions (MLTC) (Appendix B). CDFG staff have also revised the permitting documents. These revisions are shown as follows:

- Excerpts of the text of the Draft EIR, ITP, MOU, and MLTC are indented and *italicized;*
- Additions to the text are shown as underlined;
- Deletions of the text are shown as ~~strikeout~~.

Chapter 3 contains all comments received during the comment period. One hundred seventeen letters received by CDFG commented on both the Shasta Program Draft EIR and the Scott River Watershed-wide Permitting Program Draft EIR, which was prepared and released concurrently. These letters are presented first, followed by 20 letters that address only the Shasta document. Each comment letter has been assigned a number from 0 through 50, and each comment within a letter is numbered sequentially in the right margin. Seventeen individuals provided comments at the Public Hearings. The transcripts from the Public Hearing held in Fort Jones (assigned number "51") and from the Public Hearing in Yreka (assigned the number "52") follow the comment letters.

Changes to the text of the Draft EIR are also shown in Chapter 4.

- Additions to the text are shown as underlined;
- Deletions of the text are shown as ~~strikeout~~.

The revised ITP and the SAA MOU, and MLTC documents are printed in their entirety in this Final EIR and attached as Appendix A and B respectfully. As stated above, additions to these documents are shown underlined and deletions are shown as strikeout. The complete text of the Draft EIR, as revised, is available on CD.

Appendix C of the Final EIR contains the Memorandum of Understanding on "Procedures for Watermasters on the Scott and Shasta River Systems to Coordinate Actions to Avoid the Take of Coho Salmon.

TABLE 1-1
COMMENT LETTERS RECEIVED

Comment Letter Identification	Name
COMMENTS TO BOTH THE SHASTA AND SCOTT DEIRS	
State and Regional Agencies	
1	Ric Costales, County of Siskiyou, County Administrative Office
1.1	Ric Costales, County of Siskiyou, County Administrative Office
2	Marcia Armstrong, Board of Supervisors
2.1	Daniel J. Drake, Ph.D., UC Cooperateive Extension
Organizations	
3	Jim Morris, Siskiyou County Farm Bureau
4	Jack L. Rice, Associate Counsel, California Farm Bureau Federation, Natural Resources and Environmental Division
5	Justin Oldfield, California Cattlemen's Association
6	Alan Levine, Coast Action Group
7	Jenner Cattle Company
8	Petey Brucker, Klamath River Program Klamath Forest Alliance
9	Ellen Taylor, Chair, Lost Coast League
10	Ani Kameenui, Klamath Campaign Coordinator
11	North Group, Redwood Chapter, Sierra Club, Environmental Protection and Information Center, Northcoast Environmental Center, Felice Pace
11.1	Family Water Alliance, Ashley Indrieri
Individuals	
12	Kim Austin
13	Jerry L. Bacigalupi
14	Lee T. Bergeron
15	Jodi Burch
16	Michael Cassady
17	Jack Cowley
18	Norman Dyche
19	Michael Evenson
20	Brian Favero
21	Sam Hartman
22	Patrick Higgins
23	Joyce H. King
24	Scott P. Murphy
25	Meighan Obrien
26	Abigael Proctor
27	Hella Sekaisin
28	Rhondl Snodgrass
29	Felicia Sobonya
30.01	Lowell Ashbaugh
30.02	Lynn S. Bain
30.03	Patricia Bergeron
30.04	Jennifer Berman
30.05	Ginger Bhakti
30.06	Carolyn Brandenburg
30.07	Brien Brennan
30.08	Josh Brown

TABLE 1-1 (Continued)
COMMENT LETTERS RECEIVED

Comment Letter Identification	Name
COMMENTS TO BOTH THE SHASTA AND SCOTT DEIRS (cont.)	
Individuals (cont.)	
30.09	Linda A. Carr
30.10	James Carr
30.11	Rebekah Chappel
30.12	David Clark
30.13	Yvonne Cooney
30.14	Duelcie Cooper
30.15	Jeff Corral - Ribordy, MD
30.16	Lyra Cressey
30.17	Terry Deardorff
30.18	Kira Deschaux
30.19	M. Desobrino
30.20	Mary Dunn
30.21	Margaret Draper, Attorney at Law
30.22	Teresa Evans
30.23	Edward Forsyth
30.24	Ali Freedlund
30.25	Pgar
30.26	Grace Gold
30.27	Gregg Gold
30.28	Rosalinda Gonzdiez
30.29	Amy Gordon
30.30	Erin C. Hannelly
30.31	Jenny Hanson
30.32	Cathenie Hurt
30.33	Terl Humpry
30.34	Cindy Humphy
30.35	Nancy R. Ihara
30.36	Tori Jacobs
30.37	Eva Janson
30.38	Vaden Jantz
30.39	Todd Jenkins
30.40	Susan Johnson
30.41	Jeannine Kaprielian
30.42	Kathie Kelly
30.43	Paul and Barbara Kelly
30.44	Barbara Kennedy
30.45	Sam B. King
30.46	Melenie Kuhnel
30.47	Ron Kuhnel
30.48	Jennifer Lance
30.49	Charlene Lantelime
30.50	Linda Lee
30.51	Tom Leskin
30.52	Selene M. Levesque
30.53	Saba Malik

TABLE 1-1 (Continued)
COMMENT LETTERS RECEIVED

Comment Letter Identification	Name
COMMENTS TO BOTH THE SHASTA AND SCOTT DEIRS (cont.)	
Individuals (cont.)	
30.54	Nancy Marie
30.55	Alan McCann-Sayles
30.56	Melvin McKinney
30.57	Roberta Mickelson
30.58	Ken Miller, MD
30.59	Carol Neakirk
30.60	Jesse Noell
30.61	Jim Peterson
30.62	Amanda Picitelli
30.63	Gerald C. Resse Jr.
30.64	Eva Janson
30.65	Rick Reese and Lisa Keller
30.66	Jeanne Reily
30.67	Alan Samuel
30.68	Austin Scales
30.69	Shermen Schapine
30.70	Sarah Scher
30.71	Brett Shuler
30.72	Star Siegfried, RN, IBCIC
30.73	John St. Marie
30.74	Connie Stringer
30.75	Kerry Sweeney
30.76	Liz Thompson
30.77	Jacqueline Thorpe
30.78	Carol Vander Meer
30.79	Marie Wadman
30.80	Mary Lou Weaver
30.81	David Weinstein
30.82	Nora Winge
30.83	Wayne Wood
30.84	Joel R. Ziegler
30.85	Leon Zlatkoff
COMMENTS SPECIFIC TO THE SHASTA DEIR	
0	Governor's Office of Planning and Research, State Clearinghouse and Planning Unit
Tribes and Federal Agencies	
34	Karuk Tribe of California, Earl Crosby, Interim Director, Department of Natural Resources and Susan Corum, Water Quality Coordinator, Department of Natural Resources,
35	Quartz Valley Indian Reservation, Crystal Bowman, Envrionmental Director,
36	Yurok Tribal Fisheries Program, Michael Belchik, Senior Fisheries Biologist,
State and Regional Agencies	
37	State of California, Native American Heritage Commission
38	State of California, Department of Water Resources
39	Montague Water Conservation District, Mike Crebbin, President,
40	Shasta Valley RCD, Richard Kuck (Adriane Garayalde),

TABLE 1-1 (Continued)
COMMENT LETTERS RECEIVED

Comment Letter Identification	Name
COMMENTS SPECIFIC TO THE SHASTA DEIR (cont.)	
Organizations	
41	California Trout, Curtis Knight, Mount Shasta Program Manager,
42	Erica Terence, Klamath Riverkeeper and Glen H. Spain Northwest Regional Director, Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources,
Individuals	
38.1	Dr. Jeffrey Mount
43	T. Connick
44	A.A. “Red” Emmerson, Emmerson Investments, Inc
45	Bruce E. Fiock
46	Lowell L.Novy, DVM
47	Brian Rice
48	J. Roggenbuck, Hidden Valley Ranch
49	Blair Smith
50	Tom Wetter
50.1	Dave Webb
Public Hearing Comments	
Testimony from Public Hearing held in Fort Jones	
51.1	Marcia Amstrong, Siskiyou County Board of Supervisors
51.2 and 51.11	Mark Baird
51.3	Jeff Fowle, Siskiyou County Farm Bureau
51.4	Doug Jenner
51.5	Caroline Luiz
51.6	Erica Terence, Klamath Riverkeeper
51.7 and 51.12	Nick Jenner
51.8	John Jenner
51.9	Jim Harris
51.10	Carl Hammond
Testimony from Public Hearing held in Yreka	
52.1	Blair Smith
52.2	Richard Kuck, Chairman, Shasta Valley Resource Conservation District
52.3	Jack Roggenbuck, Hidden Valley Ranch
52.4	Brian Favero
52.5	Malena Marvin, Klamath Riverkeeper
52.6	Tom Wetter
52.7	Jim Cook, Siskiyou County Board of Supervisors

CHAPTER 2
Response to Comments and Public Hearing Testimony

2.1 Master Responses

This section contains ten "Master Responses" which consolidate the responses to comments that address major issues raised during public review of the Draft EIR. The ten Master Response topics are as follows:

1. Jeopardy
2. Upland Forest Management and Effects on Streamflows
3. Effects on Water Quality of Pesticide and Herbicide Use
4. Groundwater
5. Access for CDFG Personnel
6. Monitoring Responsibilities
7. Recovery of Coho Salmon
8. Van Kirk and Naman Article
9. Water Rights and Takings
10. Effects of Irrigation Reduction on Streamflow and Water Quality

Master Response 1: Jeopardy

This Master Response responds to comments which indicated that the Draft EIRs do not adequately analyze the Programs' potential to jeopardize the continued existence of coho salmon. This Master Response addresses those comments by explaining the purposes and requirements of CEQA as distinguished from those of the California Endangered Species Act (CESA).

CEQA requires the disclosure of environmental effects of a proposed project before discretionary approval can be issued by a public or local agency (California Code of Regulations, title 14, § 15000 *et seq.*). Pursuant to Public Resource Code, § 20161 "The purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project."

The Shasta River Watershed-wide Permitting Program Draft EIR:

1. Described the Program;

2. Determined whether the Program has the potential to cause significant adverse effects on the physical environment;

3. Where such effects were identified, developed feasible mitigation measures to reduce or eliminate the environmental impacts; and

4. Considered feasible alternatives to the Program that could attain most of the Program's objectives, while reducing its environmental impacts.

CESA prohibits the take of endangered, threatened, or candidate species, unless CDFG authorizes, by permit, the take of such species (sometimes referred to as "take authorization"). Pursuant to Fish and Game Code, § 2081(b), CDFG may issue an Incidental Take Permit, referred to as an ITP, if all of the following conditions are met: (1) the take is incidental to an otherwise lawful activity; (2) the impacts of the authorized take are minimized and fully mitigated; (3) the permit is consistent with any regulations adopted pursuant to Fish and Game Code, §§ 2112 and 2114; and (4) the applicant ensures adequate funding to implement the measures required by Fish and Game Code, § 2081 (b)(2), and for monitoring compliance with, and effectiveness of, those measures.

Furthermore, Fish and Game Code, § 2081(c) provides that CDFG may not issue an ITP if issuance of the permit would jeopardize the continued existence of the species, and that CDFG "shall make this determination based on the best scientific and other information that is reasonably available, and shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities." Thus, CDFG must make its jeopardy determination, based on a thorough analysis of the above factors ("jeopardy analysis"), prior to issuing an ITP. If, after completing this analysis, CDFG determines that permit issuance would

not jeopardize the continued existence of the species, the ITP can be issued and the Program can be implemented. If, however, CDFG determines that the continued existence of the species would be jeopardized by the permit, the ITP would not be issued and the Program would not be implemented.

As explained above, the jeopardy determination is an ITP issuance criterion pursuant to Fish and Game Code, § 2081(c), but not a CEQA requirement. Furthermore, the Draft EIRs are not intended to be, nor should they be interpreted as constituting, the jeopardy determination required under Fish and Game Code, § 2081(c). That determination is a statutory requirement (under CESA) separate from any requirement under CEQA.

Master Response 2: Upland Forest Management and Effects on Streamflows

This Master Response responds to comments which stated the Draft EIRs do not sufficiently examine the effects of upland forest management on streamflows. These comments generally imply that recent changes in upland forest management may have caused changes in evapotranspiration and infiltration rates that have as much or more influence on streamflows as agricultural water diversions.

It is beyond the scope and purpose of the Draft EIR to analyze the influence of upland evapotranspiration on stream flow because none of the Covered Activities under the Program will affect such evapotranspiration. Obviously, evapotranspiration rates influence how much precipitation eventually discharges to stream channels as runoff or groundwater. However, many other climatic and physical factors also influence how much runoff and groundwater is discharged to stream channels. The existing baseflow characteristics in both the Scott River and Shasta River watersheds reflect all such existing influences. Dissecting all processes at work and quantifying their impact upon existing baseflow volumes is not necessary or required for the purpose of the Draft EIRs. With respect to baseflow volumes, one of the primary purposes of the Program is to reduce the impact of water diverted for irrigation on coho salmon. As such, with respect to effects upon existing baseflow volumes, the setting information presented in the Draft EIRs appropriately focuses primarily on the influence of agricultural diversions. Agricultural diversions and impoundments account for a large percentage of the decrease in baseflow volumes in both watersheds.

Comment 4-5 stated a need to correct the Draft EIR's "faulty assumption that the Shasta and Scott Rivers are over adjudicated." The Draft EIR's statement that the Shasta and Scott Rivers are over-allocated during the summer and early fall is not "faulty", but is a fact supported by the allotment information presented in Table 3.2-1 (Shasta) and Tables 3.2-2, 3.2-3, and 3.2-4 (Scott).

Increased timber harvesting and stand thinning are not proposed as part of the Program and the potential impacts of such activities are therefore not addressed in the Draft EIR as a potential consequence of the Program.

Master Response 3: Effects on Water Quality of Pesticide and Herbicide Use

This Master Response responds to comments which state that the Draft EIRs did not examine the potential effects of current or future use of agricultural pesticides and herbicides on water quality and fish mortality.

The use of herbicides and pesticides by Program participants is not a Covered Activity within the proposed Program, and the Program does not propose the use of herbicides or pesticides as part of its implementation. Furthermore, an increase in the scope or spatial extent of farming practices and crop-production is not proposed as part of the Program. As such, pesticide and herbicide use was not considered a potential impact of the proposed Program.

Master Response 4: Groundwater

This Master Response responds to comments which contend that the Draft EIRs did not rely on the best available information on groundwater characteristics and dynamics within the Shasta River and Scott River watersheds, and that the Draft EIRs do not adequately analyze the potential for the Programs to increase reliance on groundwater, with resulting impacts on streamflows, water quality, and aquatic habitat.

The Geomorphology, Hydrology, and Water Quality chapter in each Draft EIR (Chapter 3.2) was thoroughly and extensively researched, as evidenced by the reference section at the conclusion of each chapter. Research included review of the best available information on groundwater characteristics and dynamics within the Shasta River and Scott River watersheds, including very recent publications reflecting current research in the watersheds.

The existing and future use of groundwater is not a Covered Activity under the proposed Program and, other than being proposed as an alternative stock-watering mitigation measure, not part of the Program. The Draft EIRs examine the potential for the Programs to result inadvertently in Program participants increasing their reliance on groundwater, or shifting from surface water diversions, which would be subject to the conditions of the Programs, to groundwater, which is not regulated or relatively unregulated in the watersheds. For the reasons stated in Impact 3.2-4 in each Draft EIR, this impact is found to be less than significant.

Where the Program intentionally encourages groundwater use, that is, as an alternative stock-watering method, this would be *in-lieu* of surface water use during coho salmon spawning migration, when streamflows are often low, and when even the relatively small volumes of surface water diversions used for this purpose (relative to use for irrigation) may have a substantial effect on the species.

The Draft EIRs also examine a secondary effect of the potential for the Programs to result in increased reliance on groundwater, since this could impact aquatic habitat, particularly by affecting baseflows and stream temperatures. For the reasons stated in Impact 3.3-2 in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, this impact is also found to be less than significant.

CDFG's authority over the pumping and use of groundwater under CESA and Fish and Game Code, § 1600 *et seq.* is limited to those instances when doing so will take a CESA-protected species or substantially divert the flow of a river or stream, respectively. In regard to Fish and Game Code section 1600 *et seq.*, CDFG is aware of some instances in the Program Area where pumping may reduce the surface flow of a river or stream. However, to determine whether the pumping is effectively diverting water from a stream or river requires a detailed technical analysis on a case-by-case basis using various methodologies that can be expensive and time-intensive. General authority over groundwater pumping and use rests with Siskiyou County, and in some cases where the "groundwater" is subsurface flow, with the State Water Resources Control Board (SWRCB). Based on the foregoing, CDFG decided not to include the pumping and use of groundwater as a Covered Activity under the Programs and it is addressed in the Draft EIRs only as an alternative stock watering method. Further, developing a groundwater management policy as part of the Programs as some commenters suggested is beyond the scope of the Programs because, as indicated above, CDFG has very limited authority to regulate the use of groundwater.

Master Response 5: Access for CDFG Personnel

This Master Response responds to comments that mistakenly state that the Programs would restrict access to streams and rivers by CDFG enforcement personnel (i.e., wardens).

The Programs will not restrict the authority of CDFG enforcement personnel to access private property. These comments may be misinterpreting ITP Article XIII.E.1.(c), which reads:

> *Sub-permittees shall provide non-enforcement Department employees written consent to access the sub-permittee's property for the specific purpose of verifying compliance with, or the effectiveness of, the avoidance, minimization, and mitigation measures required by this Permit or a sub-permit and/or for the purpose of fish population monitoring in the Shasta River and its tributaries, provided the Department notifies the sub-permittee at least 48 hours in advance, whether verbally or in writing. (Emphasis added.)*

As can be seen from this paragraph of the ITPs, the Programs require sub-permittees to provide CDFG non-enforcement personnel access to a sub-permittee's property, and do not restrict in any way access of CDFG enforcement personnel.

CDFG has never agreed to keep wardens out of areas they are responsible for protecting, and such an action is not contemplated as part, or in any way suggested within, the Programs. Fish and Game Code, § 857 limits the ability of DFG employees to enter private property without land owner's permission but is explicit in that permission is not required for a sworn peace officer (warden) to enter private lands if necessary for law enforcement purposes and that non-enforcement personnel may accompany them. Therefore, the ITPs, consistent with Fish and Game Code, § 857, specifically require Program participants to provide authorization to non-enforcement personnel to access their property for monitoring purposes. In order to clarify this point the following text has been added to ITP Article XIII.E.1.(c):

> *Sworn peace officers may enter private lands if necessary for law enforcement purposes pursuant to Fish and Game Code Section 857 or as otherwise authorized by law.*

Master Response 6: Monitoring Responsibilities

This Master Response responds to comments that state that CDFG should not delegate regulatory responsibility to the RCDs. CDFG is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources and meets that responsibility by administering and enforcing various statutes in the Fish and Game Code and other state laws, including section 1600 et seq. (section 1600) and CESA. CDFG is not delegating its responsibility to implement or enforce these laws through the Programs. In fact, ITP Article XXI., the Enforcement section, states:

A. This Permit does not authorize or require SVRCD to bring an enforcement action against a sub-permittee who is not in compliance with its sub-permit. Such enforcement shall be the sole responsibility and at the sole discretion of the Department.

B. Nothing in this Permit precludes the Department from pursuing an enforcement action against the SVRCD or a sub-permittee instead of or in addition to suspending or revoking the Permit or any sub-permit.

CDFG will conduct compliance monitoring of all activities it authorizes under the Programs and will review all monitoring documents and checklists prepared by the RCDs and the sub-permittees. CDFG is responsible for determining whether or not the RCDs and/or sub-permittees are in compliance with the conditions of the Permit or any sub-permits. ITP Article XIX, the Suspension and Revocation section, states:

> *If the SVRCD or a sub-permittee fails to comply with any term or condition in the Permit or sub-permit, the Department may suspend or revoke the Permit or sub-permit in accordance with subsection 783.7 of title 14 of the California Code of Regulations.*

Although CDFG never intended to delegate any of its authority to the RCDs, based on the comments received and discussions with the RCDs, the monitoring role of the RCDs under the Program has been clarified and CDFG has edited ITP Article XIV., Monitoring Program, and Attachment 3 of the ITP. The revised ITP is included as Appendix A. Where appropriate, the Draft EIRs have also been edited to capture these changes.

Each RCD is required to establish a monitoring program to track the implementation of the mitigation measures for which it is responsible, and to determine the effectiveness of those measures in improving conditions for coho salmon. In addition, each RCD is available to assist sub-permittees in filling out effectiveness monitoring checklists for the diversion of water and livestock or vehicle crossings. Each RCD will fund all the monitoring activities it is responsible for performing.

Each sub-permittee will be responsible for monitoring the terms and condition of their sub-permit by completing the appropriate monitoring checklists and submitting them to CDFG.

As stated above, CDFG is responsible for any and all compliance monitoring.

Master Response 7: Recovery of Coho Salmon

This Master Response responds to comments which state that the Programs will not result in the recovery of coho salmon stocks.

As stated in Chapter 2, Project Description, of each Draft EIR, the Programs are consistent with the *Recovery Strategy for Coho Salmon in California* (CDFG, 2004) (Coho Recovery Strategy), and measures to fully mitigate for take of coho salmon required by the ITP include key coho recovery tasks identified in that document. However, those measures, and the Programs in general, are not intended and should not be construed as comprehensive plans or programs to recover coho salmon. Instead, they are intended to satisfy the criteria for permit issuance pursuant to CESA (Fish and Game Code, § 2081(b)).

Sections 2081(b) and (c) of CESA stipulate that the Department may issue an ITP for a State listed threatened and endangered species only if specific criteria are met. These criteria are reiterated in Title 14 CCR, Sections 783.4(a) and (b), and are as follows:

1. The authorized take is **incidental to an otherwise lawful activity**;
2. The impacts of the authorized take are **minimized and fully mitigated**;
3. The measures required to minimize and fully mitigate the impacts of the authorized take:
    a. are **roughly proportional** in extent to the impact of the taking on the species,
    b. **maintain the applicant's objectives** to the greatest extent possible, and
    c. **are capable of successful implementation**;
4. **Adequate funding** is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and
5. Issuance of the permit **will not jeopardize the continued existence of a State-listed species**.

The Program will facilitate the objective of recovery identified in Coho Recovery Strategy by requiring the implementation of high priority coho recovery tasks as avoidance, minimization and mitigation measures however; a recovery standard is not one of the CESA issuance criteria.

Master Response 8: Van Kirk and Naman Article

This Master Response responds to comments which state incorrectly that a recent article by Van Kirk and Naman[1] that analyzes effects of water diversions and groundwater extraction on stream flows in the Scott River basin was not cited in the Draft EIRs or used in the analysis.

The Van Kirk and Naman study was reviewed for Chapter 3.2, Geomorphology, Hydrology, and Water Quality of the Scott River Draft EIR, and its findings were incorporated in the setting description. The article was cited several times in this Chapter. The following paragraph is excerpted from page 3-32 of the Scott River Draft EIR:

[1] Van Kirk, R.W. and S.W. Naman, "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin," *Journal of the American Water Resources Association (JAWRA)* 44(4): 1-18, 2008.

> *The decline in Scott River baseflow volumes and durations can be attributed, in part, to an increase in overall consumptive water use as well as the amount of water taken from groundwater sources. The period of 1942 to 1950 was prior to the establishment of the first adjudication settlement in the Program Area (i.e., the Shackleford Creek Decree) and the diversion of surface water, which was the dominant (if not exclusive) source at that time, was not regulated by statutory adjudication. As discussed above, groundwater use increased dramatically beginning in the 1990s. In essence, Figures 3.2-8 and 3.2-9 compare a dry period that occurred before much (if any) groundwater was being used to a subsequent dry period during which the use of groundwater played a greater role. The marked decline in baseflow is likely, in part, attributable to the increase in groundwater consumption. Comparing historic (1942-1976) to modern (1977-2005) periods, Van Kirk and Naman (2008) noted a significant decline in Scott River discharge during the low-flow season (approximately July through October); the authors attributed over 60 percent of this observed decline to local factors such as increases in irrigation withdrawal and consumptive use. Figure 3.2-10 further demonstrates that, regardless of water year-type or extended wet and dry periods, Scott River flows during the late summer and early fall have decreased over time. For example, in Figure 3.2-10 the discharge curve for the more recent, relatively wetter period (1995 to 2004) crosses and falls below the discharge curve for the historic, relatively drier period (1942 to 1951).*

The Van Kirk and Naman study focused on the Scott River watershed for their analysis, and for this reason it was cited only in reference to the Scott River Draft EIR. Similar, overall conclusions were presented in the environmental setting section of the Shasta River Draft EIR (i.e., existing agricultural water diversions have negative impacts on flow volumes and fish habitat), but the specific conclusions drawn in the Van Kirk and Naman (2008) study (i.e., the quantity of baseflow reductions, the percent attributable to a given source or cause, etc.) were in reference to the Scott River. As such, these specific conclusions were only cited in the Scott River Draft EIR.

Master Response 9: Water Rights

This Master Response responds to commenters who expressed concern that the Programs will in some way affect their adjudicated or nonadjudicated water rights, and if that is the case, they should be compensated. To participate in the Programs, an agricultural operator must have a valid existing water right, adjudicated or nonadjudicated, and may not exceed that right. For example, an agricultural operator may not use more water than his or her water right allows. CDFG does not intend to "revoke" such water rights, and indeed does not have the legal authority to do so. However, the ITP, sub-permits, and streambed alteration agreements (SAA) issued under the Programs will in some cases include conditions the Program participant must follow that could affect the exercise of his or her water right during certain times of the year. For example, in some cases, a Program participant might need to bypass a certain amount of water past his or her diversion during certain times of the year to protect fish and wildlife resources. Such conditions are not unique to the ITP, sub-permits, and SAAs under the Programs.

Further, it is a long-established legal principle that water rights are subject to the valid enforcement of other applicable statutes and regulations by government agencies, in addition to the state constitutional limitation of reasonable and beneficial use. CDFG does not believe that

any of the conditions that might be imposed on Program participants through the ITP, sub-permits, or SAAs require compensation and CDFG expects Program participants to comply with all conditions in those permits. Further, such comments raise legal issues that do not preclude CDFG from enforcing the mitigation measures identified and analyzed in the Draft EIR.

To be clear, compensation under the Program will only be available where a Program participant elects to participate in a Water Trust. The establishment of local Water Trusts will allow a Program participant to voluntarily sell or lease water that will be left instream to benefit fish and wildlife resources in accordance with guidelines prepared by the RCDs and approved by CDFG.

Master Response 10: Effects of Irrigation Reduction on Streamflow and Water Quality

This Master Response responds to comments which contend that water conservation measures specified in the Programs, including use of more water conserving irrigation methods than those currently used (such as flood irrigation) and water efficiency measures, such as lining or piping ditches to reduce loss during conveyance of diverted water, could result in decreased recharge of groundwater and reduced groundwater return (as cold water) to streams, thus negatively impacting streamflow and stream temperature. At the watershed scale, the amount of groundwater recharge provided by applied irrigation water is likely small compared to the recharge provided by natural rainfall and runoff. More fundamentally, the Program is not expected to result in a substantial reduction in the amount of water used for irrigation.

From the perspective of aquatic habitat and impacts to fish, water during the irrigation season provides more benefit if left in the channel. Under natural conditions (and conditions more conducive to aquatic habitat), the irrigation season (i.e., summer and early fall) should be a time during which groundwater is *discharging* to surface channels, not a time when flow from surface channels is recharging and being stored within the groundwater table. Thus, according to the CEQA Guidelines pertaining to biological resources and hydrology, the Program will not have a negative impact upon groundwater recharge.

The assertion that percolated irrigation water results in an increase in the cold water baseflow of streams, or that this same water would return to the stream at a cooler temperature than when it was extracted, is speculative at best. Further, the timing of such return flow is also important with respect to habitat for fish. For example, if a portion of applied irrigation water returns to the stream at a time when the flow volume is higher compared to when that same water was extracted, then the benefit of that water to aquatic habitat has likely been diminished. Finally, the adverse effects of tailwater return on water quality and fish habitat are well documented and well understood, and likely far outweigh any benefits that may accrue to streams from unrestricted and abundant application of diverted surface water to agricultural fields.

2.2 Response to Individual Comments

This section contains CDFG's responses to individual comments and the testimony received at the two Public Hearings. Each comment letter is assigned a number from 1 through 50, and each comment is numbered sequentially in the right margin of the comment letter and responses are referenced using the same numeric system. Testimony from the Public Hearing held in Fort Jones is assigned the number 51 and testimony from the Public Hearing held in Yreka is assigned the number "52" and follows the comment letters.

2.2.1 Responses to Joint Shasta and Scott Comments

Comment Letter 0: Governor's Office of Planning and Research, State Clearinghouse and Planning Unit

0-1 This comment from the State Clearinghouse acknowledges receipt and distribution to State agencies of the Shasta River Watershed-wide Permitting Program Draft EIR, and notes the date for close of the comment period. The letter includes as an attachment a letter from the Native American Heritage Commission. This letter is included in the response document as comment letter 37, and is responded to there.

Comment Letter 1: Siskiyou County

1-1 The comment contends that the listing of the coho salmon has had damaging impacts on the County, and that the Programs are prime examples. The comment goes on to state that a reasonable, affordable balance might have been struck between the needs of fish and ranchers, but was not in this case. Comment noted.

1-2 The comment observes that there are other mitigations in the Draft EIR that "do not appear to be associated with CEQA or 1602," and cites mitigation requirements in the Draft EIR for paleontological and archaeological resources as an example. The Draft EIR does in some cases include mitigation measures that are not part of the proposed ITP or Master List of Terms and Conditions for SAAs. The Draft EIR evaluated the potential environmental impacts of the Programs, looked at the mitigation measures, conditions, and responsibilities that will be part of the ITP, sub-permits, and SAAs, and in some cases proposed additional actions to minimize Program-related impacts. This is, in essence, the purpose and function of CEQA: in this case, to independently evaluate the Programs, identify any potential significant environmental effects associated with the Program, and to identify feasible mitigation measures to reduce those impacts, including measures that might not already be included in the ITP, sub-permits, and SAAs CDFG will be issuing under the Programs.

1-3 The comment also cites riparian planting and spawning gravel enhancement as examples of the "disconnect" between proposed mitigation and the actual impacts of the Covered Activities, i.e., "agricultural operations." The balance between water use for agriculture and fish (which the commenter felt was not achieved) is the reason for these kinds of

enhancements. The legal diversion and use of water and other Covered Activities in the Program have the potential to adversely impact coho salmon. These potential impacts must be fully mitigated, and methods for doing this include enhancing fish habitat quality in other ways. As a theoretical point: if a stream has only two-thirds of its water, it might be able to support the same number of fish if the habitat is otherwise substantially enhanced, as it would be with additional shade and gravel. In sum, the enhancements cited correspond to potential Program-related impacts.

(By way of clarification, SVRCD ITP Article XIII.E.2.(b)(iii) requires the SVRCD to plant riparian habitat along eight linear miles of streambank during the 10-year period of the ITP, and not each year as the comment states.)

1-4 It will be less expensive to obtain take authorization and a SAA under the Program than it would be to obtain those permits on an individual basis outside the Program. Indeed, one of the objectives of the Program was to reduce the financial burden on Program participants to comply with Fish and Game Code, § 1600 *et seq.* and CESA. From that perspective, the Program benefits participants. Comment noted.

1-5 The term "substantial" is not defined in the Fish and Game Code or in CDFG regulations. However, at least one court defined "substantial" in the context of now Fish and Game Code, § 1602 as "characterizing something as ample or of considerable amount, quantity or size [or] . . . as important or material and of considerable amount or value rather than inconsequential or small." (*Rutherford v. State of California* (1987) 188 Cal.App.3d 1267, 1279.) While CDFG acknowledges that there are grounds for valid differences of opinion as to what constitutes a substantial diversion of the natural flow of a river, CDFG believes that the agricultural water diversions in the Program Area are substantial as the Rutherford court defined that term. Finally, although CDFG encourages all diverters in the Program Area to participate in the Program, if a particular diverter does not believe his or her diversion amounts to a substantial diversion of the natural flow of a particular river or stream, he or she may elect not to participate.

1-6 CDFG acknowledges the receipt of Supervisor Marcia Armstrong's comments, and the commenter's support of those comments. CDFG's responds to Supervisor Armstrong's comments as Comment Letter 2 below.

1-7 See responses to Supervisor Armstrong's comment letter below (Comment letter 2).

Comment Letter 1.1: Siskiyou County

1.1-1 Based upon the substantial number of comments received on the Draft EIR, CDFG believes the review period, which exceeded the requirements under CEQA, was sufficient, and for that reason CDFG decided not to extend the review period.

Comment Letter 2: Marcia Armstrong, Siskiyou County Board of Supervisors District 5

2-1 Comment noted.

2-2 Without taking any position on its force and effect on state agencies like CDFG, CDFG believes that in developing the Programs and preparing the Draft EIRs, it has acted consistent with "Siskiyou County Code – Title 10 Planning and Zoning, Chapter 12. County Participation in State and Federal Agencies Land Transactions, Sec. 10-12.01 Findings" excerpted in the comment letter. More importantly, in all respects, CDFG exceeded CEQA's disclosure and noticing requirements. For example, the public scoping meetings on the Initial Studies and public hearings on the Draft EIRs in Fort Jones and Yreka exceeded CEQA requirements; the Draft EIRs' public comment period was longer than required under CEQA; and CDFG staff met repeatedly with individuals, irrigation districts, Resource Conservation Districts, Save our Shasta and Scott Valleys Inc. (SOSS), individual county supervisors and other county representatives during the development and preparation of the Draft EIRs. Finally, although CDFG appeared formally before the Siskiyou Board of Supervisors on only a few occasions during this same period, the county's Natural Resource Specialist was a regular participant at meetings on the Programs attended by CDFG.

2-3 Please see response to Comment 2-2.

2-4 The proposed Programs are consistent with Siskiyou County's conservation objectives relating to hydrology, water resources, and water quality, in addition to CDFG's general obligations as the trustee for the state's fish and wildlife resources. Also, please see response to Comment 2-2.

2-5 Please see response to Comment 2-2 and as to "takings," Master Response 9.

2-6 The Draft EIRs acknowledge that Siskiyou County has jurisdiction over groundwater management. However, that does not remove the need under CEQA to analyze any Program-related impacts to groundwater resources. For that reason, the potential environmental impacts to groundwater resources are addressed and analyzed in the Draft EIRs. (See Impact 3.2-4 in Chapter 3.2, Geomorphology, Hydrology and Water Quality, of each Draft EIR.)

2-7 This comment pertains to the authority of county supervisors over non-navigable streams, summarizes some court opinions on that subject, and makes a conclusion regarding the State Lands Commission's authority over non-navigable streams. The comment does not appear to be related in any way to the Programs, the Draft EIRs, CDFG's authority under the Fish and Game Code including CDFG's authority to regulate activities in or near rivers and streams under the Fish and Game Code, § 1600 *et seq.*, and SWRCB's and the Regional Water Quality Control Boards' authority under the Porter-Cologne Water Quality Control Act (Water Code, § 13000 *et seq*.) and other provisions in the Water Code.

2-8 This comment reflects a legal opinion regarding the nature of a water right and takings. However, please see Master Response 9.

2-9 This comment states that under the ITP, it appears that the watermaster will be required to reduce water diversion to meet the instream flow needs of fish, and asks whether compensation for such "reallocation" will be provided through the Water Trust and raises issues regarding takings. In some cases, the watermaster might be asked to reduce water diversions, but, as ITP Article XVIII.D. provides, only

> *If reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is determined by the Department to be the only available measure to avoid or minimize stranding,…*

Also, in that case, the Department will work with the SVRCD/SQRCD and sub-permittee and, if applicable, the watermaster to take such action. Hence, CDFG will consult with the sub-permittee before such action is taken. However, in that event, the sub-permittee will not be compensated through the Water Trust or any other mechanism. In further response, please see Master Response 9.

The comment continues by stating a legal opinion that notification is not required under Fish and Game Code, § 1602 for the mere diversion of water, i.e., "even if no physical disruption of the channel occurs" and states, "The California Farm Bureau has indicated that no where [*sic*] else in California has the CDFG interpreted the 1602 provisions to categorically require a conditional permit on all water diversions for irrigation." The comment questions CDFG's interpretation of the requirement in Fish and Game Code, § 1602 for an entity to notify CDFG before substantially diverting the natural flow of a river, stream, or lake. However, CDFG respectfully disagrees with the commenter's assertion, and the same assertion by the California Farm Bureau. CDFG believes that its position is entirely consistent with the broad legislative purpose of Fish and Game Code, § 1600 *et seq.*, as articulated in § 1600, with other statutes that more directly govern the "diversion" of water, namely the Water Code, and court decisions regarding Fish and Game Code, § 1600 *et seq.* and that nothing in the legislative history leading to the original enactment of Fish and Game Code, § 1600 *et seq.* contradicts CDFG's position on this issue. Also, insofar as the commenter believes or is concerned that the Programs represent the first and only time CDFG has applied Fish and Game Code, § 1600 *et seq.* to the diversion of water where "no physical disruption of the channel occurs," that conclusion is incorrect. Hence, Program participants would be treated in the same manner as other entities with SAAs that cover water diversions; they would not in some way be "singled out" or treated unfairly by participating in the Programs. Indeed, the Programs would afford them a financial benefit not available to other entities in the state who must obtain a SAA because Program participants do not need to pay a notification fee or CDFG's CEQA-related costs.

The comment also states that the "ITP . . . seems to require conversions of an undefined corridor of riparian lands to lands planted in trees for the benefit of endangered species habitat" and that "[the ITP] appears to recognize [CDFG] as land use authority in regard

to grazing in this undefined area of land." The purpose of revegetating and protecting riparian corridors is to minimize any take of coho salmon that might occur incidental to a Covered Activity, namely the grazing of livestock. In making those requirements part of the ITP, and similar requirements part of an SAA, CDFG is acting within its statutory authority under CESA to ensure that any take of coho salmon is minimized and under Fish and Game Code, § 1600 *et seq.*, to protect fish and wildlife resources a particular activity could substantially adversely affect; CDFG agrees that it does not have and does not purport to have any general land use authority.

Finally, the comment raises a concern regarding "rough proportionality." The comment raises a legal or permitting issue. However, insofar as the commenter is concerned that the minimization and mitigation measures in the ITP and sub-permits are not roughly proportional, as CESA requires, CDFG respectfully disagrees. The Programs' mitigation measures meet the issuance criteria required pursuant to CESA, including the rough proportionality requirement in general and the measures in the ITP and sub-permits that apply to riparian corridors.

2-10 The comment raises concerns about the financial burdens that compliance with the conditions in the ITP, sub-permits, and SAAs issued under the Programs impose on individual family farms, the RCDs, and the county's agricultural population as a whole. This comment raises social and economic issues, rather than significant environmental issues with respect to the Programs. However, CDFG acknowledges that compliance with Fish and Game Code, § 1600 *et seq.*, CESA, and other Fish and Game Code provisions can be costly. Indeed, both Draft EIRs acknowledge in Chapter 3.1, Land Use and Agriculture, and in Chapter 4, Cumulative Effects and other Required Topics, that the cost to participate in the Program (including performing specific avoidance and minimization measures) could potentially reduce net income for participants. However, CDFG does not have the authority to exempt an entity from Fish and Game Code requirements for economic reasons. At the same time, a main objective of the Programs is to facilitate compliance with Fish and Game Code, § 1600 *et seq.* and CESA by reducing as much as possible the cost of obtaining take authorization and a SAA which would be much greater outside the Programs. Similarly, a primary motive for, and objective of, the RCDs' participation is to support landowner activities (both private and public) in order to enhance the conservation and economic stability of Siskiyou County's natural resources. (See Chapter 2 of both Draft EIRs.) In broad terms, the enterprise of family farming is as dependent on stable watersheds as the fish they support.

2-11 The comment continues the concerns raised in Comment 2-10, providing considerable data and information regarding the economic plight of Siskiyou County and its consequences for its citizens. Please see response to Comment 2-10. The perspective of the comment is broadened here to describe the full effect of numerous other regulations on the social fabric of the county, which is beyond the scope of the Programs and Draft EIRs. The commenter ends with a suggestion that putting local people to work in restoration projects, and making operations more efficient and productive would be desirable. CDFG will consider that comment in implementing the Programs.

2-12 Comment noted.

2-13 Program participants will be required only to adhere to the terms and conditions of their ITP or sub-permit and SAA, as well as any applicable mitigation measures in the EIRs. While some of these terms, conditions, and mitigation measures may require adjustment and adaptation to meet the challenges posed by a changing climate, Program participants will not be responsible individually for halting climate change or be held liable for the general effects of climate change on coho salmon or other resources. Please refer also to Chapter 3.7, Public Utilities, Service Systems, and Energy, for an analysis of the effects of the Programs on climate change.

2-14 The ITPs are based on the measures described in the applications that the RCDs submitted to minimize and fully mitigate take of coho salmon pursuant to CESA. The SSRT identified a diverse and large set of actions which, if implemented, would assist with recovery of coho salmon. The Programs represent an opportunity to implement some key coho recovery tasks identified in the Coho Recovery Strategy while using those same tasks to minimize or mitigate take of coho salmon that *might* occur incidental to agricultural operations. In response to the comment that "[i]t is as though the decline in coho populations is being attributed entirely to agricultural operations[,]" the Draft EIRs make no such representation or suggestion. Any representation or suggestion to the contrary would contradict the Coho Recovery Strategy's conclusion that the observed decline of coho salmon populations leading to state listing is attributable to many factors, including agricultural operations. However, given that agricultural operations are in fact one factor, it is to the benefit of diverters to participate in the Programs in order to obtain take coverage in the event such coverage is needed. Finally, and as already mentioned above in response to Comment 2-9, CDFG does not agree that measures in the Program to avoid, minimize, or mitigate the impacts of taking are "extraordinary or disproportional."

2-15 and 2-16

The comment references pages S-12 to S-15 in each Draft EIR. The comment presumes that cultural, paleontological, and biological surveys before ground- disturbing activities would interfere with agriculture. All mitigation measures apply only to the Program's Covered Activities, which are detailed beginning on page 2-10 of both Draft EIRs, and do not include farming practices such as plowing or tilling.

2-17 The commenter cites from page S-14 in each Draft EIR a summary of grazing and riparian fencing requirements under the Program. The commenter's concern is that the ITP could severely restrict grazing within a fenced riparian area. Indeed, the purpose of exclusion fencing is to allow riparian vegetation to re-establish itself, but is not intended to totally prohibit grazing. The commenter recognizes that these areas can be grazed in accordance with a grazing management plan approved by CDFG, but asks whether existing fencing located, for example, 20 feet from a stream would have to be relocated further away to meet the 35-foot buffer stipulated by the ITP. Only new fencing would require a buffer of approximately 35 feet. The commenter continues with a question

about stock watering access. Stock watering assess lanes are a Covered Activity under the Program. Last, the commenter proposes that if a riparian area is planted to trees, it would remove it from agricultural or other economic use, and that this should be considered in any economic analysis. CDFG differs with this assertion. Among other benefits, healthy and stable vegetated riparian areas insure that bank erosion does not threaten adjacent uplands, and their restoration will benefit economic uses as much as natural resources. Neither would this require a change in land use designation under the County General Plan or zoning ordinance.

2-18 Please response to Comment 2-7. The State Lands Commission's authority or lack of authority over non-navigable rivers is immaterial to the Programs and CDFG's CEQA analysis in the Draft EIRs.

2-19 Sub-permittee must provide non-enforcement CDFG personnel permission to access the sub-permittee's property (MLTC Condition 17) to verify compliance with, or the effectiveness of, the avoidance and minimization measures required by their sub-permit and for fish population monitoring; SVRCD or SQRCD personnel must also be provided permission to access the sub-permittee's property where necessary to inspect sub-permittee's screens, headgates, measuring devices, diversion structures and livestock and vehicle crossings annually; and/or to allow SVRCD or SQRCD to complete the mitigation obligations required in ITP Article XIII.E.2. and for CDFG and SVRCD or SQRCD to monitor the effectiveness of those measures.

CDFG and the RCDs must notify the sub-permittee at least 48 hours in advance, whether verbally or in writing. Nothing in the Program restricts the sub-permittee from accompanying CDFG or the RCD on their property; in fact, sub-permittee participation is encouraged. Insofar as the commenter is primarily concerned about obtaining landowner permission, as stated above, CDFG and the RCDs will not enter private property without the landowner's permission. On the other hand, the sub-permittee must grant such permission as a condition of participating in the Programs. In further response, please see Master Response 5.

Regarding the comment, "Liability insurance for the employee should also be guaranteed," CDFG is self-insured against all or any part of any tort liability.

2-20 Please see response to Comments 2-10 and 2-11 regarding the comment that the measures for sub-permittees should be reasonable and affordable. In regard to the comment that the ITP appears to "shift the burden of fish screens" from CDFG to Program participants, it is not necessarily true that the burden would have been CDFG's in the first instance in any particular case. Regardless, in some cases, a fish screen is needed to avoid and/or minimize take, and therefore it is entirely valid to include such a requirement in a sub-permit which the sub-permittee must then meet.

2-21 CDFG is aware of the "legal difficulties" it might encounter in implementing measures for tailwater reduction and capture, but it does not believe that such potential difficulties

make those measures unenforceable or otherwise impossible to implement. In regard to the comments on takings, please see Master Response 9.

2-22 The primary purpose of the water efficiency programs the comment mentions is to leave more water in the channels during critical times of the year to increase the likelihood of fish survival (i.e., summer and early fall), while still providing the same volume of water allocated by right to a given landowner. Removing less water from the channel during the time period when it is critical for fish survival would likely be a beneficial impact of the Program; suggestions to the contrary are not supported. Potential impacts to wetlands are addressed in Chapter 3.4, Biological Resources: Botany, Wildlife, and Wetlands, of each Draft EIR.

2-23 The comment again raises the issue of takings. As to that issue, please see Master Response 9. As to the role of the Department of Water Resources (DWR) watermaster as an agent of the court, CDFG is mindful of the watermaster's proper role in administering various decrees in the Scott and Shasta Valley watersheds. Finally, in regard to the possibility that a local watermaster service will replace DWR's watermaster service, whether in the Scott or Shasta systems or both, Chapter 4, page 4-28, in the Draft EIR addresses the potential for watermastering responsibilities to be transferred to newly established Scott Valley and Shasta Valley Watermaster District. If and when a new local watermaster district assumes responsibility for the watermastering duties from DWR, they will be required to comply with CESA by obtaining a sub-permit through the Program or individually outside the Program.

2-24 CDFG has no information available to evaluate a cost of a local watermaster service versus the cost of DWR's watermaster service.

2-25 The commenter references page 3-2 of the Scott River Draft EIR. The commenter's interpretation is correct: historic and ongoing activities are not subject to the environmental analysis. The Draft EIRs evaluate the potential for the Programs to result in new environmental impacts, above and beyond what is currently occurring, and where such impacts are found to be significant, additional mitigation measures are specified. Continuation of baseline activities do not require mitigation under CEQA but may require mitigation under CESA and Fish and Game Code, § 1602. Thus the statement that mitigation is therefore "for the physical changes the actual 1602 and ITP requirements would cause" is incorrect. Mitigation obligations contained in the ITP are to offset residual, incidental take of coho salmon after implementation of avoidance measures and apply to all take occurring under the Program, i.e., take resulting from historic, ongoing activities, as well as any take resulting from the implementation of ITP required avoidance and full mitigation measures. Mitigation obligations contained in the SAAs are to protect fish and wildlife resources that a particular Covered Activity could substantially adversely affect even though that activity might be one that is historic and ongoing.

2-26 CDFG agrees with the comment that under the Programs, less agricultural water will be diverted because CDFG believes that it is not uncommon for some diverters to exceed

their legal water rights which the Program will prohibit; as mentioned in Master Response 9, in some cases, Program participants under their sub-permits and SAAs will need to divert less water during certain times of the year to benefit fish species; the Program includes water efficiency and management measures; and some Program participants will elect to sell or transfer some portion of their water to one of the local Water Trusts that will be established under the Program. However, as explained in Master Response 9 none of those actions will constitute a taking.

Regarding the question about analysis of the Programs' affect on the productivity of land and the cost of various studies necessary to conduct before performing ground-disturbing activities, the issue of economic burden on landowners is examined in Impact 3.1-1 in Chapter 3.1, Land Use and Agriculture, in each Draft EIR and was determined to be less than significant. Please also see response to Comment 2-10.

2-27 Both Draft EIRs include a description of nursery crops as a component of the local agricultural sector. See Chapter 3.1, Land Use and Agriculture, in each Draft EIR. As noted in the Draft EIRs, nursery crop data were based on information provided by the Center for Economic Development and the Siskiyou County Department of Agriculture.

2-28 The comment states that lands currently zoned for agriculture could "lose access to irrigation or be tied up in such expensive and onerous regulations that the agriculture ceases to be an economically viable use of the land," which could prompt changes to General Plan elements and zoning. As described under Impact 3.1-1, it is unlikely that the Program would reduce the financial viability of existing agricultural operations to such a level that agricultural lands would be converted to non-agricultural uses. The Siskiyou County General Plan has stringent policies and mechanisms that discourage conversion of agricultural land to non-agricultural uses. Zoning and land use changes would be subject to CEQA review by the County. Such laws, regulations, and policies represent substantial hurdles to land use conversion. The conversion of agricultural land within the Scott River Watershed and the Shasta River Watershed to non-agricultural uses is an important concern to many parties. These Programs were designed with extensive consideration to alleviating costs associated with meeting the requirements of the ITP and SAA, as discussed in the Introduction and Program Description in each Draft EIR, as well as in Impact 3.1-1 in each Draft EIR. In further response, please see response to Comments 2-10 and 2-11.

2-29 Comment noted.

2-30 Comment noted. The potential environmental impacts to groundwater resources are addressed and analyzed in the Draft EIRs (see Impact 3.2-4 in Chapter 3.2, Geomorphology, Hydrology and Water Quality, of each Draft EIR).

2-31 The commenter asserts that costs, loss of productivity and land conversion from productivity have the potential for serious impacts on the County and should be analyzed. The Cumulative Impacts and Mitigation Measures section (page 4-30) in the Draft EIR states,

The cumulative impact of environmental regulations, watermaster fees, and Program-related fees may cause landowners of properties with less viable agricultural operations to feel increased pressure to convert or sell their land. However, the cost and effort for those who choose to comply with Fish and Game Code, § 1600 et seq. and CESA outside the Program would likely be much greater than for Program participants.

As analyzed under Impact 3.1-1, the potential for the Programs to result in the conversion of agricultural land to non-agricultural uses was determined to be less than significant.

2-32 The conditions and changes described in the comment are part of the existing physical setting in the Scott and Shasta Valley watersheds, and therefore are part of the baseline for purposes of the environmental analysis in the Draft EIRs. Indeed, the hydrologic and geomorphic impacts of human development within both watersheds are discussed exhaustively in the Draft EIRs. Comment noted.

2-33 The Draft EIR concurs with the commenter's assertion that, according to readily available groundwater data, regular annual groundwater recharge occurs within the Scott Valley. The Draft EIR also acknowledges that other, more recent trends are only suggestive and inconclusive at present.

2-34 Van Kirk and Naman published an Erratum (Erratum No. JAWRA-07-0074-ER) to their paper in the very same journal issue. The Erratum specifically addressed the discrepancy with the reported irrigated acreage values. However, their overall conclusions remained unchanged and the information presented in the Erratum did not contradict their original conjecture that consumptive use of water has increased in the Scott River watershed. Please see Master Response 8.

2-35 The cited opinion by DWR's previous watermaster, as well as the general comment, are noted. The Draft EIR does not attribute the cause of baseflow decline to a single source. Rather, it is acknowledged that other factors aside from agricultural diversions and consumptive use likely play a role.

2-36 Within the Shasta and Scott River watersheds the reduction in the extent and quality of aquatic habitat can and does result in take of coho salmon. The ITP and sub-permits meet the issuance criteria required pursuant to CESA (including avoidance, minimization, and full mitigation of take).

2-37 Please see Master Response 9.

2-38 Comment noted.

2-39 MLTC Condition 34 (Condition 32 in Draft EIR) states that push-up dam construction shall commence no earlier than May 1 unless authorized by CDFG. Installation may occur earlier pursuant to MLTC Condition 35 (Condition 33 in Draft EIR) if CDFG determines construction will not substantially adversely affect an existing fish or wildlife resource. MLTC Condition 36 (Condition 34 in Draft EIR) states push-up dam construction and

removal shall be accomplished by the operation of a bucket attached to a loader, excavator, or backhoe that is situated outside of the wetted portion of the stream channel.

2-40 The comment poses a hypothetical scenario that requires a legal opinion or conclusion that even if CDFG were willing or required to address would be unable to do so without more facts.

2-41 Under CEQA, social and economic effects are not considered significant environmental effects, unless they would result in a significant physical change in the environment (CEQA *Guidelines*, § 15131(a)). As analyzed under Impact 3.1-1 the potential for the Programs to result in the conversion of agricultural land to non-agricultural uses was determined to be less than significant. The same effect is considered in the broader context of other recent regulatory actions in the Cumulative Impacts analysis (Chapter 4) of each document, and also found to be less than significant.

2-42 Please see Master Response 9.

2-43 Please see response to Comment 2-9.

2-44 The RCDs and CDFG have taken and will continue to take steps to minimize the agricultural participants' cost to participate in the Programs. On behalf of the participants, the RCDs will fund the full mitigation requirements under CESA and have paid the notification fee. Also, please see response to Comment 2-41.

Comment Letter 2.1 Dr. Daniel J. Drake, PhD., University of California Cooperative Extension

2.1-1 The commenter postulates a possible effect of the Programs on cropping types or regimes, particularly a shift from perennial pasture to annual hay production in riparian areas, and states that such a shift could cause secondary impacts on water quality and other resources. While the scenario posed by the commenter is plausible, the chain of events leading to an adverse physical environmental change are considered too long, too tenuous, and too speculative to rise to the level of a significant impact. First, the Programs will not prevent use of riparian corridors for grazing, nor terminate existing water rights, but will only add conditions and incentives to minimize the adverse effects of these activities on coho salmon. Therefore, any change in crop types would be expected to be limited. Second, the required fencing of streams and associated riparian corridors would reduce direct pollution of streams, such as manure pollution, and would increase buffering of any polluted runoff from both pastures and fields. Third, the beneficial effects of the Programs, including control of access by cattle to streams and riparian corridors, increased efficiency (and therefore a likely reduction) in use of diverted water, and in-stream habitat improvements, would be expected to outweigh possible adverse effects of crop changes. Finally, the changes postulated by the commenter would not result in a change of land use from agricultural to another use, but

merely a shift in crops or type of agriculture. From a CEQA perspective, this change would not in itself constitute a significant impact.

Comment Letter 3: Siskiyou County Farm Bureau

3-1 Comment noted.

3-2 Page 3.3-42 of the Shasta River Draft EIR and page 3.3-45 of the Scott River Draft EIR state that the range-wide decline of coho salmon is at least partially the result of conditions or events that are not specific to any given watershed; the Draft EIR does not imply that agricultural operations are solely responsible for the decline. CDFG acknowledges that there is currently insufficient data to link the decline of coho salmon in the Shasta and Scott watersheds directly to agricultural operations. However, as described in detail in Chapters 3.2 and 3.3 of the Draft EIRs, agricultural operations are directly linked to aquatic habitat quality, and aquatic habitat quality is directly linked to coho salmon survival and productivity. The adverse effects of water diversions on fish species is documented extensively in the scientific literature, a small fraction of which is presented in the Draft EIRs. Also, please see response to Comments 2-14 and 2-35.

3-3 Please see Master Response 2.

3-4 The Draft EIRs describe in detail the agricultural history and land uses in the Scott and Shasta River watersheds, and address the possibility that the Programs could result in a change in agricultural land use. Since the use of land for agriculture is central to the "culture of agriculture," this topic is adequately covered in the Draft EIRs. Impact 3.1-1 in Subchapter 3.1, Land Use and Agriculture, in each Draft EIR finds that the potential for the Programs to result in a change in agricultural land to another use is less than significant. Therefore, any effect on the "culture of agriculture" would also be less than significant.

3-5 The level of detail in the description and analysis of the In-Stream Flow Alternative in each of the Draft EIRs is consistent with CEQA *Guidelines* § 15126.6, and does not require revision or expansion. CDFG determined that implementation of this alternative would greatly increase the Programs' environmental impacts and cost. As stated in the discussion of the Environmentally Superior Alternative in Chapter 5 of each Draft EIR, CDFG determined that the Programs are environmentally superior to the alternatives considered.

3-6 Under CEQA, social and economic effects are not considered significant environmental effects, unless they would result in a significant physical change in the environment (CEQA *Guidelines*, § 15131(a)). The Draft EIRs examine the potential for the Programs to decrease the profitability of farming and ranching enterprises to the extent that this would effect a change in land use from agriculture to other uses. The Draft EIRs find in Impact 3.1-1 in Chapter 3.1, Land Use and Agriculture, that such an effect of each Program is by itself unlikely, and does not rise to the level of significance under CEQA.

This conclusion is reached based on the cost-saving aspects of the Programs, and on the likelihood of funding to assist Program participants with compliance with the Program terms and conditions. The cumulative effects analysis in Chapter 4 of each Draft EIR finds that the Programs would not contribute to a cumulatively considerable extent to such an impact when combined with the effects of other regulatory programs on agricultural land uses.

3-7 The potential for increased cost of watermastering service is discussed in Chapter 4, Cumulative Effects and Other Required Topics, of each Draft EIR.

3-8 The Programs are not expected to result in reduced crop yields to the extent that current crop yields are based on use of water in accordance with existing water rights. Insofar as a sub-permittee is required to reduce the amount of diverted water to comply with his or her sub-permit and SAA or elects to do so by selling or transferring some portion of his or her water as part of a local Water Trust, or for any other reason, the amount of the decrease and when any decrease occurs cannot be determined at this time, and therefore is speculative. Also, it is more likely that any effect of a decrease in crop yields would be economic rather than environmental, and even if environmental, not necessarily adverse. As mentioned in response to Comment 3-6, under CEQA, social and economic effects are not considered significant environmental effects, unless they would result in a significant physical change in the environment (CEQA *Guidelines*, § 15131(a)).

3-9 Please see response to Comment 3-6. Also, Fish and Game Code, § 2081(b)(4) requires an ITP applicant to ensure adequate funding to implement the measures required to minimize and fully mitigate take. In other words, CESA makes it clear that the applicant is responsible for meeting the minimization and full mitigation requirements without which CDFG could not authorize take. As a general rule, that is the case in regard to any federal, state, or local permit; the burden is on the permittee to comply with its terms and conditions. Consistent with the CESA requirement mentioned above, ITP Article XIII.E.1.(d) states that a sub-permittee will be

> *…solely responsible for any costs the sub-permittee incurs to implement any avoidance or minimization measures required under a sub-permit...*

Of course, as the Draft EIRs explain, the cost to sub-permittees to obtain take authorization under the Programs will be much less because under the Programs, the RCDs will be responsible for meeting the full mitigation requirements on behalf of the sub-permittees.

3-10 Please see response to Comment 3-6.

3-11 The comment is noted. For the reasons stated in Chapter 3.1, the Setting section, non-renewal of a Williamson Act contract is costly and cancellation is still difficult. Also, as described in Impact Analysis 3.1-1, even if Program participants were to suffer a decline in the financial viability of their agricultural operations as a result of participation in the Program, specific and general restrictions on land use changes would serve as an obstacle

to the conversion of agricultural land to non-agricultural uses. The Siskiyou County General Plan has policies and mechanisms that discourage conversion of agricultural land to non-agricultural uses. Zoning and land use changes would be subject to CEQA review by the County.

3-12 A cost-benefit analysis is not required by CEQA. Also, the Programs are intended to facilitate compliance with Fish and Game Code, § 1600 *et seq.* and CESA. While an individual might engage in a cost-benefit analysis in deciding whether to comply with those statutes where they apply, because compliance is mandatory by law, such an analysis is irrelevant in the context of enforcing Fish and Game Code, § 1600 *et seq.* and CESA through implementation of the Programs.

3-13 The commenter is presumably referring to the USDA Conservation Reserve Program (CRP). The information on the CRP below was derived from the USDA website.[2] Enrollment of land within the Program areas in the CRP would not result in a change in land use from agricultural uses to non-agricultural uses. Because the USDA provides incentive and rental payments for enrollment and maintenance of land in the CRP, the overall effects on income, agricultural employment, and the County's tax base would be expected to be minor, and would not be likely to cause secondary impacts, such as blighting of commercial areas. Therefore, if such a change were to occur, partly or wholly because of the Program, it would not be expected to result in a significant environmental effect.

Overview

USDA Farm Service Agency's (FSA) Conservation Reserve Program (CRP) is a voluntary program available to agricultural producers to help them safeguard environmentally sensitive land. Producers enrolled in CRP plant long term, resource conserving covers to improve the quality of water, control soil erosion, and enhance wildlife habitat. In return, FSA provides participants with rental payments and cost share assistance.

FSA administers CRP, while other USDA agencies and partners provide technical support. More detailed information on CRP is available in the FSA fact sheet "Conservation Reserve Program."

CRP Continuous Sign-up

Environmentally desirable land devoted to certain conservation practices may be enrolled in CRP at any time under continuous sign-up. Offers are automatically accepted provided the land and producer meet certain eligibility requirements. Offers for continuous sign-up are not subject to competitive bidding. Continuous sign-up contracts are 10 to 15 years in duration.

To offer land for continuous sign-up, producers should contact their local FSA offices. To find your local office, visit FSA's Service Center Locator.[3]

2 http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp-sp
3 http://www.fsa.usda.gov/FSA/stateOffices?area=stoffice&subject=landing&topic=landing

Eligible Producers

To be eligible for CRP continuous sign-up enrollment, a producer must have owned or operated the land for at least 12 months prior to submitting the offer, unless:

- The new owner acquired the land due to the previous owner's death;
- The ownership change occurred due to foreclosure where the owner exercised a timely right or redemption in accordance with state law; or
- The circumstances of the acquisition present adequate assurance to FSA that the new owner did not acquire the land for the purpose of placing it in CRP.

Eligible Land

To be eligible for placement in CRP, land must be either:

- Cropland (including field margins) that is planted or considered planted to an agricultural commodity four of the previous six crop years from 1996 to 2001, and which is physically and legally capable of being planted in a normal manner to an agricultural commodity; or
- Certain marginal pastureland that is enrolled in the Water Bank Program or suitable for use as a riparian buffer or for similar water quality purposes.

Eligible Practices

Also, the land must be eligible and suitable for any of the following conservation practices:

- riparian buffers;
- wildlife habitat buffers;
- wetland buffers;
- filter strips;
- wetland restoration;
- grass waterways;
- shelterbelts;
- living snow fences;
- contour grass strips;
- salt tolerant vegetation; and
- shallow water areas for wildlife.

Land within an Environmental Protection Agency (EPA)-designated public wellhead area may also be eligible for enrollment on a continuous basis.

CRP Continuous Sign-up Payments

FSA provides CRP continuous sign-up participants with rental payments, including any incentives, and cost share assistance:

- Rental Payments

In return for establishing long-term, resource-conserving covers, FSA provides annual rental payments to participants. FSA bases rental rates on the relative

productivity of the soils within each county and the average dryland cash rent or cash rent equivalent. The maximum CRP rental rate for each offer is calculated in advance of enrollment. Producers may offer land at that rate or offer a lower rental rate to increase the likelihood that their offer will be accepted. The per acre annual rental rate may not exceed FSA's maximum payment amount and is calculated in advance of enrollment. While continuous sign-up acceptance is not determined by a competitive offer process, producers may elect to receive an amount less than the maximum payment rate.

- Cost-share Assistance

FSA provides cost share assistance to participants who establish approved cover on eligible cropland. The cost-share assistance can be an amount not more than 50 percent of the participants' costs in establishing approved practices.

- Financial Incentives

As a part of annual rental payments, FSA offers financial incentives of up to 20 percent of the soil rental rate for field windbreaks, grass waterways, filter strips, and riparian buffers. An additional 10 percent may be added to the soil rental rate for land located within EPA designated wellhead protection areas. A per acre payment rate may also be added for maintenance of eligible practices.

Additional Financial Incentives

Also as a part of annual rental payments, FSA offers participants the following payment enhancements:

An up front signing incentive payment (CRP-SIP) of $100 to $150 per acre (depending on contract length) for eligible participants who enroll certain practices. The one time SIP will be made after the contract is approved and all payment eligibility criteria are met.

- A practice incentive payment (CRP-PIP) equal to 40 percent of the eligible installation costs for eligible participants who enroll certain practices. The one time PIP will be issued after the practice is installed, eligible costs are verified, and other payment eligibility criteria are met.

3-14 Please see response to Comments 3-6 and 3-13.

3-15 The commenter states that conclusions and statements in the Draft EIR regarding commodities grown and trends in crop value are inaccurate, but does not state specifically which figures are inaccurate. The commenter is also concerned with the source material used in this section. Table 3.1-1, Agricultural Production in Siskiyou County showing crop type and estimated value is based on data from the Siskiyou County Department of Agriculture. The Caltrans document used as the source for the agricultural sector's future performance forecast cites statistics that were gathered from the County Agricultural Commissioner's Offices, Bureau of Economic Analysis and the U.S. Department of Labor, Bureau of Labor Statistics among other sources.

3-16 While the crop rotation cycles cited by the commenter may not have been taken into account in describing cropping trends over time, it seems unlikely that rotations occur in lock-step; presumably they are staggered from farm to farm. In any event, the statistics presented are merely to characterize the environmental setting, and do not form the basis for an impact conclusion.

3-17 and 3-18

Please see Master Response 10. After commenting that the Draft EIR needs to be more "holistic," the commenter expresses the view that there would be unaddressed but significant impacts from reduced diversions on wells, wetlands, waterfowl, amphibians, wildlife and groundwater. In the opinion of most natural scientists, water that remains in a natural watercourse represents its highest and best use as far as biological resources are concerned. Water extracted and then partially returned, or incidentally creating habitat elsewhere, only partially offsets the impact of the withdrawal. The effects on wells and groundwater are more difficult to predict.

3-19 The comment raises a legal issue. However, Recommendation 16 is unclear insofar as it does not identify the party that would "shield" the sub-permittee from liability and, as drafted, would protect the sub-permittee from liability in *all* instances, including those where the damage is caused by the sub-permittee's own negligence or willful misconduct. In that regard, it is overly broad. Also, it is not clear if the type of relief the commenter is seeking is "hold harmless," indemnification, and/or relief from prosecution for violating other laws intended to protect fish and wildlife. In any case, CDFG understands the general objective of the recommendation, essentially to shield a sub-permittee from liability for damage to real property and/or injury or death to persons or fish and wildlife that might result from actions the sub-permittee takes to comply with a condition in his or her sub-permit or SAA. Obviously, in regard to damage to real property or injury or death to persons, CDFG cannot force another party to provide such relief, and it would be impossible to identify all potential claimants for that purpose in the first place. Hence, CDFG presumes the commenter wants CDFG to "shield" the sub-permittee from the type of liability described above. Even if CDFG were willing to do so, it does not have the statutory authority to implement that recommendation.

In regard to Recommendation 17, a sub-permittee must provide non-enforcement CDFG personnel permission to access the sub-permittee's property (MLTC Condition 17) to verify compliance with, or the effectiveness of, the avoidance and minimization measures as required by their sub-permit and for fish population monitoring; SVRCD or SQRCD personnel must also be provided permission to access the sub-permittee's property where necessary to inspect sub-permittee's screens, headgates, measuring devices, diversion structures and livestock and vehicle crossings annually; and/or to allow SVRCD or SQRCD to complete the mitigation obligations required in ITP Article XIII.E.2. and for CDFG and SVRCD or SQRCD to monitor the effectiveness of those measures. For that reason, a sub-permittee may only participate in the Programs if they grant CDFG and the RCDs permission to access their property for the purposes stated above. There might be times when it is necessary for CDFG or RCDs to bring a consultant onto a potential

project site to assist with project design or construction of a minimization or mitigation measure. In those cases the consultants will be accompanied by CDFG or RCD staff unless special arrangements have been made with the sub-permittee.

The current fish survey access agreements are inadequate to meet the objectives listed above. They are specific to fish monitoring activities and must be renewed each year because they are written for a single season. They do not include access for the other monitoring and construction activities required under the ITP. New access authorization is therefore required.

3-20 Comment 20 consists of a brief comment followed by five recommendations, Recommendations 18-22. CDFG responds as follows:

Recommendation 18: Fish and Game Code, § 2081(b)(4) requires an ITP applicant to ensure adequate funding to implement the measures required to minimize and fully mitigate take. In other words, CESA makes it clear that the applicant is responsible for meeting the minimization and full mitigation requirements without which CDFG could not authorize take. As a general rule, that is the case in regard to any federal, state, or local permit; the burden is on the permittee to comply with its terms and conditions. Hence, the sub-permittee's responsibility to install exclusion fencing cannot be predicated upon the availability of grant funding or other funding sources. However, as ITP Article XV.E.2. states, the RCDs will work with the sub-permittees to try and identify funds that can be used to offset the cost of installing exclusion fencing, but the availability of funds cannot be guaranteed.

Recommendation 19: For the same reasons stated above in response to Recommendation 18, following a natural event that damages or eliminates riparian fencing, if the sub-permittee intends to continue or resume any activity covered under the ITP, he or she must be in full compliance with avoidance and minimization measures that apply to that activity. Hence, under the scenario described in the recommendation, the sub-permittee would be responsible for repairing or replacing the riparian fencing as soon as practicable after the event (see ITP Article XXIII.). If the sub-permittee failed to do so, he or she would risk losing take authorization under the sub-permit.

Recommendation 20: ITP Article XV.E.5. states that a sub-permittee may not graze livestock within a fenced riparian area unless the grazing is done in accordance with a grazing management plan approved by CDFG. A sub-permittee may submit to CDFG a grazing plan prepared in accordance with the California Rangeland Water Quality Management Plan adopted by the SWRCB, but it would still be subject to CDFG's approval on a case-by-case basis. At a minimum, to meet the requirement of the ITP, the plan must include an explanation of how the grazing will result in improved riparian function and enhanced aquatic habitat.

Recommendation 21: ITP Covered Activity 10, Grazing Livestock, includes only the grazing of livestock in the riparian exclusion zone along the Shasta or Scott River or their tributaries in accordance with a grazing management plan approved by CDFG. The Program places no restriction on grazing outside this area. Further, CDFG will not assume regulatory authority for grazing management on land outside the riparian exclusion zone.

Recommendation 22: This comment raises a legal issue. However, it is not clear in the first instance whether a sub-permittee would be liable if his or her riparian fencing caused harm to other wildlife; it would depend on the facts and based on the facts, the applicable law. Also, while CDFG and other regulatory agencies have enforcement discretion, CDFG's authority to hold harmless or indemnify natural persons is very limited and almost certainly would not apply in the scenario described in the recommendation.

3-21 CDFG cannot and does not purport to make any guarantees relative to sub-permittees' water rights. Ultimately, it is the responsibility of the sub-permittee to comply with any conditions in his or her sub-permit or SAA that might reduce the amount of water he or she would otherwise divert in a given period, e.g., to protect coho, while at the same time taking any necessary steps to protect his or her water rights, such as by formally dedicating any bypassed water for instream beneficial use. In further response, please see Master Response 9. Finally, although participation in the Programs is voluntary, an applicant would face the same issues if he or she were to obtain a ITP or SAA outside the Program. In other words, it is not the Programs *per se* that might affect the exercise of a participant's existing valid water right, but rather the measures CDFG might include in a SAA or ITP necessary to protect fish and wildlife resources or to minimize and fully mitigate take as required by Fish and Game Code, § 1600 *et seq.* and CESA, respectively. In regard to "voluntary decreases," CDFG defines that to mean decreases a water user elects to make where he or she is *not* required to do so in accordance, e.g., with a permit. In those cases, compensation might be available through the Water Trust or some other mechanism.

3-22 Under Recommendation 25, the commenter states that ITP Article XVII.C. "requires DWR to make determinations that are outside of their expertise and gives the DFG the authority to reduce diversions, which is not an allowable action in the adjudications." ITP Article XVII.C. states DWR will inform CDFG of

…any points of diversion <u>in the watermastered areas</u> where stranding is probable.

In their comment letter to CDFG (Comment Letter 38) DWR states they can inform CDFG of any areas they observe where fish stranding is probable based on flow conditions. As explained in Master Response 9, CDFG is responsible for administering and enforcing various provisions in the Fish and Game Code that could require a water user to reduce the amount of water he or she is otherwise entitled to use regardless of whether the water right is adjudicated or not. However, the adjudication does not provide CDFG the authority to reduce diversions.

In regard to Recommendation 26, Fish and Game Code, § 2081(b)(4) requires an ITP applicant to ensure adequate funding to implement the measures required to minimize and fully mitigate take and it is unknown whether DWR would or could pass any potential additional expense on to water users. CDFG will not be responsible for any additional expenses DWR may incur to participate in the Programs and will not be responsible for those expenses should DWR pass them on to sub-permittees.

3-23 The commenter is concerned about the 25-foot mandated width of vehicle and livestock crossings because rivers are sometimes wider that 25 feet. The width stipulated by the measure is not the length of the crossing, but its "right of way" width, i.e., at right angles to the long axis of the river or stream.

3-24 Riparian fencing will only exclude cattle; elk fencing would need to be seven feet or higher. Access to the waterways will not be restricted. The effects of elk on riparian areas can admittedly be deleterious when elk are present in large numbers, but that is not the case here.

3-25 The commenter is correct that under the Program, if a participant disagrees with any MLTC Conditions CDFG includes in his or her SAA, and CDFG and the participant cannot resolve the disagreement informally, the participant is not entitled to arbitration to resolve the matter. As a result, the participant must either accept the SAA or obtain a SAA outside the Program, in which case, he or she would be entitled to arbitration in the event of an impasse over measures in a Draft SAA.

Generally speaking, under CEQA, a lead agency (in this case, CDFG) that prepares an EIR must make various "findings," including whether the mitigation measures identified in a Draft EIR are in fact feasible. "Feasible" means "capable of being accomplished in a successful manner within a reasonable period of time." (CEQA *Guidelines*, § 15364). An arbitration panel in the event of a dispute may decide that a particular mitigation measure is not required, in which case the applicant would not be required to implement it. Hence, allowing arbitration would make it impossible for CDFG to determine whether any of the measures listed in the MLTC (the ones which will be carried over to SAAs) are in fact feasible because they would all be subject, at least potentially, to arbitration, and as mentioned above, an arbitration panel could disregard them. Also, allowing arbitration would likely increase Program costs and could result in SAAs for the same Covered Activity not having the same mitigation measures. It is for this reason CDFG respectfully declines the commenter's recommendation to allow Program participants the right to arbitration.

SAA MOU Article III.F. originally stated:

> *The Department may include in the draft Agreement measures that are not in the MLTC, if the Department determines such additional measures are necessary to protect fish and wildlife resources the project could substantially adversely affect, and the Department meets any CEQA requirements that might apply before issuing the final Agreement.*

CDFG has revised this clause. It is now SAA MOU Article III, E. CDFG has added language to the MOU which provides the opportunity for the RCDs and sub-permittees to work with CDFG staff, and ultimately the Regional Manager, to resolve any disagreement regarding only those additional measures which are not currently in the MLTC. This new provision is SAA MOU Article III.F. and states:

For draft Agreements that include measures that are not in the MLTC to protect fish and wildlife resources pursuant to paragraph E above, the Participant shall work with Department staff to resolve any disagreement regarding only those measures. If the disagreement is not resolved between the Participant and Department staff, the Regional Manager shall be informed. Thereafter the Regional Manager shall work with the Participant to resolve any disagreement regarding any measure that is not in the MLTC. The decision by the Regional Manager shall be final.

3-26 This statement makes a very broad generalization. There can be many degrees of "recovery" depending on the system and the nature and magnitude of existing and/or anticipated disturbances. Instability (natural or induced, or both) is a factor that is often incorporated and accounted for in many types of restoration (or enhancement, improvement, etc.) projects. We respectfully disagree with the commenter's general statement regarding the potential for recovery of the Scott River system.

3-27 For the reasons stated in the response to Comment 3-20 (Recommendation 18), following a natural event that damages or eliminates a required avoidance and/or minimization project, if the sub-permittee intends to continue or resume any activity covered under the ITP, he or she must be in full compliance with avoidance and minimization measures that apply to that activity. Hence, the sub-permittee would be responsible for repairing or replacing the measures as soon as practicable after the event (see ITP Article XXIII.). If the sub-permittee failed to do so, he or she would risk losing take authorization under the sub-permit.

3-28 "Stabilization" of the Scott River is not a goal of the Program. The potential effects of the actions that would reasonably result from Program implementation are examined in the Draft EIR.

3-29 CDFG has held numerous discussions with DWR regarding their participation in the Programs. Should DWR decide not to participate in the Programs, CDFG will evaluate its options and any applicable legal requirements at that time.

3-30 The commenter states that the Draft EIRs discuss "flows of both watersheds and utilizes the data presented to form the conclusion that agriculture is the **major cause** for the decreased flows" (emphasis added). The Draft EIRs never state that agriculture is the "major cause" of decreased flows but do discuss the impacts of water diversions and groundwater pumping for agricultural purposes on flows. The data referred to by the commenter are presented to help define and explain the existing hydrologic condition and flow regime within both watersheds, and the data are sufficient for this purpose. The proposed Program would not have a negative impact upon flows. In fact, one of the main purposes of the Program is to provide additional flow for fish at critical times of the year.

3-31 As described in Chapter 3.3 Biological Resources: Fisheries and Aquatic Habitat in both Draft EIRs, as well as in the Coho Recovery Strategy and numerous scientific publications, riparian vegetation is an important habitat requirement for coho salmon as it

reduces water temperatures, increases stream bank stability, increases prey supplies in the form of aerial and terrestrial insects, and improves habitat complexity. We do not believe further studies are needed to support the widely acknowledged benefits of riparian plantings in areas that have been denuded.

3-32 CDFG respectfully disagrees with the commenter's assertion. Please see response to Comment 2-9, paragraph 2.

3-33 The referenced statement does not assume landowners are diverting the entire available flow of the Scott River. This is not stated in the Draft EIR; rather, the commenter introduced this assumption. In fact, the statement makes no assumption at all as to the quantity of water landowners may actually be diverting. The statement in the Draft EIR is simply in reference to the quantity which is *allotted* under the decrees (i.e., that amount that is permitted to be diverted).

3-34 Water diversions pursuant to existing water rights are considered in the environmental analysis to be a part of the environmental baseline and not analyzed as impacts of the Program. Municipal water diversions are described in the Draft EIRs but, because municipal water diversions are not part of the Program, any environmental effect they may have are not considered impacts of the Programs.

3-35 CDFG will work with municipal water diverters in both watersheds to ascertain the need for incidental take authorization and SAAs.

3-36 Please refer to Impact 3.1-1 (the Programs could result in the conversion of agricultural land within the Scott River and Shasta River watershed to non-agricultural uses) in Chapter 3.1, Land Use and Agriculture, in each Draft EIR. In both Draft EIRs, this effect is found to be less than significant, for the reasons stated in the impact discussion. Also, please see response to Comment 2-28.

3-37 Diverting water from a surface stream leads to a decrease in the flow of that stream immediately below the diversion point. This is implicit in the term *diversion* (i.e., confirming this notion does not require additional data or peer-reviewed science). The referenced passages are essentially summary statements derived from the information presented in the Environmental Setting of Chapter 3.2, Geomorphology, Hydrology, and Water Quality; they stand alone as such and do not require a citation or direct reference. A number of references are provided in the Environmental Setting with respect to flow decreases, stream temperature, and land-clearing impacts upon water quality. The correlation between decreases in flow and increases in water temperature, as well as between land clearing (grazing, tillage, cutting, etc.) and accelerated erosion, is well documented within the disciplines of hydrology and geomorphology.

3-38 Based upon the substantial number of comments received on the Draft EIR, CDFG believes the review period, which exceeded the requirements under CEQA, was sufficient, and for that reason CDFG decided not to extend the review period.

Comment Letter 4: California Farm Bureau Federation

4-1 Comment noted.

4-2 Comment noted.

4-3 CDFG respectfully disagrees with the commenter's assertion regarding the applicability of Fish and Game Code, §1602 to the diversion of water. Please see response to Comment 2-9, paragraph 2. The other Covered Activities the commenter believes are not subject to Fish and Game Code, §1602 shall remain part of the Program because in some cases they divert or obstruct the natural flow of a river, stream, or lake, or modify the bed channel or bank of a river, stream, or lake and therefore, a SAA notification will be necessary.

4-4 The suggestion is made that a Natural Communities Conservation Plan (NCCP) would be another and perhaps preferable way to meet the objectives of the Programs. This is a valid suggestion, but it would not obviate the need for individual SAAs and CDFG believes the Programs will better meet the objective of facilitating compliance with Fish and Game Code, § 1600 *et seq.* and CESA.

4-5 Please see Master Response 2.

4-6 The commenter suggests that the Draft EIRs be revised to allow landowners who choose not to participate in the Programs, but rather obtain a ITP and/or SAA outside the Program, to "tier" from the Final EIR. It appears the commenter is suggesting that CDFG should have identified the Draft EIR as a first tier environmental analysis for possible future permitting efforts for individual projects that fall outside of the proposed Program. In so doing, the commenter expresses a policy interest in modifying the project description in the Draft EIRs to include possible future permitting actions by CDFG for individual projects that are not covered by the proposed Program. Modifying the project description for the current analysis to this effect is not consistent with CDFG's goals and objectives in establishing a watershed-wide permitting program. Possible future permitting efforts by CDFG for individual projects that fall outside the proposed Program are not part of the project description at issue in the current analysis and any such individual permitting effort will be analyzed by CDFG as required by CEQA at the appropriate time on a project-specific basis. At the same time, the applicant may utilize any information in the Draft EIR relevant to the particular project if such information exists.

4-7 Please see response to Comment 3-25.

4-8 The "priority system" that applies to appropriative water rights in California (sometimes summarized as, "first in time, first in right") governs the allocation of water among "competing" appropriators. That system, however, does not apply, and CDFG is not required to apply it, in situations where, for example, a particular user must reduce his or her consumptive use in order to meet a statutory obligation to protect fish and wildlife

resources. Such obligations are "stand alone" obligations that an appropriator must meet regardless of the appropriator's priority. Further, without elaborating, trying to apply the priority system in such cases would be impractical on many levels.

4-9 Please see Master Response 10.

4-10 The development of the Programs has been undertaken by CDFG in cooperation with the RCDs and the agricultural community in a process that has lasted several years. The Draft EIRs circulated for a period of 60 days, which exceeds the statutory requirement under CEQA. During this period CDFG also held public hearings, which are not required by CEQA. CDFG also conducted public scoping meetings during circulation of the Notices of Preparation for the EIRs. Based upon our receipt of a substantial number of comments we believe the review period was sufficient, and therefore we decided not to extend the review period. In further response, see response to Comment 2-9, paragraph 2.

Comment Letter 5: California Cattlemen's Association

5-1 Comment noted.

5-2 The Commenter notes the following comments apply to both Shasta and Scott Draft EIRs.

5-3 The Programs have been the subject of an ongoing collaboration between CDFG and the RCDs, with multiple opportunities for public involvement in the process, including the opportunity to comment on the scope of the Initial Studies and Draft EIRs by providing written comments and having the opportunity to speak at the public hearings held on the Draft EIRs.

5-4 Please see Master Response 9.

5-5 Please see Master Response 6.

5-6 The RCDs have been working with federal, state, and local agencies as well as private entities to identify grant funding for the mitigation measures they have agreed to implement on behalf of the agricultural participants. The RCDs plan to charge agricultural participants a management fee to cover their administration and monitoring costs. The amount charged will depend in part on the number of participants.

5-7 The commenter is incorrect in stating that the RCDs are not government entities. The RCDs are non-profit public agencies, organized under Division 9 of the Public Resources Code. The commenter is, however, correct in stating that the RCDs are not regulatory agencies. Also, please see Master Response 6.

5-8 Please see Master Response 6. The responsibilities of the RCDs are spelled out in the ITPs, and are summarized in the first several pages of Chapter 2, Project Description, of each Draft EIR.

5-9 The reference to the ITP Article "XIII.(v)" is incomplete and therefore cannot be accurately determined but it is assumed the reference it to Shasta and Scott Programs ITP Article XIII, E. 2.(a)(v). Please see Master Response 9.

5-10 Under ITP Article XV.A.2., sub-permittees agree to verify the quantity of water diverted. For those diversions that are watermastered, this verification will be performed on behalf of the sub-permittee by the watermaster. Such verification is consistent with the watermaster's responsibility to administer the decrees.

5-11 The ITP provision referenced does not preclude cattle from crossing streams, but only restricts this activity in order to avoid and minimize take of coho salmon. This provision was thoroughly vetted with the RCDs during the drafting of the documents and is considered feasible, reasonable, and a necessary prerequisite for incidental take authorization.

5-12 The ITP provision referenced assumes that the RCDs will collaborate with Program participants in the preparation of the Riparian Fencing Plans. Each agricultural operator who becomes a sub-permittee must, however, allow riparian fencing on their property if it is identified as a priority location under the RCDs' Riparian Fencing Plan, per ITP Article XV.E.4. Article XV.E.5. requires sub-permittees to prepare a grazing management plan should they wish to graze livestock within fenced riparian areas. Mitigation Measure 3.4-4b, in Chapter 3.4, Biological Resources: Botany, Wildlife, and Wetlands of each Draft EIR further describes the required content of a grazing management plan.

5-13 The California Cattlemen's Association opposes the fencing setback of approximately 35 feet from the edge of the stream required in ITP Article XV.E.3. This fencing setback reflects a reasonable buffer in which riparian habitat may become established and/or persist, and a reasonable buffer to provide bio-filtration benefits.

5-14 The commenter believes MLTC Covered Activities F. Fencing, is not an activity subject to Fish and Game Code, §1602. Covered Activity F. states:

> *This category includes only the installation and maintenance of livestock exclusion fencing to protect riparian zones including the construction of fencing along livestock and vehicle crossings and livestock watering lanes.*

As stated in the Draft EIR, riparian fencing would be constructed approximately 35 feet from the edge of the streambank. Sub-permittees will be required to make reasonable efforts to include the existing riparian vegetation within the fenced area although this may not always be the case. The construction of fencing for livestock and vehicle crossings and livestock watering lanes could cross through existing riparian vegetation and may require modification of the bed and bank of the stream (see MLTC Condition 66 (Condition 60 in Draft EIR)). CDFG routinely takes jurisdiction over activities within riparian zones under Fish and Game Code, § 1602, and for this reason has included the fencing described above as a Covered Activity under the Program. This means that a

notification for the fencing will need to be submitted to CDFG. In some cases CDFG may determine a SAA is not required. Whether a SAA is required will depend on whether the installation of riparian fencing at the proposed location could substantially adversely affect a fish or wildlife resource, including coho salmon, which CDFG will determine after making a site visit.

5-15 The moving of livestock and vehicles across flowing streams or intermittent channels (SAA Covered Activity D) shall remain part of the Program because, in some cases, the activity may result in or require modification of the bed, channel, or bank of a river, stream, or lake (see MLTC Condition 66 (Condition 60 in the Draft EIR)) and therefore, SAA notification will be necessary. Once notified, CDFG would visit the site and determine whether use or construction of the crossing has the potential to substantially adversely affect fish and/or wildlife resources, including coho salmon, and whether a SAA would be required.

5-16 Please see response to Comment 5-15. In further response, the MLTC does not limit vehicle crossings to less than one month per calendar year. The cited condition limits vehicle operation within the wetted channel to only as authorized in a SAA. CDFG includes conditions that allow for year-round vehicle crossings within the wetted channel.

5-17 CDFG appreciates the comments by the California Cattlemen's Association.

Comment Letter 6: Coast Action Group

6-1 Comment noted.

6-2 The commenter is only partly correct: the Programs rely only on authority granted to CDFG under Fish and Game Code, § 1600 *et seq.*, CESA, and other provisions in the Fish and Game Code, as cited. CDFG intends to collaborate with other agencies, including DWR, the SWRCB, and the North Coast Regional Water Quality Control Board, as described in Chapter 1, Introduction, of each Draft EIR. The Programs meet all regulatory requirements of the Fish and Game Code and CEQA. CDFG is not required to obtain other permits or approvals from other agencies for the Programs. However, Program participants may be required to obtain other permits or approvals from other agencies for their Covered Activities. Obtaining these other permits is the responsibility of each Program participant, as is typically the case for project proponents.

6-3 The Draft EIRs adequately disclose and analyze the impacts associated with the Programs and where those impacts are deemed to be significant, identify feasible mitigation measures to reduce those impacts to less than significant. In sum, the Draft EIRs fully comply with CEQA.

6-4 CDFG has adhered to all requirements for public noticing, circulation of the environmental documents prepared for the Programs, and alternatives analysis prepared pursuant to CEQA. A Mitigation Monitoring and Reporting Program will be adopted by CDFG at the time of Program approval (Public Resources Code, § 21081.6).

6-5 There is no piecemealing as suggested by the commenter because the Draft EIRs examine the whole of the action contemplated by CDFG in issuing ITPs and SAAs, as described in Chapter 2, Project Description, of each Draft EIR. Under the Mitigation Obligations of the SVRCD/SQRCD (ITP Article XIII.E.2.) the RCDs are required, within a specific number of years, to identify locations and implement projects which will improve instream flow, provide gravel enhancement, install instream habitat improvement structures, plant riparian vegetation, and remove barriers to provide fish passage. Although the location where these projects will be performed is not currently known, the Draft EIR adequately describes these projects and analyzes their potential effects. Prior to implementation of these projects, the RCDs will be required to notify CDFG pursuant to Fish and Game Code, § 1602 and obtain a SAA. Before issuing a SAA, CDFG is required to determine whether all potential impacts of a proposed project have been analyzed in the Final EIR or in another document prepared pursuant to CEQA. If CDFG identifies potential impacts which were not disclosed, CDFG will proceed as required under CEQA *Guidelines*, § 15162 and § 15168. The potential for additional environmental review for specific activities that may occur under the Program is discussed in Chapter 1 of the Draft EIR (Section 1.2.3, Scope of the Draft EIR, page 1-4).

6-6 Non-participation in the Programs does not relieve diverters of the requirement to comply with Fish and Game Code, § 1600 *et seq*. and CESA to the extent that these apply to non-participants' agricultural operations or other activities.

6-7 A riparian right entitles the owner of land contiguous to a watercourse a right to the reasonable and beneficial use of water on that land. Unlike post-1914 appropriators, the landowner does not need a permit or approval from the SWRCB to exercise a riparian right, although in some cases, riparian claims will be included in an adjudication. For example, all appropriative claims prior to 1914 *and* riparian water rights were included in all of the court adjudicated decrees within the Scott River watershed, which include: the Shackleford Creek Decree (1950), the French Creek Decree (1958), and the Scott River Decree (1980). By contrast, riparian water rights in the Shasta River watershed are not adjudicated.

While a landowner does not need a permit or approval to exercise a riparian right, he or she must comply with all laws that apply to the diversion. That includes, but is not limited to, Fish and Game Code, § 1602, which requires an entity to notify CDFG before beginning an activity that will substantially divert the natural flow of a river, stream, or lake, and CESA if the diversion will cause take of a listed species.

6-8 Use of groundwater is described in Chapter 3.2, Geomorphology, Hydrology and Water Quality, in each Draft EIR. Each Draft EIR also evaluates the potential for the Programs to result in increased reliance on groundwater; see Impact 3.2-4 in the above-cited chapter, and Impact 3.3-1 in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, of each Draft EIR.

6-9 CDFG's determination regarding baseline is in accordance with CEQA *Guidelines*, § 15125(a) and case law. The Programs do not authorize any illegal activities. Instead, one of the primary purposes of the Program is to ensure compliance by Program participants with Fish and Game Code, § 1600 *et seq.* and CESA.

6-10 The commenter appears to be describing a suggested alternative to the Programs however, the description is inconsistent. The first sentence of the paragraph suggests limiting the scope of the permits to RCD restoration activities only, but the remainder of the proposal describes suggested modifications of or conditions on agricultural water diversions. Several of the suggested conditions, are already included in the ITP and Master List of Terms and Conditions. See ITP Article XX. and MLTC Condition 26 (Condition 25 in the Draft EIR) in each document. Limiting factors for coho salmon are extensively discussed in Chapter 3.2, Fisheries, of each Draft EIR.

6-11 Please see Master Response 4. Potential impacts on groundwater and its relationship with surface water flows and water quality are discussed in Impact 3.2-4 in Chapter 3.2, Geomorphology, Hydrology and Water Quality, and Impact 3.3-1 in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in each Draft EIR. The conclusion of "less than significant" for each is well-supported and described.

6-12 Please see Master Response 7.

6-13 The Programs do not confer regulatory authority on the RCDs or any other party. The enforcement responsibilities of CDFG cannot be assigned. Please see Master Response 6.

6-14 Please see Master Response 5.

6-15 The premise regarding delegation of regulatory authority is incorrect. Please see Master Responses 5 and 6.

6-16 CDFG may not issue a SAA under Fish and Game Code, § 1600 *et seq* without first complying with CEQA, including its public notification and public participation requirements. CDFG, in preparing the Draft EIRs, met this requirement. Before CDFG issues a SAA and sub-permit, it will 1) confirm that the activity is a Covered Activity, and, if so, 2) determine in light of the project-specific information whether the impacts of the Covered Activity are adequately addressed in the EIR for the Program and its related mitigation measures. If that is not the case, CDFG will proceed as required under CEQA *Guidelines*, § 15162 and § 15168. As stated above, the potential for additional environmental review for specific activities that may occur under the Program is discussed in Chapter 1 of the Draft EIR (Section 1.2.3, Scope of the Draft EIR, page 1-4).

6-17 Please see response to Comment 6-13, above and Master Response 6.

6-18 Please see Master Response 5.

6-19 Covered Activities are described in Chapter 2, Project Description, in each Draft EIR.

6-20 Existing conditions are described in the Setting section of Chapter 3 and each of its seven subchapters (including Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat) in each Draft EIR. Impacts are defined as those that will arise as a consequence of Program approval. As discussed in Chapter 3, existing conditions are not considered Program impacts. However, the Programs address many long-standing impacts associated with agricultural operations in the two watersheds. Although the Programs include select key coho recovery tasks identified in the Coho Recovery Strategy as avoidance, minimization, and mitigation measures, it is not intended to be a vehicle for implementation of the full Coho Recovery Strategy.

6-21 Areas of controversy are briefly noted in Section S.6 in Chapter S, Summary, of each Draft EIR and are addressed throughout the Draft EIR. See also "Response to Comments" (page 1-6) in Section 1.2.3, Scope of the Draft EIR, of each Draft EIR.

The alternatives analysis in each Draft EIR fully complies with the requirements of CEQA, including the requirement to analyze a reasonable range of feasible alternatives. Please refer to Chapter 5, Alternatives, in each Draft EIR.

Potential impacts on groundwater, and on surface water quality and flows where surface water is interconnected with groundwater, are examined in Chapter 3.2, Geomorphology, Hydrology, and Water Quality in each Draft EIR; see particularly Impact 3.2-4 in each document.

6-22 The Draft EIRs, in conjunction with the Initial Studies prepared for each Program (see Appendix D of each Draft EIR) fully describe environmental impacts and mitigation measures, as required by CEQA. The comment regarding, "…conditions not noted in the Draft EIR…" and "mitigations that have yet be [*sic*] described…" are unclear and cannot be responded to.

6-23 As stated in the response to Comment 6-4, above, a Mitigation Monitoring and Reporting Program will be adopted at the time of Program approval, as required by Public Resources Code, § 21081.6. In addition, the Monitoring and Adaptive Management Plan (MAMP) (Appendix A, Attachment 3) describes the monitoring components of the Program including adaptive management provisions.

6-24 Alternatives are discussed in Chapter 5 of each Draft EIR.

6-25 The comment that "[t]he ITP must be consistent with all [Fish and Game Code provisions] - Including 1600-1603, 5937 and 5901, State Water Code on diversions and licensing (including beneficial use protection), and the public trust[,] is not correct. Instead, the ITP must meet the issuance criteria and other requirements in Fish and Game Code, § 2081(b) and (c). However, the person responsible for the project which requires the ITP is responsible for complying with all other federal, state, and local laws and regulations that apply to the project. In regard to the Programs, in order to participate, the Program participant must obtain both a SAA and ITP, but he or she must still comply

with other laws and regulations in conducting the activities the SAA or ITP authorize, as would be the case outside the Program.

6-26 The level of take is not necessarily quantified as a numerical total in a CEQA document for an ITP program. The actual analysis of whether the ITP issuance will jeopardize the species is more rigorous, and will be part of the Department's jeopardy determination, which must be made before the Department may issue any take authorization. Please see Master Response 1.

6-27 Under the Programs, the RCDs will be implementing key coho recovery tasks identified in the Coho Recovery Strategy. Normally, such projects are funded by grants and other public monies. That will be the case for the restoration projects the RCDs implement under the Programs, as well. Hence, even though these projects will serve to fully mitigate any take of coho salmon that might occur incidental to a Covered Activity authorized under the Program, CDFG does not view the grants and public monies the RCDs receive to fund their restoration projects as "public funding for mitigation." It is more accurate to characterize it as public funding for restoration.

As stated in ITP Article XIII.E.1.(d), sub-permittees will be

> *…solely responsible for any costs the sub-permittee incurs to implement any avoidance or minimization measures required under a sub-permit.*

However, CDFG and the RCDs will make every effort to assist Program participants in reducing their compliance costs because doing so will help the Programs to succeed, which in turn will benefit coho and other fish and wildlife species in the Program Areas.

6-28 Program impacts on Chinook salmon and steelhead are analyzed in each Draft EIR. Please see Impact 3.3-1 in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in each Draft EIR.

6-29 Cumulative impacts are thoroughly analyzed in Chapter 4 of each Draft EIR. Complete descriptions of the Programs are included in Chapter 2 of each Draft EIR.

6-30 This is a Program EIR covering individual activities subject to Fish and Game Code, § 1602 and § 2081, which have similar effects and can be mitigated in similar ways. ITP Article XIII.E.2.(a) includes a number of flow enhancement activities to provide for or support the instream needs of coho salmon at specific life-cycle stages. These activities include: development and implementation of water trusts; improvement of baseline instream flows and/or water quality through installation of water efficiency and/or water management improvement projects; development and implementation of a contingency plan for dry and critically-dry water years; and installation of alternative stock water systems. The exact numbers or locations of these activities cannot be precisely identified prior to Program implementation. Similarly the reach-specific mitigations depend on the site-specific and cumulative participation in the Programs. Consequently, identification

of measurable objectives in any particular reach would provide an unwarranted degree of specificity and be speculative.

6-31 The requirement to prepare a Dry Year Contingency Plan in each ITP provides discretion to CDFG to determine the adequacy of the Plan, which must be prepared by each RCD within three years of Permit issuance. Groundwater would be "relevant" where it is determined that it is, or is likely to be, interconnected with surface flow. CDFG's determination of the adequacy of the specific provisions of the plans will be based on the best available scientific information.

6-32 The cumulative effects of water diversion likely play an important role in "stranding" of fish. The preventative measures for stranding prescribed in the ITPs are twofold. One list of measures is for the DWR sub-permit (Article XVII.), requiring that they coordinate with CDFG when they observe the potential for stranding. The other list of measures is for inclusion in the sub-permits requiring that sub-permittees acknowledge that if stranding were to occur at a watermastered point of diversion, CDFG and DWR would coordinate with the sub-permittee and the RCD in the process described (Article XVIII.).

6-33 In this comment, the riparian exclusion zone is considered too narrow. The fencing setback of approximately 35-feet from the edge of the stream as required in ITP Article XV.E.3. reflects a reasonable buffer in which riparian habitat may become established and/or persist, and a reasonable buffer to provide bio-filtration benefits. Please see response to Comment 5-13 in which the commenter considered the width as too wide.

6-34 CDFG agrees with the comment and will comply with CEQA and any other applicable law, including the Public Records Act (Government Code, § 6250 *et seq.*) in regard to information disclosure.

6-35 CDFG disagrees with the commenter's assertion that "[t]he DEIR must address where monitoring and other data will be considered proprietary and explain why the agency and the public will not need this [*sic*] data to evaluate compliance with permit conditions and applicable laws and codes." That is not required under CEQA. In regard to any data or other information held by the RCDs, CDFG cannot respond for them. However, as public agencies they are subject to the requirements of the Public Records Act.

Comments 6-36 through 6-42 apply only to the Scott document

6-36 See response to Comment 2-2. In further response, CDFG followed and met the requirements in CEQA in conducting its agency and public outreach efforts. The commenter had the same opportunity as other interested parties to provide its data and raise concerns about how the Program might impact its interests. Insofar as the commenter is suggesting that CDFG ignored it, that was certainly not CDFG's intention; again, it conducted extensive outreach in an effort to receive input from all interested parties. If the commenter has data which it believes would be useful to CDFG, CDFG would appreciate the opportunity to examine it.

6-37 Fish capture and relocation in the Scott River watershed is described on p. 3.3-41 of the Draft EIR. Fish capture and relocation are considered part of the baseline and are not a "Covered Activity" under the Program, and therefore are not an impact of the Program. These effects are thoroughly described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat. If fish within the Program Area are found in a location with poor aquatic habitat conditions from which they cannot escape and their survival is threatened, CDFG staff have federal and state authority to rescue those fish. CDFG has performed this task in the past, and will continue to do so in the future, if necessary, as resources allow.

6-38 The Draft EIR acknowledges the influence that surface water diversions and groundwater pumping have on baseflow volumes in the Scott River (see page 3.2-32). The Draft EIR took into consideration peer-reviewed scientific information related to the hydrologic conditions within the Scott River watershed and how such conditions relate to existing agricultural practices. This scientific information was considered to be of high quality. Nevertheless, groundwater-surface water interactions in the Scott River watershed are not thoroughly understood.

6-39 The importance of water temperature to coho salmon and the effects of water diversions on water temperature are thoroughly described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

6-40 The fact that U.S. Forest Service (USFS) water rights on the Scott River are generally not being fulfilled is acknowledged in the Draft EIR. According to the Scott River Decree, the USFS water rights are junior in priority to many of the large diversions within the Scott River watershed.

6-41 Several mitigation obligations in Article XIII.E.2. of the ITP are aimed at improving instream flows, particularly during dry and critically-dry water years.

6-42 The paper that the commenter referenced (Van Kirk et al (2008)) discusses groundwater issues in the Scott River Basin. The information provided in this paper was used during the development of the EIR prepared for the Scott River Watershed-wide Permitting Program. See Master Response 8.

Comments 6-43 through 6-47 apply only to the Shasta document

6-43 The ongoing effects of Dwinnell Dam on water quality and fisheries are considered part of the baseline, not impacts of the Program. These effects are thoroughly described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

6-44 CEQA Guidelines, § 15126.6(a) requires an EIR to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of

the significant effects of the project." As stated in the Draft EIR, the alternative of removing Dwinnell Dam has the potential to substantially increase the significant effects of the Program: "The major adverse impacts associated with removal of Dwinnell Dam would include effects on existing water supply systems, loss of recreational opportunities, and effects associated with construction of new off-stream storage capacity and related diversion and conveyance features. There is insufficient information to discern the severity of other impacts, including release of sediments from behind the dam (and the quality of these sediments) and effects on flooding in the Shasta Valley." For these and other reasons stated in the Draft EIR, this alternative was rejected from further consideration.

In regard to the comment on Fish and Game Code, § 5937, whether or not Dwinnell Dam is in compliance with that section has no bearing on CDFG's alternatives analysis in the Draft EIR or any decision to adopt or reject a particular alternative. However, it remains the case that Dwinnell Dam is subject to the requirements of Fish and Game Code, § 5937 and any other laws and regulations that apply to its operation.

6-45 Please see response to Comment 6-7. In further response, the ongoing diversion of water under riparian claim is part of the baseline condition in the Program Areas and does not need to be analyzed in the Draft EIRs as described by the commenter. Individuals who divert water in the Program Areas under riparian rights for agricultural purposes are eligible to participate in the Programs, even though those in the Shasta River watershed have not been adjudicated. Such operators may participate in the Programs because Fish and Game Code § 1600 *et seq.* applies to the diversion of water regardless of the basis of right and CESA's prohibition on take absent authorization from CDFG applies regardless of how the take might occur. If such operators choose to participate, they will obtain a sub-permit and SAA like any other participant, and be subject to the terms and conditions of these permits intended to protect fish and wildlife resources, including coho, from any impacts associated with their diversions.

6-46 CDFG reminds the commenter that one of the main objectives of the Program is to facilitate compliance by agricultural diverters in the Scott and Shasta River watersheds with Fish and Game Code, § 1600 *et seq.* and CESA.

6-47 This comment, which comprises the remainder of this comment letter, addresses the TMDLs for the Shasta and Scott Rivers. The TMDLs are not the subject of the Draft EIRs. TMDLs are the responsibility of the North Coast Regional Water Quality Control Board and the SWRCB, not CDFG. Further, CDFG has no authority to require the SWRCB to undertake the actions the commenter urges, and these should instead be directed to the SWRCB.

Comment Letter 7: Jenner Cattle Co., Inc.

7-1 This comment appears to go more to the merits of the Programs than to the environmental analysis, or is too vague to enable a substantive response. Please note that no one is compelled or required to participate in the Programs.

7-2 Potential effects of the Programs on the viability of agriculture are addressed in Chapter 3.1, Land Use and Agriculture (see particularly Impact 3.1-1) and in Chapter 4, Cumulative Effects and Other Required Topics (see particularly Section 4.2.1, Land Use and Agriculture) in each of the two Draft EIRs. The Programs are not intended to assign blame for the decline of coho salmon, or to constitute a plan or program for coho salmon recovery. As stated in Chapter 2, Project Description, in each Draft EIR, the Programs are intended to provide a streamlined approach for Agricultural Operators in the Scott and Shasta watersheds to comply with the requirements of CESA and Fish and Game Code, § 1600 *et seq.* To the extent that tribal members or tribes participate in the Programs as Agricultural Operators, the provisions of the Programs would apply to them as well.

7-3 These comments appear to go to the merits of the Programs, not to the environmental analysis. See responses to Comments 1-5, 2-20 (first paragraph), and 6-37. In issuing SAAs and sub-permits, CDFG staff will perform site visits and work with the RCDs and sub-permittees so these measures are implemented in a manner appropriate to the specific conditions of the site.

7-4 Please see Master Response 9.

7-5 The issue of economic burden on landowners is examined in Impact 3.1-1 in Chapter 3.1, Land Use and Agriculture, in each Draft EIR. In further response, please see responses to Comments 2-10 and 2-11.

7-6 This comment appears to go to the merits of the Programs, not to the environmental analysis. Please see response to Comment 2-20.

7-7 As described in Chapter 2, Section 2.3.4, of the Draft EIR, the Programs include a Monitoring and Adaptive Management Program (Appendix A, Attachment 3). Also, please see response to Comment 6-30, first paragraph.

7-8 Potential impacts on groundwater, and on surface water quality and flows where surface water is interconnected with groundwater, are examined in Chapter 3.2, Geomorphology, Hydrology, and Water Quality in each Draft EIR; see particularly Impact 3.2-4 in each document.

7-9 As noted above, landowners are not compelled or required to participate in the Programs.

Comment Letter 8: Klamath Forest Alliance

8-1 Comment noted. In further response, the comment letters of the Quartz Valley Indian Reservation and the Klamath Riverkeeper are responded to separately (see Comment Letters 35 and 42, respectively, in the Shasta River Watershed-wide Permitting Program Final EIR, and Comment Letters 35 and 40, respectively, in the Scott River Watershed-wide Permitting Program Final EIR).

8-2 This comment recounts the history of the federal and state listing of coho salmon, and the issuance of the notices of preparation of the EIRs for the Programs. Comment noted.

8-3 Comment noted. For the relationship between CDFG and the RCDs, please refer to the Project Descriptions (Chapter 2) in each Draft EIR.

8-4 This comment addresses the merits of Programs, not the environmental analysis. Please note that under CESA, CDFG must make a jeopardy determination before issuing the ITPs. Please see Master Response 1.

8-5 Please see Master Response 7. Factors limiting coho salmon are discussed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in each Draft EIR.

8-6 Fish stranding due to water diverted pursuant to legal water rights is considered an existing condition that is part of the baseline for the purpose of the environmental analysis, and is therefore not an impact of the Programs. ITP Article XVII.C., D., and E. and Article XVIII. are intended to avoid and minimize take associated with stranding. Also, please see response to Comment 6-37.

8-7 The commenter states, "CDFG should not agree to keep wardens off of streams they are responsible for protecting." Such an action is not contemplated, or in any way suggested as part of the Programs. Please see Master Response 5. Fish and Game Code, § 857 is explicit in that sworn peace officers may enter private lands if necessary for law enforcement purposes. That same statute, however, limits the ability of non-law enforcement personnel from entering private property. Therefore, the ITPs specifically require Program participants to provide authorization to *non-enforcement* personnel to access their property for monitoring purposes. Article XIII.E.1.(c) of each ITP reads as follows (with emphasis added):

> *c) Sub-permittees shall provide non-enforcement Department employees written consent to access the sub-permittee's property for the specific purpose of verifying compliance with, or the effectiveness of, the avoidance, minimization, and mitigation measures required by this Permit or a sub-permit and/or for the purpose of fish population monitoring in the Shasta River and its tributaries, provided the Department notifies the sub-permittee at least 48 hours in advance, whether verbally or in writing. <u>The sub-permittee is entitled to be present or have a representative present. Sworn peace officers may enter private lands if necessary for law enforcement purposes pursuant to Fish and Game Code Section 857 or as otherwise authorized by law.</u>*

As can be seen from this paragraph of the ITPs, the Programs expand access to sub-permittee's property by CDFG non-enforcement personnel, and do not restrict in any way access by CDFG enforcement personnel.

8-8 The Programs do not confer regulatory authority on the RCDs or any other party. Please see Master Response 6.

8-9 Please see Master Response 8.

8-10 This comment addresses the merits of the Programs, not the environmental analysis. See, however, the response to comment 6-27, first paragraph.

8-11 Implementation of the entire Coho Recovery Strategy is not one of the purposes of the Programs. Instead, selected key coho salmon recovery tasks identified in the Coho Recovery Strategy will be implemented by the RCDs through the Programs, and those tasks will also serve to meet the full mitigation requirement under CESA for the activities the Programs covers. In selecting the tasks to be implemented by the RCDs to fully mitigate the impacts of the Programs' authorized take, CDFG is not "exchanging recommended actions under the Coho Recovery Strategy for other mitigation options." CDFG is selecting those tasks which will fully mitigate for any take that might occur; are roughly proportional in extent to the impact of the take; maintains the applicant's objectives to the greatest extent; and are capable of successful implementation. Please see Master Response 7.

8-12 CDFG will verify the water rights of all Program participants who propose to divert water under the Program during the application process (MLTC Exhibit 1, Attachment A: Water Rights Verification Form). Diverters under the Program will be required to operate and maintain their diversions in accordance with their water rights and applicable law. Diversions will be verified by a watermaster or by some other reliable means as determined by CDFG. The quantity of water diverted at each diversion will be reported to CDFG on at least a monthly basis in the form of a database or other form approved by CDFG.

The Draft EIR refers to the joint Scott Valley and Shasta Valley Watermaster District as a "private" watermaster service. The District is a "Special District" created through passage of AB 1580 (Chapter 416, Statutes of 2007) which gives the District the power to act as watermaster over decreed water rights, adopt ordinances and regulations, acquire and dispose of property, appoint employees, enter contracts, and charge fees. In February 2008, the Siskiyou County Board of Supervisors appointed the initial Board of Directors for the District. The Final EIR has been edited as follows:

Page 2-13

> ***ITP Covered Activity 11: Water Management.*** *This activity includes water management, water monitoring, and watermastering (either state or <u>special district</u> ~~private~~) activities, including the operation of headgates in conjunction with measuring devices to assure that each diversion is operated in compliance with its associated water right or adjudicated volume.*

ITP Attachment 2, page A-43

11. Water Management
Covered activities include water management, water monitoring, and watermastering (either State or special district ~~private~~) activities; including the operation of head gates in conjunction with measuring devices to assure that each diversion is operated in compliance with the associated water right or adjudicated volume; the ongoing management and/or maintenance of existing flashboard dams, including the placement of boards into concrete abutments across the wetted channel to build head to divert water, and the removal of the boards; actions related to water diversion construction; operation, repair, minor alteration, replacement, and removal; the installation, operation, maintenance, repair, minor alteration, replacement, and removal of headgates and measuring devices on or in a diversion channel; the installation, operation, repair, minor alteration, removal, replacement and maintenance of stream gages in the active stream channel.

Comments 8-13 through 8-16 address the Shasta Program Draft EIR

8-13 Please see response to Comments 6-43 and 6-44. In further response, CDFG makes no claim that Dwinnell Dam is "legal" under Fish and Game Code, § 5937, and CEQA does not compel CDFG to engage in a discussion on this and other enforcement issues.

8-14 As discussed in the response to Comment 8-5, existing, ongoing water diversions, including those that cause hydraulic discontinuity in perennial, fish-bearing streams, are considered existing conditions, and therefore part of the baseline for the purpose of the environmental analysis, and are not impacts of the Programs.

8-15 The TMDLs for the Shasta River are discussed in Section 3.2.2 (Regulatory Setting) in Chapter 3.2, Geomorphology, Hydrology, and Water Quality.

8-16 Impacts on anadromous salmonids other than coho, and on other fish species, are addressed in Impact 3.3-1 in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in the Draft EIR.

Comments 8-17 through 8-21 address the Scott River Watershed Program Draft EIR

8-17 The Draft EIR is based on the best available science. Please refer to the references cited at the conclusion of each chapter.

8-18 Factors limiting coho salmon in the Scott watershed, and the current status of the species, are extensively reviewed in the Setting section of Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in the Draft EIR.

8-19 The effects of existing, ongoing water diversions on streamflow and water quality are described in the Setting section of Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and their effects on the fishery are described in Chapter 3.3, Biological

Resources: Fisheries and Aquatic Habitat, in the Draft EIR. As stated above, however, existing, ongoing water diversions are considered existing conditions, and therefore part of the baseline for the purpose of the environmental analysis, and are not impacts of the Programs.

8-20 Please see response to Comments 6-34 and 6-35.

8-21 Impacts on anadromous salmonids other than coho, and on other fish species, are addressed in Impact 3.3-1 in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in the Draft EIR.

8-22 Scaling back the Programs to permit only RCD restoration projects and water diversions activities would eliminate only a few Covered Activities from the Programs, specifically, the movement of livestock and vehicles across flowing streams and the construction of vehicle and livestock crossing and livestock watering lanes and the grazing of livestock within the riparian exclusion zone under specified conditions. ITP Attachment 2 includes the list of the specific Covered Activities.

8-23 The Draft EIRs fully analyze the potential impacts of the Programs, pursuant to CEQA. The purpose of an EIR is not to assure compliance with other laws and regulations. That is, however, a proper function for CDFG and other regulatory agencies. Also, please see response to Comment 6-25.

8-24 As previously stated, the Programs are intended to implement key coho recovery tasks identified in the Coho Recovery Strategy, but are not intended to be comprehensive recovery plans themselves. Please see Master Response 7.

8-25 CDFG appreciates Mr. Brucker's comments.

8-26 This comment contains references cited by the commenter.

Comment Letter 9: Lost Coast League

9-1 Comment noted.

9-2 CDFG is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources and meets that responsibility by administering and enforcing various statutes in the Fish and Game Code and other state laws, including Fish and Game Code, § 1600 *et seq.* and CESA. CDFG is not delegating its responsibility to implement or enforce these laws through the Programs. In fact, Article XXI. of the Draft ITP, the Enforcement section, states:

> *This Permit does not authorize or require RCD to bring an enforcement action against a sub-permittee who is not in compliance with its sub-permit. Such enforcement shall be the sole responsibility and at the sole discretion of the Department.*

> *Nothing in this Permit precludes the Department from pursuing an enforcement action against the RCD or a sub-permittee instead of or in addition to suspending or revoking the Permit or any sub-permit.*

Also, please see Master Response 6.

Comment Letter 10: Oregon Wild

10-1 Comment noted. For a more complete description of the Programs, please refer to Chapter 2, Project Description, in each Draft EIR.

10-2 Please see response to Comment 9-2.

10-3 Please see Master Response 5.

10-4 Under CESA, CDFG must make a jeopardy determination before issuing the ITPs. Please refer to Master Response 1.

10-5 Limiting factors for coho salmon, Chinook salmon, and steelhead are discussed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

10-6 Please see response to Comment 9-2. Also, please see Master Response 6.

10-7 Please see Master Response 5.

10-8 The Draft EIRs rely on the best available scientific information, as required by CEQA. Please see the references at the conclusion of each chapter for authorities used in the analysis.

10-9 The Draft EIRs identify potential impacts of the Programs. Where these are found to be significant, mitigation measures are specified.

10-10 The Draft EIRs are written pursuant to CEQA, not to CESA, the Water Code, or the Fish and Game Code.

10-11 Alternatives to the Programs are described and analyzed in Chapter 5 of each Draft EIR, as required by CEQA.

10-12 Please see response to Comment 8-22.

10-13 The Draft EIRs do fully analyze potential impacts of the Programs. Enforcement of laws and regulations is beyond the scope of an EIR.

10-14 CDFG appreciates Ms. Kame'enui's comments.

Comment Letter 11: North Group, Redwood Chapter, Sierra Club; Environmental Protection and Information Center; Northcoast Environmental Center, and Felice Pace (as an individual)

11-1 Each of the commenters listed in the table have been added to CDFG's mailing list. Comment noted.

11-2 This comment generally addresses the merits of the Programs, not the environmental analysis. Comment noted.

11-3 This comment describes CESA issuance criteria for ITPs. Comment noted.

11-4 As described in Chapter 2, Project Description, of each Draft EIR, the ITPs will cover only,

> *…the diversion of surface water by an appropriative or riparian right through a conduit or opening from streams channels, or sloughs … by an agricultural operator for agricultural purposes in accordance with a valid water right.*

Illegal diversions will not be covered. Also, please see response to Comment 6-37.

11-5 In its simplest form, a determination of full mitigation amounts to a quantitative analysis of the number of individuals proposed to be taken, the number of individuals to be protected through implementation of avoidance and minimization measures, and the number of individuals to be replaced through mitigation. However, such a simplistic arithmetic approach can rarely be applied since it is usually not possible to quantify precisely the number of individuals that are expected to be taken, protected, or replaced. For the Program these numbers cannot be determined with any degree of certainty. In order to determine the amount of mitigation required to "fully mitigate" the take of coho salmon CDFG looked at the probable risks that individual coho salmon will likely experience as a result of the Covered Activities and the expected beneficial effects of the proposed avoidance and minimization measures. Key coho salmon recovery tasks identified in the Coho Recovery Strategy were selected to improve conditions for coho salmon with the goals of increasing the number of fish successfully reared within the watershed and offsetting the impacts to coho salmon due to the implementation of the Program's Covered Activities.

To determine whether the full mitigation requirement of CESA is being met, CDFG has developed priorities for long-term population monitoring of coho salmon in the Shasta and Scott River watersheds. As stated under Monitoring and Adaptive Management Plan Article IX., Measurement of the Overall Success of the Permit Program, the data collected will allow for an analysis of adult to juvenile ratio trends over time to determine if the Programs are resulting in a stable or increased production rate based on the ratio of juveniles per adult in the watershed and whether conditions for coho salmon within the watersheds are improving under the Programs. See Appendix A, Attachment 3.

Please also see response to Comment 6-26.

11-6 The ITP includes numerous mitigation obligations that have not been implemented by the RCDs in the past. Furthermore, many of the avoidance and minimization measures described in the ITP, as well as the terms and conditions specified in the MLTC, have historically not been implemented in the Program Area. These measures will avoid and minimize the take of coho salmon, thereby reducing the level of take that will need to be mitigated. The commenter is correct that some of the measures currently do not include quantitative performance standards. However, the expected effectiveness of these measures to avoid, minimize, and fully mitigate take of coho salmon will be evaluated in CDFG's jeopardy analysis. Last, while some monitoring is required of the RCDs, Program participant's compliance will be monitored by CDFG. Also, please see Master Response 6.

11-7 Please see response to Comment 6-27 and Master Response 7.

11-8 Please see Master Response 1. Also, please see response to Comment 6-27 and Master Response 7.

11-9 As described in Chapter 2, Project Description of each Draft EIR, the Programs (the ITPs and SAAs) cover only certain agricultural activities. Extraction of groundwater is specifically excluded from coverage. The Draft EIRs examine the potential for the Programs to result in increased reliance on groundwater, to the possible detriment of surface water flows and water quality, but find that this impact would be less than significant (see Impact 3.2-4 in Chapter 3.2, Geomorphology, Hydrology, and Water Quality, in each Draft EIR; see also Impact 3.3-2, in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat in each Draft EIR, which relates this impact to fish habitat. As stated in the response to comment 11-4, the Programs only cover water diversions that meet specific criteria. Also, please see Master Response 4.

11-10 As discussed in Chapter 3 in each Draft EIR, the EIRs analyze the potential for the Programs to cause new or more severe environmental impacts above and beyond existing conditions, as required by CEQA. Also, please see response to Comment 11-9.

11-11 Article XIII.E.1.(f) of each ITP requires the respective RCD to submit an irrevocable Letter of Credit or other security to CDFG in the amount of $100,000, which CDFG may draw upon to implement the minimization and mitigation measures in the ITPs and sub-permits if the RCDs or sub-permittees fail to implement.

The RCDs have been working with federal, state, and local agencies and private entities to identify grant funding for the mitigation measures they will be responsible for implementing under the Programs. The commenter is correct that there can be no guarantee that funding will be available in any given year. However, CDFG does not anticipate that will be the case. However, if for some reason the RCDs are unable to fulfill their mitigation obligations, CDFG may elect to suspend or revoke the ITP, which could also have the effect of suspending or revoking the Program participant's take authorization.

11-12 Please see Master Response 8.

11-13 The alternatives analysis in each Draft EIR fully complies with the requirements of CEQA, including the requirement to analyze a reasonable range of feasible alternatives. Please refer to Chapter 5, Alternatives, in each Draft EIR.

11-14 Please see response to Comment 11-13.

11-15 Please see Master Response 3.

11-16 Please see response to Comment 6-27 and Master Response 7. Under Fish and Game Code, § 1602, the SAA is required to include measures necessary to protect existing fish or wildlife resources that the project described in a notification could adversely affect. Fish and Game Code, § 2081(b)(2) requires the impacts of any authorized take to be minimized and fully mitigated. The measures required to meet this obligation must be roughly proportional in extent to the impact of the authorized taking on the species. Thus, the requirement of the Program is to protect existing fish and wildlife resources and implement avoidance, minimization, and mitigation measures which will result in survival of additional coho to maintain the population at the same level as would exist if the impacts from the "Covered Activities" did not occur. CDFG expects that the overall outcome of the Program will be to reduce take and adverse impacts to coho salmon caused by agricultural operations and contribute to recovery of the species.

The Programs have provided multiple opportunities for public involvement in the CEQA process including the opportunity to comment on the scope of the Initial Studies and Draft EIRs by providing written comments and having the opportunity to speak at the public hearings held on the Draft EIRs.

11-17 Please see response to Comments 11-4 and 11-9.

11-18 Please see Master Response 6.

11-19 Comment noted. Please see Master Response 6.

11-20 Compliance with Fish and Game Code, § 5937 is an ongoing legal requirement, where applicable. The Programs do not change that. In addition, ITP Article XX. and General Condition 20 (Condition 19 in Draft EIR) require compliance with Fish and Game Code, § 5937. Also please see response to Comment 6-25. The Programs will be fully compliant with CESA and CEQA.

11-21 The commenter is incorrect in stating that the Programs include incidental take coverage for unregulated pumping of groundwater. Please see the last paragraph of Master Response 4.

The recommendations in this comment are addressed in the Programs:

- The Programs provide incidental take authorization for surface water diversions and associated activities that may result in take of coho salmon. The Programs also provide incidental take authorization and SAAs for stream restoration projects of the RCDs. See Chapter 2, Project Description, in each Draft EIR.

- Under the Programs, CDFG is ultimately responsible for monitoring compliance. Please see Master Response 6.

- The Programs would not limit access by enforcement personnel. Please see Master Response 5.

- Take associated with permitted activities will be minimized, avoided, and fully mitigated. Please see Master Response 1.

- In regard to Fish and Game Code, § 5937 and other sections, please see response to Comment 11-20.

- Analysis of take and the Programs' ability to avoid, minimize, and mitigate for take will be included in CDFG's jeopardy analysis. Please see Master Response 1.

- Cumulative impacts to Chinook salmon and lamprey are analyzed and disclosed in Chapter 3.3, Biological Resources, Fisheries and Aquatic Resources, and in Chapter 4, Cumulative Effects.

11-22 Please see Master Response 5 and 7.

11-23 The Programs do not cover all agricultural operations of participants. Attachment 2 of each Programs' ITP describes the Covered Activities the Programs may authorize. Also, please see response to Comments 6-7, 11-4, and 11-9.

11-24 Scaling back the Program to permit only RCD restoration projects would not allow CDFG to fulfill its commitment to develop a permitting framework within the context of the Shasta-Scott Pilot Program in the Coho Recovery Strategy which would authorize take of coho salmon incidental to Covered Activities.

ITP Article XX., Compliance With Other Laws, requires participants to comply with all local, state, and federal laws. MLTC General Condition 19 (General Condition 18 in the Draft EIR) states:

> *This Agreement does not relieve the responsible party from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or projects this Agreement authorizes,…*

MLTC General Condition 20 (General Condition 19 in the Draft EIR) requires all participants to comply with the provision of the Fish and Game Code including CESA and sections 5650, 5901, and 5937.

Please see Master Response 6 regarding monitoring responsibilities and regulatory authority.

11-25 This comment raise two separate, but related issues. First, Fish and Game Code, § 2081 does not establish a requirement for recovery associated with an incidental take permit; the permittee's obligation is limited to avoiding, minimizing, and fully mitigating the impacts of the authorized take. Overall, however, the avoidance, minimization, and mitigation obligations defined in the ITP, and the programmatic approach itself are consistent with the Coho Recovery Strategy, and are expected to contribute to recovery. Please see Master Response 7. Secondly, Attachment 2 of each Programs' ITP does not cover all aspects of agricultural operations. The Covered Activities are clearly defined in the ITP and do not include unregulated groundwater pumping, over which CDFG does not typically have jurisdiction.

11-26 Limiting the range of agricultural and restoration activities covered under the Programs would not be consistent with Program objectives. Program objectives are described in Chapter 2, Project Description, of each Draft EIR.

11-27 Please see response to Comment 9-2 and Master Response 6.

11-28 Please see Master Response 5.

11-29 The commenter questions the completeness of the setting descriptions, and states that key information, including changes in agricultural impacts over time, and illegal activities, are omitted. A CEQA document is not required to be absolutely comprehensive in its description of the setting. Neither is a CEQA document a law enforcement tool. CEQA *Guidelines* §15125, in discussing the Environmental Setting, only mandates a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published. The objective of the ITP is to authorize take which is incidental to an otherwise lawful activity through the permit terms and conditions, and CEQA mitigation measures. See responses to Comments 11-43, description of ITP Article XV.A. and 11-20.

11-30 As indicated by the commenter, the effects of low flows on coho salmon migration are disclosed in the Draft EIR. However, these effects are part of the environmental baseline and are not caused by the Program, and thus do not need to be mitigated under CEQA. Nevertheless, several mitigation obligations in the ITP are aimed at improving instream flows, particularly during dry and critically-dry water years.

11-31 The ITPs contain provisions to increase flows in the Scott and Shasta Rivers, relative to baseline conditions, and are therefore not expected to result in an impact related to reduced stream flows. ITP Article XIII.E.2.(a) includes a number of flow enhancement activities to provide for or support the instream needs of coho salmon at specific life-cycle stages. These activities include: development and implementation of water trusts; improvement of baseline instream flows and/or water quality through installation of water efficiency and/or water management improvement projects; development and implementation of a contingency plan for dry and critically-dry water years; and installation of alternative stock water systems. The exact numbers or locations of these activities cannot be precisely identified prior to Program implementation. Similarly the

reach-specific mitigations depend on the site-specific and cumulative participation in the Programs. Consequently, identification of measurable objectives in any particular reach would provide an unwarranted degree of specificity and would be speculative.

To determine whether the full mitigation requirement of CESA is being met, CDFG has developed priorities for long-term population monitoring of salmonids in the Shasta and Scott River watersheds. As stated under Monitoring and Adaptive Management Plan Article IX., Measurement of the Overall Success of the Permit Program, the data collected will allow for an analysis of adult to juvenile ratio trends over time to determine if the Programs are resulting in a stable or increased production rate based on the ratio of juveniles per adult in the watershed and whether conditions for coho salmon within the watersheds are improving under the Programs. See Appendix A, Attachment 3.

The commenter's statement that "the vast majority of the mitigations prescribed have already been implemented" is incorrect. Please see response to Comment 11-6.

The benefit of increasing cold water flow below the confluence of Big Springs Creek by 45 cfs is discussed in the Shasta Program Draft EIR on page 3.3-40. The statement that CDFG proposes 10 cfs to lower temperature in the Shasta River is false. CDFG only mentions 10 cfs in the Shasta Draft EIR as the flows determined to be necessary to attract migrating adults under the Parks Creek-Upper Shasta River Fish Bypass Channel Alternative (page 5-20).

11-32 The Programs do not restrict access of CDFG enforcement personnel. Please see response to Master Responses 5 and 6

11-33 Please see responses to Comments 6-25, 11-43, explanation of ITP Article XV.A., and 11-21, above.

11-34 Please see response to Comment 11-29.

11-35 The effects of the Program on special-status fish species, including steelhead and Chinook salmon, are analyzed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

11-36 Please see response to Comments 6-34 and 6-35.

11-37 Please see response to Comments 6-34 and 6-35.

Comments 11-38 through 11-41 applicable only to the Scott Draft EIR

11-38 Please see response to Comment 6-36.

11-39 The Programs do not include fish capture and relocation as a "Covered Activity" nor do they authorize capture and relocation. Capture and relocation operations are described in the Draft EIRs because they are part of the environmental baseline. The stranding

provisions of the ITPs (Article XVIII.) will avoid and minimize stranding, and therefore the need for fish rescue. Any residual take associated with stranding, or other consequences of Covered Activities, must be fully mitigated. If coho salmon within the Program Area are found in a location with poor aquatic habitat conditions from which they cannot escape and their survival is threatened, CDFG staff have federal and state authority to rescue those fish. CDFG has performed this task in the past, and will continue to do so in the future, if necessary, as resources allow.

11-40 Please see Master Response 8.

Comments 11-41 through 11-46 applicable only to the Shasta Draft EIR

11-41 The effects of Dwinnell Dam on coho salmon are thoroughly described in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat. These effects are part of the environmental baseline and are not caused by the Program.

11-42 Please see response to Comment 6-44.

11-43 Water diversion by riparian landowners is a baseline condition. Individuals operating surface water diversions pursuant to riparian rights, whether included in any of the adjudication decrees or not, are eligible to participate in the Program, and whether they choose to participate or not, are subject to the requirements of both CESA and Fish and Game Code, § 1600 *et seq.* ITP Article XV.A.1. and 2. require sub-permittees to comply with their water rights and verify they are operating pursuant to a valid water right (see MLTC Exhibit 1, Attachment A: Water Right Verification Form).

11-44 Please see response to Comment 6-44. The purpose of the DEIR is to analyze the Program, which provides a regulatory framework for Agricultural Operators to come into compliance with Fish and Game Code, § 1600 *et seq.* and CESA. CDFG cannot speak for the SWRCB and DWR.

11-45 The existence of Dwinnell Dam is part of the physical environmental conditions existing at that time that the baseline was established (April 28, 2005) and against which the potential environmental impacts of approving and implementing the Program were measured. An alternative that would include the removal of Dwinnell Dam is considered in the Shasta Draft EIR (Chapter 5, Alternatives), but it is rejected as infeasible. Please see the first paragraph of the response to Comment 6-44.

11-46 Comment noted.

Comments 11-47 through 11-66 applicable only to the Scott Draft EIR

11-47 Please see response to Comment 6-27, Comment 11-11 and Master Response 7.

11-48 This comment is based on a false premise that the Programs would prevent CDFG enforcement personnel access to streams and rivers in the Program Areas. Please see Master Response 5.

11-49 The commenter addresses the Scott River Draft EIR text at pages 2-22 through 2-25, questioning the mitigations as actions already undertaken but without positive results. The ITP includes numerous mitigation obligations that have not been implemented by the RCDs in the past. Furthermore, many of the avoidance and minimization measures described in the ITP, as well as the terms and conditions specified in the MLTC, have historically not been implemented in the Program Area. These measures will avoid and minimize the take of coho salmon, thereby reducing the level of take that will need to be mitigated. The comment goes on to assert that water allocated to a Water Trust can simply be replaced by using interconnected groundwater. Use of groundwater is described in Chapter 3.2, Geomorphology, Hydrology and Water Quality, in each Draft EIR; each Draft EIR also evaluates the potential for the Programs to result in increased reliance on groundwater.

11-50 The commenter doubts that the Flow Enhancement Mitigation for contingency planning for dry and critically-dry water years will work (citing Scott River Draft EIR text at pp. 2-23), and asserts that CDFG should not rely on a plan that has yet to be developed. First of all, the plan must be prepared and implemented by the RCDs as a mitigation obligation, and hence part of the ITP. Second, since it stipulates the responsible party, approval by CDFG, and standards by which it will be judged adequate, it is an adequate mitigation under CEQA.

11-51 Please see Master Response 6.

11-52 CDFG's determination regarding baseline is in accordance with CEQA *Guidelines*, § 15125(a) and case law. The Programs do not authorize any illegal activities. Instead, one of the primary purposes of the Program is to ensure compliance by Program participants with Fish and Game Code, § 1600 *et seq.* and CESA.

The exact numbers or locations of all mitigation activities cannot be precisely identified prior to Program implementation. Similarly, reach-specific mitigations depend on the site-specific and cumulative participation in the Programs. Consequently, targeting all mitigations measures would provide an unwarranted degree of specificity and would be speculative.

11-53 Citing the text at Scott River Draft EIR, page 3.2-18, the commenter questions whether changes in agricultural practices over time, described in the text, are adequately analyzed. These changes have resulted in the baseline condition analyzed in the Draft EIR.

11-54 Any such actions as cited by the commenter would be part of the environmental baseline, and would not be caused by the Program. Therefore, the EIR need not examine the effects of such actions.

11-55 Please see Master Response 1.

11-56 The current status of steelhead, lamprey, and other special-status fish species in the Program Area is part of the environmental baseline and is not caused by the Program. Potential effects of the Program on these species were analyzed, but found to be beneficial. The intent of CEQA is to analyze adverse impacts of the action under consideration.

11-57 Comment noted. The Draft EIRs describe the existing conditions in both Program Areas, including the ongoing diversion of water, as part of the baseline. Under ITP (Article XV.A.2.) sub-permittees agree to verify the quantity of water diverted. For those diversions which are watermastered, this verification will be performed on behalf of the sub-permittee by the watermaster. This is required because the Programs only allow the lawful diversion of water.

11-58 Please see response to Comment 11-39

11-59 Please see response to Comment 6-25.

11-60 Please see response to Comment 11-5.

11-61 Please see response to Comment 11-11.

11-62 Please see Master Response 1.

11-63 Please see response to Comment 11-39.

11-64 A more quantitative analysis of the potential for the Program to result in indirect impacts, including increased dependence on groundwater and resultant effects on surface water quality and fish habitat, is beyond the scope of the EIR. Establishment of the Water Trust is one among several requirements of the ITP that are intended to enhance streamflows. Please see Article XIII.E.2.(a)(i) of the ITP. These flow enhancement measures, in conjunction with other measures required by the ITP, are expected to be sufficient to avoid, minimize, and mitigate for incidental take of coho salmon, but will need to be evaluated according to the monitoring and adaptive management requirements of the ITP to determine their effectiveness (see the Monitoring and Adaptive Management Plan in Appendix A, Attachment 3).

11-65 The excerpt from Chapter 4, Cumulative Effects and Other Required Topics (page 4-32 in the Shasta DEIR and page 4-31 in the Scott DEIR) is taken out of context. The analysis necessary to support this conclusion precedes the excerpted statement.

11-66 Please see response to Comments 11-25, 11-35, and 11-39.

11-67 The commenter cites text from Article IV. of the ITP, which states:

> *The Department may also include terms and conditions in a sub-permit that are not included in this Permit, if the Department determines that such additional terms and conditions are necessary to avoid, minimize, or mitigate the take of coho salmon incidental to a Covered Activity.*

The comment states that this creates a problem under CEQA and CESA because the full range of permit terms and conditions is not disclosed. As required under CEQA, the Draft EIR identifies and analyzes the potentially significant environmental effects of the Program and the mitigation measures that will reduce those effects to less than significant. It is not anticipated that additional measures would differ qualitatively from those declared in the Draft EIR and its appendices, but in fact, both environmental documents prepared pursuant to CEQA, and ITPs issued pursuant to CESA, allow for supplements or amendments. If CDFG later identifies an impact that was not previously disclosed in the Draft EIR, and that impact can only be addressed by adding a new term or condition to the ITP, CDFG will proceed as required under CEQA *Guidelines,* § 15162 and § 15168. The potential for additional environmental review for specific activities that may occur under the Program is discussed in Chapter 1 of the Draft EIR (Section 1.2.3, Scope of the Draft EIR, page 1-4).

Comment Letter 11.1: Family Water Alliance

11.1-1 This comment provides information on the Family Water Alliance provided and does not require a response.

11.1-2 The comment generally declares that the Draft EIRs do not adequately address the economic impacts of Programs on agricultural communities, and states the Programs would add an additional regulation of already permitted activities. Impact 3.1-1 of both Draft EIRs deals with this topic and finds the impact to be less than significant. See also the analysis of cumulative impacts in Chapter 4 (Land Use and Agriculture, Cumulative Effects and Other Required Topics) of each Draft EIR.

11.1-3 Please see response to Comment 1-5.

11.1-4 The Programs do not unfairly target the agricultural sector, as the commenter asserts. In fact, the Programs were developed at the request of the SOSS which consists of agricultural community members. While SOSS actively opposed the listing of coho salmon it made clear to the Fish and Game Commission that, in the event coho salmon were listed, SOSS wanted a permitting framework for diverters to be developed. More recently, SOSS has publicly endorsed the Programs.

The Programs are intended to facilitate compliance with Fish and Game Code, § 1600 *et seq.* and CESA for agricultural diverters whose in-stream activities (e.g., push-up dams, grazing) have the potential to adversely affect fish and wildlife resources and to take coho salmon. Covered Activities include the diversion of water, but not use of the water itself, e.g., for irrigation.

11.1-5 As described in detail in Chapters 3.2 and 3.3 of the Draft EIRs, agricultural operations are directly linked to aquatic habitat quality, and aquatic habitat quality is directly linked to coho salmon survival and productivity. The adverse effects of water diversions on fish species is documented extensively in the scientific literature, a small fraction of which is presented in the Draft EIRs.

11.1-6 Please see response to Comment 2-10 regarding economic impacts in the county.

11.1-7 Comment noted.

Comment Letter 12: Kim Austin

12-1 Comment noted. The Program was developed at the recommendation of the Shasta-Scott Recovery Team (SSRT) for a Pilot Program to address recovery issues associated with agriculture and agricultural water use in the Shasta and Scott Rivers watersheds. Participants in the SSRT included representatives from federal, state, and local agencies, the tribes, environmental groups and groups representing the interests of the agricultural community. In addition, development of the Program was a collaborative effort between CDFG and the RCDs' board members which include diverters.

Comment Letter 13: Jerry L. Bacigalupi

13-1 CDFG notes that Fish and Game Code, § 1600 *et seq.*, as originally enacted required persons conducting operations subject to the newly enacted legislation to notify CDFG on or before December 1, 1961. In other words, the Legislature made it clear that operations existing prior to the original enactment of Fish and Game Code, § 1600 *et seq* were not "grandfathered in." Also, please see response to Comment 1-5 in regard to the term "substantial."

Comment Letter 14: Lee T. Bergeron

14-1 This comment is introductory in nature.

14-2 This comment raises a legal opinion. CDFG respectfully disagrees with the commenter's assertion that the Programs do not comply with Government Code, § 65030, which states that California policy is to protect California's land resource, to insure its preservation and use in ways which are economically and socially desirable. Further, the Programs are intended to facilitate compliance with other state laws, Fish and Game Code, § 1600 *et seq.* and CESA, which are intended to promote another important State policy: the protection and preservation of the State's fish and wildlife resources. The Programs promote both policies.

14-3 Please see response to Comment 3-2.

14-4 Please see Master Response 2.

14-5 Please see response to Comment 2-19 and 3-19, second paragraph. In further response, there might be times when it is necessary for CDFG or the RCDs to bring with them a consultant to assist with project design or implementation of a minimization or mitigation measure. In those cases, the consultants will be accompanied by CDFG or RCD staff unless special arrangements have been made with the sub-permittee.

14-6 Please see response to Comment 3-20 (Recommendations 20 and 21).

14-7 Notification under Fish and Game Code, § 1600 *et seq.* is required for any activity that will substantially change the bed, channel, or bank of a river, stream, or lake. Normally, such an activity will be on or within in the bed, channel, or bank, but in some instances, the activity can be outside those features and still cause a change to the bed, channel, or bank. In either case, notification would be required. CESA prohibits the take of a listed species unless the take is authorized by CDFG. The prohibition extends to any location where a listed species might occur. The Programs do not expand CDFG's jurisdiction under these statutes. At the same time, CDFG will exercise its jurisdiction, accordingly.

14-8 Please see Master Response 9. In further response, ITP Article XIII.E.2.(a) Flow Enhancement (i) and (ii) includes management measures which would result in increased stream flow for the benefit of fish and habitat. The establishment of local Water Trusts will allow water to be leased or purchased from willing water right holders. Reducing the amount of water delivered to the point of use, water efficiency, and water management improvement projects will allow additional water to remain in streams to benefit fish and wildlife.

14-9 Please see response to Comment 2-10, regarding economic impacts in the county, and to Comment 2-41.

14-10 Fish and Game Code, § 2081(b)(4) requires an ITP applicant to ensure adequate funding to implement the measures required to minimize and fully mitigate take and it is unclear whether DWR would or could pass the additional cost on to water users. CDFG will not be responsible for any additional costs DWR incurs to participate in the Programs and will not be responsible for those costs if DWR passes them on to sub-permittees.

14-11 Please see response to Comment 14-8.

14-12 Please see response to Comments 2-10, 2-44, 3-9, 3-22 (paragraph 2), and 6-27.

14-13 Please see response to Comment 3-23 regarding stream crossings.

14-14 Please see response to Comment 3-24 regarding elk.

14-15 Please see response to Comments 3-15 and 3-16.

14-16 Please see response to Comment 3-11 and 3-13.

14-17 Please see Master Response 10.

14-18 Please see response to Comment 3-18 regarding wildlife use of diverted water.

14-19 It is not clear in the first instance whether a sub-permittee would be responsible or liable for any negative impacts resulting from implemented projects as dictated by the Program. It would depend on the facts and based on the facts, the applicable law. Also, while CDFG and other regulatory agencies have enforcement discretion, CDFG's authority to hold harmless or indemnify natural persons is very limited.

14-20 See response to Comment 3-26.

14-21 Please see response to Comment 3-20 (Recommendation 19).

14-22 Please see response to Comment 3-25.

14-23 Please see response to Comment 3-29.

14-24 The commenter supports the In-Stream Flow Alternative, which is analyzed in Chapter 5, Alternatives, of each Draft EIR. Comment noted.

Comment Letter 15: Jodi Burch

15-1 The Program is intended to facilitate compliance with Fish and Game Code, § 1600 *et seq.* and CESA by Agricultural Operators in the Shasta and Scott River watersheds. It provides a much less expensive alternative than complying with these statutes on an individual basis outside the Program. The potential for the Program to affect the ability of Agricultural Operators to continue to operate profitably, and the possibility that such an effect could result in a change of land use from agriculture to a non-agricultural use, is examined in Impact 3.1-1 in Chapter 3.1, Land Use and Agriculture, and found to be less than significant. See also the analysis of cumulative impacts on land use and agriculture in Chapter 5, Cumulative Effects and Other Required Topics, in each Draft EIR.

15-2 Coho salmon within the Program Area are listed as a threatened species under CESA, and therefore take is prohibited unless authorized by CDFG. The Program is intended to facilitate Agricultural Operators' compliance with CESA so they can continue their routine agricultural activities.

Comment Letter 16: Michael Cassady

16-1 This comment is an opinion in rebuttal to Comment Letter 20 and the opinion expressed therein. Comment noted.

16-2 Please see response to Comment 16-1.

16-3 Please see response to Comment 16-1.

16-4 Please see response to Comment 16-1.

16-5 Please see response to Comment 16-1.

16-6 Please see response to Comment 16-1.

16-7 Please see response to Comment 16-1.

Comment Letter 17: Jack Cowley

17-1 Please see response to 1-5.

17-2 This comment is vague, but CDFG has never requested DWR to "arbitrate ITP issues," and this is not an element of its sub-permit. If this commenter is seeking clarification regarding DWR's role to help prevent "stranding," please see response to Comment 6-32.

17-3 CDFG is not charging any regulatory fees to agricultural participants participating in the Programs. The RCDs have paid the notification fee on behalf of the participants and will fund the full mitigation measures required under CESA. CDFG has paid the cost of preparing the EIRs for the Programs. However, please see response to Comments 2-10, 2-44, 3-9, 3-22 and 6-27.

17-4 Please see response to Comment 3-2 and Master Response 1.

17-5 Comment noted. In further response, please see generally the response to Comments 2-10, 2-44, 3-6, 3-9, 3-22 and 6-27 and Master Response 9.

Comment Letter 18: Norman Dyche

18-1 The commenter expresses a concern about his observed decline in fish numbers. Comment noted.

18-2 Please see response to Comment 18.1.

18-3 Please see response to Comment 18.1.

Comment Letter 19: Michael Evenson

19-1 Comment noted.

19-2 Comment noted. In further response, the watershed-wide approach the Programs represent will facilitate compliance with Fish and Game Code, § 1600 *et seq.* and CESA by Agricultural Operators and will contribute to the recovery of coho salmon, but the Programs are not intended or expected to fully recover coho salmon. Hence, CDFG will continue its coho recovery efforts outside the Programs.

Comment Letter 20: Brian Favero

20-1 Comment noted.

20-2 Please see "Populations Trends" in Section 3.3.1 in the Draft EIRs for the results of coho and Chinook salmon population surveys.

20-3 Please see Master Response 9, the response to Comment 2-10, regarding economic impacts in the county, and to Comment 2-41.

20-4 Comment noted.

20-5 Please see response to Comment 3-2. The ITPs are based on the measures described in the applications that the RCDs submitted to minimize and fully mitigate take of coho salmon under the Programs pursuant to CESA. The SSRT identified a diverse and large set of actions which, if implemented, would assist with recovery of coho salmon. The Programs represent an opportunity to implement some key coho recovery tasks identified in the Coho Recovery Strategy while using those same tasks to minimize or mitigate take of coho salmon that *might* occur incidental to agricultural operations.

20-6 Comment noted. In further response, the purpose of the Programs is not to in any way "single out" farmers and ranchers, but instead to facilitate their compliance with Fish and Game Code, § 1600 *et seq* and CESA, in part by reducing compliance costs. CDFG anticipates that such compliance will contribute to the recovery goals for coho salmon, but full recovery is not the objective of the Programs, and certainly farmers and ranchers are not responsible for meeting that objective. Indeed, ongoing recovery efforts by a number of federal, state, and local agencies, non-profit organizations, and individuals are critical to meet that objective (see Draft EIR page 4-14).

Comment Letter 21: Sam Hartman

21-1 Comment noted. In further response, the Programs do not in any way transfer or "hand over" CDFG's permitting or enforcement authority to Program participants, including the RCDs. As to RCDs' role in the Programs, please see Master Response 6 and the response to Comments 6-13 and 9-2.

Comment Letter 22: Patrick Higgins

22-1 Comment noted.

22-2 The effects of water diversions on coho salmon and coho salmon habitat are thoroughly described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, and reflect some of the commenter's observations.

22-3 ITP issuance criteria defined in Fish and Game Code, § 2081 does not establish a requirement for recovery associated with an incidental take permit, only to minimize and fully mitigate the impacts of the authorized take. In further response, please see Master Response 7.

22-4 Comment noted. In further response, the issue of proper enforcement of state laws is beyond the scope and purpose of the Draft EIRs. CDFG appreciates receiving the comments on the *Draft Policy for Maintaining Instream Flows in Northern California Coastal Streams*. CDFG's responses to those comments are below beginning at Comment 22-10.

22-5 Comment noted.

22-6 Comment noted.

22-7 Please see Master Response 1.

22-8 CDFG has responded to the commenter's Public Records Act Request.

22-9 Comment noted. Regarding the "illegal delegation" of state authority, please see Master Response 6.

22-10 Comment noted.

22-11/11a Most of the information relevant to the Draft EIRs summarized by the commenter pertaining to the existing hydrologic conditions within the Scott River watershed is also summarized in Chapter 3.2, Geomorphology, Hydrology, and Water Quality, of the Draft EIR. The Draft EIR acknowledges that baseflows in the Scott River watershed have decreased over time, the cause of the decrease can be attributed (in part) to increased consumptive use of water (including an increase in groundwater use), and that such decreases in baseflow have a negative effect on fish habitat.

22-12 Environmental baseline conditions and their effects on fall-run Chinook salmon are thoroughly described in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

22-13/13a Most of the information relevant to the Draft EIR summarized by the commenter pertaining to the existing hydrologic conditions within the Shasta River watershed is also summarized in Chapter 3.2, Geomorphology, Hydrology, and Water Quality, of the Draft EIR.

22-14 Please see response to Comment 8-12, second paragraph.

22-15 An alternative that would include the removal of Dwinnell Dam is considered in Chapter 5, Alternatives, of the Shasta Watershed-wide Permitting Program Draft EIR, but is rejected as infeasible.

22-16 Comment noted.

22-17 The figure provided in the comment depicts coho salmon presence and absence in streams that are outside of the Program Area. Coho salmon presence and absence within the Program Area are thoroughly described in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

22-18 Comment noted.

22-19 Hydrologic and biological baseline conditions within the Shasta and Scott River watersheds are thoroughly described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

22-20 Comment noted.

Comment Letter 23: Joyce H. King

23-1 Please see Master Response 6.

23-2 Please see Master Response 7. In further response, although not a recovery program, CDFG expects the Program to reduce take and adverse impacts to coho salmon caused by agricultural operations, thereby contributing to recovery of the species. ITP Article XIII.E.2.(a) includes a number of flow enhancement activities to provide for or support the instream needs of coho salmon at specific life-cycle stages. These activities include: development and implementation of water trusts; improvement of baseline instream flows and/or water quality through installation of water efficiency and/or water management improvement projects; development and implementation of a contingency plan for dry and critically-dry water years; and installation of alternative stock water systems.

23-3 Please see Master Response 6.

23-4 Please see Master Response 5. In further response, CDFG does not have the authority to ensure or allow the general public access to private property.

23-5 Please see Master Response 8.

23-6 Scaling back the Programs to permit only RCD restoration projects and water diversions activities would eliminate only a few Covered Activities from the Programs, specifically, the movement of livestock and vehicles across flowing streams and the construction of vehicle and livestock crossing and livestock watering lanes and the grazing of livestock within the riparian exclusion zone under specified conditions. ITP Attachment 2 includes the list of the specific Covered Activities.

Please also see response to Comment 25-1.

Please see Master Response 6 regarding monitoring responsibilities and regulatory authority.

Comment Letter 24: Scott P. Murphy

24-1 Please see Master Response 7.

24-2 Please see Master Response 2.

24-3 The commenter asks about the effect of cattle exclusion fencing on other species. Conventional range fencing to exclude cattle does not restrict movement of deer or elk. Please see response to Comment 3-24.

24-4 Fish and Game Code, § 2081(b)(4) requires an ITP applicant to ensure adequate funding to implement the measures required to minimize and fully mitigate take. In other words, CESA makes it clear that the applicant is responsible for meeting the minimization and full mitigation requirements without which CDFG could not authorize take. As a general rule, that is the case in regard to any federal, state, or local permit; the burden is on the permittee to comply with its terms and conditions. Consistent with the CESA requirement mentioned above, ITP Article XIII.E.1.(d) states that a sub-permittee will be

> *…solely responsible for any costs the sub-permittee incurs to implement any avoidance or minimization measures required under a sub-permit.*

Of course, as the Draft EIRs explain, the cost to sub-permittees to obtain take authorization under the Programs will be much less because under the Programs, the RCDs will be responsible for meeting the full mitigation requirements on behalf of the sub-permittees.

24-5 Please see Master Response 5.

Comment Letter 25: Meighan O'Brien

25-1 CDFG appreciates the commenter's obvious concern for salmon. However, generally-speaking, CDFG does not have authority under Fish and Game Code, § 1600 *et seq.* or CESA to simply deny a project. Under those statutes CDFG has the authority to add to a project conditions CDFG determines are necessary to protect fish and wildlife resources through the issuance of a SAA (pursuant to Fish and Game Code, § 1600 *et seq.*) and to minimize and fully mitigate take of a listed species that occurs incidental to the project (pursuant to CESA). If the applicant agrees to and/or meets those conditions, a SAA and/or ITP will be issued. The purpose of the Program is to facilitate compliance with these statutes, which in turn will serve to protect fish and wildlife resources, including coho salmon. The Program is not intended to recover coho salmon, but CDFG anticipates that it will contribute to that goal. Please see Master Response 7.

Comment Letter 26: Abigael Proctor

26-1 Please see Master Response 7. Although the Program is not a coho recovery program, CDFG expects it to reduce take and adverse impacts to coho salmon caused by agricultural operations, and to contribute to recovery of the species. Factors limiting coho salmon are discussed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in each Draft EIR. Regarding the comment about enforcement by the RCDs, please see Master Response 6.

26-2 Please see Master Response 6.

26-3 Please see Master Response 5.

26-4 Please see Master Response 8.

26-5 Please see response to Comment 23-6 and Master Response 5.

Comment Letter 27: Hellä Sekaisin

27-1 Comment noted.

Comment Letter 28: Rhondal Snodgrass

28-1 Comment noted.

28-2 The effects of water diversions on coho salmon and coho salmon habitat are thoroughly described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

28-3 Please see Master Response 6.

Comment Letter 29: Felicia Sobonya

29-1 Comment noted. Also, please see Master Response 6, which might address the commenter's concern.

Comment Letter 30: Form Letter Received From 85 Individuals

Comment Letters 30.01 through 30.85 were from individuals who signed and submitted a form letter (Please see Table 1.1 for the names of these individuals). While the majority of the letters were exactly the same as 30.01 below, seven commenters submitted a variation of Comment Letter 30.01. Responses to six of these letters (Comment Letters 30.25 and 30.79 were the same) follow CDFG's response to 30.01.

Comment Letter 30.01: Lowell Ashbaugh

30.01-1 This comment goes to the merits of the Program. While the commenter urges CDFG not to approve the Programs, this position appears to be based on incorrect information, assumptions, and conclusions regarding the Programs and the environmental analyses contained in the Draft EIRs. Please see response to Comment 25-1 and the responses to the following comments.

30.01-2 The effects of water diversions on coho salmon and coho salmon habitat are thoroughly described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, of each Draft EIR. Many aspects of the Program will result in a substantial improvement in stream conditions and habitat for coho salmon and other aquatic species. See, however, Master Response 7 regarding recovery of coho salmon.

30.01-3 Please see Master Response 6.

30.01-4 Please see Master Response 5.

30.01-5 The information in the Draft EIRs is in fact based on exhaustive literature search, personal contacts with regulators and researchers, and field reconnaissance of both watersheds. Please see the reference sections at the end of each chapter in the Draft EIRs. Regarding the Van Kirk and Naman article, please see Master Response 8.

30.1-6 Please see response to Comment 23-6 and Master Response 6.

Comment Letter 30.07: Brien Brennan

30.07-1 Please see response to Comment 30.01-1.

30.07-2 Please see response to Comment 30.01-2.

30.07-3 Please see response to Comment 30.01-3.

30.07-4 Please see response to Comment 30.01-4.

30.07-5 In regard to item 1, please see response to Comment 30.01-5.

In regard to item 2, the commenter does not identify the “environmental consequences” he believes the Draft EIRs failed to consider. Hence, a specific and complete response is not possible. However, the Draft EIRs fully comply with CEQA: they identify the potential significant environmental effects of the Programs and where those effects were determined to be potentially significant, the Draft EIRs identify feasible measures that will reduce those impacts to a less than significant level (See CEQA *Guidelines* § § 15126.2 and 15126.4).

In regard to item 3, The commenter does not describe how the Draft EIRs are inconsistent with CESA and other Fish and Game Code statutes, or the Water Codes. Hence, a specific and complete response is not possible.

In regard to item 4, Alternatives to the Programs are described and analyzed in Chapter 5 of each Draft EIR, as required by CEQA.

In regard to item 5, Chapter 2, the Project Description in each Draft EIR thoroughly describes the proposed Programs as CEQA requires. As stated under Monitoring and Adaptive Management Plan Article IX. "Measurement of the Overall Success of the Permit Program", CDFG has developed priorities for long-term population monitoring of salmonids in the Shasta and Scott River watersheds. Collected data will allow for an analysis of adult to juvenile ratio trends over time to determine if the Programs are resulting in a stable or increased production rate based on the ratio of juveniles per adult in the watershed and whether conditions for coho salmon within the watersheds are improving under the Programs. See Appendix A, Attachment 3.

30.07-6 Please see response to Comment 11-24.

30.07-7 Comment noted. In further response, Chapter 3.7, Public Services, Utilities, and Energy, generally describes the likely effects of global climate change.

Comment Letter 30.21: Margaret Draper

30.21-1 Please see response to Comment 25-1.

30.21-2 First bullet: Please see Master Response 6.

Second bullet: Comment noted. In further response, please see Master Response 4.

Third bullet: The Programs include measures to address these issues.

Fourth bullet: The ITP, sub-permits, and SAAs CDFG will be issuing under the Program, and any permits CDFG and other regulatory agencies issue in general, will be subject to all other applicable laws and regulations.

30.21-3 Please see Master Response 5. In further response, CDFG does not have the authority to ensure or allow the general public access to private property.

30.21-4 The Programs include numerous measures to increase flow in the Shasta and Scott Rivers and their tributaries. In further response, please see Master Responses 4 and 7.

30.21-5 The commenter does not identify the reason(s) why she believes the Draft EIRs are "inadequate, incomplete and do not comply with" CEQA. Hence, a specific and complete response is not possible. The Draft EIRs fully comply with CEQA: they identify the potential environmental effects of the Programs and where those effects

were determined to be potentially significant, the Draft EIRs identify feasible measures that will reduce those impacts to a less than significant level. (See CEQA *Guidelines*, §§ 15126.2 and 15126.4.)

Limiting factors for coho salmon in the Shasta and Scott River watersheds are discussed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

The information in the Draft EIRs is based on an exhaustive literature search, personal contacts with regulators and researchers, and field reconnaissance of both watersheds. With regards to the comment regarding the recent article by Van Kirk and Naman, please see Master Response 8.

30.21-6 Comment noted. Please see Master Response 6.

30.21-7 Please see response to Comment 23-6 and Master Response 6. With regards to the remainder of the comment, the Draft EIRs fully analyze the potential impacts of the Programs pursuant to CEQA.

Comment Letter 30.25: P. Gar

Please note that Marie Wadman submitted the same comments (Comment Letter 30.79).

30.25-1 Please see Master Response 7. The ITPs contain numerous provisions to increase flows in the Scott and Shasta Rivers, relative to baseline conditions. Factors limiting coho salmon are discussed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in each Draft EIR.

30.25-2 Please see Master Response 6.

30.25-3 Please see Master Response 5.

30.25-4 Please see response to Comment 30.07-5.

30.25-5 Please see response to Comment 23-6 and Master Response 6.

Comment Letter 30.45: Sam B. King

30.45-1 Please see response to Comment 30.1-2 and Master Response 7.

30.45-2 Please see Master Response 6.

30.45-3 Please see Master Response 5.

30.45-4 Please see response to Comment 30.1-5 and Master Response 8.

30.45-5 Please see response to Comment 11-24. CDFG does not typically have authority over the pumping of groundwater and it is not a Covered Activity under the Programs. Please see Master Response 4, last paragraph.

30.45-6 Comment noted.

Comment Letter 30.53: Saba Malik

30.53-1 Please see Master Response 7. The ITPs contain numerous provisions to increase flows in the Scott and Shasta Rivers, relative to baseline conditions. Factors limiting coho salmon are discussed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, in each Draft EIR.

30.53-2 Please see Master Response 6.

30.53-3 Please see Master Response 5.

30.53-4 Please see response to Comment 30.07-5.

30.53-5 Please see response to Comment 23-6 and Master Response 6.

30.53-6 Comment noted.

Comment Letter 30.62: Amanda Piscitelli

30.62-1 through 30.62-6

These comments are the same as Comments 30.1-1 through 30.1-6. Please see the responses to those comments.

In regard to the additional comment hand written in the left margin that granting "these permits" will be in violation of public trust, and that water resources need to be protected, the permits will be issued pursuant to CEQA, CESA, and Fish and Game Code, § 1602 and include measures which will improve aquatic conditions within the two watersheds.

2.2.2 Responses to Comments Specific to the Shasta River Watershed-wide Permitting Program Draft EIR

Comment Letter 34: Karuk Tribe of California

34-1 The commenter contends that issues raised in scoping comments were not addressed in the Draft EIR. CDFG reviewed all scoping comments received during circulation of the NOP, including the letter submitted by the Quartz Valley Tribe. CEQA does not require the lead agency to respond to comments on the NOP, but only to consider comments in the preparation of the EIR (CEQA *Guidelines* §§15082 and 15083). CDFG did in fact consider the comments of the Quartz Valley Tribe and other commenters. Several of the issues raised were generally addressed in Chapter 1, Introduction of the Draft EIR, on page 1-6.

The commenter further contends that the Program is driven by the Shasta Valley farming community, and that it would do nothing to address "streamflow and groundwater depletion and their associated water quality problems which are the documented root causes of coho salmon decline in the Shasta River watershed." The Program is the result of a collaborative effort between CDFG, SVRCD, and SQRCD. The principal purposes of the Program are to implement critical coho recovery tasks while providing a streamlined and comprehensive permitting framework to enable farmers and ranchers throughout the Shasta River watershed to continue specific agricultural activities while complying with Fish and Game Code, § 1600 *et seq.* and CESA. The Program does in fact address the ongoing impacts of agricultural surface water diversions on coho salmon and other salmonids, by requiring that Program participants adopt and conform to conditions on water diversions and other activities that may result in take of coho salmon or that may substantially alter the bed, bank, or channel of the Shasta River and its tributaries.

34-2 Please see Master Response 1.

34-3 Please see response to Comment 34-1.

34-4 The commenter is correct in stating that the Draft EIR finds the Dwinnell Dam Removal Alternative infeasible. The Draft EIR does not, however, find that lack of alternative water supply is a basis for the infeasibility determination; please see the description of the alternative on pages 5-7 through 5-9 of the Draft EIR. Several reasons are stated for rejection of this alternative, including CDFG's lack of authority to require the Montague Water Conservation District (MWCD), the owner and operator of the dam, to dismantle it. Another reason stated is that because the dam is part of the baseline for the purposes of the environmental analysis, and its impacts are not due to the Program, removal of the dam would not reduce or avoid impacts of the Program itself. Insofar as the commenter suggests that Fish and Game Code, § 5937 provides that authority, that is incorrect. The issue regarding the applicability of Fish and Game Code, § 5937 to Dwinnell Dam is a legal and regulatory issue that is beyond the scope of the Draft EIRs. Fish and Game

Code, § 5937 gives CDFG the authority to require "sufficient water to pass over, around, or through the dam, to keep in good condition any fish that may be planted or exist below the dam." It does not give authority to CDFG to have the dam removed. Please note that, were MWCD to participate in the Program, it would be required to comply with ITP Article XV.J., Additional SVRCD and Sub-permittee Avoidance and Minimization Obligations. Also see Chapter 2, Project Description, in the Draft EIR.

34-5 The benefits of removing Dwinnell Dam, including removal of this major barrier to salmonid migration to historic spawning and rearing areas; elimination of water quality problems in Lake Shastina and downstream of the dam; and elimination of predatory warm water species in Lake Shastina, are all described in the Dwinnell Dam Removal Alternative in Chapter 5, Alternatives. Please refer to the response to Comment 34-4.

34-6 The work of Mack (1960) is referenced multiple times in the Draft EIR. Neither the ITP nor the Draft EIR refers to the 20 cfs minimum instream flow target mentioned by the commenter. The remainder of this comment does not pertain to the adequacy of the Draft EIR and is noted.

34-7 Please see Master Response 3.

34-8 The comment expresses an opinion about the proper baseline for the Program. Water diversions pursuant to existing water rights are considered in the environmental analysis to be a part of the environmental baseline and CDFG's baseline determination is well in accord with CEQA and applicable case law.

In response to the concern raised regarding jeopardy, please see Master Response 1.

In response to the comment regarding ITP Article XXVII., Termination, the clause will apply:

> *if circumstances or new information provides evidence that continued Program implementation <u>would jeopardize</u> ~~may result in jeopardy to~~ coho salmon,…*

Termination will not be invoked unless it can be shown that "jeopardy" is a result of Program implementation.

In response to the comment that "The proposed ITP and DEIR lack a process to quantify or measure coho "take" therefore [it] is unclear how protection actions will function or mitigation for "take" can be justified," removal of obstructions to passage, effective screens and ladders, identification of priority reaches for water trust actions, and improved monitoring and compliance with water rights will each enhance conditions over baseline and contribute to full mitigation. However, in its simplest form, a determination of full mitigation amounts to a quantitative analysis of the number of individuals proposed to be taken, the number of individuals to be protected through implementation of avoidance and minimization measures, and the number of individuals to be replaced through mitigation. However, such a simplistic arithmetic approach can rarely be applied

since it is usually not possible to quantify precisely the number of individuals that are expected to be taken, protected, or replaced. For the Program these numbers cannot be determined with any degree of certainty. In order to determine the amount of mitigation required to meet the full mitigation issuance criteria for the ITP, CDFG looked at the probable risks that individual coho salmon may experience as a result of the Covered Activities and the expected beneficial effects of the proposed avoidance, minimization, and mitigation measures. Key coho salmon recovery tasks identified in the Coho Recovery Strategy were selected to improve conditions for coho salmon with the goals of increasing the number of fish successfully reared within the watershed and offsetting the impacts to coho salmon due to the implementation of the Program's Covered Activities.

34-9 The linkages between agricultural impacts and coho salmon are thoroughly described in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

To better understand coho salmon ecology in the Shasta and Scott River watersheds, CDFG has awarded over $1.13 million through the Fisheries Restoration Grant Program for monitoring and research activities over the past 10 years. In addition over $15,000 has been awarded through other programs for similar activities during this same time frame.

34-10 Under the Program, regardless of the level of impact an individual agricultural participant may have on coho salmon, the full mitigation requirements of the ITP will be met by the SVRCD through implementation of select key coho recovery tasks identified in the Coho Recovery Strategy. This allows full mitigation to be performed on a much larger and more effective scale. Individual agricultural participants are required to implement measures to avoid and minimize their impact on coho salmon. In issuing SAAs and sub-permits, CDFG staff will perform site visits and work with the SVRCD and sub-permittees so the measures are implemented appropriately to avoid and minimize the potential for impacts.

34-11 As described in detail in Chapters 3.2 and 3.3 of the Draft EIR, agricultural operations are directly linked to aquatic habitat quality, which is directly linked to coho salmon survival and productivity. The benefits of the proposed restoration and mitigation measures have been documented extensively in the scientific literature. There is no information available suggesting that the proposed measures would not benefit coho salmon in the Shasta River watershed.

34-12 Comment noted.

34-13 This comment expresses an opinion in part that CDFG has failed to "comply with CEQA's requirement for the use of "best science" in preparing the Draft EIR. The Draft EIR was prepared in accordance with CEQA *Guidelines* and current standards of practice for EIRs, and the potential significant environmental impacts of the Program are analyzed using the best available science. Please refer to the references cited at the conclusion of each chapter. The environmental review process as a whole has complied with or exceeded the public notification, public participation, disclosure, and analysis requirements of CEQA.

34-14 CDFG is aware of fall-run Chinook salmon trends and the risk to Pacific salmon populations from past, current, and future effects of the Pacific Decadal Oscillation. However, these are existing baseline conditions that are not caused by the Program. Furthermore, although Chinook salmon are a special-status species discussed extensively in the Draft EIR, the species is not currently listed under CESA and is not the focus of the Program. Implementation of the Program would not cause significant impacts to the species. Neither the ITP nor the Draft EIR refers to the 20 cfs minimum instream flow target mentioned by the commenter.

34-15 Comment noted. Also, please see Master Response 7.

Comment Letter 35: Quartz Valley Indian Reservation

35-1 CDFG acknowledges receipt of this comment letter.

Please note that much of the text of this letter is identical to Letter 34, from the Karuk Tribe. Therefore, many of the responses to the comments contained in this letter simply refer to the corresponding responses to Letter 34.

35-2 The Draft EIR was prepared in accordance with CEQA and the CEQA *Guidelines.* All Program participants are required to comply with applicable local, state, and federal laws.

35-3 Please see response to Comment 34-1.

35-4 Please see Master Response 1.

35-5 Please see response to Comment 34-3.

35-6 Please see response to Comment 34-4.

35-7 Please see response to Comment 34-5.

35-8 Please see response to Comment 34-6.

35-9 Please see Master Response 3.

35-10 Please see Master Response 1 and response to Comment 34-8.

35-11 Comment noted.

35-12 Please see response to Comment 34-13.

35-13 Please see response to Comment 34-14.

35-14 Please see response to Comment 34-15.

Comment Letter 36: Yurok Tribal Fisheries Program

36-1 The Draft EIR was prepared according to the CEQA statute, CEQA *Guidelines,* and current standards of practice for EIRs. The environmental review process as a whole has complied with or exceeded the public notification, public participation, disclosure, and analysis requirements of CEQA.

36-2 This comment urges CDFG to take immediate enforcement action to halt "illegal activities," including violations of Fish and Game Code, §§ 5931 and 5937. One of the primary purposes of the Program is to facilitate compliance by Agricultural Operators with Fish and Game Code, § 1600 *et seq.* and CESA. Program participants will still be required to comply with other provisions in the Fish and Game Code, as will those individuals who elect not to participate.

In regard to the comment that "[t]he DEIR needs to have explicit provisions that ITP prescriptions are subject to future water use determinations and adjudications," CDFG respectfully disagrees; such a statement is not required under CEQA and precisely what the statement means is not clear.

36-3 This is a Program EIR covering individual activities subject to Fish and Game Code, § 1602 and § 2081, which have similar effects and can be mitigated in similar ways. ITP Article XIII.E.2., Mitigation Obligations of SVRCD, requires SVRCD, within a specific number of years, to identify locations and implement projects which will improve instream flow, provide gravel enhancement, install instream habitat improvement structures, plant riparian vegetation, and remove barriers to provide fish passage. The exact numbers or locations of these activities cannot be precisely identified prior to Program implementation. Similarly, the reach-specific mitigations depend on the site-specific and cumulative participation in the Programs. Consequently, identification of measurable objectives in any particular reach would provide an unwarranted degree of specificity and would be speculative.

Regarding recovery, please see Master Comment 7.

36-4 CDFG acknowledges that there is insufficient information on the relationship between streamflow and habitat in the Shasta River and its tributaries upon which to base a full recovery effort for coho salmon. The Program and recovery planning for coho salmon would benefit from the types of investigations the commenter proposes. Please see Master Response 7.

36-5 Comment noted.

36-6 The commenter contends that issues raised in scoping comments were not addressed in the Draft EIR. CDFG reviewed all scoping comments received during circulation of the NOP, including the letters submitted by the Quartz Valley Tribe and the Yurok Tribe. CEQA does not require the lead agency to respond to comments on the NOP, but only to consider comments in the preparation of the EIR (CEQA *Guidelines,* §§15082 and

15083). CDFG did in fact consider all comments received on the NOP. Several of the issues raised are generally addressed in Chapter 1, Introduction of the Draft EIR, on page 1-6.

36-7 Please see response to Comment 34-4 and Master Response 1.

36-8 Please see response to Comment 34-5.

36-9 Please see response to Comment 34-6.

36-10 Potential effects of climate change, including implications for snow accumulation and runoff, are generally described in Chapter 3.7, Public Utilities, Services, and Energy. Impacts of the Program on climate change, including an evaluation of greenhouse gas emissions associated with the Program, are analyzed in this chapter as well.

36-11 The importance of Big Springs Creek, Upper Shasta River, and Parks Creek as refugia for coho salmon is discussed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

36-12 Under the Program, for those areas where the slopes of streambanks on a sub-permittee's property have become unstable due to actions by the sub-permittee, and re-stabilization measures are necessary to re-establish vegetation, the sub-permittee is required to implement bioengineered bank stabilization techniques to prevent additional erosion from occurring. The techniques to be implemented must be consistent with methods identified in the most recent version of CDFG's California Salmonid Stream Habitat Restoration Manual. CDFG will ensure that projects are implemented using these methods and ensure that designs minimize the use of rip-rap.

36-13 Please see Master Response 3.

36-14 Please see Master Response 6.

36-15 Please see Master Response 1 and response to Comment 34-8.

36-16 The Water Trust is one among several measures specified in the ITP intended to increase streamflows. Consistent with CESA (Fish and Game Code, § 2018(c)) and CDFG's CESA regulations, the ITP specifies that if the Program (for any reason) will result in jeopardy to coho salmon in the Shasta River watershed, CDFG may terminate the ITP.

36-17 Please see Master Response 7.

In its simplest form, a determination of full mitigation amounts to a quantitative analysis of the number of individuals proposed to be taken, the number of individuals to be protected through implementation of avoidance and minimization measures, and the number of individuals to be replaced through mitigation. However, such a simplistic arithmetic approach can rarely be applied since it is usually not possible to quantify precisely the number of individuals that are expected to be taken, protected, or replaced.

For the Program, these numbers cannot be determined with any degree of certainty. In order to determine the amount of mitigation required to "fully mitigate" the take of coho salmon, CDFG looked at the probable risks that individual coho salmon will likely experience as a result of the Covered Activities and the expected beneficial effects of the proposed avoidance and minimization measures. Key coho salmon recovery tasks identified in the Coho Recovery Strategy were selected to improve conditions for coho salmon with the goals of increasing the number of fish successfully reared within the watershed and offsetting the impacts to coho salmon due to the implementation of the Program's Covered Activities.

To determine whether the full mitigation requirement of CESA is being met, CDFG has developed priorities for long-term population monitoring of salmonids in the Shasta and Scott River watersheds. As stated under Monitoring and Adaptive Management Plan Article IX., Measurement of the Overall Success of the Permit Program, the data collected will allow for an analysis of adult to juvenile ratio trends over time to determine if the Programs are resulting in a stable or increased production rate based on the ratio of juveniles per adult in the watershed and whether conditions for coho salmon within the watersheds are improving under the Programs. See Appendix A, Attachment 3.

36-18 Comment noted.

36-19 Please see response to Comment 34-13.

36-20 CDFG agrees with the assessment of the Yurok Tribe regarding the importance of the Shasta River coho salmon run, and its potential role in conserving and restoring Klamath River coho salmon.

36-21 Comment noted. Also, please see Master Response 7.

Comment Letter 37: Native American Heritage Commission

37-1 As discussed in Mitigation Measure 3.5-1f in Chapter 3.5, Cultural Resources, of the Draft EIR, for each ground-disturbing activity proposed under the Program, a records review will be conducted prior to fieldwork at the Northeast Center of the California Historical Resources Information System at California State University, Chico (NE/CHRIS). Alternatively, a professional archaeologist will conduct a watershed-wide records search at NE/CHRIS which will be updated at least every two years.

37-2 As discussed in Mitigation Measure 3.5-1a, for each project proposed under this Program, if the records at NE/CHRIS do not show that the area has already had an adequate archaeological survey by a professional archaeologist, an archaeological survey will be conducted and a technical report with all pertinent information will be prepared and submitted to CDFG. If archaeological sites are identified and determined significant, they will be protected as outlined in Mitigation Measure 3.5-1b, or, if a site cannot be protected, then additional work will be conducted to mitigate potential adverse impacts as outlined in Mitigation Measure 3.5-1g or 3.5-1h.

37-3 CDFG provided a copy of the Draft EIR to the parties listed on the attached Native American Contacts List at the time the document was released to the public.

In response to this comment, Mitigation Measure 3.5-1f is changed as follows:

> ***Mitigation Measure 3.5-1f:*** *Prior to carrying out MLTC Condition 111 c. ~~102~~, the archaeologist/paleontologist shall: a.) contact the Native American Heritage Commission for a Sacred Lands File check and a list of appropriate Native American contacts for consultation concerning the project site and, if necessary, to assist with the development of mitigation measures; and, b;) make a determination ~~shall first be made~~ as to whether the area has had an adequate archaeological survey by a professional archaeologist and whether any historic or prehistoric sites have been recorded within a ¼-mile radius of the project area. This records review may be conducted at NE/CHRIS on a case-by-case basis for each project. Alternatively, a professional archaeologist will be contracted to conduct a watershed-wide records search at NE/CHRIS and prepare a map showing the previous surveys and recorded sites. An update of this information would then be prepared at least every two years. This map, which will show the locations of archaeological sites, would be considered confidential and made available only to individuals on an as-needed basis.*

37-4 The provisions for protection of accidentally discovered archaeological resources or human remains are discussed in Mitigation Measures 3.5-1d and 3.5-1e; MLTC Conditions 119, 120, and 122 (Conditions 106, 107, and 108 in the Draft EIR) outline the procedures to follow should human remains be discovered during project activities.

In response to this comment, Mitigation Measure 3.5-1g is changes as follows:

> ***Mitigation Measure 3.5-1g:*** *If none of the protective measures described in MLTC Condition 112 ~~103~~ can be implemented, then an archaeological data recovery program (ADRP) shall be implemented, unless the professional archaeologist determines that the archaeological resource is of greater interpretive use than research significance and that interpretive use of the resource is feasible. The project archaeologist and CDFG shall meet and consult to determine the scope of the ADRP, and the project archaeologist shall prepare a research design for the project which shall be submitted to CDFG for review and approval. This document shall identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The document will specifically identify the scientific/historical research questions being asked, the archaeological resources' expected data classes, and how the expected data classes would address the applicable research questions. Following approval of the plan by CDFG, the ADRP shall be implemented and a report prepared.*
>
> *Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. All significant cultural materials recovered shall be, as necessary, subject to scientific analysis, professional museum curation, and a report shall be prepared by a qualified archaeologist according to current professional standards. If the recovered artifacts are from a*

prehistoric site, the local Native American groups will be consulted relative to the disposition of these materials.

Comment Letter 38: Department of Water Resources

38-1 CDFG recognizes there are merits to DWR's revised Alternative 2 but rejects it for the reasons stated in the Draft EIR under rejected Alternative 2

> *[R]e-opening the decree would be a very time-consuming and expensive alternative that given the multitude of interested parties would be very controversial and uncertain in its outcome. Any expense would substantially increase if SWRCB conducted the re-adjudication, and in doing so were required to comply with CEQA.*

Also, the commenter's request raises the unsettled legal issue of a watermaster's obligation to implement a decree that in so doing could result in a violation of state law, e.g., CESA. Finally, CDFG, DWR, or some other party may "petition the court to include the appropriate terms and conditions of the ITP, SAA MOU, and MLTC into the appropriate decrees" absent the alternative suggested by the commenter.

38-2 As required under CEQA, the Draft EIR identifies and analyzes the potentially significant environmental effects of the Program and identifies mitigation measures that will reduce those effects to less than significant. CDFG determined the mitigation measures identified are adequate to reduce all significant impacts to less than significant. However, if CDFG later identifies an impact that was not previously disclosed in the Draft EIR, and that impact can only be addressed by adding a new term or condition to a sub-permit, CDFG will proceed as required under CEQA *Guidelines,* § 15162 and § 15168. The potential for additional environmental review for specific activities is discussed in Chapter 1 of the Draft EIR (Section 1.2.3, Scope of the Draft EIR, page 1-4).

38-3 It appears the commenter is referring to ITP Article XIII.E.2., the Mitigation Obligations of SVRCD, which require SVRCD, within a specific number of years, to identify locations and implement projects that will improve instream flow, provide gravel enhancement, install instream habitat improvement structures, plant riparian vegetation, and remove barriers to provide fish passage. Although the location where these projects will be performed is not currently known, the Draft EIR adequately describes these projects and analyzes their potential effects. Prior to implementation of these projects, the SVRCD will be required to notify CDFG pursuant to Fish and Game Code, § 1602 and obtain a SAA. Prior to issuing a SAA, CDFG is required to determine whether all potential impacts of a proposed project have been analyzed in the Final EIR or in another document prepared pursuant to CEQA. If CDFG identifies potential impacts which were not disclosed, CDFG will proceed as required under CEQA *Guidelines,* § 15162 and § 15168. The potential for additional environmental review for specific activities that may occur under the Program is discussed in the Draft EIR (Chapter 1, Introduction, Section 1.2.3, Scope of the Draft EIR).

38-4 The comment does not state what statutory responsibility CDFG is "surrendering" and therefore a specific and complete response is not possible. Under ITP Article XIII.E.2.(ii), SVRCD is required to perform projects to improve baseline instream flows and/or water quality within critical reaches of the Shasta River and its tributaries and at critical life stages of coho salmon. In order to do this SVRCD will first develop a list of priority stream reaches for flow enhancement. SVRCD staff have the skills necessary to make this determination. In addition, once SVRCD has developed their priority list, ITP Article XIII.E.2.(ii) requires SVRCD to provide it to CDFG for review and approval. This review will be performed by CDFG Fisheries staff that work in the Shasta River watershed and are fully qualified to accurately assess the priority list. It is not clear why the commenter believes CDFG is "surrendering its statutory responsibility" when CDFG will make the final determination regarding which projects will be implemented and their locations.

38-5 The Monitoring and Adaptive Management Plan (see Appendix A, Attachment 3) includes a Compliance Monitoring Table which includes some of the information requested by the commenter.

With regards to the question of who has the responsibility to pay for the deliverables expected from the sub-permittees and SVRCD, as stated in ITP Article XIII.E.1.(d):

> *Each sub-permittee shall be solely responsible for any costs the sub-permittee incurs to implement any avoidance or minimization measures required under a sub-permit and the SVRCD shall be solely responsible for any costs it incurs to implement any mitigation and monitoring measures required under this Permit.*

In the event CDFG determines that SVRCD or a sub-permittee is not in compliance with the terms and conditions of the Permit or sub-permit or the minimization measures appear to be ineffective, CDFG will work with the SVRCD and/or the sub-permittee to address any problems cooperatively. Where SVRCD or the sub-permittee is unable to comply with the conditions of their Permit or sub-permit, CDFG will take what action it determines is appropriate including termination of the Permit or sub-permit.

38-6 To address the commenter's concern, CDFG has amended ITP Article XV.A.3. as follows:

> *a. All sub-permittees shall install a locking headgate or valve, sized appropriately for the authorized diversion, that can regulate flow, and a functional measuring device or flow meter, on any structure or facility used to divert water, whether by pumping, through a ditch, pipe, or flume, or by some other means ("diversion") ~~that meet Department criteria~~ to facilitate better control and monitoring of water delivery within three years of the effective date of the Permit.*
>
> *b. The designs for headgates or valves and measuring devices in State Watermaster or Special Watermaster District Service areas shall be approved by Department of Water Resources (DWR) or said Special District,*

if applicable, in coordination with the Department. In areas where there is no watermaster service the designs shall be approved by the Department. All measuring devices and methods of water measurement shall be constructed and maintained to meet a ±5% measuring accuracy criteria.

c. SVRCD shall prepare a priority plan that identifies locations where headgate and measuring device installation is a priority and shall submit the list to CDFG for review and approval within one year of the effective date of this Permit.

Also, MLTC Condition 25 (Condition #24 in the Draft EIR) has been amended as follows:

The responsible party shall install a locking headgate or valve, sized appropriately for the authorized diversion, that can regulate flow, and a functional measuring device or flow meter, on any structure or facility used to divert water, whether by pumping, through a ditch, pipe, or flume, or by some other means ("diversion") that meet Department criteria ~~on or in all water diversion structures identified in this Agreement.~~ to facilitate better control and monitoring of water delivery within three years of the effective date of the Agreement. The designs for headgates or valves and measuring devices in State Watermaster or Special Watermaster District Service areas shall be approved by DWR or said Special District, if applicable, in coordination with the Department. In areas where there is no watermaster service the designs shall be approved by the Department. All measuring devices and methods of water measurement shall be constructed and maintained to meet a ±5% measuring accuracy criteria.

38-7 The recommendation raises an issue regarding the commenter's legal obligations under the Program as a Program participant, and reflects the commenter's understanding as to the priority of those obligations with which CDFG might disagree. However, insofar as the commenter believes that other legal requirements will in some way affect the obligations it must meet as a Program participant, the ITP, sub-permits, and SAAs CDFG will be issuing under the Program, and any permits CDFG and other regulatory agencies issue in general, will be subject to all other applicable laws and regulations regardless of whether those laws and regulations are specified in the Permit itself. For that reason alone, CDFG does not believe the change the commenter recommends is warranted.

ITP Article XX., Compliance With Other Laws, requires participants to comply with all local, state, and federal laws. MLTC General Condition 19 (General Condition 18 in the Draft EIR) states:

This Agreement does not relieve the responsible party from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or projects this Agreement authorizes….

MLTC General Condition 20 (General Condition 19 in the Draft EIR) requires all participants to comply with the Fish and Game Code, including CESA and §§ 5650, 5901, and 5937.

If an Agricultural Operator does not comply with these provisions they may become subject to an enforcement action by CDFG. A person who violates Fish and Game Code, § 1602 is subject to a civil penalty of up to $25,000 and/or a misdemeanor. A person who violates Fish and Game Code, § 2081 is subject to a misdemeanor. The punishment for a misdemeanor is a fine of up to $1,000 and statutory fees and/or imprisonment in county jail for up to six months.

38-8 Please see response to Comment 38-7.

38-9 Please see response to Comment 38-7. In further response, CDFG presumes that the commenter has been providing watermaster service in compliance with the Water Code and court decrees, which CDFG does not enforce. The focus of the Program in part is to ensure compliance with CESA, notwithstanding other legal obligations DWR might have.

The first sentence of ITP Article XVII.C. has been edited as follows:

> *DWR shall meet with the Department in person or by telephone on a weekly basis during the diversion season in order to inform the Department of any points of diversion <u>in the watermastered areas</u> where stranding is probable.*

38-10 Little information was found concerning what impact beaver dams might have had on fish migration historically. Some beaver dams probably hindered or even prevented the upstream migration of fish, yet in most cases this was likely only temporary (i.e., until the dam was abandoned or swept away by a large flood). Historically, the overall ecological impacts of beaver dams on aquatic habitat and water quality in the Shasta River watershed were beneficial.

38-11 Subsection A – CDFG intends to cooperate with DWR to arrive at a mutually satisfactory database.

Subsection C - A minimum flow discharge rate for each diversion has not been determined. Please see edit to ITP Article XVII.C. shown in the response to Comment 38-9 above.

Comment Letter 38.1: Dr. Jeffery Mount

38.1-1 CDFG appreciates the receipt of comments from UC Davis. Please note that CDFG is aware of UC Davis's research activities in the Shasta basin, has frequent contacts with field researchers, and continues to look forward to reviewing findings from these studies as they become available.

38.1-2 We agree with the commenter that water temperature is the primary limiting factor for coho salmon in the Shasta River watershed. Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat describes the effects of water temperature on coho salmon extensively with frequent reference to Jeffres et al. (2008) and other sources. Many of the avoidance, minimization, and mitigation measures in the ITP are either directly or

indirectly targeted at water temperature improvements through, for example, instream flow improvement, reduction or elimination of tailwater returns, riparian enhancement, and other methods. Furthermore, the commenter expresses a valid concern regarding the current lack of prioritization for implementation of these measures.

38.1-3 Please note that ITP Article XV.I., Irrigation Tailwater Reduction and/or Capture, states explicitly that:

> *SVRCD shall assist sub-permittees in the design and implementation of tailwater reduction and capture systems. SVRCD shall inventory and prioritize tailwater sources for remediation and submit the priority list of sites to the Department for its review and approval within two years of the effective date of the Permit. High priority areas identified in the priority plan will be addressed as soon as practical.*

The commenter expresses concern that the implementation of the identified conservation measures should be prioritized. CDFG shares this concern and has required the SVRCD to prioritize measures identified in the ITP. The SVRCD will be preparing priority plans for each of the following nine measures;

- Instream flow enhancement reaches;
- Alternative stockwater systems;
- Spawning gravel enhancement projects;
- Instream habitat improvement structure locations;
- Riparian planting locations;
- Locations of headgates and measuring devises;
- Fish passage sites;
- Livestock and vehicle crossings;
- Riparian fencing; and
- Tailwater project locations.

38.1-4 Numerous provisions in the ITP require the SVRCD to prioritize, with CDFG's concurrence, avoidance, minimization, and mitigation actions. It is expected that in the Shasta River watershed actions will be focused on the crucial upper Shasta River-Big Springs Creek-Parks Creek area, where the majority of wild coho salmon spawn and rear. See Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat in the Draft EIR.

38.1-5 The Draft EIRs for both Programs discuss the similarities and differences between the two watersheds. The ITPs include avoidance, minimization, and mitigation actions specific to each watershed. In issuing SAAs and sub-permits, CDFG staff will perform site visits and work with the SVRCD and sub-permittees so these measures may be implemented in a manner appropriate to the specific conditions of the site.

38.1-6 CDFG agrees with the commenter that water temperature is a critical limiting factor during the summer and early fall. Reducing warm tailwater and increasing flows will result in some improvement. Increased flows will also encourage the establishment of riparian vegetation, which will also contribute to reductions in stream temperature through increased shading. During the fall adult migration, adequate flow is necessary to allow adults to reach the those locations in the upper Shasta River where temperature and

habitat conditions are suitable for egg survival and juvenile rearing. Proper flows, temperatures, and habitat are necessary for young to survive until and during migration out of the system. As stated above, numerous provisions of the ITP require the SVRCD to prioritize, with CDFG concurrence, avoidance, minimization, and mitigation actions, including locations for tailwater capture projects. Those projects that will provide the most benefit to coho salmon, including projects to improve water temperature, will have the highest priority.

38.1-7 The Draft EIR focuses on the potential impacts to groundwater of the proposed alternative stock-watering systems because this is the only component of the Program that proposes a switch from surface water use to groundwater. See Impact 3.2-4 in Chapter 3.2, Geomorphology, Hydrology, and Water Quality, which addresses the potential increase in groundwater use that could be attributable specifically to the Program (i.e., not attributable to factors outside the scope or jurisdiction of the Program) and concludes that this would be a less than significant impact. See also Impact 3.3-2 in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, which reaches the same conclusion. As stated in the ITP (Article XIII.A.2.(a)(iv)), prior to implementing any alternative stock-watering system (e.g., using groundwater in-lieu of surface water), the SVRCD shall identify priority areas where additional instream flows in the fall would contribute significantly to adult coho migration. CDFG would need to approve any proposed alternative stock-watering system. CDFG is well aware of the importance of the Big Springs and Parks Creek areas with respect to the supply of cold-water to surface channels. Furthermore, the alternative stock watering requirement applies to the fall, when water temperature is less of a limiting factor for coho salmon and other salmonids in the Shasta River. Therefore, with respect to this Program element, the conclusion of less than significant is well-founded, both from the standpoint of water quality and biological resources.

With respect to an indirect effect of the Program in which Agricultural Operators would switch from surface water diversions to groundwater as a result of increased regulation and scrutiny of surface water diversions, Impact 3.2-4 addresses that possibility and concludes that it would be less than significant based on the increased cost associated with developing and operating wells, and the inconsistent availability of groundwater resources throughout the Shasta Valley. The commenter's point regarding the potential for a particular well to disproportionately affect salmonid habitat in the Upper Shasta/Big Springs/Parks Creek area, however, is well taken. CDFG is aware of the importance of the few spring-fed cold water refugia in this portion of the watershed. While the scenario suggested by the commenter is possible, i.e., that increased regulation of surface water may prompt an Agricultural Operator to dig a new well, and that this well would affect springs or seeps to the extent that it would diminish coldwater inputs into refugia habitat, the chain of events that would result in an impact on water quality and aquatic habitat is considered speculative for the purposes of the EIR analysis. Nevertheless, CDFG will work closely with SVRCD and Program participants in this portion of the Shasta River watershed to ensure that such an outcome does not occur.

38.1-8 The Program is not designed as a "resource management" program but instead is intended to facilitate compliance with Fish and Game Code, § 1600 *et seq.* and CESA through the issuance of SAAs, an ITP, and sub-permits. The potentially significant environmental impacts of the Program are analyzed in the Draft EIR and based on the best available science. Please refer to the references cited at the conclusion of each chapter. Under Fish and Game Code, § 1602, a SAA is required to include measures necessary to protect existing fish or wildlife resources that the project described in a notification could adversely affect. Fish and Game Code, § 2081(b)(2) requires the impacts of any authorized take to be minimized and fully mitigated. The Draft EIR identifies additional measures required to reduce potential impacts of the Program to less than significant.

Under ITP Article XIII.E.2. SVRCD is required to develop within one or two years of implementation of the Program lists of priority locations where flow enhancement, instream habitat improvement, riparian planting, gravel injection, and alternative stock watering projects may be implemented to benefit coho salmon.

To monitor the effectiveness of those measures, CDFG has developed a Monitoring and Adaptive Management Plan in coordination with both SVRCD and SQRCD (see Appendix A, Attachment 3 in this volume). Monitoring includes observation, detection, and recording of environmental conditions, resources, and effects of Covered Activities and the effectiveness of the Program's avoidance, minimization, and mitigation measures. The evaluation of monitoring information will provide the basis for assessing the Program's success in attaining biological goals and objectives. An adaptive management approach will guide the manner in which information collected by SVRCD through monitoring and directed research, as well as new information collected by others, will be used to continually evaluate and improve implementation of the mitigation measures. As a result of the Program, CDFG Fisheries staff will obtain greater access to the Shasta River and its tributaries for the collection of fish population data. Under the Program's Adaptive Management component this information will be incorporated into Program projects.

Comment Letter 39: Montague Water Conservation District

39-1 As stated in the Draft EIR on page 3-2, the baseline for this analysis is the date that SVRCD's application for an ITP was deemed complete, i.e., April 28, 2005. In response to the second part of the comment on the historical accuracy of the Draft EIR, information contained in the ITP application prepared by the SVRCD was verified and cross-checked by CDFG's EIR consultant. Unfortunately, MWCD did not identify where "points of historical record contradicts points and accounts presented in the EIR" so CDFG is unable to make any necessary correction to the Final EIR. Regardless of whether the Draft EIR was entirely accurate in its presentation of the historical effects of the construction and operation of Dwinnell Dam, the ongoing effects of Dwinnell Dam on water quality and fisheries are considered part of the baseline against which the

potential environmental impacts of approving and implementing the Program were measured pursuant to CEQA.

39-2 ITP Article XIII.E.2.(a)(ii) states

> *Within one year of the effective date of this Permit, SVRCD will provide to the Department, for its review and approval, a list of priority stream reaches for flow enhancement based on coho life stage (and) need…*

CDFG is aware of water quality issues throughout the watershed. The identification of priority reaches for flow enhancement measures based on coho salmon life stage needs will focus these activities in areas determined to be critical.

39-3 If the Montague Water Conservation District (MWCD) chooses to participate in the Program, it will need to obtain a SAA and sub-permit just like any other Agricultural Operator and comply with the conditions included in those permits, including the feasibility study requirement in ITP Article XV.J. This study is currently underway and CDFG will use the study in preparing a SAA and sub-permit for MWCD if it elects to participate in the Program.

39-4 While information contained in the ITP application prepared by the SVRCD was used in preparation of the Draft EIR, this information was extensively verified and cross-checked by CDFG's EIR consultant.

39-5 The commenter notes that the Draft EIR states that MWCD's service area is 13,000 acres, but that the actual size of the district is approximately 15,000 acres plus additional acreage served by prior rights under the Shasta River Decree, with a total service area of approximately 19,500 acres.

In response, CDFG has made the following revisions on page 3.7-2 of the Draft EIR:

> ***Montague Water Conservation District.*** *MWCD provides water to a service area of approximately 19,500 ~~13,000~~ acres ~~of farmland~~ located primarily in the area north of the Little Shasta River and east of the Shasta River, and also to the City of Montague.*

39-6 The comment points to a typographical error regarding a statement made on page 3.3-11 of the Draft EIR that MWCD's water right on Parks Creek is "14,000 cfs." The statement is actually made on page 3.2-11, but the commenter is correct that the water right is in fact 14,000 acre-feet per year (afy), as stated in the same paragraph on page 3.2-11.

In response, CDFG has made the following revisions on page 3.3-11 of the Draft EIR:

> "*14,000 ~~cfs~~ acre feet per year.*"

39-7 The nature of the referenced statement does not concern whether or not the flow releases from Dwinnell Dam match the flow rate entering the reservoir. The nature of the

referenced statement concerns how much water, other than that amount needed to satisfy the demands of downstream water users and/or customers, is released from Dwinnell Dam. Further, the statement is not just in reference to late summer months, but would include fall and spring months as well. The statement in the Draft EIR acknowledges that releases from Dwinnell Dam do occur (generally, in order to meet the demands of downstream water users and/or customers).

As such, the referenced statement in the Draft EIR does not contradict the fact that more water may be released from Dwinnell Dam than is entering the reservoir upstream during the late summer months. Based on the information available to CDFG and its EIR consultant, this statement is accurate as written.

39-8 The sentence in the Draft EIR referencing the occurrence of coarse gravel in upper Parks Creek and in the Shasta River upstream of Dwinnell Dam is based on direct field observation. Based on the size of Dwinnell Dam and Lake Shastina, this reservoir traps and retains all but the finest sediment (i.e., generally everything larger than coarse sand).

The commenter seems to suggest that even without the presence of Dwinnell Dam, no fluvial transport of coarse sediment would occur downstream of the point where Dwinnell Dam now stands. Prior to the dam, the natural transport regime may have been relatively slow (i.e., coarse sediment was temporarily stored within the channel and floodplain for long periods prior to being removed by large flows) and, undoubtedly, certain reaches may experience a net deposition of coarse sediment over time. However, CDFG respectfully rejects the notion that no coarse sediment transport occurred prior to installation of the dam or that certain reaches are completely ineffectual at transporting coarse sediment (though such transport may be slow or very episodic).

39-9 The commenter is correct that the referenced section in the Draft EIR could be interpreted as portraying Dwinnell Dam as the only reason for Chinook salmon declines in the Shasta River watershed. This was not the intent of the Draft EIR and the commenter is correct that a multitude of factors other than Dwinnell Dam, both within and outside the Shasta River watershed, have contributed to the decline in the Chinook salmon population. Some of these factors are discussed in the Draft EIR; page 3.3-2 discusses the major adult salmonid mortality event that occurred in the Klamath River as the result of impaired conditions, and the "Current Habitat Function and Primary Limiting Factors" section in Chapter 3.3 of the Draft EIR discuses the factors limiting salmonid survival.

Comment Letter 40: Shasta Valley Resource Conservation District

40-1 CDFG acknowledges and appreciates SVRCD's support for and essential role in development of the Program.

40-2 CDFG is fully aware of the funding and budget issues the comment raises and will continue to work with SVRCD and federal, state, and local agencies to ensure adequate funding is available to the commenter to meet its obligations under the Program.

40-3 The Master List of Terms and Conditions includes a list of conditions. The conditions included in any particular SAA will depend on the nature of the project and the Covered Activities the SAA authorizes. For example, depending on the proposed project, CDFG may either select Condition 46 for riparian restoration, allowing the responsible party to submit a restoration plan for review and approval, or Condition 47 for riparian restoration, which provides a standardized success criterion of a minimum 80% survival rate after five years. If the applicant chooses to submit a restoration plan for review and approval and provides justification for a reduced success criterion, CDFG will have the flexibility to adjust the success criterion.

40-4 Adverse grazing impacts are demonstrated in the scientific literature, but the commenter is correct in stating that grazing management has been shown to benefit, or at least maintain, riparian vegetation under some circumstances. Indeed, for that reason ITP Article XV.E.5, cited on page 3.4-34 in the Draft EIR, asserts that grazing management plans *will* be held to the standard of improved riparian conditions (emphasis added). The systems and their interactions with grazing are complex and the plans need to be tailored to each site. The general standards for measuring riparian function and enhanced aquatic habitat would also be relative to conditions at each grazed site. Generally, reduced sedimentation, increased bank stability, and increased riparian plant density, cover, and diversity will be necessary for grazing plan approval.

Contrary to the commenter's assertion, there is no requirement that the improvement must occur before grazing can be allowed.

40-5 Please see Master Response 6.

40-6 The requirement that the SVRCD develop a Contingency Plan for Dry and Critically Dry Water Years specifies,

> *SVRCD shall determine whether the water year will be dry or critically dry by April 1, based on the criteria in the contingency plan.*

Neither NOAA nor any other weather organization would be qualified to make this determination for the Shasta River watershed. As stated in the Coho Recovery Strategy, this recovery task would result in a comprehensive, community-based plan. CDFG suggests forming a "Dry Year Plan Committee" that includes community members that would be responsible for developing the contingency plan and the criteria used to identify various water year types.

40-7 Fish and Game Code, § 2081 does not require the ITP to include recovery goals for a species. The measurable components of the Program with regard to Fish and Game Code, § 2081 are compliance by SVRCD and sub-permittees with avoidance and minimization measures, and the successful implementation of the required mitigation measures. In addition, population monitoring conducted by CDFG will determine if the ratio of adult to juvenile coho salmon are resulting in a stable or increased production rate over time,

thereby functioning as a surrogate for determining if the Program is having the desired result. In further response, please see response to Comment 36-17.

40-8 CDFG appreciates the SVRCD's diligence, commitment, and effort in working with us to develop the Program, and looks forward to its successful implementation.

Comment Letter 41: California Trout

41-0a CDFG appreciates Cal Trout's efforts to conserve and restore native salmonids in the Shasta River watershed and throughout the State of California, and particularly Cal Trout's commitment and service to the Coho Salmon Recovery Team and the Shasta-Scott Coho Recovery Team.

The points made in the cover letter by Cal Trout regarding the environmental analysis are repeated in the comments below in greater detail; CDFG responds to them there.

41-0b The commenter's understanding of the essential purpose of the Program is correct.

41-1 Chapter 2, Project Description, thoroughly describes the proposed Program, and fulfills the requirements of CEQA in this regard. Please note, as discussed in Chapter 1, Introduction, that this is a Programmatic EIR, which examines broadly the actions that may occur as a result of approving and implementing the Program, and, generally, the environmental consequences of these actions. It is also important to bear in mind the baseline for the purpose of the environmental analysis: impacts of existing, ongoing farming and ranching activities are not caused by the Program, but are described in the setting sections of the Draft EIR, and are considered a part of the baseline for the analysis. The Draft EIR thoroughly examines the potential impacts of the Program itself (albeit at a programmatic level of detail), and where impacts are found to be significant, mitigation measures are specified to reduce or avoid these impacts.

41-2a We agree with the commenter's assessment of population trends of coho salmon in the Shasta River watershed and the risk of extirpation currently facing the Shasta River recovery unit. However, it is important to recognize that coho salmon throughout California are experiencing the same population trends. As described on p. 3.3-16 of the Draft EIR, McFarlane et al. (2008) noted an average decline of 73 percent in the number of returning adults in California in 2007 compared to the same cohort in 2004. Of the thirteen populations for which McFarlane et al. (2008) present data, the decline in returning adults in the Shasta River was the lowest at 32 percent. We do not present these data in an attempt to downplay the commenter's concern regarding the Shasta River population, but rather to provide perspective of range-wide population trends that are driven in large part by events and conditions (e.g., ocean conditions) that are not specific to any individual watershed.

41-2b Numerous provisions in the ITP require the SVRCD to prioritize, with CDFG concurrence, avoidance, minimization, and mitigation actions. It is expected that, in particular, these actions will be focused on the crucial upper Shasta River-Big Springs

Creek-Parks Creek area, the area of the watershed that, according to recent research by CDFG staff and others (which is reviewed in the Draft EIR), is where the majority of wild coho salmon spawn and rear. See Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

41-3 Although the terms "risk of extinction" and "jeopardy" are often used interchangeably, it is important to recognize the differences in their definition. As discussed in the response to Comment 41-2a, above, coho salmon within the Shasta River recovery unit, as well as the SONCC ESU and throughout the entire California range, are currently facing a serious risk of extinction. Unfortunately, this risk of extinction exists whether or not the Program is implemented. The term "jeopardy" refers to the potential effects the issuance of an ITP may have relative to the existing risk of extinction. A project or program may jeopardize the continued existence of the species if it in any way, causes, contributes to, or accelerates a species' existing risk of extinction. In other words, if the Program is found to fully mitigate the take of coho salmon, it would *not* jeopardize the continued existence of the species, even if the species continues to be at high risk of extinction. The termination clause of the ITP states that the Department may terminate the Permit if "continued program implementation would jeopardize coho salmon." Also, please see Master Response 1.

41-4 Please see response to Comment 38.1-2.

41-5a The Program does not "memorialize or provide any other explicit exemption for compliance with the Fish and Game Code" and should not be construed as such. One of the primary purposes of the Program is to facilitate compliance with Fish and Game Code, § 1600 *et seq.* and CESA. Regardless of whether they participate in the Program or not, eligible participants have a continuing obligation to comply with all applicable provisions of the Fish and Game Code.

41-5b Comment noted. In response to the issue of access by CDFG enforcement personnel, please see Master Response 5.

41-6 Because coho salmon live in an aquatic environment, it is extremely difficult to verify where take has occurred, and it therefore cannot be numerically defined for each activity. However, population trends can be determined. Please see response to Comment 6-30, first paragraph.

41-7 Please see response to Comment 6-27. In regard to the recommendation that the EIR identify the "[d]iverse funding mechanisms for all measures," that is not required under CEQA. Continued implementation of the ITP, sub-permits and SAAs requires compliance with Permit conditions independent of availability of funding. The policy question over which projects should be supported by public funds dedicated to restoration of salmonid habitats is controversial but is not germane to sufficiency of the EIR.

41-8 CDFG appreciates the commenter's recommendation, but it does not "fit" the Program, under which the SVRCD will be meeting the full mitigation requirement under CESA on

a watershed-wide scale. Also, if CDFG were to try to implement the recommendation as part of the Program, it would need to quantify the level of take at a level of specificity which, for various reasons, is not possible (please see response to Comment 34-8, third paragraph).

41-9 While CDFG recognizes that a lead agency may take a different approach in establishing the baseline, CDFG's baseline determination is well in accord with CEQA *Guidelines,* § 15125(a) and applicable case law. In regard to "pre-project baseline data," each section in Chapter 3 in the Draft EIR contains information on historic conditions as they relate to the particular subject of the section.

41-10 The comment recommends that CDFG modify the Program by expanding the Program Area to include the area above Dwinnell Dam and makes statements regarding the effect of the dam on fish and the applicability of Fish and Game Code provisions to the dam's operation. Please note the entire Shasta River watershed is included in the Program Area. In further response, as stated on page 2-6 of the Draft EIR, the "water user" must sign up for both a SAA and sub-permit. The only exception to this requirement is above Dwinnell Dam where only a SAA is required because CDFG has determined the potential consequences to coho salmon from operating a diversion upstream of the dam are negligible due to the overriding effects of the Lake Shastina impoundment and operation of Dwinnell Dam.

DFG agrees it is appropriate to investigate the potential benefits of enabling coho salmon and other anadromous species to access the upper Shasta watershed. See the description and analysis of the Parks Creek-Upper Shasta River Bypass Alternative in Chapter 5, Alternatives, of the Draft EIR. The ITP requires MCWD to evaluate the feasibility of fish passage over or around Dwinnell Dam however, current habitat suitability is unknown.

41-11 The commenter is incorrect in asserting that the Draft EIR needs to "analyze and define success for each program participant." This is not a requirement of CEQA. The Program objectives presented in Chapter 2, Project Description, are adequate for the purposes of the EIR.

41-12 The comment raises five issues pertaining to ITP Flow Enhancement Mitigation 2: Improve Baseline Instream Flows via Water Efficiency Improvements, as described in Chapter 2, Project Description, in the Draft EIR. CDFG responds to each issue as follows:

a. Please see response to Comment 6-30.

b. As stated in the Draft EIR, under the ITP, SVRCD would be required to submit a detailed Contingency Plan for Dry and Critically-Dry Water Years to CDFG for review and approval within three years of the effective date of the ITP. As stated on page 2-21 of the Draft EIR:

> *Measures contained within the Contingency Plan will incorporate the best available information on both surface and groundwater (where relevant) to*

> *minimize the likelihood that critical coldwater flows to the Shasta River and its tributaries are impaired.*

The locations where groundwater is relevant are those locations where groundwater contributes critical coldwater flows to the Shasta River and its tributaries. These locations and the actions to be taken will be identified in the Contingency Plan.

c. The extent to which the mitigation measures will increase baseline instream flows is unknown and would depend on the water year type and the action taken pursuant to the Contingency Plan for Dry and Critically-Dry Water Years, among other factors.

d. Please see response to Comment 6-30. Flow enhancement will be achieved by implementation of avoidance, minimization, and mitigation measures and any additional improvement of conditions relative to baseline.

e. Fish and Game Code, § 2081(b)(4) requires an ITP applicant to ensure adequate funding to implement the measures required to minimize and fully mitigate take. In other words, CESA makes it clear that the applicant is responsible for meeting the minimization and full mitigation requirements without which CDFG could not authorize take. As a general rule, that is the case in regard to any federal, state, or local permit; the burden is on the permittee to comply with its terms and conditions. Consistent with the CESA requirement mentioned above, ITP Article XIII.E.1.(d) states that:

> *Each sub-permittee shall be solely responsible for any costs the sub-permittee incurs to implement any avoidance or minimization measures required under a sub-permit and SVRCD shall be solely responsible for any costs it incurs to implement any mitigation and monitoring measures required under this Permit.*

While there is no guarantee grant funding will be available, CDFG anticipates that many of the SVRCD mitigation measures along with the Agricultural Operators' avoidance and minimization projects may be paid through federal, state, and private grants.

41-13 The comment raises three issues in regard to ITP Habitat Improvement Mitigation 2: Instream Habitat Improvement Structures, as described in Chapter 2, Project Description, in the Draft EIR. CDFG responds to each issue as follows:

a. Please see response to Comment 38.1-2.

b. Please see response to Comments 38.1-2 and 38.1-4.

c. CESA (Fish and Game Code, § 2081(b)(4)) requires applicants for ITPs to ensure adequate funding to implement the required minimization and full mitigation measures. SVRCD is responsible for funding mitigation measures. While there is no guarantee grant funding will be available, CDFG anticipates that many of the mitigation measures along with the Agricultural Operators' avoidance and minimization projects may be paid through federal, state, and private grants.

41-14 The comment raises four issues in regard to ITP Habitat Improvement Mitigation 3: Riparian Planting, as described in Chapter 2, Project Description, in the Draft EIR. CDFG responds to each issue as follows:

a. Although the Draft EIR does review historical conditions, this is purely to characterize the environmental setting. EIRs do not need to catalogue all elements in previous land use, only those germane to the analysis. Per CEQA *Guidelines* §15125, an EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published. However, there are references to riparian restoration, where appropriate (Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, page 3.3-94).

b. The Draft EIR does address the basic interplay of flow regime and riparian vegetation (Chapter 3.4, Biological Resources: Botany and Wildlife: page 3.4-94), and its discussion is applicable to restoration. Riparian restoration is sometimes limited by soils and flow regime: if a stream flows at present below the root zone of a cut bank, the top of the bank will be difficult to replant. In such a situation, though, restoration is still possible, for example by laying the bank back and planting the toe of the slope thus created.

c. Please see response above.

d. Please see response to Comment 41-13.c.

41-15 The comment raises three issues with regard to the ITP Monitoring and Adaptive Management Program, as described on page 2-24 of Chapter 2, Project Description, in the Draft EIR. CDFG responds to each issue as follows:

a. The Monitoring and Adaptive Management Plan (MAMP) describes how monitoring will be completed to ensure that conservation measures are in place. Please see the revised version of the MAMP in Appendix A, Attachment 3 of this volume. CDFG will verify compliance with the ITP and sub-permit conditions.

b. CDFG has developed the MAMP in coordination with both SVRCD and SQRCD. The MAMP provides detailed methodologies, including checklists and photographic monitoring, for qualitative change in habitat, detailed quantitative habitat measurements to determine changes in the conditions of habitat affected by conservation measures for the term of the permits, and quantitative fish response monitoring to measure fish response to specific habitat conditions. CDFG has also developed priorities for long-term population monitoring of salmonids in the Scott and Shasta River watersheds. The SVRCD Monitoring Table and the Monitoring Checklists (MAMP Appendix 2 and Appendix 3 respectively) provide guidance to the SVRCD relative to determining effectiveness of the measures the SVRCD is responsible for implementing.

c. Please see Master Response 6.

41-16 SVRCD plans to charge agricultural participants a management fee to cover their administration and monitoring obligations. CDFG is confident that the SVRCD can meet their reporting requirements with the fees generated.

41-17 This comment raises seven observations or issues regarding the watermaster's obligations under DWR's sub-permit under the Programs. CDFG responds to each issue as follows:

a. The first sentence of ITP Article XVII.b. states:

> *DWR shall implement the Shasta River Decree pursuant to provisions of the Water Code in the adjudicated portions of the Shasta River Watershed~~, unless the Department instructs DWR otherwise pursuant to Section XVII.C below~~.*

b. The second sentence of ITP Article XVII.b. states:

> *As part of that responsibility, the DWR watermaster, or a functional equivalent, shall verify that each sub-permittee is in compliance with their respective water right(s). The watermaster shall create a database of all diversions visited on a monthly basis to verify compliance with water rights and shall provide this data monthly to the Department.*

c. ITP Article XVII.A. states:

> *To assist with the implementation and compliance monitoring of this Permit and sub-permits, DWR shall provide to the Department water use data for all diversions with watermaster service in the Program Area, including, but not limited to the name of the diverter, the location of the diversion, the quantity of water that may lawfully be diverted and used, the dates the watermaster visits each diversion, and the estimated or measured quantity of water diverted by the watermaster on each visit. DWR shall provide the data in the form of a database on a monthly basis from April to November each year by the second week of each month following data collection.*

d. Please see response to c. above.

e. See response to Comment 41-17.c. DWR is required to submit the data collected by the watermaster on a monthly basis.

f. See response to Comment 41-17.c.

g. ITP Article XVII.C. has been edited as follows:

> *C. DWR shall meet with the Department in person or by telephone on a weekly basis during the diversion season in order to inform the Department of any points of diversion <u>in the watermastered areas</u> where stranding is probable. The Department shall make a determination regarding whether or not any diversion is causing or will cause the stranding of coho salmon. For the purpose of this Permit, "stranding" is defined as a situation in which coho salmon are in a location with poor aquatic habitat conditions, due to a reduction in flow, from which they cannot escape. ~~The Department shall instruct DWR to reduce or cease the diversion and/or change the timing or manner of the diversion and take any other measures within DWR's control that the Department determines are necessary to correct or avoid stranding~~*

~~*and DWR shall implement those measures immediately. However, before instructing DWR as described above, the Department will make every effort to work with SVRCD and sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion, all in accordance with Section XVIII.*~~

D. The Department will make every effort to work with SVRCD and sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion.

E. If the Department determines that reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is the only available measure to avoid or minimize stranding, the Department shall inform the sub-permittee of the required measures to be implemented to reduce stranding. The Department shall work with DWR to implement such measures within DWR's control.

With regards to the last sentence in "E." above, on June 6, 2002, CDFG and DWR entered into a Memorandum of Understanding on "Procedures for Watermasters on the Scott and Shasta River Systems to Coordinate Actions to Avoid the Take of Coho Salmon" (included in this volume as Appendix C) in which both agencies agreed that, "DWR will implement the reductions or cessation in diversions or changes in the timing or manner of diversions subject to DWR Watemaster Service under the decrees as necessary to avoid the take of Coho Salmon" (Item 6). CDFG has no intention of terminating the Memorandum of Understanding with DWR.

41-18 The comment includes three separate comments.

First Comment (8):

The commenter states that "ITP Additional Avoidance and Minimization Obligation A: Water Management" (ITP Article XV.) "[l]acks measurable objectives" and "need[s] adequate review of baseline data to determine in-stream flow objectives. Please see response to Comment 6-30. CDFG agrees adequate review of baseline data is required to determine instream flow objectives.

Second Comment (9):

The commenter raises three issues regarding ITP Additional Avoidance and Minimization Obligation C: Fish Passage Improvements. CDFG responds to each issue as follows:

a. All sub-permittees will be required to provide fish passage within five years, if feasible.

b. An analysis of the feasibility of providing fish passage at MWCD is being performed at this time.

c. It has not yet been determined whether fish passage implementation will be required, so a funding source has not been identified. If passage is required, generally speaking the owner of the dam would be responsible for the cost of providing fish passage.

Third Comment (10):

> The commenter raises five issues regarding ITP Additional Avoidance and Minimization Obligation J: Dwinnell Dam and the Montague Water Conservation District (MWCD). CDFG responds to each issue as follows:
>
> a. Comment noted.
>
> b. The feasibility study has been completed and was funded through the state's Klamath River Recovery Grants Program.
>
> c. Comment noted.
>
> d. Comment noted.
>
> e. Comment noted.
>
> f. Comment noted.

41-19 Please see response to Comment 41-9.

41-20 Comment noted. In further response, please see Master Responses 4 and 10.

41-21 Existing water quality characteristics, including temperature, in the Shasta River watershed are discussed on pages 3.2-19 through 3.2-22 of the Draft EIR. The effects of Dwinnell Dam on stream temperatures downstream of the dam are poorly understood. Summertime releases from the dam are limited, but a substantial volume of water leaks out of the reservoir and presumably reemerges as groundwater. The effects of Dwinnell Dam and Lake Shastina on water quality are considered existing conditions and not effects of the Program.

41-22 Comment noted. The referenced study (Jeffres et al., 2007) was used in the preparation of Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat, and is cited in that chapter.

41-23 The available information regarding the relationship between groundwater and surface water is described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality. The effects of water temperatures on coldwater fish habitat and coho salmon are discussed in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

41-24 The ITP includes a number of avoidance, minimization, and mitigation measures that are intended and expected to increase streamflows. However, some of these measures are not quantifiable at this time. For example, the potential instream flow gains resulting from ITP Article XV.A:3., which requires the installation of headgates and measuring devices or flow meters at all diversions, verification of the amount of water diverted, and compliance with existing water rights, are difficult to quantify as the current levels of non-compliance are not well understood.

41-25 High water temperatures in the Program Area are an environmental baseline condition and are not caused by the Program.

Comment Letter 42: Klamath River Keeper, Pacific Coast Federation of Fisherman's Associations, Institute for Fisheries Resources

42-0 As to the first part of this comment, comment noted. In response to the latter part of the comment, the Draft EIR was prepared in accordance with CEQA and the CEQA *Guidelines* and fully meets the requirements for a Draft EIR.

42-1 The Draft EIR includes information on historic and recent streamflow conditions in the Shasta River watershed. Please refer to Chapter 3.2, Geomorphology, Hydrology, and Water Quality. The Program is expected to result in improvements in streamflows and habitat conditions relative to existing conditions. Therefore, the Draft EIR properly concludes that the Program will not result in a significant impact related to reduced streamflow or aquatic habitat conditions.

In response to the comment regarding groundwater pumping and recovery, please see Master Responses 4 and 7.

42-2 CDFG does not have authority under Fish and Game Code, § 1600 *et seq.* or CESA to simply deny a project. Instead, under those statutes CDFG has the authority to add to a project conditions CDFG determines are necessary to protect fish and wildlife resources through the issuance of a SAA (pursuant to Fish and Game Code, § 1600 *et seq.*) and to minimize and fully mitigate take of a listed species that occurs incidental to the project (pursuant to CESA). If the applicant agrees to and/or meets those conditions, a SAA and/or ITP will be issued. The purpose of the Program is to facilitate compliance with these statutes, which in turn will serve to protect fish and wildlife resources, including coho salmon.

ITP Article XIII.E.2., Mitigation Obligations of SVRCD requires SVRCD, within a specific number of years, to identify locations and implement projects which will improve instream flow, provide gravel enhancement, install instream habitat improvement structures, plant riparian vegetation, and remove barriers to provide fish passage. The exact numbers or locations of these activities cannot be precisely identified prior to Program implementation. Similarly, the reach-specific mitigations depend on the site-specific and cumulative participation in the Programs. Consequently, identification of measurable objectives in any particular reach would provide an unwarranted degree of specificity and would be speculative.

Although the location where these projects will be performed is not currently known, the Draft EIR adequately describes these projects and analyzes their potential effects. Prior to implementation the SVRCD will be required to notify CDFG pursuant to Fish and Game Code, § 1602 and obtain a SAA for required restoration projects. Prior to issuing a SAA, CDFG is required to determine whether all potential impacts of a proposed project have been analyzed in the Final EIR or in another document prepared pursuant to CEQA. If CDFG identifies potential impacts which were not disclosed, CDFG will proceed as required under CEQA *Guidelines*, § 15162 and § 15168. The potential for additional

environmental review for specific activities that may occur under the Program is discussed in Chapter 1 of the Draft EIR (Section 1.2.3, Scope of the Draft EIR, page 1-4).

The Draft EIRs adequately disclose and analyze the impacts associated with the Programs and where those impacts are deemed to be significant, identifies feasible mitigation measures to reduce those impacts to less than significant. In sum, the Draft EIRs fully comply with CEQA.

In response to the concern raised regarding biological thresholds, note that ITP Article XXVII., Termination, states

> *This Permit may be terminated by the Department at its sole discretion if circumstances or new information provides evidence that continued program implementation ~~may result in jeopardy to~~ would jeopardize coho salmon, or if such termination is required by law or court order. For the purpose of the Permit, "jeopardy" includes, but is not limited to, to the probable extirpation of any coho salmon cohort in the Shasta River watershed.*

42-3 Please see Master Response 6.

42-4a The commenter is incorrect that "[t]he Program . . . would allow for . . . data to be withheld from the public through mechanisms to put control over this data in the sole hands of the RCDs." Please see response to Comments 6-34 and 6-35.

42-4b Please see Master Response 1.

42-4c Please note that neither the ITP nor the Draft EIR proposes minimum instream flows of 20 cfs as stated by the commenter. The Program includes measures to increase flows in the Shasta River. The Shasta River TMDL requirements are entirely separate from the Program and will require compliance irrespective of Program implementation.

42-5 Please see Master Response 5.

42-6 The comment states that the document, *Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007,* was not used in the preparation of the Draft EIR. This is incorrect. The referenced document was carefully reviewed and pertinent information was incorporated extensively into the Draft EIR. Within Chapter 3.3 this document was cited a total of fifteen times.

42-7 The effects of water diversions on coho salmon and coho salmon habitat are thoroughly described in Chapter 3.2, Geomorphology, Hydrology, and Water Quality; and in Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

42-8a Please see Master Response 1. Existing agricultural practices are part of the baseline for the purpose of the environmental analysis, and are therefore not impacts of the Programs. CDFG's determination regarding baseline is in accordance with CEQA *Guidelines,* § 15125(a) and case law.

42-8b This comment is speculative and does not require a response.

42-8c Each of the ITP mitigation measures has been previously demonstrated to be capable of successful implementation.

42-9 The Program would not authorize any particular land use, but would only provide incidental take authorization for specific Covered Activities and would facilitate Agricultural Operators' compliance with Fish and Game Code, § 1600 et seq. The program approach is consistent with the CDFG's Coho Recovery Strategy, and the analysis in the Draft EIR is appropriate and in accordance with CEQA.

Prior to implementation of most Covered Activities SVRCD and Agricultural Operators will be required to notify CDFG pursuant to Fish and Game Code, § 1602 and obtain a SAA. Prior to issuing a SAA, CDFG is required to determine whether all potential impacts of a proposed project have been analyzed in the Final EIR or in another document prepared pursuant to CEQA. If CDFG identifies potential impacts which were not disclosed, CDFG will proceed as required under CEQA *Guidelines,* § 15162 and § 15168. The potential for additional environmental review for specific activities that may occur under the Program is discussed in Chapter 1 of the Draft EIR (Section 1.2.3, Scope of the Draft EIR, page 1-4).

42-10 Please see response to the previous comment and Master Response 7. With regard to the commenter's statement that the Program seems designed to "allow CDFG to "opt out" of its remediation and enforcement responsibilities," please see Master Response 6.

42-11 Please see response to Comment 25-1. Engineered drawings for a new diversion structure at the Grenada Irrigation District diversion site are currently being developed. Due to the vagaries of grant cycles, landowner coordination, the length of time it takes to develop suitable engineered drawings, and the challenges of implementation, the eight year time frame was identified for this difficult project. As stated above, the Program is not intended to substitute for the Coho Recovery Strategy, nor is it intended to be a vehicle for implementation of the full Coho Recovery Strategy.

42-12 Please see response to Comment 9-2 and Master Responses 5 and 6.

42-13 Please see response to Comment 8-12, first paragraph.

42-14 Please see response to Comments 6-34 and 6-35.

42-15 Please see response to Comments 6-9 and 41-9. In further response, the baseline in the Draft EIR is the baseline under CEQA; it is not and should not be construed as a "baseline" against which take or recovery of coho would be measured. Finally, the commenter's statements regarding the reasons for rejecting the Adjudication of Water Rights Alternative is incorrect. Please see the description of this alternative in Chapter 5. Also note that CDFG does not have authority to administer or enforce decrees.

42-16 The ITP and sub-permits must meet the issuance criteria required pursuant to CESA (including avoidance, minimization, and full mitigation of take) and the Programs in no way foreclose other opportunities and actions to address the issues the comment raises.

42-17 Under CEQA social and economic effects are not considered significant environmental effects, unless they would result in a significant physical change in the environment (CEQA *Guidelines,* § 15131(a)). Furthermore, the Program is not expected to result in a negative impact on the commercial fishery or tribal subsistence, relative to existing conditions; the Program can be expected to provide an overall benefit to the salmon fisheries of the Shasta River and Klamath River.

42-18 Please see Master Response 3.

42-19 The two general issues summarized by the commenter, the potential for Agricultural Operators to favor groundwater because of new regulatory burdens and using groundwater in-lieu of surface water, are disclosed in the Draft EIR under Impact 3.2-4 (page 3.2-42) as *potential* environmental impacts of the Program. The Draft EIR then analyzes the potential magnitude of the impact and discloses the reasons for ultimately concluding that the impact is less than significant. There is no contradiction inherent in disclosing a potential impact and then concluding that such a potential impact would be less than significant with respect to the statutes and guidelines under CEQA.

The Draft EIR concludes that the potential increase in groundwater use that could be attributable specifically to the Program (i.e., not attributable to factors outside the scope or jurisdiction of the Program) would be a less than significant impact.

The link between surface water and groundwater is acknowledged in the Draft EIR (page 3.2-6 and 3.2-8). The existing use of groundwater is not a Covered Activity under the proposed Program. Please see last paragraph of Master Response 4.

42-20 Groundwater extraction in the Shasta River watershed, and the associated effects on coho salmon and other special-status fish species, is a baseline condition that is not caused by the Program. Impact 3.3-2 (page 3.3-50) discusses the potential for the Program to exceed these baseline conditions and cause a significant impact as a result of the requirement to install alternative stock-water systems. The Draft EIR concludes that the potential impact of additional groundwater extraction from these systems is less than significant because the additional volume would be small and the operation of these systems would occur at a time (October through December) when water temperatures are typically not the primary factor limiting coho salmon and other species. Also, please see Master Response 4.

42-21 Please see responses to Comments 6-47 and 42-4c.

42-22 Comment noted. Please see response to Comment 25-1. In further response, any SAA or take authorization CDFG issues to MCWD, whether as part of the Program or outside of it, will need to meet the issuance criteria specified in Fish and Game Code, § 1600 *et seq.*

and CESA (e.g., avoidance, minimization, and full mitigation measures). CDFG cannot exceed these criteria.

42-23 While CDFG recognizes that a lead agency may take a different approach in establishing the baseline, CDFG's baseline determination is well in accord with CEQA *Guidelines*, § 15125(a) and applicable case law. The Program does not authorize any illegal activities. Instead, one of the primary purposes of the Program is to ensure compliance by Program participants with Fish and Game Code, § 1600 *et seq.* and CESA.

In further response, the baseline in the Draft EIR is the baseline under CEQA; it is not and should not be construed as a "baseline" against which take or recovery of coho would be measured.

42-24 Please see Master Response 1.

42-25 Section 4.4 of the Draft EIR addresses CEQA *Guidelines*, § 15126.2(c). This section requires a Lead Agency to identify and discuss significant irreversible environmental changes that might be caused by the project due to an irretrievable commitment of resources or an environmental accident associated with the project.

The commenter states that "permitting ongoing diversions, dam impoundment, unregulated groundwater use and resultant coho decline without proportionally adequate mitigation does commit future generations to undesirable uses and could potentially cause irreversible damage to the Shasta River as a viable salmonid-bearing stream."

CDFG has met the requirements of Section 15126.2(c) in that it has reviewed the Program and determined it will not result in a significant irreversible environmental change for the following reasons:

- The Covered Activities authorized and the mitigation measures required under the Program will not require a large commitment or the continued commitment of non-renewable resources (such as fossil fuels).
- The primary and secondary impacts of the Program will not commit future generations to similar uses. Participation in the Program is voluntary and the Program expires ten years from the effective date of the ITP.
- Should an environmental accident occur (such as a fuel spill), due to the nature of the Covered Activities and the mitigation measures, it is unlikely that the impact of the accident would be so severe as to be irreversible.

With regards to the diversion of water and water impoundments, these are historic activities which are part of the existing physical setting in the Shasta River watershed and therefore are a part of the baseline for purposes of this environmental analysis. The use of groundwater is not a Covered Activity under the Program and DFG does not typically have authority over its use.

42-26 The Draft EIR does not state that the No Program Alternative would "allow CESA violations to continue." Instead, it states (page 5-9):

> *Under the No Program Alternative, CDFG would not issue a watershed-wide ITP or enter into a watershed-wide SAA Memorandum of Understanding (MOU) and Master List of Terms and Conditions (MLTC). Instead, SVRCD, DWR, and each Agricultural Operator would need to comply with Fish and Game Code, § 1600 et seq. and/or CESA on an individual basis.*

It goes on to state (also on page 5-10),

> *It is likely that many Agricultural Operators could not afford or would choose not to go through with an individual permitting process, potentially resulting in some Agricultural Operators operating either out of compliance with Fish and Game Code, § 1600 et seq. and CESA or terminating their usual operations.*

42-27 Because CDFG cannot make a consistency determination absent an incidental take statement (ITS) or ITP from (in this case) NMFS, the presumption underlying the Consistency Determination Alternative is that CDFG would not issue any ITPs under the Program but would wait and issue a Consistency Determination after NMFS issues an ITS or ITP. In the meantime, CDFG would process any individual requests for an ITP and/SAA and, on a case by case basis, would bring CESA and Fish and Game Code, § 1602 enforcement actions forward. By contrast, the Program provides an opportunity to bring a large number of water diverters into compliance with CESA in a much shorter period of time. The Program in no way affects CDFG's ability to enforce CESA or Fish and Game Code, § 1602 on a case-by-case basis.

In regard to baseline, please see response to Comment 42-15. Also, CDFG disagrees with the commenter's conclusion that the Draft EIR "thus assumes that CDFG can and *will* do nothing to enforce the law." (Emphasis in original.)

42-28 CDFG believes the commenter intended to state, ". . . *re-adjudication* of water rights is infeasible . . . ." rather than "*over-appropriation* of water rights is infeasible." (Emphasis added.) Indeed, CDFG rejected the re-adjudication alternative but not entirely on feasibility grounds. As CDFG explained in the Draft EIR (page 5-5):

> *[I]t would not meet the Program's basic objectives to implement selected key coho salmon recovery tasks (other than increasing streamflow) and to facilitate compliance by the SVRCD Agricultural Operators, and DWR with Fish and Game Code, § 1600 et seq. and/or CESA, which the Program would accomplish in part by establishing a watershed-wide set of terms, conditions, and mitigation measures for ongoing agricultural operations to ensure that take of coho salmon is avoided, minimized, and mitigated. Also, any readjudication would not apply to any water rights based on riparian claim unless the court or SWRCB agreed to include those claims as part of the re-adjudication. In order to implement this alternative, there must be at least one willing party affected by the decree to petition the court or SWRCB in the first place, but that party has not been identified at this time. As mentioned above, re-opening the decree would be a very time-consuming and expensive alternative that given the multitude of interested parties would be very controversial and uncertain in its outcome. Any expense would substantially*

increase if SWRCB conducted the re-adjudication, and in doing so were required to comply with CEQA. Finally, it is not certain that any re-adjudication would go far enough to adequately protect public trust resources. For the foregoing reasons, this alternative is rejected from further consideration.

Further, CDFG's rejection of this alternative in no way precludes an interested party from attempting to "re-open" the decree. Finally, CDFG takes note of the comment that the SWRCB "could, if it wishes and for good cause, impose additional conditions on the existing water rights sufficient to be in compliance with existing law."

42-29 The Draft EIR rejected the alternative to remove Dwinnell Dam (page 5-7) as infeasible for the reasons stated in Chapter 5 of the Draft EIR, which do not include the potential cost of the removal. It does include the fact that CDFG does not have the statutory authority to require its removal (see response to Comment 34-4), and CEQA does not grant an agency new powers independent of the powers granted to the agency by other laws (CEQA *Guidelines*, § 15040(b)).

In the Coho Recovery Strategy, the Shasta-Scott Pilot Program Chapter (Chapter 10) includes Task #Shasta HM-2b, which identifies the task of developing a "working group to create long-range strategy for Greenhorn and Dwinnell dams, including assessment of suitability of habitat upstream, options for passage or modification/removal." However, the Program is not intended and should not be construed as a comprehensive plan or program to recover coho salmon (please see Master Response 7). Under the Program, specific key coho recovery tasks from the Coho Recovery Strategy were selected to fully mitigate the authorized take of coho salmon and these measures do include the requirement for MWCD to study the feasibility of providing fish passage at Dwinnell Dam (ITP Article XV.J.).

Several reasons are stated for rejection of this alternative, including CDFG's lack of authority to require the Montague Water Conservation District (MWCD), the owner and operator of the dam, to dismantle it. Another reason stated is that, because the dam is part of the baseline for the purpose of the environmental analysis, and its impacts are not due to the Program, removal of the dam would not reduce or avoid impacts of the Program itself. The commenter's suggestion that Fish and Game Code, § 5937 provides that authority is incorrect. The issue regarding the applicability of Fish and Game Code, § 5937 to Dwinnell Dam is a legal and regulatory issue that is beyond the scope of the Draft EIRs. Fish and Game Code, § 5937 gives CDFG the authority to require "sufficient water to pass over, around, or through the dam, to keep in good condition any fish that may be planted or exist below the dam." It does not give authority to CDFG to have the dam removed. Please note that, were MWCD to participate in the Program, it would be required to comply with ITP Article XV.J., Additional SVRCD and Sub-permittee Avoidance and Minimization Obligations. Also see Chapter 2 of the Draft EIR.

CEQA does not require an analysis of the cost of alternatives, but only of their feasibility, their ability to meet Program objectives, and their ability to avoid or reduce environmental impacts of the Program.

42-30 CDFG agrees it is appropriate to investigate the benefits of enabling coho salmon and other anadromous species to access the upper Shasta watershed. Please see the description and analysis of the Parks Creek-Upper Shasta River Fish Bypass Channel Alternative in Chapter 5 of the Draft EIR. Furthermore, The ITP requires MCWD to evaluate the feasibility of fish passage over or around Dwinnell Dam.

42-31 The Shasta River TMDL requirements are entirely separate from the Program and will require compliance irrespective of Program implementation. Please see response to Comment 6-47. The existence of Dwinnell Dam is part of the physical environmental conditions existing at that time that the baseline was established (April 28, 2005) and against which the potential environmental impacts of approving and implementing the Program were measured. An alternative that would include the removal of Dwinnell Dam is considered in the Draft EIR (page 5-7), but it is rejected as infeasible. Please see the first paragraph of the response to Comment 6-44.

42-32 Please see response to Comments 6-44, 8-13, 34-4, and 42-29.

42-33 CDFG has determined the that Program's Covered Activities have the potential to take coho salmon. In issuing incidental take authorization for these activities, CDFG will proceed in accordance with CESA. As to the suggested alternative, the alternatives analysis in the Draft EIR fully complies with the requirements of CEQA, including the requirement to analyze a reasonable range of feasible alternatives. Please refer to Chapter 5 in the Draft EIR.

42-34 Comment noted. The referenced letters are responded to separately in this Final EIR. CDFG also acknowledges receipt of PCFFA/IFR's comments on the Shasta River Watershed DO and Temperature TMDLs to the SWRCB, dated November 29, 2006. These comments do not address the Draft EIR. Much of the information contained in these comments, and many of the sources cited, were reviewed and summarized in the Draft EIR; see Chapter 3.2 and Chapter 3.3.

42-35 Attachment 1: PCFFA/IRF Comments on Shasta River Watershed DO and Temperature TMDLs to the SWRCB (11/29/06). This attachment addresses the Shasta River Action Plan, not the Draft EIR for the Program and requires no response.

42-36 Attachment 2: Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007, Jeffrey Mount, Peter Moyle and Michael Dias, Principal Investigators. A report prepared for the U.S. Bureau of Reclamation by the Center for Watershed Studies, UC Davis, CA (undated). CDFG is aware of this document and it was reviewed for and been referenced in the Draft EIR.

Comment Letter 43: T. Connick

43 This Comment Letter raises eight issues, the first seven of which are numbered (1-7). CDFG responds to each one as follows:

1. The purpose of the hold harmless and indemnification provision is to afford CDFG and the SVRCD protection against any harm or injury that might result from the landowner's negligence of willful misconduct. CDFG and the SVRCD afford the landowner similar protection in regard to their own actions while on the landowner's property.

2. The purpose of the provision the comment references is to make it clear that the permittee is undertaking a Covered Activity voluntarily, thereby underscoring the fact that CDFG or the SVRCD will not be responsible for any harm or injury that might occur to the permittee or another party in conducting the activity.

3. This comment is divided into five separate comments. CDFG responds to each as follows:

    a. The Right of Entry Agreement (MLTC Exhibit 1. Attachment B) was being developed in coordination with both RCDs at the time the Draft EIR was released and is included in Appendix B of this Final EIR.

    b. In general, non-enforcement personnel employed by the State have no greater right of access over private property to reach a "waterway" than the general public. Further, Fish and Game Code, § 857 requires non-enforcement CDFG personnel to obtain a landowner's consent before entering the landowner's property, except in cases of emergency. That is the reason for MLTC Condition 17 and the access agreement referenced as MLTC Exhibit 1, Attachment B.

    c. To participate in the Program, the sub-permittee must ensure access to CDFG and the SVRCD to the project site. If the sub-permittee does not own the property where the project is located, and does not have the authority to allow a third-party like CDFG or the SVRCD access to the property, it is the responsibility of the sub-permittee to make the proper arrangement to allow such access. If the sub-permittee cannot make such an arrangement, he or she will likely be precluded from participating in the Program.

    In regard to insurance, CDFG is insured through the State. CDFG does not have any information regarding SVRCD's insurance.

    d. To participate in the Program, the sub-permittee must ensure access to CDFG and the SVRCD to the project site. Hence, if the sub-permitee refuses to grant such access, the sub-permitee is not eligible to participate in the Program. However, denying access and/or not participating in the Program would not preclude CDFG from enforcing Fish and Game Code, § 1600 et seq., CESA, and any other law that might apply to a particular project regardless of its location. CDFG cannot force any party to participate in the Program; it is a voluntary Program. However, regardless of whether the party chooses to participate, he or she must comply with all laws and regulations that apply to a particular action or activity by that party.

    e. CDFG does not have any information regarding the SVRCD's insurance coverage.

Regarding the comment that the Program "now has expanded to include CEQA," issuance of the ITP, sub-permits, and SAAs constitute discretionary permitting actions by CDFG, and therefore, pursuant to CEQA Statute, § 21080(d), CDFG has prepared an EIR for the Program.

4. This is a Program EIR covering individual activities subject to Fish and Game Code, § 1602 and § 2081, which have similar effects and can be mitigated in similar ways. The exact numbers or locations of these activities cannot be precisely identified prior to Program implementation. Similarly, the reach-specific mitigations depend on the site-specific and cumulative participation in the Programs. Consequently, identification of measurable objectives in any particular reach would provide an unwarranted degree of specificity and would be speculative.

5. CDFG has not depicted the biological goals and objectives in GIS format. Please see the above response.

6. Any response to this question would be speculative. In addition, please see response to 4 above.

7. Comment noted.

In response to the final comment, with regard to the Program, all comments received at the address specified in the Notice of Preparation of the Shasta River Watershed-wide Permitting Program were included in the Draft EIR, which was posted on CDFG's internet website.

Comment Letter 44: Emmerson Investments, Inc.

44-1 Comment noted.

44-2 Please see Master Response 9. CDFG considered allowing Program participants the option of obtaining only a SAA or only a sub-permit, rather than having to obtain both in order to participate. However, CDFG rejected the former option because it determined that after complying with the conditions in a SAA, take of coho salmon could still occur. The only exception to this requirement is above Dwinnell Dam where only a SAA is required because CDFG has determined the potential consequences to coho salmon from operating a diversion upstream of the dam are negligible, due to the overriding effects of the Lake Shastina impoundment and operation of Dwinnell Dam.

Regarding the remainder of the comment, comment noted.

44-3 Please see response to Comment 3-25. In further response, because arbitration of the measures in the SAA is not allowed in the Program, if an Agricultural Operator elects to obtain a SAA outside the Program for one diversion, he or she would still be able to participate in the Program for any other Covered Activities described in the Program for which a SAA is required.

44-4 The commenter's question at the end of this comment ("What is the process for determining culpability?") is somewhat vague. If the commenter is asking how CDFG determines whether a particular Covered Activity requires a SAA or take authorization, that is based on the statutory requirements in Fish and Game Code, § 1600 *et seq.* (e.g., notification is required for any substantial diversion of water) and the fact that the Covered Activities can result and have resulted in take of coho salmon.

44-5 CDFG acknowledges and appreciates the time and effort that the commenter and others have spent to date, and are likely to continue to spend, on the Program to ensure that their interests and rights are protected. However, the current condition of the Shasta River and Shasta River coho salmon populations call for protective measures to be implemented to ensure that these public trust resources are preserved. Fish and Game Code, § 1600 *et seq.* and CESA do not exempt particular entities from complying with those statutes. CDFG has tried to structure the Programs to minimize the costs of such compliance by Program participants.

The potential for the Program to affect the ability of Agricultural Operators to continue to operate profitably, and the possibility that such an effect could result in a change of land use from agriculture to a non-agricultural use, is examined in Impact 3.1-1 in Chapter 3.1, Land Use and Agriculture, and found to be less than significant.

In regard to the comment questioning CDFG's ability to verify water rights, under ITP Article XV.A.2., the sub-permittees agree to verify the quantity of water diverted (see MLTC Exhibit 1, Attachment A: Water Right Verification Form). For those diversions that are watermastered, this verification will be performed on behalf of the sub-permittee by the watermaster. ITP Article XV.A.3. requires the installation of headgates and measuring devices or flow meters at all diversions.

44-6 Potential effects on air quality and electrical supply of increased use of pumps to comply with water efficiency requirements of the Program are considered in Chapter 3.7, Public Utilities, Services, and Energy.

44-7 Please see Master Response 2.

44-8 CDFG acknowledges that, as stated in ITP Article XIII.E.1.(d), sub-permittees will be

> *"solely responsible for any costs the sub-permittee incurs to implement any avoidance or minimization measures required under a sub-permit."*

The same is true for SAAs. However, CDFG and the SVRCD will make every effort to assist Program participants in reducing their compliance costs because doing so will help the Programs to succeed, which in turn will benefit coho and other fish and wildlife species in the Program Areas. Also, as a reminder, project proponents are usually responsible for meeting any compliance costs associated with obtaining permits and other authorizations for the project. As the Draft EIR explains (page 2-6), those costs are much less under the Program because the Program participant will not need to pay a

notification fee, environmental filing fee, and any CEQA-related costs, and the SVRCD will be meeting the full mitigation requirement under CESA the participant would otherwise need to meet were he or she to obtain take authorization outside the Program.

44-9 Possible future permitting efforts by CDFG for individual projects outside of the Program but within the Program Area will be analyzed by CDFG as required by CEQA on a project-specific basis. The applicant may utilize any information in the Draft EIR relevant to the particular project if such information exists.

44-10 CDFG appreciates Mr. Emmerson's comments and looks forward to working with him toward successful implementation of the Program.

Comment Letter 45: Bruce E. Fiock

45-1 Comment noted.

45-2 The Right of Entry Agreement (MLTC Exhibit 1. Attachment B) was being developed in coordination with both RCDs at the time the Draft EIR was released and is included in Appendix B of this Final EIR. In response to the second part of this comment, please see response to Comment 43-1 (item 3.c).

45-3 To participate in the Program, the Program participant must obtain both a SAA and a sub-permit. The only exception to this requirement is above Dwinnell Dam where only a SAA is required, because CDFG has determined the potential consequences to coho salmon from operating a diversion upstream of the dam are negligible. This is due to the overriding effects of the Lake Shastina impoundment and operation of Dwinnell Dam.

Comment Letter 46: Dr. Lowell Novy

46-1 This comment is introductory in nature. CDFG appreciates Dr. Novy's support for measures to increase the efficiency of water use to benefit stream flow and improve water quality in the Shasta River.

46-2 The existing use of groundwater is not a Covered Activity under the proposed Program. The Draft EIR addresses the potential increase in groundwater use that could be attributable specifically to the Program (i.e., not attributable to factors outside the scope or jurisdiction of the Program) and concludes that this would be a less than significant impact (Impacts 3.2-4 and 3.3-2). Further, as stated in the ITP, prior to implementing any alternative stock-watering system (including use of groundwater in-lieu of surface water), the SVRCD shall identify priority areas where additional instream flows in the fall would contribute significantly to adult coho salmon migration.

46-3 CDFG appreciates the suggestion regarding a modification of the In-stream Flow Alternative. However, CDFG does not typically have authority over the pumping of groundwater. Authority over groundwater pumping rests with Siskiyou County and in

certain circumstances, with the SWRCB. Please see the final paragraph of Master Response 4.

46-4 Numerous provisions in the ITP require the SVRCD to prioritize, with CDFG concurrence, avoidance, minimization, and mitigation actions. It is expected that, in particular, these actions will be focused on the crucial upper Shasta River-Big Springs Creek-Parks Creek area, the area of the watershed that, according to recent research by CDFG staff and others, is where the majority of wild coho salmon spawn and rear (see Draft EIR page 3.3-9 and 10).

46-5 This comment does not pertain to the adequacy of the Draft EIR. Comment noted.

46-6 Comment noted. The Program does not propose to install groundwater wells up-gradient of the Big Springs Creek complex. As stated above, CDFG does not typically have authority over the pumping of groundwater. Authority over groundwater pumping rests with Siskiyou County and in certain circumstances, with the SWRCB.

46-7 The existing use of groundwater is not a Covered Activity under the proposed Program. As stated above, CDFG does not typically have authority over the pumping of groundwater. Authority over groundwater pumping rests with Siskiyou County and in certain circumstances, with the SWRCB.

46-8 An EIR should rely on the best available scientific information. A study such as that suggested by the commenter is beyond the scope of an EIR.

46-9 Please see response to Comment 46-7. Also, implementation of the proposed Watershed-wide permitting Program is not expected to have any impacts on groundwater availability.

46-10 Reference to Draft EIR page 3.2-3 - The best available information on groundwater characteristics and dynamics within the Shasta River watershed was reviewed as part of the background research for the Draft EIR. Please see the references section at the conclusion of Chapter 3.2. Development of a groundwater management policy is beyond the scope of the Draft EIR.

Reference to Draft EIR page 3.2-8 - The alternatives analysis in Chapter 5 of the Draft EIR fully complies with the requirements of CEQA, including the requirement to analyze a reasonable range of feasible alternatives. Also, the fact that CDFG does not typically have authority over the pumping of groundwater raises the question of whether the alternative the comment suggests would even be feasible.

Reference to Draft EIR page 3.2-12 - Please see Master Response 4.

First reference to Draft EIR page 3.2-19 - Please see response to Comment 46-10a.

Second reference to Draft EIR page 3.2-19 - The referenced statement is not intended to be inclusive of all potential causes of high water temperatures.

46-11 a) Please see response to Comments 46-7 and 46-8.

b) Please see Master Response 4.

46-12 Comment noted.

46-13 Please see Master Response 4.

46-14 Please see Master Response 4.

46-15 Comment noted.

46-16 The Draft EIR examines the importance of the Big Springs area as one of the few areas in the Shasta River watershed that continue to provide adequate spawning and rearing habitat for coho salmon. Please see Chapter 3.3, Biological Resources: Fisheries and Aquatic Habitat.

In this case, extraction and diversion are synonymous – the point being that most of the water that feeds Big Springs Creek is used consumptively for irrigation (i.e., via surface water diversions and groundwater extraction). Development of a groundwater management policy is beyond the scope of the Draft EIR.

46-17 Please see response to Comments 46-7 and 46-8.

46-18 Please see response to Comments 46-7 and 46-8.

46-19 CDFG is aware of the importance of the groundwater production in the Big Springs Complex. Also, please see response to Comment 46-4.

46-20 Please see response to Comment Comments 46-7 and 46-8.

46-21 Please see Master Responses 4 and 8. Likely effects of global climate change are generally described in Chapter 3.7, Public Services, Utilities, and Energy.

46-22 Please see response to Comment 46-3.

46-23 Likely effects of global climate change are generally described in Chapter 3.7, Public Services, Utilities, and Energy; an analysis of the particular effects of global climate change on groundwater extraction are beyond the scope of the EIR.

As previously stated, a study such as that suggested by the commenter is beyond the scope of the EIR.

46-24 The remainder of this letter is an attachment that does not comment on the Draft EIR.

Comment Letter 47: Brian Rice

47-1 The potential for the Program to result in conversion of agricultural lands to other uses is considered in Chapter 3.1, Land Use and Agriculture; see Impact 3.1-1 in that chapter. See also analysis of potential cumulative effects on land use and agriculture in Chapter 4, Cumulative Effects and Other Required Topics.

47-2 Please see response to Comment 3-19 (Recommendation 17). Please note that before accessing a sub-permittee's property, CDFG must notify the sub-permittee at least 48 hours in advance, either verbally or in writing. At that time, CDFG would be able to provide answers to the questions proposed by the commenter.

Comment Letter 48: J. Roggenbuck, Hidden Valley Ranch

48-1 CDFG appreciates the support of the commenter.

48-2 This is a Program EIR covering individual activities subject to Fish and Game Code, § 1602 and § 2081, which have similar effects and can be mitigated in similar ways. The exact numbers or locations of these activities cannot be precisely identified prior to Program implementation. Similarly, the reach-specific mitigations depend on the site-specific and cumulative participation in the Programs. Consequently, identification of measurable objectives in any particular reach would provide an unwarranted degree of specificity and would be speculative.

To determine whether the full mitigation requirement of CESA is being met, CDFG has developed priorities for long-term population monitoring of salmonids in the Shasta and Scott River watersheds. As stated under Monitoring and Adaptive Management Plan Article IX., Measurement of the Overall Success of the Permit Program, the data collected will allow for an analysis of adult to juvenile ratio trends over time to determine if the Programs are resulting in a stable or increased production rate based on the ratio of juveniles per adult in the watershed and whether conditions for coho salmon within the watersheds are improving under the Programs. See Appendix A of this volume.

With regard to the course of action at the terminus of the Program, the "Covered Activities" under the Program require compliance with Fish and Game Code, § 1600 *et seq.* and CESA. Unless a change in regulations or the status of coho salmon under CESA occurs which dictates otherwise, SAAs and incidental take authorization will continue to be required. When the Program ends in 10 years, CDFG and SVRCD may elect to continue the Program, or a modification of the Program, or the Program may not be renewed, in which case Agricultural Operators would be required to obtain SAAs and ITPs on an individual basis.

48-3 Please see response to Comment 44-8.

48-4 The commenter asks whether a Program participant who already has a SAA will need to submit a notification to CDFG. To participate in the Program, an agricultural operator

with an existing SAA will need to submit a notification to CDFG along with a copy of the SAA. This will allow CDFG to determine whether or not the existing SAA authorizes the Covered Activity or Activities described in the notification. This is especially important for water diversions because CDFG has observed that in many cases SAAs issued to Agricultural Operators in the Program Areas might cover the maintenance and/or operation of a water diversion structure, for example, but not the actual diversion of water, which under Fish and Game Code, § 1602 is an activity that requires notification. This will also allow CDFG to determine whether the measures in the existing SAA are sufficient to protect fish and wildlife resources, particularly coho salmon; in many cases SAAs pre-date the listing of coho salmon under CESA. If the SAA is deficient in either case, CDFG will either amend the existing SAA or issue a new SAA that will supersede the existing one. In either case, however, the Program participant will not be responsible for paying an amendment or notification fee.

48-5 Please see response to Comment 44-8.

48-6 Comment noted.

48-7 Please see response to Comment 44-8.

48-8 The SVRCD will assist any Program participant in completing the application for a SAA and sub-permit. The applicant will be responsible for submitting the appropriate forms to CDFG. Each party who expresses interest in the Program will receive an enrollment package from the SVRCD that identifies the steps he or she will need to take to enroll in the Program. A document describing the application process is included in Appendix D of this Final EIR.

48-9 At most sites with potential for significant impacts to nesting special-status birds, work may only begin after July 31 when the young have typically fledged; therefore, potential impacts will be avoided, and no surveys will be required (See MLTC Condition 71). Where work after July 31 would still have the potential to significantly impact nesting special-status birds, work may not begin until the potential for impacts no longer exists (see MLTC Condition 72). CDFG may advance the window at individual work sites if there is no suitable habitat present, or if surveys determine that nesting birds will not be affected, either because the animals are not present or the nests are safely distant or otherwise screened from the activity. “Suitable habitat” in this sense varies between species and would be determined by CDFG, for example, for the willow flycatcher in accordance with Figura (2007).

48-10 Covered Activity 4 is for the movement of livestock and vehicles across flowing streams and the construction, maintenance, and use of livestock and vehicle crossings and livestock watering lanes. All existing livestock and vehicle crossings will be required to be in compliance with the conditions in the ITP, as incorporated into the sub-permit, and SAA. ITP Article XV.D.(4) requires SVRCD to conduct annual monitoring of all livestock and vehicle crossings installed under the Program.

48-11 Activities which benefit listed species other than coho salmon cannot provide "credits" towards the Agricultural Operators' required coho salmon avoidance and minimization measures, because the activity would not provide a benefit to coho salmon.

48-12 The commenter is concerned that avoiding impacts to special-status nesting birds may affect regular ranch activities (Draft EIR Mitigation Measure 3.4-1d, page 3.4-31). The bird surveys and subsequent buffer distances apply only when performing Covered Activities under the Program.

48-13 The sub-permittee will be responsible for preparing a grazing management plan if he or she wants to graze livestock within a riparian zone. ITP Article XV.E.5 identifies the minimum information the plan must include:

> *The grazing management plan shall address the timing, duration, and intensity (number of livestock allowable per unit area [i.e., stocking rate]) of livestock grazing within the riparian zone and shall explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat. In addition, the grazing plan shall describe the means by which the livestock will be prohibited from entering live streams.*

Also, please see response to Comment 3-20 (Recommendation 20).

48-14 The time restrictions are specific to instream work. If a cultural resource is present in the drainage and processing the resource delays start of instream work such that it will extend past the October 15 end date, Mitigation Measure 3.3-1(c) may provide additional time to complete the work. At such time as CDFG determines coho salmon are in the stream system and may be harmed by the work being performed, all instream work will be required to stop.

48-15 Comment noted. In further response, the ITP is a permit that will not be codified. Generally speaking, only statutes enacted by the Legislature are codified.

Comment Letter 49: Blair Smith

49-1 ITP Article XVII.C. has been revised and the text cited in the comment deleted. It now reads;

> *C. DWR shall meet with the Department in person or by telephone on a weekly basis during the diversion season in order to inform the Department of any points of diversion in the watermastered areas where stranding is probable. The Department shall make a determination regarding whether or not any diversion is causing or will cause the stranding of coho salmon. For the purpose of this Permit, "stranding" is defined as a situation in which coho salmon are in a location with poor aquatic habitat conditions, due to a reduction in flow, from which they cannot escape. ~~The Department shall instruct DWR to reduce or cease the diversion and/or change the timing or manner of the diversion and take any other measures within DWR's control that the Department determines are necessary to correct or avoid stranding~~*

~~*and DWR shall implement those measures immediately. However, before instructing DWR as described above, the Department will make every effort to work with SVRCD and sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion, all in accordance with Section XVIII.*~~

D. The Department will make every effort to work with SVRCD and sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion.

E. If the Department determines that reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is the only available measure to avoid or minimize stranding, the Department shall inform the sub-permittee of the required measures to be implemented to reduce stranding. The Department shall work with DWR to implement such measures within DWR's control.

With regard to the last sentence in "E." above, on June 6, 2002, CDFG and DWR entered into a Memorandum of Understanding on "Procedures for Watermasters on the Scott and Shasta River Systems to Coordinate Actions to Avoid the Take of Coho Salmon" (see Appendix C in this volume) in which both agencies agreed that, "DWR will implement the reductions or cessation in diversions or changes in the timing or manner of diversions subject to DWR Watemaster Service under the decrees as necessary to avoid the take of Coho Salmon" (Item 6). CDFG has no intention of terminating the Memorandum of Understanding with DWR.

Comment Letter 50: Tom Wetter

50-1 CDFG appreciates the commenter's remarks. This comment is introductory in nature.

50-2 Comment noted.

50-3 The Draft EIR examines an alternative to the Program in which water rights would be re-adjudicated, but finds this alternative to be infeasible. Please see the discussion of Rejected Alternative 2: Adjudication of Water Rights, in Chapter 5.

50-4 The Draft EIR does not make light of the potential for the Program to adversely affect the economy of Siskiyou County. This topic is thoroughly explored both in Chapter 3.1, and, in a cumulative context, in Chapter 4. Please note that under CEQA, social and economic effects are not considered significant environmental effects, unless they would result in a significant physical change in the environment (CEQA *Guidelines* § 15131(a)). As analyzed under Impact 3.1-1 (page 3.1-25), the potential for the Programs to result in the conversion of agricultural land to non-agricultural uses, which could be considered a significant effect under CEQA, was determined to be less than significant. The same effect is considered in the Cumulative analysis in Chapter 4 of each document, and also found to be less than significant.

50-5 CDFG appreciates Mr. Wetter's comments, and his involvement in the process.

Comment Letter 50.1: Dave Webb

50.1-1 Comment noted. While the commenter states that several of his comments may also apply to the Scott River Watershed-wide Permitting Program Draft EIR, the comments are not specific in this regard; therefore, this letter is only included in the responses to comments on the Shasta document.

50.1-2 CDFG disagrees with the commenter's description of the "sole purpose of this or any ITP." Sections 2081(b) and (c) of CESA stipulate that the Department may issue an ITP for a State listed threatened or endangered species only if specific criteria are met. These criteria are reiterated in Title 14 CCR, Sections 783.4(a) and (b), and are as follows:

- The authorized take is incidental to an otherwise lawful activity;
- The impacts of the authorized take are minimized and fully mitigated;
- The measures required to minimize and fully mitigate the impacts of the authorized take:
  a. are roughly proportional in extent to the impact of the taking on the species,
  b. maintain the applicant's objectives to the greatest extent possible, and
  c. are capable of successful implementation;
- Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and
- Issuance of the permit will not jeopardize the continued existence of a State-listed species.

CDFG agrees that water temperature reduction is a priority in the Shasta River. Last, since the Nature Conservancy has recently acquired what was previously known as the Busk Ranch it appears likely that coho salmon conservation measures may be implemented on Big Springs Creek in a timely manner.

50.1-3 Pursuant to ITP Article XXVII. the Permit (and subsequently any and all sub-permits):

> *… may be terminated by the Department at its sole discretion if circumstances or new information provides evidence that continued program implementation ~~may result in jeopardy to~~ would jeopardize coho salmon, or if such termination is required by law or court order. For the purpose of the Permit, "jeopardy" includes, but is not limited to, to the probable extirpation of any coho salmon cohort in the Shasta River watershed.*

50.1-4 CDFG appreciates the commenter's definition of bioengineering, and acknowledges that it is more complete and comprehensive than the definition provided in the Draft EIR.

50.1-5 Please see response to Comment 40-3.

50.1-6 The Programs do not confer regulatory authority on the RCDs or any other party. The enforcement responsibilities of CDFG cannot be assigned. Please see Master Response 6.

50.1-7 The Program's relative contribution to the overall risk of extirpation sets the jeopardy standard of the ITP. See also Master Response 1 and the response to Comment 41-3.

Addressing the commenter's question regarding the circumstances under which termination of the ITP might occur, the loss of a year class refers to loss within the Shasta River population only. ITP Article XXVII., Termination, will apply "if circumstances or new information provides evidence that continued Program implementation would jeopardize coho salmon…" in the Shasta River watershed. Termination will not be invoked unless it can be shown that "jeopardy" is a result of Program implementation.

2.2.3 Responses to Oral Comments Received at the Public Hearing, Fort Jones Public Library, November 18, 2008

Comment 51.1: Marcia Armstrong

51.1-1 Please see response to Comment 2-2.

51.1-2 The commenter requests an extension of the comment deadline. Based upon our receipt of a substantial number of comments we believe the 60 day review period, which exceeded the requirements of the California Environmental Quality Act, was sufficient and we decided not to extend the review period.

51.1-3 Please see responses to comments 2-10 and 2-11.

51.1-4 Comment noted. CDFG will institute an outreach program, including a question/answer fact sheet, to provide information to the agricultural community.

Comment 51.2: Mark Baird

51.2-1 Comment noted. CDFG will institute an outreach program, including a question/answer fact sheet, to provide information to the agricultural community.

51.2-2 The commenter expresses frustration at the burdens imposed by laws, regulations, and permits. The comment is noted.

51.2-3 Please see response to Comment 47-2, above.

51.2-4 CDFG does not have jurisdiction over the fishing activities of other nations.

51.2-5 The commenter believes the ITP to be coercive, given the choice between the Program and the costs of complying as an individual permittee. It is not the intent of CDFG to coerce anyone into Program participation, but rather to provide a streamlined means of complying with CESA and Fish and Game Code §1600.

51.2-6 Please see response to Comment 3-18.

51.2-7 CDFG is responsible for enforcing the Fish and Game Code on a statewide basis, including Fish and Game Code, § 1600 *et seq.* and CESA. Agricultural diverters in the Scott River watershed will have three options: 1) participate in the Programs, and by doing so comply with Fish and Game Code, § 1600 *et seq.* and obtain coverage for any take of coho salmon that might result from a "Covered Activity"; 2) obtain a SAA and ITP through the standard permitting process outside the Programs, which will be more costly and time-consuming than obtaining the same authorizations through the Programs; or 3) elect not to participate in the Programs or obtain a SAA and/or ITP outside the Programs thereby risking prosecution for non-compliance with Fish and Game Code, § 1602 and CESA.

51.2-8 Fish screens are required to have bypass flows and a means for fish entering the diversion channel to return to the stream from which they came.

51.2-9 The comment is noted; however, CDFG disagrees with this statement.

Comment 51.3: Jeff Fowle

51.3-1 This comment is introductory in nature.

51.3-2 This comment is introductory in nature.

51.3-3 Evapotranspiration of instream flows is a natural phenomenon that coho salmon have evolved with. Please also see response to Comment 3-2, above.

51.3-4 Under the ITP sub-permits, a sub-permittee must provide non-enforcement CDFG personnel permission to access the sub-permittee's property (MLTC Condition 17) to verify compliance with, or the effectiveness of, the avoidance and minimization measures required by their sub-permit and for fish population monitoring; SVRCD/SQRCD personnel must also be provided permission to access the sub-permittee's property where necessary to inspect sub-permittee's screens, headgates, measuring devices, diversion structures and livestock and vehicle crossings annually; and/or to allow SVRCD/SQRCD to complete the mitigation obligations required in ITP Article XIII.E.2 and for CDFG and SVRCD/SQRCD to monitor the effectiveness of those measures.

CDFG and the SVRCD/SQRCD must notify the sub-permittee at least 48 hours in advance, whether verbally or in writing. Nothing in the Program restricts the sub-permittee from accompanying CDFG or the SVRCD/SQRCD on their property; in fact, sub-permittee participation is encouraged. Insofar as the commenter is primarily concerned about obtaining landowner permission, as stated above, CDFG and SVRCD/SQRCD will not enter private property without the landowner's permission. On the other hand, the sub-permittee must grant such permission as a condition of participating in the Programs. In further response, please see Master Response 5.

51.3-5 The commenter finds the Program is inconsistent with respect to grazing. ITP Covered Activity 10, Grazing Livestock, includes the grazing of livestock adjacent to the channel or within the riparian exclusion zone of the Scott River or its tributaries in accordance with a grazing management plan approved by CDFG. The commenter also notes that grazing is a tool for managing riparian vegetation. This, under certain circumstances, is acknowledged to be true. With regards to accepting other grazing plans please see response to Comment 3-20 (Recommendation 20).

The second part of the comment requests clarification that grazing plans associated with the Program do not control nor restrict grazing outside of the riparian fenced corridors. The Program places no restriction on grazing outside this area. Further, CDFG will not assume regulatory authority for grazing management on land outside the riparian exclusion zone.

51.3-6 Notification under Fish and Game Code, § 1600 *et seq.* is required for any activity that will substantially change the bed, channel, or bank of a river, stream, or lake. Normally, such an activity will be on or within the bed, channel, or bank, but in some instances, the activity can be outside those features and still cause a change to the bed, channel, or bank. In either case, notification would be required. CESA prohibits the take of a listed species unless the take is authorized by CDFG. The prohibition extends to any location where a listed species might occur. The Programs do not expand CDFG's jurisdiction under these statutes. At the same time, CDFG will exercise its jurisdiction, accordingly.

51.3-7 Please see response to Comment 3-21 (Recommendation 24).

51.3-8 Comment noted. Agriculture retains open space and can be consistent with coho recovery. The Program accepts this premise as part of its most basic assumptions.

51.3-9 and 51.3-10

The Draft EIR is not a document written to satisfy the provisions of the National Environmental Policy Act (NEPA), and is not required to provide a cost-benefit analysis or other requirements of NEPA that are not also required by CEQA. In further response, please see response to Comment 2-10 regarding economic impacts in the County.

51.3-11 Fish and Game Code, § 2081(b)(2) requires an ITP applicant to ensure adequate funding to implement the measures required to minimize and fully mitigate take and it is unknown whether DWR would or could pass any potential additional expense on to water users. CDFG will not be responsible for any additional expenses DWR may incur to participate in the Programs and will not be responsible for those expenses should DWR pass them on to sub-permittees.

51.3-12 Please see response to Comment 3-21

51.3-13 Please see response to Comment 3-20, (Recommendation 18).

51.3-14 Please see response to Comment 3-23

51.3-15 The effects of elk on riparian areas can admittedly be deleterious when elk are present in large numbers, but that is not the case here. Moreover, analysis of impacts which are part of baseline conditions are beyond the scope of a CEQA analysis.

51.3-16 The commenter is incorrect in asserting that Caltrans was relied on for information on agricultural commodities grown and crop values. As noted in Chapter 3.1 of the Draft EIRs, information presented in Table 3.1-1 and 3.1-2 was gleaned from the Siskiyou County Department of Agriculture. Information on farmland classification and conversion came from the California Department of Conservation (Tables 3.1-3, 3.1-4, and 3.1-5), information on irrigation methods and acreage was taken from the California Department of Water Resources and SQRCD (Table 3.1-6, 3.1-7, and 3.1-8). Caltrans was relied upon as a source of information on long-term socioeconomic forecasting for Siskiyou County, including future population growth and economic activity. Please see also the response to Comment 3-15.

51.3-17 Please see response to Comment 3-11 and 3-13.

51.3-18 Please see response to Comment 3-18.

51.3-19 This comment raises a legal issue. In further response, CDFG's authority to hold harmless or indemnify natural persons is very limited.

51.3-20 Please see response to Comments 3-27 and 3-20, (Recommendation 19).

51.3-21 Please see response to Comment 3-25.

51.3-22 Summary comments are noted.

Comment 51.4: Doug T. Jenner

51.4-1 The commenter believes the ITP Program to be coercive, given the choice between the Program and the costs of complying as an individual permittee. It is not the intent of CDFG to coerce anyone into Program participation.

Comment 51.5: Caroline Luiz

51.5-1 The commenter agrees with the preceding comments and finds the document, and the Program as a whole, vague, incomplete and confusing. CDFG regrets that the EIR process has not provided greater clarity.

Comment 51.6: Erica Terence

51.6-1 The commenter identifies herself as familiar with the local communities and their resources. The comment is noted.

51.6-2 Please see responses to Comment 3-20, (Recommendation 18), and Master Response 6.

51-6-3 CDFG and SQRCD are aware of this potential problem and are working with the various federal agencies in an attempt to resolve this issue. According to the SVRCD, NRCS and USFWS have determined that they will be able to fund mitigation projects under the Program. While there is no guarantee of funding, it is anticipated that many of the agricultural participants' avoidance and minimization projects may be paid through federal, state, and private grants.

51.6-4 The ITP will require verification that participants are complying with the limits of their existing water rights (see MLTC Exhibit 1, Attachment A: Water Right Verification Form). CDFG lacks regulatory authority over groundwater and the Programs do not cover groundwater withdrawal for irrigation. Please see Master Response 4.

51.6-5 Comment noted.

51.6-6 Please see Master Response 6 for a discussion of regulatory responsibilities under the Program.

51.6-7 Comment noted.

Comment 51.7: Nick Jenner

51.7-1 Water diversions pursuant to existing water rights are considered in the environmental analysis to be a part of the environmental baseline and not analyzed as impacts of the Program. The Draft EIRs evaluate the potential for the Program to result in new environmental impacts, above and beyond what is currently occurring, and where such impacts are found to be significant, additional mitigation measures are specified. Continuation of baseline activities do not require mitigation under CEQA but may require mitigation under CESA and Fish and Game Code, § 1602. Historical information on water diversions and irrigation practices in the Scott Valley are presented in Chapter 3.2, Geomorphology, Hydrology, and Water Quality.

51.7-2 Although the impacts which might occur from performance of Covered Activities at specific site are unknown, the Draft EIR adequately describes the activities and analyzes their potential effects. In issuing SAAs and sub-permits, CDFG staff will perform site visits to determine any site specific impacts and will work with the sub-permittees so the avoidance and minimization measures required by the SAA and sub-permit are implemented in an appropriate manner.

51.7-3 The commenter states that actually visiting the headgate sites would be necessary to understand how they operate. Many sites were visited by CDFG and consultant staff during the preparation of the Draft EIR. Program implementation will involve more specific evaluation of each diversion site.

51.7-4 The commenter wonders how a piece of paper can make it OK to kill a fish. The ITP guarantees that take of fish will be avoided and minimized to the extent possible, and that

any residual take will be fully mitigated. The difference between "having a piece of paper" and not is a legal liability and the risk of coho extirpation.

51.7-5 The commenter suggests that CDFG could help landowners clear out channels, which would improve stream flows. The comment is noted.

Comment 51.8: John Jenner

51.8-1 The commenter expresses opposition to any fencing, taking of water, or future costs. The comment is noted.

51.8-2 Please see response to Comment 51.7-3.

51.8-3 The commenter doubts that comments will be heard or responded to. Responses to comments are a required part of the Final EIR. The commenter requests additional informational meetings. CDFG will institute an outreach program, including a question/answer fact sheet, to provide information to the agricultural community.

Comment 51.9: Jim Harris

51.9-1 Under Fish and Game Code, § 857(a), CDFG non-enforcement staff may not enter private property without the landowner's consent. However, under Fish and Game Code, § 857(b)(2) CDFG non-enforcement staff may accompany a warden on private land for law enforcement purposes without first obtaining the consent of the landowner.

Comment 51.10: Carl Hammond

51.10-1 The commenter considers that many restoration projects are not well planned and sometimes fail, and requests that there be greater accountability. The Programs do require effectiveness monitoring. Please see the Monitoring and Adaptive Management Plan in Appendix A.

51.10-2 Please see response to Comment 3-24 regarding elk in streams. The commenter compares the proposed Program to the Ford (Motor Company) bailout, and asserts that CDFG should take action against predators in the streams eating fish. The comment is noted.

Comment 51.11: Mark Baird

51.11-1 The commenter asserts that ranchers are not the only ones causing loss of habitat for the fish. No such assertion is made in the Draft EIRs.

51.11-2 The commenter asserts that maintaining land in agricultural open space is better for the fish than real estate development. The potential for the Programs to result in a change of land use from agricultural to other uses is examined in Impact 3.1-1 in Chapter 3.1 of the Draft EIR.

Comment 51.12: Nick Jenner

51.12-1 Please see response to Comment 6-37.

2.2.4 Responses to Oral Comments Received at the Public Hearing, Siskiyou County Courthouse, Yreka, California, November 19, 2008

Comment 52.1: Blair Smith

52.1-1 Comment noted.

52.1-2 Please see response to Comment 49-1.

Comment 52.2: Richard Kuck

52.2-1 Comment noted.

52.2-2 Please see response to Comment 40-2.

52.2-3 Please see response to Comment 40-3.

52.2-4 Grazing management plans approved through the ITP will be required to demonstrate that grazing will result in improved riparian function and enhance aquatic habitat, and the scientific burden of demonstrating this will be developed by the person proposing grazing activities. Regarding the remainder of the comment, please see response to Comment 40-4.

52.2-5 CDFG has worked with the SVRCD and SQRCD to resolve this issue. Please see Master Response 6.

Comment 52.3: Jack Roggenbuck

52.3-1 Please see response to Comment 48-9.

52.3-2 Please see response to Comment 48-2.

52.3-3 Please see response to comment as Comment 44-8.

52.3-4 Please see response to Comment 48-4.

Comment 52.4: Brian Favero

52.4-1 Comment noted.

Comment 52.5: Malena Marvin

52.5-1 Comment noted.

52.5-2 Comment noted.

52.5-3 In regard to removal of Dwinnell Dam as an alternative to the Shasta Program, this alternative is examined, but rejected as infeasible for the reasons stated in Chapter 5 of the Shasta Draft EIR (page5-7).

In regard to groundwater in the Scott River watershed, the existing and future use of groundwater is not a Covered Activity under the proposed Program and, other than being proposed as an alternative stock-watering mitigation measures, not part of the Program therefore developing a groundwater management policy as part of the Programs is beyond the scope of the Programs.

52.5-4 Comment noted. In further response, please see response to Comment 44-8.

52.5-5 Comment noted. Data collected by CDFG would be available by request through the Public Records Act (Government Code, § 6250 *et seq.*). In further response, please see response to Comment 8-12.

52.5-6 Comment noted.

Comment 52.6: Tom Wetter

52.6-1 Mr. Wetter did not provide oral testimony. Please see the responses to his written comments (Comment Letter 50) above.

Comment 51.7: County Supervisor Jim Cook

52.7-1 Comment noted.

52.7-2 Comment noted.

52.7-3 Please see response to Comment 2-2.

52.7-4 Comment noted.

CHAPTER 3

Comment Letters Received and Public Hearing Testimony

Comment Letter 0

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

December 10, 2008

Bob Williams
Department of Fish and Game, Region 1
601 Locust Street
Redding, CA 96001

Subject: Scott River Watershed-wide Permitting Program
SCH#: 2006102095

Dear Bob Williams:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on December 9, 2008, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

0-1

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Comment Letter 0

Document Details Report
State Clearinghouse Data Base

SCH# 2006102095
Project Title Scott River Watershed-wide Permitting Program
Lead Agency Fish & Game #1

Type EIR Draft EIR

Description The primary purpose of the Scott River Watershed-wide Permitting Program is to facilitate compliance by Program participants with Fish and Game Code section 1600 et seq. and with respect to coho salmon, the California Endangered Species Act (CESA) (Fish and Game Code, 2050 et seq.) while conducting specific routine agricultural activities the Program covers.
The Program area is the Scott River watershed, including the Scott River and its tributaries, in Siskiyou Co. Farmers and ranchers in the Program area may participate in the Program. Other participants include the Siskiyou Resource Conservation District and the Department of Water Resources (DWR). DWR will participate in the Program because it provides watermaster service in the Program area, and as part of the responsibility delivers water to farmers and ranchers.

Lead Agency Contact

Name Bob Williams
Agency Department of Fish and Game, Region 1
Phone (530) 225-2300 **Fax**
email
Address 601 Locust Street
City Redding **State** CA **Zip** 96001

Project Location

County Siskiyou
City
Region
Lat / Long
Cross Streets
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways Scott River and tributaries
Schools
Land Use Primarily Agriculture

Project Issues Archaeologic-Historic; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Cumulative Effects; Agricultural Land; Biological Resources

Reviewing Agencies Resources Agency; Department of Boating and Waterways; Department of Conservation; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 2; Regional Water Quality Control Board, Region 1; Regional Water Quality Control Bd., Region 5 (Redding); Native American Heritage Commission; State Lands Commission

Date Received 10/10/2008 **Start of Review** 10/10/2008 **End of Review** 12/09/2008

0-1 cont.

Note: Blanks in data fields result from insufficient information provided by lead agency.

Comment Letter 0

STATE OF CALIFORNIA — Arnold Schwarzenegger, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

October 17, 2008

RECEIVED
OCT 29 2008
STATE CLEARING HOUSE

Clear
~~H-24-08~~ 12-9-08
e

Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001

RE: SCH#2006102095 Scott River Watershed-wide Permitting Program; Siskiyou County.

Dear Mr. Williams:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Completion (NOC) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

0-1 cont.

Sincerely,
Katy Sanchez
Program Analyst

CC: State Clearinghouse

Comment Letter 0

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

December 10, 2008

Bob Williams
Department of Fish and Game, Region 1
601 Locust Street
Redding, CA 96001

Subject: Shasta River Watershed-Wide Permitting Program
SCH#: 2006102093

Dear Bob Williams:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on December 9, 2008, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

0-1

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Comment Letter 0

Document Details Report
State Clearinghouse Data Base

SCH# 2006102093
Project Title Shasta River Watershed-Wide Permitting Program
Lead Agency Fish & Game #1

Type EIR Draft EIR

Description The primary purpose of the Shasta River Watershed-wide Permitting Program (Program) is to facilitate compliance by Program participants with Fish and Game Code section 1600 et seq. and, with respect to coho salmon, the California Endangered Species Act (CESA) (Fish and Game Code, section 2050 et seq.) while conducting specific routine agricultural activities the Program covers. The Program area is the Shasta River watershed, including the Shasta River and its tributaries, in Siskiyou County. Farmers and ranchers in the Program area may participate in the Program. Other participants include the Shasta Valley Resource Conservation District and the Department of Water Resources (DWR). DWR will participate in the Program because it provides watermaster service in the Program aea, and as part of that responsibility delivers water to farmers and ranchers.

Lead Agency Contact

Name Bob Williams
Agency Department of Fish and Game, Region 1
Phone 530-225-2306 **Fax**
email
Address 601 Locust Street
City Redding **State** CA **Zip** 96001

0-1 cont.

Project Location

County Siskiyou
City Redding
Region
Lat / Long
Cross Streets
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways Shasta River and its tributaries
Schools
Land Use Primarily agricultural

Project Issues Agricultural Land; Archaeologic-Historic; Biological Resources; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 2; Regional Water Quality Control Board, Region 1; Native American Heritage Commission; State Lands Commission

Date Received 10/10/2008 **Start of Review** 10/10/2008 **End of Review** 12/09/2008

Note: Blanks in data fields result from insufficient information provided by lead agency.

Comment Letter 0

STATE OF CALIFORNIA — Arnold Schwarzenegger, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

Clear 11-24-08 e 12-9-08

October 17, 2008

Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001

RE: SCH#2006102093 Shasta River Watershed-wide Permitting Program; Siskiyou County.

Dear Mr. Williams:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Completion (NOC) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

0-1 cont.

Sincerely,
Katy Sanchez
Katy Sanchez
Program Analyst

CC: State Clearinghouse

COUNTY OF SISKIYOU
County Administrative Office

Mailing Address: P.O. BOX 750, YREKA, CA 96097
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FAX

Date: 12-9-08

To: Bob Williams

Fax No.: (530) 225-2381

No. of Pages: 20 including this cover

From:
- ____ Brian McDermott
- ____ Rose Ann Herrick
- ____ Ann Waite
- ____ Amy Detrick
- ____ Phyllis Gibbons
- X Ric Costales

- ____ Original documents will be mailed.
- ____ Original documents will not be mailed.

Subject: Scott/Shasta DEIR

Message:
- ____ Please review and comment.
- ____ Pursuant to your request
- ____ For your information
- ____ Other ____

Please notify _____ at (530) 842-8005 if there is any problem with this transmission.

COUNTY OF SISKIYOU

COUNTY ADMINISTRATIVE OFFICE

Ric Costales, Natural Resource Policy Specialist
P.O. Box 750 • 201 Fourth Street, Yreka, CA 96097
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December 9, 2008

Mr. Bob Williams
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Subject: DEIR on the Scott and Shasta Rivers Watershed-wide Permitting Program

Dear Mr. Williams:

I am the Natural Resource Policy Specialist for Siskiyou County. As such, innumerable and diverse issues associated with natural resources affecting County citizens require my attention and effort. Among them all, the Watershed-wide Permitting Program (Program) for the Scott and Shasta rivers is one of the most important that has yet come across my desk. The potentially damaging impacts to Siskiyou County of the listing of the coho salmon under the California Endangered Species Act (CESA) were apparent from the time the petition to add coho to the list was first bandied about. At this point, it is clear that all the concerns were well-placed. If ever there were any doubt, the DEIR on the Program has put an end to that debate!

The notion of an understandable, expedited, and affordable way to allow agricultural operators to continue to do business while complying with CESA and Section 1602 of the California Fish and Game Code was something essential to all parties concerned about the fate of the coho and the human communities sharing their range. This pilot project received blessing from the state's Coho Recovery Strategy, the Scott and Shasta Recovery Team, and local and statewide ag operators and organizations. Even Sonoma County, seeing the value of such an approach, contributed grant money to Siskiyou to help iron out a something that might be exported to other areas similarly affected by the listing. 1-1

Unfortunately, the sense is rapidly emerging among many in the agriculture community in Siskiyou County that the "cure" may be worse than the "disease." Certainly the Department of Fish and Game (DFG) has statutory obligations under CESA and the Code that, while onerous and in some cases probably pointless, cannot be ignored. The mitigation in the DEIS for paleontological and archaeological resources is one such example. 1-2

There are other burdensome mitigations in the DEIR, however, that do not appear to be requirements associated with CEQA or 1602. For example, the Shasta DEIR specifies a commitment by the Shasta Valley Resource Conservation District (SVRCD) to see that 8 miles per year of stream banks get planted. Since the Program is designed to avoid take on diversions, ag operations, crossings and restoration projects, what is it about these activities that require the whole Shasta River to be planted to shade trees? The spawning gravel enhancement mandate is a similar case in point for the Scott River Program. Lack of spawning gravel is not the result of ag operations. 1-3

What all such mandates do, whether truly beneficial or not, is increase the labor and financial burdens of agricultural operators and the RCDs. The DEIR makes it abundantly clear in its socioeconomic analysis that agriculture, while a critical component of Siskiyou County's custom, culture and economy, is under extreme pressure from market and regulatory challenges. The RCDs, being the primary coordinator for projects ameliorating much regulatory pressure are also operating on the fringes of capacity. The DEIR needs to take particular care to keep requirements at the absolute minimum to prevent take and comply with CESA and Section 1602. 1-4

Finally, Section 1602 of the Fish and Game Code is being used as the main reason that agricultural operators need to enroll in the Program since a Streambed Alteration Agreement (SAA) accompanies the Incidental Take Permit. DFG is interpreting the "substantial diversion" language in the Code to include all agricultural water diversions. Agricultural diversions should only require a SAA if they involve the modification of the channel (push up dams), a physical change in the diversion or the diversion truly is a "substantial diversion of the natural flow." 1-5

As previously stated, I am enclosing a copy of Supervisor Armstrong's comments. The purpose is to underscore the fact that I, too, support her comments and criticisms relative to the DEIR. 1-6

Thank you for the opportunity to comment on the DEIR.

Sincerely,

Ric Costales, Natural Resource Policy Specialist
County of Siskiyou

Attachments: Copy of District 5 Supervisor Marcia Armstrong comments on DEIR 1-7

December 7, 2008

Mr. Bob Williams
Dept. of Fish and Game
601 Locust St.
Redding, CA 96001

As Siskiyou County Supervisor for the Fifth District, the following are my initial comments on the Scott River Watershed-Wide Permitting Program Draft Environmental Impact Report (DEIR) and for the Shasta, (insofar as DEIR statements and provisions are similar to the Scott.) These comments are submitted in the context of general support for the concept and program. am commenting in my capacity as an individual County Supervisor.

General Comments and Authorities:

(1) Siskiyou County Code – Title 10 Planning and Zoning, Chapter 12. County Participation in State and Federal Agencies Land Transactions, Sec. 10-12.01 Findings states:

"(b) In order to protect the customs, culture, economy, resources, and environment of the County of Siskiyou, it is critical that federal and state agencies recognize and address the effects of any actions proposed within the County which may affect matters, including, but not limited to, economic growth, public health, safety and welfare, land use, the environment, conservation of natural resources, such as timber, water, fish, wildlife, mineral resources, agriculture, grazing, and recreational opportunities.
(c) The coordination and consideration of the County's interest is required by law, such as in those requirements set forth in the National Environmental Protection Act, the National Forest Management Act, the Intergovernmental Cooperation Act, the Federal Land Policy and Management Act, the Federal Administrative Procedures Act, the State of California Public Resources Code, the California Environmental Quality Act, and numerous other federal and state statutes and administrative procedures.
(d) These various state and federal laws provide for participation by Siskiyou County and the public through opportunities for comment on proposed projects and actions."

Sec. 10-12.02 Notification, referral, and consultation procedures states:
"(a) All federal and state agencies shall inform the County of Siskiyou, or its designee, of all pending, contemplated or proposed actions affecting local communities, citizens, or affecting County policy, and shall, if requested by the County, coordinate the planning and implementation of those actions with the County or its designee(s). Such notification shall include a detailed description of the proposed plan, procedure, rule, guideline, or amendment sufficient to fully inform lay persons of its intent and effects, including the effects on the resources, environment, customs, culture, and economic stability of the County of Siskiyou.
(b) The Siskiyou County Board of Supervisors shall be consulted in accordance with the laws and regulations of the State of California and the United States regarding any pending, contemplated, or proposed actions affecting local communities and citizens.
(c) All federal and state agencies shall, to the fullest extent permissible by law, comply with all applicable procedures, policies, and practices issued by the County of Siskiyou.
(d) When required by law or when requested by the County of Siskiyou, all federal and state agencies proposing actions that may impact citizens of the County of Siskiyou shall prepare and submit in writing, and in a timely manner as soon as is practicable, report(s) on the purposes, objectives and estimated impacts of such actions, including environmental, health, social, customs, cultural and economic impacts, to the County of Siskiyou. Those reports shall be provided to the County of Siskiyou for review and coordination with sufficient time to prepare a meaningful response for consideration by the federal or state agency.
(e) Before federal and state agencies can alter land use(s), environmental review of the proposed action shall be conducted by the lead agency and mitigation measures adopted in accordance with policies, practices, and procedures applicable to the proposed action and in accordance with all applicable federal, state, and local laws. Impact studies shall, as needed, address the effects on community and economic resources, the environment, local customs and public health, safety, and welfare, culture, grazing rights, flood prone areas and access and any other relevant impacts."

COMMENT: As of this date, the CA Dept. of Fish and Game has failed to come before the Siskiyou County Board of Supervisors to present the DEIR or the Shasta and Scott Recovery Team recommendations referenced in the DEIR as mitigation measures. Only one hearing was held on the Scott River DEIR in Scott Valley and this was to gather comments only. No meeting has ever been held where the Board or the public could freely ask questions about the program itself. I now understand that CDFG has scheduled a Board presentation on Dec. 9, (the same day that comments are due.) This will be the very first opportunity for the Board to find out more about the program and to ask questions. The public also needs an opportunity to ask questions about the proposed program itself. I would respectfully request that the deadline for comments be extended to allow for additional analysis by the staff and public.

(2) As outlined in this year's Resolution of the Siskiyou County Board of Supervisors "Asserting Legal Standing and Formally Requesting Coordination with All State and Federal Agencies Maintaining Jurisdiction Over Lands And/Or Resources Located in Siskiyou County," the County directs that "state agencies shall inform the Board of Supervisors of all ending or proposed actions affecting local communities and citizens within Siskiyou County and coordinate with the Board of Supervisors in the planning and implementation of those actions;" citing:

- The California Constitution has recognized Siskiyou County's authority to exercise its local, police and sanitary powers, and the California Legislature has recognized and mandated exercise of certain of those powers in specific statutes; and;

- The California Legislature has mandated in Government Code Section 65300 that each county shall prepare a comprehensive plan, and stated legislative intent in Section 65300.9 that the county planning shall be coordinated with federal and state program activities, and has mandated in Section 65103 that county local plans and programs must be coordinated with plans and programs of other agencies; and,

- The California Legislature has mandated in Section 65040 that the State Office of Planning and Research shall "coordinate, in conjunction with ... local agencies with regard to matters relating to the environmental quality of the state; and,

- Water Code §§ 8125-8129, the California Legislature has placed planning for non-navigable streams within the authority of county supervisors, and since such planning activities must be coordinated with natural resource planning processes of federal and state agencies; and

- Public Resources Code § 5099.3, the California Legislature has mandated coordination by the state with Siskiyou County since it is a county "having interest in the planning, development, and maintenance of outdoor recreation resources and facilities,"

(3) Siskiyou County has local natural resource planning authority. Government Code 65302 states:
(d) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations.

That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies that have developed, served, controlled or conserved water for any purpose for the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county. The conservation element may also cover the following:

(1) The reclamation of land and waters.
(2) Prevention and control of the pollution of streams and other waters.
(3) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
(4) Prevention, control, and correction of the erosion of soils, beaches, and shores.
(5) Protection of watersheds.
(6) The location, quantity and quality of the rock, sand and gravel resources.
(7) Flood control.

Siskiyou County's Conservation Element - Page 18 establishes the intent to coordinate with the CA Department of Fish and Game. On page 101, the Conservation Element outlines the County's jurisdiction as relates to fisheries habitat and land use planning. Page 112 outlines some of our jurisdiction over watersheds and water recharge lands.

COMMENT: The CA Dept. of Fish and Game does not appear to have formally consulted Siskiyou County Planning Agencies, County Agricultural Dept. and coordinated with County Natural Resource Specialist Ric Costales or the Board of Supervisors, in the preparation of the DEIR and CEQA process. It appears to have taken the liberty on its own of interpreting and applying provisions of the General Plan and Scott Valley Plan for the County.

(4) The 1996 Siskiyou County Comprehensive Land and Resource Management Plan specifies:

Introduction and Statement of Purpose

...**"Accordingly, the Board of Supervisors of the County of Siskiyou declares that it is the policy of the county to require each and every federal (see Appendix I) and state agency administering, managing or regulating lands or natural resources within the county to fully coordinate with the county at the initiation and throughout the planning process, whenever proposed plans, actions, regulations, restrictions or establishment of productivity levels are being considered."**

General Processes, Methods And Goals Of An Analysis By Agencies

"Plans or actions by agency, inter-agency or other decision-making groups shall contain information and discussion to facilitate a coordinated planning effort between the agency and county government. Participation by the county in multi-interest planning, advisory or decision-making processes does not replace, abridge or satisfy the requirements for coordinated consultation and coordination between county government and the decision making agency(s).

"This information for a coordinated planning effort shall include effects on the physical, social and economic environment. This includes the physical environment, historic customs, culture, useage, property rights, economic welfare, general prosperity and economic stability of communities in Siskiyou County. Actions or plans with non-significant impacts or negative impacts on the physical environment shall also be included since those actions or plans may have significant social and/or economic implications, including cumulative impacts.

"Since the majority of land in Siskiyou County is non-private land, and the County's major industries livestock, farming, timber, mining and recreation - are

tied to that land and pertinent resources either directly or indirectly, then all economic or social and natural or physical environmental effects are interrelated..."

"Discussions of effects on the County's natural resources and environmental quality should include but are not limited to:

1. fisheries and wildlife resources
2. forest and timber resources
3. range resources
4. dryland crops
5. watershed resources
6. private surface and ground water rights and irrigated cropland
7. mineral resources
8. recreational opportunities
9. environmental quality of air, water, and soils
10. integrated resource planning and management in which county private parties and/or public interests are involved
11. multiple use, sustained yield and range resource laws
12. private investments, property interests and regulations into public land resources
13. impacts on privately owned land, improvements and resources or adjacent to federal or state managed land where the plan, program or project is proposed
14. Discussions of effects on the County's culture, governance, schools, social services and other local programs include but are not limited to:
15. The culture of the county due to potential population loss.
16. The culture of the county from possible limitations and restrictions on cultural beliefs and practices, diversity and choice of lifestyle, and maintenance of cultural, community, generational and familial cohesion and kinship.
17. Cultural and community aesthetics, including historic sites, natural resource vistas, river ways and landscapes.
18. The County's ability to protect and provide services for the health, safety, and social and cultural well-being of its citizens
19. The County's ability to finance public programs and services through bonding, lending and other financing mechanisms
20. Local governments (towns, etc.) and schools from identified tax revenue loss
21. Local emergency medical services, law enforcement, fire (and wildfire) protection and nuisance abatement
22. The local infrastructure, including transportation, community water, sewer, power, electric power generation and transmission systems, (including irrigation and reclamation districts), service districts, and landfill services.
23. Local community well-being, stability of governance, and the education and welfare of children from cumulative and long-term impacts
24. Pest and predation control, and weed abatement.

Discussions of effects on the County's economy, customs, useages, services and businesses to include but are not limited to:

1. Economic diversity
2. Private investment backed expectations
3. Direct, indirect and cumulative employment (including those who are self-employed) and wages
4. The industries of cattle, farming, timber, mining and recreation - specifying unit cost effects (e.g. economic value of animal unit months (AUMs), million board feet (MMBF), measurements of cubic feet per second (cfs) or acre feet of water, yield per acre, acres in production), recreational user days or other units of measurement as appropriate.
5. Local businesses directly and indirectly related to the resource decision or plan.
6. Housing, real estate values, residential energy, water, sewer and sanitation needs.
7. Variable thresholds for business demand and markets.
8. Marketability of workforce skills
9. Business and financial planning and the ability to obtain financing dependent upon continued availability and productive use of a natural resource.
10. The level of manufacturing or processing technology required of local industry, dependent upon the availability of suitable raw materials.
11. Local community well-being, stability and ability to maintain current and future debt service by long-term and cumulative impacts.

"Direct and indirect impacts on economics, and ramifications of planned activities on local economics shall use appropriate multipliers.

"Discussions shall include any effects on property rights and protectable interests in the County. In addition to these requirements, there shall be an evaluation of the impacts on property rights, as subject under California Executive Order D-78-89 on Regulatory Takings, the United States Presidential Executive Order No. 12630, entitled "Government Actions and Interference with Constitutionally Protected Property Rights", and the Attorney General's guidelines entitle "Evaluation of Risks and Avoidance of Unanticipated Takings", mandating that the following tests or criterion be used in assessing possible taking of private property rights:

1. Whether the plan, program or project constitutes an actual physical intrusion or actual taking
2. Whether the plan, program or project constitutes a regulatory taking
3. Potential for partial or full loss of economic value or investment backed expectation
4. Related effects on custom, culture and usage
5. Whether the agency action conforms to constitutionally protected property rights and commonly accepted notions of fairness and due process
6. Cost of compliance.

"Discussions shall include cumulative, long-term effects on the County's economy, culture, usage, services and businesses. Plans, programs or actions may have insignificant impacts when analyzed individually, however, cumulative long-term impacts when combined with plans that have similar direct or indirect impacts may be significant.

Infrastructure of economic sectors, culture, customs, usage, services and community stability must be evaluated and protected from cumulative effects."

COMMENT: (This is informational)

(5) ***COMMENT***: Under Baldwin v. County of Tehama (1994) and In re Maas (1933,) Siskiyou County has clearly asserted jurisdiction over groundwater management through the passage of Siskiyou County Code Title 3. Public Safety, Chapter 13 Groundwater Management. Recently, as part of the TMDL Action Plan by the North Coast Regional Water Quality Control Board (NCRWQCB), Siskiyou County submitted a groundwater study plan to the NCRWQCB prepared by Dr. Thomas Harter, Ph.D. of University of California Extension Dept. of Land and water Management for the Scott Valley. Historically, Siskiyou County has also helped to fund a static well study in the area.

(6) ***COMMENT:*** Under Water Code §§ 8125-8129, the California Legislature has placed planning for non-navigable streams within the authority of county supervisors. The code states that:

"Non-navigable streams," as used in this article, means streams and washes in a county which are not declared by law to be navigable and which are not in fact navigable for commercial purposes. 8126. The board of supervisors may provide for widening, deepening, straightening, removing obstructions from, and otherwise improving non-navigable streams the overflow of which interferes with highways, and for protecting the banks and adjacent lands from overflow of non-navigable streams. 8127. The board may make regulations for the use of the streams and the repair and control of the works. 8128. No regulations of the board nor improvements directed by it to be made shall in any manner interfere with the private rights or privileges of riparian owners, miners, or others. 8129. Whenever, in the opinion of the board of supervisors, the general fund is insufficient to defray the cost of the improvements provided for under this article, the board may levy a tax or contract a bonded indebtedness therefore in the manner provided by Title 3 of the Government Code."

Historically, (150 years) Siskiyou County has considered the Scott River and its tributaries to be non-navigable and the bed and banks of these rivers in vested private ownership. Lux v Hagin (1886); Scott v. Lattig (1913); United States v. State of Utah (1931). (It is a long established principle that a vested right cannot be resumed, annulled or later modified by the grantor through legislation or otherwise. Further, States are barred from impairing the obligation of contracts, including these vested rights Hughes v. Washington (1967.)

In 1913, Donnelly v. U.S. established the navigability of the Klamath River. This is reflected in the California Codes – Harbors and Navigation Code Section 103. The Klamath is the only river so listed for the County of Siskiyou.

Absent a definitive judicial determination that the Scott River is, indeed, navigable, the question arises as to the jurisdiction of the State Lands Commission over the river. The

State Lands Commission appears to have no jurisdiction over non-navigable streams: California Public Resources Code Section 29300-29308.

(7) ***COMMENT:*** The Proposed ITP appears to include the redirection of water from private use for irrigation to instream uses for fish and habitat. Many of the water use rights in Scott Valley are either riparian or were established by appropriation and continuous beneficial use in the mid 19th century - well before 1914 when the People of the State claimed surplus water beyond vested rights. (In San Bernardino v. Riverside (1921) and Palmer v. Railroad Commission (1914) the Court specifically stated that the 1911 statute declaring water the "property of the people" did not apply to private water use rights already vested.) Most water use rights in the Scott are vested, privately owned and valuable property, and not revocable "permitted" or licensed water use subject to conditions from the state.

In the recent United States Court of Appeals for the Federal Circuit case –Casitas Municipal Water District v. United States (2008), it was reinforced that a physical invasion of privately owned property (water use right) by government appropriation, or a regulatory action which causes "an owner to suffer a permanent invasion of her property – however minor," or a regulatory action that "completely deprive[s] an owner of 'all economically beneficial use" constituted a compensable property taking under the Fifth Amendment of the Constitution. Restrictions on water use rights for the public use of protection of endangered species – including instream use was recognized as a "taking" of property. The case further denies claims that appropriation of natural resources for environmental use is not for government use under the Fifth Amendment: "…preservation of an endangered species is for government and third party use – the public- which serves a public purpose." In addition, Casitas makes a distinction between the ruling in Tahoe-Sierra on the basis that the Tahoe decision did not physically appropriate anything, change or diminish the property.

Under the ITP, it appears that the Water Master would be required to reduce water diversion for instream flow needs of fish. Will compensation for reallocation of this valuable property to public use be provided through the Water Trust? There are also questions regarding the Dry Year plan and connectivity requirements. The ITP also seems to require conversions of an undefined corridor of riparian lands to lands planted in trees for the benefit of endangered species habitat. In addition, it appears to recognize the CA DFG as land use authority in regard to grazing in this undefined area of land.

In January 1993, the Siskiyou County Board of Supervisors Passed Resolution 93-19 requesting that the state evaluate possible takings of the private property or private property rights of the citizens of Siskiyou County prior to the implementation of any action, decision or regulation effecting said citizens; to formally evaluate and avoid the risk of unanticipated private property takings and investment backed expectations; and that the property owner shall be justly compensated for losses as mandated by the Fifth Amendment of the U.S. Constitution and Article 1, Section 8 of the Constitution of the State of California without undue delay.

I am concerned about the potential in many of the mitigations being imposed for the creation of "unconstitutional conditions," which would require the surrender of rights guaranteed by the Constitution of the United States in exchange for a valuable discretionary privilege which the state threatens otherwise to withhold. This includes the right to privacy (property access,) the right to receive just compensation when property is taken for a public use.

I am concerned that a "permit" (1602) requirement is being categorically imposed on the exercise of a long vested and valuable property right (pre-1914 water use right) - making it, essentially a discretionary conditional privilege. Many of these early appropriative water rights were granted as an invasion of riparian rights on federal lands under the federal Act of 1866. It is a long established principle that a vested right cannot be resumed, annulled or later modified by the grantor through legislation or otherwise. Further, States are barred from impairing the obligation of contracts, including these vested rights Hughes v. Washington (1967.) It is also established in law that whenever a grant is made, it also included whatever was necessary for taking and enjoying the property, (diversion of an appropriative right.)

The DEIR appears to indicate that a 1602 permit is required to operate all diversions, even if no physical disruption of the channel occurs. The California Farm Bureau has indicated that no where else in California has the CDFG interpreted the 1602 provisions to categorically require a conditional permit on all water diversions for irrigation. The code originated from a need to control land disturbing activities – not exercise of water use rights as simple as lifting a headgate:

1602 - (a) "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:"

This raises the question of equal treatment under the law. If Scott Valley residents are required to obtain a permit to use their water use right (divert,) then everyone in California should also be required to do so.

I am also concerned about the "rough proportionality" of the conditions being imposed in relationship to the reasonable impact and actual risk of "kill" from the individual covered activity. (Dolan v. City of Tigard, 1994). (For instance, does the risk of sediment and foraging in riparian areas proportionately justify the conversion of land to trees and the imposition of an entire regulatory scheme to permit grazing on an undefined amount of 'riparian" land?)

(8) ***COMMENT:*** Environmental Justice is the fair treatment and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Agencies are directed to avoid, minimize

or mitigate: (1) disproportionate health, environmental, social and economic effects on low-income populations; and (2) barriers to participation in the decision-making process and self-determination by low income populations.

Obviously, the DEIR clearly establishes Scott Valley and the entirety of Siskiyou County as an economically depressed area (Long Term Economic Distress page 3.1-4 DEIR.) With a median household income of $32,531 and the average net cash profitability of local farms and ranches at $29,747, those engaged in agriculture in the County constitute a low income population. In addition, the ranching and farming families of Siskiyou County represent a unique cultural heritage as the descendants of pioneer California families. Many operate Century ranches that have been in existence since the mid 19th century. The 1996 Siskiyou County Comprehensive Land and Resource Management Plan chronicles the custom, culture and history of this significant cultural group in Siskiyou County.

Considerations should be made to ensure that financial implications from implementing measures in the 1602 and ITP are minimized for individual family farms and the County agricultural population as a whole. (This includes indirect costs from additional Water Master service, replacement costs of fences and fish screens after flood and other events.) The proposed measures essentially benefit endangered species, (a "public purpose,") and costs should not be born by the individual alone. The value of preserving the culture and heritage of farming and ranching, which is of great significance to Siskiyou County and California, must be weighed in balancing costs to benefits for coho.

In addition, I am very concerned about the unknown financial costs to and liability of the Siskiyou Resource Conservation District, which serves this population in Scott Valley. Care must be given to ensure that exposure is minimized and that they are protected from the inability to acquire expected grant funding for anticipated projects to address cumulative watershed effects and mitigate claimed species "take." A hold harmless off-ramp should be provided if grant funding is found to be unavailable.

(9) ***COMMENT:*** As a County suffering from "Long Term Economic Distress" (page 3.1-4 DEIR,) particular care must be taken to eliminate any additional damage to a fragile local economy and social fabric. The social and economic impacts of the proposal and cumulative effects of water quality, air quality and other regulations on agriculture and the economy of Siskiyou County as a whole have been inadequately analyzed in the DEIR.

According to the new 2007 California County Data Book, Siskiyou County is now dead last in all California Counties in family economic well-being, having the lowest median income. 65% of households with children ages 0-17 are low income, compared with a California average of 43%. The report notes that 27% of Siskiyou County's children live in official poverty, compared to 19% for the state. Since the Northwest Forest Plan, average unemployment in the county has been 12.3%. In 2003, only 39.5% of the population was in the labor force. This is projected to decline another 8.7% by 2015. Between 1990 and 2002, official poverty rose 32.9% to 18.6% of the total population.

Several farming communities have higher poverty rates: 26% in Fort Jones (Scott Valley); and 24.2% in Montague (Shasta Valley.) These conditions will only worsen in the current statewide economic downturn.

The deterioration of the economy in the past two decades has caused dramatic demographic changes, such as an overall decrease in the population aged 30-39, (as well as school aged children,) and an increase in the population aged 50-59, with those aged 60 making up a higher percentage of the population than the state average. School enrollment since 1990 has declined from 25-30%. This aging trend is projected to steadily increase over the next 20 years.

Other than two plywood veneer mills, Siskiyou County has almost no manufacturing industry. There is very little economic diversity, with almost the entire economy based upon continued access to natural resources. Agriculture produces $170 million in revenue that is said to circulate in the local economy about 5 times. Tourism (mostly in the south county – Sacramento River Region) is valued at $60 million. What is left of our timber industry brings in about $48 million in revenues to be circulated.

(The DEIR page 3.1-9) indicates that in 2002, average annual sales per farm were approximately $137,000 per farm, but input costs were $107,386. The County determined in its 1999 comments regarding a proposed federal 300 foot critical habitat designation for coho, that 21% of the irrigated agriculture land base in the Shasta Valley (9,817 acres) and 35% (11,215 acres) in the Scott would be implicated and largely converted from production ag. (Currently proposed buffers and probable land conversions are indicated but not quantified in the DEIR.) A decade ago at that proposed level of involvement, the combined loss of annual ag production was estimated to be $4,420,766. Using the multiplier effect of an income/output model by UCE, this was estimated to result in lost sales in other economic sectors of the county of $5,913,173, losses in income of $1,847,079 and 132 lost jobs.

It was also estimated at that time that weed infestation from projected management prohibitions in the buffer areas would amount to another $1,225,095 in ag loss. Loss in annual timber stumpage value from riparian buffer strips was estimated at $4,941,695. No "multiplier effect" on local economy was calculated for these projected losses. Loss in ag land value from prohibitions was estimated at $40 million.

According to Cal. D.O.T. Siskiyou County Economic Forecast, since 1995, Siskiyou County's agriculture industries have experienced substantial job loss at about 586 jobs, declining almost 45%. For instance, since 1996, county vegetable crops have declined in their contribution to the economy from $18.9 million to $11.8 million - or 38 percent. Much of this is due to regulatory pressures, such as the water crisis in the Upper Klamath Basin.

The advent of the Northwest Forest Plan saw the closure of several local saw mills. Logging jobs have steadily decreased from 951 jobs in 1989, to 331 in 1995, to 186 in 2004. In recent years, under regulatory restrictions, the Klamath National Forest has

annually been allowed to harvest only 15 million board feet of timber, when it grows 654 million board feet in a year.

Poverty and other stressors contribute to local family problems. Siskiyou County has a very high child abuse referral rate compared to national statistics. For instance, in a total population of only 44,000, in December 2007 there were 36 referals and three children had to be removed from their home. In that month, 83 children were in permanent foster care or a group home, 20 were in non-relative guardianship, 23 were supported by a voluntary family maintenance plan, and 69 children were in a temporary foster or other care working toward family reunification. The 2004 report entitled *"Community Indicators of Alcohol and Drug Abuse Risk for Siskiyou County"* (CA Dept. of Alcohol and Drug) indicates that from 2000-2002 in Siskiyou County, there were 132.1 emergency responses per 1,000 population under the age 18 for child endangerment/abuse. This compares with a statewide average of 68.6 per 1,000. County Foster care placements were 18. 9 per 1,000, compared with a statewide average of 10.3.

According to an October 2008 study by Meredith Bailey CPA, Inc. entitled *"A Review of Intimate Partner Violence in Siskiyou County,"* the rate of Type I crimes (aggravated assault, robbery and forcible rape,) is much greater in Siskiyou County than in Los Angeles. In fact aggravated assault is about five times greater. Siskiyou County also dominates the surrounding counties of Humboldt, Shasta, Lassen and Del Norte County in the rate of these crimes. The report points to "social strain" fueled by alcohol and drug use as the cause.

The report entitled *"Community Indicators of Alcohol and Drug Abuse Risk for Siskiyou County"* states that from 1999-2001 the annual rate of DUI arrests for Siskiyou County was 13.3 per 1000 people aged 18-69, while the average for the State of California is only 8.4. The total arrests for alcohol-related offenses (excluding DUI) was per 13.2 per 1000 people aged 18-69 in Siskiyou County, while the rate for California is only 5.9. In 1998-2000, the rate of alcohol related fatalities was 149.4 per 100,000 drivers in Siskiyou County and an average of in the entire State was 98.1.

The deterioration of the economy and social well-being of the county parallels ever increasing Endangered Species Act, Northwest Forest Plan, water quality (TMDL,) air quality and global warming regulatory schemes. Such regulations limit access to resources, inflict emotional stress from worry and frustration about compliance, eliminate jobs, increase costs of operation and allocate needed resources to environmental uses of little economic benefit to the area. This has increased stress on families and communities. CA DFG must realistically and carefully consider the direct and cumulative impact of the ITP and 1602 programs on Siskiyou County and the further harm they might cause.

This proposed regulatory scheme is not going to occur in a vacuum. I have repeatedly asked for an adequate economic/social impact statement and cumulative effects analysis from the many regulatory agencies that have imposed new layers of regulations on natural resource users in Siskiyou County. Given the current dire state of economy and social straits that this County finds itself in, I must insist that the CDFG seriously proceed

with such an analysis. We will not survive as a county if these regulations continue to destroy the fabric of our families, communities and local economy. Crafting a plan to limit the steps a landowner or irrigator must take to protect coho that is realistic, simple, affordable and does not affect land and water available for production, family income and local economies is vital. Programs that bring in financial and technical resources to put people to work in restoration and make operations more efficient and productive would be desirable.

(10) ***COMMENT:*** According to the Draft Quadrennial Fire Review for 2009, "most experts calculate that the nation is still in the first decade of what is expected to be a 25-30 year cycle." "[D]rought will create competition for water on ecosystems, increasing the stress on biomas and drying out vegetation." Conditions will be such that "a month should be added to the front and back of the traditional fire season. Fires will continue to be large and of high intensity. There will be shorter wetter winters and warmer, drier summers.

In light of the above assessment, what consideration is being made so that farmers and ranchers will not be expected to mitigate for climate change and its impact on temperature, hydrology, vegetation and sedimentation from fire, in addition to their own discrete impacts?

Specific Comments on the DEIR text:

- Page S-3 - *Recovery Strategy for California Coho Salmon (SSRT)* – The SSRT strategy was created as a series of actions to be taken voluntarily by agriculturalists and others to help achieve recovery of coho in the Scott and Shasta River valleys. It appears that this "voluntary" approach has now morphed into a menu of mitigation measures to be forcibly implemented through the regulatory umbrella of the ITP and 1602. The likelihood that any discrete action of a farmer or rancher could be tied directly by proximate cause to the death of a coho does not appear to be that great. Yet the actions being required to avoid, minimize and mitigate impacts appear extraordinary and disproportionate to the risk of provable taking (kill.) It is as though the decline in coho populations is being attributed entirely to agricultural operations or that the ITP is being used to implement the recovery strategy, not to "fully mitigate" kill.

I would also like to point out that the final SSRT recommendations were never presented to the Board of Supervisors, even though personally I requested this several times from Mr. Craig Martz.

- S-12 to 15 - *"ground disturbing activities" requiring professional special status plant surveys, archaeological and paleontological surveys ; beginning a "covered activity" requiring professional surveys for sandhill cranes, Swainson's hawk and willow flycatchers.* It appears that expensive surveys may be required in order to engage in normal farming activities, such as plowing/tilling.
- S-14 – *Grazing in the "riparian zone" to be subject to a grazing management plan approved by CDFG. 2-13 Grazing adjacent to the channel requiring a CDFG approved grazing management plan. 2-19 and 24 Riparian Fencing and Planting –*

requirement for revegetation and exclusion fencing. 3.2-19 *Grazing "adjacent to the channel" may only occur with and approved grazing management plan.* It appears that the ITP page 26 establishes that a livestock exclusion fencing requirement of 35 feet would be required. Exceptional use of this fenced riparian area for grazing to reduce noxious weeds, etc., would require a special grazing management plan. In some areas (particularly the Shasta River,) tight meanders create conditions where the fence would have to follow the river contours, as a straight line would substantially reduce available land for productive use. The question also arises about those who currently have a 20 foot fence. Would these have to be moved and more land taken out of production? It is assumed that riparian stock watering access would be provided. Otherwise, exclusion for five years or more could amount to a physical takings of a water right. As other provisions appear to require planting of trees in riparian areas, it would seem that this could result in a substantial conversion of land use into non-use "buffer" areas and a reduction of highly productive soils available for agriculture and economic use. Please include these considerations in an economic impact analysis.

- *1-3 Covered Activities could affect the beds of navigable waters.* Please see previous comments on non-navigable status.
- *2-15 Requirement to provide written consent for non-enforcement CDFG representatives to access sub-permitees' property to verify compliance with 48 hour pre-notification.* As with prior salmon survey permission forms, the landowner should be allowed to limit access to CDFG employees only. The landowner should be allowed to accompany the employee and receive a copy of any data gathered, if the landowner so desires. Liability insurance for the employee should also be guaranteed.
- *2-15 The sub-permitee and SQRCD should be solely responsible for any costs they incur in implementing avoidance, minimization, mitigation and monitoring measures.* As previously explained, many agriculturalists in Siskiyou County are in a low income group. Necessity and environmental justice require that measures for sub-permittees be reasonable and affordable. Permittees should not be required to bear an unreasonable burden for the public benefit to the point of destruction of their small business and family income. RCDs have no income, so they are dependent upon receiving grant funding in order to implement measures. As expressed previously, I have concerns about unrealistic expectations to the contrary.
- 2-16 – *Fish Screens* - originally, it was the CDFG's statutory responsibility to install fish screens on diversions that had been in place prior to a certain date. CDFG had done only a handful in the Scott, so the RCD took up an ambitious voluntary plan to accelerate the program and acquired grants to install fish screens throughout the valley. I believe almost all diversions within coho range have now been installed. The ITP, however, seems to shift the burden of fish screens to the individual irrigator. I am concerned that in the event of one of our serious periodic floods, irrigators will be expected to replace out of pocket fish screens that range from $10,000 to more than $100,000 in cost.
- *2-10 Tailwater Capture systems.* It is my understanding that the Scott River Adjudication decree specifically allocates tailwater. CDFG may encounter some legal difficulties with the adjudication in implementing measures for reduction and capture. At the very least, there should be a provision that no one should be harmed in the receipt of water due them under the adjudication from such measures.

- *2-21 Maintaining Connectivity of the Tributaries in the Mainstem.* This provision should be reviewed for potential property takings implications.
- *2-21and 2-23 Contingency Plan for Dry and Critically-Dry Water Years, Diversion Ramp Up Management Plan, Stranding and reducing or cessation of diversions*. This provision should be reviewed for potential property takings implications.
- *2-22 Water efficiency programs.* There is a very real concern that so called "water efficiency" measures may affect the timing of river flows. Rather than storing water not used for evapotranspiration in the subsurface soil profile like a sponge, allowing it to be cooled as it travels into the summer through soils to the river, super efficient delivery systems will deliver only what is evaporated or transpired by the plant, allow unused spring flows to rapidly leave the system to the Klamath, leaving little stored in the soil profile to linger and feed summer flows. Flood irrigation, although thought to be inefficient, may actually evaporate less because of less exposure to wind. It also recharges the aquifer and allows for surface storage to feed later summer flows. "Efficiency" is a factor in late summer for flows, but at other times of the year may be a detriment. Also, many of the so-called "leaky ditches" provide hydration for wetlands and other ecosystems that have grown to depend upon them. Piping or replacement delivery systems could significantly affect that.
- *2-23 Alternative Stock Water systems.* See prior comments about loss of habitat from efficiency and property takings. Ditch leakage may currently supply domestic wells along the route. Loss of that water could be problematic.There are also the design concerns regarding the creation of a system that will adequately operate in freezing conditions.
- 2-27 *Watermaster* – The issue of property takings for actions required of the Watermaster (outside of administering the adjudication) that may shut off water from a water rights owner and reallocate that water to a public purpose should be analyzed and discussed. The Watermaster is an agent of the court whose purpose is to administer the adjudication in the field, where so directed by the Court. The CDFG appears to be requiring expensive Watermaster Service or something similar for those not currently required by the court to have it. The ITP appears also to be coopting the duties of an official Watermaster to implement reductions in water allocations outside of the court decree. Also, the State Legislature passed a law allowing for the establishment of a local Watermaster service and district on the Scott River system. This district was created and representatives appointed by the Board of Supervisors. I believe they are in the process of obtaining court recognition. The local service was initiated because of the astronomical future rate increases indicated by the Watermaster. It has not yet been fully implemented. The ITP fails to address any additional costs that would be passed on to the water user from new Watermaster duties and only assumes that the DWR Watermaster will be providing the service. ITP Coverage needs to include the new local option as well.
- 3-2 *Mitigation* - The third and fourth paragraphs appear to indicate that historic and ongoing activities of farmers and ranchers in Scott Valley would not require mitigation. (Presumably they would still require avoidance and minimization, which is what the ITO "Conditions" are all about.) The mitigation is for the physical changes the actual 1602 and ITP requirements would cause, in order to bring them to less than significant impact levels. Is this correct? As the RCD would be held responsible for

Comment Letter 1

mitigation under the ITP and as the program is largely beneficial to the environment, then the mitigations expected of the RCD would appear to be negligible. Please clarify further.

- Page 3-4 *Physical Changes Likely to Result from Program* – I am concerned that less agricultural water is expected to be diverted. Is this from defacto property takings? As any analysis been done on how this will affect the productivity of the land and the local economy? I am concerned that "conditions placed on ground-disturbing activities" for various studies may be a very expensive permit to farm.
- 3.1-7 *Nurseries* - An extensive nursery operation does exist in Scott Valley (Cal Forest Nurseries.)
- 3.1-12 and 3.1-27 *Zoning and Subdivision* - As set forth in our new Five Year Strategic Plan, the County will be reviewing its General Plan elements and zoning for possible revision. It will also be considering new area plans. I assume that land use and trends will be considered in the process. Should land currently zoned for agriculture lose access to irrigation or be tied up in such expensive and onerous regulations that the agriculture ceases to be an economically viable use of the land, it is possible that changes will be made. There are currently areas in the Shasta Valley where there is considerable developmental pressure and at least one owner has already tried to opt out early from their Williamson Act contract in order to subdivide.
- 3.1-6 *Williamson Act* - Due to the State Budget and proposals to discontinue the Williamson Act subvention payments to the County, many contracts now contain the following wording:

  " If in any year the State fails to make any of the subvention payments to the County required under the provision of the Open Space Subvention Act, then this Contract, at the option of, and in the sole and absolute discretion of the County, may be terminated by the County."

- 3.1-17 *Efficiencies and Groundwater.* (See Prior Comments made.) According to Dr. Thomas Harter, the average annual discharge in the Scott Valley watershed is 615,000 acre feet of water. This is more than the groundwater basin can hold (400,000 acre ft. – U.S. Geological Survey.) The Department of Water Resources has estimated that agriculture uses only 70-90,000 acre ft. It would seem to be that storage of peak flows, conjunctive use and other management options could be honed to meet the needs of both agriculture and fish. The Scott Valley is definitely NOT in an overdraft situation. The water just isn't where it is needed at certain times of the year. Water that has left the system in the winter and spring might be better stored in high mountain lakes (as it was historically,) aquifers or other storage for later release.
- 3.1-25 and 26 *Significant "Physical Effects" such as Land Conversion.* Page 3.1-9 discussed the "low profitability of existing local agricultural production" and the current average net profit. Expensive regulatory schemes that add to costs and decrease that limited margin of profit are likely to push operations over the threshold to not profitable – resulting in land conversion. Regulatory schemes that expect to reallocate water from agriculture in any way that effects productivity reduces the profitability margin and pushes operations over the threshold to non-profitable – resulting in land conversion.

The 1996 Siskiyou County Comprehensive Land and Resource Management Plan states that "Since the majority of land in Siskiyou County is non-private land, and the County's major industries livestock, farming, timber, mining and recreation - are tied to that land and pertinent resources either directly or indirectly, then all economic or social and natural or physical environmental effects are interrelated..." Considering the long tern state of economic distress that Siskiyou County continues to experience, costs, loss of productivity and land conversion from productivity have the potential for serious impacts on the county and should be analyzed.

- 3.2-5 *Sediment* It should be considered that the Scott River is an unstable system. Past large mining operations (Yuba dredges, Hydraulic Mining) – particularly close to the headwaters of the Scott River (Callahan,) Oro Fino and Moffett Creek (Cherry Creek) have caused ongoing instability in the sediment regime. In addition, fires up Kidder Creek and down in the Scott River Canyon have caused mass land movement. The Army Corps of Engineers also straightened rivers, removing meanders and access of the river to the floodplain. This has caused downcutting and widening of the rivers. Youngs dam and its removal has caused head cutting up the river. In addition, periodic large flooding events tend to erode huge areas of land and redistribute gravel onto agricultural fields. In the past, this has ripped out restoration work intended to help mitigate the erosion problem. It would be entirely unreasonable and it would show a huge lack of perspective to expect farmers and ranchers to cure this instability by merely planting trees and excluding livestock from riparian areas. They have tried this for decades with minimum success.
- 3.2-25 *Draw down of the water table* – Findings from the static well monitoring study shows regular annual recharge of wells with the exception of one or two in a particular area (Eastside?) that appear to be on a slower recharge cycle. Scott Valley does not have an overdraft problem.
- 3.2-32 *Decline in Scott River baseflow* Attributed to an increase of consumptive use and groundwater extraction. I understand that the figures attributing decreases in baseflow to agriculture in the recent Van Kirk report do not reconcile with the DWR figures since 1954 and complaints have been filed about the report's quality. Dr. Thomas Harter is the researcher closest to the field work actually being done in the Scott River area.
- 3.3-41 *Channel Dewatering* – I attended a meeting where the previous DWR Water Master (I believe it may have been Mr. Dicks) indicated that it was his professional opinion that if everyone stopped irrigating in the Valley, that it would only delay dewatering in some stretches by – one to two weeks. I feel it is disingenuous to lay the blame for dewatering on agriculture. Dr. Dan Drake and others have done studies to show the recent decline in snowpack in the area. The Scott River Watershed Council has done studies that show that water supplies vary from year to year according to when snowmelt occurs. Also refer to my comment #9 on climate change trends. One would need to be able to show that the action of the diverter was directly responsible for killing the fish (proximate cause.)
- 3-3-42 *Habitat availability, habitat reductions, available summer rearing habitat, affects on fish growth, migration barriers, fish densities* do not reach the level of avoiding the "kill" standard of CESA. Beyond that, water adjustments move across the threshold into cutting off a diverter's water and reallocating it to fish, which would

appear to be a compensable property taking **(Casitas Municipal Water District v. United States.)**

- 3-2-50 *State Regulation and Oversight of Water Rights* (Please see prior comments on pre-1914 water use rights as privately owned property which is not permitted or licensed.) The Water Use Rights as decreed under the Scott River Adjudication are under the jurisdiction of the Siskiyou County Superior Court.
- 3.2-57 *Mitigations* – instream equipment operation limited to July 1-October 15 How will this apply to irrigators with "push up dams" at the start of irrigation season?
- 3.2-57 *Instream structures* – Under flood conditions, who would be responsible for damage incurred to downriver landowners or County infrastructure – roads and bridges – from movement of these structures? Who would be responsible for replacing these structures if lost?
- 4.2 et all *Cumulative Effects*. As indicated previously, "Since the majority of land in Siskiyou County is non-private land, and the County's major industries livestock, farming, timber, mining and recreation - are tied to that land and pertinent resources either directly or indirectly, then all economic or social and natural or physical environmental effects are interrelated..."(SC Comp. Lnd. and Res. Mgt. Pln.) Cumulative effects analysis should include and consider, not just physical effects, but effects on the social and economic environment as well.

This concludes my initial comment. In summary, I have significant concerns about the apparent reallocation of water to instream use by the Watermaster and whether this constitutes a property taking. There are some serious concerns about the new interpretation of CA Fish and Game Code 1602 and its application to diverters that do not physically change the bank or channel in the process of diverting. I was disappointed to see that there are so many measures required under the 1602 and ITP that could be expensive to implement and would take land out of agricultural production. Although an attempt was made to look at impacts on agriculture, no serious analysis has been done about the cumulative effects of regulation and specific effects of this program on the economic and social fabric of Siskiyou County.

Sincerely,

Marcia H. Armstrong, Fifth District Supervisor
Siskiyou County
P.O. Box 750
Yreka, CA 96097

Comment Letter 1.1

COUNTY OF SISKIYOU
COUNTY ADMINISTRATIVE OFFICE

Ric Costales, Natural Resource Policy Specialist
P.O. Box 750 • 201 Fourth Street, Yreka, CA 96097
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Email: rcostales@co.siskiyou.ca.us

December 9, 2008

Mr. Bob Williams
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Subject: DEIR on the Scott and Shasta Rivers Watershed-wide Permitting Program

Dear Mr. Williams:

At its Board meeting today, the Siskiyou County Board of Supervisors passed a resolution asking for an extension of the comment period. Unfortunately, today was the first time the Department of Fish and Game made a presentation to the Board since the DEIR was released in October. It also happens to be the last day of the comment period.

The Board has increasingly heard from constituents that people really don't understand what they are being asked to comment on. The perception has developed that it is important that more time is given to let people know what is being proposed so that they can make comments that might substantively affect the final EIR. 1.1-1

Due to the lack of time to get a certified copy of this resolution, I have been authorized to fax you this signed copy of it so that you might receive it before the end of the comment period. A copy of the certified resolution will be faxed to you as soon as the County Clerk has completed the certification process.

Thank you for your consideration.

Ric Costales, Natural Resource Policy Specialist
County of Siskiyou

RESOLUTION OF THE SISKIYOU COUNTY BOARD OF SUPERVISORS REQUESTING AN EXTENSION OF THE COMMENT PERIOD FOR THE SCOTT AND SHASTA RIVERS WATERSHED-WIDE PERMITTING PROGRAMS

WHEREAS, the Siskiyou County Board of Supervisors is the decision-making body responsible for many issues affecting the citizens of Siskiyou County; and

WHEREAS, it is critical to their decision-making ability that the Supervisors be apprised and informed to the greatest degree possible on all issues; and

WHEREAS, state and federal agencies are required by numerous state and federal laws to insure that local governments are as knowledgeable as possible with regard to state and federal initiatives; and

WHEREAS, the Watershed-wide Permitting Programs for the Scott and Shasta rivers are critical to the sustainability of agriculture in Siskiyou County; and

WHEREAS, agriculture is a critical component of the custom, culture and economy of Siskiyou County; and

WHEREAS, the Watershed-wide Permitting Programs for the Scott and Shasta rivers are complex documents requiring considerable explanation to be able to interpret and comment upon; and

WHEREAS, the appearance of the California Department of Fish and Game before the Siskiyou County Board of Supervisors on the Watershed-wide Permitting Programs for the Scott and Shasta rivers is coming on the last date of the comment period; and

WHEREAS, such short time to digest the results of this presentation leaves little opportunity for the Board to develop substantive comments; and

NOW, THEREFORE BE IT RESOLVED, the Siskiyou County Board of Supervisors requests the California Department of Fish and Game to extend the comment period on the Watershed-wide Permitting Programs for the Scott and Shasta rivers for 60 days.

1.1-1 cont.

Passed and adopted this December 9, 2008, by the following vote:

AYES: Supervisors Overman, Ericksen, Armstrong, Kobseff and Cook
NOES: NONE
ABSENT: NONE
ABSTAIN: NONE

W.R. Overman, Chair
Siskiyou County Board of Supervisors

ATTEST:
Colleen Setzer, County Clerk
By: s/ Wendy Wintingham
Deputy

December 7, 2008

Mr. Bob Williams
Dept. of Fish and Game
601 Locust St.
Redding, CA 96001

As Siskiyou County Supervisor for the Fifth District, the following are my initial comments on the Scott River Watershed-Wide Permitting Program Draft Environmental Impact Report (DEIR) and for the Shasta, (insofar as DEIR statements and provisions are similar to the Scott.) These comments are submitted in the context of general support for the concept and program. am commenting in my capacity as an individual County Supervisor. 2-1

General Comments and Authorities:

(1) Siskiyou County Code – Title 10 Planning and Zoning, Chapter 12. County Participation in State and Federal Agencies Land Transactions, Sec. 10-12.01 Findings states:

"(b) In order to protect the customs, culture, economy, resources, and environment of the County of Siskiyou, it is critical that federal and state agencies recognize and address the effects of any actions proposed within the County which may affect matters, including, but not limited to, economic growth, public health, safety and welfare, land use, the environment, conservation of natural resources, such as timber, water, fish, wildlife, mineral resources, agriculture, grazing, and recreational opportunities.
(c) The coordination and consideration of the County's interest is required by law, such as in those requirements set forth in the National Environmental Protection Act, the National Forest Management Act, the Intergovernmental Cooperation Act, the Federal Land Policy and Management Act, the Federal Administrative Procedures Act, the State of California Public Resources Code, the California Environmental Quality Act, and numerous other federal and state statutes and administrative procedures.
(d) These various state and federal laws provide for participation by Siskiyou County and the public through opportunities for comment on proposed projects and actions." 2-2

Sec. 10-12.02 Notification, referral, and consultation procedures states:
"(a) All federal and state agencies shall inform the County of Siskiyou, or its designee, of all pending, contemplated or proposed actions affecting local communities, citizens, or affecting County policy, and shall, if requested by the County, coordinate the planning and implementation of those actions with the County or its designee(s). Such notification shall include a detailed description of the proposed plan, procedure, rule, guideline, or amendment sufficient to fully inform lay persons of its intent and effects, including the effects on the resources, environment, customs, culture, and economic stability of the County of Siskiyou.
(b**) The Siskiyou County Board of Supervisors shall be consulted in accordance with the laws and regulations of the State of California and the United States regarding**

any pending, contemplated, or proposed actions affecting local communities and citizens.
(c) All federal and state agencies shall, to the fullest extent permissible by law, comply with all applicable procedures, policies, and practices issued by the County of Siskiyou.
(d) When required by law or when requested by the County of Siskiyou, all federal and state agencies proposing actions that may impact citizens of the County of Siskiyou shall prepare and submit in writing, and in a timely manner as soon as is practicable, report(s) on the purposes, objectives and estimated impacts of such actions, including environmental, health, social, customs, cultural and economic impacts, to the County of Siskiyou. Those reports shall be provided to the County of Siskiyou for review and coordination with sufficient time to prepare a meaningful response for consideration by the federal or state agency.
(e) Before federal and state agencies can alter land use(s), environmental review of the proposed action shall be conducted by the lead agency and mitigation measures adopted in accordance with policies, practices, and procedures applicable to the proposed action and in accordance with all applicable federal, state, and local laws. Impact studies shall, as needed, address the effects on community and economic resources, the environment, local customs and public health, safety, and welfare, culture, grazing rights, flood prone areas and access and any other relevant impacts."

COMMENT: As of this date, the CA Dept. of Fish and Game has failed to come before the Siskiyou County Board of Supervisors to present the DEIR or the Shasta and Scott Recovery Team recommendations referenced in the DEIR as mitigation measures. Only one hearing was held on the Scott River DEIR in Scott Valley and this was to gather comments only. No meeting has ever been held where the Board or the public could freely ask questions about the program itself. I now understand that CDFG has scheduled a Board presentation on Dec. 9, (the same day that comments are due.) This will be the very first opportunity for the Board to find out more about the program and to ask questions. The public also needs an opportunity to ask questions about the proposed program itself. I would respectfully request that the deadline for comments be extended to allow for additional analysis by the staff and public.

2-2 cont.

(2) As outlined in this year's Resolution of the Siskiyou County Board of Supervisors "Asserting Legal Standing and Formally Requesting Coordination with All State and Federal Agencies Maintaining Jurisdiction Over Lands And/Or Resources Located in Siskiyou County," the County directs that "state agencies shall inform the Board of Supervisors of all ending or proposed actions affecting local communities and citizens within Siskiyou County and coordinate with the Board of Supervisors in the planning and implementation of those actions;" citing:

- The California Constitution has recognized Siskiyou County's authority to exercise its local, police and sanitary powers, and the California Legislature has recognized and mandated exercise of certain of those powers in specific statutes; and;

2-3

- The California Legislature has mandated in Government Code Section 65300 that each county shall prepare a comprehensive plan, and stated legislative intent in Section 65300.9 that the county planning shall be coordinated with federal and state program activities, and has mandated in Section 65103 that county local plans and programs must be coordinated with plans and programs of other agencies; and,

- The California Legislature has mandated in Section 65040 that the State Office of Planning and Research shall "coordinate, in conjunction with … local agencies with regard to matters relating to the environmental quality of the state; and,

- Water Code §§ 8125-8129, the California Legislature has placed planning for non-navigable streams within the authority of county supervisors, and since such planning activities must be coordinated with natural resource planning processes of federal and state agencies; and

- Public Resources Code § 5099.3, the California Legislature has mandated coordination by the state with Siskiyou County since it is a county "having interest in the planning, development, and maintenance of outdoor recreation resources and facilities,"

2-3 cont.

(3) Siskiyou County has local natural resource planning authority. Government Code 65302 states:
(d) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations.

That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies that have developed, served, controlled or conserved water for any purpose for the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county. The conservation element may also cover the following:

(1) The reclamation of land and waters.
(2) Prevention and control of the pollution of streams and other waters.
(3) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
(4) Prevention, control, and correction of the erosion of soils, beaches, and shores.
(5) Protection of watersheds.
(6) The location, quantity and quality of the rock, sand and gravel resources.
(7) Flood control.

2-4

Siskiyou County's Conservation Element - Page 18 establishes the intent to coordinate with the CA Department of Fish and Game. On page 101, the Conservation Element outlines the County's jurisdiction as relates to fisheries habitat and land use planning. Page 112 outlines some of our jurisdiction over watersheds and water recharge lands.

COMMENT: The CA Dept. of Fish and Game does not appear to have formally consulted Siskiyou County Planning Agencies, County Agricultural Dept. and coordinated with County Natural Resource Specialist Ric Costales or the Board of Supervisors, in the preparation of the DEIR and CEQA process. It appears to have taken the liberty on its own of interpreting and applying provisions of the General Plan and Scott Valley Plan for the County.

2-4 cont.

(4) The 1996 Siskiyou County Comprehensive Land and Resource Management Plan specifies:

Introduction and Statement of Purpose

…"Accordingly, the Board of Supervisors of the County of Siskiyou declares that it is the policy of the county to require each and every federal (see Appendix I) and state agency administering, managing or regulating lands or natural resources within the county to fully coordinate with the county at the initiation and throughout the planning process, whenever proposed plans, actions, regulations, restrictions or establishment of productivity levels are being considered."

General Processes, Methods And Goals Of An Analysis By Agencies

"Plans or actions by agency, inter-agency or other decision-making groups shall contain information and discussion to facilitate a coordinated planning effort between the agency and county government. Participation by the county in multi-interest planning, advisory or decision-making processes does not replace, abridge or satisfy the requirements for coordinated consultation and coordination between county government and the decision making agency(s).

"This information for a coordinated planning effort shall include effects on the physical, social and economic environment. This includes the physical environment, historic customs, culture, useage, property rights, economic welfare, general prosperity and economic stability of communities in Siskiyou County. Actions or plans with non-significant impacts or negative impacts on the physical environment shall also be included since those actions or plans may have significant social and/or economic implications, including cumulative impacts.

"Since the majority of land in Siskiyou County is non-private land, and the County's major industries livestock, farming, timber, mining and recreation - are

2-5

tied to that land and pertinent resources either directly or indirectly, then all economic or social and natural or physical environmental effects are interrelated…"

"Discussions of effects on the County's natural resources and environmental quality should include but are not limited to:

1. fisheries and wildlife resources
2. forest and timber resources
3. range resources
4. dryland crops
5. watershed resources
6. private surface and ground water rights and irrigated cropland
7. mineral resources
8. recreational opportunities
9. environmental quality of air, water, and soils
10. integrated resource planning and management in which county private parties and/or public interests are involved
11. multiple use, sustained yield and range resource laws
12. private investments, property interests and regulations into public land resources
13. impacts on privately owned land, improvements and resources or adjacent to federal or state managed land where the plan, program or project is proposed
14. Discussions of effects on the County's culture, governance, schools, social services and other local programs include but are not limited to:
15. The culture of the county due to potential population loss.
16. The culture of the county from possible limitations and restrictions on cultural beliefs and practices, diversity and choice of lifestyle, and maintenance of cultural, community, generational and familial cohesion and kinship.
17. Cultural and community aesthetics, including historic sites, natural resource vistas, river ways and landscapes.
18. The County's ability to protect and provide services for the health, safety, and social and cultural well-being of its citizens
19. The County's ability to finance public programs and services through bonding, lending and other financing mechanisms
20. Local governments (towns, etc.) and schools from identified tax revenue loss
21. Local emergency medical services, law enforcement, fire (and wildfire) protection and nuisance abatement
22. The local infrastructure, including transportation, community water, sewer, power, electric power generation and transmission systems, (including irrigation and reclamation districts), service districts, and landfill services.
23. Local community well-being, stability of governance, and the education and welfare of children from cumulative and long-term impacts
24. Pest and predation control, and weed abatement.

Discussions of effects on the County's economy, customs, useages, services and businesses to include but are not limited to:

2-5 cont.

1. Economic diversity
2. Private investment backed expectations
3. Direct, indirect and cumulative employment (including those who are self-employed) and wages
4. The industries of cattle, farming, timber, mining and recreation - specifying unit cost effects (e.g. economic value of animal unit months (AUMs), million board feet (MMBF), measurements of cubic feet per second (cfs) or acre feet of water, yield per acre, acres in production), recreational user days or other units of measurement as appropriate.
5. Local businesses directly and indirectly related to the resource decision or plan.
6. Housing, real estate values, residential energy, water, sewer and sanitation needs.
7. Variable thresholds for business demand and markets.
8. Marketability of workforce skills
9. Business and financial planning and the ability to obtain financing dependent upon continued availability and productive use of a natural resource.
10. The level of manufacturing or processing technology required of local industry, dependent upon the availability of suitable raw materials.
11. Local community well-being, stability and ability to maintain current and future debt service by long-term and cumulative impacts.

"Direct and indirect impacts on economics, and ramifications of planned activities on local economics shall use appropriate multipliers.

2-5 cont.

"Discussions shall include any effects on property rights and protectable interests in the County. In addition to these requirements, there shall be an evaluation of the impacts on property rights, as subject under California Executive Order D-78-89 on Regulatory Takings, the United States Presidential Executive Order No. 12630, entitled "Government Actions and Interference with Constitutionally Protected Property Rights", and the Attorney General's guidelines entitle "Evaluation of Risks and Avoidance of Unanticipated Takings", mandating that the following tests or criterion be used in assessing possible taking of private property rights:

1. Whether the plan, program or project constitutes an actual physical intrusion or actual taking
2. Whether the plan, program or project constitutes a regulatory taking
3. Potential for partial or full loss of economic value or investment backed expectation
4. Related effects on custom, culture and usage
5. Whether the agency action conforms to constitutionally protected property rights and commonly accepted notions of fairness and due process
6. Cost of compliance.

"Discussions shall include cumulative, long-term effects on the County's economy, culture, usage, services and businesses. Plans, programs or actions may have insignificant impacts when analyzed individually, however, cumulative long-term impacts when combined with plans that have similar direct or indirect impacts may be significant.

Infrastructure of economic sectors, culture, customs, usage, services and community stability must be evaluated and protected from cumulative effects."

COMMENT: (This is informational)

2-5 cont.

(5) ***COMMENT***: Under Baldwin v. County of Tehama (1994) and In re Maas (1933,) Siskiyou County has clearly asserted jurisdiction over groundwater management through the passage of Siskiyou County Code Title 3. Public Safety, Chapter 13 Groundwater Management. Recently, as part of the TMDL Action Plan by the North Coast Regional Water Quality Control Board (NCRWQCB), Siskiyou County submitted a groundwater study plan to the NCRWQCB prepared by Dr. Thomas Harter, Ph.D. of University of California Extension Dept. of Land and water Management for the Scott Valley. Historically, Siskiyou County has also helped to fund a static well study in the area.

2-6

(6) ***COMMENT:*** Under Water Code §§ 8125-8129, the California Legislature has placed planning for non-navigable streams within the authority of county supervisors. The code states that:

"Non-navigable streams," as used in this article, means streams and washes in a county which are not declared by law to be navigable and which are not in fact navigable for commercial purposes. 8126. The board of supervisors may provide for widening, deepening, straightening, removing obstructions from, and otherwise improving non-navigable streams the overflow of which interferes with highways, and for protecting the banks and adjacent lands from overflow of non-navigable streams. 8127. The board may make regulations for the use of the streams and the repair and control of the works. 8128. No regulations of the board nor improvements directed by it to be made shall in any manner interfere with the private rights or privileges of riparian owners, miners, or others. 8129. Whenever, in the opinion of the board of supervisors, the general fund is insufficient to defray the cost of the improvements provided for under this article, the board may levy a tax or contract a bonded indebtedness therefore in the manner provided by Title 3 of the Government Code."

2-7

Historically, (150 years) Siskiyou County has considered the Scott River and its tributaries to be non-navigable and the bed and banks of these rivers in vested private ownership. Lux v Hagin (1886); Scott v. Lattig (1913); United States v. State of Utah (1931). (It is a long established principle that a vested right cannot be resumed, annulled or later modified by the grantor through legislation or otherwise. Further, States are barred from impairing the obligation of contracts, including these vested rights Hughes v. Washington (1967.)

In 1913, Donnelly v. U.S. established the navigability of the Klamath River. This is reflected in the California Codes – Harbors and Navigation Code Section 103. The Klamath is the only river so listed for the County of Siskiyou.

Absent a definitive judicial determination that the Scott River is, indeed, navigable, the question arises as to the jurisdiction of the State Lands Commission over the river. The

State Lands Commission appears to have no jurisdiction over non-navigable streams: California Public Resources Code Section 29300-29308. 2-7 cont.

(7) ***COMMENT:*** The Proposed ITP appears to include the redirection of water from private use for irrigation to instream uses for fish and habitat. Many of the water use rights in Scott Valley are either riparian or were established by appropriation and continuous beneficial use in the mid 19th century - well before 1914 when the People of the State claimed surplus water beyond vested rights. (In San Bernardino v. Riverside (1921) and Palmer v. Railroad Commission (1914) the Court specifically stated that the 1911 statute declaring water the "property of the people" did not apply to private water use rights already vested.) Most water use rights in the Scott are vested, privately owned and valuable property, and not revocable "permitted" or licensed water use subject to conditions from the state.

In the recent United States Court of Appeals for the Federal Circuit case –Casitas Municipal Water District v. United States (2008), it was reinforced that a physical invasion of privately owned property (water use right) by government appropriation, or a regulatory action which causes "an owner to suffer a permanent invasion of her property – however minor," or a regulatory action that "completely deprive[s] an owner of 'all economically beneficial use" constituted a compensable property taking under the Fifth Amendment of the Constitution. Restrictions on water use rights for the public use of protection of endangered species – including instream use was recognized as a "taking" of property. The case further denies claims that appropriation of natural resources for environmental use is not for government use under the Fifth Amendment: "…preservation of an endangered species is for government and third party use – the public- which serves a public purpose." In addition, Casitas makes a distinction between the ruling in Tahoe-Sierra on the basis that the Tahoe decision did not physically appropriate anything, change or diminish the property. 2-8

Under the ITP, it appears that the Water Master would be required to reduce water diversion for instream flow needs of fish. Will compensation for reallocation of this valuable property to public use be provided through the Water Trust? There are also questions regarding the Dry Year plan and connectivity requirements. The ITP also seems to require conversions of an undefined corridor of riparian lands to lands planted in trees for the benefit of endangered species habitat. In addition, it appears to recognize the CA DFG as land use authority in regard to grazing in this undefined area of land.

In January 1993, the Siskiyou County Board of Supervisors Passed Resolution 93-19 requesting that the state evaluate possible takings of the private property or private property rights of the citizens of Siskiyou County prior to the implementation of any action, decision or regulation effecting said citizens; to formally evaluate and avoid the risk of unanticipated private property takings and investment backed expectations; and that the property owner shall be justly compensated for losses as mandated by the Fifth Amendment of the U.S. Constitution and Article 1, Section 8 of the Constitution of the State of California without undue delay. 2-9

I am concerned about the potential in many of the mitigations being imposed for the creation of "unconstitutional conditions," which would require the surrender of rights guaranteed by the Constitution of the United States in exchange for a valuable discretionary privilege which the state threatens otherwise to withhold. This includes the right to privacy (property access,) the right to receive just compensation when property is taken for a public use.

I am concerned that a "permit" (1602) requirement is being categorically imposed on the exercise of a long vested and valuable property right (pre-1914 water use right) - making it, essentially a discretionary conditional privilege. Many of these early appropriative water rights were granted as an invasion of riparian rights on federal lands under the federal Act of 1866. It is a long established principle that a vested right cannot be resumed, annulled or later modified by the grantor through legislation or otherwise. Further, States are barred from impairing the obligation of contracts, including these vested rights Hughes v. Washington (1967.) It is also established in law that whenever a grant is made, it also included whatever was necessary for taking and enjoying the property, (diversion of an appropriative right.)

The DEIR appears to indicate that a 1602 permit is required to operate all diversions, even if no physical disruption of the channel occurs. The California Farm Bureau has indicated that no where else in California has the CDFG interpreted the 1602 provisions to categorically require a conditional permit on all water diversions for irrigation. The code originated from a need to control land disturbing activities – not exercise of water use rights as simple as lifting a headgate:

1602 - (a) "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:"

This raises the question of equal treatment under the law. If Scott Valley residents are required to obtain a permit to use their water use right (divert,) then everyone in California should also be required to do so.

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I am also concerned about the "rough proportionality" of the conditions being imposed in relationship to the reasonable impact and actual risk of "kill" from the individual covered activity. (Dolan v. City of Tigard, 1994). (For instance, does the risk of sediment and foraging in riparian areas proportionately justify the conversion of land to trees and the imposition of an entire regulatory scheme to permit grazing on an undefined amount of 'riparian" land?)

2-9 cont.

(8) ***COMMENT:*** Environmental Justice is the fair treatment and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Agencies are directed to avoid, minimize

2-10

or mitigate: (1) disproportionate health, environmental, social and economic effects on low-income populations; and (2) barriers to participation in the decision-making process and self-determination by low income populations.

Obviously, the DEIR clearly establishes Scott Valley and the entirety of Siskiyou County as an economically depressed area (Long Term Economic Distress page 3.1-4 DEIR.) With a median household income of $32,531 and the average net cash profitability of local farms and ranches at $29,747, those engaged in agriculture in the County constitute a low income population. In addition, the ranching and farming families of Siskiyou County represent a unique cultural heritage as the descendants of pioneer California families. Many operate Century ranches that have been in existence since the mid 19th century. The 1996 Siskiyou County Comprehensive Land and Resource Management Plan chronicles the custom, culture and history of this significant cultural group in Siskiyou County.

Considerations should be made to ensure that financial implications from implementing measures in the 1602 and ITP are minimized for individual family farms and the County agricultural population as a whole. (This includes indirect costs from additional Water Master service, replacement costs of fences and fish screens after flood and other events.) The proposed measures essentially benefit endangered species, (a "public purpose,") and costs should not be born by the individual alone. The value of preserving the culture and heritage of farming and ranching, which is of great significance to Siskiyou County and California, must be weighed in balancing costs to benefits for coho.

In addition, I am very concerned about the unknown financial costs to and liability of the Siskiyou Resource Conservation District, which serves this population in Scott Valley. Care must be given to ensure that exposure is minimized and that they are protected from the inability to acquire expected grant funding for anticipated projects to address cumulative watershed effects and mitigate claimed species "take." A hold harmless off-ramp should be provided if grant funding is found to be unavailable.

2-10 cont.

(9) ***COMMENT:*** As a County suffering from "Long Term Economic Distress" (page 3.1-4 DEIR,) particular care must be taken to eliminate any additional damage to a fragile local economy and social fabric. The social and economic impacts of the proposal and cumulative effects of water quality, air quality and other regulations on agriculture and the economy of Siskiyou County as a whole have been inadequately analyzed in the DEIR.

According to the new 2007 California County Data Book, Siskiyou County is now dead last in all California Counties in family economic well-being, having the lowest median income. 65% of households with children ages 0-17 are low income, compared with a California average of 43%. The report notes that 27% of Siskiyou County's children live in official poverty, compared to 19% for the state. Since the Northwest Forest Plan, average unemployment in the county has been 12.3%. In 2003, only 39.5% of the population was in the labor force. This is projected to decline another 8.7% by 2015. Between 1990 and 2002, official poverty rose 32.9% to 18.6% of the total population.

2-11

Several farming communities have higher poverty rates: 26% in Fort Jones (Scott Valley); and 24.2% in Montague (Shasta Valley.) These conditions will only worsen in the current statewide economic downturn.

The deterioration of the economy in the past two decades has caused dramatic demographic changes, such as an overall decrease in the population aged 30-39, (as well as school aged children,) and an increase in the population aged 50-59, with those aged 60 making up a higher percentage of the population than the state average. School enrollment since 1990 has declined from 25-30%. This aging trend is projected to steadily increase over the next 20 years.

Other than two plywood veneer mills, Siskiyou County has almost no manufacturing industry. There is very little economic diversity, with almost the entire economy based upon continued access to natural resources. Agriculture produces $170 million in revenue that is said to circulate in the local economy about 5 times. Tourism (mostly in the south county – Sacramento River Region) is valued at $60 million. What is left of our timber industry brings in about $48 million in revenues to be circulated.

(The DEIR page 3.1-9) indicates that in 2002, average annual sales per farm were approximately $137,000 per farm, but input costs were $107,386. The County determined in its 1999 comments regarding a proposed federal 300 foot critical habitat designation for coho, that 21% of the irrigated agriculture land base in the Shasta Valley (9,817 acres) and 35% (11,215 acres) in the Scott would be implicated and largely converted from production ag. (Currently proposed buffers and probable land conversions are indicated but not quantified in the DEIR.) A decade ago at that proposed level of involvement, the combined loss of annual ag production was estimated to be $4,420,766. Using the multiplier effect of an income/output model by UCE, this was estimated to result in lost sales in other economic sectors of the county of $5,913,173, losses in income of $1,847,079 and 132 lost jobs.

2-11 cont.

It was also estimated at that time that weed infestation from projected management prohibitions in the buffer areas would amount to another $1,225,095 in ag loss. Loss in annual timber stumpage value from riparian buffer strips was estimated at $4,941,695. No "multiplier effect" on local economy was calculated for these projected losses. Loss in ag land value from prohibitions was estimated at $40 million.

According to Cal. D.O.T. Siskiyou County Economic Forecast, since 1995, Siskiyou County's agriculture industries have experienced substantial job loss at about 586 jobs, declining almost 45%. For instance, since 1996, county vegetable crops have declined in their contribution to the economy from $18.9 million to $11.8 million - or 38 percent. Much of this is due to regulatory pressures, such as the water crisis in the Upper Klamath Basin.

The advent of the Northwest Forest Plan saw the closure of several local saw mills. Logging jobs have steadily decreased from 951 jobs in 1989, to 331 in 1995, to 186 in 2004. In recent years, under regulatory restrictions, the Klamath National Forest has

annually been allowed to harvest only 15 million board feet of timber, when it grows 654 million board feet in a year.

Poverty and other stressors contribute to local family problems. Siskiyou County has a very high child abuse referral rate compared to national statistics. For instance, in a total population of only 44,000, in December 2007 there were 36 referals and three children had to be removed from their home. In that month, 83 children were in permanent foster care or a group home, 20 were in non-relative guardianship, 23 were supported by a voluntary family maintenance plan, and 69 children were in a temporary foster or other care working toward family reunification. The 2004 report entitled "*Community Indicators of Alcohol and Drug Abuse Risk for Siskiyou County"* (CA Dept. of Alcohol and Drug) indicates that from 2000-2002 in Siskiyou County, there were 132.1 emergency responses per 1,000 population under the age 18 for child endangerment/abuse. This compares with a statewide average of 68.6 per 1,000. County Foster care placements were 18. 9 per 1,000, compared with a statewide average of 10.3.

According to an October 2008 study by Meredith Bailey CPA, Inc. entitled *"A Review of Intimate Partner Violence in Siskiyou County,"* the rate of Type I crimes (aggravated assault, robbery and forcible rape,) is much greater in Siskiyou County than in Los Angeles. In fact aggravated assault is about five times greater. Siskiyou County also dominates the surrounding counties of Humboldt, Shasta, Lassen and Del Norte County in the rate of these crimes. The report points to "social strain" fueled by alcohol and drug use as the cause.

2-11 cont.

The report entitled *"Community Indicators of Alcohol and Drug Abuse Risk for Siskiyou County"* states that from 1999-2001 the annual rate of DUI arrests for Siskiyou County was 13.3 per 1000 people aged 18-69, while the average for the State of California is only 8.4. The total arrests for alcohol-related offenses (excluding DUI) was per 13.2 per 1000 people aged 18-69 in Siskiyou County, while the rate for California is only 5.9. In 1998-2000, the rate of alcohol related fatalities was 149.4 per 100,000 drivers in Siskiyou County and an average of in the entire State was 98.1.

The deterioration of the economy and social well-being of the county parallels ever increasing Endangered Species Act, Northwest Forest Plan, water quality (TMDL,) air quality and global warming regulatory schemes. Such regulations limit access to resources, inflict emotional stress from worry and frustration about compliance, eliminate jobs, increase costs of operation and allocate needed resources to environmental uses of little economic benefit to the area. This has increased stress on families and communities. CA DFG must realistically and carefully consider the direct and cumulative impact of the ITP and 1602 programs on Siskiyou County and the further harm they might cause.

This proposed regulatory scheme is not going to occur in a vacuum. I have repeatedly asked for an adequate economic/social impact statement and cumulative effects analysis from the many regulatory agencies that have imposed new layers of regulations on natural resource users in Siskiyou County. Given the current dire state of economy and social straits that this County finds itself in, I must insist that the CDFG seriously proceed

with such an analysis. We will not survive as a county if these regulations continue to destroy the fabric of our families, communities and local economy. Crafting a plan to limit the steps a landowner or irrigator must take to protect coho that is realistic, simple, affordable and does not affect land and water available for production, family income and local economies is vital. Programs that bring in financial and technical resources to put people to work in restoration and make operations more efficient and productive would be desirable. 2-11 cont.

(10) ***COMMENT:*** According to the Draft Quadrennial Fire Review for 2009, "most experts calculate that the nation is still in the first decade of what is expected to be a 25-30 year cycle." "[D]rought will create competition for water on ecosystems, increasing the stress on biomas and drying out vegetation." Conditions will be such that "a month should be added to the front and back of the traditional fire season. Fires will continue to be large and of high intensity. There will be shorter wetter winters and warmer, drier summers. 2-12

In light of the above assessment, what consideration is being made so that farmers and ranchers will not be expected to mitigate for climate change and its impact on temperature, hydrology, vegetation and sedimentation from fire, in addition to their own discrete impacts? 2-13

Specific Comments on the DEIR text:

- Page S-3 - *Recovery Strategy for California Coho Salmon (SSRT)* – The SSRT strategy was created as a series of actions to be taken voluntarily by agriculturalists and others to help achieve recovery of coho in the Scott and Shasta River valleys. It appears that this "voluntary" approach has now morphed into a menu of mitigation measures to be forcibly implemented through the regulatory umbrella of the ITP and 1602. The likelihood that any discrete action of a farmer or rancher could be tied directly by proximate cause to the death of a coho does not appear to be that great. Yet the actions being required to avoid, minimize and mitigate impacts appear extraordinary and disproportionate to the risk of provable taking (kill.) It is as though the decline in coho populations is being attributed entirely to agricultural operations or that the ITP is being used to implement the recovery strategy, not to "fully mitigate" kill.

  I would also like to point out that the final SSRT recommendations were never presented to the Board of Supervisors, even though personally I requested this several times from Mr. Craig Martz. 2-14
- S-12 to 15 - *"ground disturbing activities" requiring professional special status plant surveys, archaeological and paleontological surveys ; beginning a "covered activity" requiring professional surveys for sandhill cranes, Swainson's hawk and willow flycatchers.* It appears that expensive surveys may be required in order to engage in normal farming activities, such as plowing/tilling. 2-15 2-16
- S-14 – *Grazing in the "riparian zone" to be subject to a grazing management plan approved by CDFG. 2-*13 *Grazing adjacent to the channel requiring a CDFG approved grazing management plan. 2-19 and 24 Riparian Fencing and Planting –* 2-17

requirement for revegetation and exclusion fencing. 3.2-19 *Grazing "adjacent to the channel" may only occur with and approved grazing management plan.* It appears that the ITP page 26 establishes that a livestock exclusion fencing requirement of 35 feet would be required. Exceptional use of this fenced riparian area for grazing to reduce noxious weeds, etc., would require a special grazing management plan. In some areas (particularly the Shasta River,) tight meanders create conditions where the fence would have to follow the river contours, as a straight line would substantially reduce available land for productive use. The question also arises about those who currently have a 20 foot fence. Would these have to be moved and more land taken out of production? It is assumed that riparian stock watering access would be provided. Otherwise, exclusion for five years or more could amount to a physical takings of a water right. As other provisions appear to require planting of trees in riparian areas, it would seem that this could result in a substantial conversion of land use into non-use "buffer" areas and a reduction of highly productive soils available for agriculture and economic use. Please include these considerations in an economic impact analysis. 2-17 cont.

- *1-3 Covered Activities could affect the beds of navigable waters.* Please see previous comments on non-navigable status. 2-18
- *2-15 Requirement to provide written consent for non-enforcement CDFG representatives to access sub-permitees' property to verify compliance with 48 hour pre-notification.* As with prior salmon survey permission forms, the landowner should be allowed to limit access to CDFG employees only. The landowner should be allowed to accompany the employee and receive a copy of any data gathered, if the landowner so desires. Liability insurance for the employee should also be guaranteed. 2-19
- *2-15 The sub-permitee and SQRCD should be solely responsible for any costs they incur in implementing avoidance, minimization, mitigation and monitoring measures.* As previously explained, many agriculturalists in Siskiyou County are in a low income group. Necessity and environmental justice require that measures for sub-permittees be reasonable and affordable. Permittees should not be required to bear an unreasonable burden for the public benefit to the point of destruction of their small business and family income. RCDs have no income, so they are dependent upon receiving grant funding in order to implement measures. As expressed previously, I have concerns about unrealistic expectations to the contrary. 2-20
- 2-16 – *Fish Screens* - originally, it was the CDFG's statutory responsibility to install fish screens on diversions that had been in place prior to a certain date. CDFG had done only a handful in the Scott, so the RCD took up an ambitious voluntary plan to accelerate the program and acquired grants to install fish screens throughout the valley. I believe almost all diversions within coho range have now been installed. The ITP, however, seems to shift the burden of fish screens to the individual irrigator. I am concerned that in the event of one of our serious periodic floods, irrigators will be expected to replace out of pocket fish screens that range from $10,000 to more than $100,000 in cost.
- 2-*10 Tailwater Capture systems.* It is my understanding that the Scott River Adjudication decree specifically allocates tailwater. CDFG may encounter some legal difficulties with the adjudication in implementing measures for reduction and capture. At the very least, there should be a provision that no one should be harmed in the receipt of water due them under the adjudication from such measures. 2-21

- *2-21 Maintaining Connectivity of the Tributaries in the Mainstem.* This provision should be reviewed for potential property takings implications.
- *2-21and 2-23 Contingency Plan for Dry and Critically-Dry Water Years, Diversion Ramp Up Management Plan, Stranding and reducing or cessation of diversions* . This provision should be reviewed for potential property takings implications.

2-21 cont.

- *2-22 Water efficiency programs.* There is a very real concern that so called "water efficiency" measures may affect the timing of river flows. Rather than storing water not used for evapotranspiration in the subsurface soil profile like a sponge, allowing it to be cooled as it travels into the summer through soils to the river, super efficient delivery systems will deliver only what is evaporated or transpired by the plant, allow unused spring flows to rapidly leave the system to the Klamath, leaving little stored in the soil profile to linger and feed summer flows. Flood irrigation, although thought to be inefficient, may actually evaporate less because of less exposure to wind. It also recharges the aquifer and allows for surface storage to feed later summer flows. "Efficiency" is a factor in late summer for flows, but at other times of the year may be a detriment. Also, many of the so-called "leaky ditches" provide hydration for wetlands and other ecosystems that have grown to depend upon them. Piping or replacement delivery systems could significantly affect that.
- 2-*23 Alternative Stock Water systems.* See prior comments about loss of habitat from efficiency and property takings. Ditch leakage may currently supply domestic wells along the route. Loss of that water could be problematic.There are also the design concerns regarding the creation of a system that will adequately operate in freezing conditions.

2-22

- 2-27 *Watermaster* – The issue of property takings for actions required of the Watermaster (outside of administering the adjudication) that may shut off water from a water rights owner and reallocate that water to a public purpose should be analyzed and discussed. The Watermaster is an agent of the court whose purpose is to administer the adjudication in the field, where so directed by the Court. The CDFG appears to be requiring expensive Watermaster Service or something similar for those not currently required by the court to have it. The ITP appears also to be coopting the duties of an official Watermaster to implement reductions in water allocations outside of the court decree. Also, the State Legislature passed a law allowing for the establishment of a local Watermaster service and district on the Scott River system. This district was created and representatives appointed by the Board of Supervisors. I believe they are in the process of obtaining court recognition. The local service was initiated because of the astronomical future rate increases indicated by the Watermaster. It has not yet been fully implemented.

2-23

The ITP fails to address any additional costs that would be passed on to the water user from new Watermaster duties and only assumes that the DWR Watermaster will be providing the service. ITP Coverage needs to include the new local option as well.

2-24

- 3-2 *Mitigation* - The third and fourth paragraphs appear to indicate that historic and ongoing activities of farmers and ranchers in Scott Valley would not require mitigation. (Presumably they would still require avoidance and minimization, which is what the ITO "Conditions" are all about.) The mitigation is for the physical changes the actual 1602 and ITP requirements would cause, in order to bring them to less than significant impact levels. Is this correct? As the RCD would be held responsible for

2-25

mitigation under the ITP and as the program is largely beneficial to the environment, then the mitigations expected of the RCD would appear to be negligible. Please clarify further. 2-25 cont.

- Page 3-4 *Physical Changes Likely to Result from Program* – I am concerned that less agricultural water is expected to be diverted. Is this from defacto property takings? As any analysis been done on how this will affect the productivity of the land and the local economy? I am concerned that "conditions placed on ground-disturbing activities" for various studies may be a very expensive permit to farm. 2-26
- 3.1-7 *Nurseries* - An extensive nursery operation does exist in Scott Valley (Cal Forest Nurseries.) 2-27
- 3.1-12 and 3.1-27 *Zoning and Subdivision* - As set forth in our new Five Year Strategic Plan, the County will be reviewing its General Plan elements and zoning for possible revision. It will also be considering new area plans. I assume that land use and trends will be considered in the process. Should land currently zoned for agriculture lose access to irrigation or be tied up in such expensive and onerous regulations that the agriculture ceases to be an economically viable use of the land, it is possible that changes will be made. There are currently areas in the Shasta Valley where there is considerable developmental pressure and at least one owner has already tried to opt out early from their Williamson Act contract in order to subdivide. 2-28
- 3.1-6 *Williamson Act* - Due to the State Budget and proposals to discontinue the Williamson Act subvention payments to the County, many contracts now contain the following wording:

  " If in any year the State fails to make any of the subvention payments to the County required under the provision of the Open Space Subvention Act, then this Contract, at the option of, and in the sole and absolute discretion of the County, may be terminated by the County." 2-29

- 3.1-17 *Efficiencies and Groundwater*. (See Prior Comments made.) According to Dr. Thomas Harter, the average annual discharge in the Scott Valley watershed is 615,000 acre feet of water. This is more than the groundwater basin can hold (400,000 acre ft. – U.S. Geological Survey.) The Department of Water Resources has estimated that agriculture uses only 70-90,000 acre ft. It would seem to be that storage of peak flows, conjunctive use and other management options could be honed to meet the needs of both agriculture and fish. The Scott Valley is definitely NOT in an overdraft situation. The water just isn't where it is needed at certain times of the year. Water that has left the system in the winter and spring might be better stored in high mountain lakes (as it was historically,) aquifers or other storage for later release. 2-30
- 3.1-25 and 26 *Significant "Physical Effects" such as Land Conversion.* Page 3.1-9 discussed the "low profitability of existing local agricultural production" and the current average net profit. Expensive regulatory schemes that add to costs and decrease that limited margin of profit are likely to push operations over the threshold to not profitable – resulting in land conversion. Regulatory schemes that expect to reallocate water from agriculture in any way that effects productivity reduces the profitability margin and pushes operations over the threshold to non-profitable – resulting in land conversion. 2-31

The 1996 Siskiyou County Comprehensive Land and Resource Management Plan states that "Since the majority of land in Siskiyou County is non-private land, and the County's major industries livestock, farming, timber, mining and recreation - are tied to that land and pertinent resources either directly or indirectly, then all economic or social and natural or physical environmental effects are interrelated…" Considering the long tern state of economic distress that Siskiyou County continues to experience, costs, loss of productivity and land conversion from productivity have the potential for serious impacts on the county and should be analyzed. 2-31 cont.

- 3.2-5 *Sediment* It should be considered that the Scott River is an unstable system. Past large mining operations (Yuba dredges, Hydraulic Mining) – particularly close to the headwaters of the Scott River (Callahan,) Oro Fino and Moffett Creek (Cherry Creek) have caused ongoing instability in the sediment regime. In addition, fires up Kidder Creek and down in the Scott River Canyon have caused mass land movement. The Army Corps of Engineers also straightened rivers, removing meanders and access of the river to the floodplain. This has caused downcutting and widening of the rivers. Youngs dam and its removal has caused head cutting up the river. In addition, periodic large flooding events tend to erode huge areas of land and redistribute gravel onto agricultural fields. In the past, this has ripped out restoration work intended to help mitigate the erosion problem. It would be entirely unreasonable and it would show a huge lack of perspective to expect farmers and ranchers to cure this instability by merely planting trees and excluding livestock from riparian areas. They have tried this for decades with minimum success. 2-32
- 3.2-25 *Draw down of the water table* – Findings from the static well monitoring study shows regular annual recharge of wells with the exception of one or two in a particular area (Eastside?) that appear to be on a slower recharge cycle. Scott Valley does not have an overdraft problem. 2-33
- 3.2-32 *Decline in Scott River baseflow* Attributed to an increase of consumptive use and groundwater extraction. I understand that the figures attributing decreases in baseflow to agriculture in the recent Van Kirk report do not reconcile with the DWR figures since 1954 and complaints have been filed about the report's quality. Dr. Thomas Harter is the researcher closest to the field work actually being done in the Scott River area. 2-34
- 3.3-41 *Channel Dewatering* – I attended a meeting where the previous DWR Water Master (I believe it may have been Mr. Dicks) indicated that it was his professional opinion that if everyone stopped irrigating in the Valley, that it would only delay dewatering in some stretches by – one to two weeks. I feel it is disingenuous to lay the blame for dewatering on agriculture. Dr. Dan Drake and others have done studies to show the recent decline in snowpack in the area. The Scott River Watershed Council has done studies that show that water supplies vary from year to year according to when snowmelt occurs. Also refer to my comment #9 on climate change trends. One would need to be able to show that the action of the diverter was directly responsible for killing the fish (proximate cause.) 2-35
- 3-3-42 *Habitat availability, habitat reductions, available summer rearing habitat, affects on fish growth, migration barriers, fish densities* do not reach the level of avoiding the "kill" standard of CESA. Beyond that, water adjustments move across the threshold into cutting off a diverter's water and reallocating it to fish, which would 2-36 2-37

appear to be a compensable property taking (**Casitas Municipal Water District v. United States.)** 2-37 cont.

- 3-2-50 *State Regulation and Oversight of Water Rights* (Please see prior comments on pre-1914 water use rights as privately owned property which is not permitted or licensed.) The Water Use Rights as decreed under the Scott River Adjudication are under the jurisdiction of the Siskiyou County Superior Court. 2-38
- 3.2-57 *Mitigations* – instream equipment operation limited to July 1-October 15 How will this apply to irrigators with "push up dams" at the start of irrigation season? 2-39
- 3.2-57 *Instream structures* – Under flood conditions, who would be responsible for damage incurred to downriver landowners or County infrastructure – roads and bridges – from movement of these structures? Who would be responsible for replacing these structures if lost? 2-40
- 4.2 et all *Cumulative Effects*. As indicated previously, "Since the majority of land in Siskiyou County is non-private land, and the County's major industries livestock, farming, timber, mining and recreation - are tied to that land and pertinent resources either directly or indirectly, then all economic or social and natural or physical environmental effects are interrelated…"(SC Comp. Lnd. and Res. Mgt. Pln.) Cumulative effects analysis should include and consider, not just physical effects, but effects on the social and economic environment as well. 2-41

This concludes my initial comment. In summary, I have significant concerns about the apparent reallocation of water to instream use by the Watermaster and whether this constitutes a property taking. 2-42 There are some serious concerns about the new interpretation of CA Fish and Game Code 1602 and its application to diverters that do not physically change the bank or channel in the process of diverting. 2-43 I was disappointed to see that there are so many measures required under the 1602 and ITP that could be expensive to implement and would take land out of agricultural production. Although an attempt was made to look at impacts on agriculture, no serious analysis has been done about the cumulative effects of regulation and specific effects of this program on the economic and social fabric of Siskiyou County. 2-44

Sincerely,

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Siskiyou County
P.O. Box 750
Yreka, CA 96097

Comment Letter 2.1

UNIVERSITY of CALIFORNIA
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December 8, 2008

Mr. Bob Williams
Dept. of Fish and Game
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Redding, CA 96001
Fax: 530-225-2381
E-mail: SHASTADEIR@dfg.ca.gov

Comments on Siskiyou and Shasta ITP Environmental Impact Report

In my professional opinion, the EIR has omitted an evaluation of the potential for changes in crops especially in riparian areas that could fundamentally alter hydrologic cycles, change watershed functions, increase erosion and other hazards. Several aspects of the program have been evaluated individually and determined to be insignificant. For example, the potential for changing from surface diversions to groundwater pumping has been determined to be small and insignificant. The same evaluation holds true according to the EIR for other program demands such as reduced or eliminated stream crossing, stream watering for livestock, dates for instream work, and increased regulation and reductions in livestock grazing. There was also a determination that the program in total would not result in a reduction in Williamson Act participation and thereby increased land conversion to non-ag. However, in my professional opinion, a very likely and possible scenario would be changes in crop use from grazing of perennial pasture to hay production. Such a change could address and respond to many aspects of the proposed program such as livestock stream crossings, manure pollution and livestock drinking requirements. The cropping system changes could lead to annual cropping, increased use of chemicals, changing to sprinkler irrigation, decreased soil moisture content (and thereby subsurface cold water return flows), greatly increased erosion potential during land preparation phases and other activities. Grazed perennial pastures are probably the best use of the riparian lands as they provide stable soil areas with minimally intensive agricultural practices. The potential for landowners to select an intermediate action to the program, not complete withdrawal of ag land to non-ag land, but rather a conversion from native or perennial pastures to a cropped haying system was not evaluated. The impetus for such a change would not be the result of the CESA itself, nor various other regulatory actions, but instead the aggregate proposed program requirements. Large scale conversion of riparian lands from pasture lands into intensive hay operations could greatly change watershed functions and increase environmental damages. 2.1-1

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UC Cooperative Extension Farm Advisor &
CE Associate Dept. Animal Science
University of California, Davis

Comment Letter 3

Siskiyou County Farm Bureau
*809 Fourth St. * Yreka, CA 96097 * 842-2364*

November 22, 2008

Bob Williams, Staff Environmental Scientist
Conservation Planning
California Department of Fish and Game
Northern California – North Coast Region
601 Locust Street
Redding, California 96001

Re: Shasta River Watershed-Wide Permitting Program Draft Environmental Impact Report *and* Scott River Watershed-Wide Permitting Program Draft Environmental Impact Report

Dear Mr. Williams:

These comments are submitted by the Siskiyou County Farm Bureau and pertain to both the Scott and Shasta Draft EIR on the respective watershed-wide permitting programs. We would like to thank you for the opportunity to provide comments.

The health of the fishery in the both the Scott and Shasta depend on an agricultural industry that is profitable and sustainable in order to maintain open space. We are concerned that many aspects of the ITP's, as proposed, threaten property and water rights, introduce a culture of dependency and impose management restrictions on an industry that has been independent and self-reliant while utilizing the best available technology and science to be profitable while protecting the environment for their future generations.

3-1

Certainly, the Department of Fish and Game is responsible for the successful management of our fisheries. However, a successful recovery depends on the continued success of agriculture and a strong bridge of trust between the RCD's, the Department of Fish and Game and the landowners. As the Program is currently described, it jeopardizes the economic stability of an already fragile industry, threatens constitutional and judicial rights of landowners and degrades the existing level of trust that currently exists.

If there is a true desire to restore the fishery in both the Scott and Shasta watersheds, we would expect the Final EIR, ITP, and SAA to include the additions and modifications that we have presented.

Sincerely,

Jim Morris
President

KEY AREAS OF CONCERN:

Concern 1: The Program is being created for the entire watershed of both the Scott and Shasta rivers. The assumption is made that agriculture is the "major" cause of the decline in salmon numbers due to flows, without any scientific evidence to support that conclusion. In fact, the DEIR fails to correlate any changes in agricultural activities, such as increases in agricultural water use, to the recent decline in coho salmon numbers. Since the early 1990's restoring forests to densities within the range of natural variability approximating pre-settlement conditions has required significant reductions in tree density and stand basal area. (Covington et al. 1997). All Scott Valley Watershed conifer forest uplands have not been managed for these pre-European settlement conditions. L. H. MacDonald and J. D. Stednick (Professors at Colorado State University) have done extensive research on North American forest hydrology (including the Sierra Nevada Mountains) showing declining water yield, shifting patterns of water yield with climate change, reduced instream flows due to interception loss, sublimation loss (ice to water vapor without melt), and abnormally high ET rates. Sabo et al. (2008) found southwestern ponderosa pine forest tree densities 40-50 time greater than before European settlement also described by Covington and Moore (1994) and Covington et al. (1997). 3-2

California mixed conifer forests viewed by John Muir were 'clean open and park-like' (H. H. Biswell, Professor of Forest Fire Ecology, UC Berkeley, personal communications) with much lower tree densities and usually lacking ladder fuel loads prone to stand replacing fire. Creeping low-intensity ground fires caused by lightening were common in pre-European forests keeping fuel loads and tree densities in check. White fir and incense cedar readily regenerate seedling and sapling understories in almost full shade of larger overstory trees with fire protection. Such forests which are the dominant condition of Scott Valley upland forests are overstocked with fir and cedar ladder fuels. Excessively dense multilayer forests intercept snow repeatedly over winter; much of the moisture as ice sub limes or evaporates directly from the canopy to the air never becoming liquid water infiltrating into the soil and therefore never contributes to instream flow. In talking on these points with NRCS District Conservationist Jim Patterson concerning the Scott Valley EIR, he agrees that a Watershed Health Analysis should be conducted as part of the California Department of Fish and Game's assessment, not limiting options only to valley-bottom agricultural land. 3-3

Many years ago clearcut logging was done as part of snow management research to increase watershed yields in the Sierra Nevada Mountains. Over the last couple of decades almost all forest harvesting on public lands has stopped. With virtually unlimited fire fighting budgets and fire exclusion in the Scott Valley Watershed coupled with little on no forest harvesting or thinning, extremely dense overstocked-forested uplands now dominate. As canopy layers and tree density continue to increase with lack of harvesting and thinning coupled with fire exclusion, instream flows will continue to decline due to greater forest tree densities in the Scott Valley Watershed.

Recommendation 1: The EIR needs to address the ET rates of the uplands and present the potential increase of flows that could be attained through an increase in proper harvesting and thinning.

Concern 2: The DEIR discusses in great detail the cultural aspects and potential impacts to the culture of the local tribes. However, only the history of agriculture is discussed, with no discussion on its culture and the negative impacts that the Program could have on that culture, if implemented. 3-4

Recommendation 2: The EIR needs to address the culture of agriculture and how this Program will impact that culture.

Concern 3: The DEIR briefly discusses an Instream Flow Alternative. If increasing flows are truly an objective, this alternative should be more closely analyzed. The potential gains for late summer and early fall flow augmentation is not an alternative that should be dismissed. 3-5

Recommendation 3: The EIR needs to incorporate the alternative and further discuss the additional benefits that would result in its implementation. The Coho Recovery Plan clearly states that increasing storage is vital to the recovery of salmonids.

Concern 4: The DEIR is incorrect in its assessment that the Programs' impact on agriculture is "less than significant." If the true objective is to recover salmon, the existing open space must be maintained. That open space is provided through agriculture. For agriculture to remain, it must be PROFITABLE and sustainable. Without profitability, agriculture is not sustainable. One accurate statistic in the DEIR is that the average net annual income of agricultural operations is only $7,000 above poverty level. Any increase in cost of operation or decrease in yield is SIGNIFICANT. 3-6

Recommendation 4: The EIR needs to include the likely increase in cost to DWR, for implementation of the Program, which will then be passed on to the sub-permittee. 3-7

Recommendation 5: The EIR needs to include a discussion of the impact that a decrease in diverted water will have on the production of existing crops and their yields resulting in a decrease of net profit to the sub-permittee. 3-8

Recommendation 6: The EIR needs to address the financial impact that will result through the implementation of the Program, upon the sub-permittee. Costs that will be assessed to the sub-permittee, through the implementation of projects required by enrollment in the Program, will have a significant impact on the financial stability of an already unstable agricultural industry, especially if no funding is available to offset implementation of required mitigations. 3-9

Recommendation 7: The EIR needs to address the potential cumulative economic impacts of implementing the Program. 3-10

Concern 5: The DEIR incorrectly dismisses the potential withdrawal from Williamson Contracts. With the current condition of the economy, land values and the recommendation by the State to eliminate the Williamson Act, withdrawal is a very real scenario. 3-11

Recommendation 8: The EIR needs to reevaluate its assessment of the potential cumulative economic and environmental impact of landowners sub-dividing and developing their land, due to the implementation of the Program, especially due to recent developments in the economy, land values and State actions.

Recommendation 9: The EIR needs to include a thorough and all inclusive cost-benefit analysis of the Program. 3-12

Concern 6: The DEIR fails to discuss the realistic option of landowners enrolling their land into reserve programs. 3-13

Recommendation 10: The EIR needs to address the potential cumulative economic impacts on the County economy with a decrease in taxable revenue and jobs. 3-14

Concern 7: The conclusions and statements in the DEIR regarding commodities grown and trends in crop value are inaccurate.

Recommendation 11: Citing Caltrans as a source for predicting crop values is absurd at best. All data and assessments pertaining to agriculture should come from individuals and agencies that have expertise in the field and industry. 3-15

Concern 8: The conclusion drawn from table 3.1-6 is in error. "However, the amount of acreage by crop has changed, with grains decreasing from over 3,570 acres in 1958 to less than 2,000 acres in 1991..." If one were to dismiss natural events and market impacts on the effect of planting rotations, the comparison years for 1958 would be 1993. However, it is important to recognize that in addition to the relatively predictable variability of crop rotation, market forces also play a significant role in determining amount of grain acreage.

Recommendation 12: Statement regarding a trend of decreasing grain acreage does not take into account that grain is used rotationally every 6 – 7 years as the table from which the statement refers is on a 10, 3 and 9 year data depiction respectfully. 3-16

Recommendation 13: Statement regarding trends of crop acreage does not take into account the marketability of the crops in the cited years.

Recommendation 14: Statement regarding grains grown for local livestock consumption is in error, as most of the grain grown is sold and shipped out of the area and may or may not be for livestock consumption.

Concern 9: The DEIR fails to address potential impacts of the Program on a holistic level.

Recommendation 15: Reduction of diversions and complete dedications back to stream and river flow, combined with proposed efficiency measures, could have a very significant negative impact on the following, and needs to be addressed in detail. 3-17

1. **Residential wells**
2. **Wetlands**
3. **Birds and water fowl**
4. **Amphibians**
5. **Terrestrial wildlife**
6. **Groundwater recharge.** 3-18

Recommendation 16: XXII. (ADDED SECTION) Sub-permitees shall not be held responsible or liable for any negative impacts on any residential property, existing riparian 3-19

habitat, and other species of fish, birds, water fowl, amphibians, reptiles, or terrestrial wild life, resulting from implemented projects as dictated by the Program.

Concern 10: The Program encroaches on private property rights. As written, a sub-permittee is forced to allow Department employees access to their property after 48 hour notice. There is already an access agreement that is utilized for fish survey purposes. Access to private property is at the discretion of the landowner.

3-19 cont.

Recommendation 17: XIII. E. 1. (c) Should utilize the access agreement that is currently utilized for the purpose of conducting fish surveys. The landowner has the option to restrict access to only Full Time Department employees (no consultants or part-time field workers) and has the option to be present during the period of access.

Concern 11: The Program and its description are inconsistent, excessive in their regulatory scope and fail to protect the sub-permittee from negative impacts that may result in explaining and implementing the riparian fencing and grazing limitations.

Recommendation 18: XV. E. 2 The sub-permittee shall be responsible for installing riparian fencing "when funding is available" for such a project.

Recommendation 19: XV. E. 3 Following natural events, that result in damage or elimination of riparian fencing, the sub-permittee shall not be held financially responsible for repair and/or replacement.

Recommendation 20: XV. E. 5 The Department shall accept all grazing plans that are in accordance with the California Rangeland Water Quality Management Plan adopted by the State Water Resources Control Board. It should also be referenced that the North Coast Regional Water Quality Control Board has accepted this approach for addressing riparian grazing in the Scott and Shasta TMDL's.

3-20

Recommendation 21: XV. E. 5 (ADDED LANGUAGE) The Department does not and will not assume regulatory authority for grazing management on land outside of the banks of the river and its tributaries through the enrollment of this Program.

Recommendation 22: XV. E. 6. (ADDED SECTION) The sub-permittee shall not be held liable nor responsible for any negative impacts that riparian fencing might be found to cause, to other wildlife, after it has been built.

Concern 12: The Program threatens existing water rights, potentially increases the fees on water users, and decreases the available water for production that will directly decrease crop yields and profit

Recommendation 23: XIII. E. 2. a. (i) (ADDED LANGUAGE) The sub-permittee shall not lose any part of their adjudicated water right through enrollment in the Program.

3-21

Recommendation 24: XIII. E. 2. a. (vii) (ADDED SECTION) All voluntary decreases of adjudicated water shall result in fair market compensation to the sub-permittee. If compensation is not available, the sub-permittee retains the right to not decrease diversion and will not be held liable for any perceived negative impacts that may be attributed to the

Recommendation 25: XVII. C. (DELETE SECTION) **This section requires the DWR to make determinations that are outside of their expertise and gives the DFG the authority to reduce diversions, which is not an allowable action in the Adjudications.**

Recommendation 26: XVII. C. (ADDED SECTION) **Any increase in expense, assumed by the Department of Water Resources, attributed to the implementation of the Program, shall be paid by the Department of Fish and Game and not assessed to the sub-permittees.** 3-22

Concern 13: The Programs proposed mitigations, pertaining to livestock and vehicle crossing are unrealistic.

Recommendation 27: Covered Activity 4 - A maximum allowable width of crossing at 25' is not reasonable as the average width of both rivers is well over 25'. This will prohibit all crossing of the river by livestock and vehicles, thus increasing GHG emissions and increasing operation costs. This needs to be changed. Additionally, the potential economic environmental impacts need to be addressed in the EIR. 3-23

Recommendation 28: There is no discussion of the impact of the Elk herd, one of which is currently at 12 head, that crosses and wallows in the river, on a daily basis, from September through May. The negative environmental impact from this natural activity needs to be addressed. 3-24

Concern 14: The Program eliminates the option of arbitration for the sub-permitee. 3-25

Recommendation 29: All sub-permitees shall maintain the right to arbitrate.

Concern 15: As noted in the DEIR, the Scott River is not a stable system. The natural rain and snow events will never allow the Scott River system to recover in its current geomorphologic condition. 3-26

Recommendation 30: XXIII. **(LANGUAGE ADDITION) Sub-permittees shall not be held financially responsible for the continued repair and re-construction of projects damaged and destroyed due to natural events.** 3-27

Recommendation 31: While it is noted that the Scott River is not a stable system, discussion was inadequate in addressing what is necessary to stabilize the system and further, the feasibility of such action and the impacts that such action would have on the environment, economy and cultures. 3-28

Concern 16: The Program relies heavily upon the participation of the Department of Water Resources.

Recommendation 32: The Final EIR needs to evaluate the scenario of the DWR not participating. 3-29

Recommendation 33: The ITP needs to explain the scenario of the DWR not participating.

Concern 17: The DEIR discusses flows of both watersheds and utilizes the data presented to form the conclusion that agriculture is the major cause for the decreased flows.

> **Recommendation 34: The Final EIR needs to include data for precipitation and ambient air temperatures to correlate with data for the same years of flow and salmon return numbers. Additionally, data showing the annual and monthly decreases and increases of the evapo-transpiration rate of the uplands in both watersheds needs to be included. A reassessment of the impacts on flows should then be conducted by an individual with the necessary expertise. Those assessments then need to be peer reviewed and noted as such.**

3-30

Concern 18: The EIR describes the watersheds as needing full riparian vegetation along the tributaries and the rivers.

> **Recommendation 35: Fish biologists need to evaluate collected data regarding spawning surveys in correlation with reaches and determine if riparian vegetation is the proper scientific recommendation to enhance spawning habitat or if it has a negative impact.**

3-31

Concern 19: The Program assumes that the Department of Fish and Game has the authority to require a landowner to get a 1602 permit to operate an existing diversion, even if no physical disruption of the channel occurs, a head gate is in place and the diversion is screened. The legal authority of the Department to require such action is questioned. Legislation that created the 1600 codes was specifically directed at mining and NOT agricultural diversions. The Departments interpretation of these codes, as applied to agriculture, is erroneous.

> **Recommendation 36: Landowners who do not physically alter the streambed or bank, have a head gate in place to measure flow and have a diversion that is screened, do not require a 1602 for diversion of their adjudicated water right, and further, do not require an ITP permit.**

3-32

Concern 20: The description of the environmental setting within the EIR claims that "the total allotment of water under the three decrees is greater than the average monthly flow of the Scott River from June through December, based on 64 years of record." **(3-3)** One would assume that this means that landowners are diverting the entire available surface water flow. However, this assumption is incorrect. There has been recorded average monthly flow at the USGS station on the Scott every year since the data has been collected. If the statement were correct, data from the USGS station would be recorded at 0.

> **Recommendation 37: The total allotment of water under the three decrees is greater than the *average monthly flow, at the USGS station, located at the mouth of the canyon*, from July through November, based on 64 years of record.**

3-33

Concern 21: The EIR states "Furthermore, because towns do not divert water for agricultural purposes, they also would not be participating as Agricultural Operators in the Program." **(3.1-22)**

> **Recommendation 38: The EIR needs to address the total use of diverted water by the local municipalities and a discussion of the potential gains as well as the negative impacts that may occur.**

3-34

Recommendation 39: Will the municipalities be required to secure a 1602 and an independent ITP? If not, why? 3-35

Concern 22: The DEIR cites that the Program "would also have a significant impact if it would: convert or involve changes that could result in conversion of farmland to non-agricultural use." (3.1-25)

Recommendation 40: Discussion of the above statement is missing. The criterion is applicable and should result in a finding of significant impact. 3-36

Concern 23: The DEIR states "Most notably, water diversions, primarily for agricultural purposes, have led to decreased surface flows, and increased stream temperatures....including land clearing, tillage, and grazing, which in turn has lead to accelerated erosion and increased stream sediment loads."

Recommendation 41: There is no reference or supporting data provided to arrive at this conclusion. The related data and peer reviewed science needs to be provided. 3-37

Concern 24: The time allowed for adequate review of the lengthy DEIR and ITP is too short. Most of the individuals that this Program will affect have not been informed of the what the Program involves, let alone be able to write informed comments to the Department. Additionally, the Department is meeting with the County on the day that the comments are due, not allowing them the opportunity to properly formulate their comments.

Recommendation 42: We request a minimum of a 30 day extension to the comment period. The Department, in collaboration with the local RCD's, County government and Farm Bureau, need to hold several "Question and Answer" sessions in both watersheds. 3-38

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December 9, 2008

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Redding, CA 96001

Re: Shasta River Watershed-Wide Permitting Program Draft Environmental Impact Report; *and*
Scott River Watershed-Wide Permitting Program Draft Environmental Impact Report

Dear Mr. Williams,

The California Farm Bureau Federation ("Farm Bureau") appreciates this opportunity to comment on the Shasta River Watershed-Wide Permitting Program Draft Environmental Impact Report and the Scott River Watershed-Wide Permitting Program Draft Environmental Impact Report ("DEIR").[1] As these draft environmental impact reports are predominately the same, please accept these comments as generally applicable to both documents, except where otherwise noted.

Farm Bureau is a non-governmental, non-profit, voluntary membership California corporation whose purpose is to protect and promote agricultural interests throughout the State of California and to find solutions to the problems of the farm, the farm home and the rural community. Farm Bureau is California's largest farm organization, comprised of 53 county Farm Bureaus currently representing more than 33,000 farm families and 91,500 individual members in 56 counties. Farm Bureau strives to protect and improve the ability of farmers and ranchers engaged in production agriculture to provide a reliable supply of food and fiber through responsible stewardship of California's resources.

4-1

Farm Bureau supports the concept of a watershed scale program to assist farmers and ranchers in efficiently complying with the law. As explained in the DEIR, the

4-2

[1] "DEIR" refers to both the Shasta River Watershed-Wide Permitting Program Draft Environmental Impact Report and the Scott River Watershed-Wide Permitting Program Draft Environmental Impact Report collectively and individually as the case may be.

proposed watershed-wide permitting program is intended to implement the recommendations made by the Shasta-Scott Recovery Team and described in the Coho Salmon Recovery Strategy. However, our review of the DEIR and the component Draft Incidental Take Permit ("ITP") and Draft Streambed Alteration Agreement MOU and Master List of Terms and Conditions ("SAA") revealed several concerns which must be addressed in the final environmental impact report. 4-2 cont.

1. The DEIR misinterprets Fish and Game Code § 1602.

A foundational component of the watershed-wide permitting programs for both the Shasta and Scott Rivers is a new and incorrect interpretation of Fish and Game Code §1602 (hereinafter "§1602").[2] Without the benefit of public process or formal rulemaking, the California Department of Fish and Game ("Department") has significantly changed its interpretation of §1602 to require notification for activities which have never been, and were never intended to be, covered by these Fish and Game Code sections. The plain language of the statute, its historical application, and the legislative history all clearly point out that that §1602 cannot support the Department's new interpretation.

It is clear from the DEIR (particularly the component ITP and SAA) that the Department now believes every diversion of water requires notification. This, however, this is not the only expansion of §1602 authority the DEIR daylights for the first time. Throughout the document, but particularly in the SAA, the Department suggests that a number of actions are "covered activities" even though under a reasonable interpretation of the statute, notification is not required. 4-3

Exercising a Water Right

Perhaps the most problematic action ostensibly covered by the Department's new interpretation is the exercise of an existing water right. For the first time we are aware of, the Department has interpreted §1602 to apply to the exercise of an existing water right based solely on the fact it is a diversion of water from the natural flow. The DEIR indicates that "water diversions [and] activities related to water diversions … are subject to Fish and Game Code §1600 *et seq.* because they substantially divert or obstruct the natural flow of rivers, streams, or lakes … ."

This new interpretation is unsupported by the plain language of the statute, which provides that "[a]n entity may not substantially divert or obstruct the natural flow of … any river, stream or lake …" without first notifying the Department. It is not clear how diverting *from* the natural flow equates to substantially diverting the natural flow. As the language clearly indicates, the provisions of §1602 were intended to apply in situations

[2] While streambed alteration agreements are generally described in Fish and Game Code §1600 *et seq.*, the incorrect interpretation appears to be §1602. However, since there is no public explanation for the Departments reinterpretation, it is not possible how extensively these sections have been modified.

where the natural flow of a stream, river, or lake was diverted from its original course into a new course; all the while remaining the natural flow. In addition to the statutory language, common sense, the legislative history, and historical application of Fish and Game Code §1600 *et seq.* all conflict with the Departments new expanded interpretation.

While it is obvious that a streambed alteration agreement would be required in situations where the natural flow was diverted from its course, no such activities are proposed by the DEIR. Consequently, the DEIR should not state that notification under §1602 is required solely for the act of diverting water under an existing water right.

Recommendation: The portions of the DEIR incorrectly stating that §1602 applies to the exercise of an existing water right should be corrected. Instead, a streambed alteration agreement should only be required where modifications to the bed, bank, or channel require such notification.

Other Covered Activities

The DEIR also states that the Department's recent reinterpretation of §1602 has given it jurisdiction over far more than just water rights; it now applies to a number of other activities, primarily related to agriculture, which have historically never been subject to §1602. While some of the "covered activities" described in section III of the SAA and elsewhere clearly are subject to §1602, several are not. Following is a list of activities which are not subject to §1602 and should not be listed as "covered activities" without further qualification:

4-3 cont.

- *A. Water Diversions*: See discussion above.

- *B. Water Diversion Structures*: The operation of a water diversion structure is not subject to §1602 notification requirements because merely operating a structure is exercising an existing water right. Although some activities related to the construction and maintenance of a diversion structure may require notification because of other factors; standing alone, the operation of a diversion structure does require notification.

- *C. Fish Screens*: Neither the operation nor maintenance of a fish screen requires notification *per se*.

- *D. Stream Access and Crossings*: The language of this condition suggests that the act of crossing a stream requires notification. While it is clear that constructing a special stream crossing as proposed in the DEIR would require notification, merely crossing a watercourse with livestock or a vehicle has never and cannot reasonably be deemed to require notification.

- *E. Fencing*: Installing and maintaining fencing along a stream does not require notification; especially in situations as described in the DEIR where the fence is 35 feet from the stream bank.

- *F. Riparian Restoration and Revegetation*: Although some activities related to restoration and revegetation may be subject to §1602, a number of the activities listed under this heading do not require notification.

- *H. Stream Gages*: Even though the DEIR recognizes that installing stream gages usually does not require heavy equipment and may only consist of installing a two inch pipe, it is nonetheless inappropriately listed as a covered activity.

4-3 cont.

Recommendation: The portions of the DEIR which inappropriately describe activities as "covered activities" even though such activities are not subject to §1602 should be removed. Rather, where the SAA is not attempting to assert that the above activities are explicitly subject to §1602, but is instead providing coverage for any rare circumstance when §1602 may apply, the DEIR should be worded to reflect this difference. For instance, the DEIR may state that "even though it is recognized that this activity is not subject to §1602, if during the course of activities it is conducted in a manner where a §1602 is required, this permit provides such coverage."

2. A Natural Communities Conservation Plan ("NCCP") should be analyzed as an alternative to the proposed watershed-wide permitting program.

The final EIR should propose and analyze a Natural Communities Conservation Plan ("NCCP") as one of the alternatives. It is important to analyze a NCCP because it may provide important opportunities to: (1) avoid the problems posed by the inappropriate application of §1602, (2) more accurately implement the recommendations of the Coho Recovery Team, (3) provide for comprehensive compliance with other State and Federal laws, and (4) afford an opportunity for additional participants to address a broader range of issues such as growth and transportation. Basically, it is important to analyze a NCCP as it provides greater legal justification (by not relying on an inappropriate interpretation of §1602) and broader compliance protection.

4-4

Recommendation: The Department should analyze a NCCP as an alternative to the watershed-wide permitting program.

3. The influence of upland forests on stream flows must be appropriately analyzed.

The DEIR fails to address the impact of upslope forests on Scott and Shasta River stream flows. While the DEIR recognizes historical forest practices significantly altered upslope forest ecology and hydrology, it does not address the current condition where increasing evapotranspiration ("ET") rates of those forests have reduced stream flows.

4-5

Over the past few decades, the decline in timber harvest in the Scott and Shasta river watersheds has resulted in increased forest densities and basal areas. Many of the trees in these watersheds are nearing their maximum growth rate and also their highest ET rates. Consequently, the upslope forests are using more water than they have historically. These ET rates will be sustained for many decades unless action is taken to reduce tree density and basal area.[3]

Because the DEIR does not address the fact that younger and denser forests are using more water than they ever have, or than the slower growing less dense old growth forests ever did, the analysis in the DEIR is flawed in a number of respects. First, since the increasing water use of upslope forests is a critical part of baseline conditions, it must be described in the environmental setting. Second, since the reduction in stream flows is due to higher ET rates of upslope forests, the DEIR incorrectly anticipates that higher flows can be achieved by the implementation of the program. Finally, since it is well established that reducing forest densities contributes to stream flows by reducing forest water use, this should be analyzed as an alternative to the watershed-wide permitting program.[4]

4-5 cont.

Recommendation: The DEIR should analyze the impact that increasing ET rates of upslope forests have on stream flows. Among other things, this includes analyzing the impact as part of the environmental baseline, correcting the DEIR's faulty assumption that the Shasta and Scott Rivers are over adjudicated, and analyzing increased timber harvest as an alternative method for increasing stream flows. The analysis should also propose appropriate mitigation measures for these impacts.

4. The DEIR should expressly provide for tiering in order to facilitate those who may be best served by proceeding independently.

Landowners in the Shasta and Scott River watersheds may determine that participating in the watershed-wide permitting program is not the best way to comply with the law. For example, some landowners may need either an ITP or a SAA and not both; while other landowners may decide to proceed individually instead of as a sub-permittee. For such individuals, participating in the watershed-wide program may not be appropriate. The DEIR was not drafted in a manner to readily provide for tiering. Because a number of landowners may be best served by proceeding independently of this program, the final EIR should provide for tiering in order to facilitate the completion of any subsequent environmental review which may be required.

4-6

Recommendation: The DEIR should be modified to allow landowners that may need to complete environmental review subsequent to this program to tier from the final EIR.

[3] Chang, Forest Hydrology An Introduction to Water and Forests (2d ed. 2006) pp. 90-91.
[4] Chang, Forest Hydrology An Introduction to Water and Forests (2d ed. 2006)

5. The SAA should provide for arbitration.

The provisions in Fish and Game Code §1600 *et seq.*, providing for arbitration of terms and conditions should disagreement occur, have been removed in the SAA for reasons not described within the document. While the Department may believe that allowing for arbitration could compromise the integrity of the ITP by allowing for lenient terms and conditions in a sub-permittee's streambed alteration agreement, there is no explanation of this position. According to the statute, the terms of a SAA must reasonably protect fishery resources. Whether these are unilaterally imposed by the Department as contemplated by the DEIR, or the result of arbitration as directed by the statute, all terms must be reasonable.

4-7

Recommendation: The SAA should be modified to allow a sub-permittee to exercise his or her rights under the law and seek arbitration to resolve conflicts over streambed alteration agreement terms and conditions.

6. The DEIR fails to recognize the priority system.

Section XVII of the ITP provides for the reduction or complete closure of a diversion by DWR in order to prevent stranding. As proposed, the ITP provides for a situation wherein the Department, if it determines stranding may occur, can require DWR to reduce or shut-off a diversion. While the environmental purpose of this provision is relatively clear, it ignores water rights generally and the priority system particularly. A well established principle of California water law is that lower priority rights must be reduced before higher priority rights; as drafted, the DEIR does not address this requirement.

4-8

Recommendation: The DEIR and the component ITP must be modified to comply with California water law, particularly by recognizing water right priorities.

7. The impact of irrigation water percolation and the resulting groundwater baseflow of cold water must be addressed.

Both DEIRs should analyze the relationship between surface irrigation, groundwater recharge, and coldwater baseflow to streams. Although some of the groundwater basins may be complicated, it is nonetheless necessary to assess the impact of reductions in coldwater baseflow due to decreased agricultural water use. Since the DEIR suggests increased groundwater pumping has contributed to decreased streamflows, the relationship between groundwater and surface water is recognized, if not fully understood. The final EIR should fully analyze this relationship by determining how reduced irrigation water use could impact cold water baseflows.

4-9

Recommendation: The DEIR should analyze how irrigation water percolation into shallow groundwater results in increased cold water baseflow into the streams.

8. Additional time is needed in order to provide adequate opportunity to respond.

The DEIR describes a watershed-wide permitting program for both the Shasta and Scott Rivers that suggests major changes in how the Department intends to deal with agricultural operations. It is our understanding that Department officials have publically stated that this program will be implemented elsewhere in the state, with the next likely location the Russian River watershed. Given that the Department is fundamentally altering its interpretation of §1602 and that this program is intended to be applied throughout the state, it is important that more time be allowed for a more thorough review by a broader coalition of interests, including those who will likely be impacted by a similar program. 4-10

Recommendation: The Department should extend the DEIR comment deadline by at least 60 days. Furthermore, other regions where a similar program may be implemented should be notified and afforded an opportunity to review the document.

Very truly yours,

JACK L. RICE
Associate Counsel

Comment Letter 5

California Cattlemen's Association

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12/3/2008

Mr. Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001

Submitted via E-mail: SHASTADEIR@dfg.ca.gov

Dear Mr. Williams:

The California Cattlemen's Association (CCA) appreciates the opportunity to comment on the Draft Incidental Take Permit (ITP) and Draft Streambed Alteration Agreement Memorandum of Understanding and Master List of Terms and Conditions (MOU) for the Shasta Valley Resources Conservation District and the Siskiyou Resource Conservation District. CCA is a statewide trade organization representing California's beef cattle producers, many of whom reside and operate within the projected program area. California ranchers are stewards of our nation's natural resources and provide the majority of California's wildlife habitat for threatened and endangered species. 5-1

CCA has serious concerns with certain provisions outlined in both ITPs and MOUs that, if implemented as proposed, will impose dramatic hardships for ranchers operating within the program area. For the purposes of this comment letter, issues identified below represent concerns for both the Shasta Valley RCD and Siskiyou RCD ITP and Shasta Valley RCD and Siskiyou RCD MOU unless otherwise noted. 5-2

DFG should ensure that all future efforts regarding the development of the final ITP and MOU are conducted in collaboration with local livestock producers, CCA and other agricultural stakeholders. It's vital that local livestock producers and DFG strive for a consensus on issues of disagreement and ensure that the final program does not set statewide precedent for the 1600 section of the Fish and Game Code. 5-3

First and foremost, CCA urges the Department of Fish and Game (DFG) to ensure a final program that emerges from the public process does not inhibit the ability of a landowner to exercise a legal water-right, adjudicated or permitted. DFG must ensure the protection and integrity of private water-rights to be exercised when necessary to water livestock, irrigate pastures or irrigate crops and should not be impeded by any terms or conditions of the ITP or MOU. 5-4

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Secondly, the ITP establishes inappropriate enforcement authorities for the Resource Conservation Districts (RCD) through the required monitoring of sub-permittees to ensure the sub-permittee is in compliance with the ITP as described in **Section XIV** of the ITP. CCA urges that DFG retain enforcement authority and not defer these traditional responsibilities to the RCDs who are comprised largely of local landowners and depend almost entirely on competitive grant and private funding. If the RCDs are unable to secure grants or other outside funding to conduct the activities outlined in the current proposal, they will likely be forced to impose fees on sub-permittees which will constitute an unacceptable economic impact on local livestock producers. 5-5 5-6

RCDs serve local landowners, farmers and ranchers to provide technical and regulatory compliance assistance and help implement conservation projects on private and public lands. RCDs are not government entities and should not be held liable for enforcing the provisions of the ITP. Establishing such a relationship between the RCDs and private landowners would be unprecedented and would shift RCD focus from implementing conservation efforts that wildlife and ranchers both benefit from to developing and enforcing a new regulatory regime. 5-7

CCA suggests that the RCDs, as the holder of the permit, assist sub-permittees with permit coordination, the development of mitigation and monitoring plans, conduct educational courses and provide outreach to assist sub-permittees with permit compliance and other assistance activities with landowner request but refrain from engaging in enforcement activities as suggested under the monitoring regime. 5-8

Certain terms and conditions listed under the ITPs are also unnecessary or require alteration. 5-9

- **X111(v)** - Under no condition should a sub-permittee be required to forego exercise of a legal and existing water-right. CCA suggests that DFG omit the proposed program in which the RCDs are directed to develop a schedule to rotate the exercise of water-rights by landowners to enhance in-stream flows.
- **XV(A)2** – The Department of Water Resources (DWR) or local water masters should not be required to report water diversions to DFG for the purpose of enforcement. Water masters and DWR serve only as the mechanism to distribute water according to legal water-rights and should not be required to regulate the allocation of water as a means of enforcement or compliance under the draft ITP. 5-10
- **XV(D)1** – CCA opposes any provision that would preclude livestock from crossing streams, especially nearly 7 months out of the year as the ITP suggests. Cattle or vehicles crossing streams or creeks should not be assumed to mean automatic inadvertent take of a fish. Requiring only certain lanes to be used that are certified as unlikely spawning grounds or have necessary mitigation already constructed is unfeasible. Rather, DFG should encourage 5-11

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landowners to construct mitigation measures on lanes that have frequent cattle crossing within a set time period but allow ranchers to continue to utilize crossings as deemed appropriate. 5-11 cont.

- **XV(E)1** – CCA urges that DFG include language that would require any plan to force the exclusion of cattle in riparian areas be based on sound science and research. Also, the development of the Riparian Fencing Plan should be a collaborative process, not solely authored or developed by the RCDs, and include ranchers that may be required to fence riparian areas. 5-12
- **XV(E)3** – CCA opposes terms and conditions that would require sub-permittees to build riparian exclusion fencing 35 feet from the edge of the stream bank. The number selected is arbitrary and represents no benefit to protecting riparian habitat and certainly does not decrease inadvertent take. This figure should be amended to reflect a more reasonable riparian fencing policy that identifies areas of concern to be fenced at the edge of the streambank. 35 feet represents a significant loss of forage for livestock and will unnecessarily impact a rancher's ability to graze cattle near riparian areas. 5-13
- **XV(E)5** – DFG should better clarify what criteria will be used to justify excluding livestock grazing in a fenced riparian area. This section is broad, ambiguous and provides little direction for ranchers who depend on the use of lands adjacent to riparian habitat for livestock forage. Criteria should be developed in close collaboration with CCA and local livestock producers.

Certain terms and conditions listed under the MOUs are also unnecessary or require alteration.

- **III(E)** – CCA opposes listing livestock fencing as a covered activity under the MOU. Fencing creeks or requiring the fencing of creeks as part of the MOU is an unacceptable and incorrect interpretation of the Fish and Game Code as an activity that requires a 1602 permit under the Fish and Game Code. 5-14
- **V(C)60 -** CCA opposes defining livestock crossing sites as a covered activity under the MOU and subsequently requiring a 1602 permit under the Fish and Game Code and represents a board and false interpretation of the Code. Livestock crossing sites have not in the past nor should be now defined as a streambed alteration requiring notification to DFG or a 1602 permit. This would establish a dangerous precedent for other regions of the state and would impose new and unfeasible terms for the majority of California's livestock producers who depend on crossing streams and creeks to move cattle from one pasture to another. Subsequently, CCA urges DFG to remove all language in the MOU that would subject livestock crossing sites as streambed alterations and require a 1602 permit or notification to DFG. 5-15
- **V(E)65** – CCA opposes any provision that would restrict vehicle crossings through wet areas as a term and condition of the MOU. As suggested, ranchers can only operate vehicles across streams for less than one month out of any given calendar year. Most significantly, defining a vehicle crossing as a streambed alteration is an ambiguous and incorrect interpretation of an 5-16

Comment Letter 5

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activity that requires a 1602 permit. CCA urges DFG to remove language in the MOU referencing vehicle crossing sites as a covered activity under the MOU. 5-16 cont.

Once again, CCA appreciates the opportunity to provide comments on the ITPs and MOUs for the Shasta and Scott Valleys. Should you have any questions or would like to discuss my comments in more detail, don't hesitate to contact me. 5-17

Sincerely,

Justin Oldfield
Director of Industry Affairs

COAST ACTION GROUP
P.O. Box 215
Point Arena, CA 95468
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December 9, 2008

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

Included below are CAGs comments on the proposed Shasta and Scott River Watershed-wide permitting programs. We are combining our comments for both DEIRs because the two proposals have much in common – with separate comments for areas that are distinct in their issue. We offer recommendations for your consideration. 6-1

General

It appears that the intent of this ITP process is to use several regulatory tools to achieve oversight of land use practices that threaten stream flows, water quality, instream habitat, and thus, salmon. The proposed ITP process intends use of the various programs, including: Regional Board authority and TMDLs, State Water Board authority and State Water Code, and Fish and Game Code regulatory authority. 6-2

The resulting proposal, indicating reliance on the above mentioned regulatory authorities, has failed to meet the legal standards, and intent, of the above mentioned California Public Resource Codes. Thus, at this point, and as indicated by the documents in the file, the DEIR fails to adequately describe and mitigate issues for the protection of the beneficial use – Cold Water Fishery. 6-3 In addition, there is not a sufficient public noticing, mitigation implementation and monitoring program, and/or Alternatives Discussion that is mandated for compliance with the California Environmental Quality Act provisions. 6-4

The ITP must be consistent with the above noted regulatory and CEQA authority. Reliance on mitigations that have not yet been described is project piece-mealing and is not consistent with CEQA. 6-5

Please review comments on the Scott TMDL - Below

Comments pertinent to both the Shasta and Scott DEIRs

The scope of the projects is overly broad:

CDFG proposes that the programmatic "take" and stream alteration (1600s) permit programs apply to ALL agricultural operations. What is to be the course of action that would occur with those farmers and ranchers who do not choose to participate? This is huge gap in the program – yet to be explained. In the Shasta River (and possibly the Scott River) riparian water rights are unregulated. There are numerous situations where water diversion is occurring outside of regulatory boundaries. CDFG has in its files evidence that riparian landowners in the Shasta River have – without notice or permit – placed pumps into the river and removed water for irrigation and other uses. 6-6 6-7

DWR information, and information in the file, indicates that since the 1950s groundwater (some of these waters would be considered underflow) pumping in the Scott Valley has more than doubled. DWR data also indicates that groundwater pumping now constitutes more than 50% of total irrigation in the Scott. Surface diversions have not been reduced as a result of this increase but rather land that was previously dry farmed or unfarmed has been brought under irrigation. For example, the entire North end of Scott Valley comprising the lower Moffett Creek Watershed was dry farmed as late as 1970. The entire area is now intensely irrigated and most of it is in alfalfa and other high water use crops. 6-8

Baseline conditions do not consider that illegal activities – their occurrence and their effects – historically or cumulatively. Illegal actions cannot be considered baseline. If it is determined the baseline included illegal activities the baseline must be reassessed. The "Environmental Setting" (3-2) is the place to raise the question of illegal activities being part of the baseline as this issue must be fully described and mitigated. 6-9

Recommendation: The scope of the permits should apply only to restoration programs of the RCDs. All diversions under the authority of the State shall have a Water Rights License. It might be possible to apply the permits to surface diversions as well if CDFG and the RCDs can assure that all diversions of a given landowner would be covered (even diversions pursuant to riparian rights in the Shasta), provisions of the Fish & Game Code (especially section 5937) will be enforced and there is an adequate monitoring program in place. The summation of all water use shall be considered in analysis for adjudication and/or licensing. Flow and temperature are the primary limiting factors for coho salmon and all mitigations should be clearly tied to measurable objectives that address these limiting factors. 6-10

Groundwater impacts are not clearly defined in the document and therefore are not adequately mitigated. The document claims a less than significant impact from extraction of additional groundwater with no mitigation measures required (S-12, 3.2-4 – also see S-14 3.3-2). This claim ia not supported by evidence in the file. "Groundwater (indeed – in some cases diverted ground water is part of the subsurface flow regime) dynamics exert a strong influence on the volume and quality of surface flow in the Shasta and its tributaries." (3.2-8). In spite of this 6-11

statement there is no groundwater component (assessment, monitoring, and/or diversion control) of the Program. Monitoring of additional wells, groundwater extraction and groundwater levels as well as potential relationships with surface flow must be included in any analysis and/or program. 6-11 cont.

The permit programs will not lead to the recovery of Coho Salmon as required by the California Endangered Species Act:

Information in the DEIR does not support the assertion that the proposed permits will lead to or are consistent with Coho recovery as required by the CESA. Information which has been provided during the scoping period, and extant in the current file, indicates that the permit program is not consistent with recovery. Because the permits are designed to cover all agricultural operations and because those operations include unregulated activities which expert agencies and CDFG's own information indicate are and will continue to negatively impact Coho, the proposed permits do not meet CESA requirements. For example, CDFG, Siskiyou RCD and tribal collaborative Coho surveys in the Scott River indicate that Coho migration has been delayed in recent drought years due to low flow barriers. Those low flows have now been shown to0 be directly related to unregulated groundwater pumping. 6-12

Recommendation: CDFG should remove from permit coverage those activities which other expert agencies, peer reviewed studies and CDFG's own fish monitoring programs indicate are inconsistent with the recovery of Coho salmon.

The permit programs would delegate CDFG regulatory responsibilities to the Shasta and Scott RCDs which are not regulatory agencies and which have asserted in testimony on the proposals to list Coho salmon pursuant to the state and federal ESAs that they will not perform regulatory functions. 6-13

CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers (a situation where conflicts of interest are obvious) who would be required to enforce the law on their neighbors. CDFG is also proposing to restrict the access of its wardens to the streams covered by the permit. 6-14 In addition, the proposal does not include provisions for adequate compliance monitoring. 6-15 For these reasons it will be impossible for CDFG to verify whether or not the RCDs are performing the regulatory functions that proposed to be delegated – as noted in the DEIR.

What is the public noticing and participation process for the DFG Code 1600 process? How will information be provided for public participation in this process? Who will be responsible for this process? 6-16

Recommendations:

- CDFG should not delegate regulatory authority to agencies that have no record of adequate regulatory performance, which have stated in the public record that they are not regulatory and do not intend to perform regulatory functions and which would require neighbors to report and enforce on neighbors in order to be effective. 6-17

- CDFG should not agree to keep wardens, and other enforcement staff, off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law. 6-18

The DEIRs do not comply with CEQA requirements:

CEQA contains specific requirements which must be met before a project can be approved. The DEIRs do not meet several CEQA requirements including: 6-19

- **Projects must be fully described:** The DEIRs do not adequately describe the scope of the proposed projects because they do not adequately describe the agricultural operations to which they will apply. In addition the DEIR does not adequately describe existing conditions, including human modified hydrologic conditions, extant in the Scott and Shasta Rivers and how the proposed ITP process will mitigate for adverse actions and recover salmon. For example, the changes in agricultural practices over time in these valleys and the impact these changes have had on flows, water temperature and fish habitat have not been adequately described. 6-20

- The document fails to adequately address, discuss, and analyze the "Areas of Controversy" (S-8) including: Project Alternatives to the Program such as re-adjudication of water rights, and removal of Dwinnell Dam; assessment and determination of the proper baseline for the environmental analysis; large information gaps on minimum flow needs (and effects of absence of minim flows) for coho salmon; information gaps on the inter-connectivity of groundwater (subsurface flows in defined channels and surface water) and State authority and responsibility on this issue. 6-21

- **Project must consider environmental consequences and mitigate:** Does the DEIRs fully anticipate consequences and environmental effects and fully mitigate? How do you mitigate for conditions not noted in the DEIR? How can mitigations that have yet be described be counted on to actually do what is called for? 6-22

- Project must have a mitigation monitoring plan - that is capable of dealing with anticipated and un-anticipated results and capabilities of adapting to fix problem areas 6-23

- Project must consider a full range of Alternatives - with full discussion and thought process for findings supporting conclusions and choices. 6-24

- **Project (under CEQA) analysis must consider consistency with applicable law - water code, DFG code, ESA, etc.** The ITP must be consistent with all F&G Codes - Including 1600-1603, 5937 and 5901, State Water Code on diversions and licensing (including beneficial use protection), and the public trust. 6-25

- The level of take must be numerically defined for each activity and mitigations to address the anticipated take must also be individually defined with clearly measurable criteria included in the document. 6-26

- Reliance on public funding for mitigations is not acceptable. Public funding should not be used for mitigation purposes but should be used for "recovery" purposes. Diverse funding mechanisms for all measures should be identified and include the contributions from applicants. Program Funding (3.1-27): states that CDFG and SVRCD anticipate that grants, cost shares and loans will offset some or all of the costs of the Program. It further states that "it is likely the Program will result in minimal net cost to participating Agricultural Operators". Will Ag not be required to pay for their necessary mitigations? Who will pay? Where is the money going to come from? 6-27

- DEIR fails to assess and address needs of steelhead and Chinook salmon, and ITP implementation impacts fails California Environmental Quality Act (CEQA) requirements for analysis of cumulative effects. You can not accomplish a cumulative effects analysis without a full and complete description of the project. 6-28 6-29

- Flow enhancement mitigation 2 – improve baseline instream flows – (2-21) requires identification of reaches, but offers no measurable objectives for meeting "aquatic habitat improvement". Long-term solutions must be found to provide the needed water flows, such analysis to determine minimum necessary by-pass flows and/or a permanent transfer of water dedicated for fish. 6-30

- Flow enhancement mitigation 3 (Shasta and Scott) – contingency plan for dry years – (2-21) requires a plan to "incorporate the best available information on both surface and groundwater (where relevant) to minimize the likelihood that critical coldwater flows to the Shasta River and its tributaries are impaired". It does not define where groundwater is "relevant" or what relevant means. "Minimize" is should be qualified with measurable objectives. Analysis must be undertaken to establish use of "ground water" (subsurface flow in a confined channel) and its interface (relevance) with instream flows necessary for fish survival. 6-31

- The mitigations for fish "stranding" are unclear. What role does the cumulative effects of water diversion play to stranding – and – preventative measures to limit stranding? 6-32

- Grazing livestock – Agricultural impacts – including sediment pollution and nutrient loading are not adequately addressed and need additional evaluation. Grazing exclusion fencing zones of 35 feet (A-25) are too narrow and should be 100 feet minimum based on federal guidelines established to protect riparian zones and overflow pollution. (See Scott TMDL discussion below. 6-33

- CEQA compels CDFG to share all data (data must be available to the public) from the existing DEIR and the Department needs to commit itself and the Shasta Valley RCD to full disclosure and public sharing of all data, including raw data. This raises another issue 6-34 6-35

pertinent to RCD administration of the proposed permits. The RCD considers monitoring data collected on private lands as proprietary information. The DEIR must address where monitoring and other data will be considered proprietary and explain why the agency and the public will not need this data to evaluate compliance with permit conditions and applicable laws and codes. All information necessary for analysis and the decision making process must be made available to the public. 6-35 cont.

Comments applicable only to the proposed Scott River Permit Program

1. The Department has not consulted adequately with the Quartz Valley Indian Reservation (QVIR) – a federally recognized tribe.

The QVIR has invested a tremendous amount of time and resources into water quality monitoring. Yet CDFG has not treated the Tribe as a partner, has not requested or adequately considered its data or how the proposed project will impact its interests. Furthermore, the Siskiyou RCD – which CDFG proposes implement the permit program has not included the QVIR in its plans and deliberations.

Recommendation: The QVIR should be a full partner in any permit program which will impact Coho and Chinook salmon and/or which potentially could impact the interests of the tribe and its members. 6-36

2. The DEIR does not adequately analyze and disclose the impact of the CDFG/DWR "fish rescue" program and the impact of "take" which has and will continue to occur which is directly related to the operation of surface water stream diversions.

(Discuss take, warden complaints/legal actions and complaints associated with take of Coho and other species at diversions). 6-37

3. The Scott DEIR does not adequately consider the best scientific information available on conditions in the Scott River and on the relationship between agricultural activities and these conditions.

Included in the file is the abstract of a peer reviewed study which directly addresses two issues which the EIR must address to comply with the requirements of CEQA. These two issues are the impact of climate change and the impact of the increase in irrigation associated with a doubling of unregulated irrigation pumping while surface diversions have remained fairly constant. This empirical study found that 60% of the decrease in Scott River flow is not explained by changes in precipitation and are most likely related to the increase in unregulated groundwater pumping. Combined with previous groundwater studies by the USGS (1955) and DWR (1975), this study makes a very strong case that the increase in groundwater pumping is a major factor in the decline of Coho salmon in the Scott. The NCWQCB and numerous other sources have documented the connection between flow and temperature. DFG's own listing documents and 6-38 6-39

your Coho Recovery Plan indicate that temperature is a major factor in the decline of Coho and the failure of Coho to recover in the Scott River. 6-39 cont.

The decreases in Scott flow associated with increased agricultural water use – including groundwater pumping - means that adjudicated US Forest Service rights to streamflow in the Scott are now not met in the late summer and fall even in average water years. This water right (these flows) were specifically provided for fish. As a result of adequate flows not being provided, Chinook can not reach spawning grounds in average water years and Coho spawning migration is delayed in drought years. 6-40

The delay in Coho migration is documented in the CDFG's own reports (see Scott River Coho spawning surveys). The DEIR does not adequately consider or analyze the impact of this information on Coho or how the proposed permit program would address these impacts so that Coho recovery could occur. 6-41

This significant new information is directly related to the proposed action and pursuant to CEQA regulations must be considered in the DEIR. Because the proposed action would legalize the dewatering which has resulted from the unregulated groundwater pumping implicated in the significantly decreased flows and consequent impacts to Coho salmon - and because this significant new information was not considered in the DEIR - I am requesting that CDFG withdraw the DEIR and reissue it with this new information fully considered. 6-42

- **Recommendation**: The EIR should consider the Van Kirk study (abstract and citation below) and information in the CDFG and cooperators Coho spawning and rearing surveys and analyze how the proposed permit program will or will not address this key factor which until addressed will continue.

Comments applicable only to the proposed Shasta River Permit Program

1. The Draft Environmental Impact Report (DEIR) does not adequately analyze or disclose the impact of Dwinnell Dam and Reservoir on Coho salmon. This impact is direct (loss of access to habitat) and indirect (impact on water quality, flows and habitat below the dam. 6-43 The DEIR rejects Dwinnell Dam removal option when its operation is illegal under CDFG Code 5937 and removal appears to be critical to Coho salmon recovery and water pollution abatement. In the absence of an adequate consideration of its impacts, the removal option can not be rejected out of hand pursuant to CEQA. 6-44

2. The DEIR does not adequately discuss, analyze or address the lack of regulation of water withdrawal by riparian landowners. The extent of this unpermitted, unadjudicated type of withdrawal is not disclosed nor does the DEIR explain how the proposed permit program would address these withdrawals. 6-45

3. The DEIR ignores epidemic problem in the Shasta River basin of non-enforcement of laws related to stream flow and water allocation by CDFG, State Water Resources Control Board (SWRCB) Water Rights Division (WRD) and the Department of Water Resources (DWR). 6-46

CAG CommentsScott TMDL Action Plan for Sediment and Temperature

These comments reflect on the adequacy of the Scott TMDL for Sediment as applied in this ITP DEIR – for, both, Scott and Sasta Rivers.

Coast Action Group supplied detailed comments to the Regional Board. These comments are in the record. This document supplements comments made to the Regional Board regarding deficiencies and issues of compliance with State legal mandates under State Water Code and CEQA.

Included in this document is discussion of actions that the SWRCB can take to resolve issues related to instream flows, a recognized limiting factor and cause of temperature impairment. Because the flow issues are such a large factor on the Scott River and in the TMDL Action Plan, action taken by the SWRCB to remedy this issue can go a long way to attaining legal consistency.

PROBLEMATIC ISSUES

State water law says that a TMDL Action Plan/Implementation plan (Water Quality Control Plan) must contain a description of the nature of specific actions that are needed to achieve the water quality objectives, a time schedule, and a plan for monitoring compliance (State Water Code Section 13242). As a Water Quality Control Plan, the Action/Implementation Plan must be adopted into the Basin Plan (Water Quality Control Plan for the Region). 6-47

Currently the Scott River TMDL Action Plan/Implementation, in many respects, relies on voluntary actions and/or relies on actions that are not clearly defined, or where language is to be developed after the approval of the TMDL by the Regional Board (or SWRCB). This is inconsistent with Cal Water Code that states that actions are to be clearly defined, with timelines for implementation of such actions. Voluntary actions can be submitted as planning documents to be approved by the Regional Board. Such voluntary planning documents must also include compete descriptions of actions to be taken where those actions must be equal to or better than enforceable criteria that has been clearly stated in the Action/Implementation Plan and capable of meeting Water

Quality Standards. Such voluntary actions (meeting standards under Cal Water Code) should be held open as options for attaining targets and to meet Water Quality Standards (as in the case of the Garcia River Action Plan for Sediment).

Reliance on ill defined actions is not consistent with anti-degradation policy:

Voluntary actions sought in the Scott River Implementation/Action Plan not only do not meet Cal Water Code mandates - they are not consistent with the Basin Plan Anti-degradation Policy (which is amended into the Basin Plan and is enforceable):

Basin Plan Anti-degradation Policy: "*Controllable water quality factors shall conform to the water quality objectives contained [in the Basin Plan]. When other factors result in the degradation of water quality beyond the levels or limits established [in the Basin Plan] as water quality objectives, then controllable factors shall not cause further degradation of water quality. Controllable water quality factors are those actions, conditions, or circumstances resulting from man's activities that may influence the quality of waters of the State and that may reasonably be controlled*."

Given the above failures, there is a third area in which the Scott TMDL is not consistent with state environmental statute - CEQA.

If aspects of the implementation plan are not developed for public review prior to approval of the TMDL, but are later to be developed and implemented; this is a violation of CEQA noticing and review policy known as project piecemealing and incomplete description of the project.

6-47 cont.

Due to the factors noted above, reliance of actions yet to be described or unlikely to occur, the State Water Board can not find that the Scott River TMDL Action Plan for Sediment and Temperature meets the requirements of Cal Water Code Section 13242 and the California Environmental Quality Act.

In the case if the Scott River TMDL Action/Implementation Plan for Sediment and Temperature; of the issues not in compliance with Cal Water Code (Section 13242) necessary attributes of a water quality control plan, the most important issue is that of instream flows - maintaining sufficient flows to allow minimal accommodation for the survival of salmonids. The greatest issue not addressed in the Action/Implementation Plan (but to be addressed at some future point that is not stated) is minimum flow maintenance and enforced diversion limitations in the Scott River Basin.

Reliance by the Action Plan, in regards to flow issues, on studies to be done by Siskiyou County, without any actionable or enforceable outcomes associated with any of the language does not meet the specifications of Cal Water Code or the definitions of appropriate project review, as defined under CEQA. Not only are the actions ill defined, the responsibility for flow issues do not reside primarily with the Regional Board. These diversion and flow issues reside within the jurisdiction of the SWRCB/Division of Water Rights.

The issue of minimum flows and enforcement of diversion limitations and water rights license is the responsibility of the SWRCB/ Division of Water Rights. The SWRCB is just not meeting its responsible agency obligations. In fact, the need for the TMDL, for temperature issues, would not have to be dealt with at all if the SWRCB was doing its job.

See analysis of proposed actions from Table 4 of the Action/Implementation Plan - Below

ACTION THAT THE SWRCB CAN TAKE TO REMEDY ISSUE

Correcting this Action Plan inadequacy in dealing with flow issue and legal inconsistency: the SWRCB should remedy the inadequacy by giving the Division of Water Rights directive to address issue. This direction should accomplish the following:

- State Water Board to adopt instream flow guidelines and support established minimum by-pass flows for the Scott River and its tributaries by use water right administration.

6-47 cont.

- Adoption of procedures (relating to compliance, as well as coordination of the several State agencies) to assure effective regulation of water diversions in the Scott River. Such regulation is consistent with the objectives of the California Performance Review, which seeks to improve efficiency, responsiveness and accountability in State Government. See The California Performance Review Report (Aug.3, 2004).

- Direct the Division of Water Rights to provide (initiate and oversee) study and analysis of water use effects on instream flows of the Scott River during critical low flow periods. Such study should make determinations on the regional risk of cumulative impacts related to diversions and pumping from subsurface flows. The study should develop recommendations which, if adopted as guidelines, would permit development of water supply consistent with salmonid survival.

- State Water Board develop a compliance program that, on a watershed scale, includes the following features:

  (A). Installation of stream flow gauging and recording devices at key locations within each stream basin for determining compliance with bypass flow requirements and current level of impairment;

  (B). Separate schedule for routine, random compliance inspections for each watershed, which is based upon the level of impairment and sensitivity of anadromous salmonid habitat;

(C). Requirement that applicants develop and implement measures that will ensure compliance with bypass terms, and a specific recommendation of "passive" bypass facilities; and
(D). Procedure for documenting that bypass facilities have been installed and are being maintained.

Note: Taking such action in a TMDL to deal with flow issues has recently been accomplished by the SWRCB - **Attachment - San Joaquin TMDL - Flow issues - Below**

- The SWRCB should memorialize the current Threatened & Impaired Rules (from the current Forest Practice Rules) into the Scott Action and Implementation Plan. The Regional Board based the Action/Implementation Plan for timber harvest on the employment of these regulations - as a minimum standard for logging operations. These rules sunset in December 2006 and may not be re-authorized by the Board of Forestry. **See - Analysis of Proposed Actions - from Table 4 of the Basin Plan Amendment**

JURISDICTION - State Water Resources Control Board

The people own the state's waters. See Water Code § 102. Use of that water is of public concern. See id. § 104. All waters shall be managed for the greatest public benefit. See id. § 105.

6-47 cont.

The State Water Board has exclusive jurisdiction to issue, condition, or rescind post-1914 appropriative water rights. See Water Code § 1250 et seq. It also regulates other rights, including pre-1914 and riparian, to prevent waste or unreasonable use. See id. §§ 100, 275; California Constitution, Article X, section 2.

More generally, the State Water Board is responsible to "provide for the orderly and efficient administration of the water resources of the state." Water Code § 174. The State Water Board "shall exercise the adjudicatory and regulatory functions of the state in the field of water resources." Id. It shall take "all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water" in California. Id. § 275. To perform these functions, the State Water Board may: "(A) Investigate all streams, stream systems, portions of stream systems, lakes, or other bodies of water; (B) Take testimony in regard to the rights to water or the use of water thereon or therein; and (C) Ascertain whether or not water heretofore filed upon or attempted to be appropriated is appropriated under the laws of this state." Id., § 1051. Its function "has steadily evolved from the narrow role of deciding priorities between competing appropriators to the charge of comprehensive planning and allocations of waters." National Audubon, 33 Cal.3d at 444.

As required by the public trust doctrine, the State protects the trust uses of navigable waters fishing, navigation, commerce, and environmental quality to the extent feasible in water rights and other regulatory decisions. See National Audubon, 33 Cal. 3d at 437,

441. The State Water Board may reexamine prior diversions to determine whether they should be changed to protect the public trust uses of the affected waters. See id. at 446.

The State Water Board may adopt guidelines and procedures to implement applicable laws and rules. See Water Code § 275. It may formulate and adopt state policy for water quality control. See id. § 13140.

CEQA Mandates

The State Water Board is a public agency subject to CEQA. See Pub. Resources Code § 21063. It is the lead agency in a water rights proceeding, even though other public agencies have concurrent jurisdictions.

CEQA's environmental review requirements apply to State Water Board actions (in this case TMDL and Action Plan approval is a functional equivalency issue - CEQA mandates still apply) and discretionary projects. See Pub. Res. Code § 21080(a). CEQA generally applies to "discretionary projects proposed to be carried out or approved by public agencies…." Id. The statutory definition of "project" includes an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies. See id. § 21065.

6-47 cont.

In this case the Action/Implementation Plan relies on policy and actions yet to be described and not clearly defined. Thus the impacts and effectiveness of these actions can not be addressed by the public or other responsible agency (including the both the SWRCB and the Regional Board. Thus, public and other responsible agency have been denied a full description of the project/action to be taken and adequate assessment of impacts or affects of the project/action.

The Regional Board, and State Board, analysis of Alternatives consideration is inadequate under CEQA. The consideration of Alternatives must consider feasible, less damaging alternatives. Feasible alternatives were presented by interested parties and are in the record. These alternatives (some included in this paper) offer reasonable solutions and outcomes to issues in question. Reasonable analysis of these alternatives has not be accomplished by the Regional Board and/or State Board.

FISHERY RESPONSIBILITY

Two State reports illustrate that the ESA listings result from inadequate regulation of water rights within the Petition's Geographic Scope. In 1988, the California Advisory Committee on Salmon and Steelhead Trout, created by law in 1983 to develop a conservation and restoration strategy for salmon and steelhead fisheries (see Fish and Game Code § 6900 et seq.) found:

"The effort to maintain adequate streamflow for fish is also seriously hampered by the existing system for considering, granting, and enforcing the conditions placed on diversion permits. These activities are the responsibility of the State Water Resources Control Board (SWRCB). More than 13,500 [in 1988] permits have been granted, but only 500 (less than 4%) have bypass flow requirements for the protection of fish life. A recent survey conducted by the SWRCB indicated that more than 35% of the permittees were diverting more water than their rights authorize, indicating poor enforcement. Furthermore, there is the equivalent of only one staff person to handle all of the field inspections."

California Advisory Committee on Salmon and Steelhead Trout, Restoring the Balance (1988 Annual Report), p. 25 (emphasis in original). Second, in 2003, DFG found that:

> "A substantial amount of coho salmon habitat has been lost or degraded as a result of water diversions and groundwater extraction….In some streams the cumulative effect of multiple small legal diversions may be severe. Illegal diversions are also believed to be a problem in some streams within the range of coho salmon….Many of the watersheds where coho salmon are present have been developed and flows have been regulated and significantly reduced compared to natural flows."

6-47 cont.

Guidelines for Substantive Review of Water Right Permit Applications

The State Water Board may approve a permit application on proof that (A) water is available for diversion and (B) the diversion will be put to reasonable and beneficial use. See Water Code § 1240. It may establish streamflow and other conditions as it deems necessary to protect fish and wildlife resources. See id. § 1257.5. It will consider the Basin Plans applicable to the affected stream and may subject the permit to those conditions necessary to implement the plan. See id. § 1258; see also id. § 1243.5. A.B. 2121 requires consideration of such plans. Id., § 1259.4(a)(2).

A.B. 2121 requires that, by January 1, 2007, the State Water Board shall adopt instream flow guidelines for these coastal streams in accord with water quality standards for the purpose of water rights administration. See Water Code § 1259.4(a)(1). Prior to such formal adoption, the Board may consider the 2002 Joint Guidelines. Id. § 1259.4(b).

Under Water Code section 1052, the State Water Board may impose an Administrative Civil Liability (ACL) up to $500/day of unauthorized diversion. This is a form of civil penalty, subject to judicial review, for trespass on this public property. Pursuant to Water Code section 1055.3, "[i]n determining the amount of civil liability, the board

Analysis of Proposed Actions - from Table 4 of the Basin Plan Amendment

Roads & Sediment Waste Discharges:

Reliance on voluntary actions. Site specific plans to be developed on an "as needed basis". No dates for compliance specified for "as needed" compliance plans and actions, no specifications or default language (description) for baseline actions to comply, waits to after discharge takes place to initiate action by the Regional Board.

Evaluation and development of Caltrans actions and NPDES will occur at some future date. If need program and language will be developed in 2 years. No specifications or default language (descriptions) of baseline actions for compliance are present. Stormwater Plan to be reviewed at some future date - not disclosed.

Roads – **County of Siskiyou**: MOU with Siskiyou County on road management. No specifications or default language (descriptions) of baseline actions for compliance are present. Stormwater Plan to be reviewed at some future date - not disclosed. No final implementation dates noted - though development of a schedule is proposed.

Grading Ordinance - County of Siskiyou: "The Regional Water Board encourages the County to develop a comprehensive
ordinance addressing roads, land disturbance activities, and grading activities...." Encouragement with no timeline, language or specifics on what must be addressed and when.

6-47 cont.

Temperature & Vegetation

Reliance on voluntary actions. No dates for completion of actions or descriptive language are developed for plans and actions, no specifications or default language (description) for baseline actions to comply, plan waits to after discharge takes place to initiate action by the Regional Board.

Water Use – Water Users

Reliance on voluntary actions for conservation practices. The Regional Board requests the County, " in
cooperation with other appropriate stakeholders" to do a study on the affects of ground water pumping on instream flows. The County, along with the "stakeholders" is resistant to such study and implementation of practices that would maintain sufficient instream flows to protect fish. Such study, with development of protective guidelines, is very unlikely to be developed.

This issues is really under the authority of the SWRCB, Division of Water Rights - see discussion above.
No enforceable program is described under this issue.

Timber Harvest – Private & Public

No dates for completion of actions or descriptive language are developed for plans and actions, no specifications or default language (description) for baseline actions to

comply with TMDL targets. Reliance is on the general permitting process, subject to mult-agency review. All Scientific reports and EPA and NOAA findings indicate that such application of the Forest Practice Rules, as administered by CDF, do not protect the beneficial uses of water.

NOTE: This TMDL Action/Implementation Plan relies on the Forest Practice Rules, known to both the Regional Board and the SWRCB to not sufficiently protect the beneficial uses of water. Also, reliance in based on Threatened & Impaired Rules that may, or may not remain as an enforceable part of the Timber Harvest Plan management process. This TMDL Action/Implementation plan states, "If current laws and regulation governing timber harvest (e.g., the Forest Practice Rules) are changed in a manner that reduces water quality protections, the Regional Board will use its authorities to maintain at a minimum the current level of water quality protection." **This language is not sufficient to assure maintenance of the Threatened & Impaired Rules that are now in place. The SWRCB must take action to ensure maintenance of the minimum standards of the Threatened and Impaired Rules by incorporating them into the Scott Rive TMDL Action/Implementation Plan for Sediment and Temperature. The Threatened and Impaired Rules were put in place as minimum operational standards to protect beneficial uses and meet water quality standards. This regulation is interim and sunsets in Dec. 2006. Failure of the Board of Forestry to re-authorize these rules needs to be addressed by the SWRCB through the MAA/MOU process.**

6-47 cont.

The U.S. Forest Service & U.S. Bureau of Land Management are requested to develop an MOU to address timber harvest management issues. Dates are not set for completion and enforceable language and description of actions is missing and not reviewable by the public.

<u>Grazing Management Practices</u>

The U.S. Forest Service & U.S. Bureau of Land Management are requested to develop an MOU to address grazing management issues. Dates are not set for completion and enforceable language and description of actions is missing and not reviewable by the public. Such language and interim management guidelines should be provided for grazing practices.

Grazing Activities- private lands: Reliance is on voluntary application of standards that have not been disclosed. Dates are not set for completion and enforceable language and description of actions is missing and not reviewable by the public. Such language and interim management guidelines should be provided for grazing practices.

We hope these comments help to clarify and improve upon issues

Sincerely,

For Coast Action Group

Comment Letter 7

FROM : DOUG AND GAIL JENNER FAX NO. : 5304685331 Dec. 05 2008 02:58PM P1

530-225-2381

FAX Cover Sheet

TO: **Mr. Bob Williams,** Staff Environmentalist
Scientist

Conservation Planning CDFG
601 Locust St. Redding, CA 96001

RE: Shasta and Scott Watershed-Wide Permitting programs/Draft EIR & ITP

From
Jenner Cattle Co., Inc.
Fax: 530-468-5331
Call: 530-598-6100 or 530-598-6107

FOUR (4) pages,

Pg. 1

December 2, 2008

Bob Williams, Staff Environmental Scientist
Conservation Planning
California Department of Fish and Game
Northern California – North Coast Region
601 Locust Street
Redding, California 96001

California Department of Fish and Game

RE: The Scott & Shasta EIR & ITP

by Jenner Cattle Co., Inc.
Represented by:
Douglas T. Jenner
John W. Jenner
Frank B. Jenner
Nicholas T. Jenner
Francyne Jenner
Gail Jenner
Sarah Jenner
Jenny Jenner

We are commenting on the PROPOSED Scott & Shasta EIR & ITP and our comments relate to Scott Valley. We seriously question the integrity and process involved in this proposal. These are our major concerns:

1. There are too many unknowns and gray areas, not sufficiently addressed or clearly delineated. It has much too serious an impact on agriculture and on landowners and particularly on water rights. How can you expect us to sign on to a program that has been adequately spelled out and YOU do not even know the consequences of your proposals.
2. This is an infringement on private property rights and on water rights and their legal status in California.
3. Agriculturalists are being burdened with 100% of the "solutions" to "the problem," but we represent only 15% of those involved in the entire question of FISH and habitat.
4. Others involved include Indian tribes who now fish with impunity; they are over-fishing and taking out more than just what they might have traditionally. In addition, OFF-SHORE fishing by other countries has to have an incredible impact on fish numbers.

7-1

5. Historical value has been addressed by the proposal regarding Indian traditions and values. No comments have been made in regard to the historical value of agriculture. This issue must be addressed with the SAME value given Native American cultural traditions, OR changes must be made in the treaties signed between the government and tribes. They must take responsibility for their part of this issue. If we are being asked to sacrifice for the fish, mustn't they also be asked to sacrifice? Changes are being made in our laws in relation to our basic rights; the same needs to be asked of tribes. If this is being avoided because it is a political hot potato, it is not fair or just.

7-2

6. The proposal has the potential to change the original 1600 Agreements and their purpose and intent. This proposal will alter to such a degree that it can only be regarded as an abuse or misuse of legislation. It also has the potential to impact the water use not only in Siskiyou County, but throughout the entire state of California.
7. This program is cost prohibitive for the average California farmer and includes an unnecessary and restrictive "one size fits all" mentality. Although monies are being set aside at this time, history reveals that the state cannot sustain the burden of the program for any extended period of time, and it will undoubtedly come back to the individual landowner and water user.
8. Fish & Game are responsible for MORE stranded fish than this program will save! Naturally de-watered streams with stranded fish could be saved if properly managed. No transport is allowed at this time if and when fish are trapped in pools of water, even when contacted by landowners! However, if fish were captured and transported, as many fish could be saved as could be saved potentially by this program—if properly managed. Why not start out with REAL fish to be saved not just supposed numbers of fish that might be involved in this program? 7-3
9. IF instituted, the mitigations measures need to be flexible and SITE-SPECIFIC. There is no solution that can meet all the needs of landowners OR fish. The idea that one mandate will take care of problems is utterly preposterous. Those employed to perform restoration activities MUST be expected to DO the work of restoration and individualize according to the needs and environment and requirements inherent in each location.
10. RE: the taking of water: Taking water from landowners and agriculture is unacceptable, and if instituted, every person affected by this taking MUST be compensated. However, at the same time, it is almost impossible to measure the impact on landowners or agriculturalists in this compensation. How can anyone ascertain the exact LOSS suffered by those who have lost water? It is absolutely not acceptable. 7-4
11. This entire project puts too much demand on the 1600 process and on landowners. The economic strain is immeasurable and will create UNDUE HARDSHIP for farmers, ranchers, landowners, water-users. 7-5
12. IF this is the PEOPLE'S choice, then the PEOPLE MUST pay 100% of the direct and indirect costs – which can only be measured, truly, by those who own the water and whose livelihoods will be seriously affected. The decisions of a few who will be imposing these new regulations and who –by the way – derive their living from us, as huge taxpayers, is absolutely unfair. 7-6
13. Nothing in this proposal deals with the possibility that this "science" is flawed or that the results may garner little or nothing. IF, after all, the program fails, what insurance or guarantee does the landowner have that changes or a retraction is possible? The 7-7

government does not have a good reputation in repairing or retracting failed projects. The fact that this money is being used to fund jobs in the RCD or DFG means that those individuals will be working to preserve their jobs at any cost. There must be some sort of concrete data gathering that PROVES (publicly) that the results have been worth the sacrifices. 7-7 cont.

14. Finally, this project addresses SURFACE water users. What about ALL water users? The impact is not addressed in this draft of the project. 7-8

We expect that the answers to these concerns be adequately and clearly addressed before anyone is expected to sign up. We question a project that leaves much to the imagination and much in the air! 7-9

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Attention: Mr. Bob Williams at **bwilliams@dfg.ca.gov**
Electronic Submission: SCOTTDEIR@dfg.ca.gov or SHASTADEIR@dfg.ca.gov

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIRs

Date: December 9, 2008

Dear California Department of Fish & Game,

We would like to thank you for providing us with the opportunity to submit comments to the California Department of Fish and Game (CDFG) on the Proposed Scott and Shasta Watershed Wide Permitting Programs and related Draft Environmental Impact Reports (DEIR). Your hard work on these documents and in the related processes should be commended. We are providing you with both additional general comments that raise common issues to both the Shasta and Scott DEIRs, as well as comments that are specific to the Shasta and Scott DIERs. We incorporate by reference comments submitted to you by the Quartz Valley Indian Reservation and the Klamath Riverkeeper for the DEIRs. 8-1

The National Marine Fisheries Service (Weitkamp et al., 1995) found Coho salmon (Oncorhynchus kisutch) required protection under the federal Endangered Species Act (ESA), throughout their range in northwestern California and southern Oregon more than a decade ago. The California Department of Fish and Game (CDFG) eventually reached a similar conclusion and moved to list coho under California Endangered Species Act (CESA) statutes in 2003 (CDFG, 2002). 8-2

An Incidental Take Permit (ITP) is required by CESA by any party planning to engage in any land or water use that might cause harm to any species listed. On October 11, 2006 CDFG issued a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for a Shasta and Scott River Watershed-Wide Coho Salmon Incidental Take Permitting Programs. CDFG's ITP initiative and EIR are in response to draft applications by agricultural groups in both basins, which we have found to be problematic in terms of approach and sufficiency (see comments below). 8-3

Coho salmon populations in both the Shasta and Scott River basins are clearly at high risk of extinction (NRC, 2004) and the quality of the ITPs will determine whether they continue their decline to extinction or begin recovery. We are also concerned about how CDFG will deal with flow issues in these basins, because TMDL studies indicate that water quality problems like temperature cannot be solved unless agricultural water diversion and ground water pumping is reduced. 8-4

General Comments for both the Incidental Take Permits and Draft Environmental Impact Reports for Shasta and Scott River Coho Salmon

- The DEIRs will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. The DEIRs need to address the key problems associated with flow in the Shasta and Scott watersheds. 8-5
-
- The DEIRs state that the Water Master and CDFG must work together to take steps when fish are stranded as a result of no water connectivity. It does not explain what these steps are and weakly implies using fish rescue or salvage. The DEIRs must be explicit about when and how fish rescue will be used, as fish rescue in and of itself is not an adequate replacement for instream flows. 8-6
-
- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 8-7
-
- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The RCDs are uncomfortable with being charged with enforcing the Endangered Species Act on project participants, and rightly so. The Siskiyou and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action. RCDs are not a regulatory agency with enforcement power and this is a major oversight of the Program. Please clarify who exactly will be in charge of enforcing the terms of the permit, and on what grounds these parties are given this power. 8-8

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: “Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin”, Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18). Please incorporate this information and associated analysis into the Final Environmental Impact Report (FIER). 8-9

- The Program does not adequately explain how "required mitigation" projects will be paid for under the new permitting system. If the RCDs are unable to pay for such mitigation through their existing grants, the burden of paying for mitigation and restoration will fall squarely on landowners. This is unfair to landowners and does not bode well for the success of the program. Please provide an avenue for funding these "required mitigations" which will more likely be successful. 8-10
-
- The DEIRs acknowledge that the Program doesn't fully address California's Coho Recovery Strategy. However, one purpose of the Watershed-Wide Permitting Program is to implement this Coho Recovery Strategy. Please fully analyze the environmental impacts associated with exchanging recommended actions under the Coho Recovery Strategy for other mitigation options. 8-11
-
- The Program rests on the assumption that a programmatic Incidental Take Permit (ITP) would provide coverage for otherwise legal activities. However, the DEIRs do not adequately explain what assurances we have that covered activities will in fact be legal. There are already significant breaches of water rights in these watersheds, and Siskiyou County's move to private Water Master service may only add to this problem. Please clarify how the EIRs will track the legality of time of use, place of use, and point of diversion for covered water diversions. 8-12

Comments Specific to the Shasta River Incidental Take Permit and DEIR

- CDFG *Initial Study* does not mention removal or modification of Dwinnell Dam , which violates CDFG 5937, because it dewaters the river, and blocks passage to a huge amount of salmon spawning and rearing habitat; The Dwinnell Dam removal alternative was rejected for inappropriate reasons. Please explain in the FEIR for the Shasta watershed how Dwinnell Dam is legal under CDFG code 5937. 8-13
- The Shasta DEIR Does not address reconnection of tributaries like Parks Creek or the Little Shasta River through flow restoration. Please address this need and include in the FEIR for the Shasta watershed. 8-14
-
- The Shasta DEIR does not reference the Shasta TMDL or address water quality problems that are related to diminished flow. In the FEIR for the Shasta watershed, please incorporate actions that address water quality problems that are related to diminished flows in Shasta watershed and reference findings and direction found in the TMDL. 8-15
-
- The CDFG Initial Study considers validating flow levels that target coho only and could incidentally harm Chinook salmon and steelhead, if approved. Please address these potential impacts in the FEIR for the Shasta watershed. 8-16

Comments Specific to the Scott River Incidental Take Permit and DEIR

- The CDFG *Initial Study* and Scott DEIR fail to meet the stated CESA requirements for the use of best available science. 8-17
-

- These documents do not properly characterize the true risk of coho salmon extinction in the Scott River and should be addressed in the FEIR. 8-18
-
- Excessive diversion of streamflow, over-extraction of groundwater and, therefore, flow-related water quality problems in the Scott River are not adequately addressed and will not be resolved. These water quality problems related to flow should be addressed in the FEIR for the Scott watershed. 8-19
-
- There is no indication that CDFG will require unrestricted public data sharing, which is a requirement of science and necessary for public trust protection. The DEIR should clarify how data will be shared with the public. 8-20
-
- Actions taken under the *SRCD Draft ITP* and *Initial Study* focus only on coho salmon, which is not the only Pacific salmon species at risk in the Scott River basin nor the species of greatest economic importance. 8-21

CONCLUSION

In conclusion, the CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. 8-22 The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG. 8-23 In addition, the CDFG should develop and implement actions that are feasible and will likely lead to the protection and recovery of coho salmon in these watersheds and throughout the state of California. 8-24 We look forward to your developing a Final Environmental; Impact Statement that adequately addresses our comments and concerns raised above. 8-25 If you have any questions or would like additional details on any of our comments, please contact me.

Sincerely,

Petey Brucker

Petey Brucker- Klamath River Program Coordinator for
Klamath Forest Alliance

References

California Department of Fish and Game. 2006a. Scott River Watershed-Wide Permitting Program Environmental Check List and Initial Study. CDFG, Region 1, Redding, CA. 73 p.

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California Department of Fish and Game. 2006a. Notice of Preparation of a Draft Environmental Impact Report Shasta River Watershed-Wide Permitting Program. CDFG, Region 1, Redding, CA. 11 p.

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Shasta Valley Resource Conservation District. 2005. Draft Shasta Valley Resource Conservation District Master Incidental Take Permit Application. Submitted to CDFG Region 1 in April 2005. SVRCD, Yreka, CA. 120 p.

Siskiyou Resource Conservation District. 2005. Draft Siskiyou Resource Conservation District Incidental Take Permit Application for Coho Salmon. Submitted to the California Department of Fish and Game Region 1 in March 2005. Siskiyou RCD, Etna, CA.

Weitkamp, L. A., T. C. Wainwright, G. J. Bryant, G. B. Milner, D. J. Teel, R. G. Kope, and R. S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-24, 258 p.

8-26 cont.

Comment Letter 9

Governor Arnold Schwarzenegger
Governor of California
State House
Sacramento, California

Dear Governor Schwarzenegger,

Re: DFG's legal responsibility to protect the salmon in the Shasta and Scott Rivers

The Lost Coast League is a forty-year-old organization with both local and national membership whose efforts are concentrated on protecting public trust values and natural resources on the north coast of California. We have interacted with the California Department of Fish and Game on numerous occasions in regard to the preservation of the King Range, timber harvest practices on the north coast and more specifically the fate of our precious and endangered salmon populations.

As you are no doubt aware our salmon populations are in danger of extinction in the next decade. I am sure you agree that this loss would be difficult to tolerate, from a a spiritual, economic or environmental standpoint. We must do everything humanly possible to prevent such a catastrophe.

9-1

To therefore allow the DFG to abdicate its responsibilities to Californians, and not assume the most dedicated and militant stand to protect this resource, wwould both baffle and infuriate our membership.This is a time for DFG to impose the strictest possible protections on our salmon habitat. Its adventurist proposal, to cede its mandate on the Scott and Shasta Rivers, must be swiftly and summarily rejected.

9-2

Very Truly Yours,

Ellen E Taylor

Ellen Taylor, Chair Lost Coast League

From: Ani Kame'enui [ak@oregonwild.org]
Sent: Monday, December 08, 2008 1:00 PM
To: bwilliams@dfg.ca.gov
Cc: governor@governor.ca.gov
Subject: Scott & Shasta take permits considered

Mr. Williams,

I'm writing on behalf of thousands of members and our concerns for the health of the Klamath River tributaries, the Scott and Shasta. I understand that the CDFG has prepared Draft Environmental Impact Reports (DEIR) on its proposal to provide programmatic permits allowing the "take" of coho salmon to the Scott Resource Conservation District and the Shasta Resource Conservation District. It is also my understanding that CDFG has proposed to let these Districts administer permits needed by farmers to potentially alter or privately "manage" stream beds. Under this program, it appears that Fish & Game wardens would be prohibited from entering the land of farmers and ranchers who sign up for the program or following public streams that run through the property. 10-1 10-2 10-3

Under this plan and the aforementioned proposed permits the recovery and restoration of coho salmon will continue to be in jeopardy. This permit process will present an additional risk to coho, chinook salmon and Steelhead trout as the permits do not address the core needs of these fish. Of course, at the core, these fish struggled due to low flows and the progressive de-watering of these key Klamath tributaries; this is a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. 10-4 10-5

To be clear, CDFG should not delegate responsibility for the enforcement of the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards. It is well know that the Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action. Further, CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 10-6 10-7

Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). CEQA inadequacies include: 1. Failure to use the best available scientific information; 2. failure to consider environmental consequences and mitigate for those consequences; 3. inconsistency with other laws and regulation including C-ESA, Water Codes and Fish & Game Codes; and 4. failure to consider alternatives to the proposed action. 10-8 10-9 10-10 10-11

In sum, CDFG should scale back the proposed permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG. 10-12 10-13

Please review these and additional concerns as you consider the enforcement of the CA-ESA and the 10-14

long-term health of these invaluable watersheds. 10-14 cont.

Thank you for your consideration.

Best regards,

Ani Kame'enui
Klamath Campaign Coordinator
(503) 283-6343 x205
Oregon Wild (www.oregonwild.org)

North Group, Redwood Chapter, Sierra Club
Environmental Protection and Information Center
Northcoast Environmental Center
Felice Pace (as an individual)
28 Maple Road
Klamath, California 95548

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: **Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR**

Dear California Department of Fish & Game,

We write today to provide comments on the proposed Shasta and Scott River Watershed-wide permitting programs. We are combining our comments for both DEIRs because the two proposals are very similar. However, there are some issues pertinent to the DEIRs that are distinct for each watershed. Therefore, after our comments which are pertinent to both proposals we include comments specific to the Shasta and the Scott. Finally, we make recommendations to CDFG on how to proceed with respect to both proposals.

There follows the contact persons for each of the three groups and one individual submitting these comments. Please direct future communications to these contact persons and check to be sure they are each individually on the list so that each receives all future notices and documents – preferably in electronic form.

11-1

NAME	ORGANIZATION	MAILING ADDRESS	E-MAIL ADDRESS
Diane Beck	North Group Redwood Chapter Sierra Club	PO Box 238 Arcata, CA 95518	dfbeck@northcoast.com
Scott Graecen	Environmental Protection and Information Center	Number 122 600 F St, Suite 3 Arcata, CA 95521	scott@wildcalifornia.org
Pete Nichols	Northcoast Environmental Center	1465 G Street, Arcata, CA 95521	pete@humboldtbaykeeper.org
Felice Pace	Self	28 Maple Rd. Klamath, CA 95548	unofelice@gmail.com

Summary of Comments

The CDFG is proposing to institute programmatic 1600 and C-ESA take permits to the Shasta and Siskiyou RCDs. It appears that the 1600 program is feasible as designed. But the C-ESA take permits are not feasible and do not comply with C-ESA regulations. 11-2

C-ESA requirements for granting of a "Take" permit include: 1) the activity is incidental to a lawful activity; 2) the impacts of the authorized take are minimized and fully mitigated; 3) the permit is consistent with any regulations adopted pursuant to Fish and Game Code, §§ 2112 and 2114; 4) there is adequate funding to implement the minimization and mitigation measures, and to monitor compliance with and the effectiveness of those measures; and 5) issuance of the permit will not jeopardize the continued existence of the species. 11-3

The requirements of the C-ESA are not met because:

- As explained below, the permit would authorize or cover activities that are not otherwise authorized or legal. For example, full diversion in winter (i.e. outside the irrigation season as defined in respective adjudications), "Take" via Fish Rescue and the unreasonable use of water in violation of the Water Code and the Public Trust Doctrine. 11-4

- The level of "take" authorized is not known or adequately described. Therefore it is impossible to know whether mitigations will be effective to mitigate this level of take. 11-5

- The mitigations proposed are all projects and actions which the RCDs have already been implementing – most of them for more than 20 years. Since those projects and actions have not been effective in the past it is unrealistic to assume they will be effective in the future. The DEISs contain no analysis indicating whether or not these mitigations will be effective. Furthermore, adequate performance measures are not identified or defined and the permit holders (the respective RCDs) are responsible for monitoring their own compliance. 11-6

- The programs divert all restoration funding to mitigating "take". Yet the documents state that the Coho Recovery Plan is not being implemented by these programs. Therefore, by the CDFGs own admission, diversion of all restoration funding to mitigation will preclude recovery. But CDFG has a responsibility under the C-ESA to recover the species. Thus the programs violate the C-ESA. 11-7

- Coho in the Shasta and Scott River are already at jeopardy because the number of returning spawners is not a genetically viable population as defined in the scientific literature. The proposed permits either incorporate the status quo (including illegal activities) or rely on actions for which funding is not assured or adequate and/or which are not adequately analyzed (e.g. water banks). Therefore, the proposed programs can not be presumed to preclude jeopardy. In fact, because it would divert funds from restoration (recovery) to mitigation, the proposed programs may actually enhance current jeopardy conditions. 11-8

The proposed programs violate CEQA because:

- The program does not adequately describe the project as required by CEQA. The project applies to ALL agricultural operations but those agricultural operations are not adequately 11-9

described. Specifically, the use of groundwater for irrigation, the changes in groundwater use over time and the impact of this increase on flows has not been adequately described. Also, common irrigation practices including running diversions full all year and out-of-season irrigation are not described. 11-9 cont.

- The program does not adequately analyze and disclose project impacts as required by CEQA. For example, the project applies to ALL agricultural operations but the use of groundwater for irrigation, the changes in groundwater use over time and the impact of this increase on flows and on Coho salmon have not been adequately analyzed and disclosed. 11-10

- The mitigations that are described are entirely dependent on the state legislature and federal government continuing to provide restoration funding. Therefore implementation of the mitigations can not be assured over the course of the permit. 11-11

- The Scott DEIR cites but does not use the best available scientific information. Specifically a major peer reviewed study: Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin, **Authors:** Van Kirk, Robert W.[1]; Naman, Seth W.[2] **:** JAWRA Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18) is cited but its analysis is not applied to analysis of impacts or feasible alternatives. 11-12

- The DEIRs do not contain a reasonable range of feasible alternatives as required by CEQA. The California Environmental Quality Act (CEQA) requires an evaluation of the comparative effects of a range of reasonable alternatives. The environmental impact report (EIR) must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. Feasible alternatives to the program exist which are not even considered or mentioned. These include: 11-13

  1. Focusing on compliance with existing state laws: Allowing CDFG enforcement personnel to enter private agricultural lands in order to assure compliance with applicable Fish & Game Codes is both legal and feasible Because it is well documented that non-compliance occurs on a regular basis (see, for example, attached 2001 SF Chronicle article citing CDFG officials concerning non-enforcement of Fish & Game Codes in the Shasta and Scott) it is feasible and reasonable to include an alternative which would rely on effective enforcement of existing laws and rules. Absent inclusion of such an alternative it is impossible to determine if such an approach would be more or less effective, more or less costly and more or less likely to achieve the objectives (conserving Coho and minimizing take). 11-14

  2. A program that would include extending watermaster service to the entire area.

  3. Requiring the permittee or the sub-permittee to fund mitigations as opposed to diverting restoration funds for this purpose.

  Failure to include and analyze a reasonable and feasible range of alternatives is a violation of CEQA.

- The DEIRs do not disclose or analyze the impact of pesticide use by the agricultural operations it proposes to permit. Pesticide use in these valleys include pesticides which the EPA has determined can harm salmonids – including Coho - and which NMFS has determined require large no-spray buffers on streams. But no permit conditions prescribe buffers or any restrictions. The failure to analyze the impact of pesticide use is a violation of CEQA. 11-15

The proposed Program has major flaws which will render it ineffective in conserving Coho Salmon. These flaws include:

- The proposed Take Permit does not do enough for Coho. Coho in Scott Valley and Shasta Valley. These Coho need over-summer and over-winter habitat. The "mitigations" discussed in the Initial Study are mostly either for regulatory compliance or paying irrigators to pump water into the river that will be sucked out again by pumps near the river farther down stream. The proposed Take Permit does not advance recovery strategy goals. In fact, it diverts scarce resources from true restoration (recovery) to pay for irrigator regulatory compliance.

- The proposed Take Permit ignores the collegial and respectful approach to restoration that has been used in Klamath River for the past 20 years. Under the Klamath Act the State of California acted as a partner with tribes, fishermen, local government and federal agencies. Unfortunately, in this case those who have a vital interest in water management in the Scott River and Shasta River – tribes, fishermen, river and coastal communities – the Downstream Interests - and the considerable localized knowledge and expertise in fisheries restoration which the tribes and communities in particular have developed - have been excluded from the process. These proposed programs are truly a lost opportunity and a backward step for Klamath River Basin restoration.

11-16

- Take permit protection will cover all agricultural activities including groundwater pumping; but groundwater pumping – which according to the Department of Water Resources constitutes 54% of Scott River irrigation – is not addressed in the regulatory or mitigation frameworks. The DEIRs appear at points to assert that the scope is limited to surface water diversion. However, a plain reading of the permits disproves such assertions. Both permits read in part: "For purposes of this Permit, "agricultural operator" is defined as any natural person or any partnership, corporation, limited liability company, trust, or other type of association or any public agency, as defined in CEQA Guidelines, §15379, who diverts water from a stream by means of an active diversion in the Program Area for an agricultural purpose**, or is involved in an agricultural operation on property in the Program Area through which or adjacent to which a stream flows."** (emphasis added).

11-17

- The RCD boards – responsible under the proposed take permit for monitoring compliance and reporting those who do not follow through with what is needed to minimize take -are likely to include the holders of sub-permits. Based on self-interest, past performance and declared philosophy concerning regulation of land, water and wildlife, the RCDs can not be relied upon to monitor and report non-compliance. As in the past, the RCD policy will likely be "don't ask; don't tell." From a legal standpoint, participation on boards which make regulatory decisions is not permitted for members of the regulated community. Therefore, for the RCDs to be in change of compliance monitoring the Supervisors would have to appoint board members who are not involved in irrigated agriculture.

11-18

- The RCDs are responsible under the proposed permits for "Effectiveness Monitoring" The proposed permits state that the RCDs "shall determine the effectiveness of the avoidance, minimization, and mitigation measures identified in this Permit and sub-permits and the extent to which the objectives of those measures have been met in accordance with the requirements below." While the inclusion of effectiveness monitoring is excellent, it is well established in the literature that the entity implementing a project has natural biases which preclude that

11-19

entity from adequately monitoring the effectiveness of what are essentially its own actions. Consequently, in order to be effective, effectiveness monitoring must be accomplished by an independent entity. In this case we recommend that the Quartz Valley Indian Reservation be designated as the entity responsible for effectiveness monitoring and that funding for this monitoring be provided by the permittees and/or CDFG.

11-19 cont.

- It is likely that the proposed programs will result in continued non-enforcement of Fish & Game Code 5937. In addition, as proposed, the Take permit would violate the CESA and its implementing regulations and CEQA regulations and case law.

11-20

The programmatic 1600 and C-ESA programs will not work in practice for the reasons summarized above and discussed in detail below and in attachments. To remedy the deficiencies w strongly recommend that the CDFG abandon the attempt to provide a "take" permit that covers all agricultural operations including the unregulated pumping of groundwater. In our opinion, a programmatic approach in these two valleys could potentially work if CDFG did the following:

- Limit the program to a 1600 program, restoration activities of the RCDs and (possibly) a well designed and implemented "take" permit covering surface diversions only.
- CDFG itself or an independent contractor were in charge of monitoring compliance (including allowing enforcement personnel to participate in verifying compliance).
- Take associated with permitted activities were quantified and mitigated.
- Permits and sub-permits specifically commit holders to comply with S. 5937 and other applicable Fish & Game and Water Codes.
- The DEIRs contained an adequate estimate of the amount of take to be permitted and an analysis of impact of the quantified take on Coho viability in the two subject watersheds – including genetic viability.
- Cumulative impacts to Chinook salmon and Lamprey were adequately analyzed and disclosed.

11-21

Programmatic approaches for the Shasta and Scott Valleys could be constructed that would both pass legal muster and which would be in the interest of Coho and the public. Unfortunately, the programs described in the DEIRs do not meet these criteria.

The proposed programs will not advance the recovery of Coho salmon and are inconsistent with the adopted Recovery Strategies and Plans:

As stated in the proposed permits: "The Recovery Strategy emphasizes cooperation and collaboration, and recognizes the need for funding, public and private support for restoration actions, and maintaining a balance between regulatory and voluntary efforts to meet the goals of the Recovery Strategy."

Unfortunately, the proposed programs do not provide a "balance between regulatory and voluntary efforts" which is called for in the Recovery Strategy. This is most dramatically seen in the proposal to not allow CDFG enforcement personnel onto the lands which would be "covered" by the permit. As documented in the SF Chronicle (2001, attached), the Shasta and Scott Valley's have for years been subject to a decision from the highest levels of the Department of Fish & Game to NOT enforce key Fish & Game Codes. Furthermore, DFG wardens have been ordered not to enter streambeds on private lands in these valley's even though they have a well established right guaranteed by the state constitution and the Public Trust Doctrine. The proposed programs would continue this situation. This does not constitute a "balance between regulatory and voluntary efforts."

11-22

Comments pertinent to both the Shasta and Scott DEIRs

1. The scope of the projects is overly broad:

CDFG proposes that the programmatic "take" and stream alteration (1600s) permit programs apply to ALL agricultural operations of those farmers and ranchers who choose to participate. This includes operations that are unregulated and which are implicated not only in the decline of Coho and Chinook salmon but which the available information indicates are likely precluding recovery of Coho salmon. In the Shasta River riparian water rights are unregulated. They were not covered in the Shasta adjudication. More importantly, CDFG has in its files evidence that riparian landowners in the Shasta River have – without notice or permit – placed pumps into the river and removed water for irrigation and other uses. For example, you have a letter from Shasta River landowner John Spencer about a neighbor who acts in this manner. This individual pumps water directly from the river onto steep, low value grazing land. In the Scott River it is groundwater pumping which is unregulated. DWR information indicates that since the 1950s groundwater pumping in the Scott Valley has increased dramatically. DWR data also indicates that groundwater pumping now constitutes more than 50% of total irrigation in the Scott. Surface diversions have not been reduced as a result of this increase but rather land that was previously dry farmed or unfarmed has been brought under irrigation. For example, the entire North end of Scott Valley comprising the lower Moffett Creek Watershed was dry farmed as late as 1970. The entire area is now intensely irrigated and most of it is in alfalfa and other high water use crops. 11-23

Recommendation: Scale back the scope of the permits to apply only to restoration programs of the RCDs. It might be possible to apply the permits to surface diversions as well if CDFG and the RCDs can assure that all diversions of a given landowner would be covered (even diversions pursuant to riparian rights in the Shasta), provisions of the Fish & Game Code (especially section 5937) will be enforced and there is an adequate independent monitoring program in place. 11-24

2. The permit programs will not lead to the recovery of Coho Salmon as required by the California Endangered Species Act:

Information in the DEIR does not support the assertion that the proposed permits will lead to or are consistent with Coho recovery as required by the C-ESA. In fact, there is considerable information which has been provided during the scoping period which indicates that the permit program is not consistent with recovery. Because the permits are designed to cover all agricultural operations and because those operations include unregulated activities which expert agencies and CDFG's own information indicate are and will continue to negatively impact Coho, the proposed permits do not meet C-ESA requirements. For example, CDFG, Siskiyou RCD and tribal collaborative Coho surveys in the Scott River indicate that Coho migration has been delayed in recent drought years due to low flow barriers. Those low flows have now been shown to be directly related to unregulated groundwater pumping (see Van Kirk, 2007 previously cited). 11-25

Recommendation: CDFG should remove from permit coverage those activities which other expert agencies, peer reviewed studies and CDFG's own fish monitoring programs indicate are inconsistent with the recovery of Coho salmon. 11-26

3. The permit programs would delegate CDFG regulatory responsibilities to the Shasta and Scott RCDs which are not regulatory agencies and which have asserted in testimony on the proposals to list Coho salmon pursuant to the state and federal ESAs that they will not perform regulatory functions.

CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. CDFG is also proposing to restrict the access of its wardens to the streams covered by the permit. In addition, the proposal does not include provisions for adequate compliance monitoring. For these reasons it will be impossible for CDFG and the public to verify whether or not the RCDs are performing the regulatory functions which will have been delegated to them under the proposals. 11-27

Recommendations:

- CDFG should not delegate regulatory authority to agencies that have no record of adequate regulatory performance, which have stated in the public record that they are not regulatory and do not intend to perform regulatory functions and which would require neighbors to report and enforce on neighbors in order to be effective.
- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 11-28

4. The DEIRs do not comply with CEQA requirements:

CEQA contains specific requirements which must be met before a project can be approved. The DEIRs do not meet several CEQA requirements including:

Projects must be fully described:

The DEIRs do not adequately describe the scope of the proposed projects because they do not adequately describe the agricultural operations to which they will apply. For example, the changes in agricultural practices over time in these valleys and the impact these changes have had on flows, water temperature and fish habitat have not been adequately described.

The DEIR's do not adequately describe baseline conditions precluding accurate analysis of impacts. In particular, the baseline improperly includes illegal practices which are a consequence of the lawlessness that characterizes water management and use in these watersheds. Examples of illegal practices included in the baseline include: 11-29

- There is at least one diversion on Etna Creek that flows full year around. There is at least one ditch on Kidder Creek that also flows full year around. There is no watermaster service on either creek and in the majority of the Scott Valley. The extent of the practice of running diversion ditches year around is not acknowledged, disclosed, quantified or analyzed. This is a CEQA violation.
- After recent floods (97 and 05) landowners in the East Fork and Moffett Creek (Scott) have operated bulldozers in the creek straightening and channelizing them. The result of this illegal activity is now included in the baseline.

- In the Shasta River the owner of land surrounding Big Springs has put in wells which tap the underground streams that feed Big Springs. As a result the flow of Big Springs has decreased from 120 CFS to 20 CFS. In addition, the entire flow of Little Springs has been diverted into a ditch. These illegal activities are improperly included in the environmental baseline in violation of CEQA.

11-29 cont.

The improper definition of the environmental baseline prejudices the analysis and makes it impossible for the true impacts of the project to be defined or analyzed. This is a CEQA violation.

Project must consider environmental consequences and mitigate:

1. The DEIRs correctly identifies dewatering of lower portions of tributaries in the Scott and lack of adequate flows in the Scott and Shasta as major factors impacting Coho and other species. But the DEIRs fail to adequately analyze the consequences of these flows. For example, the delay of Coho migration in the Scott River in dry years as a result of low flow barriers is documented in CDFG spawning survey reports and elsewhere but is not identified in the DEIS. The impact of these low flow barriers on Coho and other species (e.g. Chinook and lamprey) are not analyzed or disclosed.

11-30

2. The mitigation for flow problems are contained in sub-permit conditions and the Scott and Shasta River Water Trusts. However, the actual impact of these factors on the dewatered sections of tributaries and on flows in the Scott River and Shasta River are not analyzed or disclosed. Thus it is impossible to determine whether the mitigations will be effective. This is a CEQA violation.

In the absence of flow studies to determine the specific flow needs of Coho it is impossible to determine whether the mitigations prescribed will be effective. In the absence of these needed flow studies the best surrogate is the USFS adjudicated flows in the Scott which were provided for fish migration and habitat. But the Scott DEIR does not contain an analysis indicating that sub-permit conditions and the Water Trust will need these flows or even stem the progressive dewatering of the Scott. The CEQA requirement for mitigation of impacts is not met.

No similar adjudicated flows for fisheries exist in the Shasta. However, in both basins the vast majority of the mitigations prescribed have already been implemented. Some of them (e.g. riparian revegetation) have been implemented for twenty years or more. Judging by the Coho spawner and juvenile survey data provided (and similarly for Chinook salmon) the mitigations will not be effective. Coho and Chinook production, survival and return have not increased or rebounded and appear to have actually decreased. In the absence of other analysis, the failure of the prescribed mitigation measures to halt the decline of Coho must be used to judge whether these same mitigations will mitigate the "take" proposed for authorization.

11-31

3. The one mitigation that has not been fully implemented is the Scott Valley Water Trust. However, the Scott DEIS does not analyze how much water must be purchased to mitigate the proposed take (i.e. to meet the USFS adjudicated flows) and does not assess the financial feasibility or whether this level of expenditure is sustainable.

4. In the Shasta, the DEIR relies on the TMDL Action Plan but fails to embrace the flow target which the NCWQCB has determined is needed to lower temperature in the Shasta River to provide for the needs of Coho. Instead of 40-45 CFS target for flow increase, CDFG in the DEIS proposed 10 cfs. There is no analysis to indicate a 10 CFS increase in flows will provide adequately for Coho. Therefore

the mitigations can not be judged adequate and must be presumed inadequate to mitigate for the take proposed for authorization.

Conclusion: The environmental consequences of the proposed Shasta and Scott 1600 and C-ESA programs are not adequately analyzed or disclosed. The mitigations prescribed are not adequately analyzed and therefore can not be judged to be sufficient. The fact that most of the mitigations have been implemented for up to 20 years without positive impact on Coho numbers and other species indicates that the mitigations will not be effective to mitigate take proposed for authorization. This is a violation of CEQA. 11-31 cont.

Project must have a mitigation monitoring plan that is capable of dealing with anticipated and unanticipated results and the capability to adapt in order to fix problem areas.

The mitigation monitoring plans requires the RCDs – the permittee – monitor compliance with permit conditions not only of the RCDs themselves but also of landowner sub-permittees. Because there is no requirement that RCD Board members can not be sub-permittees this amounts to a situation in which the RCDs would be responsible for monitoring compliance and reporting violations of its own board members. Even if this was remedied, it is unlikely that the RCD board members would be willing to report violations of their neighbors. Furthermore, CDFG enforcement personnel are excluded from "covered" lands and can not verify compliance. For these and other reasons the monitoring plans do not meet the requirements of CEQA, its implementing regulations and guidance. 11-32

Project must consider a full range of Alternatives - with full discussion and thought process for findings supporting final choice:

The lack of an adequate range of feasible alternatives is discussed above (see page 3). In particular, alternatives which relies on reinstituting enforcement of existing Fish & Game Codes intended to protect Coho and other Public Trust Resources should be displayed, fully analyzed and fully considered. Allowing wardens to enter public access lands within the mean high water mark so that they can do their jobs is likely to be more cost effective and not require the diversion of restoration funds necessary for recovery in order to fund mitigation. Furthermore, CDFG should promote compliance with the law and not acquiesce to allowing widespread illegal water management practices to continue. As a public trustee this is an integral part of CDFG's mission which has been abrogated in the Shasta and Scott for much too long. 11-33

Project analysis must consider consistency with applicable law - water code, DFG code, ESA, etc.

The DEIRs are deficient in that they do not adequately disclose existing violations of specific Water and Fish & Game Codes. In fact, by including numerous illegal impacts in the environmental baseline, CDFG signals a willingness to allow these violations to continue. 11-34

Additional Inadequacies

DEIR failure to address needs of steelhead and Chinook salmon in the DEIR and ITP implementation impacts fails California Environmental Quality Act (CEQA) requirements for analysis of cumulative effects. 11-35

CEQA compels CDFG to share all data from the existing DEIR and the Department needs to commit itself and the Shasta Valley RCD to full disclosure and public sharing of all data, including raw data. 11-36

This raises another issue pertinent to RCD administration of the proposed permits. The RCD considers monitoring data collected on private lands as proprietary information. The DEIR must address where monitoring and other data will be considered proprietary and explain why the agency and the public will not need this data to evaluate compliance with permit conditions and applicable laws and codes. 11-37

Comments applicable only to the proposed Scott River Permit Program

1. The Department has not consulted adequately with the Quartz Valley Indian Reservation (QVIR) – a federally recognized tribe.

The QVIR has invested a tremendous amount of time and resources into water quality monitoring. Yet CDFG has not treated the Tribe as a partner, has not requested or adequately considered its data or how the proposed project will impact its interests. Furthermore, the Siskiyou RCD – which CDFG proposes implement the permit program has not included the QVIR in its plans and deliberations. 11-38

Recommendation: The QVIR should be a full partner in any permit program which will impact Coho and Chinook salmon and/or which potentially could impact the interests of the tribe and its members.

2. The DEIR does not adequately analyze and disclose the impact of the CDFG/DWR "Fish Rescue" program and the impact of "take" which has and will continue to occur which is directly related to the operation of surface water stream diversions.

As operated, the DWR/CDFG Fish Rescue Program (sic) is not biologically sound and only displaces take from below diversions to where it is less likely to be seen. The Take operates through the scientifically well established mechanism known as "density dependent mortality." Furthermore, if CDFG enforced F&G Code 5937 this costly program would not be necessary to protect the watermaster from "take" complaints. This program is susceptible to legal challenge and a complaint on it has been filed with NMFS. Thus, continued reliance on this biologically questionable practice as proposed by CDFG places the agency at legal risk. 11-39

3. The Scott DEIR does not adequately consider the best scientific information available on conditions in the Scott River and on the relationship between agricultural activities and these conditions.

A recent study (: Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin Authors: Van Kirk, Robert W.[1]; Naman, Seth W. Source: JAWRA Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18) directly addresses two issues which the EIR must address to comply with the requirements of CEQA. These two issues are the impact of climate change and the impact of the increase in irrigation associated with a doubling of unregulated irrigation pumping while surface diversions have remained fairly constant. This empirical study found that 60% of the decrease in Scott River flow is not explained by changes in precipitation and are most likely related to the increase in unregulated groundwater pumping. Combined with previous groundwater studies by the USGS (1955) and DWR (1975), this study makes a very strong case that the increase in groundwater pumping is a major factor in the decline of Coho salmon in the Scott. The NCWQCB and numerous other sources have documented the connection between flow and temperature. DFG's own listing documents and your 11-40

Coho Recovery Plan indicate that temperature is a major factor in the decline of Coho and the failure of Coho to recover in the Scott River.

The decreases in Scott flow associated with increased agricultural water use – including groundwater pumping - means that adjudicated US Forest Service rights to streamflow in the Scott are now not met in the late summer and fall even in average water years. This water right (these flows) was provided for fish. As a result of adequate flows not being provided, Chinook can now not reach spawning grounds in average water years and Coho spawning migration is delayed in drought years.

The delay in Coho migration is documented in the CDFG's own reports (see Scott River Coho spawning surveys) but is not cited. The DEIR does cite the Van Kirk study. But it does not adequately consider or analyze the impact of this information on Coho or how the proposed permit program would address these impacts so that Coho recovery could occur.

Recommendation: The EIR should consider the Van Kirk study and information in the CDFG and cooperators Coho spawning and rearing surveys and analyze how the proposed permit program will or will not address this key factor which until addressed will continue to preclude Coho recovery.

11-40 cont.

Comments applicable only to the proposed Shasta River Permit Program

1. The Draft Environmental Impact Report (DEIR) does not adequately analyze or disclose the impact of Dwinnell Dam and Reservoir on Coho salmon. This impact is direct (loss of access to habitat) and indirect (impact on water quality, flows and habitat below the dam. The DEIR rejects Dwinnell Dam removal option when its operation is illegal under CDFG Code 5937 and removal appears to be critical to Coho salmon recovery and water pollution abatement. In the absence of an adequate consideration of its impacts, the removal option can not be rejected out of hand pursuant to CEQA.

11-41

11-42

2. The DEIR does not adequately discuss, analyze or address the lack of regulation of water withdrawal by riparian landowners. The extent of this unpermitted, unadjudicated type of withdrawal is not disclosed nor does the DEIR explain how the proposed permit program would address these withdrawals.

11-43

3. The DEIR ignores epidemic problem in the Shasta River basin of non-enforcement of laws related to stream flow and water allocation by CDFG, State Water Resources Control Board (SWRCB) Water Rights Division (WRD) and the Department of Water Resources (DWR).

11-44

4. The DEIR does not analyze an alternative that would remove Dwinnell Dam and Reservoir even though the National Research Council and highly respected scientists are on record that this is among the most effective actions which can be taken in the Klamath River Basin to benefit Coho (see first NRC report). The DEIR claims this alternative is not feasible. Yet it displays an alternative that is arguably less feasible – development of new dams and water storage. It is feasible for MWCD – the owner and operator of Dwinnell – to shift the point of diversion to a new source (groundwater or the Klamath River) because: 1. a comprehensive Klamath settlement is currently under negotiation and Siskiyou County and CDFG are parties, and 2. Dwinnell does not provide reliable irrigation supplies. The failure to include an alternative that removes Dwinnell is arbitrary and a violation of CEQA.

11-45

Attachment #1
SF Chronicle on Fish & Game Code Non-enforcement in the Shasta and Scott

Young fish die as water laws go unenforced - Ranchers' cooperation threatened
- Glen Martin, Tom Stienstra, Chronicle Staff Writers, Friday, June 22, 2001

Irrigation by ranchers is decimating salmon and steelhead populations on California's second biggest river system, and Department of Fish and Game officials acknowledge they are not implementing a tough state law that could stop the diversions.

Ranchers have diverted most of the flow of the Scott and Shasta Rivers in Siskiyou County to irrigate alfalfa fields and pastures, leaving thousands of young salmon and steelhead without enough water and facing imminent death.

State game wardens generally are disposed to citing the diverters under Fish and Game Code 5937, which requires dam owners to maintain water in state streambeds sufficient to keep fish healthy.

But agency officials say they are being told not to cite offenders out of concern that cooperative restoration projects between the state and ranchers on the Scott and Shasta Rivers would end instantly if the law were enforced.

The controversy points out difficulties with cooperative programs between government agencies and private parties. Though such agreements can help resolve thorny environmental problems, they may also inhibit agencies from cracking down on private sector partners.

11-46

Warden Renie Cleland said he was told to back off from citing ranchers on the Scott and Shasta rivers.

"This has gone all the way to Sacramento," said Cleland. "It's extremely politically sensitive. I was told to take no enforcement action on it. These fish are dying. We've got five or six thousand steelhead trout dead on the Scott, and (dead juvenile steelhead) everywhere on the Shasta."

MAJOR KLAMATH TRIBUTARIES

The Scott and Shasta are major tributaries of the Klamath River, which is second only to the Sacramento River in its dimensions and the number of fish it supports.

The Klamath and its tributaries once supported hundreds of thousands of Chinook salmon, coho salmon and steelhead trout. Their numbers began declining in the mid-20th century from dams, agricultural irrigation and timber harvesting. By the mid-1980s, only a few thousand fish were left -- mostly on the Scott and Shasta.

During the past decade, efforts to screen agricultural pump intakes, reduce soil erosion, restore riparian forests and transport fish trapped in "dewatered" streambeds have bolstered the fish populations somewhat.

WATER RIGHTS FROM THE 1930S

But conflict between environmentalists and ranchers over diversions has simmered for years. Ranchers exercising water rights adjudicated in the 1930s typically lower the rivers through irrigation during the summer.

This year, a severe local drought has greatly increased the degree of the problem. The Scott has been sucked dry, and the Shasta reduced to a trickle at its juncture with the Klamath.

Temperatures in the river have reached or exceeded the level considered lethal for salmon species, which favor cold water. Thousands of fish have died,

and thousands of others face imminent death, making the pumping a clear violation of Code 5937.

"Everything has died," said Fish and Game Captain Chuck Konvalin of the Scott River. "The system has been dried up." Konvalin, who heads a team of wardens who operate in the north state, says their superiors are reigning them in.

"This thing is out of whack," said Konvalin. "I get my orders."

Gary Stacey, a fisheries program director for Fish and Game who oversees projects in the Klamath area, said enforcing Code 5937 would "slam the door" on meaningful restoration programs along the Scott and Shasta, which cost $25 million a year.

"All our current programs depend on landowner cooperation," he said. "That would all stop immediately if we pulled the trigger. And the process involved in filing and prosecuting a case like this could take years -- years the fish don't have.

"By taking strong law enforcement action, we could simply be assuring that the (fish) populations would wink out."

11-46 cont.

COOPERATIVE EFFORTS

Ranchers confirm they would scrap all cooperative ventures with the state if they were cited by game wardens, and say they are guaranteed diversion rights by court rulings made decades ago.

Gary Black, who diverts Scott River water to irrigate alfalfa and wheat on his 240-acre farm, said ranchers would respond to voluntary incentives to improve fish populations but would resist government fiat.

"We're looking for win-win situations," said Black, who helps direct a local resource conservation district that promotes fish-friendly agricultural methods. "I've worked with more than half the farmers in the Scott Valley. Everyone is willing to do their part for fishery protection -- the question becomes how far is too far."

Still, "flows remain the number one issue, and this is a good time to sit down and talk," Black said. "That will work better around here than getting out the citation book."

Attachment #2
PowerPoint Presentation on Illegal Out-of-Season Irrigation in the Scott River Valley
Felice Pace

(The attachment is in PowerPoint format and is provided in a separate electronic submission. It is also in the records of the SWRCB where it was presented in 2007.)

Attachment #3
Additional Comments on the Scott DEIR

Issue: Reliance on restoration funding for mitigation

DEIR @ 1-6:

"The Program is not intended to substitute for the Coho Recovery Strategy, nor is it intended to be a vehicle for implementation of the full Coho Recovery Strategy. Overall, however, the Program is consistent with the "programmatic implementation framework" called for in the Coho Recovery Strategy. The restoration activities included as mitigation in the ITP are also consistent with elements of the Coho Recovery Strategy. As described in the Coho Recovery Strategy, the effort to restore coho salmon in California must go well beyond the mitigation measures that will be implemented as part of the Program."

11-47

Comment:

If all restoration funding is diverted to mitigate "take" there will be no funding for activities that will lead to recovery. = opportunity cost = abandonment of recovery as a goal. Furthermore, since restoration funds depend on future federal and state appropriation of restoration funds, CDFG can not guarantee that mitigations will be implemented.

_____

Issue: Stranding of fish below diversions

DEIR @ 2-21 -

"Under ITP Article XVIII, if CDFG determines that a diversion covered by a sub-permit is causing or will cause the stranding of coho salmon, CDFG will take the steps in the order below to avoid or minimize such stranding:
a) CDFG will determine whether or not the sub-permittee is in compliance with the sub-permit.
b) If the sub-permittee is not in compliance with the sub-permit, CDFG will contact the sub-permittee to determine why they are not in compliance and take appropriate action.
c) In either case, CDFG will consult with SQRCD and the sub-permittee to determine whether there are any measures SQRCD and/or sub-permittee can take to avoid or minimize stranding.
d) If reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is the only available measure to avoid or minimize stranding, CDFG will work with SQRCD and the sub-permittee and, if applicable, DWR, to take such action."

11-48

Comment:

The applicable phrase in this statement is: "if CDFG determines…". The problem is that with enforcement personnel banned from the lands covered by the permit CDFG will not be in a position to make such a determination. Non-enforcement personnel do not see enforcement as part of their job description. Furthermore, these personnel know that managers will not act on such complaints. Historically and today they do not report p[problems even when these involve take. 11-48 cont.

Issue: Mitigation responsibilities of SQRCD -

DEIR at 2-22 through 2-25:

Comment:

The listed mitigations are all projects which have already been implemented by the SQRCD with salmon restoration funding. Some of these projects – e.g. alternative stockwatering – have been going on for years. Yet during this period flows have continued to decrease. Therefore, it is unlikely the mitigations listed will be effective. 11-49

The one mitigation that has only been applied in limited fashion is the Scott Valley Water Trust. However, because those diverters who would lease the water can shift to pumping interconnected groundwater – and other irrigators downstream can pump the water back out it is unlikely that flow continuity and flow enhancement can actually occur except in very limited circumstances, e.g. Sugar Creek

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Issue: Flows

DEIR @ 2-23:

"Flow Enhancement Mitigation 4: Develop and implement a Contingency Plan for Dry and Critically-Dry Water Years."

Comment: 11-50

CDFG can not legally rely on a plan that has yet to be developed to mitigate known impacts. It is unlikely that the SQRCD can accomplish something in the future that it has not been able to do in the past. In fact, because there is no authority over groundwater pumping (roughly 50% of irrigation) and not regulatory authority over diversions, the only option is lease of water which would be prohibitively expensive and is therefore unrealistic.

DEIR @ 2-25:

The proposed ITP requires SQRCD to establish a monitoring program to determine whether the sub-permittees are fulfilling all sub-permit terms and conditions, the implementation of avoidance, minimization, and mitigation measures identified in the ITP and any sub-permit, and the effectiveness of those measures in improving conditions for coho salmon. 11-51

Comment:

SQRCD relies on these sub-permittees to allow them to perform restoration projects. As SQRCD has stated many times on the record (e.g. comments on proposed Coho listing) they are not a regulatory agency and would loose critical landowner support if they performed regulatory functions. Therefore the monitoring program is unlikely to

DEIR @ 3-2:

"In summary, mitigation for these ongoing historic baseline activities will not be required pursuant to CEQA because the Program will not result in an increase in environmental impacts from these activities; rather, the mitigation for impacts to fish and wildlife resources from these activities will be identified in the SAA, ITP and/or sub-permit participants must obtain as a condition of participating in the Program."

11-52

Comment:

The environmental baseline selected includes illegal activities; the mitigations are not specifically targeted and would not be defined until some point in the future. These are CEQA violations.

DEIR @ 3.2-18: **Agricultural Practices and Water Management**

Comment:

The changes in agricultural practices over time (e.g. crop shifts, changes in irrigation water sources) are described but the impact of these changes on flows in the Scott River and on Coho salmon are not adequately described or analyzed.

11-53

DEIR @ 3.2-21

Comment:

Illegal modifications to stream channels have occurred in the Scott Valley in recent years after flood events. These are documented for the East Fork and Moffett Creek. They are considered part of the "baseline". This is a CEQA violation.

11-54

DEIR @ 3.3-10

Comment:

The Coho survey information presented makes it clear that we have in the Scott River one cohort out of 3 that is viable. The proposed permits will authorize take but there is no analysis in the DEIR indicating the level of take that will occur and there is no analysis indicating that this level of take will not lead to extirpation from the Scott River.

The population levels disclosed indicate that Coho are not genetically viable in the Scott River in at least 2 out of three years (cohorts). How will genetic viability be sustained or restored? How will the level of take authorized impact genetic viability? CEQA requires analysis to answer these questions but that analysis is not supplied in the DEIR.

11-55

DEIR beginning @ 3.3- 14 and onward:

Comment:

11-56

While there is good discussion of Chinook, lamprey and other species that likely will be impacted and their habitat needs there is no analysis (as required by CEQA) which supports the conclusion that impacts to these species will be "less than significant." 11-56 cont.

DEIR @ 3.3-29

"The Scott River Decree allows a maximum of 75 cfs to be diverted between April 1 and October 15 in the Etna Creek watershed. This volume is reduced to approximately 4 to 5 cfs at baseflow by the early fall."

Comment:

The statement is based the assumption that the diversions are reduced at the end of irrigation season. But there is at least one diversion on Etna Creek that flows full year around. There is also at least one ditch on Kidder Creek that also flows full year around. There is no watermaster service on either creek and in the majority of the Scott Valley. The extent of the practice of running diversion ditches year around is not acknowledged, disclosed, quantified or analyzed. The consequences of the non-existence of watermaster service in much of the project area is not disclosed or analyzed. This is a CEQA violation. 11-57

DEIR @ 3.3-41:

"Existing evidence suggests that water diversions in the Program Area can lead to direct mortality of coho salmon. CDFG staff conduct weekly conference calls with the watermaster to determine the likelihood of fish becoming stranded as a result of water diversions and at times have conducted capture-and-relocation efforts to minimize fish mortality from stranding. Data gathered by CDFG during fish rescue operations in the Program Area indicate that between 1993 and 2006, a total of over 46,000 juvenile coho salmon have been salvaged by CDFG staff during dry-back events downstream of water diversion sites. Salvage efforts on the mainstem accounted for the single largest contribution of approximately 16,000 coho salmon. Since the listing of coho salmon as a threatened species under CESA in March 2005, approximately 14,600 coho salmon have had to be salvaged within the watershed. Although the argument may be made that rescued fish are not dead fish since the very intent of the operations is to save fish from dying, the fact remains that in the absence of the diligent efforts of CDFG staff, these fish would have perished. While natural processes, including decreased streamflows after snow melt and increased water temperature in summer, contribute to deteriorating habitat conditions and fish stranding, water diversions exacerbate these conditions." 11-58

Comment:

The Fish Rescue Program by DWR and CDFG is not eliminating "take" at diversions where it is practiced but rather is displacing take to where it can not be seen. The mechanism is "density dependent mortality" and is well established scientifically. There is a complaint filed with NMFS for this take. The Scott DEIR continues to rely on Fish Rescue as mitigation and it is proposed as a covered activity. Because the amount of take associated with Fish Rescue has not been quantified and the impact of this take not analyzed, CEQA is violated.

Issue: C-ESA 11-59

DEIR @ 3.3-46:

"CESA (Fish and Game Code, § 2050 et seq.) prohibits take of an endangered, threatened, or candidate species unless the take is authorized by CDFG. CDFG may authorize take by permit provided: 1) it is incidental to a lawful activity; 2) the impacts of the authorized take are minimized and fully mitigated; 3) the permit is consistent with any regulations adopted pursuant to Fish and Game Code, §§ 2112 and 2114; 4) there is adequate funding to implement the minimization and mitigation measures, and to monitor compliance with and the effectiveness of those measures; and 5) issuance of the permit will not jeopardize the continued existence of the species (Fish and Game Code, § 2081, subds. (b), (c))."

11-59 cont.

Comment:

The proposal does not meet the requirements necessary for CDFG to authorize take because:

1. Illegal activities (e.g. violation of DFG code 5937) will be allowed to continue and are included in the environmental baseline (illegal streambed alternations after floods; out of season irrigation, running ditches full out of the irrigation season).

2. The amount of take to be permitted is not quantified and therefore it is impossible to determine whether they will be "minimized and fully mitigated." 11-60

3. Mitigation is the implementation of restoration activities which require government funding. The CDFG can not guarantee that the needed funding will be available. 11-61

4. Coho are currently in jeopardy in the Scott (the Shasta too) and the mitigations (existing restoration programs and projects) over at least 20 years have not led to increases in the Coho population. Therefore, it is impossible to determine if the amount of take proposed will or will not continue the jeopardy situation. 11-62

DEIR @ 3.3-49:

"In accordance with Appendix G in the CEQA Guidelines, the Program would have a significant effect on the environment if it could….. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. For purposes of this analysis, substantial interference with the movement of fish species are defined as effects that permanently block (e.g., dams) or seasonally impede (e.g., insufficient water depths) fish movement."

11-63

Comment:

The Fish Rescue program proposed for authorization would interfere substantially with the movement of Coho salmon, Chinook salmon and Steelhead and is therefore illegal under CEQA.

DEIR @ 3.2-60 Impact 3.2-4:

"The Program could result in an increase in the extraction of groundwater, which could contribute to decreased baseflows and increased ambient water temperatures in the Scott River and its tributaries (Less than Significant)."

11-64

Comment:

While the discussion is comprehensive, there is a lack of adequate analysis to determine that the impact will be "less than significant". Specifically the amount of surface water which would be required to be leased for in-stream flow as part of mitigation (Scott River Water Trust) in order to meet

the USGS right to minimum flows which are needed by Coho and the amount and impact of groundwater substitution for the reduction in surface diversion is not estimated, analyzed or disclosed.

Likewise, the impact of groundwater substitution for surface flow impact on water temperature is discussed but not analyzed. There is no estimation, quantification or calculation of this impact.

11-64 cont.

DEIR @ 4-41:

"Based on the above, where activities similar to those covered by the Program will result in impacts to geomorphology, hydrology, and water quality, those caused by the Program when combined with those impacts will not be cumulatively considerable. As a result, no mitigation measures beyond those specified for Impacts 3.2-1 and 3.2-3 are required."

Comment:

This conclusion is not based on an analysis but rather on description and assertion unsupported by analysis and therefore does not comply with CEQA.

11-65

Issue: Cumulative Impacts

DEIR @ 4-32:

"The incremental impacts on fisheries and aquatic habitat from the activities in the Program covers when combined with similar past, present, and probable future activities will not be cumulatively considerable for the following reasons:

• Specified terms and conditions contained in SAAs and other permits required for projects of this kind usually mitigate impacts to less-than-significant levels;

• Residual impacts after mitigation tend to be short-term, site-specific, and transitory in nature;

• Many instream projects, including many of the Covered Activities, aim to improve fish habitat and passage, such that short-term impacts are mitigated by long-term gains in habitat quality and access;

• The Program (with mitigation measures identified in this Draft EIR) would reduce take of coho salmon in the Scott River watershed, and would improve habitat (including increased access to and from spawning and rearing areas) for coho salmon and other anadromous fish; and

• Several other regulatory programs, plans and policies, particularly implementation of TMDLs in the Watershed, the state and federal listing of coho salmon, and the implementation of the NWFP, also serve to protect and improve stream habitat and to benefit coho salmon and other anadromous fish. In sum, these regulatory efforts, in combination with voluntary efforts on the part of individual landowners, the SQRCD, the SRWC, the French Creek WAG, Siskiyou County DPW, and others, are having, and will continue to have, a cumulative beneficial impact on anadromous and other fish in the Scott River watershed.

Based on the above, where activities similar to those covered by the Program will result in impacts on fisheries and aquatic habitat, those caused by the Program when combined with those impacts will not be cumulatively considerable. As a result, no mitigation measures beyond those specified for Impacts 3.3-1 are required."

11-66

Comment:

The Scott DEIR substitutes assertion and assumptions of efficacy for analysis to conclude that cumulative impacts to Coho will not occur. The cumulative impacts specific to aspects of the proposed program's coverage – including the Fish Rescue Program and substitution of groundwater for surface water for irrigation associated with the Water Trust – are not adequately analyzed or assessed.

Additionally, the cumulative impacts of the proposed permit programs and other practices (e.g. the increase in groundwater pumping in both watersheds) on other aquatic species including Chinook salmon and Steelhead trout are not adequately analyzed or disclosed.

11-66 cont.

Comment:

The proposed Scott and Shasta Take Permits (Appendix A in both DEIRs) include this statement: *"The Department may also include terms and conditions in a sub-permit that are not included in this Permit, if the Department determines that such additional terms and conditions are necessary to avoid, minimize, or mitigate the take of coho salmon incidental to a Covered Activity."*

This creates a problem under both CEQA and the C-ESA. Since the permit conditions that will be allied to participating landowners are not specified, and since these are the very conditions which are relied on to "to avoid, minimize, or mitigate the take of coho salmon incidental to a Covered Activity" - it is impossible to determine whether the authorized take will be effectively mitigated. This constitutes a violation of both CEQA and C-ESA. At minimum, the DEIRs must identify the full range of permit terms and conditions that may be utilized and provide analysis indicating that these are likely to be effective at mitigating the authorized take. CDFG does not have the discretion to push the decisions on which mitigation measures to apply into the future; they must be specified now.

11-67

Comment Letter 11.1

FWA
Family Water Alliance

(530) 438-2026
Fax: (530) 438-2940
E-mail: fwa@frontiernet.net

"Every Day is Earth Day on the Farm"

P. O. Box 365, Maxwell, California 95955

December 16, 2008

Mr. Bob Williams
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

RE: Comments on Shasta River and Scott River Watershed-Wide Permitting Program

Dear Mr. Williams:

Family Water Alliance (FWA) is a nonprofit, grassroots organization, whose mission is education and public outreach in an effort to protect private property rights, water rights, and the preservation of rural agricultural communities in Northern California. As the protection of a secure and affordable water supply, upon which farmers and ranchers depend to produce food and fiber for the state, the nation, and the world, is instrumental to the continued economic viability of rural communities in Northern California, we take great interest in the Draft Environmental Impact Reports for the Shasta River and Scott River Watershed-Wide Permitting Program. 11.1-1

To begin, the Draft Environmental Impact Reports (Reports) do not adequately address the economic burden that the proposed Program would have on the rural agricultural communities. The proposed plan would add excessive regulation to an already permitted activity that has been common place for many decades. 11.1-2 The proposed plan fails to address how the agricultural diversions in the watershed substantially divert or obstruct the natural flow of rivers, streams or lakes in the Program Area. 11.1-3

The proposed plan also unfairly targets the agricultural sector, while excluding water diverters for urban or environmental uses. If the premise is that this statute should apply to agricultural diversions then it should apply to all water diverters, including municipalities. By not fairly applying the regulation it can disrupt or divide the community. 11.1-4

Furthermore, the Reports fail to substantiate that these diversions take fish and therefore need an Incidental Take Permit. Is there data to back up such a claim? 11.1-5

Numerous different variables effect fish entrainment such as geographic location on the river or stream, orientation of intake, size of pumping facility as well as other factors need to be considered in fish entrainment. To be able to make the claim the diversions in the Program area take fish, entrainment monitoring on each diversion would need to have been conducted. 11.1-5 cont.

The Reports state that "increased costs for Agricultural Operators could result in reduced income for the agricultural operations". The report fails to address the economic impact on the county and community services districts if farmers and ranchers are can no longer operate because it is no longer economically viable. Nearly $170 million was generated from Siskiyou County crops and livestock in 2007. Such a loss of revenue would cause great economic harm to the community. 11.1-6

In closing, I would like to reiterate the concerns that FWA has voiced with regard to these two Reports. The proposed program has ramifications throughout the State if implemented. Further, it would be my hope that these concerns are addressed in a timely manner. Thank you for your cooperation. 11.1-7

Sincerely,

Ashley Indrieri

Ashley D. Indrieri
Executive Director

Cc:
Senator Sam Aanestad
Assemblyman Jim Neilsen
Assemblyman Dan Logue
Congressman Wally Herger
Siskiyou County Board of Supervisors
Siskiyou County Farm Bureau
Shasta Valley Resource Conservation District
California Farm Bureau Federation

From: Kim Austin [k_austin_2006@yahoo.com]
Sent: Monday, December 08, 2008 11:15 PM
To: shastadeir@dfg.ca.gov
Subject: Water Rights
Dear Mr. Bob Williams,

I am a concerned citizen of Siskiyou County. I just wanted to inform you that your policies concerning water rights and fish protection is destroying our county. We have hard working ranchers and farmers who are being struggled by these policies where they can't even grow their crops and raise their cattle, which, by the way, help feed thousands of people. The people here, who are most affected, don't get a big enough say in what happens. The government seems to think what is best for us, and they don't, they don't live here and understand our life style and how important we really are to this country, state, and yes, country. We help build this country from the ground up, and poorly written and researched polices will only worsen this country in the long run.

Please, listen to the other concerned citizens and take their opinions in good faith and listen. Together we can work together and make better, more informed decisions that are best for this county, and the people living in it.

12-1

Sincerely,

Kimberly Austin

Comment Letter 13

December 7, 2008

Jerry L. Bacigalupi
P.O. Box 689
Montague, Ca. 96064

Gary B. Stacey
Dept of Fish and Game
Regional Manager Northern Region
601 Locust Street
Redding, Ca. 96001

Re: Scott and Shasta EIR and ITP

Dear Mr. Stacey:

In response to your letter dated October 22, 2008, giving notice of completeion of draft of environmental documents for the Scott and Shasta River Watershed-wide Permitting program and review of the environmental documents, I provide you with the following comments:

1. As stated in your letter, "As you know, the primary purpose of the two permitting (programs) is to bring agricultural diverters into compliance with Fish and Game Code Section 1600 et. Seq. (Lake or Streambed Alteration Agreement Statute)" and with respect to Coho Salmon, a threatened Species (CESA).

   The 1600 program was introduced by the Department of Fish and Game in 1961 and since was reformulated in 1976 by A.B. 2210 (Z'Berg) (Chapter 603) and in 2003 by S.B. 418 (Sher) Chapter 736. The intent of the program has remained unchanged. The intent of the 1600 program as given to the Senate and Assembly by the Department of Fish and Game, to quote, is as follows: 13-1

   "The 1600 Program allows the DFG to regulate projects that ***substantially*** *divert or obstruct the natural flow or* ***substantially*** *change the bed, channel, or bank of any river, stream or lake. All persons* ***proposing*** *a project that could* ***effect*** *a river, stream or lake are required to notify the DFG ahead of time and, if the department determines the potential adverse impact to be* ***substantial****, a Lake or Streambed Alteration Agreement is required to be entered into by the department and the project proponent. Projects generally requiring DFG notification include building a pier in a waterway, adding a levee for flood control, installing bank or*

culvert, or extracting gravel from a channel. Emergency projects are generally not regulated under the 1600 program."

For the Department of Fish and Game to now require 1600 Permits for all existing adjudicated stream and spring diversions and existing stream crossings that have been in operation prior to the 1600 Program is a government violation of existing state law. The intent of the 1600 program has remained unchanged since 1961. New legislation will be required to proceed with the Scott and Shasta River Permitting Programs involving the 1600 Program as proposed. 13-1 cont.

Respectfully

Jerry L. Bacigalupi

cc. Bob Williams
Staff Environmental Scientist
Conservation Planning
Calif. Dept of Fish and Game
Northern Calif. North Coast Region
601 Locust St.
Redding, Ca. 96001

cc. California Farm Bureau Federation
2300 River Plaza Dr.
Sacramento, Ca. 95833
Atten: Jack Rice

SOSS
P.O. Box 207
Yreka, Ca. 96097

Shasta Valley Resource Conservation District
215 Executive Court, Suite A
Yreka, Ca. 96097
Atten: Ms. Adriane Garayalde, District Administrator

CRMP
215 Executive Court
Yreka, Ca. 96097

Siskiyou Resource Conservation District
P.O. Box 268
Etna, Ca. 96027
Atten: Ms. Carolyn Pimentel, District Manager

Scott Valley and Shasta Valley Watermaster District
P.O. Box 1041
Fort Jones, Ca. 96032

Leo T. Bergeron
Calif. State Grange
347 N. Main
Yreka, Ca. 96097

Comment Letter 14

December 2, 2008

Bob Williams, Staff Environmental Scientist
Conservation Planning
California Department of Fish and Game
Northern California – North Coast Region
601 Locust Street
Redding, California 96001

California Department of Fish and Game

RE: The Scott & Shasta EIR & ITP

THE ENCLOSED ARE CONCERNS AND CHANGES THAT MUST BE ADDRESSED & IMPLEMENTED BEFORE THIS PROGRAM WOULD BE ACCEPTABLE TO THE RESIDENCE OF THE SCOTT & SHASTA RIVER VALLEYS 14-1

STATE LAW "TITLE 7 OF THE GOVERNMENT CODE OF CALIFORNIA" GOVT. CODE SECTION 65030 STATES "IT IS THE POLICY OF THE STATE AND THE INTENT OF THE LEGISLATURE TO PROTECT CALIFORNIA LAND RESOURCES, TO INSURE ITS PRESERVATION & USE IN A WAYS WHICH ARE ECONOMICALLY & SOCIALLY DESIRABLE IN AN ATTEMPT TO IMPROVE THE QUALITY OF LIFE IN CALIF. 14-2

THIS PROGRAM AS OUTLINED DOES NOT DO THIS IT DOES THE OPPOSITE!

Sincerely, Lee G. Bragg

LEE T. BEAGLEY 347 N. MAIN ST YREKA, CA 96097
Printed Name Address City

KEY AREAS OF CONCERN:

Program assumes that agriculture is the "major" cause of the decline in salmon numbers without scientific support. 14-3

There is a strong emphasis on flow. However, the focus is limited to 15% of the watershed that is privately owned agricultural land. **The EIR needs to address the ET rates of the uplands and present the potential increase of flows that could be attained through an increase in proper harvesting and thinning.** 14-4

Program encroaches on private property and water rights.

DFG's description to access private property is unacceptable. **Access to private property shall be at the discretion of the sub-permitee in terms of notification and timing. Access may be restricted to DFG employees only (no third parties), and in the presence of the sub-permitee.** 14-5

Program is inconsistent at best in its explanation of restrictions on grazing. Grazing is an important tool for management of riparian habitat. **DFG shall accept RMAC grazing plans as the necessary tool to allow grazing. Further, DFG shall not control, nor restrict grazing outside of the riparian fenced corridors.** 14-6

Program is beyond its authority placing restrictions on ground disturbing activities "adjacent" to the channel. **Activities that occur outside of the channel, in the normal process of agricultural business shall not be restricted, nor managed by DFG.** 14-7

Program expects participants to reduce diversion use and they "may" be paid for the reduction. **All reductions in diversion use shall be voluntary and sub-permitees shall be compensated for the reduction at a fair market value. If compensation can not be made, the reduction in diversion is at the discretion of the participant.** 14-8

Incorrect assessment that the Programs' impact on agriculture is "less than significant."

If the true objective is to recover salmon, the existing open space must be maintained. That open space is provided through agriculture. For agriculture to remain, it must be PROFITABLE and sustainable. Without profitability, agriculture is not sustainable. One accurate statistic in the EIR is that the average net annual income of agricultural operations is only $7,000 above poverty level. Any increase in cost of operation or decrease in yield is SIGNIFICANT. 14-9

The Program will cause an increase in cost to DWR, passing the increase on to the participants. **Any additional costs that arise from the implementation of the Program for services performed by DWR shall be paid for by DFG.** 14-10

The Program will potentially reduce diversion of water, with no guarantee of compensation, resulting in a loss of production. **All reductions of diversions shall be voluntary and be compensated at a fair market price.** 14-11

The Program will hold the participant accountable for costs of avoidance, minimization and potentially mitigation if funding is not available. **Any costs associated through the implementation of projects required by DFG, through the Program, shall be paid for in full or in share from outside sources. At no time, shall the sub-permitee be held accountable for the full cost of a project or mitigation measure.** 14-12

Mitigations pertaining to livestock and vehicle crossing are unrealistic.

A maximum allowable width of crossing at 25' is not reasonable as the average width is well over 50'. This will prohibit all crossing of the river by livestock and vehicles, thus increasing GHG emissions. 14-13

There is no discussion of the impact of the Elk herd, currently at 12 head, that crosses the river in 3 prime spawning reaches, on a daily basis, from September through May. 14-14

Conclusions and statements in the EIR regarding commodities grown and trends in crop value are inaccurate.

Citing Caltrans as a source for predicting crop values is absurd at best.

Statement regarding a trend of decreasing grain acreage does not take into account that grain is used rotationally every 6 – 7 years as the table from which the statement refers is on a 10, 3 and 9 year data depiction respectfully.

Statement regarding trends of crop acreage does not take into account the marketability of the crops in the cited years. 14-15

The EIR briefly discusses the option of landowners withdrawing from Williamson contracts as a result of the Program. However, it dismisses this as a viable option believing that existing county regulations and stipulations serve as significant barriers and fails to address the second option available to landowners of enrolling in a reserve program.

Withdrawals from Williamson contracts in whole or in-part is a very realistic option, especially today, with land values falling, allowing landowners to cancel contracts with less of an economic burden. In fact, several applications to withdraw have been approved within the last two years.

Enrolling agricultural land into reserves is the other option, which is an allowable use under the Williamson Act, and could have a potentially devastating impact the county economy. This was not addressed in the EIR as a significant potential negative economic impact. 14-16

The EIR fails to address potential impacts of the Program on a holistic level. 14-17

Reduction of diversions and complete dedications back to stream and river flow, combined with proposed efficiency measures, could have a very significant negative impact on residential wells, wetlands, birds and other wildlife that depend on that diverted water for 14-18

life processes and groundwater recharge. 14-18 cont.

Sub-permitees shall not be held responsible or accountable for any negative impacts resulting from implemented projects as dictated by the Program. 14-19

As noted in the EIR, the Scott River is not a stable system. The natural rain and snow events will never allow the Scott River system to recover in its current geomoriphilogical condition. 14-20

Sub-permittees shall not be held financially responsible for the continued repair and r construction of projects damaged and destroyed due to natural events. 14-21

The Program eliminates the option of arbitration for the sub-permitee. 14-22

All sub-permitees shall maintain the right to arbitrate.

Due to budget constraints, the DWR has stated that it will likely not participate in the ITP for th Scott and Shasta as proposed within the Program. 14-23

Who is going to pick up the responsibilities of DWR?

The alternative pertaining to off stream storage should be included as a viable option to be pursued in coordination with the proposed Program. 14-24

Comment Letter 14

Comment Letter 15

December 2, 2008

Bob Williams, Staff Environmental Scientist
Conservation Planning
California Department of Fish and Game
Northern California – North Coast Region
601 Locust Street
Redding, California 96001

2008 DEC 4 PM 12:24

California Department of Fish and Game

RE: The Scott & Shasta EIR & ITP

This permit plan will be devastating to the Ag community and our county. This will also have a statewide implication. A fish should not be allowed to have more rights than a hard working farmer! Ag is not the problem! You like to eat but complain about the food prices, well this will only make the prices higher!

15-1

15-2

Sincerely,

Jodi Burch
Printed Name

8720 Linger Ln.
Address

Montague
City

From: Michael Cassady [mikecassady@me.com]
Sent: Tuesday, December 09, 2008 12:10 AM
To: SHASTADEIR@dfg.ca.gov
Subject: A rebuttal to Mr. Brian Favero on the Coho EIR that appeared as a Guest Opinion in the Siskiyou Daily News of Dec. 8th

Mr. Robert Williams,
Staff Environmental Scientist,
California Department of Fish an Game
601 Locust Street
Redding CA 96001

Dear Mr. Williams,

A Mr. Brian Favero recently wrote an article in the 'Opinion' section of our local newspaper, Siskiyou Daily News (SDN), voicing strong opposition to the Environmental Impact Report concerning the watersheds associated with known Coho Salmon spawning areas in the North State, a study implemented as a consequence of the listing of the Coho on March 30, 2005 as a threatened species under the California Endangered Species Act (CESA), as well as by the California Department of Fish and Game(CDFG). I respectfully disagree with Mr.
Favero's position, and I believe I can say I represent just one of many dissenting Progressive voices in my area which are systematically excluded from the SDN's editorial concern due to the paper's admitted conservative political bias and, frankly speaking, its silly, chauvinistic pandering to well connected, local vested-interests. So be it. 16-1

Mr. Favero speaks of the CESA, the CDFG and the EIR as if they are enemy agents of an invading alien power. They are, in fact, the American public itself_ us _ with a mandate to steward our natural resources for the benefit of Americans in general, not to exclude our future generations. The role of these public agencies to arbitrate between private and public interests has been made increasingly complicated since World War II, on one hand, by our modern technical and scientific capacity to seriously impact the environment, as never before in history, and, on the other hand, by our ability to investigate scientifically, and react preventatively to serious, probable long term negative effects on he environment. I think Mr.
Favero's polemical attitude does little to bring much needed, informed reasoning to the discussion table. 16-2

Having grown up in Scott Valley, and having spent many summers "sweating my guts out"_ pardon the expression _hauling hay bales, I could not fail to notice today the extreme changes in the practice of raising alfalfa. What irrigation was done back then was pitifully limited by today's standards for cause of being very labor intensive_ hand-moved sprinkler lines, or flood irrigation. The farmers I worked
for were lucky to get any third crop worth talking about at all. 16-3

There are whole areas of Scott Valley under intensive irrigation today that were never used for water-hungry alfalfa back then because the soil would not retain enough moisture for the quasi dry-land farming that was done.

Today, farming has eliminated a vast labor force working on the land (also the county tax-base) in favor of the machine based, capital intensive agribusiness model in fashion with industrial-scale farming in areas perhaps better suited to such practices than Scott Valley, or Siskiyou County. Lobbying agencies such as the Farm Bureau have worked very diligently to promote capital driven, intensive farming by lobbying for preferential electric rates for water pumping and huge government subsides for pivot irrigation systems arguably less wasteful of water. The intensive farming practices required to service such debt-driven agriculture has resulted in a massive increase in the pumping of ground water, as well as the increased use of pesticides and herbicides. The fact is, farming today is not just the same old thing it was in grandfather's time. It belongs to a vastly more integrated world where many different stake-holders desperately need to find positive ways to resolve their differences by peer-reviewed science, honest negotiation and productive consensus.

16-4

16-5

I believe that Mr. Favero is entirely sincere in his passionate defense of the local status-quo in farming practices, but his polemical method is wrong-headed. If his position were more balanced, he would not have targeted for damnation only the obvious bête-noires of the local landed interests_ spotted-owl environmentalists, the famously ill-considered tribes and distant, coastal salmon-fishing trawlers. He would have also had to mentioned very vocal and well organized tourist anglers who are also opposed to kicking the Coho, and healthy river can down the road. And, in his honorable concern for the economic impact of protecting the rivers, he may have taken time to compare the income generating value of the alfalfa market against the value of the ocean salmon fishing economy that has been nearly wiped-out. He may have mentioned as well the economic, and local tax value of hotel rooms and local services to fishermen and river-rafters.

16-6

I hope with the recent change of administration in Washington, the newly elected President and Congress will return to the tradition of policy making that understands how our urge to innovate in this country inheres in finding ways of making minority and majority interests work together, and advance each other's purposes through loyal, healthy competition. A first step might be to stop using the the arguments of demagogues and side-show snake-oil hawkers.

16-7

Sincerely yours,

Michael Cassady

Comment Letter 17

December 5, 2008

Bob Williams, Staff Environmental Scientist
Conservation Planning
California Department of Fish and Game
Northern California – North Coast Region
601 Locust Street
Redding, California 96001

California Department of Fish and Game

RE: The Scott & Shasta EIR & ITP

① The 1602 Permit is not Necessary For diverters who Already have Permanate diversion with Fish Screens in place. They should only be Concidered For land owners who need pool up dams — 17-1

② DWR should only have The responsibility to Regulate adjudicate Water Rights, not arbitrary I.T.P issues. — 17-2

③ Regulatory Fees should be The burden of State and National agencies because They Profess to be Carrying out The will of The People — 17-3

④ EIR does not address Environmental Causes of Take, but places The burden on The Land owners. — 17-4

⑤ ITP assumes The Land owner is The Cause of Take. It does not Concider Enviromental Causes.

⑥ Their is no mention of Financial Liabilities to Land owners For water Losses do To Fish needs or Natural Events — 17-5

Sincerely, Jack Cowley

Jack Cowley — 7385 Ball mtn Rd — Montague Cal 96064
Printed Name — Address — City

From: norman dyche [3711nd@suddenlink.net]
Sent: Thursday, November 20, 2008 8:58 PM
To: SCOTTDEIR@dfg.ca.gov
Subject: Klamath river basin
To Bob Williams
Re: Klamath river basin

Bob, I realize you have gotten hundreds of the same letters. Probably just put mine on the stack.
I am real sad that after 30 years of a fishing license and anticipating my retirement to the Eureka area to enjoy this sport. No Fish!! As a young man we would come up here and catch 4-6 in a day and return home satisfied. Now i can't catch one in a week; or not allowed to fish that day, much less see one. 18-1

I have never seen anything get so bad. Even the commerical guys are hurting. So much has been done to help these fish and we finally narrowed it down to the flow of the river. Now Pacific Corps is playing more games with antiquated dams..
Please, please get the agreement in stone so they can't change again See if we can upstart this process and get the dams started in 1-2 years. Waiting for 10 years, and then more games will definately wipe all the fish off the map and certainly thew last 2% of the coho. 18-2

Please help, I would like to try 5-8 more years of casual fishing before my time.So may experts and scientists have spoken, I don't need to add more. 18-3

Sincerely,
Norman Dyche
3711nd@suddenlink.net

From: Michael Evenson [evenson@igc.org]
Sent: Tuesday, December 09, 2008 8:45 AM
To: bwilliams@dfg.ca.gov
Subject: Scott and Shasta River Coho ITP

PO Box
157
Petrolia,
CA
95558
(707)
629-
3506

Mr. Bob Williams, CDFG
601 Locust Street
Redding, CA96001
bwilliams@dfg.ca.gov

RE: Scott and Shasta River Coho Take Permits

Dear Mr. Williams,

By way of introduction, I have been involved in the restoration of native salmonid populations since 1980, co-founding the Eel River Salmon Restoration Project (with Scott Downie and Bill Eastwood) in 1981 and as an active practitioner and member of the Board of Directors of the Mattole Salmon Group since 1987. In addition, I have been a member of the Federally chartered Klamath Province Advisory Committee and the California Coast Province Advisory Committee, both of which worked closely with state and federal public trust agencies mostly concentrating efforts on salmonid issues on the north coast of California. Our family operates a beef cattle ranch at the mouth of the Mattole and I am well aware of the needs of agricultural producers. 19-1

From my experience over the past 37 years regarding the human/salmonid interactions, I can tell you that the **Incidental Take Permit should never be granted in a broad way, nor should it be granted without strict oversight and participation from the Department of Fish and Game**. Your mandate is the protection and recovery of these valuable animals and ecosystems. These are public trust resources in which the public places great value and has a great stake.

The situation in the Scott and Shasta Rivers has become critical in recent years, especially because of the lack of water in the channel. Fish need water – it's axiomatic. Groundwater pumping in the basins are contributes greatly to this problem which is also exacerbated by the current drought. However, any permitting and planning regarding these fish need to maintain their viability no matter what mischief the climate throws our way. DFG must hold the line or violate its sole mandate. 19-2

Failure to perform this duty results in poor agency morale, ineffective performance of its duty, degenerating public support, all of which reflects badly on your own legacy.

Step back from this pending ITP and ensure that the public trust resources are protected and work to recover the losses of salmonid populations over the past 20 years. 19-2 cont.

Please feel free to contact me further regarding this ITP and keep me informed of any considerations or decisions you make in this matter.

Sincerely yours,
Michael Evenson

cc: Governor Arnold Schwarzenegger

Shasta and Scott Valley Incidental Take Permit EIR Comments Submission

With great respect for all the work and due diligence performed by the field Biologists, research assistants, administration staff, and all others involved in preparing this Environmental Impact Report, I hereby submit these comments:

In these two EIRs, one could get down in the weeds with chapter/verse and dotted "i's" and crossed "t's" all you want. However, the below represents the broad stroke failings of the reports. In general, these failings revolve around three major issues. The last issue is the "BIG PICTURE" look at the EIR, and although it falls outside the geographical confines of the reports, it is crucially germane to the first two issues. 20-1

1) Lack of Metrics: There is no mention of gross or net numbers of fish returning to either Valley watershed systems that will represent a quantified benchmark of water management success. Without these extremely important metrics, the potential of more and more additional draconian requirements being included in the already excessively restrictive Incidental Take Permit requirements are endless! It's no wonder no metrics exist, since both the State and the Scott Valley Recovery Plan for Coho and Anadromous Fishes both say there is either total lack of, or too little, data to build any quantitative recovery model. This lack of metrics, benchmarks, recovery mile markers, or whatever one wishes to call a fish return recovery rate, is absolutely unacceptable. If some quantitative metrics are not included in these two Valley's EIRs, it would be like a Track Coach at practice telling his runners to start running, then walk off the field. "When do we stop, Coach?" "Don't worry, I'll come back and tell you some day. Just keep running!" 20-2

2) Lack of fair compensation for landowners and lack of County wide economic impact implications: Who is going to pay the landowners for loss of revenue caused by reduced production on their ranches and farms when their adjudicated water rights are infringed upon for the sake of higher flow rates in either river system? Who is going to pay the County of Siskiyou for the lost tax revenue when agricultural production drops? Who is going to pay the County wide business loss of revenue when the ranchers and farmers have less and less discretionary income? This process will be incremental, and must be addressed in this EIR process. Furthermore, when the inevitable expunging of Ranchers and Farmers from their land is enacted by State or Federal edict due to lack of adequate water quantity to continue agricultural diversions from river stems required for fish propagation, their land will be worthless in any Real Estate market. NO mention is given as to how these values will be established, or if the Government will even purchase the land from said rightful owner of the property. Theoretically, water confiscation by the State Watermaster or other Governmental entities would never occur. To illustrate this, statements by Siskiyou County Council (Ret) Frank DeMarco at various public meetings regarding Court adjudication of water rights during low water or drought conditions are very unsettling. "Harmonious court negotiations regarding adjudicated water rights and 20-3 20-4

the landowners are usually the norm- it's a give and take proposition," or words to that effect. DO NOT EXPECT THE COURT SYSTEM TO RULE IN FAVOR OF THE RANCHERS AND FARMERS ANY MORE THAN THEY RULED IN FAVOR OF THE TIMBER INDUSTRY WITH THE SPOTTED OWL CONTROVERSY. 20-4 cont.

3) Big Picture: I realize the Scott and Shasta EIRs are dealing only with those two River systems and Valleys. However, there are huge extenuating biological ecosystems surrounding them both that absolutely guarantee the failure of the two Valley's fish recovery plan if they are not addressed loudly and with all possible vigor. Without failure, the collapse of the Pacific West Coast Continental Shelf and Coastal Fisheries, and unregulated Gill Netting at the mouth of the Klamath River by indigenous Indians must be addressed in this report. The same so called "Harmonious" court proceedings can be brought to bear on the NOAA, National Marine Fisheries and the Indian Nations that will be brought to bear upon the Ranchers and Farmers of the two Valleys. If these two major elements are not addressed and solved, there will be a minuscule chance of any significant fish recovery. In the case of Continental Shelf and the Gill Netting procedures, it is not prudent for the EIRs to ignore them as not being in the prevue of the report. No Biologist worth his salt that worked on these two EIRs can ignore the implications of the Marine Fisheries and Gill Netting practices. It would be like ignoring a next door neighbor who is trying to barbeque one of his kids! 20-5

It is not fair to the Ranchers, Farmers, and various Resource Conservation Districts that have labored long and hard for the past 10-15 years to bear the total brunt of the responsibility of the fish recovery process. If the above issues are not addressed in a sincere, forthright manner, these two EIRs will be a horrifically myopic report at best, or at worst, a total failure to the people served. 20-6

Very Respectfully Submitted,

R. B. Favero

Comment Letter 21

From: hartman@sfsu.edu
Sent: Monday, December 08, 2008 12:36 PM
To: bwilliams@dfg.ca.gov
Subject: Shasta and Scott River Protection and Stewardship

Dear Mr. Williams,

My name is Sam Hartman and I have been studying the Environment,Biology and Ecolgical cross connections for five years now at San Francisco State Unviersity. I am writing to urge you to protect California's ecosytems , specifically the Scott and Shasta river systems, which are in peril of being handed over to the so-called stewardship of the very landowners that are responsible for decimating river systems for years by drawing down waters which many species, most notably salmon, depend on. We cannot allow permits and oversight for streambed alterations to be taken further out of public hands and placed in confidence of those who would put economic gain ahead of long term ecological health and sustainability. Please use your status and position in our official public ecosystem protection organization to ensure that the CDFG retains strong oversight of the river systems in Northern California and maintains (and hopefully improves) the Ecosystem health of the Scott and Shasta Rivers and the many species of life that depend on fresh,cool,abundant water to thrive. 21-1

-Thank you,
Sam Hartman

From: phiggins@humboldt1.com
Sent: Monday, December 08, 2008 5:05 PM
To: Bob Williams
Subject: Patrick Higgins Comments on ITP/Data Request

Attachments: _NC_Flows_Higgins_Sierra_Club_4_03_08.pdf

Patrick Higgins
Consulting Fisheries Biologist
791 Eighth Street, Suite N
Arcata, CA 95521
(707) 822-9428

Mr. Bob Williams
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

December 8, 2008

Re: Scott and Shasta Incidental Take Permits (ITPs) for Coho Salmon Draft Environmental Impacts Report (DEIR)

Dear Mr. Williams,

I have reviewed the Draft Environmental Impacts Reports (DEIR) for both the Shasta and Scott River Watershed Wide Incidental Take Permits (ITPs) for Coho Salmon and find them completely unsatisfactory. The problems for coho salmon in the Scott and Shasta River basins both relate to the insufficient flows in both systems in the summer. The slower transit time associated with lower flows contributes to stream warming and both rivers exceed lethal temperatures for salmonids for a great deal of the year. Nutrient pollution is also exacerbated by reduced flows. Since coho salmon require cold, clean water and the ITPs would not increase flows sufficiently abate water quality problems; therefore, cohos almon will not be recovered under these ITPs as requried by the California Endangered Species Act. 22-1 22-2 22-3

The problems with flows are not just as a result of lack of enforcement of California Fish and Game Code Section § 5937 by the California Department of Fish and Game (CDFG), but also the State Water Resources Control Board (SWRCB) Water Rights Division (WRD) is not enforcing California Water Codes § 1052 and § 1243. The latter two state, respectively, that no dams will be constructed without a permit and that sufficient flows in California streams will be maintained to allow for "recreation and the preservation and enhancement of fish and wildlife resources." I have recently commented on the SWRCB WRD (2008) North Coast Instream Flow Study and I am attaching those comments because they document systematic problems with enforcement by that agency regionally, including in the Shasta and Scott Rivers. My 22-4

comments also describe how lack of regulation of groundwater regionally by the California Department of Water Resources
(DWR) and their poor and inept performance of watermaster services have contributed problems in the Shasta and Scott Rivers. 22-5

Your failure to describe institutional problems that have lead to the current need to list coho salmon is a huge oversight with regard to meeting the California Environmental Quality Act (CEQA). 22-6 The lack of a tangible and enforceable plan to get surface and groundwater allocation problems resolved means that coho salmon will not be recovered under the ITPs as described in the DEIR. That two of three year classes of coho salmon in the Shasta and Scott are weak is indicative of high risk of extinction or jeopardy. Unless CDFG and the permittees can show that the two weak year classes are recovering, then jeopardy will be continuous under the permit, when CDFG stipulates that the permits would be cancelled in the event that jeopardy occurred under the ITP. 22-7

CEQA requires that "information developed in individual environmental impact reports be incorporated into a data base which can be used to reduce delay and duplication in preparation of subsequent environmental impact reports" (§ 21003). Under the California Public Records Act, I hereby officially request the database you are using for decision support for DEIR for the Scott and Shasta watershed ITPs in electronic within the timeframe required by the Act. Please notify me that you have seen and are processing this request in writing or via electronic mail or I will follow up with a certified letter, if necessary. 22-8

I sincerely hope that the Department corrects its recent course of action, which constitutes abdication of its public trust responsibility and its illegal delegation to those very interests which have caused the "take" of coho salmon to the point where they are in jeopardy of extinction. Being a fish biologist I work with and respect many of CDFG's dedicated employees, but the leadership in Region 1 and at the State level are an embarassment to the tradition the Department and should be removed from their positions. 22-9

Sincerely,

Patrick Higgins

Patrick Higgins
Consulting Fisheries Biologist
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(707) 822-9428

April 2, 2008

Karen Niiya
Senior Water Resource Control Engineer
Permitting Section Division of Water Rights
State Water Resources Control Board
1001 I St., P.O. Box 2000
Sacramento, CA 95812-2000

Re: Comments on *Draft Policy for Maintaining Instream Flows in Northern California Coastal Streams*

Dear Ms. Niiya,

I have reviewed the *Draft Policy for Maintaining Instream Flows in Northern California Coastal Streams* on behalf of the Redwood Chapter of the Sierra Club and provide comments on their behalf below. In addition to commenting specifically on the proposed *Policy*, I provide information on the status of Pacific salmon species in northern California, climatic cycles that affect salmon abundance, and on the interplay of cumulative watershed effects caused by land use management and those caused by diversion. I also provide case studies of several northern California watersheds where water diversion is limiting Pacific salmon, including ones outside the area defined by the *Policy*.

I have read the *Draft Policy* and read peer review comments from Dr. Lawrence Band (2008), Dr. Margaret Lang (2008), Dr. Robert Gearheart (2008), Dr. Charles Burt (2008), and Dr. Thomas McMahon (2008). In addition I read or reviewed McBain and Trush and Trout Unlimited (MTTU, 2000), California Department of Fish and Game and National Marine Fisheries Service (2002) guidelines for central California coastal streams and Appendices to the *Policy* (Stetson Engineering, 2007a; 2007b; R2 Consulting, 2007a; 2007b; 2007c). Although I find the *Draft Policy for Maintaining Instream Flows in Northern California Coastal Streams* to have substantial technical merit, much more action is needed on regulation of water use to prevent the further decline of Pacific salmon stocks and the likelihood of stock extinctions. 22-10

Qualifications

With regard to my qualifications, I have been a consulting fisheries biologist with an office in Arcata, California since 1989 and my specialty is salmon and steelhead restoration. I authored fisheries elements for several large northern California fisheries and watershed restoration plans (Kier Associates, 1991; Pacific Watershed Associates, 1994; Mendocino Resource Conservation District, 1992) and co-authored the northwestern California status review of Pacific salmon species on behalf of the American Fisheries Society (Higgins et al., 1992). Although I am not a hydrologist, I have considerable expertise in the area of water use and its effect on Pacific salmon.

Since 1994 I have been the project manager for a regional fisheries, water quality and watershed information database system, known as the Klamath Resource Information System or KRIS (www.krisweb.com). This custom program was originally devised to track restoration success in the Klamath and Trinity River basins, but has been applied to another dozen watersheds in northwestern California, including a number that fall within the targeted area of the *Policy*.

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The California Department of Forestry (CDF) funded KRIS projects in the Mattole, Ten Mile, Noyo, Big and Gualala rivers as part of the North Coast Watershed Assessment Planning effort. The Sonoma County Water Agency (SCWA) also funded regional KRIS projects (IFR, 2003), including ones for the Garcia, Russian and Navarro rivers and tributaries of the Pacific Ocean and San Francisco Bay in Marin and Sonoma Counties. I am submitting a DVD including all KRIS projects for the geographic area covered by the *Policy*.

Since January 2004, I have been working under contract with the Klamath Basin Tribal Water Quality Work Group, a consortium of environmental departments of Lower Klamath River Basin Indian Tribes, to improve enforcement of the Clean Water Act. Through work on review of Total Maximum Daily Load (TMDL) reports, I have become further acquainted with factors limiting Pacific salmon, including those related to flow depletion.

I also have extensive field experience as a field biologist in the South Fork Trinity, Klamath, Eel, Navarro, Mattole and Garcia rivers as well as smaller coastal streams from Humboldt Bay to San Diego County.

Overview

The *Policy for Maintaining Instream Flows in Northern California Coastal Streams* (*Policy*) (SWRCB WRD, In Review) was created in response to California Assembly Bill 2121, which requires the State Water Resources Control Board (SWRCB) Water Rights Division (WRD) to adopt principles and guidelines for maintaining instream flows in coastal streams from the Mattole River to Marin County and in coastal streams entering northern San Pablo Bay (Figure 1). Much of the *Policy* is derived from a California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS) central California coast water supply paper (CDFG and NMFS, 2002). The *Policy* proposes to: 22-10 cont.

1) Restrict new appropriative rights for diversion of surface water to October 1 to March 15,
2) Establish minimum bypass flows,
3) Set cumulative diversion limits, and
4) Discontinue permitting dams on Class I and II streams.

The *Policy* also calls for universal screening of new diversions, construction of fish passage facilities, non-native species control and riparian restoration. Appropriate monitoring parameters are identified in the Policy and the adaptive management strategy is theoretically sound (Band, 2008; McMahon, 2008).

Unfortunately, the *Policy* will only be narrowly applied to new appropriative water right applications in a restricted geographic area and does not deal with other aspects of long recognized water supply problems. Shortcomings of the approach include:

- No action to assess summer and fall flows, when the most critical flow shortages for juvenile salmonid rearing are known to occur,
- No recognition of changes in stream channels and watershed hydrology due to land use nor the implications for salmonid suitability or surface water supply,
- Applies only to new diversions seeking appropriative water rights and does not discuss potential problems due unlimited riparian water rights that could be exercised at any time,

Figure 1. North Coast area defined by the *Policy* to which the statutes defined therein will be applied. It does not cover the Klamath or Eel River basins that have greater need of water rights reform and greater potential for salmon and steelhead recovery.

- Insufficient consideration of ground water extraction despite known linkage to diminished surface flow and carrying for Pacific salmon species regionally,
- Enforcement discussion shows the WRD refuses to enforce water law and to provide a disincentive for unpermitted water use, creating an epidemic problem of illegal diversions, and
- The *Policy* recommends recognizing Watershed Groups that are comprised of diverters and envisions transfer of many SWRCB WRD responsibilities to such local extraction interests.

Although AB 2121 has forced publication of this *Policy*, there seems to be a great deal of reluctance on behalf of the SWRCB WRD to fully engage in this effort as indicated by the tone of the report, a lack of willingness to set limits on diversion and to enforce CA Water Code § 1052, 1055, 1243, and 1375. Also the geographic area of the *Policy* does not cover some northern California watersheds with greater need for water rights reform for Pacific salmon species protection, such as the Scott, Shasta and Eel Rivers. Consequently, the *Policy* is not likely to recover coho salmon, Chinook salmon and steelhead in northern California.

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Policy Framework

The SWRCB WRD has been working on this *Policy* for more than a decade (R2 Consultants, 2007a) and there is a great deal of merit in the theoretical basis for its minimum base flow and maximum cumulative diversion calculation. Dr. Lawrence Band (2008) summed limitations and benefits of the *Policy*:

> "The documents provided for review contain a set of references to the limited time and budget available for data collection and analysis, and present very limited field sampling at one specific time, with flow records drawn from different periods of time. Given these limitations, the approach adopted in the proposed policy, to provide more conservative restrictions on in-stream water use at the regional level, is a sound strategy."

There are, however, some instances where the *Policy* strays from a sound scientific basis and potential major data gaps will likely confound the application of the system. The five elements of the *Policy* framework are listed below with observations of peer reviewers and my own comments.

1. *"Water diversions shall be seasonally limited to periods in which instream flows are naturally high to prevent adverse effects to fish and fish habitat."*

In fact, the only limitation on water diversions would be on new appropriative water rights applicants and no study or action is envisioned for extraction from April through October, when flows are

severely limiting for juvenile salmonid rearing. Dr. Thomas McMahon (2008) cautions that the entire exercise will be confounded due to this deficiency:

> "Implementation of a diversion season along with the proposed minimum base flow (MBF) and maximum cumulative diversion (MCD) standards to maintain the fall-winter hydrograph could offer a false sense of protection to the listed species if flow levels during other seasons are insufficient to support the completion of rest of the freshwater life cycle."

The Policy gives little or no scientific defense of its choice of October 1 versus December 15 as the start up of the winter water diversion:

> "Although the DFG-NMFS Draft Guidelines recommended a season of diversion from December 15 through March 31, an earlier diversion season start date is still protective of fishery resources when minimum instream flows and natural flow variability are maintained. This policy limits new water diversions in the policy area to a diversion season beginning on October 1 and ending on March 31 of the succeeding year."

Band (2008) points out that "the recommended limits of October 1 to March 31 is a compromise between the two other options (all year diversions and December 15-March 31), but places the beginning of the diversion season at the beginning of flow increases and Chinook migration in most years." Dr. Margaret Lang concurred and recommended the later start date: "The December 15 start date is much more likely to prevent water diversion during the extreme low flows present before the onset of consistent rainfall." She notes that numerous years there is little runoff on the first major storms of the season, as soil pores and the groundwater matrix soak up most early rainfall.

22-10 cont.

2. *"Water shall be diverted only when stream flows are higher than the minimum instream flows needed for fish spawning and passage."*

Peer reviewers (Lang, 2008; McMahon, 2008) suggest that impacts on rearing salmonids need equal consideration with those on migrating and spawning adults. Steelhead juveniles typically spend two years in freshwater (Barnhart, 1989) and coho salmon spend a full year feeding before migrating to the ocean (Groot and Margolis, 1991). Dr. Lang (2008) points out that factors such as "food availability, food delivery from upstream, and hiding cover, that are also important and not well characterized" by modeling exercises and cites Harvey et al. (2006) as demonstrating differences in growth rates of juvenile salmonids between diverted and undiverted streams.

Again there is no mention of limiting diversion from April through October, no limit proposed for riparian diversions that do not require off-stream storage, nor restrictions on ground water extraction to actually maintain and restore flows for salmon and steelhead, even if the *Policy* were enacted (Band, 2008; Gearheart, 2008).

3. *The maximum rate at which water is diverted in a watershed shall not adversely affect the natural flow variability needed for maintaining adequate channel structure and habitat for fish.*

This policy requires calculation of minimum base flow (MBF) and maximum cumulative diversion (MCD), but lack of recent or historic flow data and problems with application of models confound accurate estimates (Lang, 2008). Even if the MBF and MCD were accurately calculated, they do not properly account for interactions between diversions. Synergy between diversions in multiple tributaries will cause unintended consequences on flows, fish passage and alteration of substrate quality in downstream reaches that need to be more fully considered (Band, 2008; Gearheart, 2008).

4. *Construction or permitting of new on-stream dams shall be restricted. When allowed, on-stream dams shall be constructed and permitted in a manner that does not adversely affect fish and their habitat.*

Although future permit activities may restrict the construction of new dams, there are 1771 illegal dams already constructed within the geographic area covered by the *Policy* (Stetson Engineers, 2007a) (Figure 3) for which permits are being considered. Avoiding cumulative effects from thousands of impoundments, many of which are on Class I streams that contain salmonids, will not be possible without widespread enforcement action to remove a significant number of these illegal dams.

Several peer reviewers express reservations about damming and diversion of small headwater tributaries (Band, 2008; McMahon, 2008). Band (2008) notes a high risk of cumulative effects despite mitigations proposed for such projects in the *Policy*. According to McMahon (2008) "dams on ephemeral streams have the potential to greatly dampen the early fall/winter freshets important for access to the upper reaches of small spawning tributaries by their capture of the entire flow within the stream until the reservoir is filled, potentially resulting in significant dewatering downstream."

5. *The cumulative effects of water diversions on instream flows needed for the protection of fish and their habitat shall be considered and minimized.*

The *Policy* does not properly deal with cumulative effects of diversions (Gearheart, 2008; Band, 2008) nor those associated with long term changes to streams and watershed hydrology due to land use that effect surface and ground water availability (see Cumulative Effects). Gearheart expressed the following concern:

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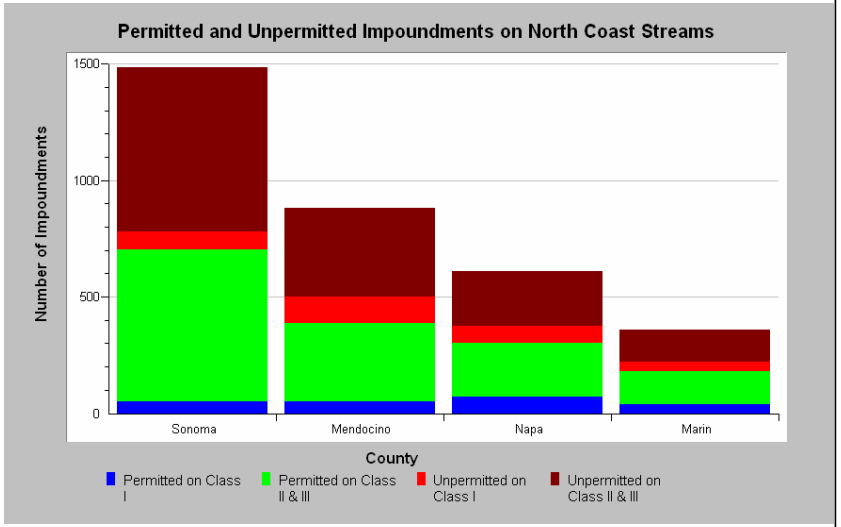

Figure 2. The number of permitted and unpermitted impoundments within the geographic area covered by the *Policy* is displayed above with illegal diversion impoundments outnumbering legal ones. Data from Stetson Engineers (2007a).

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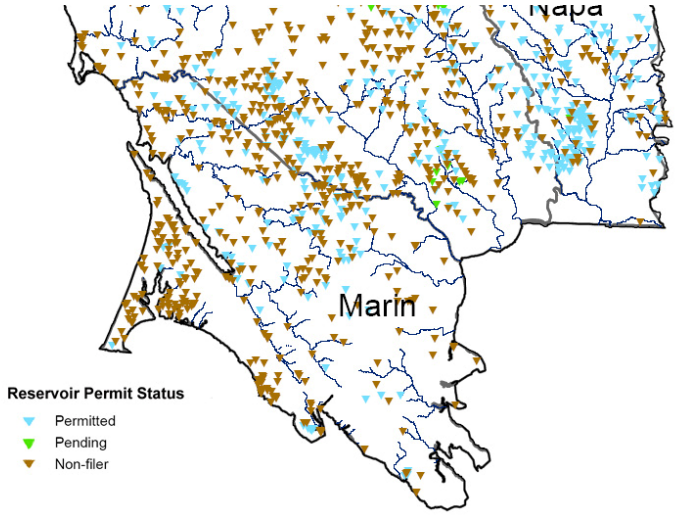

Figure 3. The number of Marin County, southern Sonoma and Napa County diversion impoundments displayed above demonstrate the challenge that an appropriative right water applicant faces in inventorying quantities diverted. Stetson Engineers (2007a) Figure A-3.

22-10 cont.

> "It appears to me as one evaluates the cumulative effect of scalping 5% of the peak as the storm hydrograph precedes down stream the reduction in the total flow reduces and the delay time (1/2 day recession -flow restricted) increases."

Band (2008) suggests that flow depletion below stream convergence points will magnify fluctuations. This in turn will cause depositions of fine sediment and other undesirable channel changes that could affect spawning salmon and steelhead downstream (see Cumulative Effects).

Minimum Base Flow (MBF) and Maximum Cumulative Diversion (MCD): The Policy hinges on relatively accurate estimate of MBF and MCD. Although the scientific basis for calculation of these statistics is theoretically sound, accurate calculation is confounded by lack of historic records and problems with model simulations.

The *Policy* defines the MBF as "the minimum instantaneous flow rate of water that must be moving past the point of diversion (POD) before water may be diverted" and recommends 60% of the mean annual unimpaired flow (0.60 Q_m) as needed for flows and fish passage in watersheds greater than 290 square miles either at the point of diversion, or at the upper limit of anadromy. Lang (2007) states that 68% (0.68 Q_m) is actually needed for protection of fisheries resources and also points out that there may be substantial error in calculation of mean annual unimpaired flow because there are very sparse gauge data, often with periods of record of less than 10 years. Lang (2008) cautions additionally that model generated mean flow estimates may have significant error:

> "Scaling by watershed area and mean annual precipitation works reasonably well for peak and major storm flows dominated by the rainfall generated runoff (assuming the storm influences at nearby gauged sites are consistently similar to the watershed of interest) but at lower flows, more subtle factors such as watershed geology, slopes, ground cover, soil thickness, etc. influence the stream flow. The mean annual flow is as much a function of storm flows as low flows that do not generally correlate as well to drainage area."

The maximum cumulative diversion (MCD) is defined in the policy as "the largest value that the sum of the rates of diversion of all diversions upstream of a specific location in the watershed can be in order to maintain adequate peak stream flows. The maximum cumulative diversion criterion is equal to five percent of the 1.5-year instantaneous peak flow."

Lang (2008) recommended against the use of MCD in the Policy:

> "The analysis by R2 Resources (2007) and Stetson Engineers, Inc (2007) clearly shows that maximum cumulative diversion limits set as volumes failed to meet the stated criteria of providing for channel maintenance flows. Stating the criteria as a volume would not meet objectives of the policy."

Lang (2008) is joined by most other peer reviewers (Band, 2008; Gearheart, 2008; McMahon, 2008) in calling for additional data collection to better establish flow regime targets.

Water Availability Analysis: Before the SWRCB WRD can issue a permit for an appropriative water right, it must demonstrate that there is "unappropriated water available to supply the applicant" (CA Water Code § 1375) and that sufficient water for remains for "recreation and the preservation and enhancement of fish and wildlife resources" (CA Water Code § 1243). A multi-party regional assessment is laid out as part of the *Policy* plan, but it also envisions a great deal of information being contributed by permit applicants and permit holders (see Watershed Groups).

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The *Policy* section entitled Data Submissions (4.1.1.1) repeatedly refers to public domain spreadsheets and programs. The issue is not whether data analysis and models are done using public or private software, but whether the raw data are made available and the computer codes for models are made available so that results can be fully audited. Any revision of the *Policy* should have clear language that specifies full raw data availability and model transparency.

Water Supply Reports and Instream Flow Analysis Required of Applicants: The *Policy* provides the following description of study requirements facing new applicants:

> "This policy requires a water right applicant to conduct a water availability analysis that includes (1) a Water Supply Report that quantifies the amount of water remaining instream after senior rights are accounted for, and (2) an Instream Flow Analysis that evaluates the effects of the proposed project, in combination with existing diversions, on instream flows needed for fishery resources protection."

The water supply report is *not* required to describe flow conditions in the stream or determine surplus availability for April through November. Applicants are asked, however, to hire consultants to make a case that there is surplus water available in winter. This will not only be expensive, the consultants may actually be unable to determine the amount of cumulative diversion without an extensive survey because of unregistered riparian rights, pre-1914 water rights and those that have been established illegally (Figure 3). They will also be forced to use models and simulated data that produce considerable error (Lang, 2008) as discussed above.

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Effectiveness Monitoring: Most peer reviewers stress that extensive field data needed on an on-going basis to support adaptive management, or the implementation of the *Policy* will be seriously flawed (Lang, 2008; Band, 2008, Gearheart, 2008; McMahon, 2008). The tone of the *Policy* on this topic, however, is very disappointing and shows little commitment on behalf of the WRD with every passage in this section using *may* not will: "The State Water Board *may* develop and implement a policy effectiveness monitoring program."

Enforcement: The SWRCB WRD has clear authority to regulate water extraction and to penalize those who appropriate water without a permit:

> "Pursuant to Water Code section 1052, an unauthorized diversion or use of water is a trespass against the State subject to a maximum civil liability of $500 per each day of unauthorized diversion or use of water. Water Code section 1055, subdivision (a), provides that the Executive Director of the State Water Board may issue an Administrative Civil Liability (ACL) complaint."

The problem is the WRD's near absolute refusal to enforce the law. Stetson Engineering (2007a) lists 1771 unpermitted diversions in the North Coast region as defined by this project (Figure 2). They note the potential need to remove 1569 structures, but also note that 519 unpermitted structures now have pending permit applications. The pattern of non-enforcement is clear in a number of basins (Figure 3) and I have documented similar problems in northern California case studies below both inside and outside the *Policy* area (i.e. Napa, Navarro, Russian, Gualala, Scott, and Shasta).

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The WRD has also been derelict in its duty with regard to CA Water Code § 1243 and 1375, which require that they protect recreation, fish and wildlife and that they establish a surplus before issuing permits, respectively. The WRD has failed to comply with these laws by simply not supplying permits other than after ponds and diversions have been illegally constructed. This has caused not only a loss of fish habitat but also treasured recreational opportunities enjoyed by past generations, such as swimming at the Scout Camp on the Wheatfield Fork of the Gualala or at Hendy Woods on the lower mainstem Navarro River.

Instead of active enforcement, the WRD relies on mechanisms like self-enforcement, whereby permit holders self-report violations, and on complaints from citizens. I know several individuals who have filed hundreds of complaints over several decades with the WRD and have had few resolved as a result (Bob Baiocchi; Stan Griffin, personal communication).

The reluctance to enforce the law is evident in the following passage from the Policy:

> "Every violation deserves an appropriate enforcement response. Because resources may be limited, however, the State Water Board will balance the need to complete its non-enforcement tasks with the need to address violations. It must also balance the importance or impact of each potential enforcement action with the cost of that action. Informal enforcement actions, described below, have been the most frequently used enforcement response. *Such informal actions will continue to be part of this policy for low priority violations*."

Figure 4. Navarro River at Hendy Woods State Redwood Park is so flow depleted that only a stagnant pool not suitable for human contact remains. The mainstem Navarro was formerly rearing habitat for juvenile steelhead (Kimsey, 1952) and a major recreational draw during the hot days of summer and fall. CA Water Code § 1243 is clearly not being upheld in this basin. Photo by Pat Higgins from KRIS Navarro. September 21, 2001.

Some of the WRD criteria for prioritization include any violations:

- On Class I or Class II streams,
- That threaten or cause a take of endangered species,
- That constitute waste, unreasonable use, or unreasonable method of use,
- That illegally take water in a fully appropriated stream system, or
- That injure a prior right holder.

Despite pages of text on enforcement, there is no specific plan mentioned for decommissioning dams that are high priority. Almost all dams in the region effect at-risk salmonids and 308 illegal impoundments are on Class I streams (Figure 2) (Stetson Engineering, 2007 a). The Sierra Club (Pennington et al., 2008) points out that allowing diverters to avoid permit fees and costs of compliance offers them an unfair business advantage as well.

Informal Enforcement: "The purpose of an informal enforcement action is to quickly bring a violation to the water diverter's attention and to give the diverter an opportunity to voluntarily correct the violation and return to compliance as soon as possible." While quickly and voluntarily correcting violations is desirable, as one reads further into the *Policy*, deficiencies become apparent. Informal enforcement may only mean that WRD staff calls or emails the violator and then creates a file as a record of contact.

Penalties: The lack of willingness to enforce extends into the realm of use of fines as a disincentive:

> "The ability to pay administrative civil liability is limited by diverter's revenues and assets. In some cases, it is in the public interest for the diverter to continue in business and bring operations into compliance. If there is strong evidence that administrative civil liability would result in widespread hardship to the *service population* or undue hardship to the diverter, it may be reduced on the grounds of ability to pay."

I have added emphasis to the term "service population" above because it shows the inherent bias of the WRD for diverters (their clients) as opposed to protection of public trust. They also express a willingness to skip the enforcement phase, if the diverters just agree to pay for cooperative management:

22-10 cont.

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> "Accordingly, flexibility should be provided to groups of diverters who endeavor to work together to allow for cost sharing, real-time operation of water diversions, and implementation of mitigation measures."

Watershed Groups: The *Policy* proposes to use watershed groups to fund studies, assess flow availability, and mitigate all problems related to diversions. A watershed group is defined as follows:

> "A watershed group is a group of diverters in a watershed who enter into a formal agreement to effectively manage the water resources of a watershed by maximizing the beneficial use of water while protecting the environment and public trust resources."

Any watershed group formed by special interests that does not include public participation is unacceptable. Consultants working for water diverters would protect vested interests and the quality of science would not likely be as unbiased or equal to that collected by government scientists who have public trust responsibility.

The *Policy* defines further the role these watershed groups would play:

> "The watershed group shall provide the technical information necessary for the State Water Board to determine water availability, satisfy the requirements of CEQA (if applicable), evaluate the potential impacts of water appropriation on public trust resources, make decisions on whether and how to approve pending water right applications for diverters in the watershed group, and make decisions on whether to approve the watershed group's proposed watershed management plan."

In other words, they want to turn their job and that of other State agencies over to local diverters. There are numerous streams in northwestern California that are already so over-subscribed they are dry in summer and fall. Many of the diversions may be unpermitted or constructed illegally and have permit applications pending. This strategy is not going to do anything for public trust and fish and it is likely illegal.

22-10 cont.

Cumulative Watershed Effects

The California Environmental Policy Act (CEQA) requires that cumulative effects be considered and defines them as "indirect or secondary effects that are reasonably foreseeable and caused by a project, but occur at a different time or place." The *Policy* is subject to CEQA yet fails to meet its requirements in considering cumulative watershed effects. Discussions of this topic are parsed below into 1) discussion of cumulative effects from networks of diversion on downstream reaches, and 2) on how all the watersheds under consideration are cumulatively effected by land use. The emphasis in the latter discussion is on changes in stream channel form and watershed hydrology that effect surface water availability.

Water Use Related Cumulative Effects: Band (2008) described numerous cumulative watershed effects likely from the interaction of diversions, even if all were operating in accordance with minimum base flows (MBF).

> "The cumulative impacts of water diversions from all areas of the drainage network requires consideration of the network as an entity, and not just the sum of all individual reaches."

While each diversion might only capture less than 5% of the 1.5 recurrence interval flow at one location, Band (2008) calculated the interaction between diversions in the stream system could increase to 28% downstream. He sees the necessity of increasing model parameters "to analyze the impacts of sequential dependencies of reach conditions as they will not be randomly distributed."

If interactions of multiple diversions are not factored into consideration, Band (2008) predicts "perturbations to the downstream hydraulic geometry, as well as bed sediment grain size, and seasonal variations in bed composition." Of specific concern to Band (2008) is fine sediment delivery from early storms in streams where flow is depleted: "the first few increased flows of the year may flush fine grained sediment, perhaps without mobilizing coarser grain sizes, which may accumulate in reaches where discharge is drawn down." These reaches might be ones used for spawning.

Band (2008) and Gearheart (2008) expressed concern about cumulative effects potential associated with dams on ephemeral streams (Class III). These headwater swales may constitute 50% of a watershed's area and "the vast majority of coarse grained material delivered to larger streams with salmonid habitat are generated from small, headwater catchments" (Band, 2008). Figure 2 above shows permitted and unpermitted impoundments and there are 1357 permitted impoundments in the Policy's area of interest and another 1771 unpermitted ones (Stetson Engineering, 2007a). Therefore, there is significant likelihood of advanced cumulative effects from interactions of releases from diversions.

Stetson Engineering (2007a) estimates that the capacity of illegal impoundments in the North Coast watershed region, as defined by the Policy, is 48,515 acre feet and that 3,234 surface acres of reservoirs now submerge former stream reaches or headwaters. These impoundments in turn are ideal habitat for bull frogs, which decimate native amphibian populations. They are often stocked with warmwater game fish that escape into water bodies below and may predate upon salmonids or displace them through competition (Higgins et al., 1992).

Ground water is not considered in the *Policy*, yet over-extraction is known to contribute to diminished water quality and greatly reduced fish habitat in many streams within the region (see Case Studies). Peer reviewers (Band, 2008; Gearheart, 2008; McMahon, 2008) point out that no real water budget can be calculated without knowing the influence of ground water withdrawals. The Department of Water Resources, a separate State agency, has oversight over ground water withdrawal, but all well logs are treated as proprietary and restriction of ground water use is uncommon.

Potential additional water withdrawal under riparian water rights is another flow-related cumulative effect. Riparian rights are those where water is extracted for use on lands that directly boarder the stream and any owner of a parcel immediately adjacent to a water course has the right to take water for domestic and agricultural use at any time unless specific deed restrictions are stated in the title to the land. Riparian rights do not require a permit from the WRD. Although the WRD requests that riparian water users file a statement of diversion and use, there is no penalty for not complying and few are filed.

Band (2008) mentions tailwater as a major issue needing consideration by the WRD as a potential effect. Agricultural waste water may have elevated temperature and nutrients and its impact is recognized as substantial on the Shasta River (NCRWQCB, 2006a).

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Upland Cumulative Effects and Surface Water Supply: Cumulative effects in northern California watersheds related to logging and associated road networks are well studied (Ligon et al., 1999; Dunne et al., 2001; Collison et al., 2003). Although much of the geographic area defined by the *Policy* is now in agricultural production, virtually all the watersheds have been logged at least historically. All of those logged after WW II have extensive road networks that alter watershed hydrology (Jones and Grant, 1996). High road densities act to extend stream networks and intercept ground water flows (Jones and Grant, 1996), resulting in increased peak flows and decreased base flows (Montgomery and Buffington, 1993).

Most of the streams within the *Policy* area are listed for sediment impairment on the SWRCB 303d list and targeted for remediation under the Clean Water Act TMDL program. A huge amount of sediment recognized as polluting north coast rivers is moving downstream in waves. The level of aggradation can be up to 25 feet (i.e. South Fork Trinity) (PWA, 1994) and high sediment yield has caused dozens of regional streams, such as those of the Lower Klamath (Voight and Gale, 1998), to lose surface flow even when there is no diversion (Figure 5).

The *Policy* needs to consider the question of water supply in a stream environment that is profoundly changed by cumulative effects. Increased flood peaks and excess sediment transport in North Coast rivers have caused a loss of pool habitat, an increased width to depth ratio, reduced large wood, and overall diminishment of salmon and steelhead habitat. Because the streams have become wider and shallower, they are more subject to warming (Poole and Berman, 2000). (The *Policy* skips the discussion of cumulative effects due to April-October flow depletion on stream temperatures by concerning itself only with the October-March time period.) The North Coast Regional Water Quality Control Board (NCRWQCB, 2006a) found that flow depletion in the Shasta River was contributing to temperature pollution and NRC (2004) found the same relationship on the Scott River (see Case Studies).

Anderson Creek in the Navarro River basin might serve as an example. When an early water right was granted for 2 cubic feet per second (cfs), pools were likely frequent with some 6-8 feet deep (CDFG, 1969), and the effect of the withdrawal was likely minimal. The stream has experienced substantial cumulative effects and pools are now infrequent and maximum pool depth is often 4 feet or less; *the effects on fish of the historically permitted quantity of water may now be significant*. Add to the equation decreased baseflows due to high road densities, recent logging and development and one can understand why streams are running dry and fish are going without water. All of these are factors that the *Policy* needs to consider in order to meet CEQA requirements and to determine water availability that truly reflects the needs of fish.

Cumulative effects should also be recognized as compromising recreational opportunities. Not only do north coast rivers lack sufficient flow for recreation, flow depletion and aggradation now cause stagnation that fosters toxic algae. Although the South Fork Eel River is not in the *Policy* area, it none the less serves as a regional example. Generations of Californians have vacationed on the South Fork Eel at Richardson's Grove Redwood State Park or at Benbow Lake, but toxic blue-green algae species now make surface water contact during low flows ill-advised. There have been several accounts in the local press of dogs dying after ingesting SF Eel River water. Rural development in the Eel River watershed has fostered a similar pattern of unpermitted water use as in *Policy* area basins, that when combined with aggradation, leads to major loss of recreational opportunities.

22-10 cont.

Figure 5. Lower Terwer Creek running underground in late fall 1990. High sediment yield related to watershed disturbance has caused massive aggradation. The stream loses surface flow in late summer and fall yet there is no diversion upstream. Photo by Paat Higgins from KRIS Klamath-Trinity Version 3.0. September 1991.

Case Studies

There are a number of watersheds in northwestern California that have flow levels that limit salmonid production and case studies are provided below for areas both inside and outside the geographic area covered by the *Policy*. Many of my reports are provided on the DVD that is being filed with these comments so that WRD can get more detailed information from them.

Napa River: I am intimately familiar with the Napa River watershed from having commented (Higgins, 2006a) on the *Napa River Sediment TMDL* (SFBWQCB, 2006) and on several proposed vineyard conversions (Higgins, 2006b; 2007). The diminishment of flow from historic levels is most clearly seen through examining what would have been coho salmon habitat. USFWS (1968) estimated the historic coho population in the Napa River at 2000-4000 fish. Coho prefer reaches with a gradient of less than <2% and suitable water temperature, with juveniles spending one year in freshwater. Figure 6 illustrates where coho are likely to have ranged in the middle Napa River watershed. The majority of low gradient mainstem and tributary reaches were found to be dry (Figure 7) or stagnant in 2001 by Stillwater and Dietrich (2002). Figure 8 is taken from Stetson Engineers (2007a) and shows the number of permitted and unpermitted diversions in the lower Napa River, including Carneros Creek. Stetson Engineers (2007a) noted that 43% of winter flow in Carneros Creek is likely diverted.

While Napa River coho are extinct, steelhead are still present, although there is a homogeneous disturbance in the watershed because of urbanization, timber harvest, vineyard development, dams for municipal water supply and changes in the stream channel. Steelhead are blocked from 30% of the Eastside of the watershed by large municipal water supply dams, the mainstem Napa River is now either dry or unsuitable for steelhead rearing, and Westside tributaries sustain steelhead in isolated pools. Stillwater and Dietrich (2002) noted that steelhead juveniles stranded in isolated pools lost weight during summer due to lack of insect drift delivered not being delivered by flows. Given the precipitous decline in steelhead habitat, it is my professional opinion that their population is likely dropping significantly. Chinook salmon still return to the Napa River, but their population is small and also at risk of loss.

My *Napa River TMDL* comments (Higgins, 2006a) conclude that sediment and flow problems cannot be remedied without limiting watershed disturbance and that temperature and fish problems cannot be remedied without additional flows:

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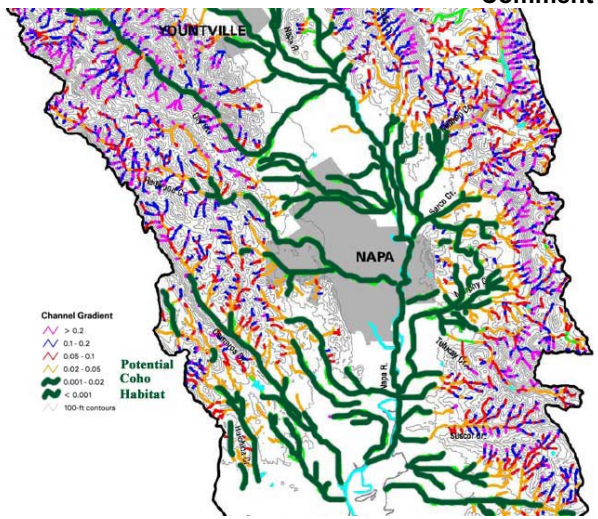

Figure 6. Stream gradient map of the Napa River is overlain with dark green on reaches with gradient less than 2% (0.02) to show likely range of coho salmon prior to human disturbance. Map 6 from Stillwater and Dietrich (2002).

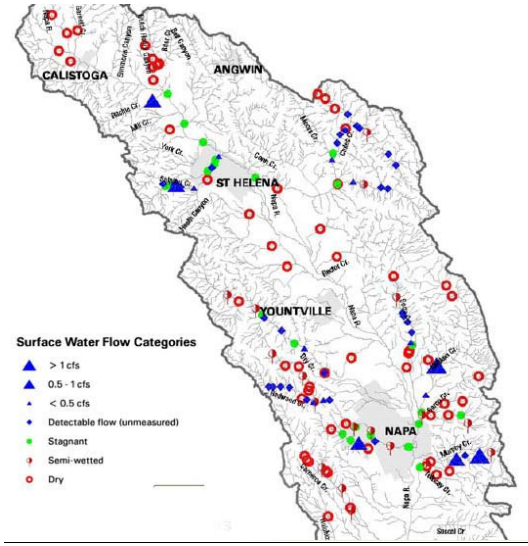

Figure 7. Symbols on this Napa River map indicate that reaches likely formerly inhabited by coho now lack surface flow or are stagnant. Taken from Stillwater and Dietrich (2002) where it appears as Map 13.

22-10 cont.

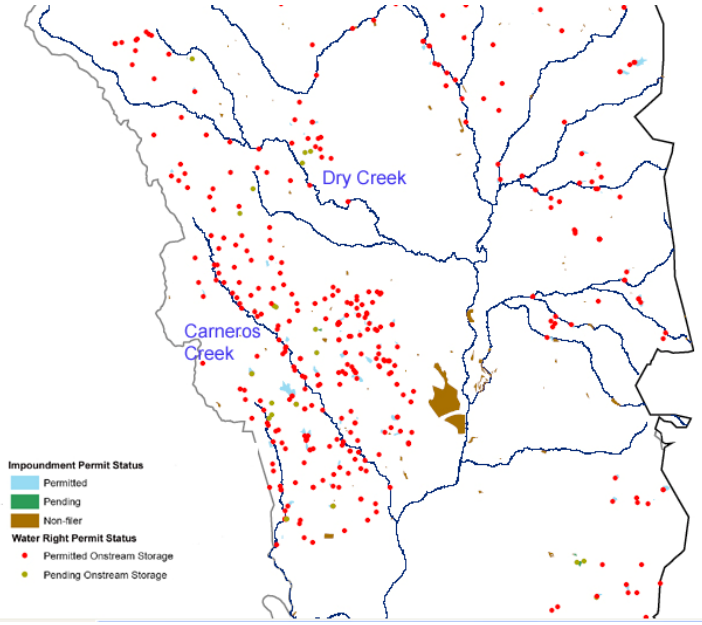

Figure 8. Diversions and impoundments in the lower Napa River basin in Huachuca, Carneros and Dry creeks at left. Impoundments include both those permitted and unpermitted. Stetson Engineers (2007a).

> "The State Water Resources Control Board Water Rights Division has the authority to install stream gages where ever necessary to insure protection of public trust, water quality and water rights. The TMDL should make explicit reference to reaches affected by low flows and call on the SWRCB WRD to take appropriate monitoring and enforcement actions."

Navarro River: I am familiar with the Navarro River having worked in the basin as a CDFG seasonal aid in 1972, commented on proposed timber harvests in Rancheria Creek and Indian Creek in 1993-1994, and more recently helped complete the KRIS Navarro project (IFR, 2003a). The WRD is intimately familiar with the Navarro River as documented in previous comments on regional flow policy by Friends of the Navarro River Watershed (Hall, 2006) and the Sierra Club (2006).

In 1994 the Sierra Club Legal Defense Fund (Volcker, 1994) filed a water rights complaint with the SWRCB WRD for failing to adequately address instream flow needs under the Public Trust Doctrine in the Navarro River basin. In the complaint, Volker (1994) stated that:

> "Illegal and unreasonable water diversions from the Navarro River and its tributaries, primarily for agricultural purposes, have significantly impaired instream fish and wildlife beneficial uses, to the point where the river was literally pumped dry during August and September of 1992. Such illegal and unreasonable diversions threaten again this fall to eliminate the natural flow of

22-10 cont.

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> the river and its tributaries necessary to sustain constitutionally and statutorily protected instream fish and wildlife beneficial uses."

Volcker's (1994) assertion that the Navarro loses surface flow was correct at the time and the condition is still chronic in summer (Figure 9). In processing the complaint, the WRD (SWRCB, 1998) found 121 illegal impoundments (Figure 10), none of which were removed and many of which have now applied for permits (Pennington et al., 2008). The SWRCB (1998) declined to take public trust protection action:

> "The SWRCB could initiate a public trust action in the watershed. However, the cause of the anadromous fish decline may be principally due to factors other than flow, and there is not adequate information available regarding the flow needs of the fishery in the summer. Consequently, the Division recommends that a public trust action should not be initiated at this time. If the complainants, DFG, or some other entity develops adequate information regarding the summer flow needs of the anadromous fishery, this recommendation can be reevaluated."

Illegal diversions of two types for Mendocino County watersheds are shown in Figure 11, which is taken from Stetson Engineers (2007a). The Navarro River appears at left with a combination of regulatory dams, diversions that do not impound water, and illegal impoundments.

Russian River: I am familiar with the Russian River due to work on a KRIS Russian database (IFR, 2003a) and from having provided comments on the Bohemian Grove NTMP (Higgins, 2007b).

As one of the centers of the booming wine industry, the Russian River is one of the most heavily diverted streams in northwestern California, as indicated by the prevalence of unpermitted diversions (Figure 11). Major tributaries lose surface flow during summer and early fall (Figure 12) and significant numbers of large pumps have been installed to tap ground water, some immediately adjacent to the river (Figure 13). The Sierra Club (2006) documented problems with over-diversion and widespread illegal water use in Maacama Creek causing severe damage to public trust.

Coho salmon are increasingly rare in the Russian River, but still known to occur in some tributary sub-basins. Figure 14 shows the existing appropriative rights and those proposed for all tributaries known to have harbored coho salmon in the past. Coho were present in Green Valley Creek all three years of CDFG surveys from 2000-2002, but present in Dutch Bill Creek only one year in that period. While there is only one permit on Green Valley Creek, there were 17 applications as of 2001 and Dutch Bill had 7 water rights permitted, but an additional 10 in the application process. Figure 15 shows identified illegal water withdrawal specifically on these streams (Stetson Engineers, 2007a). Legal and illegal diversions pose significant risk to the last streams where coho still persist in the Russian River.

California Department of Fish and Game habitat typing surveys of Green Valley Creek and Dutch Bill Creek show that both streams lose surface flow in some reaches (Figure 15). Pool frequency is also low relative to the CDFG (2004) target of 40% as optimal for salmonids and coho juveniles are known to require pools for freshwater rearing (Reeves et al., 1988). Additional permitted extraction of surface water is likely to both raise water temperatures and decrease depth and cover for juvenile coho salmon. The extent of dry habitats suggests that both streams are fully or possibly over-allocated and that coho habitat is already significantly diminished.

22-10 cont.

Figure 9. The lower mainstem Navarro River near Flume Gulch is shown at left during low flow conditions on September 21, 2001. The USGS flow gauge indicated that the average flow on this day was 1.1 cubic feet per second. The algae on the margins of the stream indicate stagnation and no fish were present at the time of observation. Photo from KRIS Navarro by Pat Higgins.

Kimsey (1952) sampled this exact location in August 12, 1962 and found steelhead trout of two age classes (young-of-year, 1+) and a flow of 15 cfs during what was an average water year.

U.C. Davis (Johnson et al., 2002) found only seven suckers in many miles of Navarro stream surveys indicating that even this hardy species is disappearing.

22-10 cont.

Figure 10. Aerial photo of agricultural development in the Navarro River basin circa 1998 shows ten ponds of different types typical of water storage. Vineyard development and aggradation has almost completely eliminated salmonid summer rearing habitat. Photo from KRIS Navarro.

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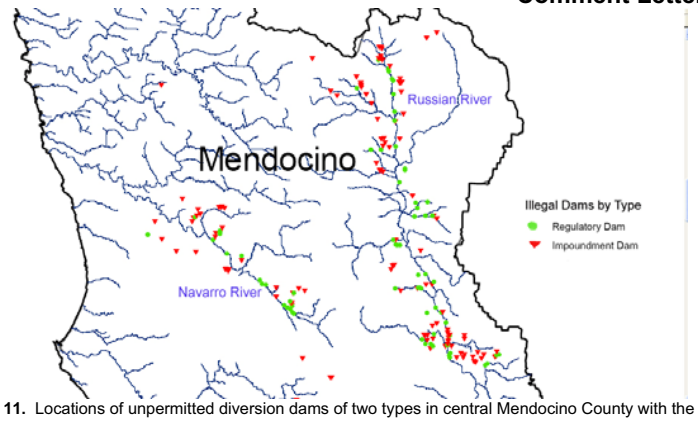

Figure 11. Locations of unpermitted diversion dams of two types in central Mendocino County with the Navarro at left and upper Russian River at right. Regulatory dams are diversions with no impoundments. From Stetson Engineering (2007a).

Figure 12. Looking downstream at the dry stream bed of the West Fork Russian River off the Eastside Road Bridge. The riparian vegetation lining both banks and extending back on the terrace at right is a result of a bioengineering project by Evan Engber. While trees have been successfully re-established to protect adjacent property and to stabilize channel conditions, over-diversion causes loss of flows. Photo by Patrick Higgins from KRIS Russian. July 13, 2003.

22-10 cont.

Figure 13. Large ground water pump appears right of center in the riparian zone of the Russian River looking west off East Side Road north of Hopland. KRIS Russian. Photo by Patrick Higgins. July 15, 2003.

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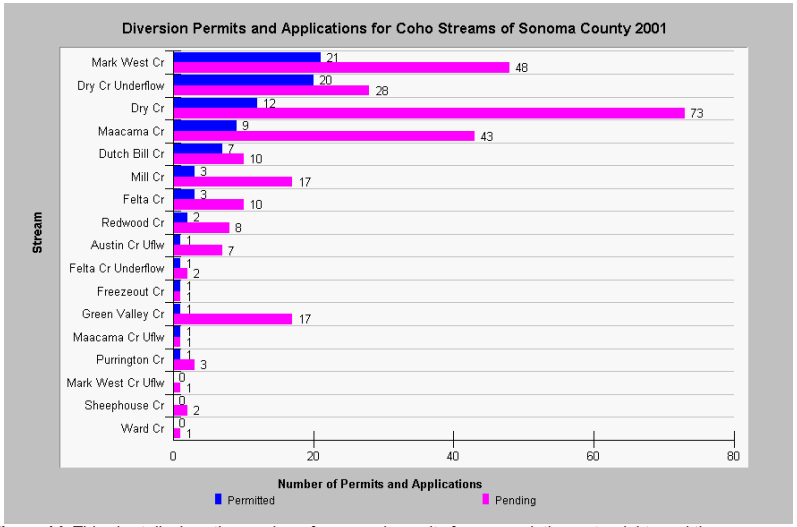

Figure 14. This chart displays the number of approved permits for appropriative water rights and those submitted for approval in Russian River tributaries known to have harbored coho salmon, including Green Valley Creek and Dutch Bill Creek. Data from the SWRCB WRD. March 2001. Chart from KRIS Russian.

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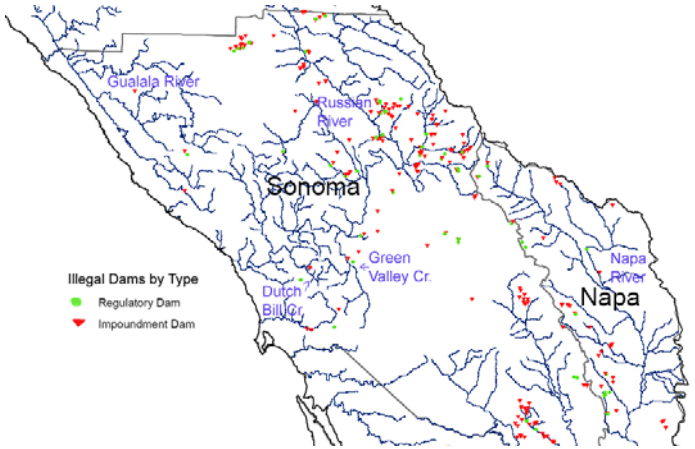

Figure 15. This map shows the locations of unpermitted diversion dams of two types in southern Sonoma and Napa counties, including lower Russian River tributaries Green Valley and Dutch Bill Creeks, which have recently harbored coho. Regulatory dams are diversions with no impoundments. From Stetson Engineering (2007a).

22-10 cont.

Sonoma Creek: My familiarity with Sonoma Creek is primarily due to my participation in the KRIS East Marin-Sonoma database project. Similar types of evidence are available to those used to demonstrate problems on the Russian River above. Habitat typing data (Figure 16) from upper Sonoma Creek indicates that reaches downstream of the headwaters go dry in summer. The cause of this loss of surface flow might be partially related to aggradation, but is still a sign that surface water availability has been diminished and that fish habitat is currently compromised. Figure 17 shows the dry bed of Carriger Creek, a tributary of Sonoma Creek, with what appears to be a large diversion pipe upstream. While Sonoma Creek itself has some problems with unpermitted diversion (Figure 18), diversion in the Tolay Creek basin indicates major illegal over-appropriation. It is likely that steelhead in Tolay Creek are at a very low level, if they persist at all.

Gualala River: I am familiar with the Gualala River from having worked on the KRIS Gualala database (IFR, 2003), completed a literature search and data assessment (Higgins, 1997), and commented on several proposed vineyard conversions (Higgins, 2003; 2004a, 2004b).

The Gualala River lies within southern Mendocino and northwestern Sonoma counties. It is recognized as impaired with regard to sediment (NCRWQCB, 2004) and has major problems with loss of surface flow and high water temperature (IFR, 2003b). CDFG (2001) characterized coho salmon in the Gualala River as "extirpated or nearly so."

The following passage from KRIS Gualala (IFR, 2003b) characterizes SWRCB WRD prior actions in the North Fork:

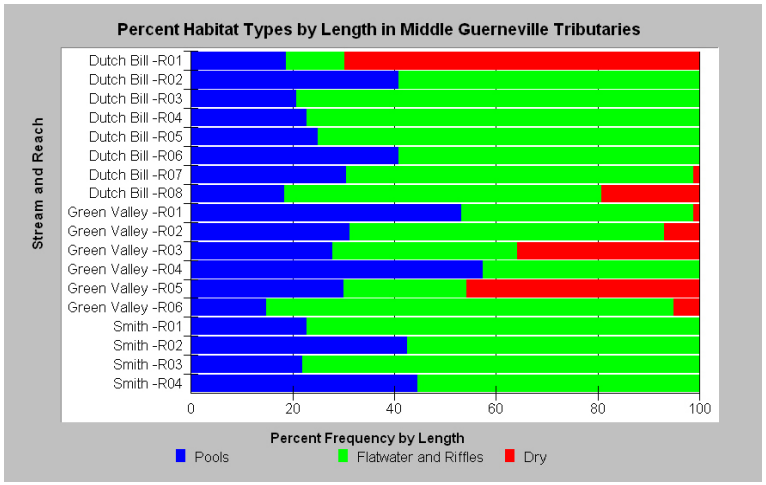

Figure 15. This chart shows CDFG habitat typing data for three lower Russian River tributaries. Notice that Dutch Bill and Green Valley Creek have significant dry reaches. Data from CDFG chart from KRIS Russian.

22-10 cont.

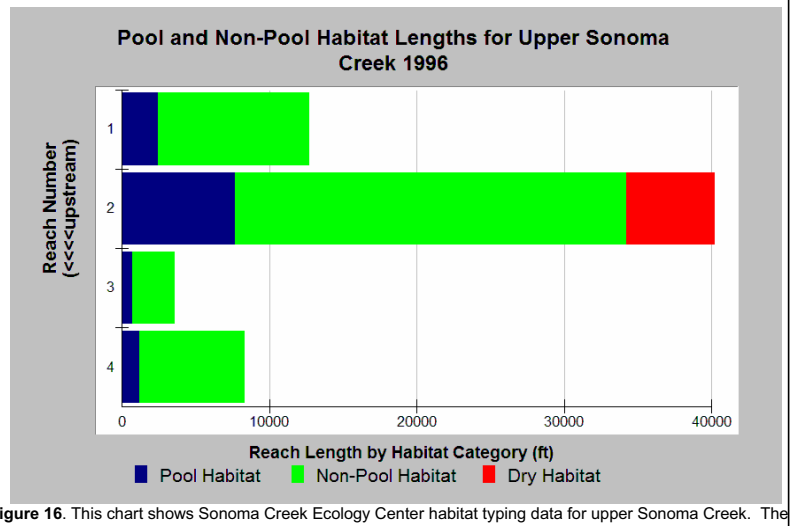

Figure 16. This chart shows Sonoma Creek Ecology Center habitat typing data for upper Sonoma Creek. The pool frequency is lower than optimal for salmonids (CDFG, 2004) and there are significant dry reaches. From KRIS East-Marin Sonoma.

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Figure 17. This photo shows Carriger Creek, a tributary of Sonoma Creek, with a dry stream bed and what appears to be a large diversion pipe along cutbank upstream. From KRIS East-Marin Sonoma.

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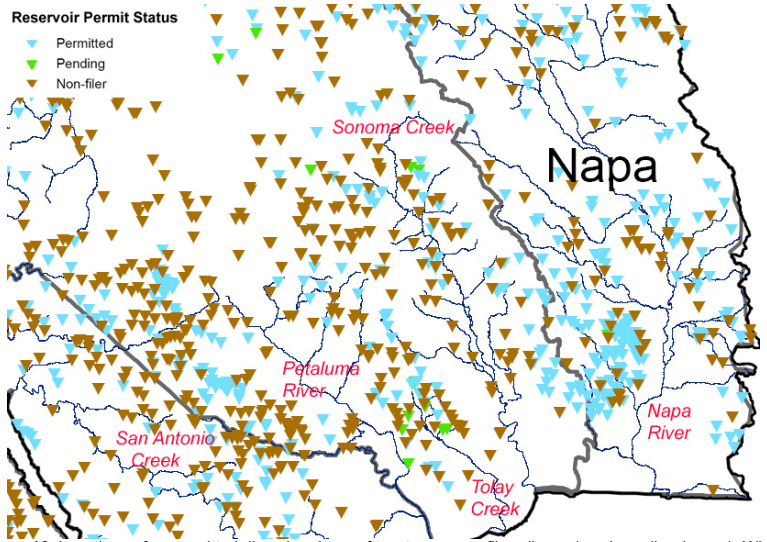

Figure 18. Locations of unpermitted diversion dams of two types, non-filers (brown) and pending (green). While there are many legal and illegal diversions on Sonoma Creek, cumulative effects risk is much greater in Tolay Creek, a much smaller basin, where there are 29 unpermitted diversions. From Stetson Engineering (2007a).

"The California Department of Fish and Game (Hunter, 1996) expressed concern about the diversion of the North Fork Gualala by the North Gualala Water Company, citing reduction in fish habitat if minimum stream flows were not retained. The State Water Resources Control Board (1999) prohibited diversion of surface water when the North Fork dropped below four cubic feet per second (cfs), then in August 2000, ruled that this order applied to two NGWC groundwater wells (SWRCB, 2000). This decision recognizes the importance of North Fork flows to the lower mainstem Gualala as well."

The Gualala River combination of aggradation and increased water use due to vineyard expansion has created an expanding problem with stream reaches in this basin losing surface flow (Figure 19), including the lower mainstem, Wheatfield Fork, South Fork, Buckeye Creek and Rockpile Creek (Higgins, 2003; 2004). Habitat typing surveys by CDFG (2001), as part of the North Coast Watershed Assessment Program, found mainstem reaches going dry (Figure 20) where they maintained surface flow during the 1976-77 drought (Boccione and Rowser, 1977). Although rainfall in 1976-77 was only 16.0 inches, total rainfall in 2001 was 24.6 inches, yet flows in 1976-77 were 12.5 cfs and all major tributaries contributed surface flow. This indicates a major decrease in water yield and water supply.

The extensive loss of surface flows in the Gualala River represents a major threat to the continuing survival of steelhead, which are still a major part of the local tourist-based economy.

Figure 19. The Wheatfield Fork, just upstream of its convergence with the South Fork, ran underground in 2001. Although the aggradation of the Wheatfield Fork is a factor contributing to lack of surface flows, water diversion for several vineyards and rural residential use exacerbate the problem. Photo by Pat Higgins from KRIS Gualala database.

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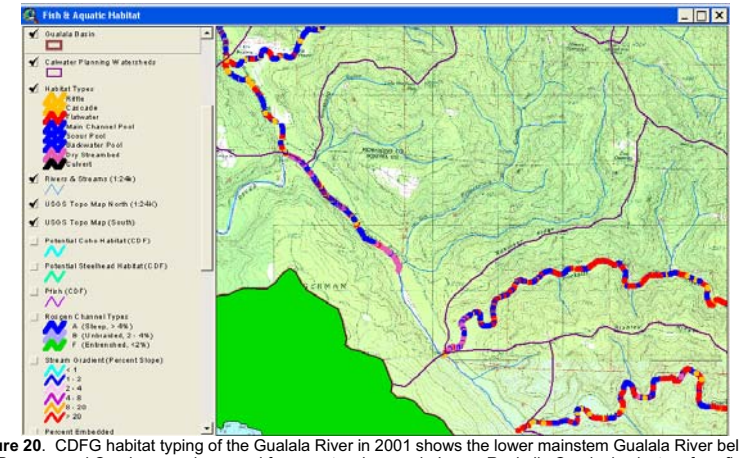

Figure 20. CDFG habitat typing of the Gualala River in 2001 shows the lower mainstem Gualala River below Big Pepperwood Creek ran underground for an extensive reach. Lower Rockpile Creek also lost surface flows in more than a quarter mile. KRIS Gualala and Higgins (2003).

22-10 cont.

West Marin Tributaries: Salmon, Americano, Stemple and Walker creeks all have agricultural water extraction that both compromises water quality and limits habitat for steelhead and coho salmon. Figure 21 shows a close up of these West Marin tributaries with all impoundments, 1) permitted, 2) those with applications pending, and 3) illegal diversions with no contact from the operator. The epidemic problem of over diversion and potential for cumulative effects is self-evident.

All these West Marin tributaries have extensive agricultural land use, mostly by dairies. Cattle may deposit fecal material directly into streams or it may enter as a result of overland flow. Grazing takes place up to stream banks leaving no riparian buffer capacity (Figure 22). Lack of canopy also promotes stream warming and flow depletion contributes promotion of both increased water temperatures and nutrient pollution.

Charts from KRIS West-Marin Sonoma (IFR, 2003a) show the degree of water quality impairment due to the cumulative effects of agricultural activity and flow depletion. Salmon Creek is the most northerly of tributaries considered, entering the Pacific Ocean north of Bodega Bay. Figure 23 shows dissolved oxygen (DO) values from several stations sampled by CDFG on Salmon Creek that are indicative of nutrient pollution. Super-saturated DO of greater than 10 mg/l at Highway 1 is linked to very high biological activity of algae blooms that thrive in the stagnant, nutrient-rich waters. Minimum DO levels at the Bodega location approached the recognized lethal limit for salmonids of 3.8 mg/l (WDOE, 2002). While D.O. is super-saturated during daylight hours due to photosynthesis, D.O. becomes depressed as algae respire at night or as algae dies off.

Merritt and Smith Consulting (1996) studied Americano Creek for the City of Santa Rosa. Figure 24 shows flow measurements indicating that surface flow near Garicke Road (Station E-6) was not present from April until November 1988 and from May-September 1989. Flow depletion also contributes to major pollution problems similar to those in neighboring creeks. Stemple Creek shows another symptom of nutrient pollution, high pH (Figure 25). A pH value of over 9.5 is directly lethal to rainbow trout (Wilkie and Wood, 1995).

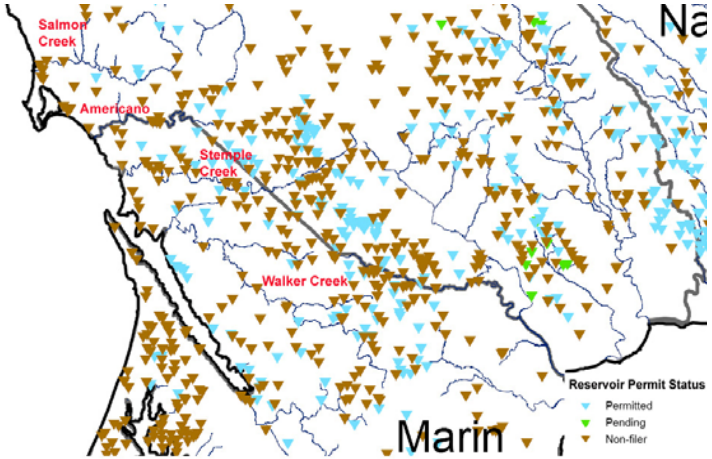

Figure 21. This map shows a zoom of the same type as Figure 2 with close up of West Marin County creek diversion impoundments that are permitted, have permits pending or are unpermitted (Non-filer). There is an obvious huge cumulative effects problem with diversion and water use. From Stetson Engineers (2007a).

22-10 cont.

Figure 22. The photo at left shows the lower mainstem of Walker Creek with very poor fish habitat as a result of livestock grazing and flow depletion. The shallow, wide stream channel and lack of riparian vegetation makes the stream subject to warming. Photo from KRIS West Marin-Sonoma.

Creel census data from 1949-1974 indicate that hundreds of adult steelhead were harvested in some years and adult coho were present in the catch (Kelley, 1976). Kelley (1976) interviewed long time residents and anglers, who said that the coho salmon run in Walker Creek was much more robust prior to 1950.

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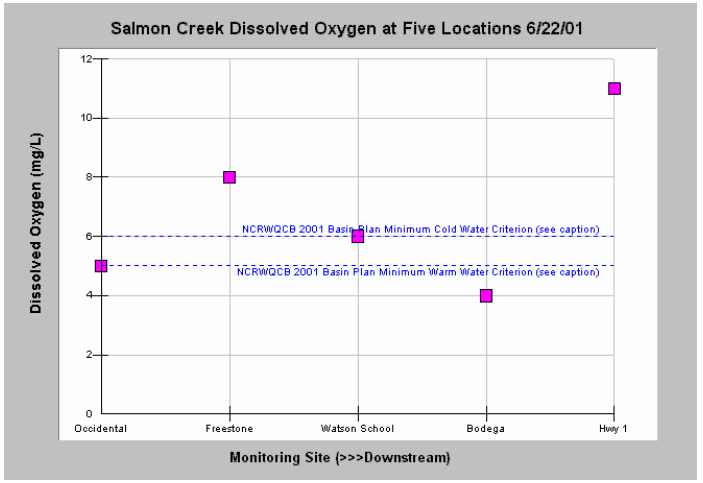

Figure 23. Dissolved oxygen at five stations (going downstream from left to right) in Salmon Creek. The high dissolved oxygen at Highway 1 is consistent with elevated pH values indicating photosynthetic activity characteristic of nutrient pollution. D.O. sags would occur at night. These data were collected by the North Coast Regional Water Quality Control Board as a part of the Surface Water Ambient Monitoring Program (SWAMP). June 22, 2001. From KRIS West Marin-Sonoma.

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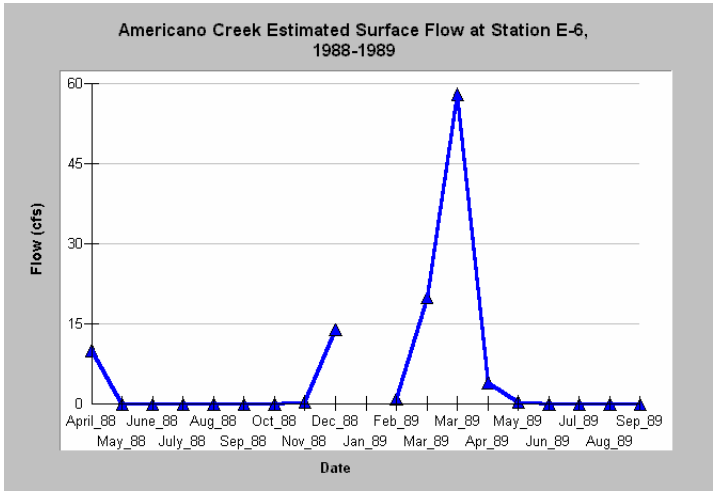

Figure 24. Surface flow was estimated approximately once monthly near Garicke Road (Station E-6) in Americano Creek from 1988-1989. Flow was not present after April in 1988 until November 1988 and from May-September 1989. Data from Merritt Smith Consulting for the City of Santa Rosa and U.S. Army Corps of Engineers. KRIS West Marin-Sonoma.

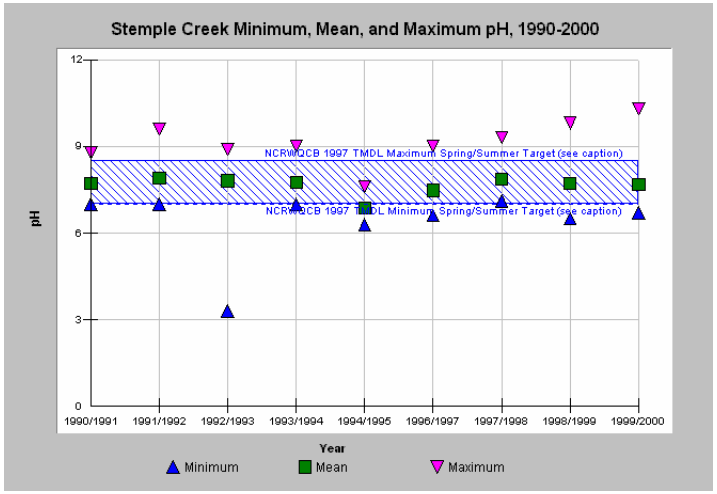

Figure 25. The pH of Stemple Creek exceeded stressful or lethal for salmonids (>9.5) as a result of nutrient enrichment from cattle waste in combination with flow depletion. Data from CDFG and chart from KRIS West Marin-Sonoma.

22-10 cont.

Walker Creek had coho salmon historically (Figure 26) but flow depletion and nutrient pollution have contributed to their disappearance. Kelly (1976) used electrofishing and netting for the Marin Municipal Water District sponsored studies that found coho, abundant Pacific lamprey juveniles and steelhead juveniles of all age classes in Walker Creek. Flows now annually fall to near 5 cfs or less from July through September (Figure 27). Reduced flow and grazing impacts have resulted in water quality problems similar to previously discussed tributaries related to nutrient pollution.

22-11

Scott River: Although the Scott River is not within the *Policy* area, it has very well recognized water quality and fisheries problems related to surface and ground water extraction (NRC, 2004). I am intimately familiar with this basin from helping with restoration planning (Kier Associates, 1991), restoration evaluation (Kier Associates, 1999), building three versions of KRIS databases, and four years of work on Scott River issues for the Klamath Basin Tribal Water Quality Work Group. Several papers on the Scott, Shasta and Klamath TMDLs are posted on their website and WRD can easily access documents on the Internet at www.klamathwaterquality.com.

I draw below from previous comments on the *Scott TMDL* (Higgins, 2006c) that are on the DVD with regional KRIS projects filed with these comments. The principal findings were as follows:

1. Flows have been decreased by ground water extraction,
2. Flows have declined to far below those required by the Scott River adjudication and often cause stream reaches and tributaries to go dry,
3. Low flow exacerbates water temperature problems, and
4. Flow and temperature problems combine with sediment to severely limit productivity of salmon and steelhead populations.

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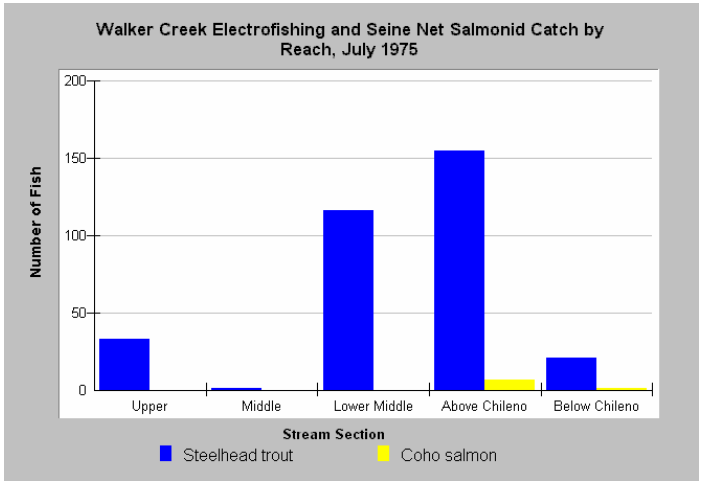

Figure 26. Fish sampling in Walker Creek in 1975 found coho salmon and numerous steelhead. Kelly (1976).

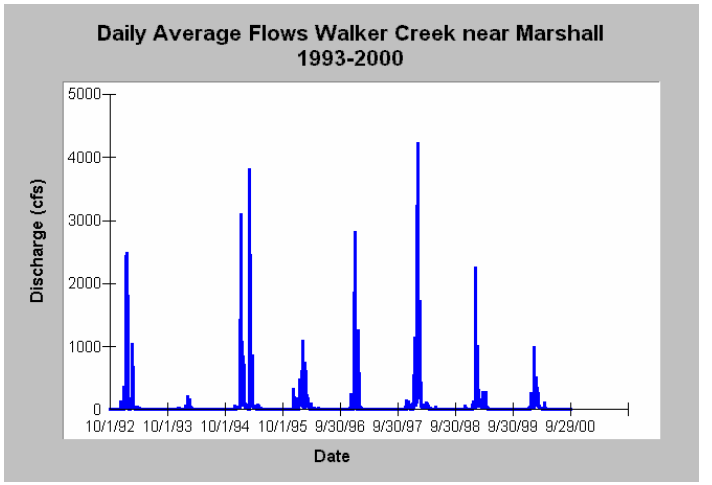

Figure 27. Flows in Walker Creek, tributary of Tomales Bay, dropped to 5 cfs or less on average annually according to USGS flow gauge records. Chart from KRIS West Marin-Sonoma.

The Scott River channel and many of its major tributaries are dried up annually, in violation of CDFG code 5937 (Figure 28 & 29), severely limiting rearing habitat for salmonids. Although the Scott River is adjudicated (SWRCB, 1980), flow levels fall below those required for months of the year (Figure 30). This causes major reductions in habitat quality in the lower Scott River, which formerly served as a summer refugia for juvenile salmonids.

The *Long Range Plan for the Klamath River Basin Conservation Area Fishery Restoration Program* (Kier Assoc., 1991) noted that ground water pumping in the Scott River valley depleted surface flows because of interconnections between surface and ground water. The Scott River has experienced major declines in surface flows coincident with installation of ground water pumps beginning in the 1970's. Pumps continue to be installed through NRCS and EQIP funding (Figure 31) and drops in ground water levels are becoming evident (Figure 32). The chart suggests that while annual maximum levels have remained relatively constant over time, annual minimum levels have declined since 1965, although they fluctuate with precipitation.

22-11 cont.

The National Research Council (2004) makes a clear case that flow depletion is at the root of temperature problems in the Scott River. As flows drop, transit time for water increases allowing an opportunity for stream warming. A thermal infrared radar (TIR) image of Shackleford Creek (Figure 33) was taken by Watershed Associates (2003) as part of the Scott River TMDL and shows dramatic effects of flow depletion on water temperature. Shackleford Creek is cool enough for juvenile salmonid rearing above points of diversion, then warms rapidly as its flow is depleted. Flow resumes below the major tributary Mill Creek, warms again as flow is reduced by irrigation until surface flows are lost, just upstream of the convergence with the Scott River.

Fall chinook salmon from the Scott River are an important component of the Klamath River run that supports ocean, sport and Native American fishing. Scott River fall chinook returns plummeted in 2004 and 2005 to the lowest level on record for two years in a row (Figure 34). Even after prolonged drought from 1986-1992 Scott River fall chinook returns ranged from 3000-5000 adults annually.

A major potential problem for chinook salmon is that they are stranded in the lowest reaches of the Scott River due to continuing stock water activities and other illegal diversions after October 1 (Figure 30). The fish are forced to spawn in lower reaches of the Scott River (Figure 35) where decomposed granitic sand levels are very high, which threatens egg survival as sand is transported during winter storms.

22-12

The SWRCB WRD needs to make the Scott River a priority for enforcement. Fall chinook are collapsing and coho salmon only have one strong year class of three, indicating a high risk of extinction. Immediate action is appropriate given the change in weather and flow patterns expected with a change of the Pacific Decadal Oscillation (PDO) expected sometime from 2015 to 2025 (Collision et al., 2003) and with longer term drought cycles expected with global warming (see Climate Cycles and Change).

Shasta River: My experience on the Shasta River parallels that described for the Scott River and my TMDL comments (Higgins, 2006d) also serve as the source for information below. The Shasta River Adjudication (CDPW, 1932) does not require a minimum flow level similar to the Scott River Adjudication (CSWRCB, 1980) and average daily flows can fall to near 20 cfs (Figure 36), which has major consequences for elevated stream temperatures (NRC, 2004). Lack of coordination of irrigation operations may sometimes cause flows to fall below the listed average and present an even greater challenge for fish survival. Dwinnell Reservoir (Figure 37) blocks the headwaters of the Shasta River and is a major source of pollution itself (NCRWQCB/UCD, 2005). Major tributaries like Parks Creek (Figure 38) and the Little Shasta River lose surface flows for several months a year.

22-13

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Figure 28. The dry bed of the Scott River in a reach near the airport looking upstream. This is a violation of CDFG Code 5937. Photo from KRIS Klamath-Trinity V 3.0 taken by Michael Hentz. 2002.

Figure 29. Shackleford Creek is shown here running dry at its convergence with Scott River in August 1997. The creek has coho and chinook salmon and steelhead trout, but diversions dry it up annually during summer and fall. This is also in violation of CDFG Code 5937. Photo by Pat Higgins from KRIS V 3.0.

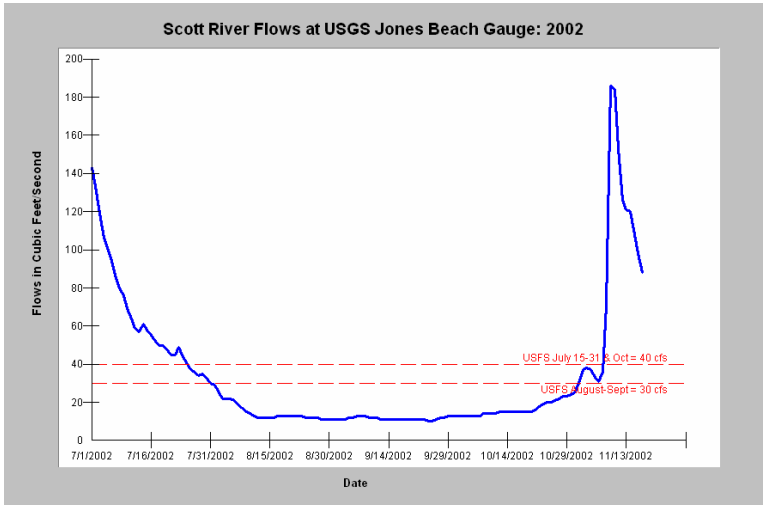

Figure 30. Jones Beach USGS flow gauge data from the irrigation season of 2002 show that flows failed to meet adjudicated levels for the USFS and flows needed for fish migration, spawning and rearing in August, September and October. Reference lines are those from the SWRCB (1980) adjudication.

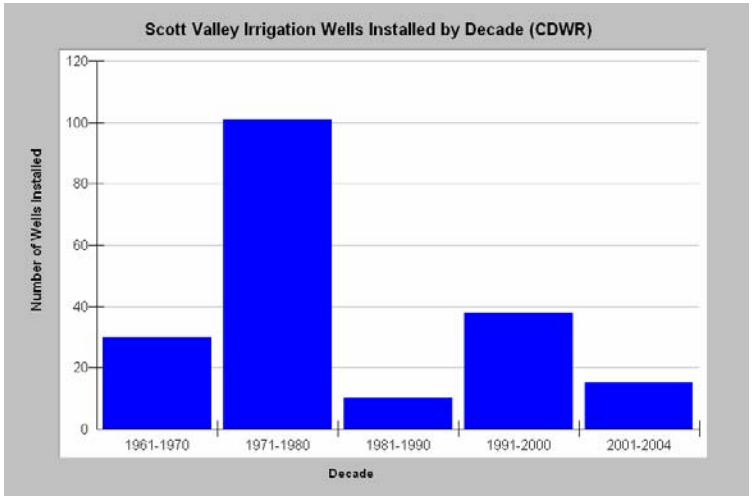

Figure 31. This chart shows the number of irrigation wells recorded by the California Department of Water Resources. Data may be only partial as not all parties installing wells file with DWR.

22-11a

Comment Letter 22

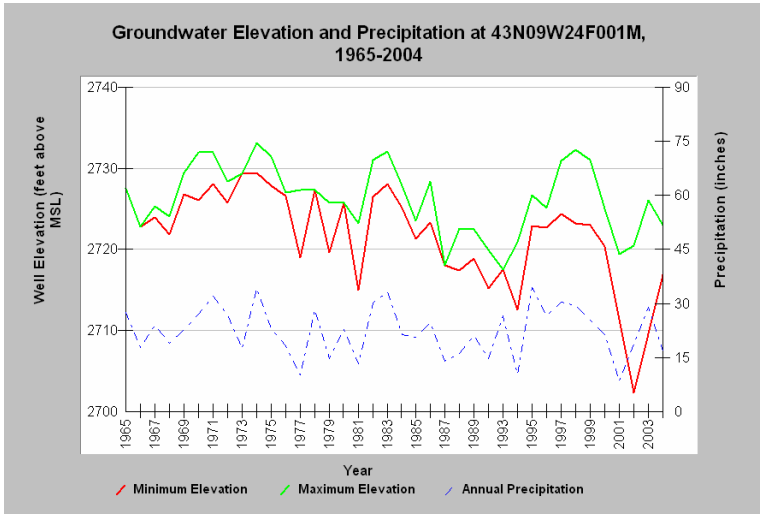

Figure 32. Department of Water Resources well 43N09W24F001M, approximately 5 kilometers south-southeast of Fort Jones, for the years 1965-2004. Minimum elevation declines are likely indicative of ground water depletion. From QVIC (2006).

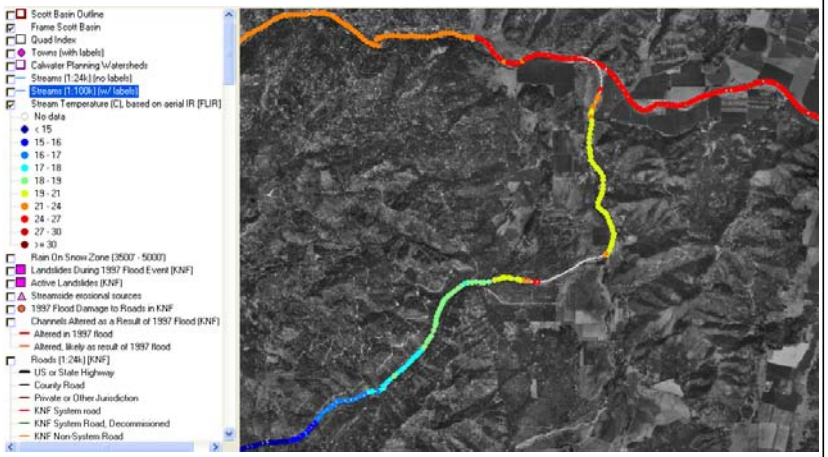

Figure 33. This map shows summary data of Scott River Thermal Infrared Radar (TIR) surveys for Shackleford Creek. Note that water temperature warms in a downstream direction as flow is depleted. Reaches with no temperature coded color are dry, indicating loss of surface flow in violation of CDFG Code 5937 and over-diversion in violation of SWRCB Codes 1243, and 1375. Data from Watershed Sciences (2003).

22-11a cont.

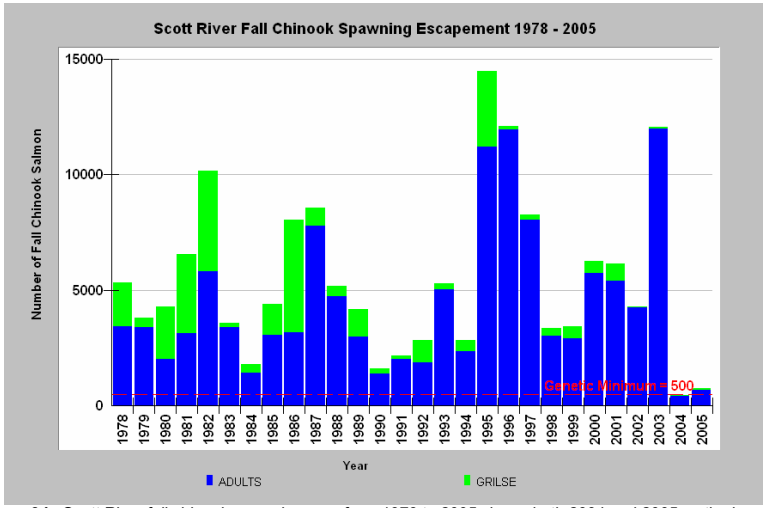

Figure 34. Scott River fall chinook spawning runs from 1978 to 2005 shows both 2004 and 2005 as the lowest years on record. Summer and fall flow conditions were near all time lows for preceding 2004-05 brood years (2001-2002). Data from CDFG.

22-11a cont.

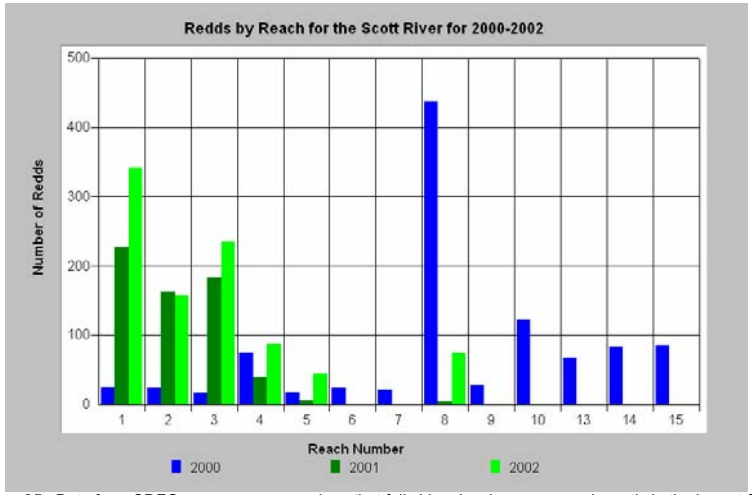

Figure 35. Data from CDFG spawner surveys show that fall chinook salmon spawned mostly in the lowest five reaches of the Scott River in 2001 and 2002, where eggs may be vulnerable due to potential for bed load movement or transport of decomposed granitic sands. Low flows in fall prevent salmon disbursement to upstream reaches where gravel conditions are superior and chances of egg survival greater. KRIS V 3.0.

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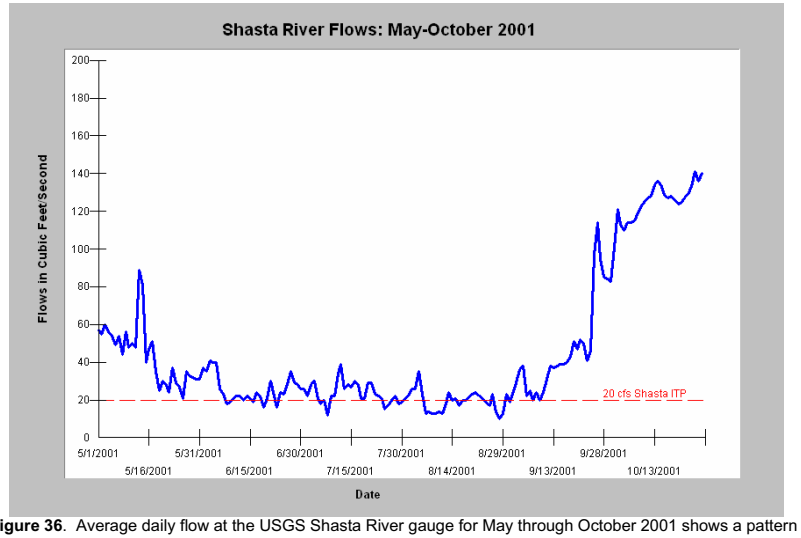

Figure 36. Average daily flow at the USGS Shasta River gauge for May through October 2001 shows a pattern of extremely low flows with many days falling below 20 cubic feet per second. This contributes to temperature problems as less water mass warms easily and agricultural runoff back to the river is hot.

22-13a

Figure 37. Dwinnell Reservoir looking southeast off the dam with water levels at less than full pool in 2002. Long retention time and exposure to sunlight trigger algae blooms and nutrient pollution. Water releases from this reservoir are restricted to avoid adding to water pollution downstream. It has blocked downstream flow since 1928 in violation of CDFG 5937. Photo from KRIS V 3.0 by Michael Hentz.

Figure 38. Parks Creek is shown here below the diversion to Dwinnell Reservoir with surface flows almost completely depleted. This not only shuts off cool water that could buffer high Shasta River water temperatures. Winter flows are also diverted blocking adult fish passage and blocking spawning gravel recruitment to the mainstem Shasta River. Photo by Michael Hentz.

22-13a cont.

Mack (1958) measured flow in Big Springs Creek of 103 cfs, which is very similar to the measurements taken by the California Department of Public Works (1925) for the Shasta River Adjudication (CDPW, 1932). This spring source was at optimal temperatures for salmonid rearing and the California Department of Water Resources (1981) found that Big Springs Creek had the highest spawning use of any Shasta River reach or tributary. Kier Associates (1999) noted that the spring feeding Big Springs had been depleted due to ground water pumping to less than 20 cfs.

Major increases in diversion of surface and groundwater have changed the temperature regime of the Shasta River. Thermal infrared radar (TIR) imagery captured by Watershed Sciences (2003) illustrates how flow depletion affects Big Springs Creek and Shasta River water temperature (Figure 39). The image shows water temperatures below 20° C only immediately downstream of Big Springs Lake, but warming to 21.7° C (Watershed Sciences, 2003), which is stressful for salmonids (U.S. EPA, 2003). The NCRWQCB (2006b) recommends that flows increases at Big Springs to at least 50 cfs to restore water quality.

22-13

The Shasta River and Scott River will also be where new private Watermaster service will be pioneered. The service has been ineffective in protecting instream flows in these basins (Kier Associates, 1991; 1999). The cost of DWR Watermaster service is born by the water users and it has been rising in recent years. Recent legislation now allows the water users to hire private contractors to render the same service. Questions have been raised as to whether a private contractor working for the water users can be expected to elevate public trust interests over those of his clients.

22-14

The NRC (2004) asked for consideration of removal of Dwinnell Dam in order to restore fish passage and increase flows. Models of snow fall changes resulting from global warming indicate that only Mt. Shasta's snow pack will increase, which makes the Shasta River one of the best places to maintain salmonids in the Klamath Basin in the face of climate change.

22-15

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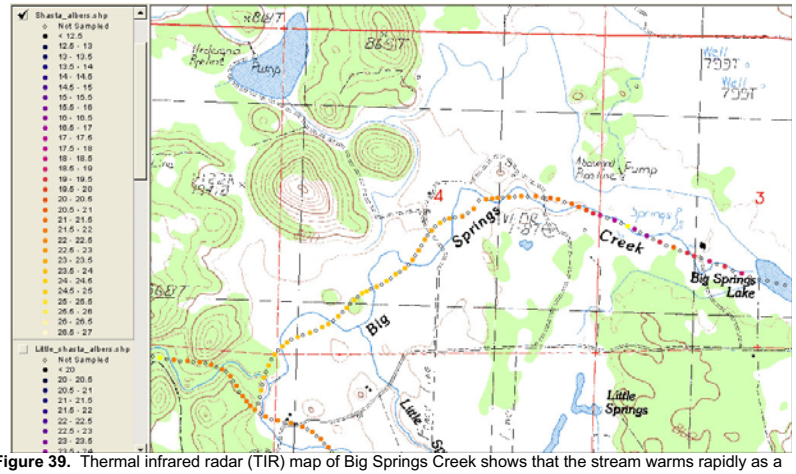

Figure 39. Thermal infrared radar (TIR) map of Big Springs Creek shows that the stream warms rapidly as a result of diversion and now is too warm for optimal salmonid rearing within a distance of less than three miles. Data from Watershed Sciences (2003) provided as GIS by NCRWQCB staff.

22-13a cont.

Climatic Cycles and Climate Change

The majority of the peer reviewers of the *Policy* (Lang, 2008; Gearheart, 2008; Band, 2008; McMahon; 2008) stated that SWRCB WRD needed to factor climate change into their planning. As mentioned above, NRC (2004) asserts that the Shasta River has the greatest restoration potential in the Klamath Basin in the face of global warming. Oscillations of climatic cycles will likely accentuate drought, which will act in concert with increased water demand from a growing population (Stetson Engineering, 2007b). While study of climate change is still progressing, shorter term cycles of rainfall and ocean productivity are now well recognized (Hare, 1998).

The Pacific Decadal Oscillation (PDO) cycle causes major shifts in ocean productivity from favorable to unfavorable for salmon approximately every 25 years off the coast of California, Oregon and Washington (Hare et al., 1999). Good ocean conditions are linked to wetter weather cycles and prevailed from 1900-1925 and 1950-1975 and returned to favorable again in 1995 (Collison et al., 2003). Poor ocean productivity and dry on-land cycles from 1925-1950 and 1976-1995 created very adverse conditions for salmon, particularly coho. The wet climatic cycle from 1950 to 1975 included the 1955 and 1964 floods. As the PDO cycle shifted, the 1976-1977 drought combined with highly aggraded stream beds to create a freshwater habitat bottleneck. Poor upwelling in the ocean also reduced growth and survival. Coho salmon populations on the California coast from Santa Cruz to Mendocino plummeted and many have never recovered (Figure 40).

The PDO influence is also evident in the Shasta River fall Chinook spawning returns (Figure 41). The highest return of 80,000 adults was just after Dwinnell Reservoir was built, despite being in a less productive ocean and climatic cycle (1925-1950). Even with access to less spawning habitat, runs in the 1960's exceeded 30,000 fall Chinook. The lowest ebb of the Shasta came during an extended drought from 1986-1992, when adult returns dropped to as low as 500 fish. Hopefully the WRD and DWR will get more water back in the Shasta River before the PDO switches in 2015-2025.

22-16

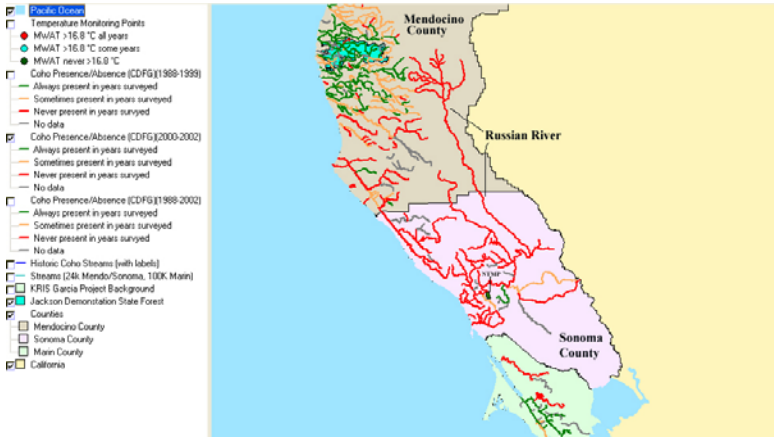

Figure 40. CDFG northern California coho salmon presence and absence maps show streams as green, if coho were always present, yellow if present in at least one year and red if absent in all three years from 2000-2002. Remaining populations are mostly near the coast within the redwood ecosystem and associated with more intact forests patches in coastal Marin County and around Jackson Demonstration State Forest. KRIS Russian.

22-17

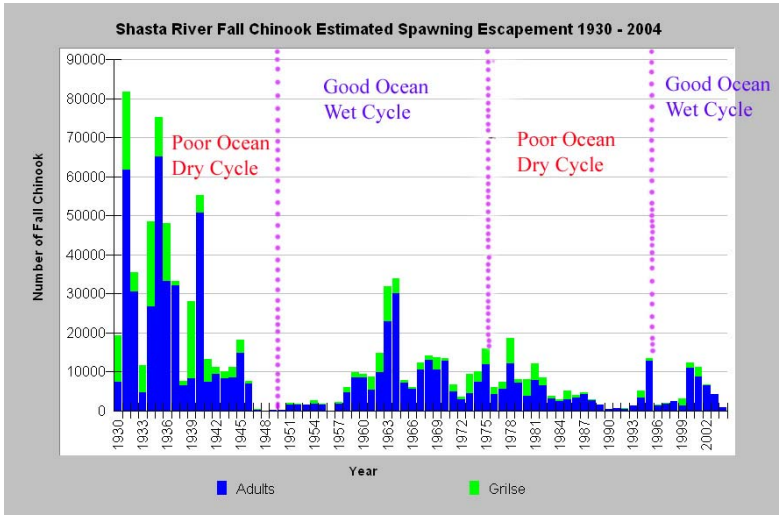

Figure 41. The CDFG Shasta Rack counts show fall Chinook returns from 1930 to 2004 with the PDO cycles overlaid. Returns fluctuate with climate and ocean cycles but the long term trend is down as a result of continuing loss and degradation of freshwater habitat. From Higgins (2006c) and KRIS V 3.0.

22-18

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Restricted Geographic Scope Misses Basins With Greater Need

The *Policy* implementation is restricted to coastal watershed from the Mattole River south to San Francisco Bay (Figure 1) and does not include either the Klamath or the Eel River basins, which have enormous fisheries potential, more wildlands, and arguably greater need for help resolving flow issues.

The Shasta and Scott river basins are both recognized as water quality impaired to the degree that fisheries resources are compromised. CDFG is currently attempting to issue Incidental Take Permits (ITP) under the California Endangered Species Act for agricultural operations in these watersheds (CDFG, 2006a; 2006b). Lack of flows is confounding coho recovery under both State and federal ESA and, similarly, over-diversion is thwarting attainment of water quality standards under recently completed Scott and Shasta TMDLs (NCRWQCB, 2006a; 2006b). Despite the critical need for resolution of water supply issues, SWRCB WRD involvement is not apparent in either the ITP process or TMDL Implementation. California Department of Water Resources (DWR) staff have taken a similarly passive role in management of groundwater, which is directly linked to surface water supply problems in both basins. DWR has also failed to provide effective Watermaster Service and a new law permits the privatization of the service, which poses a potentially substantial impediment for insuring public trust oversight.

Timely action to restore flow and improve water quality in the Scott and Shasta Rivers could get the best return on investment for the WRD, if fish production is the index. The Shasta River has recently produced more than 10,000 adult Chinook salmon (Figure 41) and still has a run of coho salmon. Similarly, a restored Scott River could produce 10,000 fall chinook and viable populations of coho and steelhead as well. As NRC (2004) points out, increasing flow in the Shasta River would decrease water temperature. Functional Scott and Shasta River canyons would once again revitalize the rearing capacity of the both rivers for steelhead.

22-19

The Klamath River is recognized as being in crisis with regard to water quality and fish disease (Nichols and Foott, 2004) and the potential cumulative benefit of restoring flows and cold water from the Scott and Shasta Rivers should not be overlooked. Currently the Shasta and Scott contribute very little flow in summer to the mainstem Klamath River and what water they do contribute is warm and high in nutrients. McIntosh and Li (1998) used forward looking infra-red radar (FLIR) to examine water temperatures of the Klamath River. Figure 42 shows the FLIR image of the convergence with Shasta River water temperatures exceeding 29^{o} C (84^{o} F) and the Klamath River itself above lethal limits for salmonids. This influence is the opposite of the historic role the Shasta River played in moderating Klamath River water temperatures and nutrient loads.

The Eel River once had hundreds of thousands of salmon and steelhead, yet even the mainstem has gone dry in recent years just above Fernbridge in late summer. Flow depletion due to Pillsbury Dam reduces mainstem habitat, but the South Fork Eel is now also flow depleted. The latter has become so stagnant in recent years that blue green algae has proliferated that is toxic to dogs and makes recreational use impossible. Dozens of formerly productive tributaries for fisheries now run dry in summer and early fall. Because the Eel River watershed remains largely unpopulated and wild land, it has a great deal more chance for recovery than urbanizing watersheds or those with extensive agricultural activity.

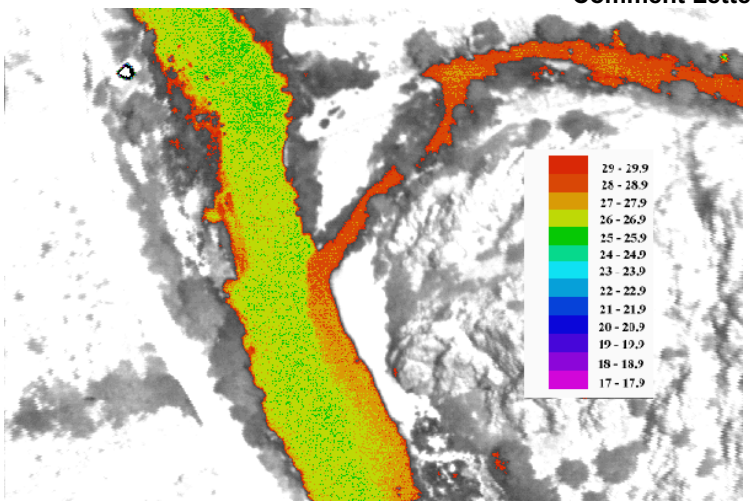

Figure 42. Thermal Forward Looking Infrared Radar Image (FLIR) showing the confluence of the Klamath River (flowing from the top of the image to the bottom of the image) and the Shasta River (flowing right to left in the image). The Shasta River is approximately 29 degrees C, which is well above lethal to salmonids. A warm water plume is observed in the Klamath River below. From McIntosh and Li (1998).

22-19 cont.

Monitoring, Data Management and Adaptive Management

Monitoring: The *Policy* calculation of protective base flows and water availability rely on fragmentary historical flow data and flawed synthetic data and "additional data collection on small stream hydrology and fish usage is needed to verify these relationships" (Lang, 2008). A major problem is that all monitoring envisioned is on winter flows (October-March) when surplus water is theoretically available, not on April-September flows that are known to be limiting fisheries.

There is a need for year around data collection in small and large streams throughout the region, with the priority identification of stream reaches where surface flows are lacking but where historically there was carrying capacity for salmon and steelhead. Band (2008) suggests gages "with real-time capability, likely co-funded with the USGS to take advantage of the National Water Information System (NWIS) real-time discharge system."

22-20

McMahon (2008) recommends installation of inexpensive stage height and temperature sensors (www.trutrack.com) that can be purchased inexpensively ($200) and are easy to install. He also recommends that monitoring be focused on key salmon and steelhead reaches (biological hotspots). Band (2008) pointed out the necessity of monitoring for *Policy* implementation:

> "Monitoring and management of the finite water resource network calls for the development of a more advanced sensor network to monitor stream temperature, turbidity, suspended sediment transport in addition to flow. The State of California should be in the position to develop and implement this type of network in collaboration with federal agencies and the university system."

In other words, to fully deal with the questions of cumulative effects of water diversion and water supply, many similar data elements are needed to those of other processes like the Clean Water Act (TMDL), Endangered Species Act (ITP) and the National Forest Management Act. The SWRCB WRD needs to co-participate with other agencies so that multiple objectives of different processes can be met and the WRD benefits from corollary data collected by its partners.

The SWRCB WRD shows little technical capacity, other than that provided by consultants, and no track record of extensive field data collection. There is no commitment to a schedule for monitoring and the effectiveness monitoring section of the Policy shows bureaucratic reluctance. DWR shows a similar lack of capacity with regard to ground water monitoring and regulation. Consequently, the State should solicit emergency help from the U.S. Geological Survey to assess water supply and surplus availability (see Conclusion for discussion on the need to re-organize WRD and DWR).

Data Management: Regardless of how data collection and agency coordination are structured, there needs to be a common database for sharing results, trend monitoring and implementation of adaptive management. KRIS projects submitted with these comments supply a great deal of useful data, including GIS information The SWRCB Water Rights Division should consider using this tool, already subsidized with over $1 million in public money, especially since the KRIS software allows easy cost-effective updating capacity for trend monitoring.

If *Policy* implementation involves partnerships with private parties or groups, all raw data, computer codes for models and other related information must be available to the scientific community and to the public in electronic form. Without full transparency, no model or study output is scientifically valid (Collison et al., 2003) and history shows that public trust resources, such as salmon and steelhead, cannot be fully protected without the ability of the public to participate in oversight.

22-20 cont.

Band (2008) envisions using the data collected in the field to increase the predictive capacity of the flow model:

> "An integrated GIS-spatial watershed model that incorporates natural runoff production, stream routing and all water diversions and return flows should be developed……As part of an adaptive management approach, the modeling system would provide a formal set of expectations of different water resources policies in the watersheds."

Adaptive Management: The National Research Council (2004), in recommending that adaptive management be used to recover the endangered fishes of the Klamath basin, described it as follows:

> "Adaptive management is a formal, systematic, and rigorous program of learning from the outcomes of management actions, accommodating change, and improving management (Holling, 1978). Its primary purpose is to establish a continuous, iterative process for increasing the probability that a plan for environmental restoration will be successful. In practice, adaptive management uses conceptual and numerical models and the scientific method to develop and test management options."

Dr. Carl Walters (1997) is credited with having coined the term adaptive management and has followed 25 case studies of riparian and coastal ecosystem restoration projects around the world, but found "only seven of these have resulted in relatively large-scale management experiments, and only two of these experiments would be considered well planned in terms of statistical design." He notes that too little change in anthropogenic stressors is carried out in most cases so that natural variation are not distinguishable from project effects.

> "Various reasons have been offered for low success rates in implementing adaptive management, mainly having to do with cost and institutional barriers" (Walters, 1997).

The cost of monitoring associated with *Policy* implementation is not estimated nor are sources of funding identified. The institutional barriers that might impede successful adaptive management are well described above. The attempt to pass of monitoring costs to diverters (watershed groups) in exchange for their helping shape water management is unacceptable. The WRD needs to calculate staffing costs and define a partnership structure with other agencies that will satisfy data needs for adaptive management.

If 500 or 1,000 illegal dams are removed, we would have the potential to make a difference on the problem and would also frame an interesting and valid adaptive management exercise.

Instead of adaptive management, the SWRCB WRD has been exhibiting what NRC (2004) terms deferred action:

> "In the deferred-action approach, management methods are not changed until ecosystems are fully understood (Walters and Hillborn, 1978; Walters and Holling, 1990; Wilhere, 2002). This approach is cautious but has two notable drawbacks: deferral of management changes may magnify losses, and knowledge acquired by deferred action may reveal little about the response of ecosystems to changes in management. Stakeholder groups or agencies that are opposed to changes in management often are strong proponents of deferred action."

22-20 cont.

Conclusion

When one studies Appendix E (Stetson Engineering, 2007a), it becomes apparent that Dr. Bob Gearheart's (2008) characterization of his experience with water rights in the Upper Klamath in Oregon apply to the *Policy* area: "water rights were 1) over allocated, 2) unmeasured, and 3) mostly unregulated." Implicit in the *Draft Policy* is that there is surplus water in North Coast streams in the geographic area in question. An accurate inventory of water resources might find that many or most streams are fully allocated, given changes in watershed hydrology and channel morphology in conjunction with existing levels of diversion and groundwater use. When the geographic extent and severity of the problem is fully assessed, one can see that Pacific salmon species will not thrive or even survive into the future without profound change in California water policy and management.

Recommendations: If the *Policy* goes forward under current agency framework:

- Only consider diversions after December 15.
- WRD works with USGS to set up gauges for year around flow measurement region wide, share all data in the public domain.
- No additional permits issued by WRD for streams that formerly supported juvenile salmonid rearing but now are dry for any period of the year and were not historically intermittent.
- Conduct full inventory of all water extraction on the ground in cooperation with USGS, including riparian rights, pre-1914 and illegal diversions within one year.
- Stop post-permitting of illegal diversions and make fines sufficient to be a disincentive.
- Work cooperatively w/ CDFG using 5937 and get flows back. Don't reign in the wardens.
- DWR needs to work with USGS on collection of ground water data and more actively manage the resource and data needs to be made public.

- DWR should re-establish Watermaster Service so that it is done by a government agency not a private party due to public trust protection needs and provide more effective service.
- WDR, DWR, CDFG and NOAA Fisheries need to create a participatory data management system that has all data for the region, including spatial data, and can be used for adaptive management.

In light of over-diversion, critical shortages of water for fish, inexorably rising demand for water, and the rampant lawlessness of both surface and ground water diversion, it is clear that we have a regional crisis. The data and the case studies above show that there is a complete dereliction of duty by the WRD and a similar lapse in management of ground water by DWR.

In fact, much more profound reform is likely necessary, although there will be considerable opposition from agricultural interests and intransigent bureaucracies involved. What is really necessary is:

1) Change California Water Law to make riparian diversions require a permit,
2) Have Legislature request Attorney General investigation into lack of enforcement of SWRCB codes (1052, 1055, 1243, and 1375), including illegal extraction of ground water that is connected to surface water (i.e. Big Springs, Shasta River)
3) Consolidate surface water and ground water management and Watermaster Service under one State agency that has public trust as its over-riding objective, such as CDFG or Cal EPA.
4) Integrate planning with TMDL (Regional Boards), ESA/CESA (CDFG, NMFS), watershed restoration efforts (NRCS/NGO's), and NFMA and Northwest Forest Plan (U.S. Forest Service/Bureau of Land Management) implementation to pool resources and all agencies and processes targeting Pacific salmon recovery.

22-20 cont.

Given the institutional incapacity of both the SWRCB WRD and DWR, it is hard to recommend either as a future lead agency under which water management would be carried out, and it is time to consider shifting authority. Regardless of how bureaucratic responsibility might be reallocated, the new management perspective must hold public trust protection as a priority and allow water extraction only when it does not harm fisheries and water quality. Also under any scenario the USGS is needed immediately to lead data collection and analysis.

Urgent action is needed in reform of water management to avoid a wave of Pacific salmon stock losses due to climate change and recognized shifts in climatic regimes, such as the Pacific Decadal Oscillation (PDO) cycle (Hare et al., 1999). That means substantially improved freshwater habitat conditions by 2015-2025. It is time for State agencies to uphold the law, to begin cooperative work to remediate over-diversion of surface and groundwater, and to not only prevent fish stock extinctions, but to aim for restoration that provide a harvestable surplus of fish. Restoration of recreational beneficial uses will improve regional quality of life. Healthier rivers will also contribute to economic development related to tourism.

I would be happy to discuss any aspect of my comments with your staff.

Sincerely,

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22-21 cont.

From: jhking [samonely@quik.com]
Sent: Tuesday, December 09, 2008 4:44 PM
To: bwilliams@dfg.ca.gov
Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

To: California Department of Fish and Game

601 Locust Street
Redding, CA96001
Attention: Bob Williams

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

As a member of Humboldt Watershed Council and Salmon Forever, two citizen groups trying to restore wild salmon populations in severely damaged Humboldt County watersheds, I ask you not to delegate responsibilities for monitoring and enforcement of watershed activities impacting salmon to the Scott and Shasta Resource Conservation Districts. 23-1

Restoration of native salmon in our north county may depend to some extent on straying salmon from from neighboring watersheds such as the Klamath River, which has been suffering great declines and would be critically impacted by further losses in the Scott and Shasta River tributaries. The permit programs CDFG has proposed for these valleys would allow the dewatering of the Scott and Shasta rivers to continue. This combined with further drying and rising temperatures expected with global warming will put salmon at tremendous risk. 23-2

Our experience in Humboldt County has shown that responsibility for enforcement of water quality and critical species habitat should not be left to industry-dominated boards such as the Board of Forestry, which, until recently, has been the lead agency with regard to our watershed issues. Under their watch, the timber companies which dominate the great majority of our watersheds have been self-monitoring, and those watersheds are now officially listed as impaired, and salmon populations have plummeted. CDFG should have access to all the streams they are responsible for protecting. 23-3 Farmers and ranchers in the Shasta and Scott Valleys should not be allowed to deny river and stream access to Fish & Game officials and the public. 23-4

In granting permits for activities harmful to salmon and watershed health, these boards often rely on environmental documents that are inadequate and fail to use the best available scientific information, instead substituting low-level industry scientists or industry-friendly consultants, in essence, circumventing the spirit of the environmental review process. The most important inadequacy in environmental documents prepared for the Scott and Shasta permits is absence of references to such important studies as “Relative Effects of Climate and 23-5

Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.1; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18). 23-5 cont.

Please scale back these permits to apply only the restoration actions of the resource conservation districts and agricultural surface water diversions, and maintain all CDFG's power and authority for monitoring and enforcing California Endangered Species Act and the Fish & Game Codes. 23-6

Thank you for you time and consideration.

Sincerely,

Joyce H. King
685 School Rd
McKinleyville, CA 95519

Comment Letter 24

December 2, 2008

Bob Williams, Staff Environmental Scientist
Conservation Planning
California Department of Fish and Game
Northern California – North Coast Region
601 Locust Street
Redding, California 96001

2008 DEC 4 PM 12 24

DFG - REDDING

California Department of Fish and Game

RE: The Scott & Shasta EIR & ITP

* The report does not have practical solutions to increase the population of salmon. 24-1

* The report does not consider the evapotranspiration rate of the upland vegetation. 24-2

* If exclusion fencing is used, what other species will be affected by the fencing? 24-3

* What if the funding for fish protection runs out? Who will pick up the slack? 24-4

* Leave me alone and stay off of my property. Calif. Dept. of Fish & Game is not welcome unless I request their presence. 24-5

Sincerely,

Scott P. Murphy

Scott P. Murphy (Printed Name) | 125 Eastside Rd. (Address) | Etna CA 96027 (City)

From: Meighan O'Brien [meighanobrien@yahoo.com]
Sent: Thursday, December 11, 2008 9:00 AM
To: bwilliams@dfg.ca.gov
Subject: Shasta/Scott river take permits

Mr. Bob Williams
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Dear Mr. Williams,

RE: Proposed permit changes by the California Department of Fish and Game to provide programmatic permits allowing take of Coho salmon to the Scott Resource Conservation District and the Shasta Resource Conservation District.

Please rise to the challenge of leadership at this critical point in all of our lives. Utilize your position in our government and encourage Gov. Schwarzenegger to do the same and DENY these permits. At the national level, we are seeing/living the disastrous consequence of unregulated, for profit ventures that have irresponsibly squandered our public resources and left our nation in economic debt, exorbitant unemployment and a wrecked infrastructure that will take a generation to rebuild.

Why would you choose to inflict a similar bankrupt, destructive policy on the waters and salmon and people of our state? 25-1

There are a couple of things we know for sure: Low water flows lead to extinction of Coho and Chinook salmon.

We also know when the salmon leave a river, the river leaves us.

Can we afford more dry/dead rivers?

Please act on behalf of our public trust, our future Do everything you can to protect our salmon, our rivers. Utilize your position to lead the farmers and ranchers to develop a sustainable economic practice. Grant incentives to change and grow into the next millennium. Dont grant permits that encourage the same old tired, deadly practices.

Do not grant permits that obviously destroy the very things we need as a people to survive. We cannot afford one more dead river.

Please, for all of our sakes, use your best knowledge, listen to real science and remember your joy as a child when you saw your first river and wild fish.

Thank you.

Sincerely,

Meighan OBrien
1862 Bird Avenue
McKinleyville, CA 95519

From: Abigael Proctor [abilouhill@gmail.com]
Sent: Tuesday, December 09, 2008 9:12 AM
To: bwilliams@dfg.ca.gov
Subject: RCD permits

Dear California Department of Fish & Game,

I am writing today to urge you to think seriously about granting permits to the Scott and Shasta Resource Conservation Districts as you have proposed. While these permits may open the doors for more enforcement of land management use, these permits may not will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout.I want your agency to ask itself if the permits really address the core reasons these fish are threatened and at risk. That core reason being low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. Will enforcement by the RCD's truly regulate flows? 26-1

The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action. No body enforcing regulatory laws will be the good guy, but somebody who will do they job well and efficiently should step up to take care of these fish.CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 26-2 26-3

Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18). 26-4

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately and strongly monitored by CDFG. 26-5

Sincerely,

Abigael Proctor

From: sekaisin@fastmail.fm
Sent: Sunday, December 07, 2008 1:32 AM
To: governor@governor.ca.gov; bwilliams@dfg.ca.gov
Subject: No Alteration Permits for the Shasta and Scott Rivers

Dear Governor Arnold Schwarzenegger and Mr. Bob Williams, CDFG:

As a California constituent and a concerned human, I am repulsed and offended by the Department of Fish and Game's proposed "Endangered Species and Stream Alteration Permits" regarding the Shasta and Scott Rivers.

I will say this in as few words as possible: no species, let alone endangered ones, should be altered by humans, permits granted or not.
The rivers have flowed the way they do for a reason, just as your blood veins do. To allow farmers and ranchers nearby--whether or not with permits, under the auspices of the Shasta and Scott Resource Conservation Districts or not--to alter the rivers flow or to alter the Coho and Chinook salmon's very existence by reducing the water flow, would be simply unethical and evil. Too much damage has already been done.

It could be argued (unsuccessfully in the long-term) that to deny the farmers and ranchers the legal ability to pump groundwater without regulation and divert and alter streams and rivers would also be unethical, in that the farmers and ranchers then make their products available at a cost to those who can afford to buy their salable foods--assuming the economy can hold up much longer and the trucking arteries of this nation can survive rising fuel costs. However, with the upcoming effects that Peak Oil (and therefore massive food shortages, without the easy and cheap availability of petrochemical fertilizers) and global climate change will have on current human populations, it becomes quickly obvious to anyone remotely informed that biodiversity itself is the much greater treasure to protect than the questionable benefits of continuing to promote massive agricultural operations that can only be viable, to the extent they ever were, for a very short time. 27-1

We do not have time to keep making mistakes that have already been made in the name of profit. I ask that you do what is ethically viable for the continuation of biodiversity and life on this planet.

Thank you.

Hellä Sekaisin
--

sekaisin@fastmail.fm

From: Rondal Snodgrass [ravenswatch@asis.com]
Sent: Monday, December 08, 2008 7:02 PM
To: bwilliams@dfg.ca.gov
Subject: Fwd: Shasta and Scott River Permits

Subject: Shasta and Scott River Permits

To Bob Williams
California Dept. of Fish and Game

I am concerned that Endangered Species and Stream Alteration Permits proposed for both the Scott and Shasta rivers could violate the California Environmental Quality Act. 28-1

Low flows seems to be the main issue in Coho, Steelhead, and Chinook recovery. Regulating water pumping directly from rivers and groundwater pumping are now necessary facts of water resource protection.. 28-2

Please do not delegate your responsibilities to Conservation Districts that have primarily been dominated by water users. The public trust is the measuring stick for water regulation. 28-3

Thank you,

Rondal Snodgrass
P. O. Box 221
Bayside, CA 95524

From: felicia sobonya [feliciaterv@sbcglobal.net]
Sent: Sunday, December 07, 2008 9:42 PM
To: bwilliams@dfg.ca.gov

Please leave the survival of the salmon to those who know how to maximize their habitat, spawning and ultimate success.

Giving this to those who could care less is obviously a bad idea.

29-1

Felicia Sobonya
Nevada City CA 95959

From: Lowell Ashbaugh [ashbaugh@ucdavis.edu]
Sent: Tuesday, December 09, 2008 4:06 PM
To: bwilliams@dfg.ca.gov
Subject: Protection of Klamath River Coho
From: Lowell Ashbaugh
677 Equador Place
Davis, CA 95616

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because: 30.1-1

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and are at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. 30.1-2
- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would lose the support of landowners if they were to take regulatory action. 30.1-3
- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 30.1-4
- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin, Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, 30.1-5

August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG. 30.1-6

Sincerely,
Lowell Ashbaugh

Lowell L. Ashbaugh
677 Equador Place
Davis, CA 95616
(530) 758-6722
(530) 752-2848 (work)
http://trc.ucdavis.edu/ashbaugh/

From: Brien Brennan [alvannan@sbcglobal.net]
Sent: Monday, December 08, 2008 9:44 PM
To: bwilliams@dfg.ca.gov
Cc: unofelice@gmail.com
Subject: Klamath Coho salmon

Dear Mr. Williams,

The Endangered Species and Stream Alteration Permits proposed for the Shasta and Scott Rivers are a very bad idea, will not lead to the recovery of Coho and other salmon, violate the California Environmental Quality Act and should be scrapped altogether. 30.07-1

Here is why:

The Scott River salmon are a threatened species. The proposed permits will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. 30.07-2

CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors or themselves. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action. 30.07-3

CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 30.07-4

Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). CEQA inadequacies include: 1. failure to use the best available scientific information; 2. Failure to consider environmental consequences and mitigate for those consequences; 3. Inconsistency with other laws and regulation including C-ESA, Water Codes and Fish & Game Codes; 4. Failure to consider alternatives to the proposed action, and 5. Failure to fully describe the scale and scope of what is proposed and to put in place a plan to monitor whether the program is protecting Coho and other Public Trust Resources. 30.07-5

CDFG should scale back these permits to only cover restoration actions of the resource conservation districts. 30.07-6

And finally, it is time for public officials at every level of governance to stop turning a blind eye to the upcoming effects of Peak Oil and global climate change. These two factors will profoundly transform our culture. Within the century, human population will decrease significantly, long-distance trade will all but cease, and communities not prepared for the changes will experience miserable years or decades of privation. It becomes quickly obvious to anyone in tune with the current global trends, that the needs of the natural world are more important than the needs of the economic system. Biodiversity itself is the much greater treasure to protect than the so-called "benefits" of agricultural operations that can only be viable—to the extent they ever were—for a very brief time. 30.07-7

Sincerely,
Brien Brennan
7200 South Fork Drive

Red Bluff, CA 96080
530-833-9970

Comment Letter 30.21

From: Margaret Draper
Attorney at Law
POB 176
Bayside, CA 95524

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

As a former Director of the Shasta Valley Resource Conservation District, I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should *not* grant these permits because: 30.21-1

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards. These boards are in the unfortunate position of having to enforce requirements on their peers in farming, and do not exist to enforce regulations. Much of what they do involves friendly persuasion. This did not work back in the 1980s, (witness the current situation) and it will not work now. I have heard insanity defined as continuing to do the same thing and expecting different results. What has *not* been tried is simple: strong regulations to stop all of the following: 30.21-2
- 1] excessive withdrawal of groundwater,
- 2] land-use practices that increase turbidity and temperature of water instream.
- 3] implementation of severe consequences for not adhering to regulation.

- CDFG should not absolutely NOT agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is clearly contrary to the stated objectives of the CDFG, but is also contrary to state law and the public trust doctrine, and should be ended. 30.21-3

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address underlying problem - which is: the lack of underlying water! What an apt analogy…the issue is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. 30.21-4

- Certainly the Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). Agencies and RCD's in the area have known for a generation that the problem with regard to fish species recovering is lack of water, turbidity, and high temperature where there is water. One doesn't even need scientific studies to ascertain this: all you need is the testimony of people like myself who actually remember endless meetings with USCS and various fisheries biologists (from the time when 20 million dollars was allocated to improve the Klamath Watershed - Barry Keene's legislation), trotting out endless slide shows about the ongoing loss of aquatic species…due to lack of water, high temperature, and turbidity.

- The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

30.21-5

Handing this problem over to the foxes to guard the chickenhouses for another generation is a tremendous loss to food production in America. There are plenty of cattle, and very few fish. We know that fish species are a superior food source and are healthiest when obtained from the wild.

30.21-6

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. Any competent EIR cannot escape the conclusion that the problem has been known for many years, and that faulty handling of the issue has worsened the problem. The EIR must fully analyze impacts, assessing progress relative to crises confirmed in the Klamath watersheds in the 1980s, and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

30.21-7

Sincerely,

Margaret Draper

From: PGar [PGar@charter.net]
Sent: Friday, December 05, 2008 1:58 PM
To: bwilliams@dfg.ca.gov; governor@governor.ca.gov
Cc: Felice Pace
Subject: Protect Klamath Coho!

- The proposed permits will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. 30.25-1

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action. 30.25-2

- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 30.25-3

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). CEQA inadequacies include: 1. failure to use the best available scientific information; 2. Failure to consider 30.25-4

environmental consequences and mitigate for those consequences; 3. Inconsistency with other laws and regulation including C-ESA, Water Codes and Fish & Game Codes; 4. Failure to consider alternatives to the proposed action, and 5. Failure to fully describe the scale and scope of what is proposed and to put in place a plan to monitor whether the program is protecting Coho and other Public Trust Resources.

30.25-4 cont.

- CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

30.25-5

From: sking62@suddenlink.net
Sent: Sunday, December 07, 2008 1:59 PM
To: bwilliams@dfg.ca.gov
Subject: Proposed Scott and Shasta Watershed - Wide Permitting Program DEIR
To:
Mr. Bob Williams
California Department of Fish & Game
Redding, CA 96001

Subject:
Proposed Scott and Shasta Watershed - Wide Permitting Program DEIR

Dear Mr. Williams

The purpose of this email is to urge you to look into the proposal by the California Department of Fish & Game to delegate their responsibilities under the California Endangered Species Act and Fish & Game Code to the Scott and Shasta Resource Conservation Districts. As the National Research Council has pointed out (http://books.nap.edu/openbood.php?isgn=0309090970), the Shasta and Scott Rivers are key to the recovery of Coho salmon in the entire Klamath River Basin. The permit programs CDFG has proposed for these valleys would allow the progressive dewatering of the Scott and Shasta rivers to continue and this in turn would prevent recovery of Coho salmon, negatively impact Chinook salmon and make it much more difficult or impossible to correct the failure of the Shasta and Scott to meet water quality standards which protect beneficial uses of water. 30.45-1

The permits which CDFG has proposed granting to these districts are also a bad idea because:

CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The RCDs are not regulatory agencies and will not enforce compliance with permit conditions. 30.45-2

CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law. 30.45-3

Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008, pp.1035-1052(18). 30.45-4

Please tell the CDFG to scale back these permits. CDFG is proposing that these permits apply to the entire agricultural operations of participating farmers and ranchers - including the unregulated pumping of groundwater. Please tell CDFG to scale back these permits to cover only the restoration actions of the resource conservation districts. 30.45-5

Sincerely,
Sam B. King
2626 Elizabeth Road
McKinleyville, CA 95519
sking62@suddenlink.net

NOTE: If we don't act soon, irreparable damage will result which would prevent the resurgence of the native fisheries. The indian populations desperately need healthy rivers that can produce fish so necessary to their diet. The dams need to be removed quickly, and regulation to control the pumping of groundwater needs to be instituted and enforced. We must prevent these life-sustaining rivers from destroyed by the special interests of a few. 30.45-6

From: Sabsmalik12@aol.com
Sent: Monday, December 08, 2008 10:22 AM
To: governor@governor.ca.gov; bwilliams@dfg.ca.gov
Cc: unofelice@gmail.com
Subject: Coho and Chinook Salmon

FAO Governor Schawrzenegger and the Dept of Fish and Game,

The proposed permits will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. 30.53-1

CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish a& Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action. 30.53-2

CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 30.53-3

Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). CEQA inadequacies include: 1. failure to use the best available scientific information; 2. Failure to consider environmental consequences and mitigate for those consequences; 3. Inconsistency with other laws and regulation including C-ESA, Water Codes and Fish & Game Codes; 4. Failure to consider alternatives to the proposed action, and 5. Failure to fully describe the scale and scope of what is proposed and to put in place a plan to monitor whether the program is protecting Coho and other Public Trust Resources. 30.53-4

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface 30.53-5

water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

30.53-5 cont.

Please stop this insanity

30.53-6

Sincerely

Saba Malik

Comment Letter 30.62

From: Amanda Piscitelli
1390 Grant Ave.
Arcata, CA 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because: 30.62-1

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. 30.62-2

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action. 30.62-3

• granting these permits will be in violation of public trust water resources need to be protected.

- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 30.62-4

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18). 30.62-5

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG. 30.62-6

Sincerely, Amanda Piscitelli

From: Marie Wadman [marie@divingswallow.com]
Sent: Tuesday, December 09, 2008 1:15 PM
To: bwilliams@dfg.ca.gov
Cc: unofelice@gmail.com
Subject: Endangered Species and Stream Alteration Permits proposed for the Shasta and Scott Rivers

Dear Mr. Williams,

The proposed permits will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river. 30.79-1

CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish and Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action. 30.79-2

CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended. 30.79-3

Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). CEQA inadequacies include:

1. Failure to use the best available scientific information;
2. Failure to consider environmental consequences and mitigate for those consequences;
3. Inconsistency with other laws and regulation including C-ESA, Water Codes and Fish & Game Codes;
4. Failure to consider alternatives to the proposed action;
5. Failure to fully describe the scale and scope of what is proposed and to put in place a plan to monitor whether the program is protecting Coho and other Public Trust Resources.

30.79-4

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG. 30.79-5

Sincerely,

Marie Wadman
marie@divingswallow.com

ADDITIONAL FORM LETTERS

Letters 30.1 through 30.85

From: Lowell Ashbaugh [ashbaugh@ucdavis.edu]
Sent: Tuesday, December 09, 2008 4:06 PM
To: bwilliams@dfg.ca.gov
Subject: Protection of Klamath River Coho

From: Lowell Ashbaugh
677 Equador Place
Davis, CA 95616

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and are at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.
- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would lose the support of landowners if they were to take regulatory action.
- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.
- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin, Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4,

Form Letters 30.1 through 30.85
file:///G|/206xxx/D206063.00%20-%20Shasta%20Scott%20Watersheds/06...0public%20comments/Joint%20Shasta-Scott%20comments/I_ashbaugh.htm

August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,
Lowell Ashbaugh

Lowell L. Ashbaugh
677 Equador Place
Davis, CA 95616
(530) 758-6722
(530) 752-2848 (work)
http://trc.ucdavis.edu/ashbaugh/

From: Lynn S. Bain
1320 14th St
Eureka, Calif 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action.

- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely, Lynn S Bain

Form Letters 30.1 through 30.85

From: Patricia Bergeron
4050 N Hwy 101
Eureka, Calif 95503

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action.

- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely, Patricia Bergeron

From: Jennifer Berman

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Jennifer Berman
1596 Ocean Dr
McKinleyville, CA 95519

Form Letters 30.1 through 30.85

From: Ginger Bhakti
2066 Golf Course Rd
Bayside, CA 95524

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action.

- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Ginger Bhakti

From: Carolyn Brandenburg
1010 Oakwood Ct Mckinleyville, Ca. 95519

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action.

- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Form Letters 30.1 through 30.85

From: Josh Brown [joshmbrown@hotmail.com]
Sent: Tuesday, December 09, 2008 10:17 AM
To: bwilliams@dfg.ca.gov
Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

From: Josh Brown

2511 Davis Way

Arcata, CA. 95521

To: California Department of Fish and Game

601 Locust Street

Redding, CA96001

Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

After reviewing the DEIR for the Scott and Shasta watersheds I urge you to not grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. These permits are flawed because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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Sincerely,

Josh Brown

Form Letters 30.1 through 30.85

From: LINDA A. CARR, P.O. BOX 176, LOLETA, CA 95551

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

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Sincerely,

Linda A. Carr

From: JAMES CARR
P.O. BOX 176
LOLETA CA 95551

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

James A Carr

Form Letters 30.1 through 30.85

From: Rebekah Chappel
P.O. Box 372
Ferndale, CA 95536

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Rebekah Chappel

From: David Clark
2327 Tulip Ct.
Mckinleyville Ca. 95519

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Form Letters 30.1 through 30.85

From: Yvonne Cooney
1915 Henderson St
Eureka, CA 95501-3123

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

From: Dolcie Cooper

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Dolcie Cooper

Form Letters 30.1 through 30.85

From: JEFF CORRAL-RIBORDY, MD
1917 S ST
EUREKA, CA 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

JCR

From: lyra cressey [lyracressey@hotmail.com]
Sent: Saturday, December 06, 2008 3:58 PM
To: bwilliams@dfg.ca.gov
Cc: unofelice@gmail.com
Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

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Form Letters 30.1 through 30.85
file:///G|/206xxx/D206063.00%20-%20Shasta%20Scott%20Watersheds/06...20public%20comments/Joint%20Shasta-Scott%20comments/I_cressey.htm

Lyra Cressey
PO Box 34
Forks of Salmon, CA
96031

From:

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely, Terry Leardeff

Form Letters 30.1 through 30.85

From: Kira Deschaux
PO Box 598
Arcata, CA 95518

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely, Kira Deschaux

From: M. DESABRINO, 7565 ELK RIVER RD, EUREKA, CA. 95503

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Form Letters 30.1 through 30.85

From: MARY DUNN
1644 VICTOR BLVD
ARCATA, CA 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

From: Teresa Evans
6281 Sesame Ln
Eureka, Ca. 95503

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Teresa Evans
6281 Sesame Ln

Form Letters 30.1 through 30.85

From: Edward Forsyth
318 12th Street
Arcata, CA 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action.

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Edward Forsyth

From: Ali Freedlund
1304 Sunset Avenue
Arcata, CA 95521
ali@mattole.org

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely, Ali Freedlund

Form Letters 30.1 through 30.85

From: Grace Gold
480 Hilledge Dr
Laguna Beach, CA 92651

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely, Grace Gold

From: Gregg GOLD
1513 Beverly Dr
Arcata, CA 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

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Sincerely,

Gregg Gold

Form Letters 30.1 through 30.85

From: Rosalinda Gonzalez
54 G Street
Arcata CA 95521
or
21841 Jimetes
Mission Viejo CA 92691

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Rosalinda Gonzalez

12/8/08

From: Amy Gordon
4270 Excelsior Road
Eureka, CA 95503
(707) 269-9519

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

You have proposed granting permits to the Scott and Shasta Resource Conservation Districts. I have strong reservations about your proposals for the following reasons:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is **low flows** and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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Sincerely,
Amy Gordon
Amy Gordon

Form Letters 30.1 through 30.85

From: Erin C. Hannelly
PO Box 193
Trinidad, CA 95570

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

From: Jenny Hanson
po Box 490, Arcata, CA 95518

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,
Jenny Hanson

Form Letters 30.1 through 30.85

From: Catherine Hart
1117 K Street
Eureka, CA 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

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Sincerely,
Catherine Hart

From: Ted Humphrey 1736 Fickle Hill Arcata CA 95521 12/8/08

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

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Form Letters 30.1 through 30.85

From: Cindy Humphrey 1736 Fickle Hill arcata, Ca 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

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Sincerely, Cindy Humphrey

From: Nancy Ihara [nancyihara@yahoo.com]
Sent: Monday, December 08, 2008 6:30 PM
To: bwilliams@dfg.ca.gov
Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

From: Nancy R. Ihara
231 Dean St.
Arcata, CA 95521
nancyihara@yahoo.com

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at bwilliams@dfg.ca.gov

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

Some years ago I travelled through Scott Valley. I have memories of a barely existent Scott River. Because of those memories I share the concerns of so many regarding the policies of your Department which threaten further the existence of this river and those of the Shasta River.

I urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

• They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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Sincerely,

Nancy R. Ihara

The proposed permits will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). CEQA inadequacies include: 1. failure to use the best available scientific information; 2. Failure to consider environmental consequences and mitigate for those consequences; 3. Inconsistency with other laws and regulation including C-ESA, Water Codes and Fish & Game Codes; 4. Failure to consider alternatives to the proposed action, and 5. Failure to fully describe the scale and scope of what is proposed and to put in place a plan to monitor whether the program is protecting Coho and other Public Trust Resources.

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Form Letters 30.1 through 30.85

From: Eva Janson
1632 P St
Eureka CA 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Eva Janson

From: Vaden Jantz

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely, Vaden Jantz

Form Letters 30.1 through 30.85

From: Todd Jenkins
617 11th Street
Huntington Beach, CA 92648

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action.

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- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

From: Susan Johnson
1308 Wood St
Eureka, CA 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Susan Johnson

Form Letters 30.1 through 30.85

From: Jeannine Kapelian
1005 K St.
Eureka, Ca. 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Jeannine Kapelian

From: Paul & Barbara Kelly
2670 Kelly Ave.
McKinleyville, CA 95519

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely, Barbara C. Kelly
Paul Kelly

Form Letters 30.1 through 30.85

From: bkenn202@asis.com
Sent: Tuesday, December 09, 2008 9:10 AM
To: bwilliams@dfg.ca.gov
Subject: Klamath Coho Comment Letter

Please make this letter part of the public record. Thank you.

From: Barbara Kennedy, 202 Lum Street, P.O. Box 29,
Weott, CA 95571

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at bwilliams@dfg.ca.gov

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely, Barbara Kennedy

This message was sent using IMP, the Internet Messaging Program.

Form Letters 30.1 through 30.85

From: MELANIE KUHNEL
1604 G ST
EUREKA CA 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Melanie Kuhnel

From: Ron Kuhnel
1604 G St
Eureka CA 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Ron Kuhnel

Form Letters 30.1 through 30.85

From: Jennifer Lance [jlance@hughes.net]
Sent: Sunday, December 07, 2008 10:22 AM
To: bwilliams@dfg.ca.gov
Subject: Endangered Species and Stream Alteration Permits proposed for the Shasta and Scott Rivers

- The proposed permits will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). CEQA inadequacies include: 1. failure to use the best available scientific information; 2. Failure to consider environmental consequences and mitigate for those consequences; 3. Inconsistency with other laws and regulation including C-ESA, Water Codes and Fish & Game Codes; 4. Failure to consider alternatives to the proposed action, and 5. Failure to fully describe the scale and scope of what is proposed and to put in place a plan to monitor whether the program is protecting Coho and other Public Trust Resources.

- CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Jennifer Lance
jlance@hughes.net
jennifer@greenoptions.com

Founder, Editor, and Writer
Eco Child's Play

http://ecochildsplay.com

Lead Writer/Editor
Really Natural
http://reallynatural.com

Contributing Writer
Red, Green, and Blue
http://redgreenandblue.org

Form Letters 30.1 through 30.85

From: Charlene Lantelme
274 Hidden Valley Rd
Bayside Ca 95524

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Charlene Lantelme

From: Linda Lee

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Form Letters 30.1 through 30.85

From: Tom Leskiw
5440 Cummings Road
Eureka, CA 95503

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

From: Selene M. LevesQue

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Selene Naman LevesQue

Form Letters 30.1 through 30.85

From: Nancy Marie
1718 Blokaleeave.
Arcata, CA. 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Nancy Marie

From: Alan McCann-Sayles [alanpol@humboldt1.com]
Sent: Monday, December 08, 2008 8:54 AM
To: bwilliams@dfg.ca.gov
Subject: Please stop the Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

California Department of Fish and Game
601 Locust Street
Redding, CA 96001
Attn: Bob Williams

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

Please Do not grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. I believe you should not grant these permits because:

They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

Also the environmental documents prepared for these permits seem inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA).

Sincerely,

Alan McCann-Sayles
1696 Ocean Drive
McKinleyville, CA 95519

Form Letters 30.1 through 30.85

From: Melvin McKinney
P.O. Box 78 Cutten Ca. 95534

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

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Sincerely,

Melvin McKinney

From: Roberta Mickelson
Po Box 944
Trinidad, CA. 95570

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

- CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish & Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action.

- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.1; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Roberta Mickelson

Form Letters 30.1 through 30.85

Scott Shasta DEIR

From: Ken Miller [tamer1@suddenlink.net]
Sent: Sunday, December 07, 2008 2:24 PM
To: bwilliams@dfg.ca.gov
Subject: Scott Shasta DEIR
From: Ken Miller, MD
1658 Ocean Drive
McK, CA 95519
12/7/08

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,
I am writing today to urge you ***not*** to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

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Sincerely,

Scott Shasta DEIR

Ken Miller, MD

Form Letters 30.1 through 30.85

From: Carol Newkirk
3465 McLean Street
Eureka, CA 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

From: Jesse Noell

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,
Jesse Noell, 8050 Elk River Rd. Eureka, CA 95503

Form Letters 30.1 through 30.85

From: Jim Peterson [tye_one_on@hotmail.com]
Sent: Saturday, December 06, 2008 8:26 AM
To: Arnold Schwarzenegger
Cc: Bob Williams; Bob Nakagawa; Steve Korbay
Subject: RE: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

From: James H. Peterson

909 Dana Drive #2F257

Redding, California 96003

To: California Department of Fish and Game

601 Locust Street

Redding, CA96001

Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

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Sincerely,

James H. Peterson

Form Letters 30.1 through 30.85
file:///G|/206xxx/D206063.00%20-%20Shasta%20Scott%20Watersheds/06...20Shasta-Scott%20comments/I_peterson2--compare%20with%20other.htm

From: Gerald C. Rees Jr.
1860 Wavecrest Ave
McKinleyville, CA
95519

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

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Sincerely,

Gerald C. Rees Jr.

Form Letters 30.1 through 30.85

From: Rick Reese and Lisa Keller
2330 W. Shell St.
Martinez, CA 94553

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

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Sincerely,

Richard Reese

Lisa Keller

From: Jeanne Reilly
PO Box 635
Blue Lake CA 95525

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Form Letters 30.1 through 30.85

From: ALAN SAMUEL 1013 K ST EUR 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

From: Austin Scales [jascales@hotmail.com]
Sent: Sunday, December 07, 2008 5:22 PM
To: bwilliams@dfg.ca.gov
Cc: unofelice@gmail.com
Subject: Regarding the Klamath Salmon
Dear Mr. Williams,

The proposed permits will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

CDFG should not delegate responsibility for enforcing the California Endangered Species Act and the Fish a& Game Codes to local resource conservation district boards which are dominated by farmers and ranchers who would be required to enforce the law on their neighbors. The Scott and Shasta Resource Conservation Districts have stated many times that they are not regulatory agencies and would loose the support of landowners if they were to take regulatory action.

CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). CEQA inadequacies include: 1. failure to use the best available scientific information; 2. Failure to consider environmental consequences and mitigate for those consequences; 3. Inconsistency with other laws and regulation including C-ESA, Water Codes and Fish & Game Codes; 4. Failure to consider alternatives to the proposed action, and 5. Failure to fully describe the scale and scope of what is proposed and to put in place a plan to monitor whether the program is protecting Coho and other Public Trust Resources.

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Form Letters 30.1 through 30.85
file:///G|/206xxx/D206063.00%20-%20Shasta%20Scott%20Watersheds/06...%20public%20comments/Joint%20Shasta-Scott%20comments/I_scales.htm

Austin Scales

From: Sherman Schapiro
Box 1142
Blue Lake CA 95525

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

- They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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- CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

- Environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA). The most important inadequacy is failure to use the best available scientific information including: "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin", Van Kirk, Robert W.[1]; Naman, Seth W., Journal of the American Water Resources Association, Volume 44, Number 4, August 2008 , pp. 1035-1052(18).

CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,

Form Letters 30.1 through 30.85

From: Sarah Scher [sarahpol@humboldt1.com]
Sent: Monday, December 08, 2008 8:44 AM
To: bwilliams@dfg.ca.gov
Subject: Please DO NOT grant permits to the Scott and Shasta Resource Conservation Districts

From: Sarah Scher, MD
770 Tenth Street
Arcata, CA 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

Please DO NOT grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. I believe you should not grant these permits because:

They will not lead to the recovery of Coho salmon and present an additional risk to Coho, Chinook salmon and Steelhead trout because they do not address the core reasons these fish are threatened and at risk. That core reason is low flows and the progressive dewatering of these key Klamath tributaries as a result of unregulated groundwater pumping and (in the Shasta) unregulated pumping of water directly from the river.

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CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be ended.

I further believe that the environmental documents prepared for these permits are inadequate, incomplete and do not comply with the California Environmental Quality Act (CEQA).

Thank you.

Sincerely,

Sarah Scher

--

What is hateful to you, do not do to your fellow men. That is the entire law, all the rest is commentary.
--Talmud

Hurt not others with that which pains yourself.
--Udana-Varga, Buddhism

This is the sum of duty; do naught to others which if done to thee would cause thee pain.
--The Mahabarata, Hinduism

No one of you is a believer until he desires for his brother that which he desires for himself.
--Hadith

Form Letters 30.1 through 30.85

From: BRETT SHULER
936 11TH ST
ARCATA CA
95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

I am writing today to urge you not to grant permits to the Scott and Shasta Resource Conservation Districts as you have proposed. You should not grant these permits because:

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely, Brett Shuler 12/7/08

From: Star Siegfried RN, IBCLC
145 Boggton Prairie Rd.
Arcata Ca 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,
Star Siegfried

Form Letters 30.1 through 30.85

From: John St. Marie
1404 Foster Ave #3
Arcata, CA. 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

Dear California Department of Fish & Game,

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CDFG should scale back these permits to cover restoration actions of the resource conservation districts and agricultural surface water diversions. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG.

Sincerely,
John St. Marie

From: CeeJaySee@aol.com
Sent: Friday, December 05, 2008 3:19 PM
To: bwilliams@dfg.ca.gov
Subject: Attn: Bob Williams Proposed Scott and Shasta Watershed-Wide Permitting Program D
From:
Connie Stringer
25079 Bachelor Lane
Bend, OR 97701

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at bwilliams@dfg.ca.gov

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Form Letters 30.1 through 30.85
file:///G|/206xxx/D206063.00%20-%20Shasta%20Scott%20Watersheds/06%...20public%20comments/Joint%20Shasta-Scott%20comments/I_stringer.htm

Sincerely,
Connie Stringer

From: Kerry Sweeney
PO Box 775
Ferndale CA 95536

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

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Sincerely, Kerry Sweeney

Form Letters 30.1 through 30.85

From: Liz Thompson
1513 Beverly Dr.
Arcata, CA 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely, Liz Thompson

From: JACQUELINE THORPE
1135 K ST.
EUREKA CA. 95501

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,

Jacqueline E Thorpe

From: Carol Vander Meer [carol.vandermeer@gmail.com]
Sent: Monday, December 08, 2008 8:07 AM
To: bwilliams@dfg.ca.gov
Subject: letter from Carol Vander Meer opposing proposed Scott and Shasta RCD permits
From: Carol Vander Meer
P.O. Box 12, Arcata, Ca 95518

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,
Carol Vander Meer

--
Carol Vander Meer
carol@friendsofthedunes.org
707-444-1397
cell: 707-834-4113

Form Letters 30.1 through 30.85

From: Mary Lou Weaver
2850 Sunny Grove Ave
McKinleyville CA 95519

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely,
Mary Lou Weaver

From: David Weinstein
1985 B. rd Ave
Mckinleyville CA 95519

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

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David Weinstein

Form Letters 30.1 through 30.85

From: Nora Winge

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Nora Winge

From: Wayne Woolf

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely, Wayne Woolf
1596 Ocean Dr.
McKinleyville, Ca 95519

Form Letters 30.1 through 30.85

From: Jael R Ziegler
4500 Fickle Hill Road
Arcata, CA 95521

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

Subject: Proposed Scott and Shasta Watershed-Wide Permitting Program DEIR

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Sincerely, Jael R Ziegler

Form Letters 30.1 through 30.85

From: Leon Zlatkovic
6668 Tanglewood
Eureka Ca 95503

To: California Department of Fish and Game
601 Locust Street
Redding, CA96001
Attention: Bob Williams at **bwilliams@dfg.ca.gov**

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Sincerely,

Karuk Tribe of California

Department of Natural Resources
Post Office Box 282
Orleans, CA 95556
(530) 627-3446 Fax (530) 627-3448

Administrative Office
Post Office Box 1016
Happy Camp, CA 96039
(530) 493-5305 Fax (530) 493-5322

Karuk Tribal Health Clinic
Post Office Drawer 249
Orleans, CA 95556
(530) 627-3452 Fax (530) 627-3445

December 9, 2008

Mr. Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001
Email: SHASTADEIR@dfg.ca.gov

RE: Shasta River Watershed-Wide Permitting Program

Mr. Bob Williams,

The Karuk Tribe is submitting comments on the Shasta River Watershed Wide Permitting Program. Restoration of the Shasta River Watershed is vital to the health of Tribal Trust fish species. Please contact Susan Corum, Water Quality Coordinator, (530) 469-3456, scorum@karuk.us, if you have any questions regarding our comments.

Sincerely,

Earl Crosby

Interim Director
Department of Natural Resources

MEMORANDUM REPORT

EXECUTIVE SUMMARY

While the California Department of Fish and Game (CDFG) appears to have noted receipt of the relevant materials (e.g., QVIR 2005) and recommendations (QVIR 2006) submitted earlier by the Quartz Valley Tribe (QVIR)concerning the proposed development of a Shasta River coho salmon Incidental Take Permit (ITP), few if any of the issues of substance raised by QVIR in their submittals to CDFG have actually been addressed by the Department in its *Draft Environmental Impact Report* (DEIR) for the Shasta Watershed Wide Permitting Program. 34-1

The DEIR is driven by an ITP proposal submitted by the Shasta River valley farming community. The plan fails to address the issues of streamflow and groundwater depletion and their associated water quality problems which are the documented root causes of coho salmon decline in the Shasta River watershed.

While the measures recommended might improve some conditions for coho salmon, at the margin and at substantial cost, taken together they will not improve stream conditions sufficiently to assure that actions to be permitted under the proposed Watershed Wide Permitting Program will not cause further jeopardy to the species. The DEIR does not, therefore, meet the requirements of the California Endangered Species Act (CESA) nor those of the California Environmental Quality Act (CEQA) and it is, in our view, open to successful challenge in court should CDFG proceed to adopt only a lightly revised final version of this EIR. 34-2

Because the improvements to the DEIR previously recommended by the Tribes (QVIR 2006, 2005) and noted in the DEIR have simply been ignored, we will not bother to restate them all here. Instead, the most significant and fatal flaws of the Watershed Wide Permitting Program strategy will be pointed out below and we will describe briefly a scientifically-based approach for preventing further jeopardy to Shasta River coho salmon. 34-3

DETAILED COMMENTS

Dwinnell Dam

Although the DEIR identifies Dwinnell Dam removal as an option, it rejects it as infeasible because there are no alternative water supplies or systems of delivery for the Montague Water Conservation District with which to serve its customers. It also opines that "…CDFG does not have the statutory authority to require MCWD to decommission and dismantle the dam, and it does not appear that other governmental agencies have such authority. For that reason alone, this alternative might not be feasible." (p. 5-9) 34-4

In fact, as stated in the Tribes' earlier comments on this project, California Fish and Game Code (CF&GC) §5937 says that CDFG is not to allow streams to be dewatered. The passage of this statute preceded the construction of Dwinnell Dam, the operators of which make no provision to protect fishlife below it (Figure 1).

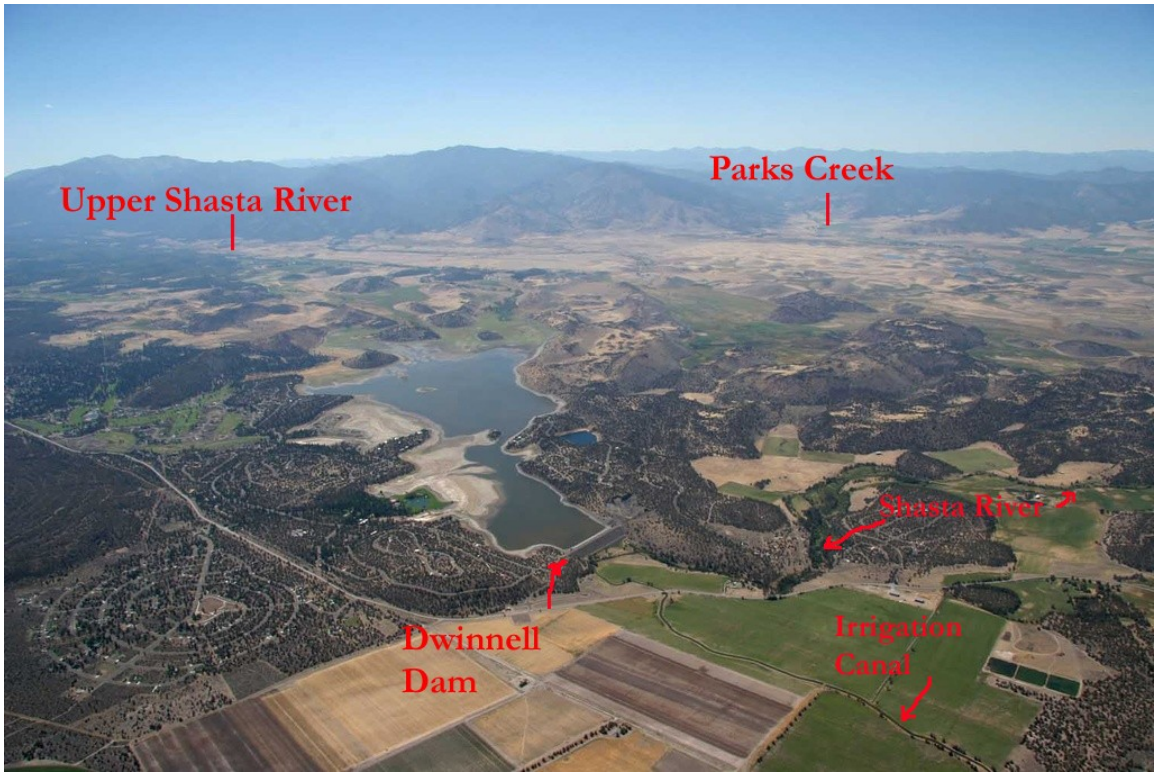


Figure 1. Dwinnell Dam blocks access to upstream migration of coho to the upper Shasta River and tributaries and water from Parks Creek is diverted to fill the reservoir above it. Dwinnell Dam does not release water to the Shasta River. Photo by Thomas Dunklin.

The DEIR does not explain why it thinks CDFG lacks the authority to enforce (CF&GC) §5937. The DEIR essentially attempts to legitimate Dwinell's illegal operation under the Watershed Wide Permitting Program by treating it as part of the baseline conditions: "Dwinnell Dam and its impacts on the hydrology and aquatic resources of the Shasta River are part of existing physical conditions in the Program Area (i.e., it is part of the baseline), which will continue with or without the Program". In fact, operation of Dwinnell Dam constitutes a major "take" of coho salmon and is a documented contributor to the jeopardy of Shasta River coho salmon (see Jeopardy Issues).

34-4 cont.

The National Research Council (2004) urged that serious consideration of removal of Dwinnell Dam because of the substantial amount of habitat that would be opened up for endangered coho. NRC pointed out that in a global warming scenario, Mt. Shasta, alone, is expected to get increased snow fall, which makes the Shasta River the best potential future refugia for Klamath River salmon species. In order to decrease the risk of loss of coho salmon, the population's spatial distribution and its productivity need to be increased (Williams et al. 2006). Removing Dwinnell Dam would be one way to do that expeditiously.

Water quality in Dwinnell Reservoir is extremely poor during the summer months (Vignola and Deas, 2005), as is that of other eutrophic reservoirs in the Klamath Basin like Iron Gate and Copco Reservoirs on the mainstem Klamath River. The prevalence of warm water fish species in Dwinnell Reservoir is indicative of its poor water quality.

Dwinnell Reservoir stratifies thermally during the summer season. The reservoir's upper layer is warm, the water has a high pH, and hosts nuisance blooms of blue green algae

34-5

including toxigenic *Anabaena flos-aquae* (NCRWQB, 2005). The deeper layer of water is cooler, oxygen-deprived, and nutrient rich. The nutrients in these deeper waters accumulate from the settling of organic matter from above and from internally-generated nutrients released from the anoxic sediments underlying the reservoir waters (Vignola and Deas, 2005). The water released from Dwinnell Dam comes from the depths of the reservoir and thus the dam discharges the same degraded water quality (i.e. low oxygen and high ammonia) as its source. Consequently, flows released downstream in summer now degrade water quality in the mainstem Shasta River. 34-5 cont.

Water quality nuisances and a major source of exotic fish species introduction could be abated by the removal of Dwinell Dam. The river's coho salmon's chances for recovery would be increased substantially.

Surface and Groundwater Issues

Shasta River water quality problems are acknowledged as being related to low flow conditions (NCRWQCB 2006, NRC 2004) and it is also acknowledged that temperature problems, in particular, cannot be resolved without increasing streamflow in the river. To that end, the SWRCB (NCRWQCB 2006) has acted "to increase the dedicated cold water instream flow in the Shasta River by 45 cfs or alternative flow regime that achieves the same temperature reductions from May 15 to October 15" by 2011. CDFG discusses the flow options and benefits of increased flow, but fails to conform its policy to that of the SWRCB. CDFG's flow goal, instead, is for minimum flows of 20 cfs by 2015.

Without substantially improved flows, coho salmon will remain in jeopardy under the Watershed Wide Permitting Program, which CDFG admits is illegal. (see Jeopardy Issues).

CDFG fails to reference the work of the U.S. Geologic Survey (Mack 1960) but acknowledges that historic flows at the mouth of Big Springs Creek were apparently on the order of 100 to 120 cfs. These flows were undiminished as of 1980, when the California Department of Water Resources (DWR, 1981) found that the highest concentration of Chinook salmon spawning was in this reach of the river, where hundreds of salmon redds were observed. The DEIR describes how Big Springs Creek was dried up and Little Springs Creek virtually obliterated (Figure 2), but fails to note that these practices are legally questionable: 34-6

> "While Big Springs Creek typically maintains substantial flow at its confluence with the Shasta River, the entire flow of Little Springs Creek is often diverted for flood irrigation during much of the summer. Prior to the mid 1980s, in addition to the above two diversions, the Big Springs Irrigation District (BSID) also utilized a surface water diversion from Big Springs Lake, but found itself increasingly restricted in order to assure that higher priority water users further downstream received their water. Eventually the BSID drilled several relatively shallow wells and effectively abandoned their surface water right for unregulated groundwater, presumably originating from the same aquifer that feeds Big Springs Creek and the other springs in the area." (p. 3.3-32)

As pointed out in the Tribes' previous comments (QVIR 2005, 2006) and readily-available reports (Kier Associates 1999), the diversion of Big Springs is clearly recognized as

connected to surface hydrology and such requires a permit for appropriative use from the SWRCB Water Rights Division (WRD). The flow depletion has converted what was once a cold refugia that gave life to the Shasta River below Dwinnell Dam to a tepid shrunken creek. Thermal infrared radar imagery (Watershed Sciences Limited 2004) of Big Springs Creek shows that it warms to 21 C as it meets the Shasta River (Figure 3), a water temperature much too warm for coho salmon (McCullough 1999; Sullivan 2000). The cumulative impacts on the mainstem Shasta of this diversion represent a high level of take. Without increased flows at Big Springs coho shall remain in jeopardy of extinction.

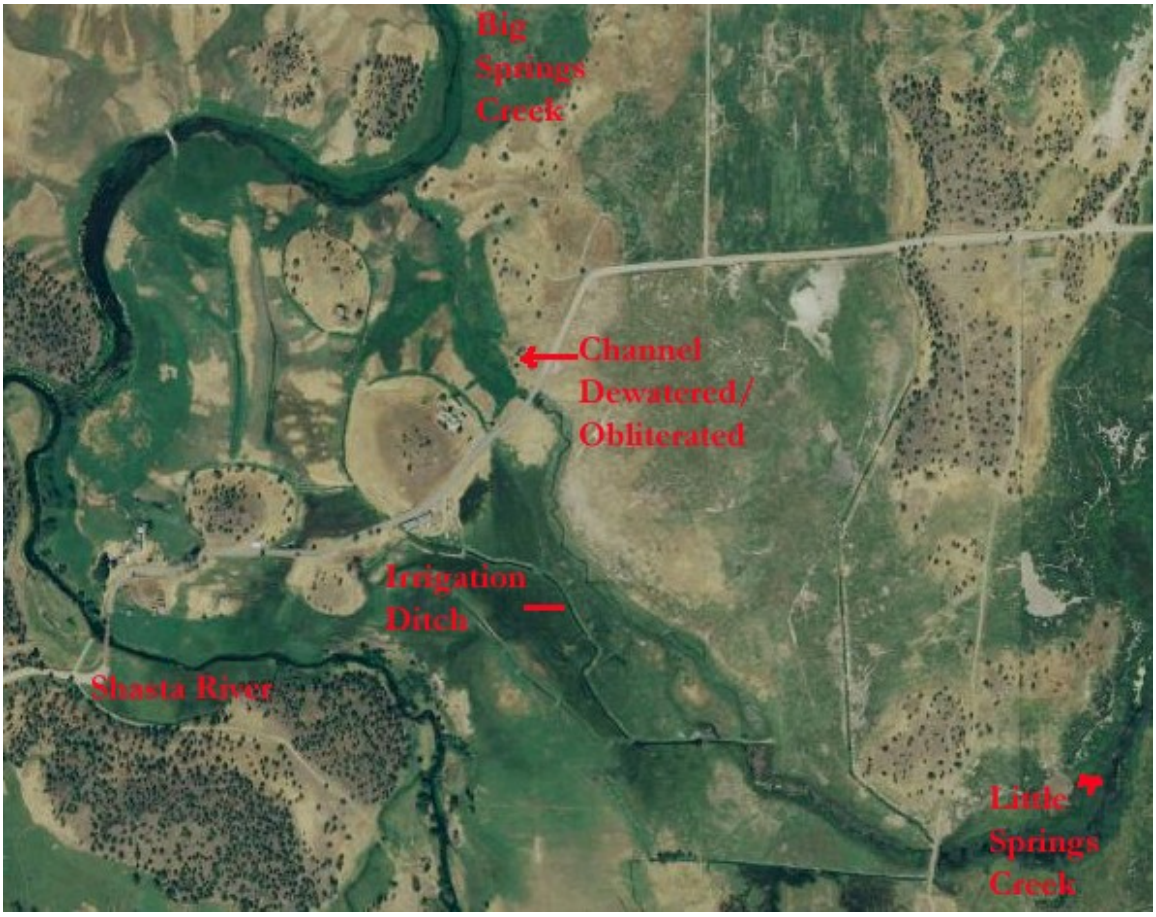


Figure 2. Little Springs Creek is at lower right but is completely diverted and its lower channel obliterated. The Shasta River below Dwinnell is at left and Big Springs Creek at top.

34-6 cont.

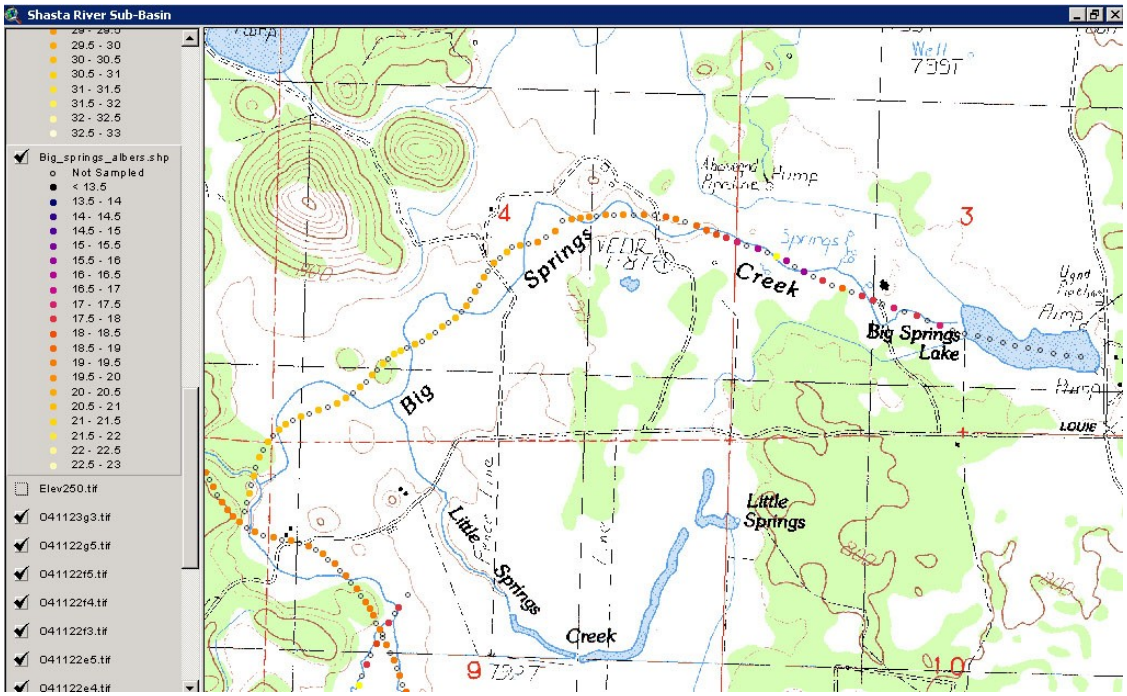


Figure 3. This thermal infrared radar image of Big Springs Creek shows that flow depletion is causing the stream to warm from suitable for coho (<16 C) to stressful for all salmonids (>21 C).

34-6 cont.

Parks Creek also joins the Shasta River near the convergence of Big Springs Creek and could also provide a refugia. Instead virtually all its water is shunted into Dwinnell Reservoir and its lower reaches, which are spring fed, are channelized and dewatered (Figure 4). Thermal infrared imagery of lower Parks Creek shows how dewatering contributes locally to increased water temperatures (Figure 5). With little flow coming from Dwinnell Dam, and with Big Springs Creek diminished in flow by 80% and Parks Creek dried up, there is little wonder that the entire Shasta River is experiencing an ecosystem crisis and that its coho salmon remain in jeopardy and are at high risk of extinction.

Pesticides and Herbicides

Despite a clear request in the Tribes' scoping comments (QVIR 2006) for a discussion of pesticide and herbicide use associated with agricultural practices in the Shasta River basin, the DEIR fails to address the issue. Thousands of pounds of pesticides are being applied each year in the Shasta River Basin (Figure 6). Many of these chemicals are known to be harmful to salmonids (Ewing 1999, NCAP 1999). NMFS (2008) recently found in a Biological Opinion to the U.S. EPA that products containing chlorpyrifos, diazinon, and malathion have significant impacts on endangered species. According to the California Pesticide Use Reporting Database[1], these three chemicals are currently in use in the Shasta River basin. Gilliom et al. (2006) point out that while some highly utilized chemicals like hexazinone may break down quickly in the atmosphere, they can be very persistent in groundwater. USGS surveys commonly find this substance in agricultural aquifers.

34-7

[1] http://www.ehib.org/tool.jsp?tool_key=18

In that the DEIR fails to address pesticide and herbicide use related to the Shasta River activities to be permitted under the Watershed Wide Permitting Program, the DEIR fails to meet the standards of CEQA.

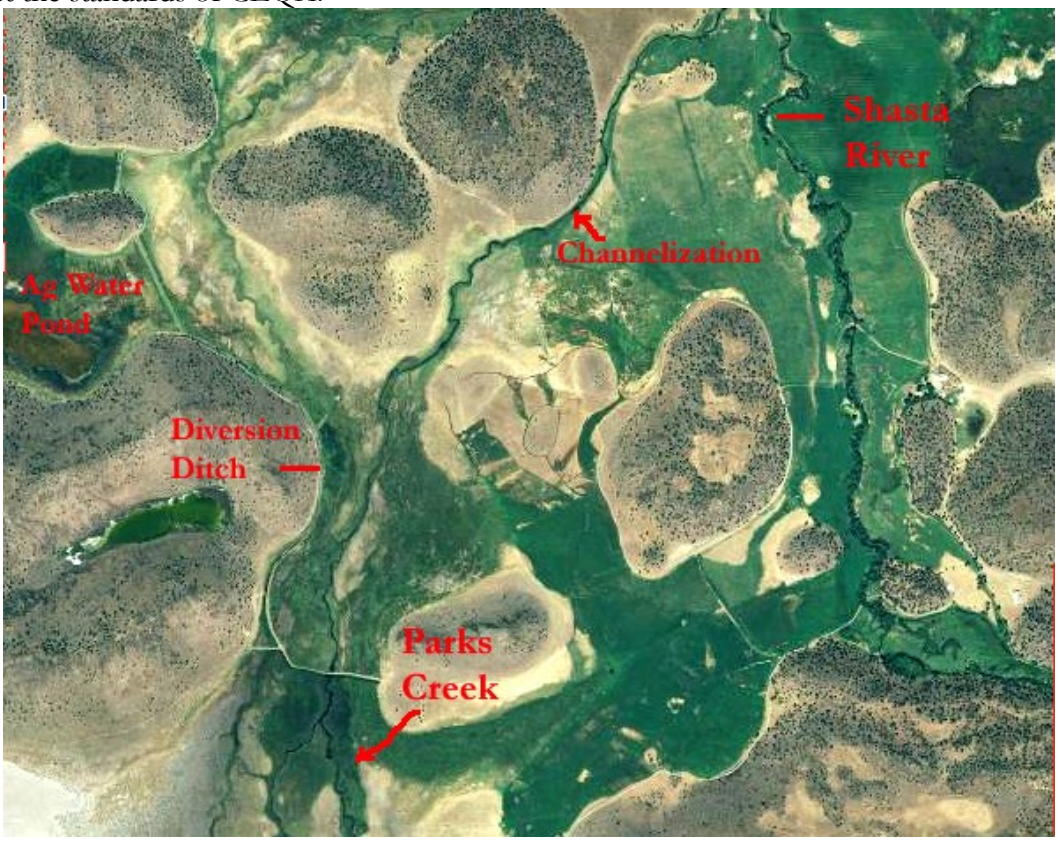
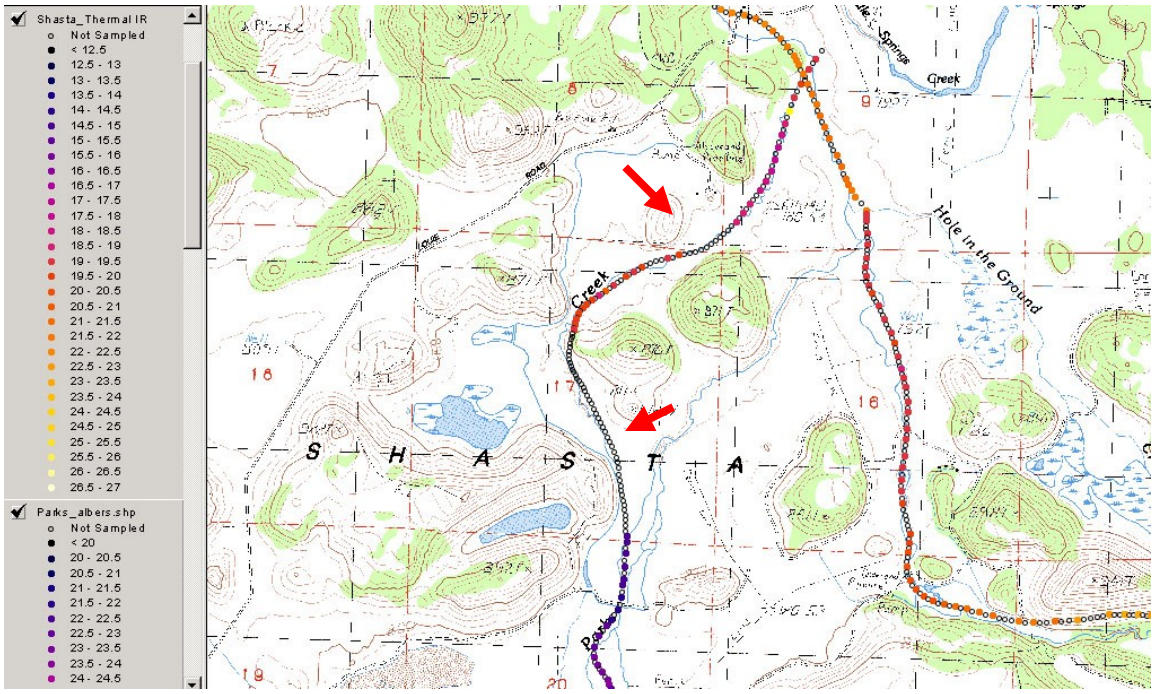


Figure 4. Lower Parks Creek is shown here in a 2005 aerial photo that demonstrates dewatering, channelization and loss of fisheries productivity in what could easily be converted into a refugia.



34-7 cont.

Figure 5. Thermal infrared imagery of lower Parks Creek shows how flow depletion of spring flow is very cold but that the stream becomes warm when most of the water is diverted from its channel. Red arrows show dry reaches (Watershed Sciences LLC 2004).

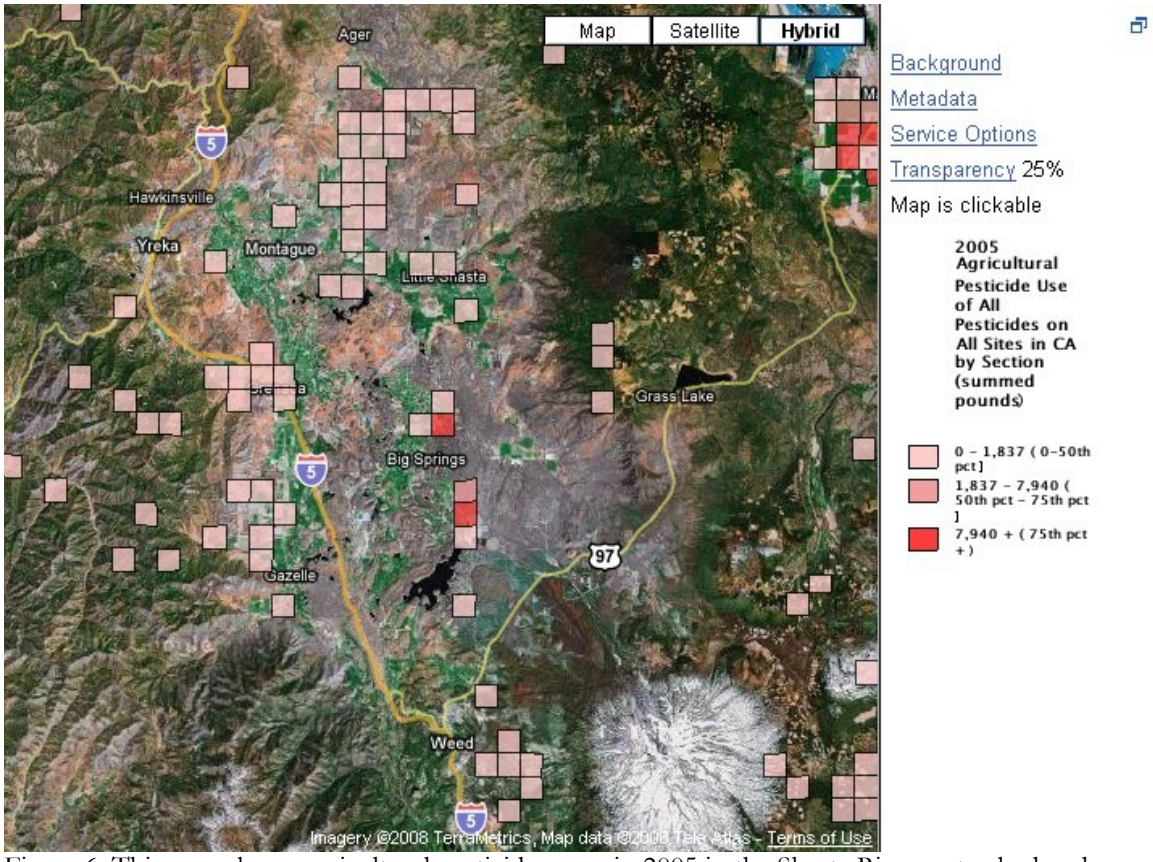


Figure 6. This map shows agricultural pesticide usage in 2005 in the Shasta River watershed and surrounding area, in units of total pounds of pesticide applied per section (square mile). Map was created using the California Environmental Health Tracking Program (CEHTP) Agricultural Pesticide Use Web Map Service (WMS), a map interface that facilitates access to the California Department of Pesticide Regulation's (CDPR) Pesticide Use Reporting (PUR) database. The map can be accessed at: http://www.ehib.org/tool.jsp?tool_key=18

34-7 cont.

Jeopardy Issues

The DEIR/CDFG assert that conditions as of the SVRCD (2005) ITP application submission date constitute baseline conditions and argue that only positive change will result from the Watershed Wide Permitting Program. In fact the evidence presented in the DEIR show drastic reductions in surface flow in the Shasta River in recent years as a result of increased surface and groundwater use (NRC 2004, Kier Associates 1999, QVIR 2005, 2006). The DEIR in some places describes coho salmon habitat destruction as a matter of fact, but then fails to follow up and show how habitat will be restored and how continuing problems with "take" related to these practices will be diminished. In fact, activities that have resulted in the collapse of the Shasta River ecosystem with regard to supporting coho

34-8

salmon will continue to occur under the ITP and marginal changes in existing practices are not sufficient to prevent jeopardy to coho salmon.

The actions contemplated under the Watershed wide Permitting Program will continue to place Shasta River coho salmon in jeopardy. The "project" addressed here does not, therefore, comply with CESA or CEQA.

The DEIR states that:

> "This Permit may be terminated by the Department at its sole discretion if circumstances or new information provides evidence that continued program implementation may result in jeopardy to coho salmon, or if such termination is required by law or court order. For the purpose of the Permit, 'jeopardy' includes, but is not limited to, to the probable extirpation of any coho salmon cohort."

34-8 cont.

There is strong evidence showing that Shasta River coho salmon are currently in jeopardy and are likely to remain so. For example, downstream migrant traps on the Shasta River between 2000-2002 captured between 212 and 747 coho juveniles from February to July. The same weak year class pattern described in the Scott River prevails, as well, in the Shasta River.

ADDITIONAL COMMENTS

The proposed ITP and DEIR lack a process to quantify or measure coho "take" therefore is unclear how protection actions will function or mitigation for "take" can be justified.

The DEIR describes agricultural impacts in generic terms, without details or linkages to coho ecology. A clear understanding of agricultural impacts is needed to protect and or mitigate "take" of coho salmon. The basic understanding of coho ecology in the Scott River and Shasta River is limited due to many factors including; the lack of on the ground assessments and studies on agricultural impacts, limited landowner cooperation and limited funding. There is a general reluctance by CDFG to prioritize funding studies and research because these projects lack tangibles (e.g. miles of habitat restored) otherwise found with on the ground restoration projects.

34-9

The "Programmatic Approach" described in the DEIR is problematic because it assumes all impacts from agricultural users are shared while some users may have greater impacts than others. Accountability of impacts from individual users is diluted due the programmatic approach therefore enforcement of ITP protection measures is limited.

34-10

Studies that link coho ecology to problems derived from agricultural practices covered in the proposed ITP should be implemented and considered so that actions in the DEIR are scientifically justified. Furthermore, funding on the ground restorations actions has been prioritized by CDFG, but without the proper linkages to coho salmon ecological needs. This is relevant because the same salmon restoration actions CDFG typically funds are listed in the ITP as mitigation measured for losses of coho salmon, but without scientific evidence such actions will benefit coho.

34-11

CONCLUSION

Many of the actions that CDFG, the State Water Resources Control Board (SWRCB) Water Rights Division (WRD) and the Department of Water Resources (DWR) would perform under the new Watershed Wide Permitting Program do not require that the contemplated permitting process be created. Rather, these agencies have neglected these duties resulting cumulatively in a continuing and elevated "take" of coho salmon. Through the legitimizing of current harmful practices without more tangible steps for coho protection, illegal activities will continue to be ignored and hopes of public trust resource recovery will be set back substantially. 34-12

The DEIR not only fails to comply with CEQA's requirement for the use of "best science" and for the identification of cumulative watershed effects, and for data sharing, but it also runs counter to CEQA's policy requiring the efficient use of resources "to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment". CDFG has spent $750,000 on the preparation of a DEIR that is deficient on key scientific issues and insufficient to assure the avoidance of continuing jeopardy to the Shasta River coho salmon population. The Department should have spent such funds on enforcing existing laws and restoring legally-required streamflow to the Shasta River. 34-13

Previous comments submitted by QVIR (QVIR 2005, 2006) have pointed out the urgent need to rebuild at-risk Pacific salmon populations in advance of climatic oscillations in the north Pacific Ocean (Hare and Mantua 1999), which will shift to unfavorable ocean conditions and dry on-land conditions sometime between 2015 and 2025 (Collison et al. 2003). Figure 7 displays the long term fall Chinook salmon trends for the Shasta River with Pacific Decadal Oscillation (PDO) trends overlaid. Chinook are less dependent on freshwater habitat than coho salmon, but their long term decline is nonetheless the result of continuing freshwater habitat loss in the Shasta River. The timelines in the Watershed Wide Permitting Program need to reflect such urgency. The current DEIR, to the contrary, allows seven years for some critical steps like getting fish passage at the Scott Valley Irrigation District diversion dam. Targets such as minimum mainstem Shasta River flows of 20 cfs by 2015 are clearly too little too late. 34-14

Shasta River coho salmon cannot be maintained at their current low levels because the likelihood of loss due to storms or other stochastic events is high (Rieman et al. 1993). Coho populations must be aggressively rebuilt by providing refugia (Reeves et al. 1995) in habitats that have high intrinsic potential (Williams et al. 2006) and anthropogenic stressors like livestock use of the riparian zone need to be eliminated to allow full riparian and hydrologic recovery (Kaufmann et al. 1999). Dwinnell Dam operation would continue under the Program, passage to headwaters habitat would remain unavailable, Big Springs flows remain depleted and Parks Creek stays disconnected. These conditions will not recover weak year classes of coho nor the species. Without addressing the factors that have driven coho salmon into jeopardy, the Watershed Wide Permitting Program will remain ineffective and should not be adopted. 34-15

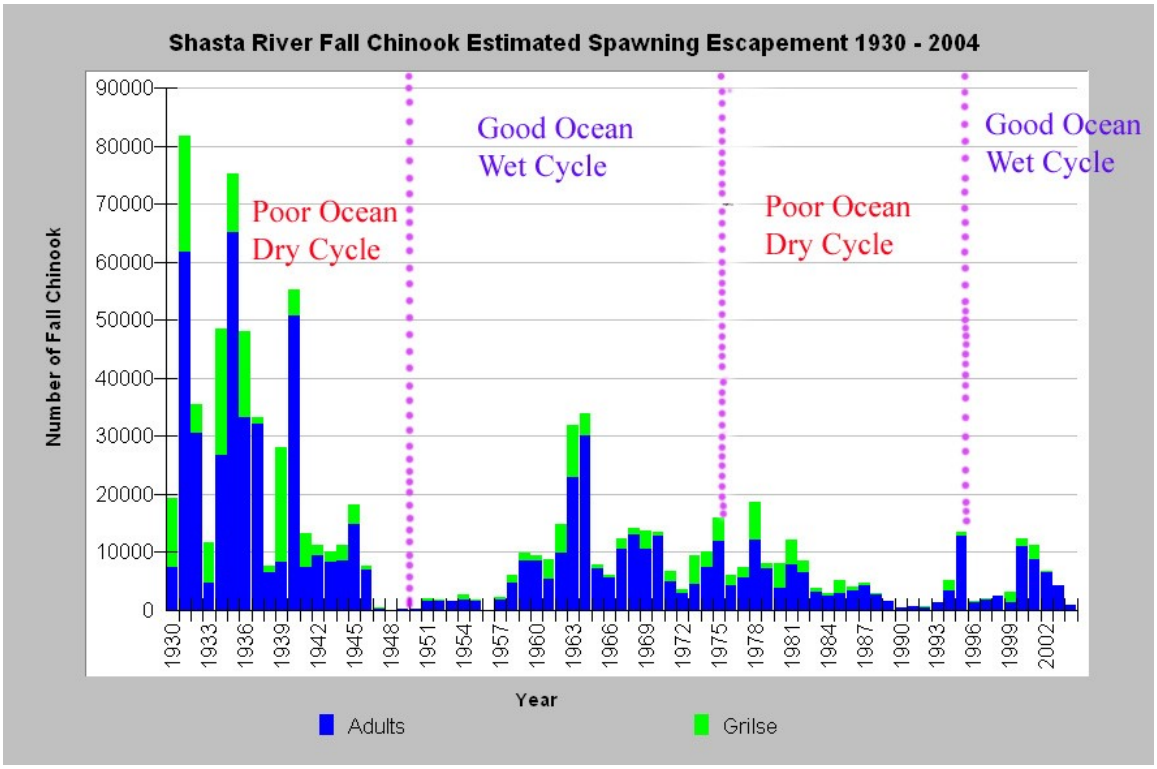


Figure 7. Fall Chinook salmon returns to the Shasta River have been monitored as far back as 1930 and runs show a long term pattern of decline despite cycles associated with ocean and climatic conditions because of continuing freshwater habitat declines. Data from CDFG.

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Mr. Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001
Email: SHASTADEIR@dfg.ca.gov

December 9, 2008

RE: Shasta River Watershed-Wide Permitting Program

Mr. Bob Williams,

The Quartz Valley Indian Reservation's (QVIR) Environmental Protection Department has reviewed and is providing detailed comments on the Draft *Environmental Impact Report for the Shasta River Watershed –Wide Permitting Program.*

As you are aware, the Reservation is located in Quartz Valley, a sub-basin within the Scott River Watershed. The Tribe has also placed acreage in the Shasta Watershed in Trust for the QVIR. This federally recognized Tribe was established for Tribal people of the following decent: Shasta, Karuk and Upper Klamath. The Shasta River offers spawning and rearing habitat to coho salmon and it is in the best interest of the Tribe to protect, restore and preserve this habitat for the existing and future prosperity of the Tribal way of life, which once existed for the Shasta people in this valley. 35-1

Upon review of the Program's Draft EIR, we find it inadequate in meeting the obligations set forth in the California Environmental Quality Act. Enforcement of existing laws and regulations is necessary to recover salmonids in the Shasta River Watershed. Currently there is a lack of enforcement of existing DFG laws for such activities proposed to occur under the Shasta River Watershed –Wide Permitting Program. It is DFG's responsibility to enforce and uphold these laws to recover the federal and state listed coho salmon. 35-2

We thank you for your time and consideration of the detailed comments provided.

Sincerely,

Crystal Bowman
Environmental Director
Quartz Valley Tribal Environmental Program

MEMORANDUM REPORT

EXECUTIVE SUMMARY

While the California Department of Fish and Game (CDFG) appears to have noted receipt of the relevant materials (e.g., QVIR 2005) and recommendations (QVIR 2006) submitted earlier by the Quartz Valley Tribe concerning the proposed development of a Shasta River coho salmon Incidental Take Permit (ITP), few if any of the issues of substance raised by the Tribe in their submittals to CDFG have actually been addressed by the Department in its *Draft Environmental Impact Report* (DEIR) for the Shasta Watershed Wide Permitting Program. 35-3

The DEIR is driven by an ITP proposal submitted by the Shasta River valley farming community. The plan fails to address the issues of streamflow and groundwater depletion and their associated water quality problems, which are the documented root causes of coho salmon decline in the Shasta River watershed.

While the measures recommended might improve some conditions for coho salmon, at the margin and at substantial cost, taken together, they will not improve stream conditions sufficiently to assure that actions to be permitted under the proposed Watershed Wide Permitting Program will not cause further jeopardy to the species. The DEIR does not, therefore, meet the requirements of the California Endangered Species Act (CESA) nor those of the California Environmental Quality Act (CEQA) and it is, in our view, open to successful challenge in court should CDFG proceed to adopt only a lightly revised final version of this EIR. 35-4

Because the improvements to the DEIR previously recommended by the Tribes (QVIR 2006, 2005) and noted in the DEIR have simply been ignored, we will not bother to restate them all here. Instead, the most significant and fatal flaws of the Watershed Wide Permitting Program strategy will be pointed out below and we will describe briefly a scientifically-based approach for preventing further jeopardy to Shasta River coho salmon. 35-5

DETAILED COMMENTS

Dwinnell Dam

Although the DEIR identifies Dwinnell Dam removal as an option, it rejects it as infeasible because there are no alternative water supplies or systems of delivery for the Montague Water Conservation District with which to serve its customers. It also opines, "…CDFG does not have the statutory authority to require MCWD to decommission and dismantle the dam, and it does not appear that other governmental agencies have such authority. For that reason alone, this alternative might not be feasible." (p. 5-9) 35-6

In fact, as stated in the Tribes' earlier comments on this project, California Fish and Game Code (CF&GC) §5937 says that CDFG is not to allow streams to be dewatered.

The passage of this statute preceded the construction of Dwinnell Dam, the operators of which make no provision to protect fishlife below it (Figure 1).

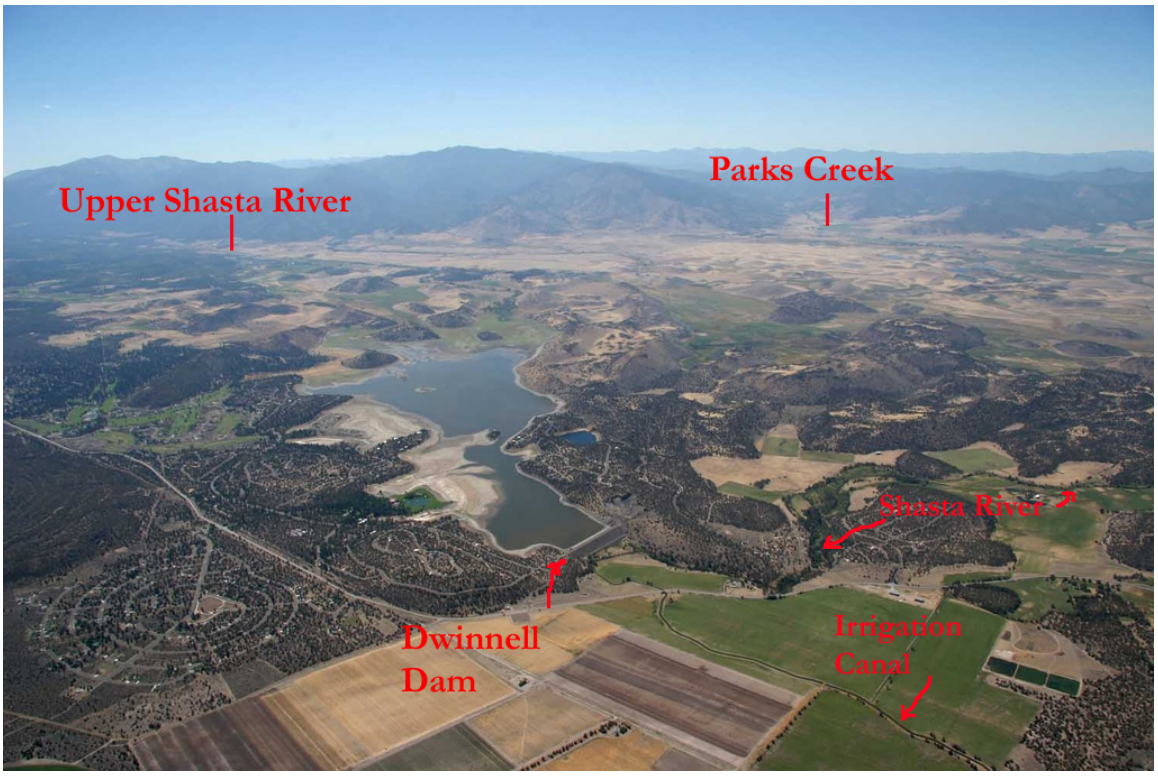

Figure 1. Dwinnell Dam blocks access to upstream migration of coho to the upper Shasta River and tributaries and water from Parks Creek is diverted to fill the reservoir above it. Dwinnell Dam does not release water to the Shasta River. Photo by Thomas Dunklin.

The DEIR does not explain why it thinks CDFG lacks the authority to enforce (CF&GC) §5937. The DEIR essentially attempts to legitimate Dwinell's illegal operation under the Watershed Wide Permitting Program by treating it as part of the baseline conditions: "Dwinnell Dam and its impacts on the hydrology and aquatic resources of the Shasta River are part of existing physical conditions in the Program Area (i.e., it is part of the baseline), which will continue with or without the Program". In fact, operation of Dwinnell Dam constitutes a major "take" of coho salmon and is a documented contributor to the jeopardy of Shasta River coho salmon (see Jeopardy Issues).

35-6 cont.

The National Research Council (2004) urged that serious consideration of removal of Dwinnell Dam because of the substantial amount of habitat that would be opened up for endangered coho. NRC pointed out that in a global warming scenario, Mt. Shasta, alone, is expected to get increased snow fall, which makes the Shasta River the best potential future refugia for Klamath River salmon species. In order to decrease the risk of loss of coho salmon, the population's spatial distribution and its productivity need to be increased (Williams et al. 2006). Removing Dwinnell Dam would be one way to do that expeditiously.

Water quality in Dwinnell Reservoir is extremely poor during the summer months (Vignola and Deas, 2005), as is that of other eutrophic reservoirs in the Klamath Basin

35-7

like Iron Gate and Copco Reservoirs on the mainstem Klamath River. The prevalence of warm water fish species in Dwinnell Reservoir is indicative of its poor water quality.

Dwinnell Reservoir stratifies thermally during the summer season. The reservoir's upper layer is warm, the water has a high pH, and hosts nuisance blooms of blue green algae including toxigenic *Anabaena flos-aquae* (NCRWQB, 2005). The deeper layer of water is cooler, oxygen-deprived, and nutrient rich. The nutrients in these deeper waters accumulate from the settling of organic matter from above and from internally-generated nutrients released from the anoxic sediments underlying the reservoir waters (Vignola and Deas, 2005). The water released from Dwinnell Dam comes from the depths of the reservoir and thus the dam discharges the same degraded water quality (i.e. low oxygen and high ammonia) as its source. Consequently, flows released downstream in summer now degrade water quality in the mainstem Shasta River.

35-7 cont.

Water quality nuisances and a major source of exotic fish species introduction could be abated by the removal of Dwinell Dam. The river's coho salmon's chances for recovery would be increased substantially.

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received their water. Eventually the BSID drilled several relatively shallow wells and effectively abandoned their surface water right for unregulated groundwater, presumably originating from the same aquifer that feeds Big Springs Creek and the other springs in the area." (p. 3.3-32)

As pointed out in the Tribes' previous comments (QVIR 2005, 2006) and readily available reports (Kier Associates 1999), the diversion of Big Springs is clearly recognized as connected to surface hydrology and such requires a permit for appropriative use from the SWRCB Water Rights Division (WRD). The flow depletion has converted what was once cold refugia that gave life to the Shasta River below Dwinnell Dam to a tepid shrunken creek. Thermal infrared radar imagery (Watershed Sciences Limited 2004) of Big Springs Creek shows that it warms to 21 C as it meets the Shasta River (Figure 3), a water temperature much too warm for coho salmon (McCullough 1999; Sullivan 2000). The cumulative impacts on the mainstem Shasta of this diversion represent a high level of take. Without increased flows at Big Springs coho shall remain in jeopardy of extinction.

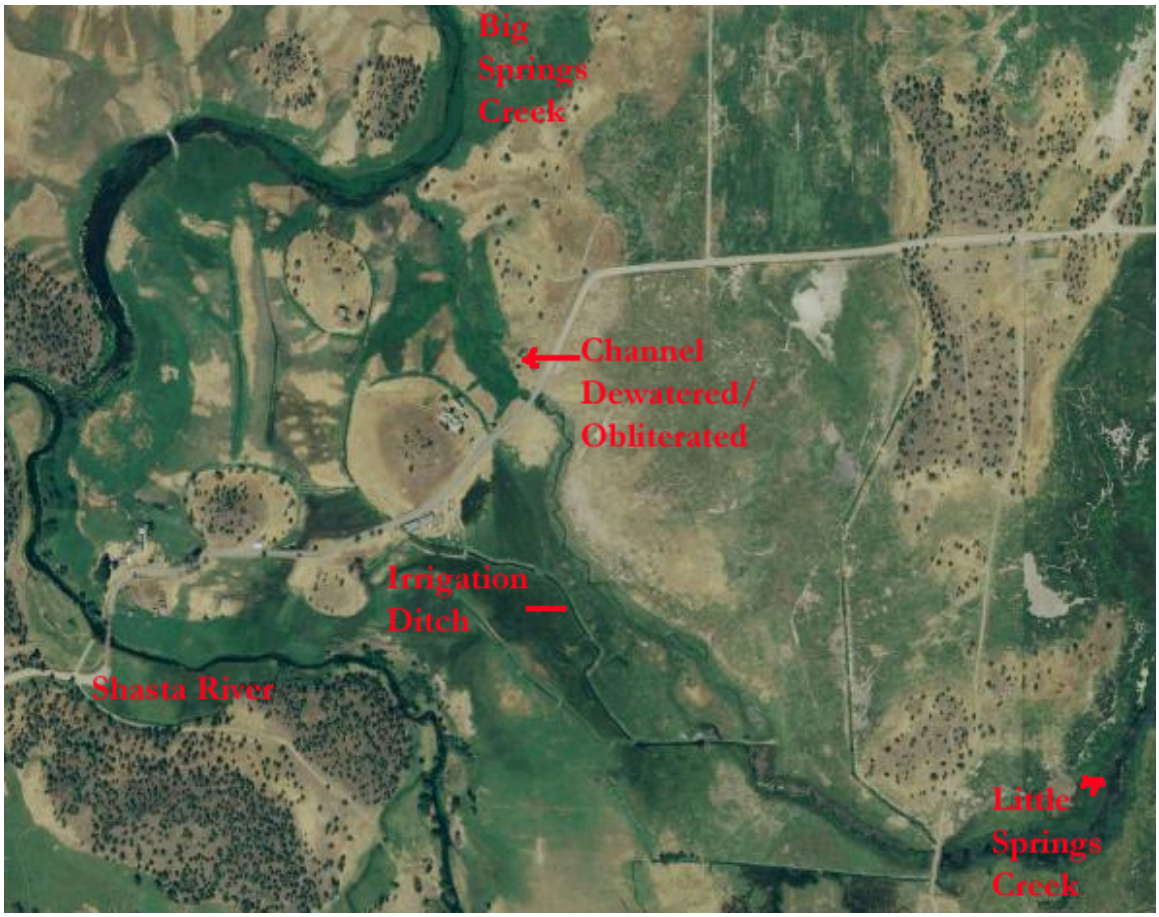

Figure 2. Little Springs Creek is at lower right but is completely diverted and its lower channel obliterated. The Shasta River below Dwinnell is at left and Big Springs Creek at top.

35-8 cont.

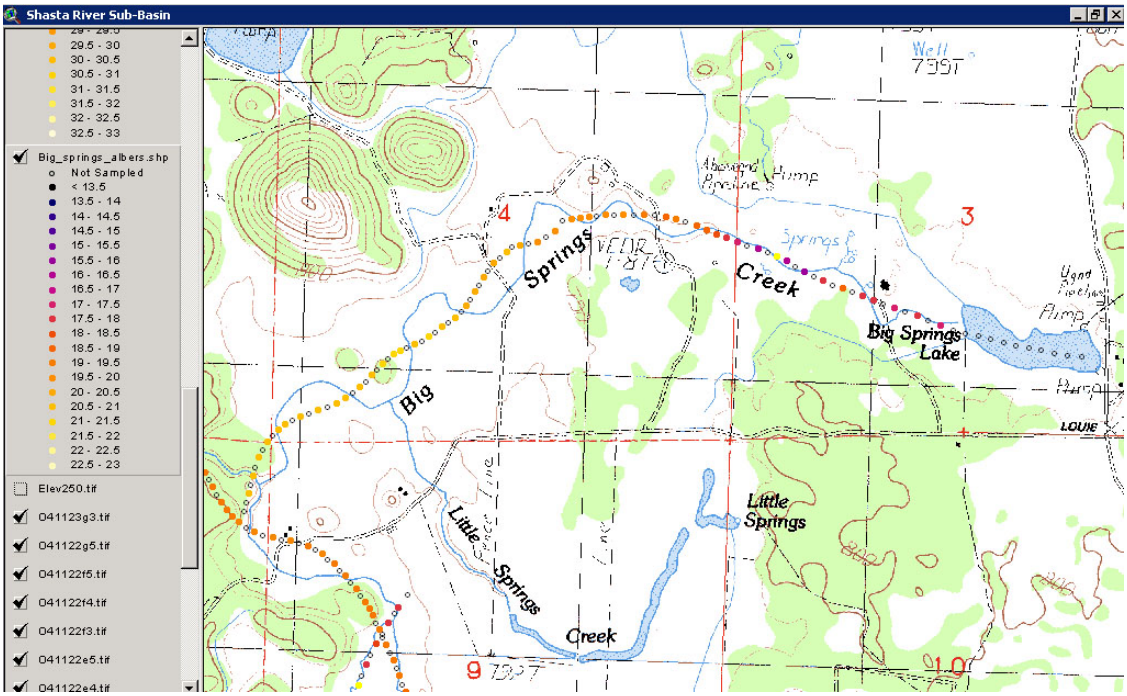

Figure 3. This thermal infrared radar image of Big Springs Creek shows that flow depletion is causing the stream to warm from suitable for coho (<16 C) to stressful for all salmonids (>21 C).

35-8 cont.

Parks Creek also joins the Shasta River near the convergence of Big Springs Creek and could also provide a refuge. Instead virtually all its water is shunted into Dwinnell Reservoir and its lower reaches, which are spring fed, are channelized and dewatered (Figure 4). Thermal infrared imagery of lower Parks Creek shows how dewatering contributes locally to increased water temperatures (Figure 5). With little flow coming from Dwinnell Dam, and with Big Springs Creek diminished in flow by 80% and Parks Creek dried up, there is little wonder that the entire Shasta River is experiencing an ecosystem crisis and that its coho salmon remain in jeopardy and are at high risk of extinction.

Pesticides and Herbicides

35-9

Despite a clear request in the Tribes' scoping comments (QVIR 2006) for a discussion of pesticide and herbicide use associated with agricultural practices in the Shasta River basin, the DEIR fails to address the issue. Thousands of pounds of pesticides are being applied each year in the Shasta River Basin (Figure 6). Many of these chemicals are known to be harmful to salmonids (Ewing 1999, NCAP 1999). NMFS (2008) recently found in a Biological Opinion to the U.S. EPA that products containing chlorpyrifos, diazinon, and malathion have significant impacts on endangered species. According to the California Pesticide Use Reporting Database[1], these three chemicals are currently in use in the Shasta River basin. Gilliom et al. (2006) point out that while some highly utilized chemicals like hexazinone may break down quickly in the atmosphere, they can be very persistent in groundwater. USGS surveys commonly find this substance in agricultural aquifers.

[1] http://www.ehib.org/tool.jsp?tool_key=18

In that the DEIR fails to address pesticide and herbicide use related to the Shasta River activities to be permitted under the Watershed Wide Permitting Program, the DEIR fails to meet the standards of CEQA.

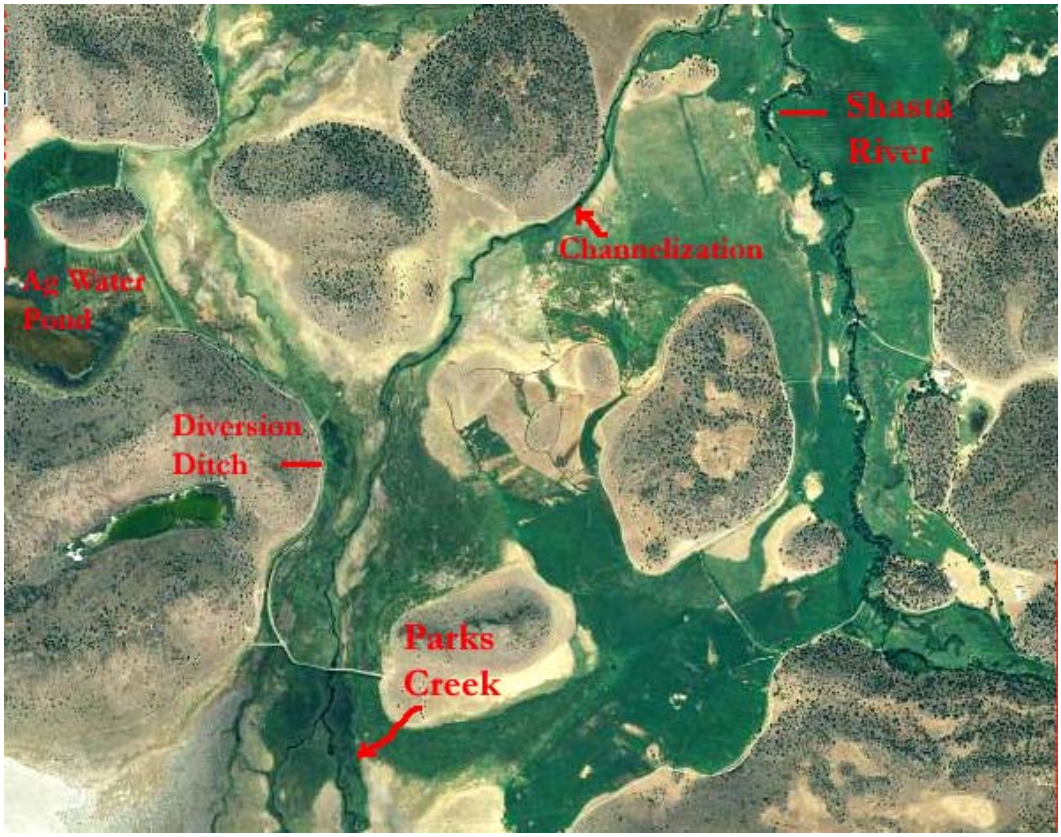

Figure 4. Lower Parks Creek is shown here in a 2005 aerial photo that demonstrates dewatering, channelization and loss of fisheries productivity in what could easily be converted into a refugia.

35-9 cont.

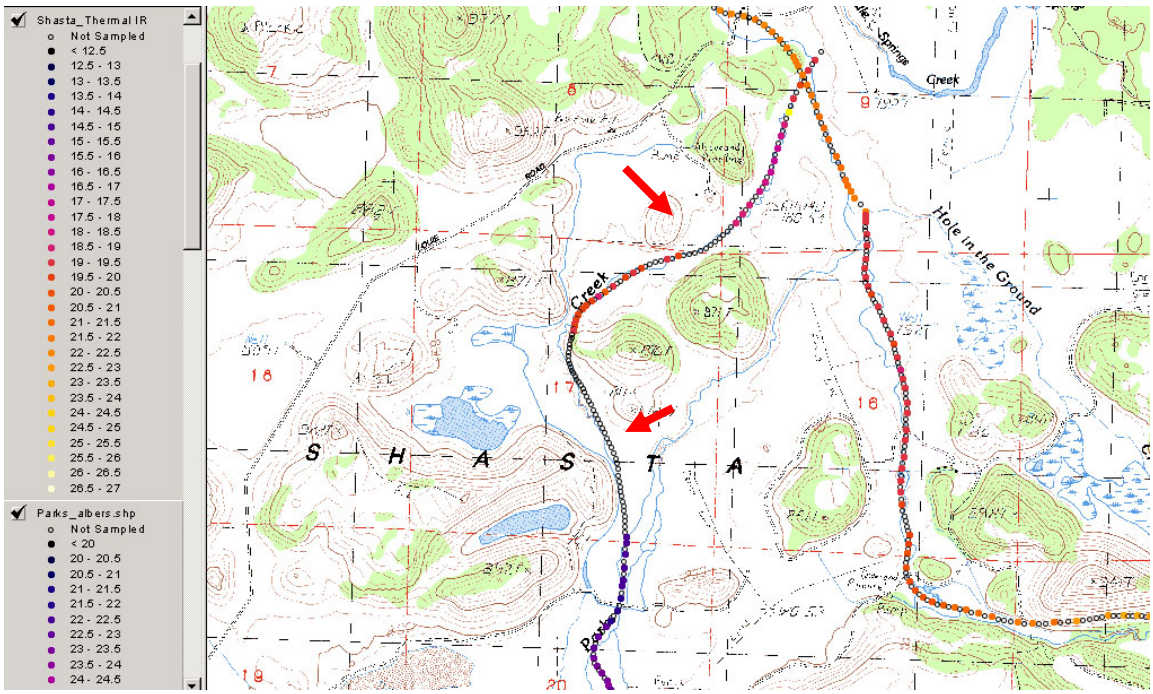

Figure 5. Thermal infrared imagery of lower Parks Creek shows how flow depletion of spring flow is very cold but that the stream becomes warm when most of the water is diverted from its channel. Red arrows show dry reaches (Watershed Sciences LLC 2004).

35-9 cont.

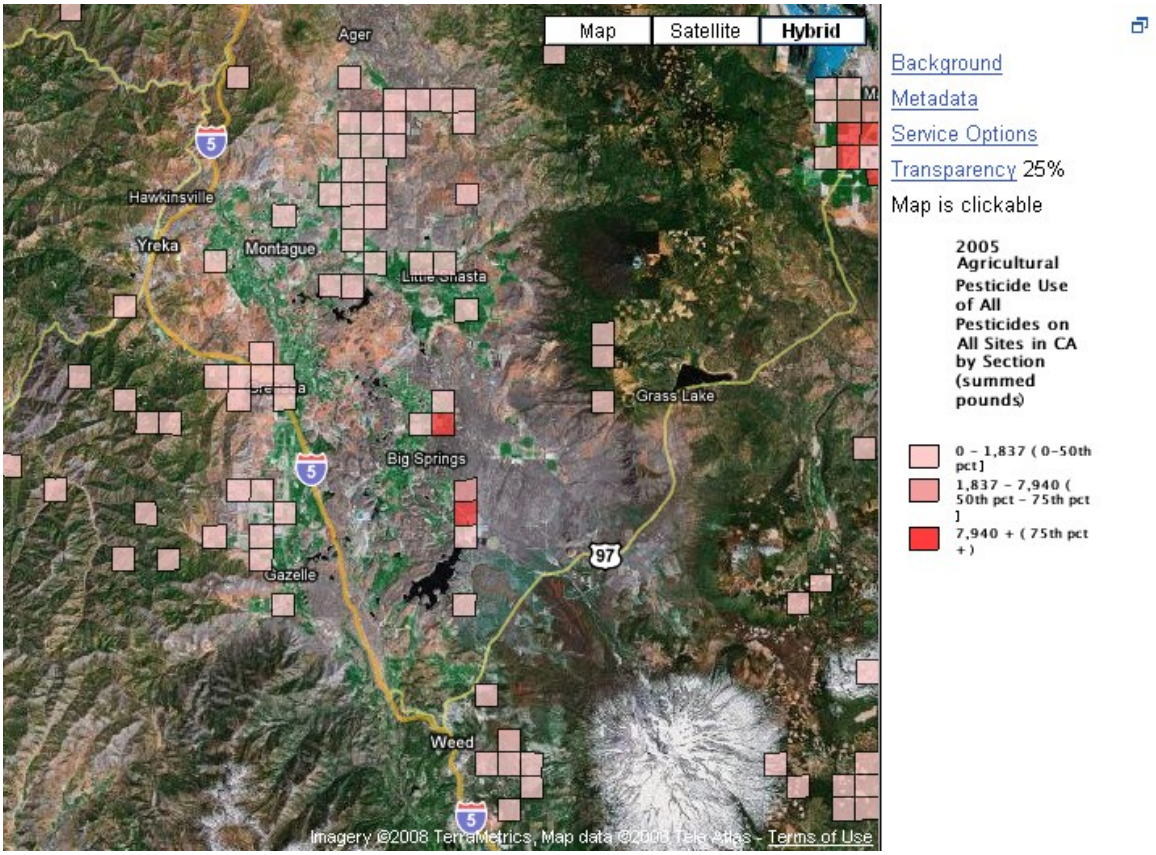

Figure 6. This map shows agricultural pesticide usage in 2005 in the Shasta River watershed and surrounding area, in units of total pounds of pesticide applied per section (square mile). Map was

created using the California Environmental Health Tracking Program (CEHTP) Agricultural Pesticide Use Web Map Service (WMS), a map interface that facilitates access to the California Department of Pesticide Regulation's (CDPR) Pesticide Use Reporting (PUR) database. The map can be accessed at: http://www.ehib.org/tool.jsp?tool_key=18

35-9 cont.

Jeopardy Issues

The DEIR/CDFG assert that conditions as of the SVRCD (2005) ITP application submission date constitute baseline conditions and argue that only positive change will result from the Watershed Wide Permitting Program. In fact the evidence presented in the DEIR show drastic reductions in surface flow in the Shasta River in recent years as a result of increased surface and groundwater use (NRC 2004, Kier Associates 1999, QVIR 2005, 2006). The DEIR in some places describes coho salmon habitat destruction as a matter of fact, but then fails to follow up and show how habitat will be restored and how continuing problems with "take" related to these practices will be diminished. In fact, activities that have resulted in the collapse of the Shasta River ecosystem with regard to supporting coho salmon will continue to occur under the ITP and marginal changes in existing practices are not sufficient to prevent jeopardy to coho salmon.

The actions contemplated under the Watershed Wide Permitting Program will continue to place Shasta River coho salmon in jeopardy. The "project" addressed here does not, therefore, comply with CESA or CEQA.

35-10

The DEIR states that:

> "This Permit may be terminated by the Department at its sole discretion if circumstances or new information provides evidence that continued program implementation may result in jeopardy to coho salmon, or if such termination is required by law or court order. For the purpose of the Permit, 'jeopardy' includes, but is not limited to, to the probable extirpation of any coho salmon cohort."

There is strong evidence showing that Shasta River coho salmon are currently in jeopardy and are likely to remain so. For example, downstream migrant traps on the Shasta River from 2000-2002 captured between 212 and 747 coho juveniles from February to July. The same weak year class pattern described in the Scott River prevails, as well, in the Shasta River.

CONCLUSION

Many of the actions that CDFG, the State Water Resources Control Board (SWRCB) Water Rights Division (WRD) and the Department of Water Resources (DWR) would perform under the new Watershed Wide Permitting Program do not require that the contemplated permitting process be created. Rather, these agencies have neglected these duties resulting cumulatively in a continuing and elevated "take" of coho salmon. Through the legitimizing of current harmful practices without more tangible steps for coho protection, illegal activities will continue to be ignored and hopes of public trust resource recovery will be set back substantially.

35-11

The DEIR not only fails to comply with CEQA's requirement for the use of "best science" and for the identification of cumulative watershed effects, and for data sharing, but it also runs counter to CEQA's policy requiring the efficient use of resources "to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment". CDFG has spent $750,000 on the preparation of a DEIR that is deficient on key scientific issues and insufficient to assure the avoidance of continuing jeopardy to the Shasta River coho salmon population. The Department should have spent such funds on enforcing existing laws and restoring legally-required streamflow to the Shasta River. 35-12

Previous comments submitted by the Tribe (QVIR 2005, 2006) have pointed out the urgent need to rebuild at-risk Pacific salmon populations in advance of climatic oscillations in the north Pacific Ocean (Hare and Mantua 1999), which will shift to unfavorable ocean conditions and dry on-land conditions sometime between 2015 and 2025 (Collison et al. 2003). Figure 7 displays the long term fall Chinook salmon trends for the Shasta River with Pacific Decadal Oscillation (PDO) trends overlaid. Chinook are less dependent on freshwater habitat than coho salmon, but their long term decline is nonetheless the result of continuing freshwater habitat loss in the Shasta River. The timelines in the Watershed Wide Permitting Program need to reflect such urgency. The current DEIR, to the contrary, allows seven years for some critical steps like getting fish passage at the Scott Valley Irrigation District diversion dam. Targets such as minimum mainstem Shasta River flows of 20 cfs by 2015 are clearly too little too late. 35-13

Shasta River coho salmon cannot be maintained at their current low levels because the likelihood of loss due to storms or other stochastic events is high (Rieman et al. 1993). Coho populations must be aggressively rebuilt by providing refugia (Reeves et al. 1995) in habitats that have high intrinsic potential (Williams et al. 2006) and anthropogenic stressors like livestock use of the riparian zone need to be eliminated to allow full riparian and hydrologic recovery (Kaufmann et al. 1999). Dwinnell Dam operation would continue under the Program, passage to headwaters habitat would remain unavailable, Big Springs flows remain depleted and Parks Creek stays disconnected. These conditions will not recover weak year classes of coho nor the species. Without addressing the factors that have driven coho salmon into jeopardy, the Watershed Wide Permitting Program will remain ineffective and should not be adopted. 35-14

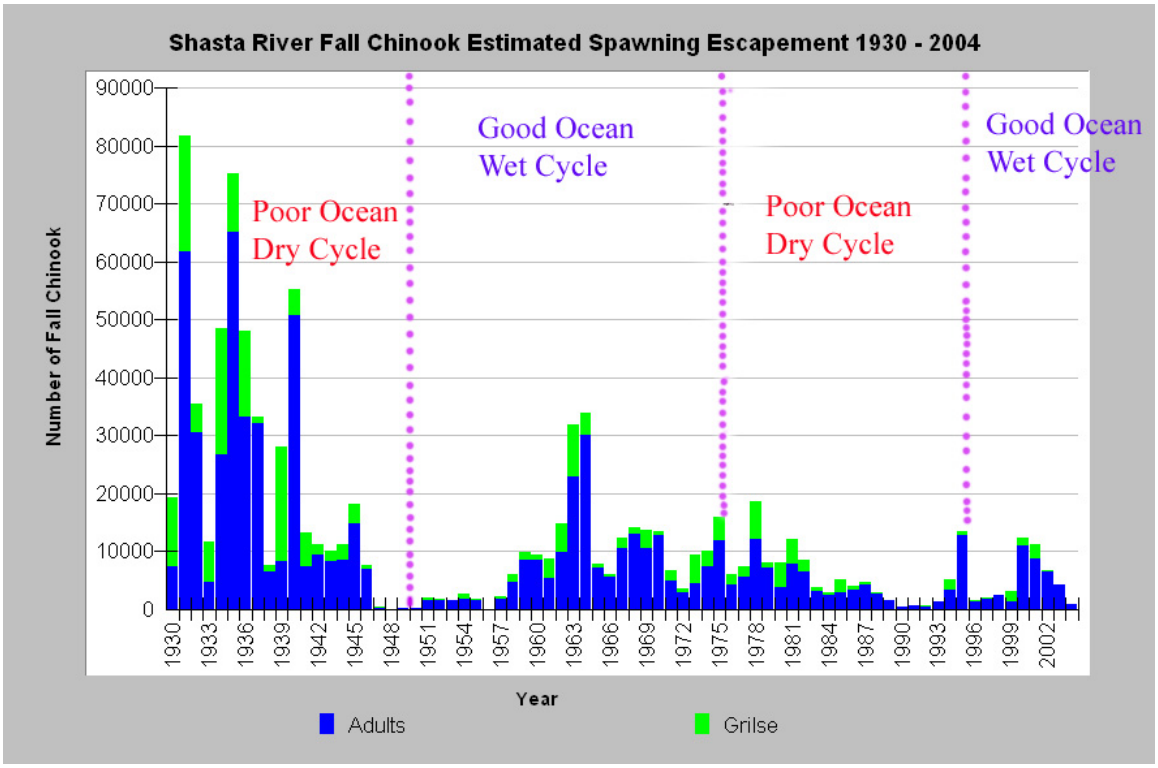

Figure 7. Fall Chinook salmon returns to the Shasta River have been monitored as far back as 1930 and runs show a long term pattern of decline despite cycles associated with ocean and climatic conditions because of continuing freshwater habitat declines. Data from CDFG.

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COMMENTS OF THE YUROK TRIBE
REGARDING THE STATE OF CALIFORNIA'S
DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE
SHASTA WATERSHED WIDE PERMITTING PROGRAM

General Comments

The following represent the comments of the Yurok Tribe regarding the Draft Environmental Impact Report for the Shasta Watershed-wide Permitting Program (DEIR) associated with the Incidental Take Permit (ITP) . Master Streambed Alteration Agreement (MSAA) The Yurok Tribe has used materials from Keir and Associates which have been provided to the Tribes of the Klamath Basin through the Klamath Basin Tribal Water Quality Work Group (Work Group), an association of the water quality and environmental departments of five Lower Klamath River Basin Tribes. Additional material has come from the Quartz Valley Tribe, and is used with their permission. These comments differ from other submissions and must be considered independently.

The Yurok Tribe hereby incorporates by reference the submissions of Kier and Associates for the Tribes of the Klamath Basin, the Quartz Valley Tribe, the Pacific Coast Federation of Fishermen's Associations, and Klamath Riverkeeper, as well as our earlier EIR scoping comments. For the record, the Yurok Tribe alleges that this Draft EIR fails to address adequately the above comments and objections as is required under CEQA. 36-1

<u>ITP Cannot Authorize Illegal Activities</u>

No illegal activities can be made legal (even in appearance only) by this ITP. Diversions and structures that violate current regulations can not be allowed, including violations of CDFG sections 5931, and 5937 (streamflow and passage) This especially applies to Dwinnell reservoir which has no fish passage, no dedicated instream flow, and degrades water quality significantly in the Shasta River. Illegal conditions must be fixed immediately and cannot be permitted.

The DEIR needs to have explicit provisions that ITP prescriptions are subject to future water use determinations and adjudications. 36-2

<u>Lack of Scientific Framework in the Shasta River Basin and the DEIS Makes it Impossible to Gauge Effectiveness of Proposed Actions</u>

The DEIR lacks measurable and obtainable goals and objectives that will lead to recovery of coho salmon. It is unclear, if agricultural operators comply with each and every condition of their permit, whether that would lead to recovery of coho. Development of the scientific work products described below will facilitate a realistic assessment of the effectiveness of prescribed changes to agricultural operations. 36-3

The Permitting Program should use settlement efforts in the Upper Klamath Basin as a template for progress. In the Upper Klamath Basin, a historic Klamath Basin Restoration Agreement was tentatively reached by stakeholders, including agricultural operators. The agreement was facilitated by the development of several key science products:

1. A Flow Study (Hardy Phase 2) that gave downstream interests a means to evaluate different flow proposals;
2. An unimpaired flow evaluation that gave stakeholders a template upon which to judge flows and lake levels;
3. A hydrological model (KPSIM, followed by WRIMS) that enabled all stakeholders to evaluate the effects of changing different management actions. The WRIMS model was peer-reviewed to the point where all stakeholders believed that its results were a reasonable representation of various management options.

The flow study enabled parties interested in fisheries, including the Tribes, NMFS, USFWS, and CDFG, to evaluate whether settlement proposals would in fact result in satisfactory flow conditions in the River below Iron Gate Dam. The unimpaired flow study allowed stakeholders to evaluate historic conditions and "reasonableness" of proposed flow schedules and agricultural management actions. The WRIMS model allowed different actions by the agricultural community, and different large-scale restoration actions to be evaluated in terms of effects to basin hydrology. These three key studies together, paved the way for the historic agreement that promises to end decades of conflict between agricultural and salmon interests. 36-4

A similar effort needs to be made in the Shasta (and Scott) Rivers. <u>We cannot overstate the importance of these actions.</u> A condition of the ITP should be that a comprehensive flow study should be initiated immediately and completed in an expedited manner. In return for permit coverage, sub-permittees must allow access to their property as necessary to complete a site-specific flow study. The flow study must be transparent and peer-reviewed. Similarly, work must begin on a flow/groundwater interaction model to begin to understand the effects of different actions by agricultural operators to the system. The temperature modeling that has been completed by Deas et al is a good start Other scientific work products may prove to be necessary, and their development through an open and peer-reviewed process should be required as they are identified.

It is only through this framework of information development that:

1. Specific recovery goals can be set regarding flows in different parts of the system, with particular attention paid to spring-water sources
2. Different management actions (i.e. changes in agricultural operator actions, or Water Trust, etc) can be evaluated in terms of how close they move the system to meeting specific habitat and coho restoration objectives.

The development of this information should not be used as a reason for delay of coho recovery actions. The flows in the Shasta River, and the water quality are impaired enough to warrant immediate action and movement toward a recovery status (i.e. improved water quality and higher flows). 36-4 cont.

A Step in the Right Direction

There are some positive aspects to the DEIS. The Shasta River has been in need of fundamental changes to agricultural operations for decades, and the ITP paves the way for cooperative restoration efforts to be enhanced. As noted in the preceding paragraph, these actions are long overdue. We believe that it is possible to restore the coho (and other species) salmon in the Shasta River. As recently as the 1930's, nearly 100,000 salmon made their way into the Shasta River. 36-5

Many of These Issues Were Raised Previously

Many of these issues mentioned in this letter were brought up in scoping comments. While the California Department of Fish and Game (CDFG) appears to have noted receipt of the relevant materials (e.g., Yurok Tribe Scoping Comments 2006) and recommendations (QVIR 2006) concerning the development of the Shasta River ITP, many of the issues of substance raised in these submissions appear not to have been addressed by CDFG in the DEIR. 36-6

DETAILED COMMENTS

Dwinnell Dam

Although the DEIR identifies Dwinnell Dam removal as an option, it rejects it as infeasible because there are no alternative water supplies or systems of delivery for the Montague Water Conservation District with which to serve its customers. It also states that "…CDFG does not have the statutory authority to require MWCD to decommission and dismantle the dam, and it does not appear that other governmental agencies have such authority. For that reason alone, this alternative might not be feasible." (p. 5-9)

In fact, California Fish and Game Code (CF&GC) §5937 states that CDFG is not to allow streams to be dewatered. The passage of this statute preceded the construction of Dwinnell Dam, the operators of which make no provision to protect fish life below it (Figure 1). 36-7

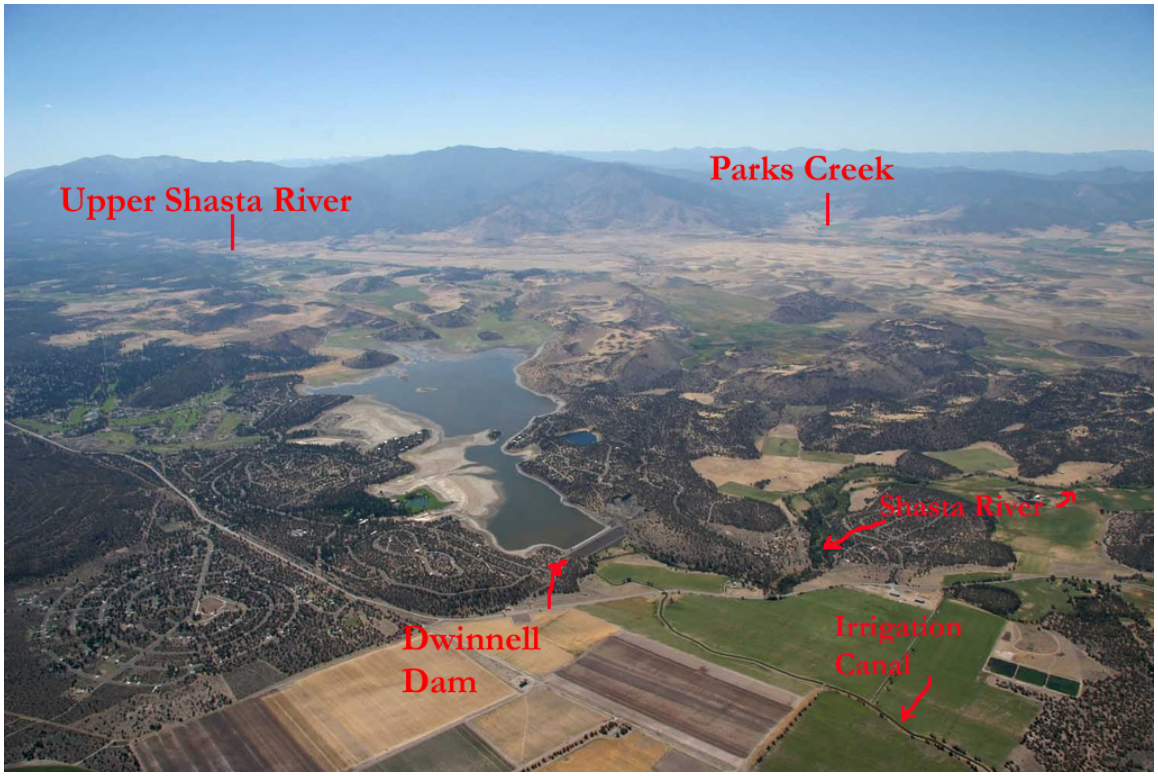

Figure 1. Dwinnell Dam blocks access to upstream migration of coho to the upper Shasta River and tributaries and water from Parks Creek is diverted to fill the reservoir above it. Dwinnell Dam does not release water to the Shasta River. Photo by Thomas Dunklin.

The DEIR does not explain why CDFG lacks the authority to enforce (CF&GC) §5937. The DEIR essentially attempts to legitimize Dwinnell's operation under the Watershed Wide Permitting Program by treating it as part of the baseline conditions: "Dwinnell Dam and its impacts on the hydrology and aquatic resources of the Shasta River are part of existing physical conditions in the Program Area (i.e., it is part of the baseline), which will continue with or without the Program". In fact, operation of Dwinnell Dam constitutes a major "take" of coho salmon and is a documented contributor to the jeopardy of Shasta River coho salmon (see Jeopardy Issues).

36-7 cont.

The National Research Council (2004) urged that serious consideration of removal of Dwinnell Dam because of the substantial amount of habitat that would be opened up for endangered coho. NRC pointed out that in a global warming scenario, Mt. Shasta, alone, is expected to get increased snow fall, which makes the Shasta River a significant potential future cold water refugia for Klamath River salmon species. In order to decrease the risk of loss of coho salmon, the population's spatial distribution and its productivity need to be increased (Williams et al. 2006). Removing Dwinnell Dam would be a way to accomplish that.

Water quality in Dwinnell Reservoir is extremely poor during the summer months (Vignola and Deas, 2005), as is that of other eutrophic reservoirs in the Klamath

36-8

Basin like Iron Gate and Copco Reservoirs on the mainstem Klamath River. The prevalence of warm water fish species in Dwinnell Reservoir is indicative of its poor water quality.

Dwinnell Reservoir stratifies thermally during the summer season. The reservoir's upper layer is warm, the water has a high pH, and hosts nuisance blooms of blue green algae including toxigenic *Anabaena flos-aquae* (NCRWQB, 2005). The deeper layer of water is cooler, oxygen-deprived, and nutrient rich. The nutrients in these deeper waters accumulate from the settling of organic matter from above and from internally-generated nutrients released from the anoxic sediments underlying the reservoir waters (Vignola and Deas, 2005). The water released from Dwinnell Dam comes from the depths of the reservoir and thus the dam discharges the same degraded water quality (i.e. low oxygen and high ammonia) as its source. Consequently, flows released downstream in summer now degrade water quality in the mainstem Shasta River.

Water quality nuisances and a major source of exotic fish species introduction could be abated by the removal of Dwinell Dam. The river's coho salmon's chances for recovery would be increased substantially.

36-8 cont.

<u>Surface and Groundwater Issues</u>

Shasta River water quality problems are acknowledged as being related to low flow conditions (NCRWQCB 2006, NRC 2004) and it is also acknowledged that temperature problems, in particular, cannot be resolved without increasing streamflow in the river. To that end, the SWRCB (NCRWQCB 2006) has acted "to increase the dedicated cold water instream flow in the Shasta River by 45 cfs or alternative flow regime that achieves the same temperature reductions from May 15 to October 15" by 2011. CDFG discusses the flow options and benefits of increased flow, but fails to conform its policy to that of the SWRCB. CDFG's flow goal, instead, is for minimum flows of 20 cfs by 2015.

These discrepancies underscore the need for a science-based flow evaluation that can be used to gauge effectiveness of the ITP program when instream flows are increased. It is possible that even the SWRCB's goals are inadequate. In any case, without substantially improved flows, coho salmon will remain in jeopardy under the Watershed Wide Permitting Program.

36-9

CDFG fails to reference the work of the U.S. Geologic Survey (Mack 1960) but acknowledges that historic flows at the mouth of Big Springs Creek were apparently on the order of 100 to 120 cfs. These flows were undiminished as of 1980, when the California Department of Water Resources (DWR, 1981) found that the highest concentration of Chinook salmon spawning was in this reach of the river, where hundreds of salmon redds were observed. The DEIR describes how Big Springs Creek was dried up and Little Springs Creek virtually obliterated (Figure 2), but fails to note that these practices are legally questionable:

"While Big Springs Creek typically maintains substantial flow at its confluence with the Shasta River, the entire flow of Little Springs Creek is often diverted for flood irrigation during much of the summer. Prior to the mid 1980s, in addition to the above two diversions, the Big Springs Irrigation District (BSID) also utilized a surface water diversion from Big Springs Lake, but found itself increasingly restricted in order to assure that higher priority water users further downstream received their water. Eventually the BSID drilled several relatively shallow wells and effectively abandoned their surface water right for unregulated groundwater, presumably originating from the same aquifer that feeds Big Springs Creek and the other springs in the area." (p. 3.3-32)

As pointed out in the Tribes' previous comments (QVIR 2005, 2006) and readily-available reports (Kier Associates 1999), the diversion of Big Springs is recognized as connected to surface hydrology and such requires a permit for appropriative use from the SWRCB Water Rights Division (WRD). The flow depletion has significantly degraded what was once an ecologically important cold water refugia crucial to coho and other salmonids below Dwinnell Dam. Thermal infrared radar imagery (Watershed Sciences Limited 2004) of Big Springs Creek shows that it warms to 21 C as it meets the Shasta River (Figure 3), a water temperature much too warm for coho salmon (McCullough 1999; Sullivan 2000). The cumulative impacts on the mainstem Shasta of this diversion represent a high level of take. Without increased flows at Big Springs coho shall remain in jeopardy of extinction.

36-9 cont.

<u>There is a Lack of Climate Change Context</u>

Global climate change and the associated loss of snow-melt runoff in the Klamath Basin will make areas of consistently cold water (such as found at Big and Little Springs Creeks) more important to the long term health of salmon and in particular coho salmon in the Klamath Basin. Yet, nowhere in the document is climate change evaluated in these terms. Loss of snowpack in the near future will mean groundwater sources such as Big Spring will take on Basin-wide importance, and this should be evaluated and discussed in more detail.

36-10

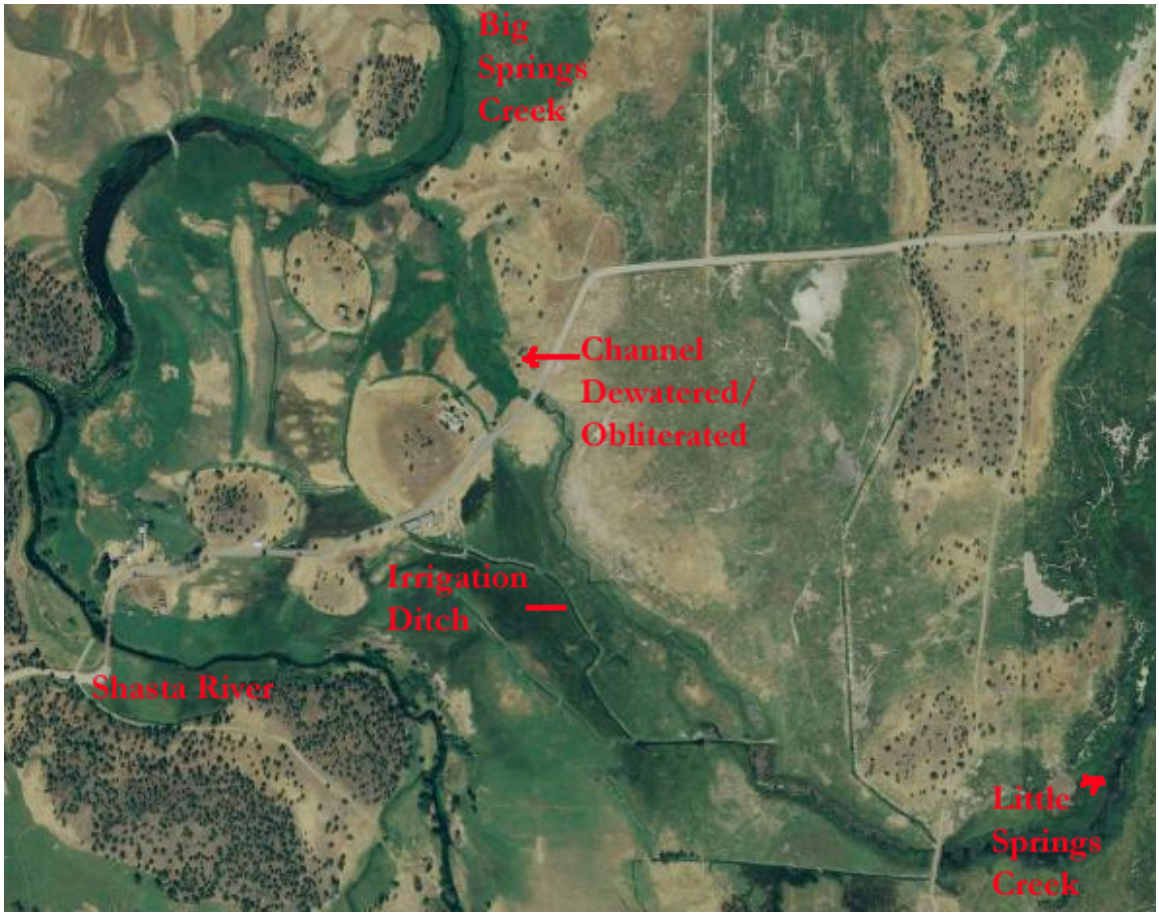

Figure 2. Little Springs Creek is at lower right but is completely diverted and its lower channel obliterated. The Shasta River below Dwinnell is at left and Big Springs Creek at top.

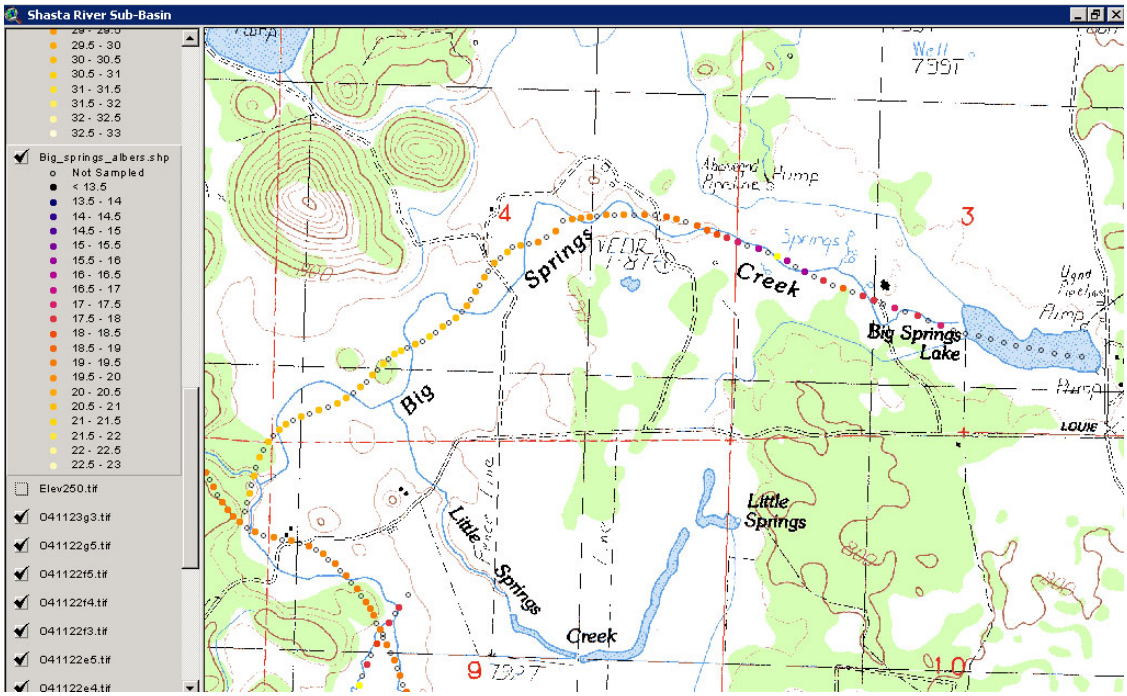

Figure 3. This thermal infrared radar image of Big Springs Creek shows that flow depletion is causing the stream to warm from suitable for coho (<16 C) to stressful for all salmonids (>21 C).

Parks Creek also joins the Shasta River near the convergence of Big Springs Creek and could also provide a refugia. Instead virtually all its water is shunted into Dwinnell Reservoir and its lower reaches, which are spring fed, are channelized and dewatered (Figure 4). Thermal infrared imagery of lower Parks Creek shows how dewatering contributes locally to increased water temperatures (Figure 5). With little flow coming from Dwinnell Dam, and with Big Springs Creek diminished in flow by 80% and Parks Creek dried up, there is little wonder that the entire Shasta River is experiencing an ecosystem crisis and that its coho salmon remain in jeopardy and are at high risk of extinction. 36-11

<u>Instream Structures</u>

The ITP allows streambanks to be stabilized using bioengineering "consistent with" the CDFG restoration manual. This has great potential to allow for rip-rapping to take place with a small amount of bio-engineering. The ITP must not allow for continued rip-rapping and channelization of the Shasta River, even if bioengineering measures are taken. Recommend removing this coverage, and looking at ways to encourage landowners to allow for natural channel meander instead of locking the channel in place. 36-12

<u>Pesticides and Herbicides</u>

Despite a clear request in the Quartz Valley Tribes' scoping comments (QVIR 2006) for a discussion of pesticide and herbicide use associated with agricultural 36-13

practices in the Shasta River basin, the DEIR fails to address the issue. Thousands of pounds of pesticides are being applied each year in the Shasta River Basin (Figure 6). Many of these chemicals are known to be harmful to salmonids (Ewing 1999, NCAP 1999). NMFS (2008) recently found in a Biological Opinion to the U.S. EPA that products containing chlorpyrifos, diazinon, and malathion have significant impacts on endangered species. According to the California Pesticide Use Reporting Database[1], these three chemicals are currently in use in the Shasta River basin. Gilliom et al. (2006) point out that while some highly utilized chemicals like hexazinone may break down quickly in the atmosphere, they can be very persistent in groundwater. USGS surveys commonly find this substance in agricultural aquifers.

36-13 cont.

In that the DEIR fails to address pesticide and herbicide use related to the Shasta River activities to be permitted under the Watershed Wide Permitting Program, the DEIR fails to meet the standards of CEQA.

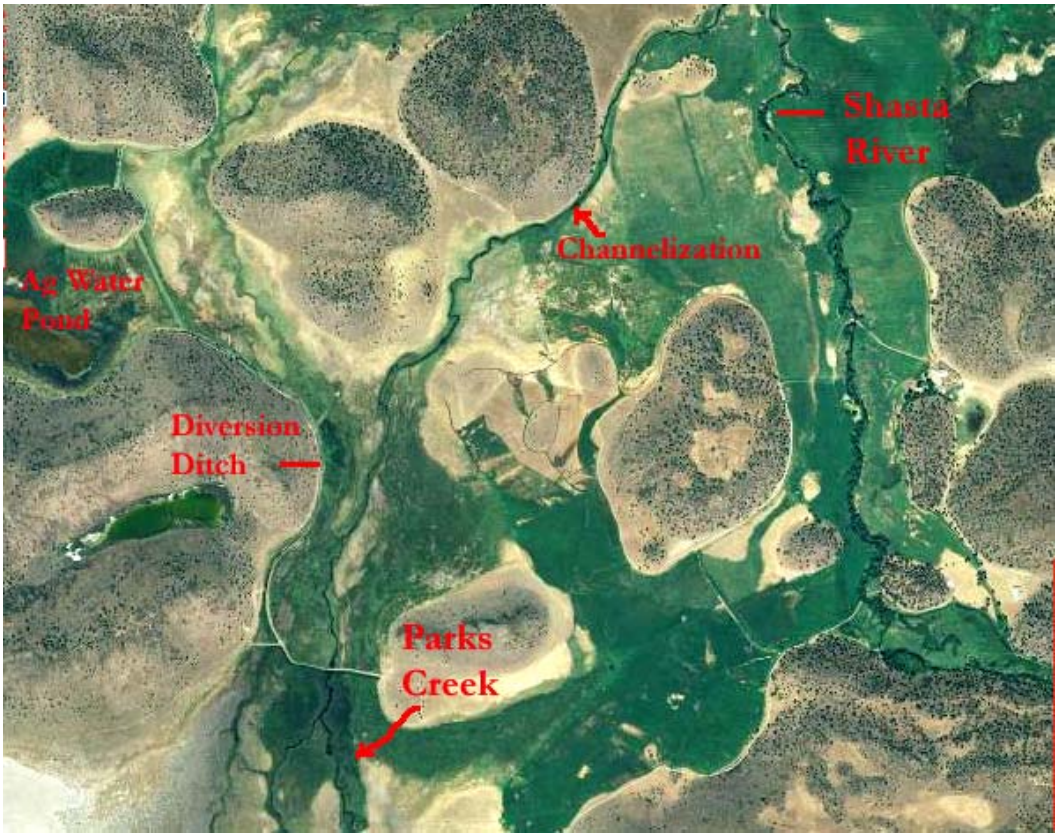

Figure 4. Lower Parks Creek is shown here in a 2005 aerial photo that demonstrates dewatering, channelization and loss of fisheries productivity in what could easily be converted into a refugia.

[1] http://www.ehib.org/tool.jsp?tool_key=18

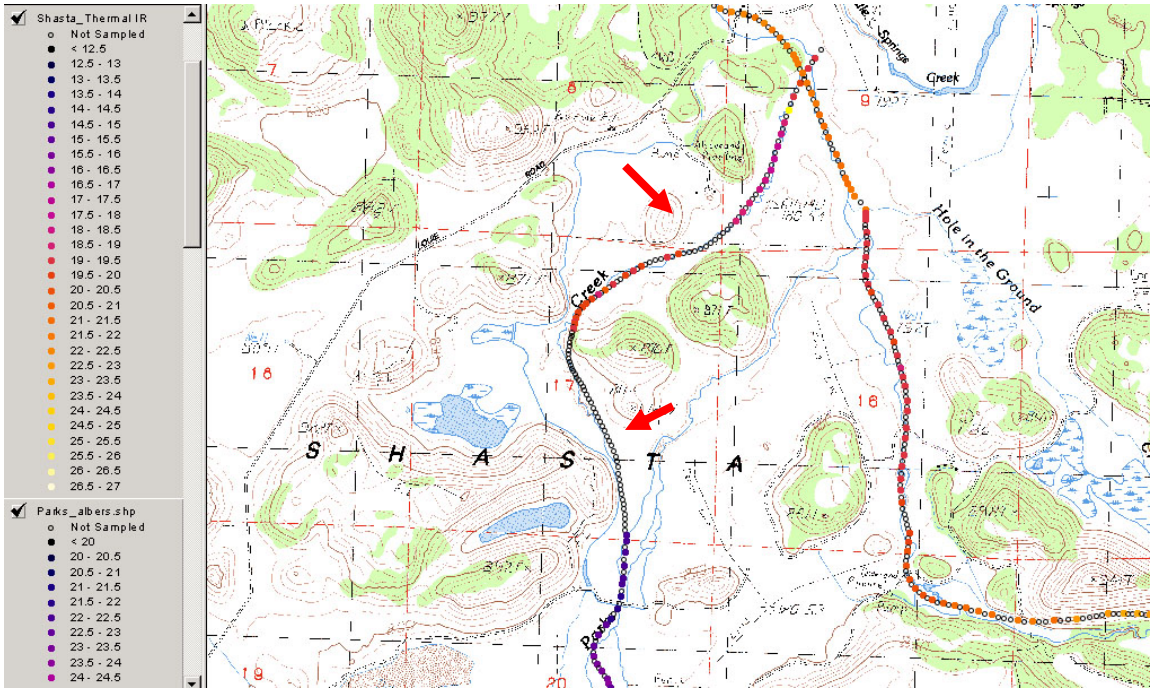

Figure 5. Thermal infrared imagery of lower Parks Creek shows how flow depletion of spring flow is very cold but that the stream becomes warm when most of the water is diverted from its channel. Red arrows show dry reaches (Watershed Sciences LLC 2004).

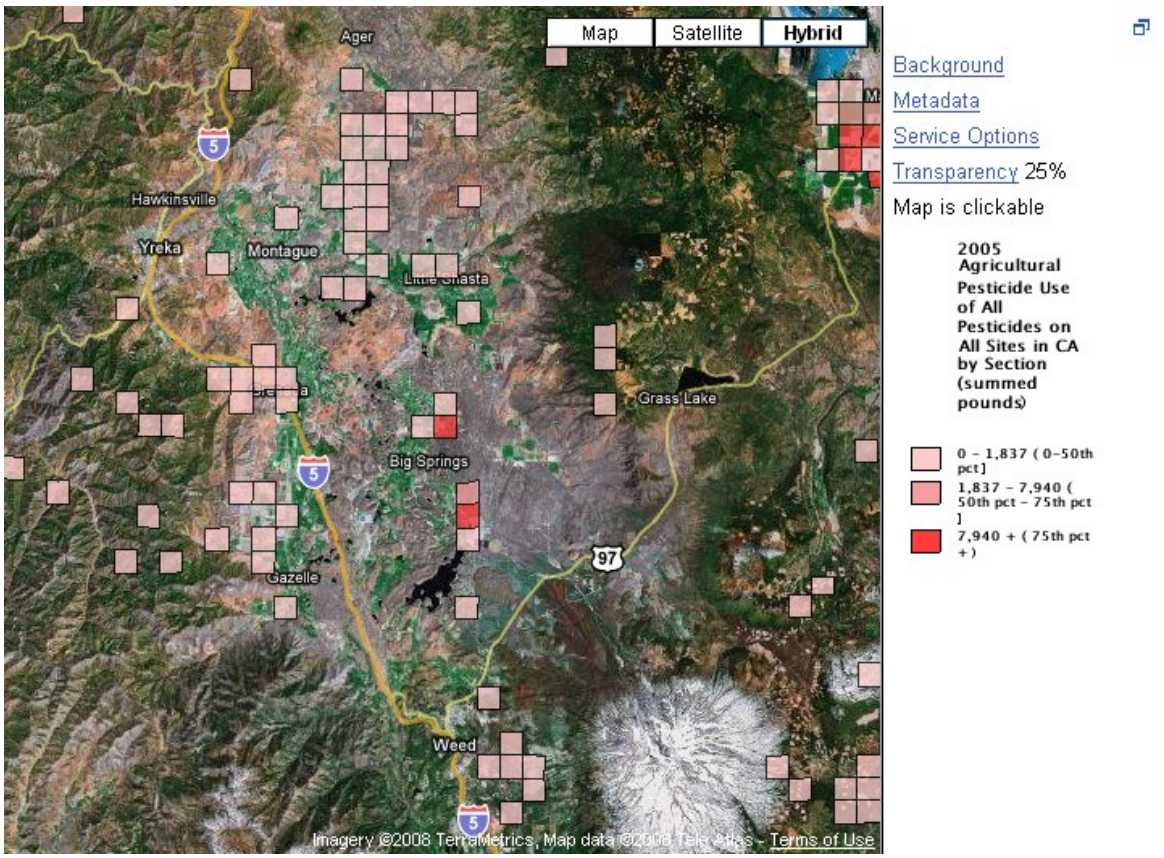

Figure 6. This map shows agricultural pesticide usage in 2005 in the Shasta River watershed and surrounding area, in units of total pounds of pesticide applied per section (square mile). Map was created using the California Environmental Health Tracking Program (CEHTP) Agricultural Pesticide Use Web Map Service (WMS), a map interface that facilitates access to the California Department of Pesticide Regulation's (CDPR) Pesticide Use Reporting (PUR) database. The map can be accessed at: http://www.ehib.org/tool.jsp?tool_key=18

36-13 cont.

Self-monitoring and Enforcement

The DEIS calls for the SRCD to determine sub-permittee compliance through the creation of a monitoring program. We believe that this poses several problems. First of all, the members of the SVRCD are appointed by the Siskiyou County Board of Supervisors, and are often agricultural operators themselves. This creates the potential for conflict of interest. If the SVRCD does in fact "blow the whistle" on non-complying sub-permittees, the SVRCD risks creating a hostile atmosphere and making restoration efforts more difficult overall.

36-14

Jeopardy Issues

In the DEIS, CDFG asserts that conditions as of the SVRCD (2005) ITP application submission date constitute baseline conditions and argue that only positive change will result from the Watershed Wide Permitting Program. In fact the evidence presented in the DEIR show drastic reductions in surface flow in the Shasta River in recent years as a result of increased surface and groundwater

36-15

use (NRC 2004, Kier Associates 1999, QVIR 2005, 2006). The DEIR in some places describes coho salmon habitat destruction as a matter of fact, but then fails to follow up and show how habitat will be restored and how continuing problems with "take" related to these practices will be diminished. In fact, activities that have resulted in the collapse of the Shasta River ecosystem with regard to supporting coho salmon will continue to occur under the ITP and marginal changes in existing practices are not sufficient to prevent jeopardy to coho salmon.

The actions contemplated under the Watershed wide Permitting Program will continue to place Shasta River coho salmon in jeopardy. The "project" addressed here does not, therefore, comply with CESA or CEQA.

The DEIR states that:

> "This Permit may be terminated by the Department at its sole discretion if circumstances or new information provides evidence that continued program implementation may result in jeopardy to coho salmon, or if such termination is required by law or court order. For the purpose of the Permit, 'jeopardy' includes, but is not limited to, to the probable extirpation of any coho salmon cohort."

There is strong evidence showing that Shasta River coho salmon are currently in jeopardy and are likely to remain so. For example, downstream migrant traps on the Shasta River between 2000-2002 captured between 212 and 747 coho juveniles from February to July. The same weak year class pattern described in the Scott River prevails, as well, in the Shasta River.

36-15 cont.

Water Trust "Plan B"

The DEIS does not state an alternative to the Water Trust if it fails to improve flow and water quality conditions to the point where coho are not jeopardized. This is a fundamentally important omission

36-16

CONCLUSION

In order for the ITP and permitting program to be credible, and actually lead to the recovery of coho salmon, appropriate scientific information must be developed in an open and peer-reviewed manner, while at the same time implementing an aggressive suite of interim measures. Only then can different management actions be evaluated in terms of effects to flows and water quality.

The DEIS lacks clear quantification of the level of take that would occur if the preferred alternative is implemented, and lacks a scientific framework to evaluate such take even if it was quantified. In this respect, the DEIS is lacking.

36-17

Many of the actions that CDFG, the State Water Resources Control Board (SWRCB) Water Rights Division (WRD) and the Department of Water Resources (DWR) would perform under the new Watershed Wide Permitting Program do not

36-18

require that the contemplated permitting process be created. Rather, these agencies have neglected these duties resulting cumulatively in a continuing and elevated "take" of coho salmon. Through the legitimizing of current harmful practices without more tangible steps for coho protection, illegal activities will continue to be ignored and hopes of public trust resource recovery will be set back substantially.

36-18 cont.

The DEIR not only fails to comply with CEQA's requirement for the use of "best science" and for the identification of cumulative watershed effects, and for data sharing, but it also runs counter to CEQA's policy requiring the efficient use of resources "to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment".

36-19

The Shasta River was the most productive river in the Klamath Basin and much potential. If it can be restored to even a fraction of its former productivity, it will contribute to the overall health of the Klamath Basin's coho populations, as well as other species, such as Chinook salmon and Pacific lamprey. Especially in light of climate change and the increasing importance of consistently cold water, the Shasta River will only become more important to the anadromous fisheries on the west coast. These foreseeable changes to the Basin that will result from global climate change, only serve to underscore the need for quick action.

36-20

Shasta River coho salmon cannot be maintained at their current low levels because the likelihood of loss due to storms or other stochastic events is high (Rieman et al. 1993). Coho populations must be aggressively rebuilt by providing refugia (Reeves et al. 1995) in habitats that have high intrinsic potential (Williams et al. 2006) and anthropogenic stressors like livestock use of the riparian zone need to be eliminated to allow full riparian and hydrologic recovery (Kaufmann et al. 1999). Dwinnell Dam operation would continue under the Program, passage to headwaters habitat would remain unavailable, Big Springs flows remain depleted and Parks Creek stays disconnected. These conditions will not recover weak year classes of coho nor the species. Without addressing the factors that have driven coho salmon into jeopardy, the Watershed Wide Permitting Program will remain ineffective and should not be adopted.

36-21

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Comment Letter 37

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

October 17, 2008

Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001

RE: SCH#2006102093 Shasta River Watershed-wide Permitting Program; Siskiyou County.

Dear Mr. Williams:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Completion (NOC) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine: 37-1
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey. 37-2
  - The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for: 37-3
  - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence. 37-4
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,
Katy Sanchez
Katy Sanchez
Program Analyst

CC: State Clearinghouse

Native American Contacts
Siskiyou County
October 17, 2008

Quartz Valley Indian Community
Ron Lincoln, Chairperson
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Fort Jones , CA 96032 Shasta
(530) 468-5907 Upper Klamath
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This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2006102093 Shasta River Watershed-wide Permitting Program; Siskiyou County.

State of California The Resources Agency

Memorandum

Date: December 9, 2008

To: Bob Williams
Department of Fish and Game
601 Locust Street
Redding, California 96001

From: **Department of Water Resources**

Subject: DRAFT Environmental Impact Report related to the Shasta River Watershed-Wide Permitting Program (October 10, 2008)

Thank you for giving us the opportunity to review your DRAFT Environmental Impact Report related to the Shasta River Watershed-Wide Permitting Program (October 10, 2008). The following comments are divided into General Comments and Section Specific Comments.

General Comments

- The Department of Water Resources (DWR) is currently the watermaster for one decree in the Shasta River Watershed. DWR provides State Watermaster Service for the Superior Court of Siskiyou County's Shasta River Adjudication and Decree 7035 issued during 1932.

  As the watermaster, DWR follows the Court's instructions as set forth in the decrees. Rejecting Alternative 2 – Adjudicated of Water Rights appears to be an attempt by The Department of Fish and Game (DFG) to impose extrajudicial water use restrictions on settled court cases. DWR request DFG to consider a revised Alternative 2 that includes the watershed-wide terms and conditions that would assure the take of coho salmon is avoided where ever possible and minimized and mitigated where the take is incidental to an otherwise legal activity and petition the court to include the appropriate terms and conditions of the ITP, SAA MOU, and the MLTC into the appropriate decrees. 38-1

  Implementing a Revised Alternative 2 is especially timely because of the actions of the County of Siskiyou to transition to a county managed watermaster program following the 2007 legislative action to establish the joint Scott Valley and Shasta Valley Watermaster District. At this time the county has already made significant advancements as evidenced by the February 2008 establishment of a Watermaster Board of Directory that currently has acquired approximately 40 per cent concurrence of the water right holders. Clearly this transition process is advancing at a pace that is consistent with implementing the ITP even if a revised Alternative 2 is selected.

In the draft EIR there are statements that the Department of Water Resources through its Watermaster Service will need to take certain actions to avoid or minimize the take of coho salmon as it relates to operating water diversion and managing water in the Program Area. The Watermaster Service will only be able to take those actions that are consistent with the decrees.

Implementing a Revised Alternative 2 would remove the implicit contradiction between the watermaster (who ever is currently acting as watermaster) implementing the decrees and the watermaster staying in compliance with the California Endangered Species Act and in the future maybe the federal Endangered Species Act.

38-1 cont.

- By stating there may be additional terms and conditions in sub-permits impedes a comprehensive review of environmental impacts associated with this permitting program. If additional terms are necessary then a supplemental EIR needs to be issued. 38-2

- Announcing that there will be additional water management actions that may result in significant and grave impacts to the environment, local economies, and land use that are expected to occur one to five years after the signing of the permit and sub-permits and not describing where and to what extent these specific actions are expected to occur appears to depart from CEQA guidelines to disclose and discuss foreseeable impacts. 38-3

- By requiring SVRCD to identify where to improve baseline instream flows and/or water quality within critical reaches of the Shasta River and its tributaries and at critical life stages of coho salmon by installing water improvement projects results in the Department of Fish and Game surrendering it statutory responsibility to someone else who may or may not have the skills to make such coho salmon related determinations and will likely compromise the success of the permitting program. DFG should retain, exercise, and defend its responsibility to make such fish related determinations. 38-4

- The EIR should list in one place (preferably in a matrix up front in the document after Table S-1) all the expected deliverables such as plans, reports, training and projects to be produced or constructed. The list should contain:
  - the required specific performance measures and significance criteria so that everyone will know when they are complete,
  - the entity responsible:
    - for paying for them,
    - for producing them,
    - for approving them,
  - the timeline to produce them
  - the timeline for approving them,
  - the consequences for not producing them, 38-5

- The list should be grouped by DFG, SVRCD, and Sub-permittee holder and within Sub-permittee holder by water right holders or DWR. 38-5 cont.

- In numerous places in the EIR DFG states that they will approve the design of head gates and flow control structures. For those diversions under the State Watermaster Service the California Water Code in Section 4100 through Section 4103 explicitly states the design will be approved by the Department of Water Resources (department). The following text is excerpted from the Water Code:

  4100. The owner of every conduit subject to regulation by a watermaster shall construct and maintain to the satisfaction of the department a substantial and serviceable diversion dam or works in the channel of the stream from which the water is diverted.
  4101. The owner of a conduit shall construct and maintain to the satisfaction of the department a substantial and serviceable headgate in the conduit through which the water is diverted at or near the diversion dam or works.
  4102. The headgate shall be of such construction that it can be locked and kept closed by the watermaster.
  4103. The owner of a conduit shall construct and maintain such water flow measuring devices at such points along the conduit as may be required and approved by the department for the purpose of assisting the watermaster in determining the amounts of water which are being diverted and applied to beneficial use.

  Either the statements corresponding to DFG's approval in the EIR should be revised to be consistent with the directives of the California Water Code by replacing DFG with DWR or additional statements need to be inserted to reflect the anticipated cooperation between DWR and DFG in arriving at the mutually satisfactory construction of diversion works and the maintenance of these works. 38-6

Section Specific Comments

Summary Page S-3 The last paragraph should mention "while also in compliance with California Water Code and several Superior Court water rights decrees."

Summary Page S-5 End of 4th paragraph: Add the consequences of Agricultural Operators being out of compliance with the Fish and Game Code and CSEA. Some operators might prefer to test this option, so they should know the consequences. 38-7

Chapter 1 Page 1-1 Add to 1st paragraph: "while also complying with the California Water Code and several Superior Court water right decrees." 38-8

Chapter 2 Page 3-5 Department of Water Resources: "Ensure watermaster activities are in compliance with CSEA, several Superior Court decrees, the California Water Code, and other applicable laws and regulations." 38-9

Chapter 2 Page 2-25 Paragraph 2. CDFG cannot instruct DWR to take actions that violate the California Water Code or the Superior Court decrees.

Chapter 2 Page 2-25 Paragraph 3. DWR can inform CDFG of any areas where fish stranding is probable based on flow conditions but cannot be responsible for observing every portion of every stream under watermaster service, nor whether or not coho may be present. DWR manages water, not fish.

Chapter 2 Page 2-25 Paragraph 3. If CDFG instructs DWR to reduce or cease a diversion and/or change the timing or manner of the diversion and take any other measures within DWR's control, DWR will implement those measures immediately (or as soon as possible) if they do not violate the California Water Code or any of several Superior Court decrees and is contingent on water right holder being a signatory of the ITP.

38-9 cont.

Chapter 3 Beaver Removal Page 3.2-10 The positive effects of beaver to the system are noted but is there any information about the beaver dams blocking migratory fish? The EIR seems to suggest that artificial structures in streams are a problem.

38-10

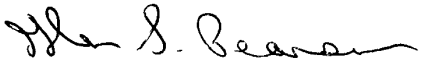
Appendix A Section XVII Page A-30 DEPARTMENT OF WATER RESOURCES SUB-PERMIT OBLIGATIONS

Sub-Section A. The last sentence should be revised to state DWR and DFG are to cooperate to arrive at the mutually satisfactory database.

Sub-Section C. At this point in time, the State Watermasters are not trained to determine what is "poor aquatic habitat" for coho salmon. The objective of this section would be better satisfied by requiring the State Watermaster to report when stream flows reach a predetermined discharge rate.

38-11

Thank you again for the opportunity to review your Draft Environmental Impact Report related to the Shasta River Watershed-Wide Permitting Program. If you have any questions concerning the Department's review of this draft report, please contact Dwight Russell at (530) 528-7402.



Glen S. Pearson, Chief
Northern District
(530) 529-7342

Comment Letter 38.1

UNIVERSITY OF CALIFORNIA, DAVIS

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CENTER FOR WATERSHED SCIENCES
Jeffrey Mount, Director
Ellen Mantallica, Assistant Director

ONE SHIELDS AVENUE
DAVIS, CALIFORNIA 95616-8527
www.watershed.ucdavis.edu

December 9, 2009

Mr. Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001
E-mail: SHASTADEIR@dfg.ca.gov

Dear Mr. Williams:

Please find attached technical comments on the Draft Environmental Impact Report for the proposed Shasta River Watershed-Wide Permitting program proposed by the California Department of Fish and Game and the Shasta Valley Resource Conservation District. These comments come from researchers who have been conducting work on the Shasta River for the past several years, including extensive assessments of factors that limit coho salmon populations in the watershed. The results of this research are readily available to DFG. 38.1-1

These comments do not represent the views of the University of California or the Center for Watershed Sciences, but rather are the opinions and judgments of the researchers.

Sincerely,

Jeffrey Mount
Director

Comments on Draft Environmental Impact Report for the Shasta River Watershed-wide Permitting Program

Center for Watershed Sciences
University of California, Davis

Introduction

Researchers affiliated with the University of California, Davis Center for Watershed Sciences have been conducting studies of the Shasta River for the past two years. The focus of this work has been on evaluating the factors that limit salmonid populations, in general, and coho salmon specifically. The following comments on the Shasta River Watershed-wide Permit Program Draft Environmental Impact Report reflect researcher's experience in the watershed and information collected during the research effort.

Principal Limiting Factor: Temperature

The DEIR states on page 1-2 that "[T]he restoration projects are intended to implement certain tasks identified in the Coho Recovery Strategy for California Coho Salmon that the Fish and Game Commission adopted in 2004 (Coho Recovery Strategy) and at the same time fully mitigate any take of coho salmon that occurs incidental to conducting a Covered Activity, as CESA.requires." There are several general findings in the Coho Recovery Strategy document.

- Rangewide recommendations are included that identify and implement actions to maintain and restore temperatures to meet habitat requirements for coho salmon in specific streams (page 7.4).
- Further, the Coho Recovery Strategy clearly identifies cold water as a limiting factor and identifies as GOAL IV and V to maintain, enhance and restore habitat (Page ES.2), which would include appropriate thermal conditions.
- Table 2.3 (page 2.22) of the Coho Recovery Strategy identifies temperatures for each life stage of coho salmon, and notes that high water temperatures are a problem (Page 6.12).

38.1-2

However, of the 26 recommended watershed actions for the Shasta and Scott Rivers, only one addresses temperature and then only through the broader category of water quality and without specific locations mentioned, actions identified, or quantification measures noted. This lack of specific stream temperature assessment, recommendations, and guidance from the Coho Recovery Strategy document from 2004 has apparently carried over into the DEIR. As such—and despite significant new research since the release of the Recovery Strategy (summarized in Jeffres et al., 2008)-- the DEIR fails to sufficiently address the principal limiting factor for coho salmon in the Shasta River: low abundance and quality of juvenile rearing habitat due to warm water conditions during irrigation season. Unless this key limiting factor is ameliorated through a prioritized restoration plan which addresses high water temperatures, coho salmon will continue to decline and the Shasta River population will move toward extirpation, regardless of other mitigation investments.

Need for Mitigation Prioritization

An effective approach to improving habitat conditions is through prioritization of mitigation investments. There is no prioritized list of mitigation measures in the DEIR that would address highest threats first. Several examples follow.

38.1-3

As noted above, recent research has shown that irrigation season water temperatures are the primary limiting factor for juvenile coho. Proposed mitigation actions in the DEIR (bioengineered bank

stabilization, LWD placement, riparian planting, increased flows, etc) that are not paired with appropriate reductions in water temperature will be ineffective. Priority mitigation investments should focus on lowering instream temperatures in the upstream reaches of the river where these efforts will yield measurable and significant results because of their proximity to cold water sources. As spring/summer temperatures are lowered in upstream locales, this effort can be expanded downstream through riparian shading and irrigation management. Taking a longitudinal, upstream-to-downstream approach, rather than a blanket, whole-watershed approach, is more likely to yield significant and timely habitat improvement for coho. Installation of "instream habitat improvement structures" as mitigation should not occur until water temperatures are low enough for juvenile coho to survive throughout the spring and summer months at the installation location. 38.1-3 cont.

Recent observations completed by DFG and others indicate that small, isolated spring-influenced reaches of Big Springs Creek and the upper Shasta River can support coho salmon through the summer period. These locations are the sole source of summer habitat in this river. Clearly, a top mitigation priority would be to protect and enhance any existing summer coho habitat. Yet the DEIR does not identify these areas as important and/or a priority. 38.1-4

Finally, the DEIR tends to treat the Shasta and Scott Rivers as a single unit, approaching the two basins with uniform, overarching, one-size-fits-all management actions. Although they share a common watershed boundary, are roughly the same size, and are tributary to the Klamath River, there are dramatic differences in hydrology, soils, geomorphology, land use, aquatic food webs, etc. These differences need explicit recognition and will require site- and condition-specific approaches to successfully implement the ITP. 38.1-5

Flow versus Temperature

Proposed mitigation measures for salmonids in general typically include the conclusion that increases in flows improve the amount and quality of rearing habitat. There is no exception to this as increased instream flows is identified as a key project alternative. However, the flow and temperature assessments included in the DEIR provide little analysis and no specific findings, rather only broad generalities. This appears inadequate to provide guidance to support actions associated with the Project, particularly since water temperature, rather than physical habitat, is the key limiting factor. Simply identifying warm tail water as a cause of warming, and increased flows as a way to "reduce maximum water temperatures" by several degrees, does not relate to coho salmon needs in any quantitative fashion. More comprehensive assessment is required to provide clear direction for site specific Project actions and more clearly illustrate how ITP activities in one part of the Shasta basin relate to ITP activities in another part of the basin, as well as their relative merit in protection of coho salmon. 38.1-6

Groundwater Management

As stated on page 3.2-4 "The Program could result in an increase in the extraction of groundwater which could contribute to decreased baseflows and increase ambient water temperatures in the Shasta River and its tributaries (Less than Significant)." Groundwater protection is probably the most important element affecting the hydrology and thermal conditions during critical over-summer rearing conditions for coho salmon. The DEIR focuses on the stock water program (a minor issue) and does not fully analyze the potential for an Agricultural Operator or Operators substituting all or part of a surface diversion for groundwater. At a minimum, the DEIR should address those areas critical to groundwater-surface water interactions. Specifically, the Big Springs complex and springs south along both the Shasta River and Parks Creek are areas of significance where springs should be protected to the highest degree possible. If these spring systems fail to function, nearly all of the 38.1-7

limited coho habitat currently available will be lost. Given that the DEIR identifies that the interactions between the groundwater and surface water are "not well understood" (page 3.2-42) and that groundwater flows via springs support nearly all the coho habitat in the Shasta River and Big Springs, the "Less than Significant" does not seem prudent. In fact, under limiting factors for this reach (page 3.3-26) identified that temperature is a principal limiting factor, and that groundwater pumping may diminish cold water spring inflows (note: all juvenile coho habitat identified in Parks Creek was associated with springs (Page 3.3-31)). To track these critical resources a spring monitoring program should be implemented to assess flow volumes and temperatures and document their current and future conditions. A practical element of this program would also be to track groundwater levels in regions of the Shasta Valley where cold springs are important to flow and temperature conditions for coho.

38.1-7 cont.

Management Framework

Large resource management programs such as that described in the DEIR are challenging to implement successfully. Our experience indicates that a formal management framework that identifies existing information, defines data gaps, and subsequently prioritizes actions and prescriptions on the ground is essential for success. These basic elements are lacking from the current DEIR. This framework would necessarily include an element to expand understanding of coho salmon in the Shasta and Scott basins. Further, proposed ITP monitoring would logically be incorporated into such a framework (identification of needs, prioritization, and implementation), as would project auditing and post-project monitoring required to measure success. Although these concepts are scattered throughout the DEIR, there is no formal framework to organize these activities and ensure efficient use of resources and time. If such a framework is not implemented at the inception of the program, the chances of the program having the desired outcome of preservation and enhancement of coho salmon populations is minimal.

38.1-8

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December 9, 2008

Mr. Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001

RE: Comment on Shasta River Watershed-Wide Permitting Program

The following comments are from the Montague Water Conservation District concerning the Draft Environmental Impact Report (EIR) for the Shasta River Watershed-wide Permitting Program (Program), released on October 10th. We have divided our comments into two categories: General and Specific. Our general comments refer to concerns and issues with the program and document in broad terms. Conversely, our specific comments refer to specific language within the EIR. Thank you for your efforts to include the community when addressing resource management issues within our watershed.

General

Baseline condition: It is our understanding that the date upon which an ITP application is submitted to the lead agency is the date in which the "baseline condition" is established for pre and post project comparison. In the case of this EIR the establishing date of the "Baseline Condition" is March 29, 2005. Under that premise, all existing infrastructure under the operation of the MWCD was in full operation.

We feel this is important to state as the Draft EIR repeatedly discusses and characterizes the historical effects of MWCD's infrastructure (mainly the construction of Dwinnell Reservoir) throughout the document. On numerous points the historical record contradicts points and accounts presented in the EIR, particularly Chapter 3. MWCD finds many of the assumptions made in the document about the historical setting to be incorrect. Had the MWCD been contacted during the development of this document, many errors could have been avoided. We caution against use of this document as a historical reference. 39-1

Water Quality over Quantity: Increased flows are identified throughout the document but the quality of the water (temperature, dissolved oxygen, etc) either currently existing or proposed for instream use is rarely discussed (it is well defined in Flow Mitigation 2). We caution the Program to seek flow enhancement without consideration of quality as has occurred on the Klamath River. 39-2

Conflict in Descriptions: The description of proposed requirements and process that will occur under the Program conflict as they relate to compliance and coverage for Dwinnell Dam. The Program requires all appropriative and riparian water rights within the program boundaries to obtain a 1602 permit. The document does not clearly describe how or whether Dwinnell Dam will be covered by the ITP and SAA.

As it relates to Dwinnell Dam, the document is unclear whether the intent is to implement the described investigation process (feasibility study) identified in "ITP Additional Avoidance and Minimization Obligation J:" in lieu of the standard SAA and ITP conditions. 39-3

Using the SVRCD Application as a reference: The Shasta Valley ITP application was used in Sections 2 and 3 of Chapter 3 as a reference for the southern portion of the watershed. We doubt the SVRCD intended the IPT Application to be used as a defensible reference in this document and recommend it be removed as a referenced document to establish historical condition, change or historical setting. In sum, an ITP Application is not a peer reviewed document and is allowed to make assumptions but can be incorrect. 39-4

Specific:

MWCD service acreage: The EIR list service acres as 13,000. The actual size of the District is approximately 15,000 acres plus additional acreage served by prior rights under the Shasta River Decree, with a total service area of approximately 19,500 acres. 39-5

Pg 3.3-11: MWCD's water right from Parks Creek is correctly stated as 14,000 acre feet in one location in the last paragraph on the page but refers incorrectly to the right as 14,000 cfs later in the paragraph. 39-6

Pg 3.2-13: EIR describes that ".....no flow is released from Dwinnell Dam except for small amounts to specific water users downstream (NRC, 2004)."

Response: This statement is misleading. At the time when the NRCS was developed there was little actual flow data in the southern portion of the watershed; this lack of specific data continues today. None the less, since 2005 DWR has been operating several gauging stations including a gage on the Shasta River at Edgewood (near the inlet of the Shasta River). Preliminary records show releases from Dwinnell to the Shasta River match or exceed inflow during the later summer months. This paragraph 39-7

should use more recent data available through DWR and be rewritten as it suggests that all flows are stored for irrigation when in actuality, more flows appear to be released than are entering the lake during the peak of the summer months. 39-7 cont.

Pg 3.2-16: " Field observations indicate that bar and streambed deposits of coarse gravel occur in upper Parks Creek and in the Shasta River upstream of Dwinnell Dam. The dam effectively traps and retains all but the finest sediment ..."

Response: There is no reference supporting this statement and we are not aware of any investigation that establishes that coarse sediment from Shasta River above Dwinnell Dam could transport to A-12 or beyond. There are several reaches above the Louie Rd. crossing of the Shasta River and another above A-12 that are very flat in gradient, have a wide flood plain and seem incapable of transporting coarse gravel regardless of the construction of Dwinnell. 39-8

Pg 3.3-18 Population Trends: This section exclusively focuses on the Dwinnell Dam construction and operation as being the only source of Chinook decline in the Shasta River. The section fails to mention regional changes in Ocean harvest, the effects of historical the fishery at the mouth of the Klamath and general decline of Chinook populations throughout the Klamath and the region (Oregon) during the same periods (The Decline of the Shasta River King Salmon Run, J.H. Whales 1951). The document also fails to consider other significant changes within the watershed including re-construction of diversion points downstream since the construction of the Dwinnell Reservoir and extensive increases in water temperature (Whales ,1951). 39-9

Sincerely,

Mike Crebbin

Mike Crebbin, President

Montague Water Conservation District

RCD
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December 8, 2008

Bob Williams
Staff Environmental Scientist
California Department of Fish & Game
600 Locust Street
Redding, CA 96001

Dear Mr. Williams,

The Shasta Valley Resource Conservation District (SVRCD) is taking this opportunity to formally comment on the Shasta River Watershed-Wide Permitting Program. While the District supports a watershed approach to permitting for Incidental Take (ITP) and 1600 permit coverage, we has some concerns regarding the program as it is written now. The following is a list of our concerns. 40-1

Funding of Mitigation Projects
As the master permit holder, the SVRCD is taking on the responsibility of implementing the mitigation measures for the permit. It has always been our concern that current funding, relied upon for implementation of projects may not be able to fund projects once they are considered as mitigation in the permit. The SVRCD has initiated contact with funders to request a formal determination by each respective agency as to whether they could continue funding the projects listed as mitigation measures for this permit. To date NRCS and FWS determined that they will still be able to fund mitigation projects under this permit. The SVRCD has not however, received any official word from other funding sources such as NOAA, BOR, the CA State Resources Control Board, and the U.S. Forest Service and private entities. 40-2

DFG
December 8, 2008

Future Funding Allocations
In light of the current economic situation both federal and state-wide, we would also like to formally express concerns about how significant budget cuts may affect the RCD's and/or the landowners ability to implement activities identified in the permit. The SVRCD would like to recommend that efforts begin both at State and Federal levels to secure funding to support ongoing activities identified in the permit despite budget shortfalls.

40-2 cont.

Success Rate for Riparian Planting
During the development of this permitting program staff and board of the SVRCD have continually expressed concerns over the requirement in the Master List of Terms and Conditions requiring an 80% success rate of riparian plantings (after 5 years)(pg. B-24). In over 20 years of conducting riparian planting projects in the Shasta River watershed we have never been able to achieve this level of success in plantings and feel that this requirement is unreasonable and unrealistic and virtually sets the SVRCD or landowners up for failure in attempting to implement planting projects. The SVRCD is a member of the Shasta River Riparian Working Group, who has a goal to to begin understanding why past planting efforts have not been sucessful, and to develop and recommend methods to insure that future planting efforts will be successful. The SVRCD strongly recommends that success criteria identified in the MLTC rely on recommendations and findings determined by this multi-agency working group of which the CA Department of Fish and Game is a member.

Furthermore requiring an unrealistic success rate of riparian plantings at year 5 is inconsistent with timelines associated with many grant funds (including funds through the CA DFG Fisheries Restoration Grant Program) and therefore the burden to achieve this unrealistic success rate at the end of 5 years will fall, unfunded and therefore unsupported, on the shoulders of the SVRCD and landowners. Rather than basing the planting success rate on some area-wide arbitrary number, the planting criteria and resulting success rate should be based on site-appropriate guidelines that are based on known characteristics of the soil and present ecological conditions.

40-3

Limitation of Grazing Management for Riparian Areas
The Incidental Take Permit (pg. A-24 E5) states that approved grazing management plans must show how grazing will result in "improved riparian function and

40-4

enhanced aquatic habitat". However, the Draft EIR or the ITP does not specifically mention how improved riparian functions or enhanced aquatic habitat is measured or
determined and leaves this determination to interpretation and is very subjective. Additional clarification is needed in how this will be measured or determined.

Secondly, grazing management has been shown in numerous studies to benefit riparian areas if implemented correctly. Requiring that "improved riparian function and enhanced aquatic habitat" occurs before obtaining permission to graze could limit a landowner's ability to manage for invasives and/or to improve overall success of riparian growth along waterways. The potential for successful adaptive management of riparian areas should not be limited by this permit.

40-4 cont.

Compliance Monitoring

Attachment 3 of the Incidental Take Permit's Monitoring and Adaptive Management Plan's Compliance Monitoring Section (A-45) lists the SVRCD as being responsible for determining if a sub-permittee is "fulfilling the terms and conditions of their sub-permits". It also states that the SVRCD shall "immediately notify the Department of sub-permittees who SVRCD believes are not fulfilling or implementing a term or condition of their sub-permit".

The SVRCD has strong concerns with the SVRCD functioning in a regulatory capacity in the form of compliance monitoring. Division 9, Chapter 13, Article 9 of the General Powers of the District gives no regulatory or enforcement authority to the District. Furthermore the SVRCD is concerned about the perception by the community of the RCD in any regulatory role and does not want this permitting program to jeopardize the trust gained by the community and the RCD's ability to continue assisting landowners with meeting permit obligations.

40-5

Dry Year Contingency Plan

Under the Flow Enhancement Mitigation Obligations, the SVRCD will develop and implement a Contingency Plan for Dry and Critically Dry Water Years. The SVRCD has a concern of being the one to determine whether the water year will be dry or critically dry by April 1st. We would feel more comfortable if NOAA or other weather organization factored into this discision.

40-6

Goals

The final concern that the SVRCD has is that there is no statement of a final DFG

40-7

measurable goal that should be achieved by our efforts in the Shasta River. The SVRCD and landowners need to know that progress is being made, but without any benchmarks of success we have no idea of when we have reached our goal. 40-7 cont.

The SVRCD appreciates the time that the Department has spent working with us toward the goal of a Watershed-Wide Permitting program, hoping that the concerns and issues that the SVRCD has can be resolved for the sake of the landowners in Siskiyou County. 40-8

Sincerely,

Richard Kuck
Board Chairman
Shasta Valley RCD

Comment Letter 41

CALIFORNIA TROUT
KEEPER OF THE STREAMS
www.calfrout.org

December 9, 2009

Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001
Email: ShASTADEIR@dfg.ca.gov

Dear Mr. Williams:

Please find attached comments on the Draft Environmental Impact Report for the proposed Shasta River Watershed-Wide Permitting program proposed by the California Department of Fish and Game and the Shasta Valley Resource Conservation District.

California Trout is a statewide conservation organization dedicated to protect and restore wild trout and steelhead waters throughout California. California Trout operates a field office in Mt. Shasta and has worked specifically on the Shasta River watershed since 2000. California Trout has served as a member of the statewide Coho Salmon Recovery Team and the Shasta-Scott Recovery Team (SSRT).

We are supportive of the Program to develop a watershed wide permitting process to implement coho salmon recovery tasks and facilitate compliance of agricultural activities and restoration projects with the California Endangered Species Act (CESA). For the program to succeed, however, several fundamental issues must be addressed.

- A revised DEIR must adequately describe the Program, analyze the significant environmental impacts of the Program and undertake a legally sufficient study of alternatives to the ITP.
- Mitigation measures proposed in the revised DEIR must address the primary factor leading to the decline of coho salmon –summer rearing water temperatures.
- The Incidental Take Program should not memorialize or provide any explicit exemption for landowners to comply with Fish and Game Code, including but not limited to Section 5937.

We are confident the above issues can be addressed and believe on the whole the Program presents Shasta Valley stakeholders with the most viable alternative for complying with state and federal law, protecting individual rights, sustaining an agricultural economy, improving habitat and water quality conditions and recovering coho salmon populations.

41-0a

Sincerely,

Curtis Knight
Mt. Shasta Area Program Manager

CALIFORNIA TROUT COMMENTS ON SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Introduction

California Trout appreciates the opportunity to comment on the California Department of Fish and Game's (Department) Shasta-Scott River Watershed-Wide Permitting Program (Program). California Trout is a statewide conservation organization dedicated to protect and restore wild trout and steelhead water throughout California. California Trout operates a field office in Mt Shasta and has worked specifically in the Shasta River watershed since 2000. California Trout currently serves as a member of the statewide Coho Salmon Recovery Team and the Shasta-Scott Coho Recovery Team (SSRT). 41-0b

We recognize the primary purpose of the Program is to enable Agricultural Operators to continue routine farming and ranching activities in the Program Area and SVRCD's restoration project implementation, while avoiding, minimizing, and mitigating for take of coho salmon that might occur incidental to the activities, in accordance with Fish and Game Code, 1600 *et seq*, and California Endangered Species Act.

We generally support DFG's programmatic approach to develop a watershed wide permitting process to facilitate compliance of agricultural activities and restoration projects with the California Endangered Species Act (CESA). The Program as described, however, falls short of adequately mitigating for covered activities and provides insufficient detail about the nature of the proposed ITP. The description of the program is vague and speculative and therefore violates CEQA's core principles. The DEIR violates CEQA because: a) it fails to adequately describe the Program, b) it fails to analyze the significant environmental impacts of the Program and c) fails to undertake a legally sufficient study of alternatives to the ITP. 41-1

CEQA defines an EIR as primarily "an informational document." Pub. Res. Code 21061. An EIR's main purpose is to "inform public agency decision makers and the public generally of the significant effects, and describe reasonable alternatives to the project. CEQA Guidelines 15121(a). This environmental review document fails to fully and accurately inform decision-makers, and the public, of the environmental consequences of their actions. The CEQA guidelines define "project" as "the whole of an action, which has a potential for resulting in a either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." Id. 15378 (a). CEQA guidelines require the DEIR to analyze the environmental impacts of the Program as a whole, and propose adequate mitigation measures to address those impacts.

Coho Salmon in the Shasta Valley

The coho salmon that return to the Shasta and Scott Rivers are unique in the distance they travel to spawn. Coho salmon runs travel 180 plus miles up the Klamath River to spawn in the Shasta and Scott Rivers and are important stocks for future fish reintroduction efforts above the Klamath Dams. Fish passage is requirement of PacifiCorp's as part of the relicensing of five dams on the Klamath River, 41-2a

either through dam removal or fish ladders. The loss of these unique stocks of fish will compromise the ability of remaining coho stocks to successfully colonize the area above Iron Gate Dam.

The estimated numbers of adult coho salmon returning to the Shasta River are low and decreasing. Fish population biologists and geneticists have established that effective population sizes of less than 50 fish result in a high risk of extinction in the short term. Over the long-term sustainability of genetically robust fish populations requires effective population sizes of more than 500 fish.[1] Two of the three cohorts of coho salmon returning to the Shasta River are in immediate risk of extinction based on the above criteria and the third is less than half the number of returning adults needed to maintain long-term sustainability. See Table 1.

Table 1. Department of Fish and Game adult coho salmon return estimates to the Shasta River 2001 - 2007.

Year	Shasta River Adult Coho Return Estimates	Cohort
2001	291	1
2002	86	2
2003	187	3
2004	373	1
2005	69	2
2006	45	3
2007	255	1

The recent decline of cohort 3 is of particular concern. In 2003, 187 adult coho salmon returned to the Shasta River. Three years later in 2006, the progeny of the 2003 run only returned 45 adult salmon. This trend for cohort 3 follows what has previously happened to cohort cohort 2. Both cohorts appear to be sliding towards extirpation in the Shasta River.

41-2a cont.

Juvenile coho currently over summer in the Shasta River in only a few cold water spring refugia habitats associated with Big Springs Creek and Parks Creek. These rearing areas are extremely important to protect and restore. Opportunities exists to expand these cold water refugia areas to increase the amount of suitable over summer rearing habitat in the Shasta Valley. The Program should identify covered activities that impact these cold water springs and define appropriate enhancement and mitigation measures for these important rearing areas. The protection and enhancement of these springs, which are located on only few properties, should be the top priorities of the Program.

41-2b

[1] Nelson, K., and M. Soulé. 1987. Genetical conservtion of exploited fishes. Pages 345-368 *in* N. Ryman and F. Utter, editors. Population genetics and fishery management. Univeristy of Washington Press, Seattle, Washington.
Allendorf, F. W., and N. Ryman. 2002. The role of genetics in population viability analysis. Pages 50-85 *in* S. R. Beissinger and D. R. McCullough, editors. Population viability analysis. University of Chicago Press, Chicago, USA.
Hilderbrand, R. H., and J. L. Kershner. 2000. Conserving inland cutthroat trout in small streams: how much stream is enough? North American Journal of Fisheries Management 20:513–520.

Jeopardy

The Department defines "jeopardy" as "the probable extirpation of any coho salmon cohort" (Jeopardy definition (A-34/5). The ITP states that the Permit "may be terminated by the Department at its sole discretion if circumstances or new information provides evidence that continued program implementation may result in jeopardy to coho salmon…" (A-34).

The population data in Table 1 indicates that jeopardy may already apply. The Program as a whole could lead to the continued jeopardy of coho salmon because it permits activities that contribute in part to the current decline. We request that the DEIR define jeopardy and permit termination criteria based on measurable goals and objectives.

41-3

Coho Salmon Limiting Factors to Production in the Shasta Valley

The DEIR and proposed mitigation and enhancement measures do not adequately address the key limiting factor for coho salmon survival in the Shasta River—warm summer time stream temperatures for rearing juvenile coho salmon. Mitigation measures that do not address warm summer time temperature will not adequately mitigate for take. More importantly lack of mitigation measures that do not address warm summer stream temperatures will result in the continued decline of coho salmon in Shasta River and eventually the more stringent regulatory measures. The DEIR makes no mention of temperature reduction as a "Physical Change Likely to Result from the Program." Mitigation measures for ITP activities do not address the primary limiting factor for coho salmon production and abundance – summer rearing stream temperatures.[2] Furthermore, unless mitigation measures lead to decreased water temperatures throughout the Shasta River, coho salmon will continue to decline.

41-4

Key Issues

The Department may authorize take by a permit provided: 1) it is incidental to a lawful activity; 2) the impacts of the authorized take are minimized and fully mitigated; 3) the permit is consistent with any regulations adopted pursuant to Fish and Game Code 2112 and 2114; 4) there is adequate funding to implement the minimization and mitigation measures, and to monitor compliance with and the effectiveness of those measures; and 5) issuance of the permit will not jeopardize the continued existence of the species (Fish and Game Code 2081, subs (b)(c).

Based on the above criteria we have the following concerns:

1. The Program cannot memorialize or provide any other explicit exemption for compliance with Fish and Game Code. The Program potentially provides explicit exemption unlawful activities and dams. For example, Dwinnell Dam currently does not comply with Fish and Game Code Section 5937 and 5901. Incidental Take Permits cannot be issued for structures that do not

41-5a

[2] Jefrres, et al. 2007. Baseline assessment of salmonid habitat and aquatic ecology of the Nelson Ranch, Shasta River, California, Water Year 2007. J. Mount, P. Moyle and M. Deas, Principal Investigators, UC Davis Watershed Center.

provide enough flow downstream of the diversion to keep fish and good condition and provide adequate fish passage. The violation of existing Fish and Game Codes is a primary factor in the decline of coho salmon in the Shasta Valley. 41-5a cont.

1. Law enforcement is paramount to success of the ITP. The EIRs must fully analyze impacts and assure that compliance with applicable laws and regulations is adequately monitored by CDFG. Adequate compliance and enforcement processes as well as funding for staffing need to be clearly identified in the document. CDFG should not agree to keep wardens off the streams they are responsible for protecting. Allowing farmers and ranchers in the Shasta and Scott Valleys to deny river and stream access to Fish & Game officials and the public is contrary to state law and should be not be considered. 41-5b

2. The level of take must be numerically defined for each activity and mitigations to address the anticipated take must also be individually defined with clearly measurable criteria included in the document. 41-6

3. Adequate funding does not exist to implement the minimization and mitigation measures; and to monitor compliance with and the effectiveness of those measures. Public funding of mitigation measures will be difficult unless these mitigation measures go the extra step to not only mitigate for take but go beyond the strict legal requirements and include mitigation measures that address coho recovery needs. Public funding should not be used for mitigation purposes but should be used for "recovery" purposes. Diverse funding mechanisms for all measures should be identified and include the contributions from applicants. Program Funding (3.1-27) states that CDFG and SVRCD anticipate that grants, cost shares and loans will offset some or all of the costs of the Program. It further states that "it is likely the Program will result in minimal net cost to participating Agricultural Operators". 41-7

4. Mitigation measures need to be fairly distributed among all users in accordance with their level of take. Large irrigation districts should be responsible for mitigating for the large impact they have on the river. For example, the Montague Irrigation District irrigation operations impact the mainstem Shasta River flow and fish passage, Parks Creek flow and fish passage, and Big Springs Creek through groundwater pumping at the Pasey Pumps. The mitigation and enhancement measures for these activities should match the "take" these activities have. 41-8

5. We challenge determination of baseline conditions. We understand that the "DEIR analyzes the physical, project-related changes to the 'baseline' the Program could cause; changes do not include the environmental impacts caused by historic, ongoing activities that predate the determined 'baseline'. Consequently, CESA does not mitigate for those changes." Current baseline conditions, however, include activities that are illegal and contributing to the decline of coho salmon. The baseline was established while illegal diversions and activities were occurring and therefore do not represent true baseline conditions. Further, pre-project baseline data is 41-9

essential for evaluating potential project impacts before project approval. The DEIR must include adequate pre-project baseline data. 41-9 cont.

6. The area of above Dwinnell Dam should be included in geographic scope of the Program. The geographic scope of the project is limited to the area below Dwinnell Dam because coho salmon cannot access historic spawning grounds in the estimated 23% of the Shasta River watershed above the dam due to lack of fish passage facilities. To be in compliance with Fish and Game Code 5901 Dwinnell Dam must provide fish passage. Coho salmon and other anadromous fish cannot access this area because of an illegal structure. Fish would have access the upper watershed and take activities above the dam would be required to participate in the program if Dwinnell Dam was a legally permitted structure. Additionally, current coldwater diversions above Dwinnell Dam from Carrick Creek, Beaughton Creek, Boles Creeks and the Upper Shasta River divert cold spring water sources from entering the Shasta River system and denying the system what it needs most—inputs of cold water during the summertime. Collectively Beaughton, Boles and Carrick Creeks contribute at least 15 cfs of cold spring water during the summer and this cold water rarely reaches the mainstem Shasta or Dwinnell Dam because of diversions that should be included in the Program. 41-10

Specific Comments by Section

Project description

1. Project Description 2.1.2 Objectives of Program Participants
    a. DEIR must analyze and define success for each program participant.
    b. Existing objectives in DEIR are vague and lack measurable indicators.
    c. How does the Program evaluate success for Program Participants? 41-11

2. Project Description 2.3.3 Mitigation Obligations of SVRCD: Flow Enhancement Mitigation 2: Improve Baseline Instream Flows Via Water Efficiency Improvements (2-21)
    a. This section requires identification of reaches but not measurable objectives for meeting “aquatic habitat improvement”. The DEIR mush identify measurable objective for “aquatic habitat improvement”.
    b. Contingency plan for dry years – (2-21) requires a plan to “incorporate the best available information on both surface and groundwater (where relevant) to minimize the likelihood that critical coldwater flows to the Shasta River and its tributaries are impaired”. The DEIR must define where groundwater is “relevant” and clearly describe what actions would be used to minimize impairment activities.
    c. To what extent will mitigation measures increase baseline in-stream flows?
    d. What constitutes success for flow enhancement?
    e. Where will funding come from for water efficiency projects? 41-12

3. Project description 2.3.3 Habitat Improvement Mitigation 2: Instream Habitat Improvement structures
    a. DEIR fails to address the issue of temperature in relation to habitat improvement 41-13

b. Physical habitat improvement projects such as "20 in-stream structures" do not constitute adequate mitigation measures unless linked to measurable temperature reductions
c. Who will fund these structures?

41-13 cont.

4. Project description 2.3.3 Habitat Improvement Mitigation 3: Riparian Planting
   a. DEIR does not address past attempts at riparian planting.
   b. DEIR does not address affects of soil conditions, and impaired flow regime on successful riparian regeneration
   c. Planting may fail without improvements in flow regime
   d. Where will funding come from?

41-14

5. Project Description 2.3.4 Monitoring and Adaptive Management Program
   a. DEIR fails to address adequately how SVRCD will monitor to determine whether sub-permittees are fulfilling the terms and conditions of their sub-permits
   b. DEIR fails to address adequately how SVRCD will determine the effectiveness of the avoidance, minimization, and mitigation measures outlined in the ITP
   c. DEIR fails to address adequately the conflict between SVRCD's lack of regulatory authority and their role in reporting non-compliance. The Program forces SVRCD to compromise their relationships with constituents which may lead to program failure

41-15

6. Project Description 2.3.5 SVRCD Reporting Requirements
   a. DEIR fails to analyze adequately the financial, human and technical capacity of SVRCD to carry out these reporting requirements

41-16

7. Project Description 2.3.6 Department of Water Resources Obligations under Sub-permit
   a. DWR will implement the Shasta River Decree pursuant to provisions of the California Water Code in the adjudicated portions of the Shasta River Watershed.
   b. As part of that responsibility, DWR water master will verify that each sub-permittee is in compliance with their respective water rights.
   c. A water right verification program must include verification of quantity, place of use, and timing of water right use.
   d. How will DWR verify that each sub-permittee is in compliance with respective water rights?
   e. How will DWR verify compliance during periods when water-master is not working?
   f. What data will be recorded in proposed data base?
   g. Does DFG have authority to direct DWR to "reduce or cease" diversion and or change timing or manner of diversion?"

41-17

8. ITP Additional Avoidance and Minimization Obligation A: Water Management
   a. Lacks measurable objectives
   b. Need adequate review of baseline data to determine in-stream flow objectives

9. ITP Additional Avoidance and Minimization Obligation C: Fish Passage Improvements
   a. Are all sub-permittees required to provide fish passage within 5 years?
   b. Does this include MWCD?

41-18

c. Who will fund design, construction and maintenance of fish passage improvements for MWCD?

10. ITP Additional Avoidance and Minimization Obligation J: Dwinnell Dam and the Montague Water Conservation District (MWCD)
    a. Avoidance and Minimization of negative effects of MWCD and Dwinnell Dam are inadequate
    b. Where will funding come from for feasibility study?
    c. Investigating "possibility" of providing fish passage is inadequate
    d. MWCD must provide passage pursuant to Fish and Game Code 5937 and 5901
    e. Permit should not be issued until these issues are explored thoroughly
    f. DEIR should address legality of Dwinnell Dam under Fish and Game Code

41-18 cont.

Environmental Settings, Impacts and Mitigation Measures

11. Environmental Setting Section (3-2)

    a. In establishing baseline conditions the DEIR does not consider that illegal activities may be occurring. Illegal actions cannot be considered baseline. If it is determined the baseline included illegal activities the baseline must be reassessed.

41-19

12. Impact 3.2-4, *The program could result in an increase in the extraction of groundwater, which could contribute to decreased baseflows and increased ambient water temperatures in the Shasta River and its tributaries (less than significant).*

    a. Groundwater impacts are not clearly defined in the document and therefore are not adequately mitigated. The document claims a less than significant impact from extraction of additional groundwater with no mitigation measures required (S-12, 3.2-4 – also see S-14 3.3-2). "Groundwater dynamics exert a strong influence on the volume and quality of surface flow in the Shasta and its tributaries." (3.2-8). In spite of this statement there is no groundwater component of the Program. Monitoring of additional wells, groundwater extraction and groundwater levels as well as potential relationships with surface flow must be included.

    b. Groundwater supply may be used as alternative means to satisfy stock water demand from Oct-Dec. Will the quantity of stock water use be verified?

    c. Increases in extraction of groundwater may lead to reduced base flow and increased temperatures
    d. Groundwater assessment or basin management plan needed

41-20

13. Dams and Impoundments 3.2-13
    a. How does Dwinnell dam and other impoundments affect temperature throughout the river?
    b. No mention of temperature in this section

41-21

14. Water Quality 3.2-19
    a. Important research excluded from section
    b. Should include Jeffres 2007, Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007

41-22

15. Impact 3.3-2, *Increased extraction of groundwater could contribute to decreased baseflows and increased ambient water temperatures in the Shasta River and its tributaries, thereby impacting coldwater fish habitat (less than significant)*

    a. What is the relationship between groundwater and surface water throughout the Shasta Valley
    b. How does this relationship affect coldwater fish habitat and coho salmon?
    c. How does

41-23

16. Impact Analysis 3.3-47
    a. DEIR claims it is expected that the overall amount of water diverted in the Program Area will decrease at certain times of the year.
    b. By how much will diversions decrease, where and when?

41-24

Cumulative Effects and other Required Topics

1. Cumulative Effects 4.2.3 Biological Resources: Fisheries and Aquatic Habitat
    a. The DEIR fails to address the cumulative effect on coho salmon of high temperatures and poor water quality throughout the project area
    b. How do current average maximum daily temperatures affect coho salmon?
    c. Proposed mitigation will not reduce average maximum temperature and therefore will not reduce the effects of the Program to less than significant

41-25

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Comment Letter 42

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December 8, 2008

Bob Williams
Email: SHASTADEIR@DFG.CA.GOV
Department of Fish and Game, Region 1
601 Locust Street
Redding, CA 96001

Re: Shasta River Watershed-Wide Permitting Program, SCH#2006102093

California Department of Fish and Game:

Following are the comments submitted by and on behalf of Klamath Riverkeeper (KRK), the Pacific Coast Federation of Fishermen's Associations (PCFFA) and the Institute for Fisheries Resources (IFR) regarding the Draft Environmental Impact Report (DEIR) for the proposal to issue watershed-wide permits for stream bed alteration actions and incidental coho take in the Shasta River watershed, where coho salmon are both state listed under the California Endangered Species Act (CESA) and federally listed under the federal Endangered Species Act (ESA).

Klamath Riverkeeper's projects and campaigns help restore water quality on the Klamath River, bringing vitality and abundance back to the river and its people. The Pacific Coast Federation of Fishermen's Associations (PCFFA) is the west coast's largest organization of commercial fishing families, many of whose members depend on a healthy Klamath salmon population for their livelihoods, and has worked for more than 30 years to restore healthy salmon runs to the Klamath Basin. The Institute for Fisheries Resources (IFR), which is closely affiliated with PCFFA, funds and manages multiple salmon restoration efforts for PCFFA and on behalf of salmon fishing-dependent coastal communities throughout the Klamath Basin.

Our organizations are all deeply committed to making the Klamath fishable and swimmable again—and to working with all the people and their communities who need clean water and healthy fisheries in the Klamath watershed.

42-0

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Summary and General Comments

Overall, we find that while the DEIR contains some well-intended proposals to help recover coho and prevent the need for regulatory enforcement, it falls far short of the level of adequate analysis required under the California Environmental Quality Act (CEQA). Additionally, the DEIR shows some troubling inconsistencies that work at cross-purposes with prescriptions in the Coho Recovery Plan referenced in the document as well as the North Coast Regional Water Quality Control Board's TMDL basin plans. 42-0 cont.

Progressive dewatering and over-appropriation of the Shasta River's limited groundwater inflows has been an ongoing problem throughout the basin and is probably the *single largest adverse impact* on coho populations in the river. Refer to ATTACHMENT 1, which are PCFFA/IFR comments on the current Shasta River TMDL dated October 29, 2006, for information on this ongoing over-appropriation problem. We include and incorporate this ATTACHMENT 1 and the references, data and charts therein as part of these comments. We also incorporate ATTACHMENT 2, which is a specific study on the impacts of the Shasta River on coho within the Nelson Ranch.

The number of groundwater permits or irrigation well has skyrocketed in recent years throughout the Shasta River, yet little study has been done to assess the adverse impacts on local stream flows of drawing down local aquifers on such a scale. Dry channels correlate closely with recent increases in groundwater pumping (see ATTACHMENT 1, especially Attachment A to that document). 42-1

Unfortunately the measures contemplated under the DEIR do not address this core dewatering issue – excessive basin-wide over-appropriation of water that dries up *increasingly large portions* of the Shasta River every year – and thus will not lead to the restoration of endangered and threatened fish species. Indeed, allowing these practices to continue through permits issued pursuant to this program would not only violate CESA and various state and federal clean water laws including California's TMDL standards in that river system, but would ultimately lead to coho extinction in that basin.

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Our analysis also finds that the facilitation of take permitting for sub-permittees in this program is impossible to justify in light of persuasive scientific data showing that some of these same projects (particularly water diversions) are resulting in a net loss of year classes or broods returning to the Shasta River (see ATTACHMENT 1, particularly at pp.22-26; ATTACHMENT 2). In addition, with respect to the Incidental Take Permits contemplated in this program, the DEIR: (1) does not fully describe these projects, and does not disclose their impacts on ESA and CESA listed coho and other salmonids present in the river system; (2) does not adequately identify biological thresholds of major significance that, if exceeded, with result in not only unnecessary "take" of these species but jeopardy resulting in eventual extinction. 42-2

CDFG cannot and should not delegate enforcement of CESA and DFG codes and regulations to the local Resource Conservation Districts (RCDs). These organizations (which are made up of and controlled entirely by the landowners who would be subject to these same regulations) have an *inherent conflict of interest* that cannot be overcome. Asking them to regulate themselves and their neighbors also puts them in an untenable political position, the end result of which will almost certainly be little or no regulation at all of actions (such as increasing over-diversion of the Shasta sub-basin's limited water supply) that *clearly* jeopardize the future existence of coho and other salmonids in the basin. 42-3

Likewise, privatizing data from publicly funded flow and water gauges is also not appropriate and is likely illegal. The Program described in the DEIR would allow for this data to be withheld from the public through mechanisms to put control over this data in the sole hands of the RCDs. 42-4a

Our organizations are concerned that, however well-intended, the program proposed in this DEIR would even further jeopardize threatened coho salmon in the basin, thereby making the program a potential violation of CDFG's obligations under the California Endangered Species Act as well as its federal equivalent. 42-4b Furthermore, these actions would jeopardize the ability of the sub-basin to meet current TMDL standards as well as ITP proposed minimum instream flows of 20 cfs needed for fish migration, spawning and rearing in August, September and October. Current Shasta River flows are already *far* 42-4c

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below these adjudicated USFS minimum flow obligations (see ATTACHMENT 1, Figure 2 on pg. 6). 42-4c cont.

Implementation of these mitigation measures and provisions is also not clearly specified, but appears to be lacking. In particular, CDFG should not agree to keep wardens off these streams which the State of California is responsible for protecting. Coho poaching in these streams is not an insignificant problem. Allowing locals to simply deny river and stream access to CDFG officials charged with statutory responsibility to protect those public trust resources is contrary to state law and should not become *de facto* policy. 42-5

The DEIR also does not include, and is therefore not based on, the best available science. For instance you should consider *Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007*, Jeffrey Mount, Peter Moyle and Michael Dias, Principal Investigators, a report prepared for the U.S. Bureau of Reclamation by the Center for Watershed Studies, UC Davis, CA (undated). For convenience we have attached this study as ATTACHMENT 2. 42-6

In specific, there is relatively little discussion or inadequate discussion of the need to maintain minimum instream flows and how decades of largely agricultural diversions of these flows (either directly from the stream or indirectly via groundwater aquifers reducing spring inflows to these streams) has been the primary driver of coho habitat destruction in the river. 42-7

Finally, Fish and Game Code 2081 (b) and (c), referenced throughout the DEIR, stipulates that authorized take mitigation measures "must be roughly proportional in extent to the impact of the taking on the species, maintain the applicant's objectives to the greatest extent possible and must be capable of successful implementation." Unfortunately, the permitting structure proposed by CDFG for this program fails to meet these stipulations because: 1) the DEIR does not adequately characterize the risk of extinction facing Shasta River coho due to agricultural practices and therefore underestimates the proportional need for mitigation; (2) the project proposed in the DEIR is unlikely to reduce the need for enforcement, citizen suits under CESA and other regulatory tightening to protect threatened and endangered coho, therefore failing to meet a key objective for applicants; and (3) the DEIR does not provide the 42-8a 42-8b 42-8c

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necessary information or trigger mechanisms for successful implementation of such a project. 42-8c cont.

Section Specific Comments

The following additional comments serve to evaluate the contents of the DEIR, breaking the document down by sections we are primarily concerned about, but also serve to evaluate the overall legal, biological and economic adequacy of the approach contemplated in the proposed permitting project or "program":

1.2.3—Scope of the Draft EIR

The programmatic scope of this document is problematic, incomplete and inappropriate. Aggregation of streambed alteration and coho take by many individual agricultural operators into one watershed-wide permit creates an accountability gap and deprives the public of its legally assured right to comment on important details unique to each specific land use under CEQA. 42-9

Section 2.1.1—Program Objectives

While we recognize and appreciate the effort taken to improve conditions for coho by working with agricultural operators to improve their practices and mitigate their damages, we find that the stated objectives either ignore, are inconsistent with, or would work at cross-purposes with the stated objectives in the referenced *Coho Recovery Strategy* approved by the Fish and Game Commission as state coho recovery policy in 2004.[1] 42-10

Page ES-2 of the *Coho Recovery Strategy* states:

> "The primary objective of this Recovery Strategy is to return coho salmon to a level of sustained viability, while protecting the genetic integrity of both ESUs, so that they can be delisted and regulations or other protections under the CESA (FGC §2050et seq.) will not be necessary. The Department defines sustained viability as a future condition when naturally producing coho salmon are adequately

[1] "Recovery Strategy for California Coho Salmon," Report to the California Fish and Game Commission (adopted by the Fish and Game Commission as formal policy on February, 2004).

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abundant and occupy a sufficient range and distribution to ensure against extinction due to environmental fluctuations, stochastic events, and human land and water-use impacts.

"A second objective of this Recovery Strategy is to achieve harvestable populations of coho salmon for Tribal, recreational, and commercial fisheries, so important to the cultural and economic well-being of California."

However, the DEIR does not furnish nearly enough detail as to how, exactly, the proposed program would meet the above stated objective of the *Coho Recovery Strategy*. What's more, the DEIR fails to identify abundance, delisting or harvestable fisheries as objectives of the program. Furthermore, the DEIR does not offer any metrics or benchmarks to quantify the net coho recovery resulting from restoration actions proposed in the program. Without such a quantifying mechanism, it is biologically impossible to measure whether the objective, not just to maintain or increase coho populations, but also to recover Shasta River coho runs to the point of abundance and delisting, has been or even ever could be achieved.

42-10 cont.

More specifically, the *Coho Recovery Strategy* provides a set of criteria for recovery. The first criterion (Goal I) listed on page 4.4 of the recovery plan: "Maintain and improve the number of key populations and increase the number of populations and brood years of coho salmon."

The reality is that as long as the root causes of coho declines in the Shasa River watershed such as excessive groundwater pumping, illegal diversions, stream dewatering, lack of enforcement and permitted habitat fragmentation go unaddressed, coho there will continue to decline. *As long as coho continue to decline, CDFG must act to reverse the trend.* Failure to do so would be arbitrary and capricious as well as a derogation of CDFG's statutory duties as the Trustee Agency over fish and wildlife in California.

Unfortunately, this DEIR offers no evidence that the proposed program would do enough to reverse the current trend toward salmonid extinction in the river. Indeed, the program seems designed instead to allow CDFG to "opt out" of its remediation and enforcement responsibilities by illegally delegating those

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responsibilities to RCDs and other entities directly controlled by the regulated community.

Although most Tribal and commercial fishermen who would benefit from a harvestable coho fishery live and work outside the Shasta River watershed, they are directly affected by salmon declines in the Shasta sub-basin. Indeed, as we saw during 2006, greatly reduced numbers of salmon surviving in the Klamath River can force "weak stock management" closures to ocean salmon harvests as far south as Monterey, CA and as far north as northern Oregon – nearly 700 miles of coastline. As such, the omission of any demonstrable benefits to these groups from the program's objectives represents an imbalanced set of priorities that fail to sync up with CDFG's commitment to the needs and historic uses of those groups in the *Coho Recovery Strategy*.

42-10 cont.

2.1.4—Program Permitting Structure

The DEIR's ITP and MLTC Covered Activity 9 proposes to complete a dam demobilization and water quality improvement project at Shasta Water Association's Dam as well as a fish barrier removal project by Grenada Irrigation District.

Table 4-1 in section 4.1.3 (p. 4-11) identifies Shasta River Water Association Fish Passage and Water Quality improvement project, specifying a new set of pumps, intake structure and a fish screen installation.

Appendix page A-17 in this DEIR, titled conditions of permit approval, documents plans to construct a new diversion structure and water transmission system eight years after an ITP is issued. How can CDFG condition permits it plans to issue to Grenada Irrigation District on a project planned for eight years after the effective date of the permit? This action would be unreasonable and inconsistent with CDFG's statutory and regulatory obligations. Further, it is likely that Grenada Irrigation District will increasingly resort to use of groundwater, which is inadequately regulated and improperly given away under this permitting program.

42-11

In the meantime, the DEIR projects a fish passage project at the Grenada Irrigation District diversion structure funded by SVRCD to be imminent or reasonably foreseeable (Table 4-5 on p. 4-22, Shasta Watershed-wide Permitting Program DEIR), although not technically covered under this program.

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Fish passage projects, covered in Activity 9 herein, should not always be allowed as a substitute for more effective measures to increase instream flows. Improving the effectiveness of enforcement, actively regulating the use of groundwater and strategically denying permits to inefficient and low yield irrigators such as Grenada Irrigation District and Shasta River Water Association would certainly do more to recover coho. (Analysis of impacts to biological resources on p. 3.4-8-9 documents the riparian recovery potential of areas irrigated by GID, making it strategically smart to deny permits here.) This coverage is too broad and cannot be justified in light of data showing that at least two out of every three year classes are declining heavily in the Shasta River (see ATTACHMENT 1, particularly at pp. 22-26).

This DEIR does not adequately show how permitting ongoing irrigation by these two diverters, whether by withdrawal of surface or groundwater, will meet steelhead, chinook or coho recovery goals or needs. This DEIR also fails to show that mitigations described therein will adequately or proportionally aid in recovering Shasta River coho while permitting incidental take and streambed alteration, as required in Fish and Game Code 2081 (b) and (c).

While our comments have focused in on activity 9 project coverage, we see similar problems with providing permit coverage for diversions, diversion structures and fish screens in other locations throughout the Shasta River watershed. In other words, environmental damages to coho and other aquatic resources caused by many of the activities covered under this program would potentially be disproportionate to the mitigations required in this program. However, this is difficult to quantify or analyze, given the vague and general nature of this program's permitting structure.

42-11 cont.

2.3.1—General Conditions in the ITP

General condition C delegates enforcement responsibility to non-enforcement representatives. The DEIR does not provide any analysis showing that CDFG is legally allowed to delegate its legal obligation under CESA to protect public trust resources such as abundant, clean water and viable fish populations to any other agency.

This section also requires that the non-enforcement representative provide at least 48 hours of notice to landowners and obtain written permission to access public river systems through a permittee's land. Such a stipulation is

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unreasonable because it weakens CDFG's ability to effectively monitor, regulate or enforce the permits it issues, running the risk that permit conditions go unenforced. If permit conditions went unenforced, coho would likely continue to decline, ironically causing the need for still more strict regulation and enforcement under CESA. 42-12 cont.

2.3.2—Additional Obligations in the ITP to Avoid and Minimize Take of Coho Salmon

Additional Avoidance and Mitigation Obligation A is insufficiently vague in its description of how water rights compliance will be verified, especially in light of weak enforcement provisions in 2.3.1. 42-13

Publicly funded stream gauges should generate data that is publicly available. CDFG should require that gauge and meter readings be posted on the internet in real-time for public access to help ensure that this obligation is met. 42-14

Chapter 3 Intro—Environmental Setting

The DEIR sets out an inadequate baseline against which to measure impacts of the program. Establishment of the baseline conditions as those existing in 2005 when composition of this program began runs a significant risk of shortchanging coho recovery potential by excluding historically abundant coho populations, lower water diversions and much less groundwater pumping from the baseline – in other words, when conditions in the Shasta supported viable and non-listed coho populations.

To provide some scale, the *Coho Recovery Strategy* this DEIR claims to align with prescribes a temporal baseline for the purpose of defining viability of coho populations (*Coho Recovery Strategy,* pg. 2.11): 42-15

> "McElhaney et al. (2000) define a viable salmonid population for purposes of the ESA as 'an independent population of any Pacific salmonid (genus *Oncorhynchus*) that has a negligible risk of extinction due to threats from demographic variation (random or directional), local environmental variation, and genetic diversity changes (random or directional) over a one-hundred year time frame.' One hundred years was chosen to represent the time frame over which to evaluate risk of extinction."

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Then, on page 3.11, the *Coho Recovery Strategy* states:

> "In some watersheds, the demand for water has already exceeded the available supply and some water rights have been allocated through court adjudication."

This is particularly true in the Shasta sub-basin. Yet, the baseline established in this DEIR document inappropriately fences off those over-appropriations from revisitation, in effect making a widespread dewatering of the river and consequent "take" (not to mention "jeopardy") of coho the environmental baseline. The DEIR states categorically that, "Some of the activities the Program covers are historic, ongoing activities that have caused and will continue to cause environmental impacts within the Program Area, including, for example, take of coho salmon….. These activities and their impacts are part of the baseline and are expected to continue regardless of the program; that is they will not be caused by the program....." (Shasta Watershed-wide Permitting Program DEIR, pg. 3-2). 42-15 cont.

This is the wrong standard. Effectively, the DEIR says in several sections including that one that correcting existing water over-appropriations is an infeasible alternative -- but without any supporting evidence, citation of Water Board analysis or further explanation. CDFG has no authority nor expertise to assert such a categorical claim, much less to make the highly depleted current river conditions the environmental baseline for the purposes of CEQA.

Perhaps more worrisome still is the likelihood that the program proposed in this DEIR would supply *de facto* ITP regulatory approval for admittedly excessive current water diversions, many of which were allocated without considering CESA requirements and under which coho recovery would likely be impossible. In approving (and essentially shielding from regulatory action) the covered activities in this document, this program would thereby foreclose some of the most crucial flow-related coho, chinook and steelhead recovery measures needed on the Shasta River -- and potentially forever preventing recovery of coho year-classes or broods and further jeopardizing coho runs by locking in what biologists now know are highly damaging agricultural water uses and over-appropriations that can only lead to coho extinction in the sub-basin. 42-16

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3.1.1-3.1.5—Environmental Setting, Impacts and Mitigation Measures

Social and economic analysis and value mapping of cold-water salmon fisheries is almost completely absent from this DEIR document as compared with those exercises for agricultural land uses, which are richly represented. Under CEQA such a comprehensive analysis and mapping should also include historic coho range, abundance, profitability and some quantification of loss of profits since then due to widespread loss of Klamath coho fisheries, including widespread closures triggered by recent ESA listings and under "weak stock management" constraints under the Magnuson-Stevens Sustainable Fisheries Act and state law.

For example, Tribal members in the area historically fished a much longer subsistence season, starting with Pacific lamprey, then moving on to spring and fall chinook and finally coho. Today Tribal subsistence fishing is much more difficult due to smaller and shorter runs, and coho catch is now severely curtailed everywhere in their historic range both under the ESA/CESA and under basic "weak stock management" requirement under other laws. This loss of Tribal subsistence fisheries once supplied by abundant coho runs has had devastating impacts on Tribal cultures and economies. 42-17

Coastal salmon fisheries have been subject to partial to complete closures for Klamath salmon since 1978, partial closures for coho since the mid-1980's and zero catch of coho with constraints on other salmon for incidental impacts on coho since 1994. Coastal fishing-dependent communities have lost thousands of jobs and much of the infrastructure that supports fisheries.

Coho were also once abundant throughout northern California, with the Klamath supplying by far the largest component of these once-healthy runs. Today Klamath coho salmon are down to only about 1-2% of their historic abundance, which is why they are ESA/CESA listed. Without quantifying the massive economic and cultural losses suffered by Tribal and commercial fishing economies because of these coho fishery losses, the socioeconomic sections of the DEIR are misleading as well as incomplete, and therefore fail to meet CEQA's requirement that *all impacts* of a project be disclosed and avoided, minimized or mitigated for.

Another glaring gap in the DEIR is its total lack of analysis on pesticide application in the Shasta River and its impacts on water quality, fisheries and 42-18

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ecological health in the basin. Thousands of pounds of pesticides known to be harmful to salmon are applied to agricultural lands in the basin (Ewing 1999, NCAP 1999.) Significant impacts to threatened and endangered species from chemicals including chlorpyrifos, diazinon, and malathion—all reportedly used in the Shasta River basin according to the California Pesticide Use Reporting Database—are well documented (NMFS Biological Opinion, 2008) We are concerned that while the toxic substances in these pesticides may break down quickly in the atmosphere, they can persist in groundwater supplies, thereby potentially impacting water quality and salmonid survival rates for long periods of time (Gilliom, et al. 2006.)

42-18 cont.

<u>3.2-42--Impact 3.2-4—Groundwater Impacts and Mitigations to Geomorphology, Hydrology and Water Quality</u>

In considering the possible impacts of the program on groundwater, the DEIR concedes that agricultural operators may favor groundwater use more heavily due to regulatory burdens the program places on surface water diversions. The DEIR also acknowledges that "Increased use of groundwater during dry conditions in order to curb the consumptive use of surface water…could decrease groundwater discharge into the Shasta River and its tributaries," (3.2-42, Shasta River Watershed-wide Permitting Program DEIR.)

In turn, "a reduction in groundwater discharge could decrease baseflow volumes and could contribute to increased water temperatures." (3.2-42.) Yet, a paragraph later, the DEIR erroneously states that the program would not substantially increase the draw on groundwater and pronounces the Shasta River's groundwater problem less-than-significant. This is an internal contradiction that cannot be reconciled.

42-19

The arbitrary and somewhat contradictory conclusion that impacts to groundwater would be less-than-significant is not consistent with the *Coho Recovery Plan* (pp. 3.11-3.12), recent findings by USGS or information elsewhere in the DEIR regarding groundwater. The categorization of groundwater use as less-than-significant in this document also needs further analysis and explanation in the context of the Shasta River 303d listing for high water temperatures, associated TMDLs and beneficial uses including cold-water fisheries—all processes overseen under the State Water Board's Clean Water Act authority. It is unacceptable under the federal CWA and CESA to permit a diversion that heats up the water, degrades water quality and habitat,

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fails to protect a beneficial use and further jeopardizes salmonid viability in the Shasta River watershed.

The nexus between quantity of groundwater pumped from the interconnected zone and water quality in the Shasta River is not addressed adequately in this DEIR. Numerous connections between groundwater and stream inflow are well known and currently being investigated in much greater detail. For instance, the program purports to cover surface water diversions, but ignores the well-documented interaction between surface water and groundwater. It is unclear whether program limitations on surface water diversions might also extend to groundwater supplies, at least in the interconnected zone. The DEIR needs to address whether people using pumps and wells to extract groundwater need to quantify or scale back their use, including mechanism for determining if such actions should be taken in the future. 42-19 cont.

3.3-530-51—Impact 3.3-2—Groundwater Impacts and Mitigation to Fisheries and Aquatic Habitat

The arbitrary and somewhat contradictory conclusion that impacts to groundwater would be less-than-significant is not consistent with the *Coho Recovery Plan* (pp. 3.11-3.12), recent findings by USGS or information elsewhere in the DEIR regarding groundwater. 42-20

4.1-4.4—Cumulative Effects

Analysis contained on pp. 4-5 and 4-6 of this section of the DEIR does not clearly demonstrate how this permitting program is in keeping with the Shasta River TMDL action plan referenced therein. Therefore, the permitting program contemplated in this DEIR is inconsistent with water quality standards contained in the Shasta River TMDL basin plan and associated action plan. Mere fish passage and dam bypass projects would not sufficiently ameliorate the stream's status as impaired for dissolved oxygen content, nor would they adequately increase the dissolved oxygen load in the Shasta River. 42-21

Additionally, sedimentation problems due to Dwinnell dam's impoundment of the river channel cannot be mitigated for by way of fish passage projects. Dissolved oxygen and sediment problems in the Shasta River are well documented and are responsible for considerable salmonid take, including coho. Therefore, it is inappropriate for this program to permit Dwinnell dam 42-22

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contingent upon mitigation, since it is impossible to adequately mitigate the biological and hydrological impacts from Dwinnell dam. 42-22 cont.

Again, the cumulative impacts analysis contained in this DEIR is flawed in assuming the historic illegal "take" of CESA-listed coho as well as over-allocation of water as the environmental baseline.

Rather, the baseline should be the environmental conditions (including instream flows) necessary to prevent significant "take" of CESA-listed coho, and which will foster coho's ultimate recovery. This level of take is not delineated nor analyzed. 42-23

How many protected fish will actually be taken by these program actions under an ITP is certainly not identified quantitatively, nor even qualitatively. Will this so-called "incidental take" be *de minimus* or will it be a major population-level adverse impact. Will coho survive these impacts? Will they recover? In the Shasta watershed? Overall, in the entire ESU? Adequate analysis on the topic is not provided in this DEIR, leaving too many unanswered questions about Shasta River coho salmon's ultimate chances for recovery. 42-24

Section 4.4 in this DEIR lacks adequate analysis of *why* and *how* "Activities implemented by Program participants would not commit future generations to undesirable uses and would not involve a use from which irreversible damage could result," (p. 4-39, Shasta River Watershed-wide Permitting Program DEIR). In our view, the opposite of the above statement is true. Permitting ongoing diversions, dam impoundment, unregulated groundwater use and resultant coho decline without proportionally adequate mitigation does commit future generations to undesirable uses and could potentially cause irreversible damage to the Shasta River as a viable salmonid-bearing stream. This alone should be enough to make the proposed program detailed in the DEIR unacceptable under CEQA.

This section of the DEIR is embarrassingly deficient and does not satisfy CEQA requirements. 42-25

5.1.1-5.1.7—Alternatives to the Program

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In short, the no-program alternative, basically representing the *status quo*, would allow CESA violations to continue, as the DEIR concedes. However, ongoing CESA violations should not be considered a legitimate option at all. There should also be some viable program of enforcement. 42-26

The DEIR uses faulty logic in its rejection of the consistency determination alternative, claiming it would allow *status quo* conditions to go on too long while awaiting a NMFS section 10 permit and subsequent consistency determinations. In the meantime, "many if not all of the ongoing historic activities would continue" (Shasta River Watershed-wide Permitting Program DEIR, 5-3 & -4). 42-27

This reflects the overall flawed approach of assuming existing illegal activity to be the required baseline. Yet the DEIR itself documents that existing historic activities are perpetuating extensive illegal take. The DEIR thus assumes, as part of its analysis, that individuals will continue to knowingly break the law with impunity, and that CDFG can and *will* do nothing to enforce the law.

The DEIR makes the unfounded assertion that over-appropriation of water rights is infeasible because "it is not certain it would go far enough to protect the public trust" (Shasta River Watershed-wide Permitting Program DEIR, 5-4 & -5). However, the Water Board could, if it wishes and for good cause, impose additional conditions on the existing water rights sufficient to be in compliance with existing law. This issue needs further consultation with the Water Board and analysis under California Water Code. 42-28

Section 5.1.7 of this DEIR inappropriately rejects Dwinnell Dam Removal as an alternative. DFG's Coho Recovery Strategy (2004) calls for study of Dwinnell removal and providing fish passage if the dam stays in place. It is inconsistent for DFG to recommend study of removal in the *Coho Recovery Strategy*, but not require this as part of an ITP. It is improper under CESA as well as premature to balance this take against supposed costs of removal and decide removal is simply infeasible. 42-29

Furthermore, there is no study included or referenced in this DEIR of what the costs of removal are and an incomplete study of the benefits, making the conclusion insupportable even if it were the proper basis to decide to reject

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removal. Further, the DEIR acknowledges that there is "insufficient information" to know the costs of removal or benefits.

Additionally, rejection of Dwinnell dam removal as an alternative is irreconcilably inconsistent with this DEIR's own analysis of program impacts on geomorphology, hydrology, fisheries and other aquatic resources found on pp. 3.2-13 and 3.3-18-19. Coho take caused by Dwinnell dam is, by definition, more than incidental and therefore cannot be permitted, avoided or adequately and proportionally mitigated. The only adequate way to mitigate for or prevent alterations to the Shasta River flow regime, sedimentation, flooding, longitudinal profile, lack of downstream spawning gravel and channel dynamics referred to on 3.2-13 is to remove Dwinnell dam. 42-29 cont.

Coho range and spatial distribution need to be increased (Williams, et al. 2006). Since the Shasta River is potentially one of the best refugia for declining aquatic species including coho, reopening some 22 % of historic coho habitat above Dwinnell dam would be a good first step towards species recovery and protection of public trust resources. 42-30

Rejection of Dwinnell dam removal is also inconsistent with water quality standards contained in the Shasta River TMDL basin plan and associated action plan (North Coast Regional Water Quality Control Board, 2006.) Water quality problems in Dwinnell Reservoir are well documented (Vignola, E and M. Deas. 2005.) and warm water fish species there are an indicator of these problems. Blue-green algae, some of it toxic, also pollutes the reservoir (NCRWQB, 2005.)

Mere fish passage and dam bypass projects would not sufficiently ameliorate the stream's status as impaired for dissolved oxygen content, nor would they adequately increase the dissolved oxygen load in the Shasta River. 42-31

Additionally, sedimentation impoverishment problems due to Dwinnell dam's impoundment of the river channel cannot be mitigated for by way of fish passage projects. Dissolved oxygen and sediment problems in the Shasta River are responsible for considerable salmonid take, including coho. Therefore, it is inappropriate for this program to permit Dwinnell dam contingent upon mitigation, since it is impossible to adequately mitigate the biological and hydrological impacts from Dwinnell dam.

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Appendix A—Draft Incidental Take Permit

Additional SVRCD and sub-permittee avoidance and Mitigation Obligation J in section XV of the mock-permit appended to this DEIR stipulates that Montague Irrigation District will conduct a feasibility study on design and implementation of fish screens on its Parks Creek and Little Shasta diversions, as well as the possibility of providing fish passage beyond Dwinnell dam.

These feasibility studies, to include evaluation of "water budget for intake and delivery operations" and the proposition of "water management measures at Dwinnell Dam to improve coho habitat downstream of the dam," should be completed and circulated to the public for CEQA review before incidental take or streambed alteration protection is extended, not after. This mitigation obligation does not go nearly far enough to truly mitigate for water diversions from these three instream structures and their associated impacts on fisheries, including significant "take." As such, we find that adequate mitigation would necessitate removal of the three structures in question.

To be consistent with Fish and Game code 5937, since Dwinnell dam has eliminated some 22 % of Shasta River coho historical habitat (3.3-18, Shasta River Watershed-wide Permitting Program DEIR), has severely degraded the quality of that habitat, and continues to impact River hydrology, water quality coho survival and recovery (not to mention impacts to chinook, steelhead, lamprey and other aquatic species), feasibility of Dwinnell Dam removal must be at least considered and analyzed.

CDFG code 5937 mandates that: "The owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam." CESA and ESA should be consulted in a CEQA analysis to establish what constitutes "good condition" and "sufficient water" to achieve said good condition. This DEIR does neither and lacks any such analysis. However, conditions above and below Dwinnell dam—with or without fish passage—are not conducive to what we would characterize as good conditions.

42-32

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Conclusion

It is important to note that NONE of the activities that the program covers that perpetuate take have been authorized before under the CESA. So all of these are newly authorized activities under the CESA that are and will continue to perpetuate take:

1. Water diversions
2. Water diversion structures, including pushup dams
3. Stream crossings
4. Fencing
5. Instream structures (road crossings, etc.)
6. Grazing and livestock

In closing, we would prefer an alternative that would require complete site specific study of the impacts on the coho from given agricultural activities and adequate assessment of how these impacts need to be reduced such that the coho will survive and recover BEFORE any incidental take protection is extended to these activities. This is what the CESA requires. While this study is being completed, MOUs and/or enforcement actions (judicial consent decrees, etc.) should be pursued/issued/secured that will require appropriate interim steps to reduce taking of coho, such as the mitigation measures outlined in the DEIR.

42-33

In submission of these comments, we herein refer to, incorporate herein and/or append comments on this DEIR submitted by the Pacific Coast Federation of Fishermen's Associations, the Quartz Valley Indian Reservation, The Karuk Tribe and the Yurok Tribe.

42-34

Thank you for your time spent reviewing and responding to these comments.

Erica Terence,
Klamath Riverkeeper

Glen H. Spain, J.D.,
Northwest Regional Director
Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources

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ATTACHMENT 1: PCFFA/IFR Comments on Shasta River Watershed DO and Temperature TMDLs to the State Water Resources Control Board (11/29/06).

ATTACHMENT 2: *Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007*, Jeffrey Mount, Peter Moyle and Michael Dias, Principal Investigators. A report prepared for the U.S. Bureau of Reclamation by the Center for Watershed Studies, UC Davis, CA (undated).

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FinalShastaITPDEIRcomment

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ATTACHMENT 1: PCFFA/IFR Comments on Shasta River Watershed DO and Temperature TMDLs to the State Water Resources Control Board (11/29/06).

42-35

Pacific Coast Federation of Fishermen's Associations
and the Institute for Fisheries Resources

Watershed Conservation Office
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State Water Resources Control Board
Attn: Song Her, Clerk to the Board
1001 "I" Street
Sacramento, CA 95814
Email: comments@waterboards.ca.gov

29 October 2006
Emailed and mailed

42-35 cont.

Re: Comment Letter - Shasta River Watershed DO and Temperature TMDLs

Dear State Water Board Members:

The Klamath River was once the third most productive salmon river system in the world. As you know, the ongoing and accelerating collapse of the Klamath River's once-abundant salmon runs, particularly for ESA-listed coho salmon (which is not commercially harvested), but also for chinook salmon, is in no small part caused by serious water quality problems in its major tributaries (including the Shasta River) that currently limit salmonid production or threaten to eliminate it altogether in those important river reaches. PCFFA, as the west coast's largest trade association of commercial fishing families, and it's many member family fishing businesses, have too long borne the brunt of all these human-caused Klamath Basin water problems, now losing tens to hundreds of millions of dollars each year in coastal community revenues because of these water problems. This year's near-total Klamath ocean fishery closure is only the latest and worst of many Klamath-driven fishery failures.

The Regional Board's Draft Resolution R1-2006-0052 recognized the essential inseparability of water quality and water quantity in amendment number nine. One clear fact of hydrology is that high temperatures and low dissolved oxygen are always exacerbated by low flows.

Thus low flows in the Shasta River are a problem that cannot be ignored, and no TMDL can validly address the various water quality problems linked to low flows without taking low flows

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into account and mitigating through minimum instream flow requirements for this most fundamental problem.

The Regional Board staff has been thorough in their analysis and their conclusion is scientifically and legally sound that maintaining the recommended 45 cfs flows as an absolute minimum flow requirement must be accomplished in order to reduce high temperatures and meet water quality standards. This standard is the minimum in-stream flow that should be adopted by the State Board.

Specific actions to achieve the minimum flows for fish are not delineated, yet immediate steps are needed now to preserve remaining salmonid stocks. We are presently experiencing relatively favorable conditions for salmonids in the ocean and in a wet on-land cycle that will likely reverse sometime between 2015 and 2025 in what is known as the Pacific Decadal Oscillation (PDO) cycle. That coho salmon and fall chinook salmon populations are at such low levels or showing serious declines during the positive cycle of the PDO is not a good sign. In order to restore Shasta River chinook and coho salmon stocks, low flow and water quality problems must be remedied by 2015 or whenever the PDO switches to less favorable conditions for salmon stocks or further extinctions are likely to occur. A population that is already severely stressed even under relatively good oceans conditions will disappear when, as is inevitable, those cyclical conditions shift for the worse.

The Shasta River TMDL should also specifically target recovery of coho salmon, which are recognized as "threatened" under both the federal and California Endangered Species Act (CESA). Coho, unlike chinook salmon, spend up to 18 months in our river systems, and are thus especially susceptible to poor water quality and river dewatering during the summer months. Coho are also exceptionally tributary dependent. Coho spawning is well known in the Shasta (in fact, the Shasta represents some of the most historically important coho spawning areas), *yet the TMDL Action Plan proposal does not specifically focus protection or restoration on reaches or tributaries that presently harbor ESA-listed coho or which are important for coho recovery.* Coho restoration in the Shasta is a policy goal that is required under both federal and CESA listings for this stock.

Attachment A of this letter further details the link between water quantity, nutrients, high pH, high temperatures and low DO throughout the Shasta River. High temperatures stressful to salmon at the Shasta River's mouth also flow into the mainstem Klamath and add to the water temperature problems there.

To implement the TMDL and comply with the Basin Plan Objectives, the Action Plan must adequately describe specific and measurable actions to achieve water quality standards, with reasonable assurance of success. Timelines with milestones and monitoring are needed to determine whether these actions are working over time.

Thousands of businesses and families downstream and along the coast are relying on the Water Boards to improve the illegally degraded condition of tributaries to the Klamath River and restore the beneficial uses, jobs and dollars this fishery traditionally provides. The ocean fishery has faced twenty-seven years of increasingly restrictive closures as Klamath River stocks

42-35 cont.

continued to decline. Commercial fishing ports in California and most of Oregon, related fishing-dependent businesses, as well as the ocean and river sport fishing-related businesses and basic subsistence support fisheries for the Tribes, are all dependent on the Water Boards to restore conditions that will support viable salmon populations, and to do this soon -- while it is still possible at all.

We live in a time of rapid change, and people are often uncomfortable with and even fearful of change. Instream dedicated flows do not have to mean farmers and ranchers going out of business, nor is there any evidence to support such hysterical scare stories. There are in fact plenty of creative solutions, including working through the many existing water conservation programs to make better and more efficient use of the water already available for irrigation, curtailing illegal usages, and to use willing seller water bank or water trust programs as temporary solutions until more permanent solutions can be implemented.

However, one thing is clear: without sufficient cold water in the Shasta River, the once-abundant salmon runs originating in or dependent upon the Shasta will go extinct. This would further jeopardize thousands of coastal and in-river fishing-dependent jobs that are also threatened with extinction. Where the salmon go, so go the fishing men and women who depend on the salmon for their livelihoods.

We know that with community involvement and public funding, salmon runs can be restored. For example, the endangered spring run chinook on Butte Creek in the Sacramento River rebounded from less than 50 fish to between ten and twenty thousand adults in each of the last nine years. After the ESA listing, local organizations, landowners and agencies removed 5 dams, established minimum flows, installed 10 flow-monitoring stations, 11 fish ladders, and 5 fish screens.

Six local salmon fishing boats just left Eureka this June for Alaska, and five of them for the first time – in other words, these fishermen has to leave the state to try to earn a living. The permit costs $30,000, and it is a dangerous trip for a small fishing boat that takes ten days to get there under good weather conditions. One Bodega Bay fisherman fished the open area down south and caught only 31 fish for the entire month. The current salmon fishing season is a major disaster. I asked one of the fishermen who was leaving what he would like me to say to the Water Board about water quality in Klamath tributaries, and he replied: "Get with it."

I also enclose Governor Schwarzenegger's 6 June 2006 Proclamation of Disaster for ten California counties (Monterey, Santa Cruz, San Mateo, San Francisco, Marin, Sonoma, Mendocino, Humboldt, Del Norte and Siskiyou Counties), as Attachment B. Poor water quality and poor water flows are specifically cited in his Declaration as some of the underlying causes of the failure of the Klamath fishery and resultant near total closures of the rest of the coast. The least this Board can do is address those Shasta River water quality and quantity problems within its control.

We also recommend that the Regional Board adopt an Action Plan for the Shasta River that incorporates the recommendations of Coast Action Group, provided in their separate letter. Please refer to Attachment A for additional information on the importance of restoring minimum

42-35 cont.

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flows to the Shasta River as part of this process. The need for a baseline minimum flow with most reaches of the Shasta River, and the importance to salmon production (and the jobs that production represents) of maintaining minimum flows even during low water years cannot be over-stated.

As this letter is filed within the deadline for comment (comments are due by November 1st at Noon) please include this letter, with Attachments A and B, in the administrative record of this proceeding.

Sincerely,

Vivian Helliwell, for the
Watershed Conservation Office, PCFFA/IFR
850 Greenwood Heights Drive
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42-35 cont.

Attachment A -- Shasta River TMDL Supporting Information: Flow, Temperature, Nutrient Pollution and Potential for Loss of Pacific Salmon Stocks

Attachment B – A Proclamation by the Governor of California of Fisheries Disaster in the Klamath (6 June 2006)

Attachment A to PCFFA/IFR Comments

Shasta River TMDL Supporting Information: Flow, Temperature, Nutrient Pollution and Potential for Loss of Pacific Salmon Stocks

This attachment is to provide information related to the *Shasta River TMDL* demonstrating relationships of flow reduction on water quality impairment. Water quality in the Shasta River is severely impaired with regard to temperature, pH and dissolved oxygen and remediation will require increased flows. Pacific salmon population status in the Shasta River basin is discussed and information presented to show that the TMDL's 40 year time line for restoring water quality may not be sufficiently speedy to prevent major salmonid stock loss. The impacts of Dwinnell Reservoir on water quality and other flow issues related to salmon recovery are also covered below.

Low Flows in the Shasta River

The *Shasta River Adjudication* (CDPW, 1932) does not require a minimum flow level similar to the Scott River Adjudication (CSWRCB, 1980), which provides baseline targets for flow to support aquatic habitat on U.S. Forest Service lands. Consequently, the Bureau of Land Management holdings in the lower Shasta River (Figure 1) are not given flow allocations. Lower reaches of the Shasta River have appropriate gradient and habitat complexity to support juvenile salmonids, but show temperatures and water quality problems that are chronically stressful or lethal throughout summer. Although the *Draft Shasta Valley Resource Conservation District Master Incidental Take Permit Application for Coho Salmon* (ITP) sets a minimum flow target of 20 cfs to be met by 2015, that level of flow will not likely attain beneficial uses such as restoration of coho salmon or

42-35 cont.

Figure 1. This photo shows the Shasta River flowing through BLM land in the canyon reach in an area referred to as Salmon Heaven. Boulders were placed to improve fish habitat, but water quality is too poor to support salmonid juveniles during most of summer. Photo from KRIS Version 3.0 (TCRCD, 2003).

steelhead trout (see Temperature section). North Coast Regional Water Quality Control Board studies related to the TMDL support increasing minimum flows to 45 cfs to abate pervasive water quality problems.

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Flow records from 2001 and 2004 from the U.S. Geologic Survey flow gauge just upstream of the convergence with the Klamath are displayed as Figures 2-3. These charts provide a reference for temperature and water quality summaries for the same years presented later in this paper. Average daily flows in dry years like 2001 fall to near 20 cfs or less for weeks at a time (Figure 2). Hourly data are not available, but lack of coordination of irrigation operations may sometimes cause flows to fall below the listed average and present an even greater challenge for fish survival.

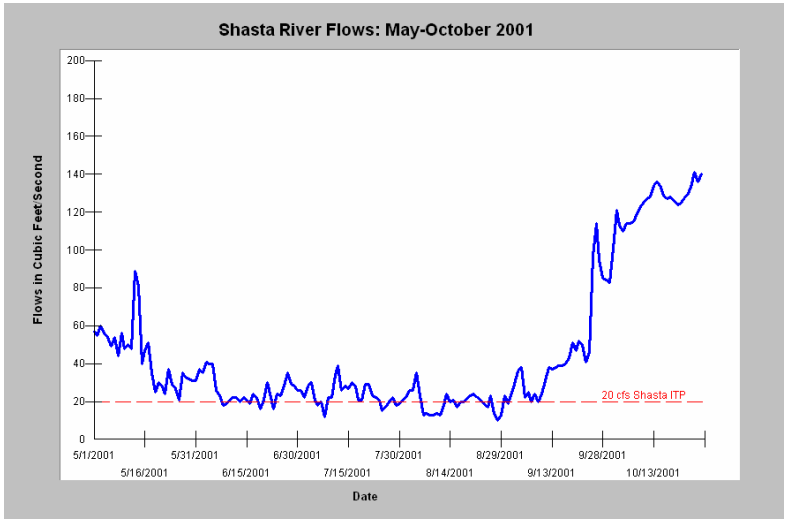

Figure 2. Average daily flow at the USGS Shasta River gauge for May through October 2001 shows a pattern of extremely low flows with many days falling below 20 cubic feet per second.

Average daily flow in years with more precipitation like 2004 may be much greater than 20 cfs on most days within the irrigation season (April 15-October 1), but can fall below that level on any given day. Summer rainfall may decrease the need to irrigate and summer thunderstorms are the cause of periodic increased flows.

The original need for adjudication on the Shasta River was driven by over-allocation, leading to water rights holders in the lower reaches being deprived of sufficient flow (CDPW, 1925). The Shasta River was blocked mid-way by the construction of Dwinnell Dam (Figure 4) in 1928. Flows are routed into a canal and down the east side of the valley for irrigation and there is no requirement for minimum flow in the reach of the Shasta River immediately below the dam. Water stored in the reservoir is augmented by diversion of Parks Creek into the Shasta River at Edgewood, even during winter when salmon and steelhead could otherwise be using this

42-35 cont.

tributary. Storage capacity in the reservoir was increased through reinforcement of Dwinnell Dam in 1958 (Figure 5) leading to less need to spill excess winter flows in most years. The resulting lack of winter flood peaks decreases channel scour, which can lead to a build up of organic material (Gwynne, 1993) and increased biological activity with the resultant adverse water quality impacts.

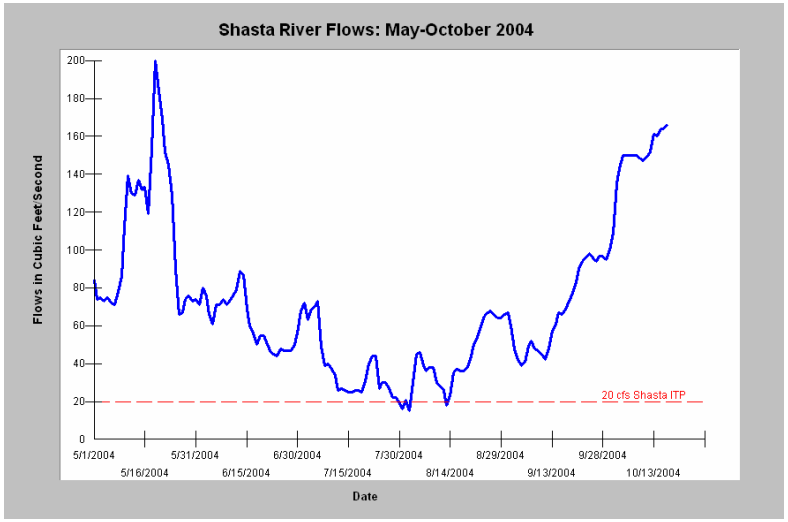

Figure 3. Average daily flow of the lower Shasta River from May to October 2004. Data from USGS.

42-35 cont.

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Figure 4. Dwinnell Dam looking south with the canal at left into which almost all flows from the reservoir are diverted. Photo from KRIS Version 3.0 (TCRCD, 2003).

42-35 cont.

Dwinnell Reservoir Monthly Storage April-October 1937-2004

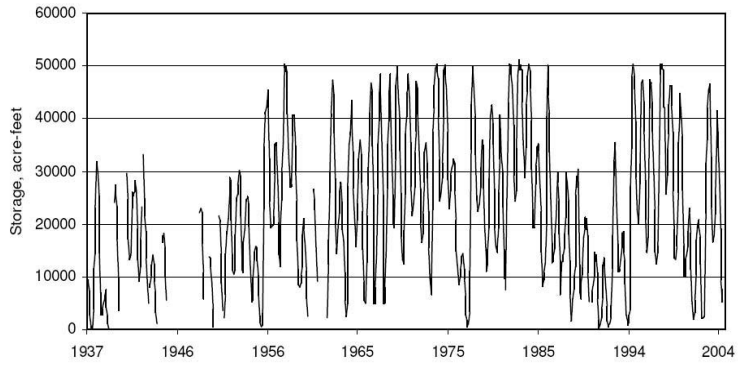

Figure 5. This chart was taken from the report *Lake Shastina Limnology* (NCRWQCB and UCD, 2005) and shows the storage capacity in acre-feet of Dwinnell Reservoir with a major increase after dam reinforcement in 1958.

There are major water quality problems in Dwinnell Reservoir (Figure 6) as a result of photosynthetic activity (NCRWQCB and UCD, 2005). Algae blooms cause very alkaline conditions, fluctuations in dissolved oxygen and periodic problems with dissolved ammonia. There is substantial seepage loss from the Dwinnell Reservoir and the reach of the Shasta River below the dam shows similar patterns of water quality impairment to those within the reservoir (NCRWQCB and UCD, 2005).

Dwinnell Dam blocks gravel transport downstream into reaches above Big Springs Creek, thus restricting supply of spawning gravels for salmonids. Similarly, the dewatering of Parks Creek (Figure 7) and other tributaries such as Willow Creek, Julian Creek and the Little Shasta River also reduces spawning gravel availability. Coutant (2005) pointed out that cumulatively gravel deprivation may have changed hydrologic function by decreasing the hyporheic zone and exchanges of surface and subsurface water that may have formerly cooled the Shasta River. Restoring access to cool headwater areas by removing Dwinnell Dam would also increase chances for restoring Pacific salmon.

Temperature Impairment and Relationship to Flow

The *Shasta TMDL* relies heavily on increasing shade and decreasing contributions of warm agricultural drain water, but also recognizes that decreased transit time from increased flows must also be used to attain beneficial uses. The National Research Council (NRC 2003) report entitled *Endangered and Threatened Fishes in the Klamath River Basin: Causes of Decline and Strategies for Recovery* described the relationship of water flow to temperature in the Shasta River:

42-35 cont.

> "Low flows with long transit times typical of those now occurring in the summer on the Shasta River cause rapid equilibration of water with air temperatures, which produces water temperatures exceeding acute and chronic thresholds for salmonids well above the

Figure 6. Dwinnell Reservoir looking southeast off the dam with water levels at less than full pool in 2002. Long retention time and exposure to sunlight trigger algae blooms and nutrient pollution. Photo from KRIS V 3.0 by Michael Hentz.

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Figure 7. Parks Creek is shown here below the diversion to Dwinnell Reservoir with surface flows almost completely depleted. This not only shuts off cool water that could buffer high Shasta River water temperatures but also blocks spawning gravel recruitment. Photo by Michael Hentz.

mouth of the river. Small increases in flow could reduce transit time substantially and thus increase the area of the river that maintains tolerable temperatures."

Water temperatures in the entire length of the Shasta River become unsuitable for salmonid juvenile rearing for most of each summer. Figure 8 shows maximum daily water temperatures of the Shasta River from Louie Road just below Dwinnell Reservoir downstream to Anderson Grade Road at the bottom of the Shasta Valley. While there may be some isolated refugia due to spring flows, most of the reach attains stressful or lethal temperatures for Pacific salmon species. McCullough (1999) found that all Pacific salmon species were stressed at temperatures greater than 20^{O} C and Welsh et al. (2001) noted that coho salmon are only found in rearing areas with an average weekly maximum temperature (MWAT) of 16.8^{O} C or less. Sullivan et al. (2000) recognized 25^{O} C as lethal for Pacific salmon.

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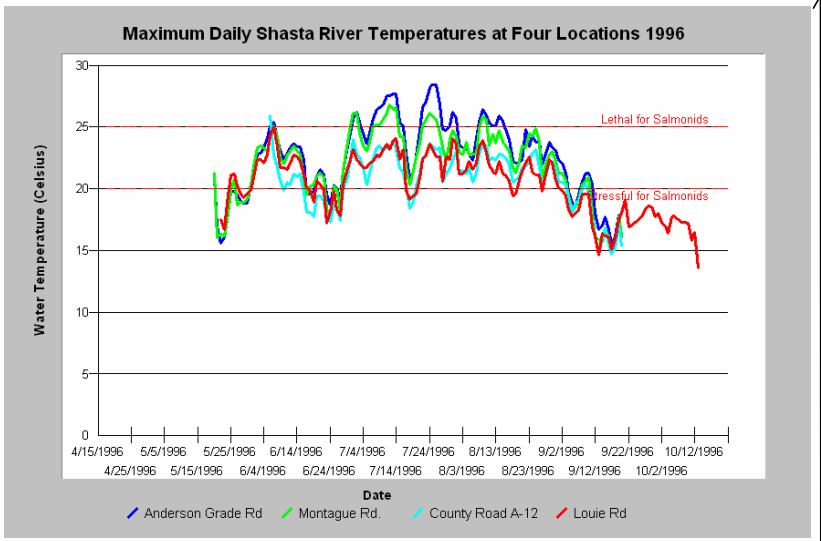

Figure 8. Maximum daily water temperatures are displayed above for the Shasta River at four locations from May through October of 1996. Temperatures exceeded stressful or lethal levels at all locations from June through August. Chart from KRIS V 3.0 and data from CDFG.

Lower mainstem Shasta River water temperatures and water quality have been measured by the U.S. Fish and Wildlife Service, the U.S. Bureau of Reclamation and USGS. Figure 9 shows minimum, average and maximum water temperature of the Shasta River just above its convergence with the Klamath River from May to October 2001. Even minimum temperatures exceeded stressful levels for salmonids and maximums often exceeded lethal levels. Fall chinook salmon use the lower Shasta River to spawn and the U.S. EPA (2003) defines the maximum temperature suitable for spawning as 13^{O} C or less as a seven day floating average. Water temperatures were above optimal for salmon spawning and egg incubation through the first week in October.

42-35 cont.

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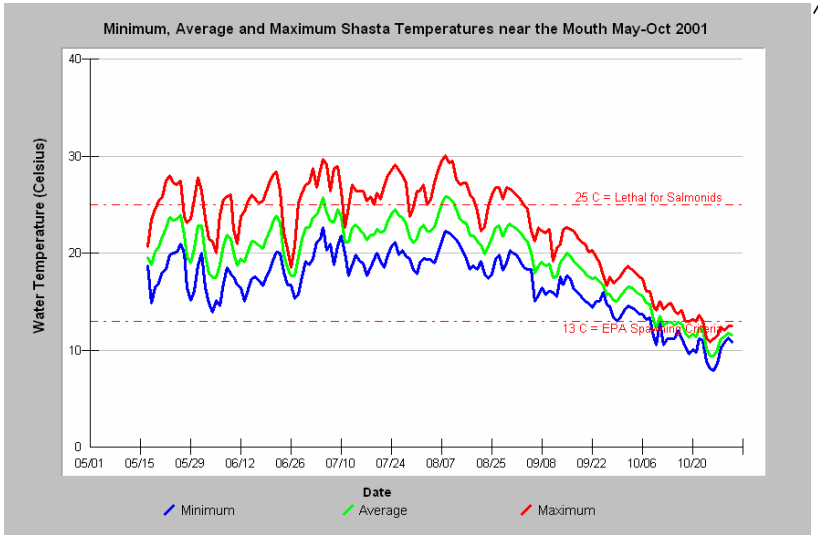

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Figure 9. Minimum, average and maximum daily water temperature of the Shasta River above its convergence with the Klamath River in 2001. Chart from KRIS V 3.0 and data from USFWS.

Water temperatures patterns in the lower Shasta River in 2004 (Figure 10) showed a very similar pattern to those of 2001 despite higher flow levels. This indicates that other measures called for in the Shasta River TMDL such as improving riparian shade and reducing warm agricultural tail water contributions will also be necessary to reduce water temperatures and restore beneficial uses. Maximum water temperatures exceeded lethal levels for months at a time in 2004 and even minimum water temperatures failed to drop below stressful levels for much of June, July and August. Although water temperatures dropped with the end of irrigation season on October 1, they still were greater than optimal for salmon spawning until the second week in October.

Major increases in diversion of both surface and groundwater have greatly changed the temperature regime of the Shasta River. Mack (1958) measured flow in Big Springs Creek of 103 cfs, which is very similar to the measurements taken by the California Department of Public Works (1925) for the *Shasta River Adjudication* (CDPW, 1932). This spring source was at optimal temperatures for salmonid rearing and the California Department of Water Resources (1981) found that it was also the reach of the Shasta River with the highest spawning use. Kier Associates (1999) noted that increased ground water pumping and additional surface diversions in Big Springs and Little Springs Creeks were depleting surface flows and reducing salmonid carrying capacity.

The NRC (2003) report characterized the Big Springs area before increased groundwater extraction and surface diversion and its potential benefit to Shasta River water quality as follows:

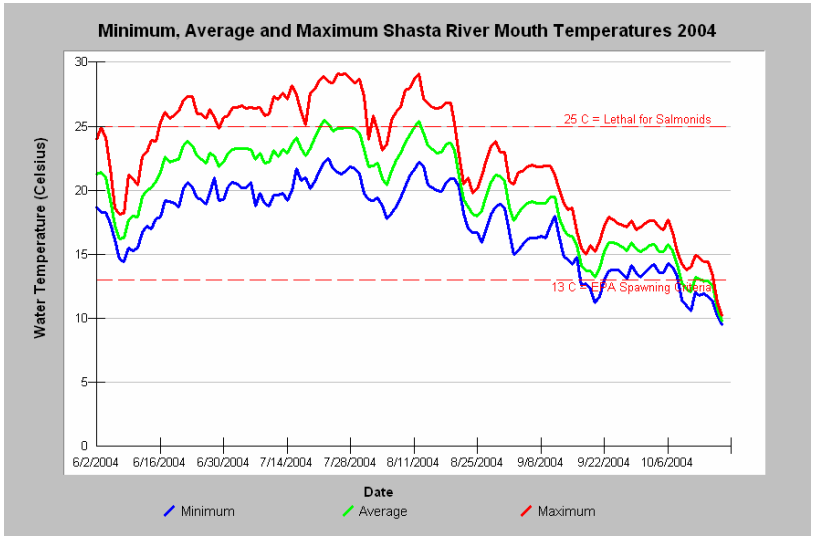

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Figure 10. Minimum, average and maximum daily water temperature of the Shasta River above its convergence with the Klamath River in 2004. Data from USFWS.

> "Flows of that magnitude would have had very short transit times (less than 1 day to the Klamath River), thus maintaining cool water throughout summer for the entire river. Consistency of flow and cool summer water were the principal reasons that the Shasta River was historically highly productive of salmonids."

Thermal infrared radar (TIR) imagery captured by Watershed Sciences (2003) illustrates how flow depletion affects water temperature (Figure 11). The image shows water temperatures below 20 ^{O} C only immediately downstream of Big Springs Lake. Instead of having water temperatures sufficiently cool to support coho, Figure 12 shows that Big Springs Creek warms to 21.7 ^{O} C (Watershed Sciences, 2003).

The reach of the Shasta River below Dwinnell Dam was formerly cooled significantly by Big Springs Creek (CDWR, 1981; CH2M Hill, 1985; Kier Associates, 1991). Figure 11 shows that the Shasta River and Big Springs Creek were essentially the same temperature on July 27, 2003, when the TIR data were collected. Consequently, flow depletion in the Big Springs Creek drainage decreases

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thermal buffering of the mainstem Shasta River and decreases suitability and carrying capacity for salmonids.

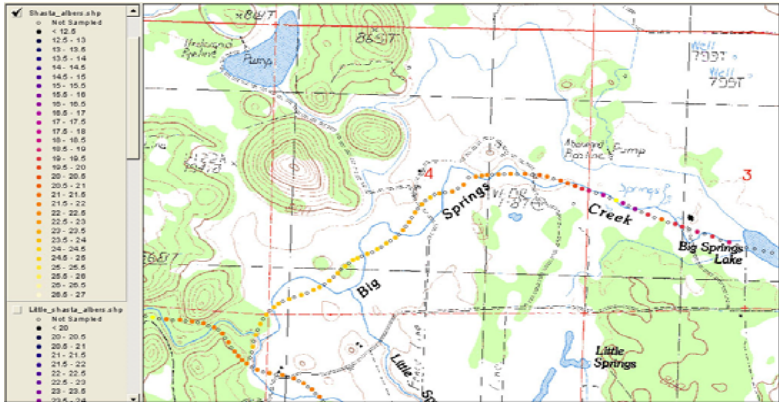

Figure 11. Thermal infrared radar (TIR) map of Big Springs Creek shows that the stream warms rapidly as a result of diversion and now is too warm for optimal salmonid rearing. Data from Watershed Sciences (2003) provided as GIS by NCRWQCB staff.

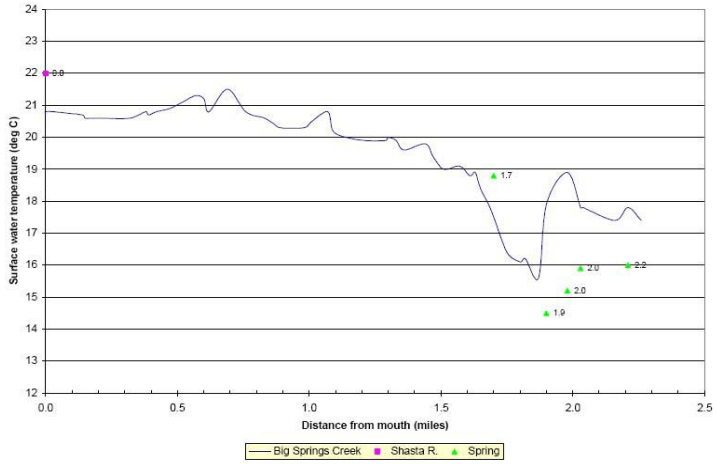

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Figure 12. Temperature profile of Big Springs Creek by stream mile according to TIR data. Taken from Watershed Sciences (2003) where it appears as Figure 25.

Parks Creek springs create reaches with temperatures somewhat suitable for salmonids (22 ^{O} C), but irrigation diversions in the lower reach depicted in Figure 13 cause the stream to go dry (Watershed Sciences, 2003). TIR data show Parks Creek temperatures of nearly 30 ^{O} C as it meets the Shasta River. Warm water below the dry reach is likely a result of agricultural return water. Parks Creek could serve as a refugia in combination with Big Springs Creek, if flows were restored (see Recovering Pacific Salmon).

The Shasta River itself has dry reaches below Dwinnell Dam (Figure 13) and water temperatures in flowing reaches largely unsuitable for salmonids. Discussions below on nutrient enrichment cover other impairments to water quality caused by tail water releases from the reservoir.

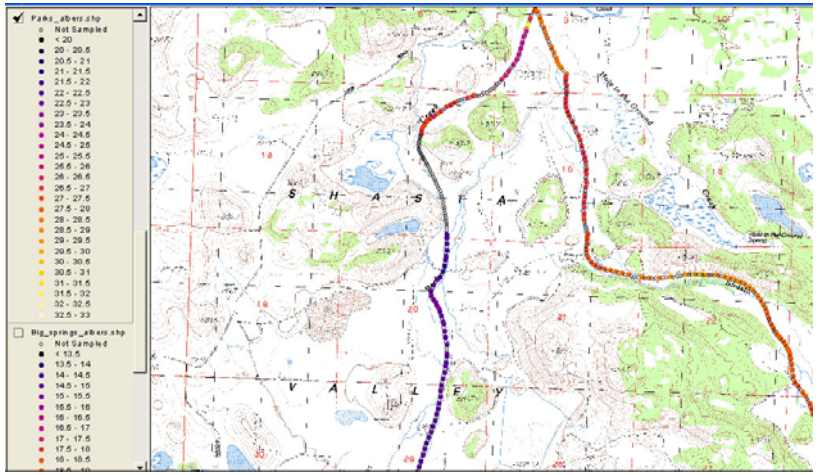

Figure 13. Thermal infrared radar (TIR) map of Parks Creek and the mainstem Shasta River downstream of Dwinnell Reservoir show little habitat with temperatures cool enough to support salmonids. Gray areas are dewatered. Data from Watershed Sciences (2003) provided as GIS by NCRWQCB staff.

The upstream extent of the Parks Creek TIR data from Watershed Sciences (2003) actually begins in a reach already impacted by flow depletion. The China Ditch is a major diversion that routes water down the west side of the Shasta Valley from Parks Creek just below where it emerges from forest lands. This ditch was built to supply water to Yreka and for mining activities but now supplies agricultural water to land south of Gazelle. Figure 14 from Watershed Sciences (2003) shows lethal water temperature conditions for salmonids (> 30 ^{O} C) at the top of the survey reach as a result of

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low flows. Dramatic cooling is as a result of springs, but diversion dries up Parks Creek just over two miles upstream of its convergence with the Shasta River.

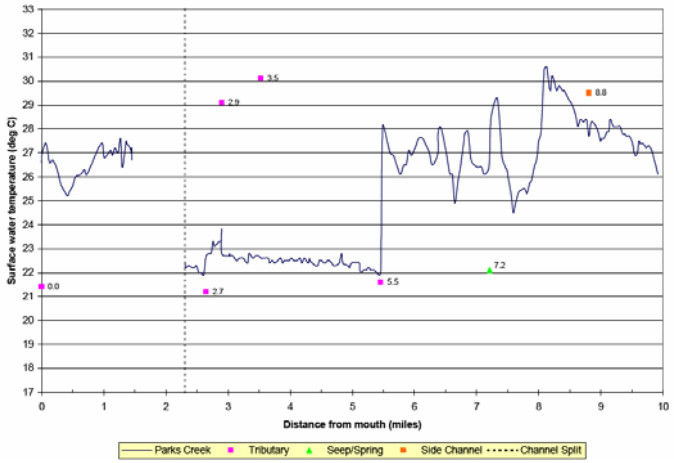

Figure 14. This temperature profile of Parks Creek shows that water temperatures are already elevated at the top of the reach as a result of flow depletion by upstream diversions. Spring flows feed the stream above river mile 5 (RM 5), but diversions dry the channel just above river mile 2 (RM 2.3). From Watershed Sciences (2003) where it appears as Figure 24.

Nutrient Pollution Problems Increase With Decreasing Flows

Nutrients themselves do not harm Pacific salmon, but as they stimulate excessive algae growth, dissolved oxygen decreases while pH and dissolved ammonia increase and may cause stress or mortality (U.S. EPA, 2000). Low flows in the Shasta River allow build up of aquatic plants and promote warming that stimulates plant growth. Gwynne (1993) noted that lack of winter flood peaks because of Dwinnell Dam also inhibited flushing of nutrients and promoted high biological activity in the Shasta River.

pH: High maximum pH and high diurnal ranges of pH are often symptomatic of nutrient enrichment and excessive growth of aquatic plants, which makes pH a highly useful index of photosynthesis. The *Shasta River TMDL* failed to note that the river regularly exceeds NCRWQCB *Basin Plan* (2002) standards for pH, which is a maximum of 8.5. Evidence from laboratory studies indicates that any pH over 8.5 is stressful to salmonids and 9.6 is lethal (Wilkie and Wood, 1995). Studies show that as water reaches a pH of 9.5, salmonids are acutely stressed and use substantial energy to maintain pH balance in their bloodstream (Wilkie and Wood, 1995), while pH in the range of 6.0 to 8.0 is normative.

42-35 cont.

The mouth of the Shasta River has been monitored with automated water quality probes since 2000 and shows that maximum pH typically exceeds 8.5 for most days from June through September (Figure 15). Pulses of extreme pH occurred in seasons of downstream juvenile migration (June) and during periods when adult Chinook salmon may be holding (September) in the lower Shasta River or downstream of the mouth in the Klamath River. The early spike in pH to 9.5 is of particular concern because of the findings of Goldman and Horne (1983) that under these conditions nearly all ammonium ions would be converted to dissolved ammonia, which is highly toxic to salmonids (U.S. EPA, 1986; 1999).

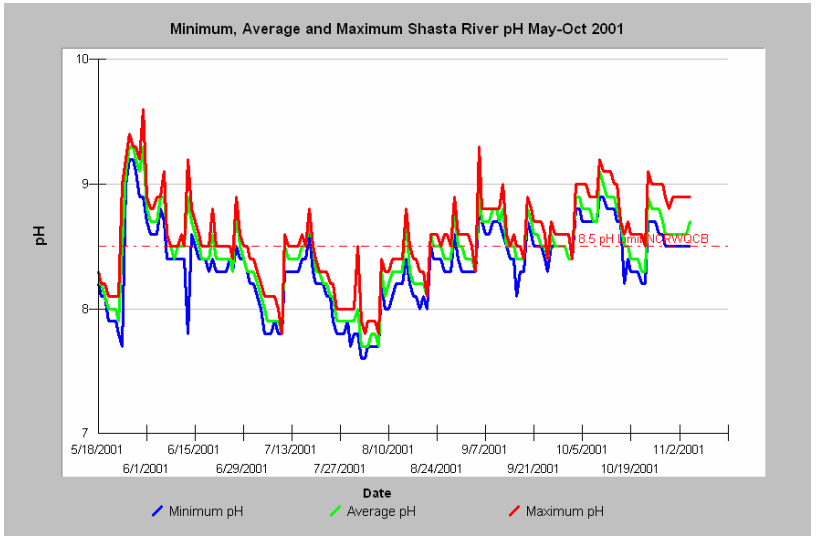

Figure 15. This chart shows pH for the Shasta River near its mouth for May through November 2001 with a reference value showing the NCRWQCB (2002) maximum pH *Basin Plan* standard of 8.5. Data are from the *Klamath TMDL* database, with data originally collected by the U.S. Fish and Wildlife Service.

The minimum, average and maximum pH data for the same lower Shasta River location in 2004 is displayed as Figure 16 and shows a more moderate fluctuation, but with values still consistently above the NCRWQCB *Basin Plan* (2002) standard of 8.5. The maximum pH was once again within stressful ranges for salmonids (>8.5) from June through October.

There are presently no data for dissolved ammonia in the Shasta River, but it is likely that such a problem exists because conditions of high water temperature and high pH coincide and agricultural tail waters are high in nitrogenous waste. Goldman and Horne (1983) show a logarithmic increase in

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conversion of ammonium ions to dissolved ammonia as pH increases above 8.0 and water temperatures exceed 25 C. (Figure 17). TMDL implementation should involve collecting further data on presence of dissolved ammonia and monitoring the abatement of this water quality impairment if it is found to exist. Dissolved ammonia is toxic to salmonids at levels as low as 0.025 mg/l (U.S. EPA, 1986).

Dissolved Oxygen (D.O.): The Shasta River TMDL clearly shows that tail water returns are increasing nitrogen levels, which increases growth of aquatic plants. Nocturnal respiration of aquatic plants is by far the largest contributor to dissolved oxygen demand in the Shasta River and creates major D.O. sags into ranges that are stressful for salmonids. Juvenile salmonids avoid areas with a D.O. of less than 5 mg/l, have impaired swimming ability at levels below 7.0 mg/l, and die at levels lower than 3.7 mg/l (White, 2002). Gwynne (1993) showed a pattern of elevated Shasta River D.O. during the day and depressed D.O. at night, indicative of high photosynthetic activity (Figure 18) indicating major problems for salmonid suitability in mainstem reaches throughout the Shasta Valley (Figure 19).

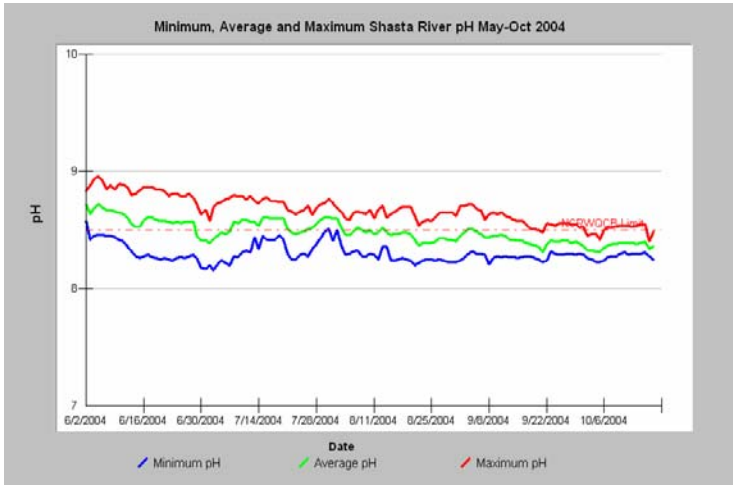

Figure 16. This chart shows pH for the Shasta River near its mouth for May through November 2004 with a reference values showing the NCRWQCB (2002) maximum pH *Basin Plan* standard of 8.5. Data are from U.S. Fish and Wildlife Service.

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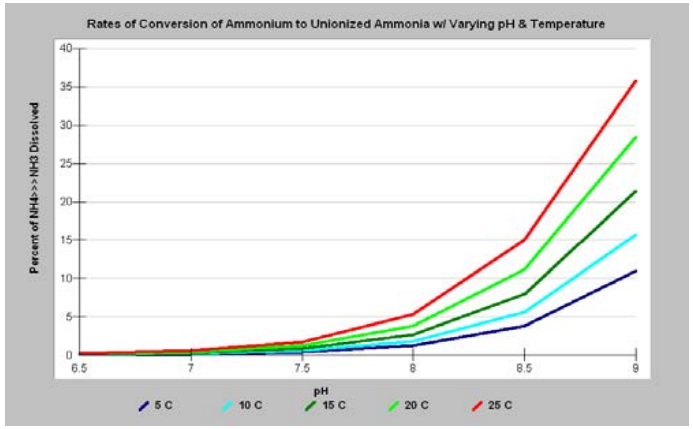

Figure 17. Chart showing the percent conversion of ammonium to dissolved ammonia with increasing pH and water temperature. Data from Goldman and Horne (1983).

42-35 cont.

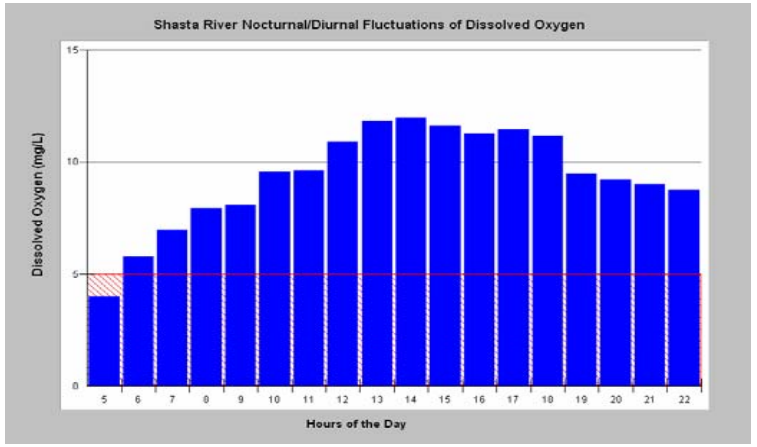

Figure 18. The chart above is based on data from Gwynne (1993) and shows supersaturated D.O. levels during the day but depressed D.O. before sunrise.

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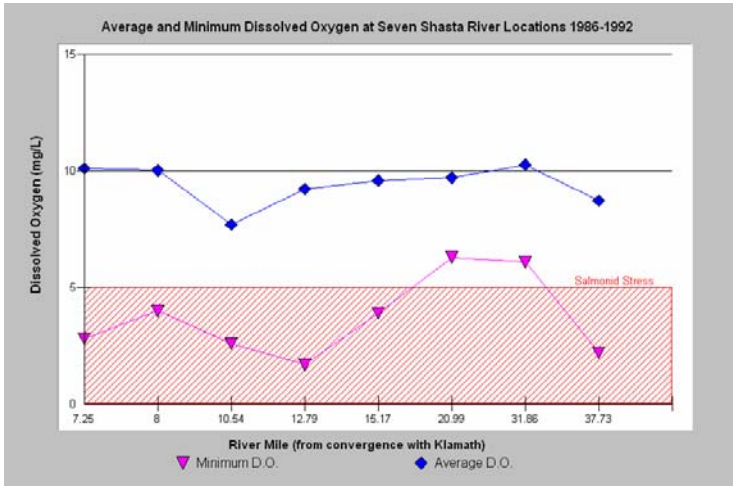

Figure 19. Average and minimum dissolved oxygen levels measured by Gwynne (1993) show that levels fell below those required for salmonid rearing at most locations. Chart from KRIS V 3.0.

Minimum dissolved oxygen readings shown in Figure 19 are the minimum of all readings for each station during the entire period of record (1986-1992). Acute problems with D.O. levels occur both in the upper Shasta Valley, just below Dwinnell Dam (RM 37.73), and in the reach from the Montague-Grenada Road (RM 15.17) to Highway 263 (RM 7.25). Dissolved oxygen problems may be moderated in the reach from Louie Road (RM 31.86) to below County Road A-12 (RM 20.99) by increased flows and cooler water from springs.

Continuous recorders placed near the mouth of the Shasta River have also captured dissolved oxygen data (Figure 20-21). Although this data shows that dissolved oxygen does not drop to levels lethal for salmonid juveniles, minimum and average levels often fall to stressful levels.

42-35 cont.

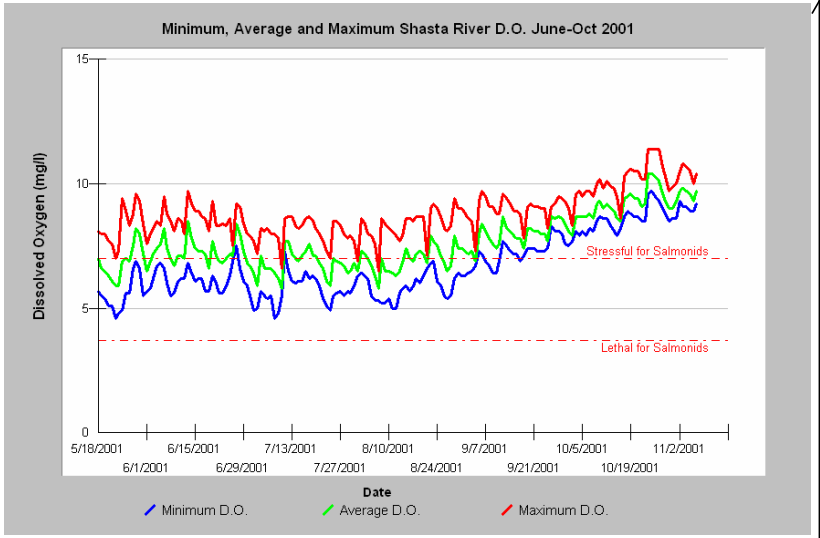

Figure 20. Minimum, average and maximum D.O. levels from May through November 2001 are displayed in the chart above indicating high levels of photosynthetic activity and nocturnal depressions likely to stress juvenile salmonids.

Although minimum dissolved oxygen levels in 2004 in the lower Shasta River (Figure 21) were slightly higher than in 2001, they still fell into stressful ranges for salmonids. White (2002) points out that salmonid egg incubation requires a dissolved oxygen of greater than 6.5 mg/l in the gravel matrix, which would require surface water D.O. of greater than 8.0 mg/l. Both 2001 and 2004 data suggest that D.O. sags are abated by October 1, although there was a brief late season depression in the spawning period in 2004.

Increased winter flows would increase scour and decrease embedded organic material that partially fuel nutrient enrichment. Increased flows of cold, clean spring water recommended by the Shasta TMDL would decrease water temperatures, decrease transit time and result in decreased problems with D.O.

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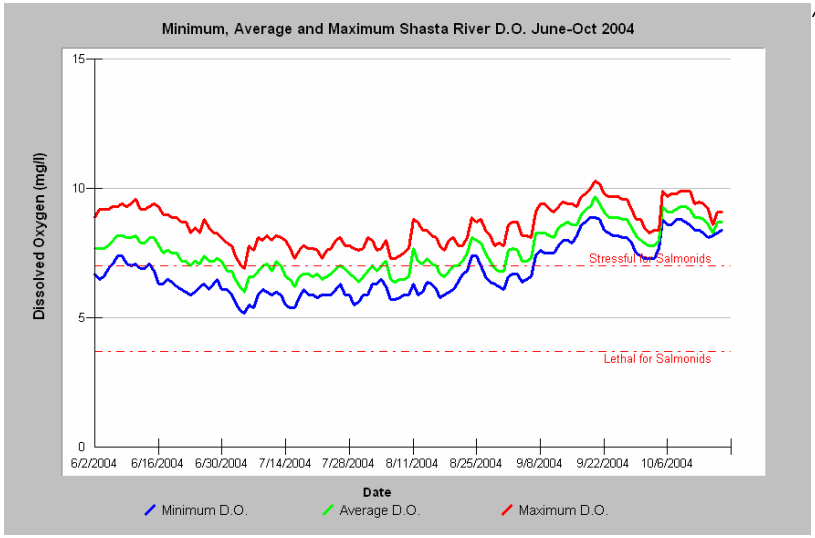

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Figure 21. Minimum, average and maximum D.O. levels from June through October 2004 are displayed in the chart above indicating high levels of photosynthetic activity and nocturnal depressions likely to stress juvenile salmonids. Data from USFWS.

Shasta River Pollution and Klamath River Cumulative Watershed Effects

Studies related to Klamath Hydroelectric Project relicensing have demonstrated extreme problems with nutrient pollution in the mainstem Klamath River (Kier Associates, 2004; 2006). Nitrogen fixing algae in project reservoirs cause nutrient enrichment of reaches just below Iron Gate Dam. As algae beds below Iron Gate decay or shed segments, nutrients are transferred downstream where they trigger periphyton blooms in what is known as "nutrient spiraling." Acute salmonid stress from high pH, temperature and ammonia in combination with depressed D.O. result in immunosuppression in juvenile salmonids and massive annual die-offs. The very warm and nutrient-rich waters of the Shasta River add to these mainstem Klamath River problems. McIntosh and Li (1998) used forward-looking infrared radar (FLIR) to characterize the pattern of temperature problems in the mainstem Klamath River. Figure 22 shows a July 1998 FLIR image of the Shasta River joining the Klamath River. The thermal signature indicates that the Shasta River is approximately 29^{O} C and has a warming influence on the mainstem Klamath.

The *Shasta TMDL* should have pointed out that the Shasta River has the potential in a restored condition to buffer mainstem Klamath River water temperatures and provide a refugia for juvenile salmonids in its lower reaches. In its present condition, however, it exacerbates nutrient and temperature pollution instead of assisting in abating these problems in the mainstem Klamath River.

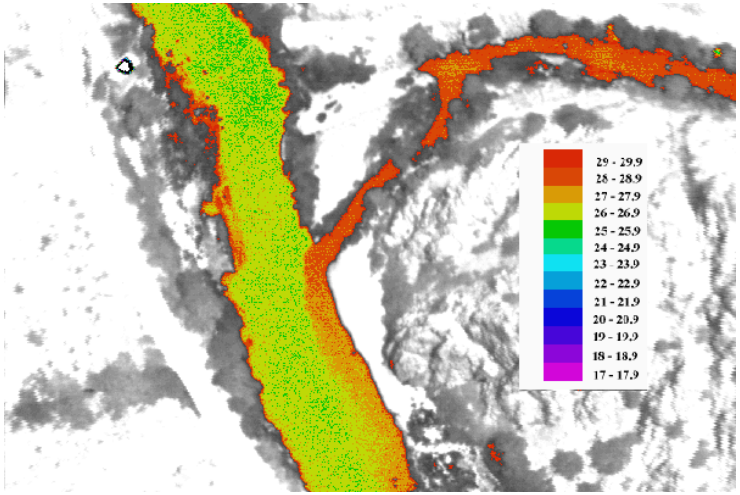

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Figure 22. Thermal Forward Looking Infrared Radar Image (FLIR) showing the confluence of the Klamath River (flowing from the top of the image to the bottom of the image) and the Shasta River (flowing right to left in the image). The Shasta River is approximately 29 degrees C. and a warm water plume is observed in the Klamath River below. From McIntosh and Li (July 1998).

Shasta River Pacific Salmon Populations at Risk of Extinction

The *Shasta TMDL* goal of remediating water quality problems over a 40-year period ignores cycles of Pacific salmon productivity attendant with ocean conditions and climate. The Pacific Decadal Oscillation (PDO) cycle causes major shifts in ocean productivity and shifts from favorable for salmon to unfavorable conditions approximately every 25 years off the coast of California, Oregon and Washington. Good ocean conditions are linked to wetter weather cycles and prevailed from 1900-1925 and 1950-1975 and switched to favorable again in 1995 (Hare et al., 1999). Poor ocean productivity and dry on-land cycles from 1925-1950 and 1976-1995 created very adverse conditions for salmon. If freshwater habitat in the Shasta River basin is not improved by the time ocean conditions change back to less favorable and we enter a drier climatic cycle sometime between 2015 and 2025, major salmonid stock losses are likely to result (Collison et al, 2003). Likewise, any long-term TMDL program must take into account long-term climate cycle stressors in a precautionary approach to such trends. Populations must not already be stressed under what are currently favorable conditions, or these stresses will lead to extinctions when such cyclical conditions change, as they inevitably must, for the worse.

Coho salmon populations in the Shasta River are also at very low levels as indicated by downstream migrant trap data (Figure 23), with between 212-747 juveniles captured during several months of

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trapping from 2001-2003 (Chesney 2001; 2002; Chesney and Yokel, 2003). The requirement of juvenile coho for water temperatures under 16.8^{O} C makes it almost impossible for this species to survive throughout summer in any reach of the Shasta River. Favorable ocean conditions and more precipitation in most years since 1995 have allowed coho to rebound somewhat, but the population remains at remnant levels and is likely to go extinct in the next negative PDO cycle unless Shasta River conditions improve dramatically.

The Shasta River fall chinook population is failing to rebound in the recent favorable PDO cycle despite mostly above average rainfall and mostly favorable ocean conditions (Figure 24).

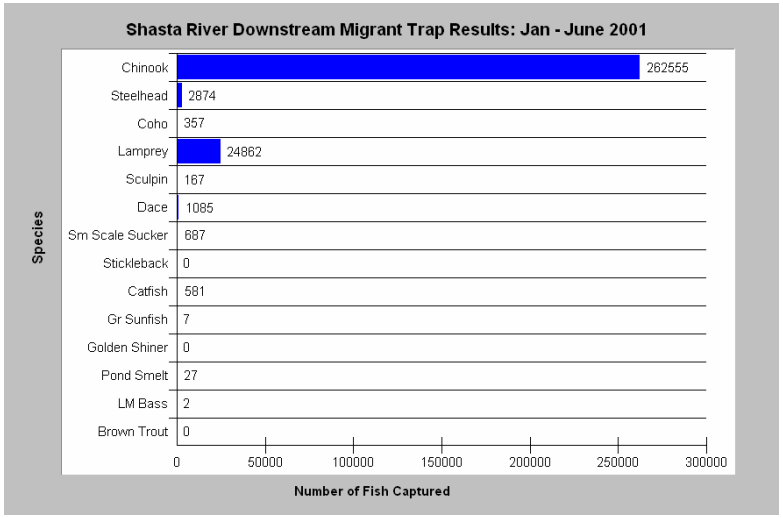

Figure 23. Downstream migrant trap results from the lower Shasta River for the period of January through June 2001 show chinook salmon juveniles to far out number steelhead and coho salmon. Chart from KRIS V 3.0 with data from CDFG.

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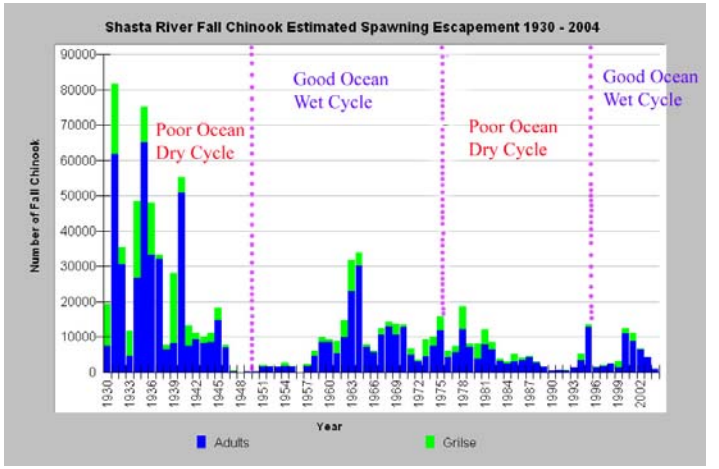

Figure 24. Shasta River Chinook salmon returns from1930 to 2005 are displayed in this chart along with known Pacific Decadal Oscillation cycles (Hare et al., 1999). Data from CDFG.

42-35 cont.

When long term population trends from the Shasta Racks are analyzed it becomes apparent that each successive positive cycle of the PDO has decreased peak returns and lower minimum returns.

Shasta fall chinook stocks ranged from lows of 533-726 from 1990-1992 during the last dry climatic cycle, a critically low level for maintaining genetic diversity (Gilpin and Soule, 1990). Consequently, if flow and water quality conditions are not improved for chinook salmon spawning and rearing in the Shasta River before the next switch to less productive ocean conditions and a period of less precipitation, there is a high risk that this important chinook salmon stock could be lost. The final *Shasta TMDL* should cite the findings of Hare et al. (1999) and use it as a reason for urgency to move forward on a TMDL Implementation Plan.

Steps Necessary for Salmon Recovery

This paper has demonstrated conclusively that low flow conditions resulting from agricultural diversions in the Shasta River compound water quality problems and that temperature impairment and nutrient pollution will not be abated unless water flows are increased. The *Shasta River TMDL* actions to restore Pacific salmon are dependent on parallel processes currently underway such as the Shasta River incidental take permit (ITP) for coho salmon (SVRCD, in review) and the California Department of Fish and Game (2004) *Coho Recovery Strategy*. These processes have very long time frames for action, often rely on voluntary measures and may achieve incremental improvements that are not sufficient for recovery of salmon and steelhead in a meaningful time frame.

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Bradbury et al. (1995) provide one of the most scientifically valid approaches to restoring Pacific salmon populations and stress protecting the best habitats available as a priority. The NRC (2003) report points out that loss of cool water flows due to increased groundwater and surface water diversion in the Big Springs Creek drainage reduced the carrying capacity of this important salmonid spawning and rearing area. U.S. EPA (2003) cites the need to protect and restore well distributed refugia when other factors confound meeting temperature requirements of salmonids in mainstem environments. Restoration of cold water flows in Big Springs Creek should, therefore, be of the highest priority.

Lower Parks Creek converges with the Shasta River very near Big Springs Creek. Kier Associates (1999) suggested restoring flows and improving riparian conditions in lower Parks Creek could provide a core refuge area in the heart of the Shasta Valley. Reconnecting Parks Creek to the Shasta River would also help improve the supply of spawning gravels to the mainstem.

The NRC (2003) report recommends consideration of removal of Dwinnell Dam because the Shasta River will become increasingly important to the Klamath River as global warming advances, because Mount Shasta will be one of the few places where snowfall increases are likely in the entire West. The *Shasta TMDL* approach of attempting to mitigate water quality problems in Dwinnell Reservoir so that water quality could be improved and tail water flows augmented is not realistic or practical. The reservoir has the same suite of problems as Klamath Hydroelectric Project impoundments and only decommissioning can lead to substantial abatement of water quality impairment (Kier Associates, 2006).

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Appropriate actions to restore salmon may be challenging because of resistance to changes in water use. Studies may be necessary that prove that unpermitted wells in the Pluto's Cave basalt formation around Big Springs are causing loss of surface flows. The existing adjudication and Watermaster services, which the NRC (2003) report found lacking, may have to be revisited. "The 1932 adjudication of surface waters in the basin, as currently administered, is insufficient to supply the quantity and quality of water necessary to sustain salmonid populations in the basin." The fact that riparian water rights below Dwinnell Dam are not part of adjudication means that the Watermaster has no authority over them. Consequently, increased flows gained through TMDL Implementation or other processes, including efforts by other landowners, could all be confounded by increased riparian diversions elsewhere. Despite these hurdles, the SWRCB must act to increase flows because they are clearly related to water quality impairment and beneficial uses will not be attained in the needed time frame unless this action is taken.

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A PROCLAMATION

BY THE GOVERNOR OF THE STATE OF CALIFORNIA

WHEREAS California's salmon runs are a vital component of our great State's resources that provide significant environmental, recreational, commercial, and economic benefits to the people; and

WHEREAS Klamath River Basin Chinook Salmon have been significantly impacted by poor ocean conditions, drought, water management, water quality, water flows, disease, and the elimination of access to historical spawning habitat; and

WHEREAS the Klamath Basin Chinook Salmon that commingle with other runs of salmon in ocean waters off of California and Oregon have been declining in abundance to a point where California's and Oregon's recreational, commercial, and tribal fisheries are being significantly constrained to conserve Klamath River Chinook Salmon; and

WHEREAS Klamath River Basin Chinook Salmon are predicted to have extremely low ocean abundance for 2006 in waters from Cape Falcon in Oregon to Point Sur in Monterey County, California, and in the Klamath River Basin; and

WHEREAS restoration of habitat and improved water quality and flows are critical to restoring an environment suitable to the long-term sustainability of the Klamath River Basin Chinook Salmon and other anadromous fish species; and

WHEREAS appropriate management of the Klamath River Basin Chinook Salmon population is critical to California's businesses, and local communities that provide goods and services in support of California's salmon fisheries; and

WHEREAS on April 5, 2006, I requested Secretary of Commerce Carlos Gutierrez to use his authority under the Magnusen-Stevens Fishery Conservation and Management Act to determine that there has been a commercial fishery failure due to a fishery resource disaster; and

WHEREAS on April 28, 2006, the National Marine Fisheries Service adopted an emergency rule to implement the recommendations of the Pacific Fisheries Management Council that resulted in severe restrictions on the commercial ocean salmon and Klamath Basin tribal and recreational fisheries and included restrictions on the recreational ocean salmon fishery; and

WHEREAS these restrictions will have significant impacts to California's commercial ocean salmon and in-river salmon fisheries and will result in severe economic losses throughout the State; and

WHEREAS the Department of Finance has determined that approximately $778,000 is continuously appropriated and available in the Small Business Expansion Fund (Fund 918) for disaster purposes under the Corporations Code section 14030 et seq.; and

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WHEREAS the Small Business Expansion Fund's available monies can be leveraged to guarantee up to approximately $9.2 million in loans for disasters, including guaranteeing loans to prevent business insolvencies and loss of employment in an area affected by a state of emergency within the state; and

WHEREAS Governor Ted Kulongoski of Oregon and I signed The Klamath River Watershed Coordination Agreement along with the responsible federal agencies in order to address the impacts to the fisheries in the region and to develop a long-term management approach, common vision, and integrated planning associated with the Klamath Basin; and

WHEREAS the serious circumstances of the Klamath River Chinook Salmon run put at risk the livelihoods of families and businesses dependent upon them.

NOW, THEREFORE, I, ARNOLD SCHWARZENEGGER, Governor of the State of California, find that conditions of disaster or of extreme peril to the safety of persons and property exist within the California counties of Monterey, Santa Cruz, San Mateo, San Francisco, Marin, Sonoma, Mendocino, Humboldt, Del Norte, and Siskiyou due to the poor ocean conditions, drought, water management, water quality, water flows, disease, and the elimination of access to historical spawning habitat and resulting from the significant restrictions that have been imposed on the State's salmon fisheries. Because the magnitude of this disaster will likely exceed the capabilities of the services, personnel, and facilities of these counties, I find these counties to be in a state of emergency, and under the authority of the California Emergency Services Act, I hereby proclaim that a State of Emergency exists in these counties.

Pursuant to this Proclamation, I hereby direct the Director of the California Department of Fish and Game and the Secretary of the Resources Agency to: (1) report to me immediately upon final action of the Department of Commerce and the California Fish and Game Commission on any further actions necessary to ensure the protection of the resource and of the economic livelihood of the fishery participants, tribes, and local communities; and (2) continue discussions for long-term restoration and management of the Klamath Basin with the State of Oregon, federal agencies (including the Secretaries of Commerce, the Interior, and Agriculture), tribal governments, and representatives from conservation, fishing, and agricultural organizations.

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I FURTHER DIRECT the Secretary of the Business, Housing and Transportation Agency, with the cooperation of the Department of Finance, to activate the Small Business Disaster Assistance Loan Guarantee Program to guarantee loans to prevent business insolvencies and loss of employment in the counties of Monterey, Santa Cruz, San Mateo, San Francisco, Marin, Sonoma, Mendocino, Humboldt, Del Norte, and Siskiyou as a result of this State of Emergency.

I FURTHER DIRECT that as soon as hereafter possible, this proclamation be filed in the Office of the Secretary of State and that widespread publicity and notice be given of this proclamation.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 6th Day of June 2006.

_____
ARNOLD SCHWARZENEGGER
Governor of California

ATTEST:

_____
BRUCE McPHERSON
Secretary of State

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ATTACHMENT 2: *Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007*, Jeffrey Mount, Peter Moyle and Michael Dias, Principal Investigators. A report prepared for the U.S. Bureau of Reclamation by the Center for Watershed Studies, UC Davis, CA (undated).

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Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007

Jeffrey Mount, Peter Moyle, and Michael Deas, Principal Investigators

Report prepared by:

Carson Jeffres (Project lead), Evan Buckland, Bruce Hammock, Joseph Kiernan, Aaron King, Nickilou Krigbaum, Andrew Nichols, Sarah Null

Report prepared for:

United States Bureau of Reclamation
Klamath Area Office

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Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007

Prepared by
U.C. Davis Center for Watershed Sciences
And
Watercourse Engineering, Inc.

For
United States Bureau of Reclamation
Klamath Area Office

1. Executive Summary

During water year 2007 (October 1, 2006 – September 30, 2007) the University of California, Davis Center for Watershed Sciences and Watercourse Engineering Inc. conducted an integrated assessment of the physical and biological factors affecting salmonids in the Shasta River, within the Nelson Ranch, Siskiyou County, California. The focus of this effort was to document a "year-in-the-life" of Shasta River aquatic ecology and to identify factors that limit salmonids during different life stages. This yearlong, detailed assessment increases understanding of seasonal habitat variability for the various salmonid species present in the river and the usage of those habitats. The study documents habitat conditions during salmonid immigration, spawning, incubation in gravels, emergence from redds, rearing and over-summering, and out-migration. Using an interdisciplinary approach to study the Nelson Ranch, we have been able to determine several physical and ecological constraints that probably impact salmonids of the greater Shasta River. We have also identified a suite of potential future studies to address key uncertainties in management of salmonids in the basin.

The year-in-the-life study included a wide range of field investigations, mapping, laboratory investigations, and associated work. We collected physical habitat data, including habitat mapping, geomorphology, hydrology, meteorology, and water temperature and quality. Ecological data collected includes surveys of aquatic macrophytes, macroinvertebrate communities and food webs, and seasonal habitat utilization by fish. All data collected during this study are included and incorporated into a project database (included CD).

The key conclusions and observations of this study are:

- Current hydrologic conditions on the Nelson Ranch are significantly affected by upstream water resource development and operations, including the impoundment of Lake Shastina and Dwinnell Dam, Parks Creek diversions to meet Montague Water Conservation District demands, and upstream irrigation practices in lands adjacent to the Shasta River and Parks Creek. Operations of the Grenada Irrigation District (GID) diversion, located adjacent to the Nelson Ranch, has direct impacts on reach hydrology during irrigation season.

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- The Shasta River exhibits hybridized characteristics of both "spring-dominated" and "rainfall/snowmelt runoff-dominated" rivers. Historically, the geomorphology of the upper river (above Big Springs Creek) reflected runoff-dominated flow conditions, while the lower river (below Nelson Ranch) reflected spring-dominated flow conditions. The Nelson Ranch represents a geomorphic and hydrologic transition zone between the upper and lower Shasta River.

- Channel planform morphologies, particularly downstream from the GID diversion, remain largely unchanged across both the pre and post-Dwinnell Dam periods. This suggests channel geometries are scaled to largely invariable spring-fed baseflows sourced in Big Springs Creek, a hydrologic condition which has remained relatively unchanged since the early 1900's.

- The proximity of the Nelson Ranch to Big Springs Creek results in water temperature conditions that exhibit seasonal variability imposed on a spring-stream dominated thermal regime. Coupled with this unique thermal regime, are impacts associated with upstream water resources development and management. Specifically, during spring and summer months, impacts of land and water use activities, coinciding with the maximum annual thermal loading, create warm water conditions on the Nelson Ranch.

- Mean weekly maximum water temperatures on the Nelson Ranch were greater than 18^{O}C (64.4^{O}F) for 151 days between 1 April and 30 September along the Nelson Ranch (82.5 percent of the period), which are above thresholds considered suitable for juvenile coho salmon.

- Aquatic macrophytes have a significant impact on the hydrology and aquatic habitats of the Nelson Ranch. Increased bed roughness from aquatic macrophytes increases river stage relative to discharge throughout the summer, increasing the availability or access to shallow water habitat. Aquatic macrophytes also create and alter mid-channel habitats available to fish throughout the seasonal growth and senescence cycle.

- Natural abundance stable isotope and food web sampling shows that the Shasta River along the Nelson Ranch is very productive, and the food web contains complex trophic interactions that vary seasonally. For instance, we found that instream (autochthonous) production supported food web productivity throughout the year.

- Aquatic macroinvertebrate sampling showed that during spring a large number of the highly tolerant Dipteran family Chironomidae (non-biting midges) were present in the samples. Large numbers of the Chironomidae are generally indicative of nutrient rich (e.g., eutrophic) water quality, and increased water temperatures.

- Juvenile coho were observed utilizing relatively fast deep-water habitats where instream woody debris was present on the Nelson Ranch. By early June, water temperatures warmed, and very few juvenile coho were observed only in a backwater habitat. After 3 July 2007, no coho were observed on the Nelson Ranch.

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- Juvenile steelhead were the most abundant salmonid observed during snorkel surveys conducted on the Nelson Ranch. Adult steelhead were observed along the Nelson Ranch in June, and appeared to be fresh from the ocean. This is evidence that summer run steelhead reside in the Shasta River. Steelhead have higher temperature tolerances than coho, and are thus able to utilize habitat on the Nelson Ranch throughout the summer.

- During October 2006, while cooperating with CDFG, we observed mature 0+ male Chinook in redds with adult female Chinook. This is the first time that mature male parr have been observed in the Shasta River. How mature parr may contribute to the population is unknown, but this life history strategy may help the population hedge bets against poor migratory conditions downstream.

The Shasta River on the Nelson Ranch is a highly productive system with significant potential for restoration of salmonid habitat. The unique hydrology and abundant aquatic macrophytes provide various habitats for fishes during all life stages. Currently the primary limiting factor to salmonids on the Nelson Ranch is elevated water temperature. The quality of spawning habitat is also low. If water temperatures along the Nelson Ranch can be reduced (e.g., through management actions), then the abundant habitat and high natural productivity could support relatively large populations of salmonids, including the federally- and state-listed coho salmon.

The baseline assessment presented herein identifies the first multidisciplinary approach to studies the Shasta Valley, providing a framework for an integrated evaluation of physical and biological factors affecting the various salmonid life stages present throughout an annual period. Although these findings provide novel and important information, continued research is necessary to advance our understanding of salmonids in the Shasta River Basin, and to more effectively identify and assess alternative management practices and restoration activities. Specifically, future studies are recommended to:

- Extend the spatial extent of assessment to Shasta River reaches upstream and downstream of the Nelson Ranch. A short term study addressing a portion of the annual period at selected sites has been funded by the U.S. Bureau of Reclamation, and is currently in progress.
- In addition to extending investigations spatially, multiple year assessment is necessary to capture aquatic system response to hydrologic and meteorological variability, as well as to capture the range of year-class characteristics associated with coho salmon.
- Quantify upstream thermal characteristics associated with groundwater influence (springs), channel morphology, travel time, meteorological conditions, and other factors to quantify heat transport through Shasta River reaches in the vicinity of the Nelson Ranch.
- Quantify temporal and spatial changes in biomass (e.g., standing stocks of organic matter, macroinvertebrates) and important ecological rates (e.g., input of allochthonous material, invert emergence and drift, secondary production) to improve our understanding of ecosystem-level processes.

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- Characterize the stable isotope signatures of additional sources of organic matter that have been identified as potentially important contributors to carbon flow in the Shasta River (e.g., particulate organic matter, epiphytic biofilms).
- Generate comprehensive information on the fish community during each season, including coupling fish distribution and abundance with stable isotope and gut content analysis to determine trophic relationships and important food web interactions. Future trophic investigation should target habitat types that are ecologically relevant to fish at different life history stages.

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Baseline Assessment of Salmonid Habitat and Aquatic Ecology of the Nelson Ranch, Shasta River, California Water Year 2007

2. Introduction

The 1997 NMFS listing of the SONCC (Southern Oregon/Northern California Coast) evolutionary significant unit of coho salmon (*Oncorhynchus kisutch*) as threatened under the ESA has resulted in an increased focus on the ecological and physical systems in the Klamath River Basin and particularly within the Shasta River. Several Klamath basin-wide reports and conservation plans have highlighted the importance of the Shasta River in preserving and restoring anadromous salmonid populations within the greater Klamath River Basin (CDFG 2004, NRC 2004, NMFS 2007, NRC 2007). Despite being a restoration priority, very little information is available about the unique hydrologic and ecologic conditions that exist in the Shasta River. The 2005 acquisition of the 1,700 acre Nelson Ranch by The Nature Conservancy allowed site-specific research and the establishment of a long-term data set that will help direct future resource management throughout the Shasta River watershed. As one of the federal agencies in the Klamath Basin, the Bureau of Reclamation contracted with the UC Davis Center for Watershed Sciences and Watercourse Engineering, Inc. to determine limiting factors of salmonids during a year-long period within the Nelson Ranch section of the Shasta River. This report is the summary of hydrology, water temperature, geomorphology, aquatic macrophyte, food web, and fish habitat usage data collected by UC Davis Center for Watershed Science (Watershed Center) and Watercourse Engineering, Inc. (Watercourse) personnel on the Nelson Ranch during the 2007 water year (1 October 2006 – 30 September 2007).

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Report Organization

The year-in-the-life study included a wide range of field investigations, mapping, laboratory investigations, and associated work. Report elements include a general site description, followed by chapters addressing hydrology/meteorology, water temperature, geomorphology, habitat mapping, aquatic macrophyte, macroinvertebrate and food web sampling, and fish surveys. Each chapter ends with major findings and future recommendations. References are included, as are appendices addressing field data.

3. Acknowledgements

We would like to acknowledge the following people who provided support to the year-in-the-life study. Specifically, we would like to acknowledge the assistance of Bill Chesney, Mark Pisano, and Mark Hampton of the California Department of Fish and Game for sharing their expertise on coho sampling, habitat assessment, and general life history in the Shasta River; Dave Webb of the Siskiyou County RCD for his insights on general conditions in the Shasta River Basin; Chris Babcock and Ada Fowler of The Nature Conservancy for their patience and support during the extended periods of field work; Henry Little, Mark Reynolds, George Stroud, and Amy Haas of The Nature Conservancy for being fully engaged in our work and providing access to this critical reach of river; the Peters family and Dan Chase for providing access to the opposite bank of the Shasta River throughout much of the Nelson Ranch property; Curtis Knight and Drew Braugh of CalTrout for organizational and logistical support; Dave Fontius for property access; Sue Maurer for help in fish survey design and survey validation. Finally, we want to extend our appreciation to the U.S. Bureau of Reclamation, Klamath Area Office for funding this project.

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4. Site Description

The 1,704 acre Nelson Ranch lies within the central Shasta River Valley in Siskiyou County, California (Figure 1). The Shasta River flows approximately 60 miles northwestward from its headwaters to its confluence with the Klamath River, and is the fourth largest tributary in the Lower Klamath River system (Figure 1). Bounded by the Scott Mountains to the west, Siskiyou Mountains to the north, and the Cascade Volcanic Range to the south and east, the Shasta River drainage basin exhibits considerable spatial variability in geologic and hydrologic characteristics. Tributaries from the Scott and Siskiyou Mountains flow northeast to the Shasta River, roughly perpendicular to the northerly strike of a the Eastern Klamath Belt, a geologic province comprised of a complex assemblage of Paleozoic sedimentary and metamorphic rocks and Mesozoic intrusives (Hotz 1977). Northerly and westerly flowing tributaries to the Shasta River drain both the northern slopes of Mount Shasta, and the western slopes of the Cascade Range, regions largely underlain by porous volcanic rocks of the Western and High Cascades geologic provinces. The Shasta River flows for most of its length along the floor of Shasta Valley, an area underlain principally by a complex assemblage of High Cascade Plio-Pleistocene andesitic and basalitic lava flows and volcaniclastic materials derived from a Late Pleistocene debris avalanche from ancestral Mount Shasta (Wagner 1987, Crandell 1989). Low-gradient basalt flows (e.g., Plutos Cave Basalts) dominate the eastern portions of Shasta Valley, while western regions exhibit a mosaic of andesitic and dacitic hillocks and depressions formed by the aforementioned debris avalanche.

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The local climate is semi-arid with mean annual precipitation varying between 10 inches (25.4 cm) and 18 inches (45.7 cm) (Clawson et al. 1986, Vignola and Deas 2005), much of which falls as snow in higher elevations during the winter months. The Shasta River has one major dam, Lake Shastina (Dwinnell Reservoir) at river mile 40.6. Drainage area for the Shasta River above Dwinnell Dam is 279 km^2 and 1,638 km^2 (632 mi^2) below the dam. Current mean annual impaired runoff is approximately 168,000,000 m^3 (136,000 acre-feet (af)).

Lake Shastina was impounded in 1928. The 1923 water right allowed 74,000,000 m^3 (60,000 af) to be stored from October to June, although maximum operating capacity is 61,700,000 m^3 (50,000 af) (Booher et al. 1960). The reservoir experiences substantial seepage losses through underlying volcaniclastic rocks (Vignola and Deas 2005). Direct reservoir outflow includes minimal controlled releases of up to 10 cfs (0.28 cms) and relatively infrequent uncontrolled winter spill events (e.g., 1964 and 1997; pers. comm., D. Webb 2007) (Vignola and Deas 2005). Consequently, measured streamflow downstream of Dwinnell Dam is primarily driven by inflow from tributaries (e.g., Parks Creek), discrete natural springs (e.g., Big Springs), and diffuse groundwater.

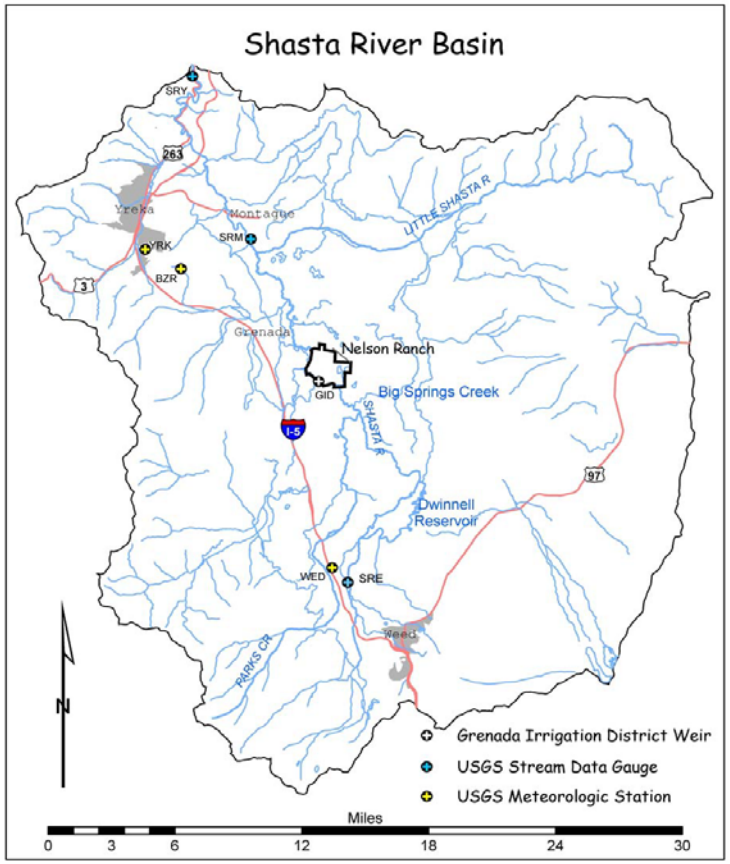

Figure 1. Shasta Valley hydrologic network and project site.

5. Hydrology

The Shasta River, like most California rivers, experiences seasonal minima flow in early summer and early fall in response to the Mediterranean climate that typifies the region. However, local spring inflows modify this typical seasonal hydrograph on the Nelson Ranch. The Nelson Ranch occupies a reach of the Shasta River between RM 32.0 and RM 27.5 (RKm 51.5 and RKm 44.3),

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just below the confluence of Big Springs Creek. Big Springs (and other springs) impose a persistent baseflow on the typical seasonal hydrograph.

This reach has two diversions, Nelson Ranch irrigation of approximately 2 cfs (.05 cms), and a combined diversion of up to 52 cfs (1.47 cms) to supply up to 40 cfs (1.13 cms) to the Grenada Irrigation District (GID) and 12 cfs (0.34 cms) to the Huseman Ditch. The Nelson Ranch diversion is a screened pump, while the GID/Huseman Diversion includes a diversion dam and screened diversion facilities. Surface return flows from the Nelson Ranch averaged 0.14 cfs (0.004 cms) throughout the year, and peaked to 1.59 cfs (0.045 cfs) during the 2007 irrigation season. Return flows from GID and Huseman Ditch have not been quantified.

To assess flow conditions in the Shasta River along the Nelson Ranch, two flow gauging stations were installed. The upstream boundary gauge (Shasta 1) was located at the upper end of the Nelson property in the vicinity of the California Department of Water Resource (DWR) gage (currently out of service). This location served to quantify flow entering the Nelson Ranch. Here, flow was primarily composed of discharge from the main-stem Shasta River below Dwinnell Dam, Parks Creek, and Big Springs Creek. A considerable volume of water was diverted during winter from Parks Creek into the Shasta River drainage above Lake Shastina for storage, which subsequently was diverted during spring and summer periods for use on Montague Water Conservation District (MWCD) lands with little return flow to the Shasta River. A second flow gauge at the downstream boundary of the Nelson Ranch (Shasta 4) captured Shasta River flow leaving the Nelson Ranch reach. Flow between the two gauging stations should differ by the quantity of water diverted to Nelson Ranch and GID, tailwater return flow, spring and seeps, and unquantified gains and losses (such as seepage, subsurface flow, evapotranspiration, and local precipitation and runoff).

Point velocity measurements were made with a Marsh McBirney Flomate electromagnetic flow meter mounted on a top set wading rod using the six-tenths-depth (0.6) method (Rantz 1982). Stream flow was calculated using the USGS mid-section velocity-area method (Rantz 1982). Stream stage measurements were collected using Druck 1830 series pressure transducers (resolution accuracy +/- 3 mm) connected on Campbell Scientific CR510 data loggers programmed to record water stage (m) at ten-minute intervals.

5.1. Stage-Discharge Rating Curves

Measured velocity and depth were used to calculate flow, which was then matched to corresponding river stage at the gauging station (Table 1). Throughout the study period such information was used to obtain stage-discharge relationships or rating curves at the two gaging locations. These rating curves were subsequently used to estimate flow during the 2007 water year (Figure 2).

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Table 1. Computed discharge measurements and corresponding gage height at the two gauging stations located along the Nelson Ranch reach during water year 2007. Stage is height above the sensor at each location. Discharge measurements taken outside of water year 2007 are included in the appendix.

	Shasta 1: Upstream Nelson Ranch		Shasta 4: Downstream Nelson Ranch	
Date	Stage (m)	Discharge (cfs)	Stage (m)	Discharge (cfs)
10/2/2006	0.98	200.8	0.62	198.019
10/12/2006	0.97	209.4	0.66	212.1125
11/2/2006	0.97	205.2	0.64	208.101
11/9/2006	0.98	214.4	0.67	220.1355
12/7/2006	0.96	175.8	0.58	193.0135
12/29/2006	0.98	193.8	0.57	191.5225
1/4/2007	0.98	205.5	0.69	201.7465
1/11/2007	0.96	160.3	0.54	161.4185
1/18/2007	0.96	154.9	0.50	139.76705
1/25/2007	0.96	155.1	0.51	157.62
3/15/2007	0.97	160.1	n/a	n/a
3/30/2007	0.95	136.7	0.41	125.67
5/17/2007	0.91	136.3	n/a	n/a
5/24/2007	0.91	92.7	0.21	84.49
6/7/2007	0.94	112.5	n/a	n/a
9/13/2007	0.94	85.9	0.27	58.22
9/19/2007	0.93	85.6	0.26	60.35
9/26/2007	0.93	87.3	0.31	77.035

Notes:
1) The flow gage Shasta 1 is located at the upstream property boundary and Shasta 4 at the downstream boundary
2) Damage to data loggers yielded 28 missing days for Shasta 1 and 18 missing days for Shasta 4 during the 2007 water year.

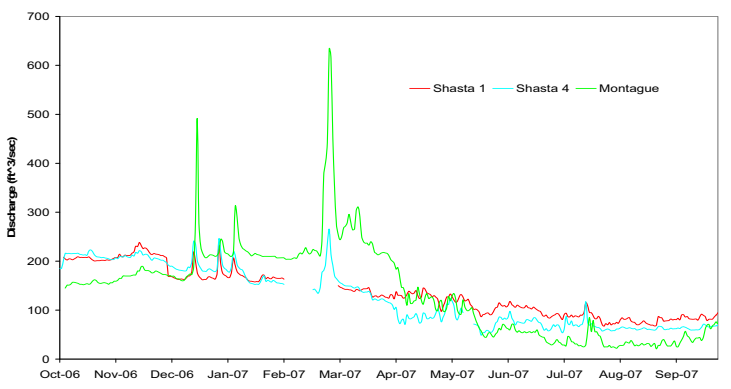

Figure 2. Calculated daily discharge during water year 2007 along the Nelson Ranch. USGS discharge data for Montague is included for comparison.

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Variability in stage-discharge relationships occurred due to seasonal aquatic macrophyte growth. Submerged macrophyte growth can considerably reduce average flow velocities leading to increased stream depth and an increase in channel cross sectional area (Champion and Tanner 2000). Initial discharge measurements at the Nelson Ranch indicated that river discharge can vary by as much as 100 cfs at the same river stage during different times of the year due to seasonal aquatic macrophyte growth. To accommodate these variable conditions, stream flow records were segregated into discrete temporal periods defined by unique stage-discharge relationships: four periods for Shasta 1 and three periods Shasta 4 (Table 2). Temporal delineations for rating curves were determined by quantitative and qualitative estimates of aquatic macrophyte cover, assuming that stage-discharge relationships would be similar during times of similar vegetative cover. The various rating curves were then developed using discharge measurements collected during times of similar vegetative cover. Collected stage data was condensed into daily average stage values and stage-discharge equations were applied to create the daily discharge shown in Figure 2.

Table 2. Power functions for Shasta 1 and Shasta 4 used to estimate discharge where (x) is river stage relative to local datum.

Date	Shasta 1	Date	Shasta 4
10/1/06 - 11/30/06	$Q= 244.82(x)^{5.7545}$	10/1/06 - 2/28/07	$Q= 345.83(x)^{1.19}$
12/1/07 - 2/2/07	$Q= 201.89(x)^{5.2538}$	3/1/07 - 7/19/07	$Q= 301.12(x)^{1.0327}$
3/4/07 - 7/20/07	$Q= 167.43(x)^{5.7816}$	7/20/07 - 9/30/07	$Q= 104.81(x)^{0.3967}$
7/21/07 - 9/30/07	$Q= 133.23(x)^{6.6086}$		
The number of discrete periods for Shasta 1 and Shasta 2 differed in response to variable vegetative cover between the two sites			

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5.2. Precipitation

Precipitation totals for the 2007 water year were below average. Average annual precipitation for the Shasta Valley varies from 10 inches (25.4 cm) to 18 inches (45.7 cm) (Clawson et al. 1986, Vignola and Deas 2005), and precipitation on the Nelson Ranch for the 2007 water year was measured at 11.14 inches (28.3 cm). Precipitation was measured at both stream gauging locations at the property boundaries of Nelson Ranch. Nelson Ranch precipitation totals equaled 11.14 in (28.3 cm) at the top of the property (Met 1) and 8.9 inches (22.6 cm) at the bottom of the property (Met 2) (Figure 3). Discrepancies in precipitation in January are due to interference by birds of the Met 2 precipitation gauge. Sixty-five percent of precipitation that fell along the study reach occurred between October and March, while thirty-four percent fell between April and August. This annual distribution of precipitation resembles large-scale weather events during the winter and spring months, and smaller more frequent convection based events taking place in summer months.

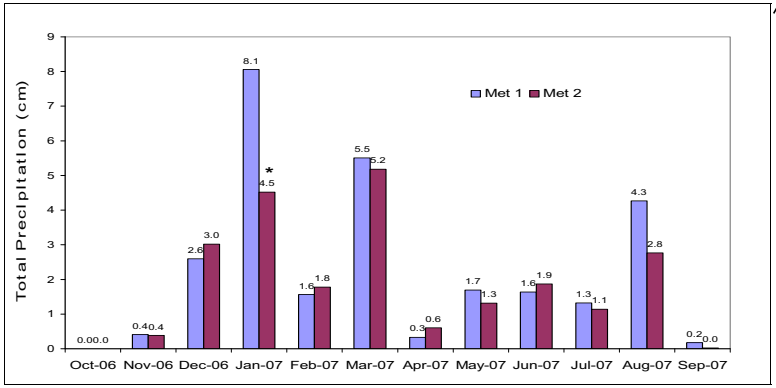

*Figure 3. Monthly precipitation totals for the Shasta River along the Nelson Ranch. * indicates interference by birds with the precipitation gauge.*

Most California rivers experience annual flow conditions in response to the Mediterranean climate that typifies the region. Winter storms bring precipitation as rain and snow which leads to the high flow conditions. During spring and into summer river stage and flow follow a typical descending hydrograph with minimum flows in late summer or fall. Year-in-the-life flow conditions on the Nelson Ranch are presented below.

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Fall: October – November

Fall flow conditions for the Shasta River on the Nelson Ranch respond not only to season, but also to the termination of irrigation practices. Specifically, during the first week of October, stage increased markedly as irrigation season concluded, increasing depth and widening the river where it was shallow and inundating portions of benches and point bars that were exposed through the summer. In deeper sections, where the river channel is typically rectangular in form, there was little change in width. Some of the most stable flow regimes of the year occurred in October and November, at approximately 200 cfs, following irrigation season and prior to winter storms (Figure 2). This stability is a byproduct of inflow from springs upstream, and provides a valuable resiliency to baseflow in the Shasta River. This condition is absent in other tributaries of the Shasta River such as Parks Creek, which exhibits a hydrograph more typical of a precipitation and low elevation snowmelt stream.

Winter: December – March

Winter brings precipitation, typically as snow in the higher elevations and rain in the lower elevations. During winter 2007, baseflow remained near 200 cfs (5.66 cms) until mid-March, when flow dropped below 100 cfs (2.83 cms). Diversions from Parks Creek and upper Shasta River flows are stored in Lake Shastina during this period (and extending into spring), leaving modest flows and few peak storm events downstream at the Nelson Ranch. During winter, the Shasta River in the Nelson Ranch reach exhibited only modest increases in flow, largely derived

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from local storm runoff. Appreciable overbank flow did not occur during the winter of 2007, with the exception infrequent inundation of low bars and benches

Lake Shastina did not spill during the winter of 2006-07, and on average spills approximately 1 out of every 10 years (B. Crabill, pers. comm. 4/07). In wetter years Parks Creek diversion to the reservoir may be significantly curtailed to avoid or minimize spill at Dwinnell Dam. The result during these years is that considerably larger flows pass through the Nelson Ranch. A longer dataset will help quantify flow differences at Nelson Ranch between dry and wet years and we recommend that gauges remain installed and continuously rated on the Nelson Ranch in future years.

Spring: April – June

Irrigation season generally begins on 1 April in the Shasta River, but certain lands have water rights that start on 1 March. When irrigation diversions from the Shasta River, tributaries, and springs commenced in 2007, flows along the Nelson Ranch were significantly reduced (Figure 2). Because the GID/Huseman Ditch diversion is located in the Nelson Ranch reach of the Shasta River, flows at any particular time often differed between the upstream and downstream gauges on Nelson Ranch. After irrigation season began, low flow conditions persisted below the GID diversion throughout the spring and summer period. Benches and point bars that had been inundated during winter were exposed by April.

Summer: July – September

Natural tributary runoff diminishes through spring and into summer. Coupled with continued irrigation demands through September, low flows persisted through summer. Small fluctuations in discharge, due to timing of various irrigation withdrawals and, on occasion, localized summer thunderstorm events were evident in the hydrograph. Overall, summer flows are restricted to the low flow channel.

42-36 cont.

5.3. Summary

The Shasta River experiences a complex hydrology. The precipitation patterns are typical of California's Mediterranean climate. However, the combined precipitation-snowmelt hydrology is modified by strong groundwater influences and water resources development. Impoundment and water management associated with operations of Lake Shastina alter the flow regime and reduce peak winter flows in most years. Groundwater influences, in the form of large spring complexes upstream of the Nelson Ranch, provide critical baseflow throughout the study reach, even during periods of stream flow diversion associated with irrigation practices. Diversions to meet demands of the GID and Huseman Ditch water rights impose a signal on the river that is apparent through much of the lower river.

6. Water Temperature

The impact of high summer water temperatures in the Shasta River reducing cold-water fish habitat and limiting fish survival has been well documented (DWR 1986, 2001; USFWS 1992; DFG 1996; NRC 2004; NCRWQCB 2006). The year-in-the-life assessment increased the understanding of spatial and temporal thermal variability throughout each season, and clearly defined small-scale thermal conditions and variability not evident in previous studies where monitoring locations were more widely distributed (Watercourse 2003b). The temperature

monitoring efforts on the Nelson Ranch illustrate clear seasonal changes, local cool and warm water regions, and overall spatial and temporal variability throughout the reach.

Outlined herein is a general description of Shasta River water temperature conditions, including discussion of thermal attributes of water entering Nelson Ranch, as well as effects of meteorological influences, spring inflow contributions, and detailed observations along the Nelson Ranch reach. Water temperature conditions over an annual period are presented under pre-water development conditions for all seasons, followed by a seasonal description of current thermal conditions and discussion of associated thermal habitat considerations. Comparisons are made between pre-development and current conditions, and changes explained or hypothesized.

6.1. General Water Temperature Conditions of Nelson Ranch

Temperature conditions in the Shasta River on the Nelson Ranch are largely driven by hydrology (and geohydrology) and meteorology. Unique attributes of the system are the temperature signals from substantial spring inflows, which may enter the river either notably warmer, nearly the same, or considerably cooler than ambient water temperatures depending on the time of year. These spring inputs create unique thermal conditions when compared to streams without springs.

In general, groundwater-dominated river systems, like the Shasta River, have a more stable flow and thermal regime than those not dominated by groundwater (Sear et al. 1999). Groundwater dominated systems can moderate the influence of meteorological conditions by direct dilution of stable inflow temperatures, as well as increasing the volume of the receiving water. The result is less seasonal variability (Caissie 2006). Big Springs Creek contributes the majority of spring-derived water, although smaller springs occur upstream of the Big Springs complex, some of which appear to be associated with the construction and operation of Lake Shastina (Crabill, pers. comm., 4/07). Thus, Shasta River water temperatures and flows are relatively stable in the reach immediately below Big Springs; however, meteorological conditions exert an increasing influence as distance from the Big Springs source increases.

Aside from spring inflows, meteorological conditions are a primary factor driving thermal conditions in the Shasta River. Water temperature response to solar radiation varies seasonally with maximum loading occurring during late spring and summer months when day length is long, solar altitude is at an annual maximum, and cloudy days are at a minimum. Air temperature reflects a similar response to seasonal solar radiation. During water year 2007, maximum air temperature was 39.7°C (103°F) on July 10, 2007, and minimum air temperature was –13.5°C (7.7°F) on January 13, 2007. Daily average air temperature typically exceed 25°C (77°F) in July and August (Figure 4).

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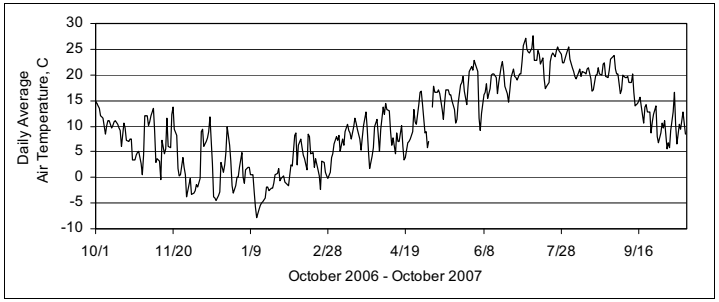

Figure 4. Nelson Ranch daily air temperature.

6.2. Detailed Observations on the Nelson Ranch

Exploratory temperature probing and lateral river transects were conducted during summer 2006 to improve understanding of small-scale thermal diversity in the Shasta River and identify possible cool-water habitat from small springs, subsurface flows, or seeps. Six sites were sampled for thermal diversity on upper Nelson Ranch on 22 August 2006 and 23 August 2006. Further, cross sectional water temperature was measured along three transects near the Nelson Ranch return flow ditch on 8 August 2006 (Figure 5) (Null 2007). Finally, winter monitoring of lateral diversity was conducted with multiple habitat cross sections and in side channels in the winter of in 2006-07.

These temperature observations throughout the year identified several key insights into smaller scale thermal conditions on the Nelson Ranch. Longitudinal thermal diversity exists on the Ranch, primarily in response to upstream conditions (both natural and anthropogenic) and meteorological influences on the river as it travels downstream. Longitudinal variability is presented in detail below, under the year-in-the-life discussion. Lateral variability was apparent near the river edge, and was most pronounced during summer. Riparian vegetation, both herbaceous and woody, may provide benefits for such margin habitat. During summer, small, localized cool water refugia associated with subsurface flow, seeps, and/or springs were identified on the Nelson Ranch with temperatures up to 1-2°C (1.8-3.6°F) cooler than mainstem river conditions. Irrigation return flows also occur on the Nelson Ranch. However, both cool refugia and return flows were generally small in size and/or magnitude and did not appear to have an appreciable influence on overall mainstem temperatures. Characterizing winter lateral variability identified that although mainstem temperatures were largely uniform, side channels differed dramatically. Side channels that were typically inundated under higher flows of winter and spring were generally frozen top to bottom during winter months. Further, soon after the ice melted, irrigation diversions reduced flows and stage, leaving the channels disconnected from the river and/or dry. Additional observations of potential refugia, springs and seeps, and return flows, would increase the information available and improve understanding of potential variability and impact these features have on anadromous fish production and associated management strategies on the Nelson Ranch as well as in other reaches.

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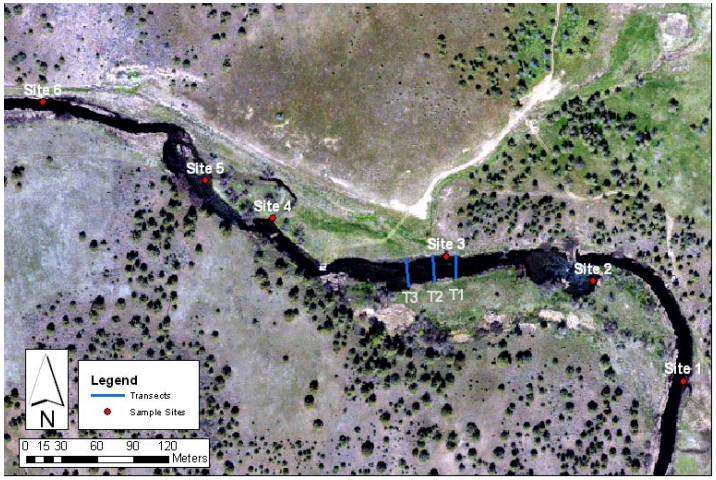

Figure 5. Exploratory temperature probing locations, August, 2006.

6.3. Pre-water Development Temperature Conditions

Pre-development conditions represent an estimate of the historic thermal regime of the Shasta River prior to groundwater pumping, construction of Dwinnell Dam, stream impoundments, diversions, and land use modifications. Historic Watermaster Service records and estimated quantification of the Big Springs complex were used to create an unimpaired hydrology of the Shasta River (DWR Watermaster service records 1930-1990; Deas 2006; Null 2007). Pre-development temperature conditions were estimated using historic flow data (NCRWQCB 2006), measured water temperatures throughout the Shasta River system, and equilibrium temperature theory (Martin and McCutcheon 1999) based on 2001 meteorological conditions. To provide a more comprehensive representation of water temperatures through space, the Tennessee Valley Authority's River Modeling System (TVA-RMS v.4) was used to simulate flow and water temperature under pre-water development conditions (Hauser and Schohl 2002; Null 2007). Estimated pre-development hydrologic and thermal conditions of the Shasta River are discussed in detail by season in the following paragraphs. Water temperature is necessarily linked to hydrologic conditions, thus, additional flow considerations are included herein with regards to assumptions regarding the unimpaired hydrology.

Fall: October – November

Fall flow regime under pre-development conditions was most likely similar to current conditions after irrigation season and before the onset of winter rains. The influence of spring inflow on local water temperatures were modest during this period of fall cooling and shorter day length because equilibrium temperature in the river approached that of the springs. Although there would be day-to-day variations in response to local meteorological conditions, water

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temperatures would probably have ranged from 7°C to 15°C (44°F to 59°F), effectively bracketing local spring temperatures of 10°C to 12°C (50°F to 53°F) (NCRWQCB 2006). Warmer water temperatures were expected in early October and cooler water temperatures in late November. Modeling studies of pre-development conditions support the finding that inflow from springs would have a minor affect on water temperature during this period (Figure 6). Shasta River baseflow was approximately 200-300 cfs (5.66 - 8.5 cms), providing sufficient migratory conditions for returning Chinook and coho salmon. During late fall herbaceous riparian vegetation would have been modest and woody riparian species, if present, were most likely leafless, making riparian vegetation largely ineffective; however, water temperature was probably not limiting during this period.

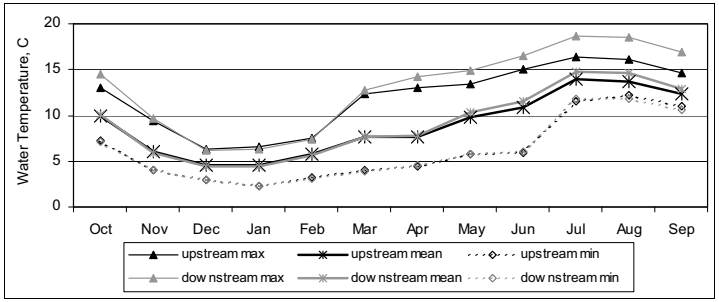

Figure 6. Simulated unimpaired max, mean, and min water temperature at Nelson Ranch upstream and downstream property boundaries

Winter: December – March

Historic data suggests winter baseflow was greater than 300 cfs (8.5 cms) (DWR Watermaster service records 1930-1990), and flows greater than 500 cfs (14.2 cms) probably occurred following storms. This larger and more consistent baseflow, coupled with more frequent and larger storm events, would lead to an increased the incidence of overbank flow onto the floodplain. Most likely the Shasta River on the Nelson Ranch was relatively warm during winter periods due to the influence of upstream springs (head of Big Springs is approximately 11°C (51.8°F) (NCRWQCB 2005)). However, during cold winter storms, precipitation events may have overwhelmed baseflow temperatures and the river may have exhibited notable cooling.

Modeling suggests winter temperatures were typically greater than 5°C, although this may be a low estimate (Null 2007) (Figure 6). The thermal regime of storm events under pre-development conditions was not assessed. Riparian vegetation was largely dormant during winter, providing only minimal stem shading.

Spring: April – June

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Elevated baseflow and peak flows in response to winter storms and snowmelt events from the Parks Creek and upper Shasta River watersheds would have continued into spring for typical precipitation years under a pre-development condition. Flows would have remained elevated into late spring on the Nelson Ranch, inundating floodplain and side channel areas, creating a diverse range of thermal conditions and habitats.

Similar to the fall periods, spring inflow probably had a modest affect on water temperature because equilibrium temperature was close to the temperature of the springs through mid-May. However, later in May and into June, the importance of the spring (e.g., Big Springs) inflows and cool temperatures would have been vital to providing cues to young salmon that oversummering habitat would be available. Riparian vegetation leaf out would occur in mid-spring, and coupled with the thermal mass from a baseflow of approximately 200 cfs (5.66 cms) would have maintained cool temperatures (maximum daily temperatures less than approximately 16°C (60.8°F)) throughout the Shasta River on the Nelson Ranch.

Summer: July – September

Under unimpaired conditions, instream flow probably remained above approximately 150 cfs (4.25 cms) through summer on the Nelson Ranch. Because of the proximity of the Nelson Ranch site to Big Springs Creek, upstream conditions would have played a critical role in local temperature. During summer cool spring flows would be maintained well downstream in the Shasta River in response to the higher baseflow, reduced transit time, and potential riparian shading. Modeling results suggest that cool water conditions would have extended well beyond the downstream boundary of the Nelson Ranch, with daily maximum water temperature near or below 19°C (66.2 °F) during July and August, and nightly low temperatures around 12°C (53.6°F) (Figure 6) (Null 2007). Such conditions would provide a rich longitudinal and lateral thermal diversity on the Nelson Ranch.

42-36 cont.

6.4. Current Water Temperature Conditions

This section discusses seasonal changes to the thermal regime of the Shasta River under current conditions. Flow is discussed where it relates to temperature conditions and instream habitat. As noted, water year 2007 was a below normal year type based on rainfall and may not be representative of normal or wetter years. Temperature and flow monitoring was conducted at Nelson Ranch throughout the study period; however, due to instrument failure and loss, data from May 2006 to May 2007 was used to interpret thermal conditions and associated impacts on instream habitat (detailed included in Null and Deas 2007). Long term monitoring would lend further insight into the variability of the thermal regime in the Shasta River over variable year types.

Fall: October - November

During fall, the diurnal range of water temperature and response to meteorological conditions was generally similar throughout the Nelson Ranch (Figure 7). As day length shortened and solar altitude diminished, overall water temperatures declined and diurnal range diminished. Mean daily temperature in the fall differs little between upstream and downstream boundaries (Figure 8). The influences of spring inflow on local water temperatures were modest during this period because equilibrium temperature in the river approached that of the springs. Although the minimum and maximum daily temperatures are not notably different in October and November

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(Figure 9), the timing of maximum daily water temperature was notably different at the upstream and downstream boundaries of the property. These differences are revealed by examining diurnal temperature variations over a 24-hour period using a series of monthly box and whisker plots. Maximum water temperature the upstream location occurred between 5:00 and 6:00 pm (Figure 10). At the lower property boundary, the daily maximum water temperature occurred between 10:00 pm and 1:00 am (Figure 11). The dominant thermal influence for the Shasta River is daytime solar radiation and advection of thermal energy from upstream sources. This implies that a volume of warm water, originating upstream of Nelson Ranch, was being transported downstream and was reaching Nelson Ranch's downstream boundary at night. Minimum daily water temperatures were similar at the upstream and downstream property boundaries, occurring between 7:00 – 9:00 am, and 8:00 – 11:00 am, respectively.

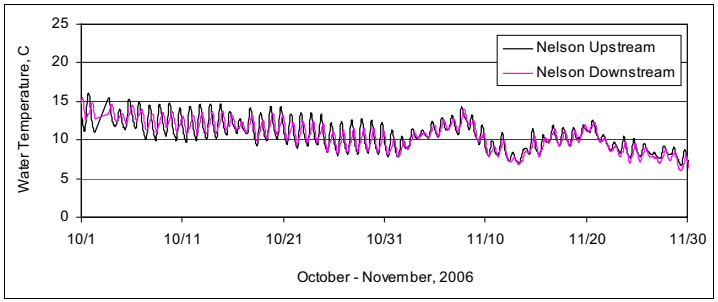

Figure 7. Fall hourly water temperature at Nelson Ranch property boundaries.

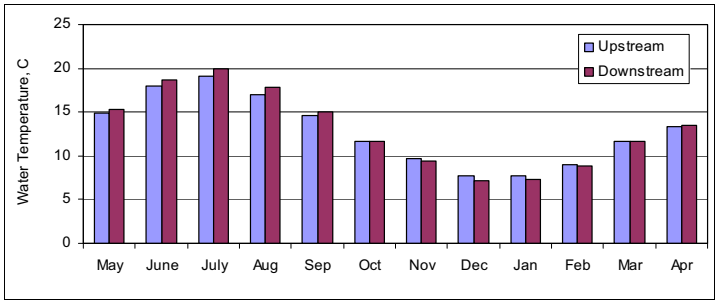

Figure 8. Mean monthly water temperature at Nelson Ranch property boundaries.

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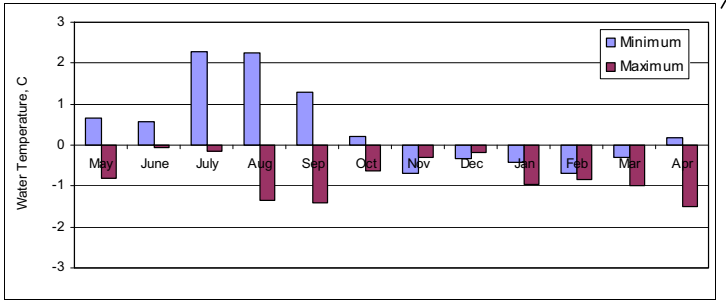

Figure 9. Difference in minimum daily and maximum daily temperature at Nelson Ranch property boundaries (downstream minus upstream, i.e., positive is warmer downstream and negative is warmer upstream).

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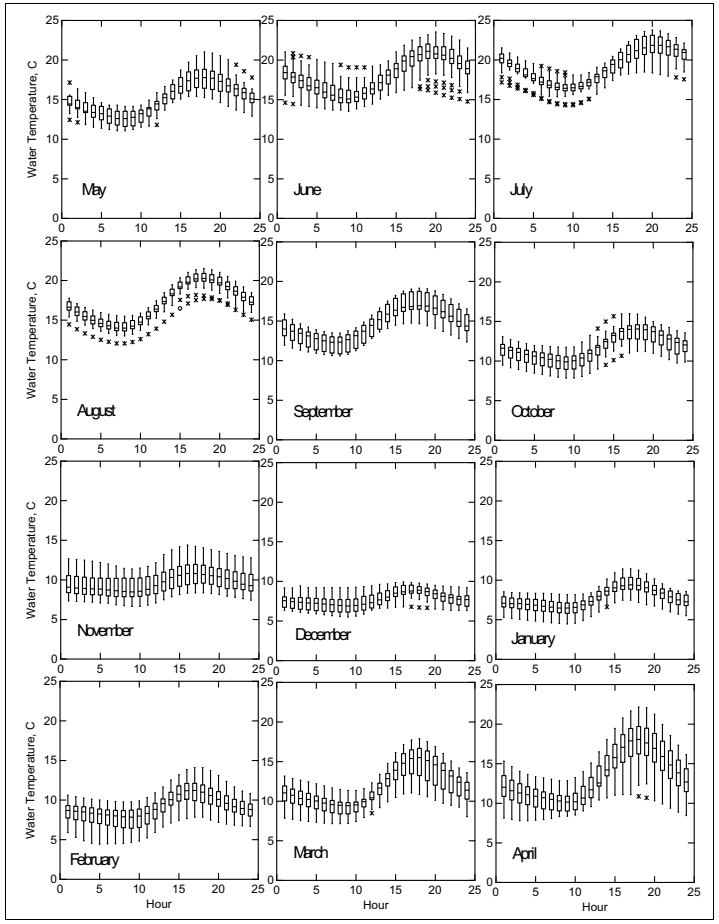

Figure 10. Hourly water temperature variability by month at Nelson Ranch upstream boundary.

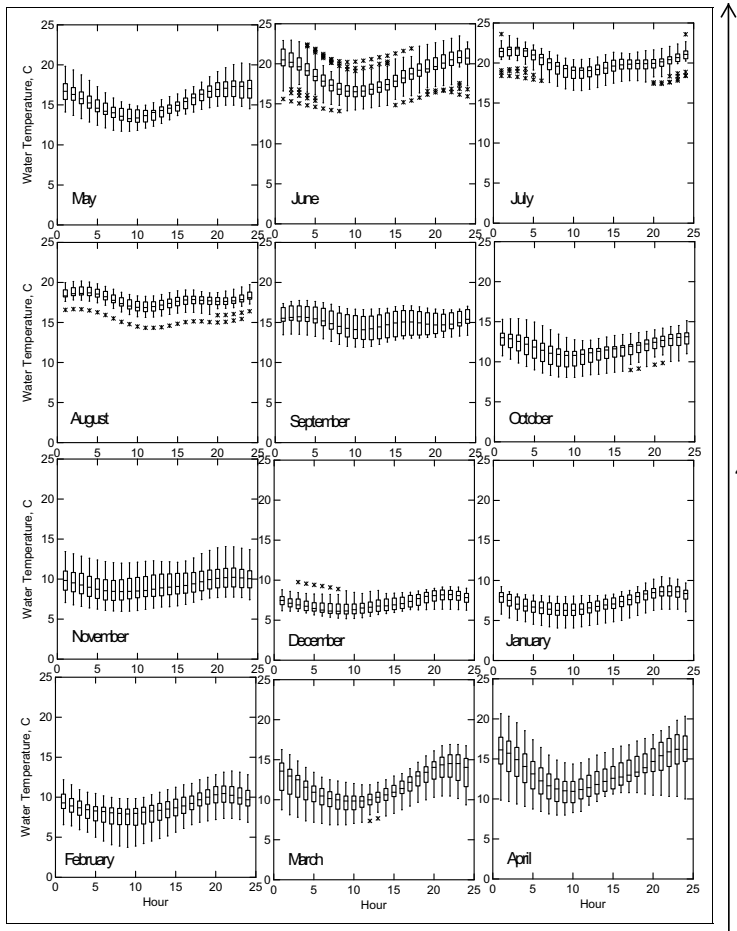

Figure 11. Hourly water temperature variability by month at Nelson Ranch downstream boundary.

Winter: December – March

During December and January, mean water temperature reached an annual minimum of approximately 5 to 7°C (41 to 44.6 °F) (Figure 12). Mean water temperature was approximately 0.5°C (0.9°F) warmer at the upstream property boundary than the downstream boundary (Figure 8). Warmer waters at the upstream boundary would be expected because of the proximity to Big Springs and subsequent cooling with distance from this warm water source, i.e., winter equilibrium temperatures are notable cooler than the springs. Diurnal range was similar at the two locations during all winter months, and increased throughout Nelson Ranch in late winter with increasing day length and solar altitude (Figure 12). Minimum and maximum temperatures were warmer at the upstream boundary than at the downstream boundary, by up to approximately 1.0°C (1.8°F) (Figure 9). Like fall, daily maximum water temperature occurred several hours later at the downstream boundary than the upstream boundary, near 10:00 pm, presumably in response to inherited upstream thermal conditions.

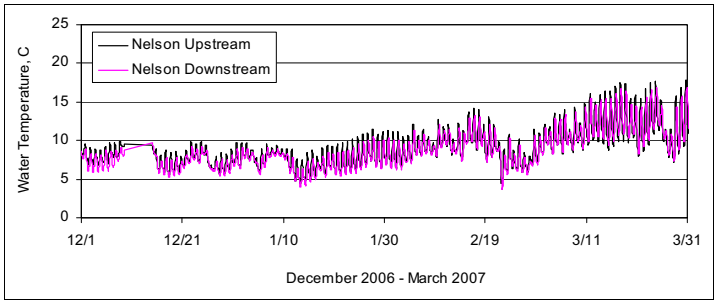

Figure 12. Winter hourly water temperature at Nelson Ranch property boundaries.

Spring: April – June

As with fall, meteorological conditions of late March and April result in water temperatures similar to the Big Springs and there is little net heat change through the Nelson Ranch reach. However, during May through June, atmospheric loading increases considerably and, in general, the system experiences net heating in the Nelson Ranch with mean water temperatures approximately 0.5°C (0.9°F) to 1.0°C (1.8°F) warmer at the bottom than the top (Figure 8). By mid- to late-spring a diurnal range of up to 5°C (9°F) was imposed on the system (Figure 13). Minimum and maximum temperature dynamics changed considerably, with minimum temperatures remaining slightly lower and maximum temperatures becoming notably higher at the upstream boundary (Figure 9). The increase in maximum daily temperatures is assumed to be related to upstream land and water use. Like fall and winter, maximum daily water temperature occurred at 10:00 – 11:00 pm at the lower property boundary, approximately four hours later than the upstream boundary (Figure 10, Figure 11).

42-36 cont.

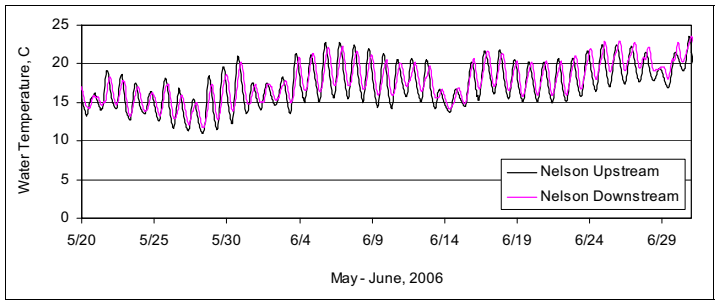

Figure 13. Spring hourly water temperature at Nelson Ranch property boundaries.

Summer: July – September

During summer, mean water temperature reached an annual maximum of 23.8°C (74.8°F) at the upstream property boundary and 23.6°C (74.5°F) at the lower property boundary (July) (Figure 14). Mean water temperature was approximately 0.5°C (0.9°F) to 1.5°C (1.3°F) warmer at the downstream property boundary than the upstream boundary (Figure 8), suggesting net heating. The springs remain approximately constant in temperature, so the summer condition presents the opposite effect of winter. Warmer waters at the downstream boundary would be expected because of the proximity to Big Springs and subsequent heating with distance from this cold water source, i.e., summer equilibrium temperatures are notably warmer than the springs. From mid-July through September, the diurnal range was greater at the upstream boundary than the downstream boundary (Figure 14). Minimum and maximum temperature dynamics were consistent with spring, but minimum temperatures were notably lower in August and September (over 1.0°C (1.8°F)) upstream and maximum temperatures were notably higher in the July through September period (over 2.0°C (3.6°F)) (Figure 14). Similar to other seasons, daily maximum water temperature occurred several hours later at the downstream boundary than the upstream boundary. Daily maxima and minima timing and magnitude differed remarkably at the property boundaries. Maximum temperatures at the downstream property boundary occurred up to eight hours after the upstream boundary maxima. Generally, water temperature peaked around 6:00 pm at the upper boundary, but not until 3:00 am at the lower boundary (Figure 10, Figure 11). Likewise, minimum daily water temperature occurred near 7:00 am and 11:00 am at the upstream and downstream boundaries, respectively (Figure 15). The increased travel time between property boundaries during summer was probably related to low flow conditions, increased channel roughness from macrophyte growth, as well as thermal signals advected into this reach from upstream conditions.

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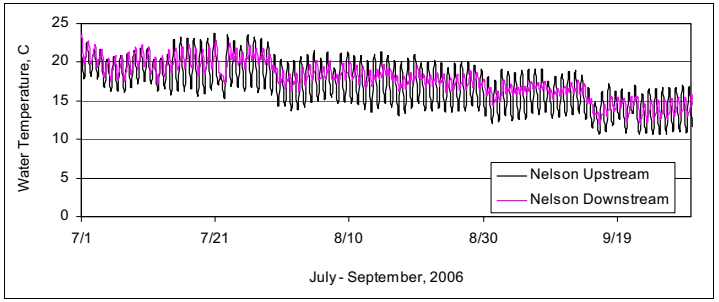

Figure 14. Summer hourly water temperature at Nelson Ranch property boundaries.

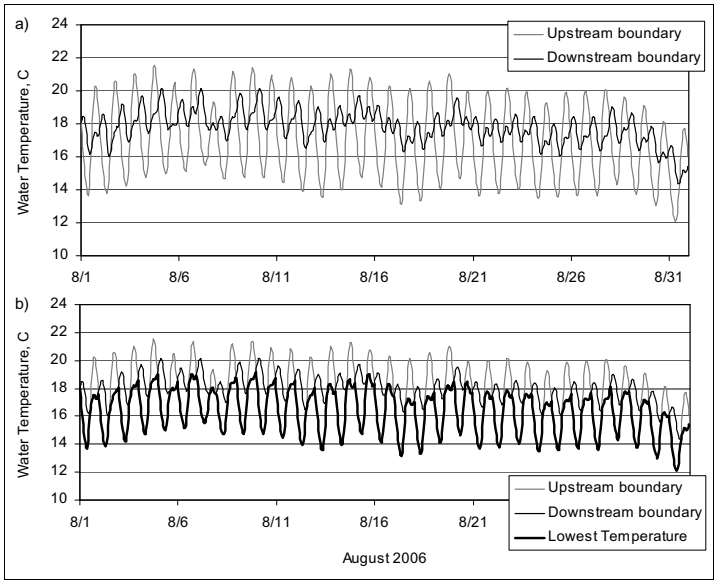

Figure 15. August water temperature at Nelson Ranch property boundaries (a); boundary temperatures with lowest temperature signal (b).

42-36 cont.

Land and water use developments along Big Springs Creek and possibly Parks Creek and the upper Shasta River contributed to this spatial and temporal thermal variability. Of particular interest are modifications to the Big Springs complex where an impoundment, diversions, return flow, and degradation of the Big Springs Creek channel have created conditions that led to appreciable thermal loading between the source water for the creek and the Shasta River.

During summer, small temperature differences occurred along the channel, such as localized areas of cool water refugia that were up to 1-2°C (1.8-3.6°F) cooler than surrounding river water, and were likely from springs, seeps, or possible subsurface flow. Additionally, slight margin warming occurred along river banks in reaches with shallow habitat and sparse riparian vegetation.

6.5. Summary

The Shasta River along Nelson Ranch is a unique river reach because of considerable influence from upstream spring contributions. However, during spring and summer seasons, the river is also strongly influenced by atmospheric heating as exhibited by increased daily mean temperatures and notable diurnal response. Water development and land use changes in the Shasta River basin, including low flow conditions, sparse riparian vegetation, diversion of springs near their sources, and warm water inflow from tailwater along the length of the river have fundamentally altered the thermal regime of the river (NRC 2004). Today, mean daily water temperature in the Shasta River along Nelson Ranch commonly exceeds 20°C (68°F) during summer months.

Of particular interest are the unique thermal signals observed on the Nelson Ranch. In the winter, upstream spring inputs form a warm water source and the river cools in the downstream direction. Conversely in the summer, the upstream spring inflows form a cool water source and the river warms in the downstream direction. Fall and winter are, in general, neutral. Of specific interest is the impact of upstream thermal conditions on minimum and maximum daily temperatures at the Nelson Ranch. There are periods of the year when maximum daily temperatures are considerably warmer (over 2°C (3.6°F)) at the upstream boundary of the ranch compared to the downstream boundary. The specific heat and density of water often result in thermal conditions from upstream reaches being transported to downstream reaches. Thus, developed land and water use, as well as spring inflow sources can impart specific thermal signatures on downstream reaches. Such conditions are hypothesized to occur at the Nelson Ranch, where relatively constant spring inflows at relatively constant temperatures, coupled with diversion practices and associated return flow at upstream locations, create unique thermal variability and daily maxima and minima patterns at downstream locations. As temperatures cooled in the fall and effects of land and water use practices abated, upstream and downstream temperatures took on attributes more typical of a stream with an upstream spring source. The most critical need at this time is to identify spring flow and temperature contributions to the Shasta River, as well as quantify the effects of land and water use in upstream reaches. The combination of these factors plays a critical role in the long term restoration of the Nelson Ranch reach for anadromous fish.

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7. Geomorphology

Geomorphic processes and landforms play critical roles in determining physical habitat conditions in riverine settings. On the Shasta River, such processes and resultant channel morphological characteristics are largely controlled by spatially variable geologic (Wagner 1987) and hydrologic conditions. As such, a basin-scale understanding of longitudinally-variable geomorphic and hydrologic characteristics of the Shasta River is necessary to understand physical habitat conditions along the Nelson Ranch Reach.

7.1. Basin Geomorphologic and Hydrologic Characteristics

Headwater reaches (approximately RM 60 to 50) of the Shasta River drain the Eastern Klamath Belt rocks of the Scott and Siskiyou Mountains, with spring-fed tributary inflows from Boles and Beaughton Creeks, both sourced in the High Cascade rocks of Mount Shasta. River slopes approach 0.07, and bed materials are inferred to be dominated by cobbles and boulders. Across the southern end of Shasta Valley proper (approximately RM 50 to 33), Shasta River slopes steadily decrease from 0.005 to 0.004 as the river crosses the lithologic boundary between the rocks of the Eastern Klamath Belt and those of the High Cascades. In this river segment, commonly referred to as the Upper Shasta River, channel planforms exhibit braided to wandering morphologies and bed materials dominated by medium to fine sand, gravels, cobbles and boulders. Lower Shasta River reaches (approximately RM 33 to 15) maintain bed slopes of approximately 0.0009, exhibit tortuously meandering planform morphologies, and contain bed materials of silts, sands, and fine gravels. Channel reaches within Shasta Valley (approximately RM 50 to 15) flow across a floodplain of variable width (10-300 m) underlain by High Cascades materials and intermittently confined between 15 m to 200 m high conical hills and ridges - antecedent topography largely resulting from a late-Pleistocene debris avalanche sourced on an ancestral Mount Shasta (Crandell 1989).

Hydrologically, the Shasta River exhibits hybridized characteristics of both "spring-dominated" and "runoff-dominated" rivers (Whiting and Stamm 1995; Whiting and Moog 2001). Steady, seasonally-independent baseflow discharges suggest inflow sources from diffuse groundwater flow through a low-conductivity volcanic aquifer (Whiting and Stamm 1995; Whiting and Moog 2001), whereas both sharp and prolonged peaks in the hydrograph signify contributions from winter and spring rainfall and snowmelt. Hydrographs for the Shasta River at both Montague (RM 16) and Edgewood (RM 48), normalized by the mean annual flow for the period of record, show that the upper reaches of the Shasta River above Dwinnell Dam (RM 45 to 50) exhibit characteristics of a runoff-dominated stream, while lower reaches (RM 33 to 15) exhibit hydrologic characteristics of a spring-dominated stream periodically influenced by runoff-dominated flood events. Furthermore, the spring-dominated hydrologic characteristics of the Lower Shasta River appear largely derived from discrete spring-dominated tributary inputs (e.g. Big Springs Creek), which may be augmented by yet-unidentified diffuse groundwater sources.

Shasta River floodplain and gently sloping upland areas throughout Shasta Valley are intensely irrigated and utilized for agricultural practices including, pastureland and hay/alfalfa production (Vignola and Deas 2005). Cattle-grazing dominates riparian land-use with potential impacts on water quality and channel characteristics. The Shasta River is fully adjudicated, allowing riparian land owners and local irrigation districts to divert in-stream flow during the April 1 to September 1 irrigation season. Non-irrigation season water withdrawals are minimal.

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7.2. Nelson Ranch Geomorphology

The Shasta River reach in the vicinity of the Nelson Ranch represents a unique geomorphic and hydrologic transition zone between the Upper (RM 60 to 34) and Lower Shasta River (RM 30 to 0). Characterized by changes in channel planform geometry, cross-sectional morphology, bed material size and hydrologic regime, this transition zone begins at approximately river mile 34 (2 river miles above the Nelson Ranch), ends at approximately river mile 30 and is strongly coincident with both a large decrease in valley slope (Figure 16) and voluminous effluent (groundwater) inflows from discrete (e.g. Big Springs Creek, Hole in the Ground Spring) sources which may be augmented by diffuse groundwater inflow. Channel gradient and hydrologic regime changes across the Upper and Lower Shasta River segments drive dramatic differences in observed channel morphology, and likely strongly influence habitat characteristics, including substrate composition, water quality, and riparian vegetation assemblages.

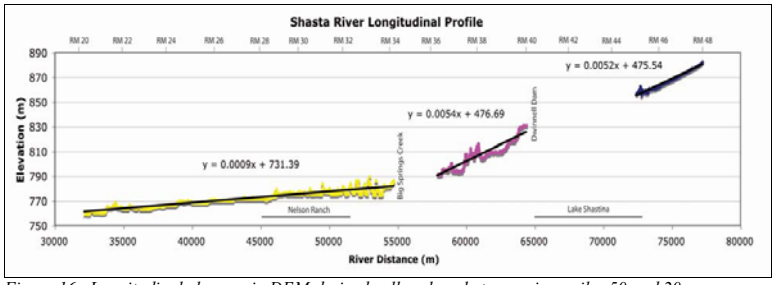

Figure 16. Longitudinal changes in DEM-derived valley slope between river miles 50 and 20.

Morphologically, the Upper Shasta River above Dwinnell Dam is characterized by wandering to meandering channel planform morphologies characterized by the presence of in-channel and lateral gravel bars, moderate to steep topographic gradients (0.005 to 0.06), riffle-pool bedform sequences, coarse bed materials and confined/narrow floodplains. Hydrologically, the upper river exhibits a hydrograph driven primarily by winter/spring rainfall and snowmelt, augmented by moderate summer baseflows sourced in several spring-fed tributaries (Beaughton Creek, Boles Creek) presumably sourced from High Cascade volcanic rocks on Mount Shasta (Nathenson et al. 2003). While access restrictions largely preclude extensive field observations of the Shasta River between Dwinnell Dam (RM 40) and the Nelson Property (RM 32) below Big Springs Creek (RM 34), initial site reconnaissance observations, historic photo and map analysis, and digital elevation model (DEM)-derived longitudinal profile data (Figure 16) suggest that this river segment was historically hydrologically and morphologically similar to upstream channel reaches. However, dam-driven flow regulation, particularly 90% reductions in mean annual flow and dramatic reduction in frequency and magnitude of flood flows, has strongly altered channel morphologies between Dwinnell Dam and Big Springs Creek. These changes have been dominated by reductions in meander bend wavelengths (Figure 17) and channel narrowing driven by vegetation encroachment (Pelzman 1973). The reduction in meander wavelength, measured as the straight-line distance between meander bend inflection

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points, is expected following dam construction and flow regulation, due to established empirical relationships between meander wavelength and discharge (Carlston 1965; Dury 1965; Schumm 1967).

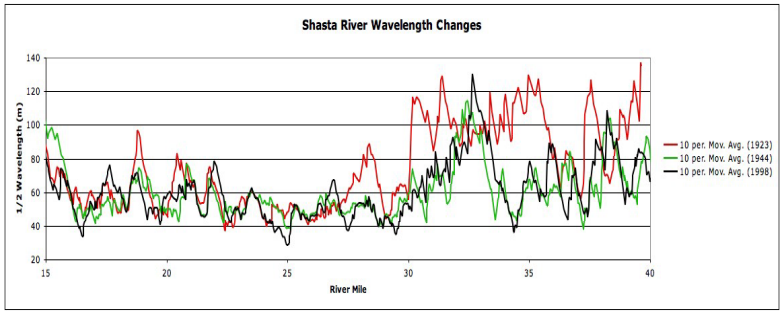

Figure 17. Historical longitudinal trends in Shasta River meander wavelength.

Contrasting with observations made on the Upper Shasta River, lower river reaches (including lower portions of the Nelson Ranch) exhibit tortuously meandering planform morphologies, shallow topographic gradients (< 0.001), plane bed bedform morphologies (i.e. relatively flat) and silt, sand and fine to medium-sized gravel bed materials. The approximately 16 river miles of lower river in the Shasta Valley proper (RM 30 to RM 14) above the Shasta River Canyon actively meanders across relatively unconfined floodplain reaches. While antecedent geologic structures (i.e. Pleistocene debris flow-derived andesite blocks) (Crandell 1989) locally constrain channel migration and planform geometry throughout this 20-mile long meander belt, unconfined reaches exhibit active bank erosion and lateral channel migration, resulting in numerous meander cutoffs and subsequent creation of oxbows and other ephemeral backwaters. Hydrologically, the lower river within Shasta Valley proper (in the absence of irrigation) exhibits minimally variable, spring-fed baseflows augmented by winter and spring flood events derived from both surface runoff and headwater snowmelt. Channel morphologies strongly reflect consistent spring-fed baseflow conditions and exhibit many similarities (e.g. high roughness values driven by vegetation growth) to previously studied spring-fed rivers in Idaho and Oregon (e.g. Whiting and Moog 2001).

As discussed above, Nelson Ranch channel reaches represent a geomorphic and hydrologic transition zone between the upper and lower rivers. Because the Nelson Ranch presents the first continuous stretch of laterally unconfined floodplain habitat downstream from Big Springs Creek, the reach not only helps dampen flood pulses from Parks Creek, but also provides fine-grained floodplain sediments into which the river can laterally erode. A consequence of this lateral erosion is both a large increase in channel sinuosity and coincident decrease in channel wavelength (Figure 17). Gradual decreases in meander wavelength throughout the Nelson Ranch (Figure 17) from upstream to downstream, further support the idea that the Nelson Ranch, and particularly channel reaches spanning river miles 32 to 30, is a transition zone between the hydrologically and geomorphically distinct upper and lower river segments.

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7.3. Historic Year-in-the-life

Historic geomorphic processes along the Nelson Ranch Reach have remained largely unaltered since river adjudication in 1923 and construction of Dwinnell Dam in 1928. Upstream reservoir impoundment and diversion of Parks Creek into the Shasta River near Edgewood, above Lake Shastina, have diminished peak flood flows associated with winter rainfall events and spring snowmelt. Such hydrologic process alterations would be expected to produce substantial changes in downstream channel morphologies. However, relatively continuous baseflow conditions below Big Springs Creek have largely dampened the dam-induced hydrologic alteration and associated geomorphic process changes observed upstream (RM 40 to 34), thus minimizing post-dam geomorphic change along the Lower Shasta River. Based on historic geomorphic observations from the Nelson Ranch using decadal-series aerial photographs, several observations regarding historical channel planform behavior can be made:

- Geologically unconstrained portions of the Shasta River through the Nelson Ranch have exhibited progressive lateral channel migration at rates approaching 0.10 meters/year. When normalized by average channel width (~10m), lateral migration rates approach those observed on the Lower Sacramento River (Micheli et al. 2004), suggesting that the Lower Shasta River is actively meandering at a relatively high rate, a physical process essential for the creation of complex riparian and aquatic habitats. Lateral channel migration is directly responsible for the creation of cutbanks, resultant bank sloughing, and subsequent habitat availability within the Shasta River.
- Meander cutoff events and the creation of oxbow lakes/backwaters appear correlated with large winter flood flows.
- Meander bend wavelength magnitudes below the GID diversion (i.e., lower river) remain remarkably unchanged when compared using the pre-dam and post-dam record. This suggests geomorphic and hydrologic processes responsible for controlling channel planform geometry (i.e. meander wavelength) are largely unaltered by construction of Dwinnell Dam and the associated Parks Creek Diversion.

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7.4. Current Year-in-the-life

Minimal, yet progressive, channel form change was observed throughout water year 2007 along the Nelson Ranch reach. Repeated channel cross-sectional surveys identified seasonally transient bedforms influenced predominantly by cutbank sloughing (i.e. bank failure) and in-channel sediment accumulation associated with seasonal rooted aquatic macrophyte growth. Additionally, lateral point bar aggradation and vertical sediment accretion along channel margins was observed. Channel margin sediment accretions are typically stabilized by emergent vegetation, facilitating the maintenance of rectangular channel cross-section morphologies during irrigation season flow regimes, while also continually creating low elevation floodplain benches typically inundated during higher, pre- and post-irrigation season flows (Figure 18). Seasonal variability in channel characteristics is discussed below.

Fall: October to November

The cessation of irrigation water withdrawals on 1 October allowed spring-fed baseflows to fill the river channel almost to bankfull capacity. Furthermore, while discharge magnitudes observed in October and November are lower than those observed in March (immediately prior

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to the irrigation season), water stage is higher (see Figure 18), largely a result of channel roughness increases induce by in-channel growth of aquatic macrophytes. A consequence of this elevated river stage is channel margin geomorphic surfaces, stabilized by emergent vegetation during the irrigation season, become inundated until the rooted aquatic macrophytes senesce towards the end of the fall. Complex interactions between river stage and aquatic macrophyte senescence define the hydrogeomorphic characteristics along the Nelson Ranch Reach during this period of the year

Winter: December to March

In the absence of both irrigation withdrawls and aquatic macrophytes, water stage during the winter months exhibits minimal variation, largely reflecting consistent spring-fed baseflows. Water stage increases are typically only observed following rainfall events. During the winter, channel margin geomorphic surfaces (i.e. floodplain benches) provide critical, shallow and low-velocity rearing habitat for juvenile salmonids throughout the Nelson Ranch reach. Winter baseflows inundate these channel margin surfaces under 10 to 50 cm of water, thus extending available juvenile salmonid rearing habitat onto the channel margins (Figure 18).

Spring: April to June

The initiation of irrigation pumping on 1 April substantially dewaters channel margin geomorphic surfaces, thus creating hydrologic separation between these shallow, low-velocity channel margin areas from the largely homogenous (and higher velocity) main channel (Figure 18). Channel margin geomorphic surfaces remain largely dewatered until the initiation of in-channel aquatic macrophyte growth in late-spring/early summer. Geomorphic field mapping suggests that channel margin habitat is reduced by approximately 15,000 square meters along the 3 river miles downstream from the GID diversion following initiation of irrigation withdrawals beginning in April.

Summer: July to September

Late-spring/summer aquatic macrophyte growth forces considerable increases in river stage due to marked increases in channel roughness. However, observed macrophyte-induced increases in river stage still do not allow for channel margin geomorphic surfaces to be inundated, largely due to the magnitude of water withdrawls for irrigation. Such hydrogeomorphic conditions lead to reduced habitat complexity.

Summary

Stage and flow information presented in Table 1 and Figure 18 indicate complex interactions between river stage, irrigation, and aquatic macrophyte growth. For example, on 16 October the stage was approximately 0.15 meter higher than on 20 March, but the flow was 10 cfs lower. Such seasonal variations in the stage-discharge relationship directly impact habitat availability, particularly during the winter/early spring juvenile salmonid rearing period.

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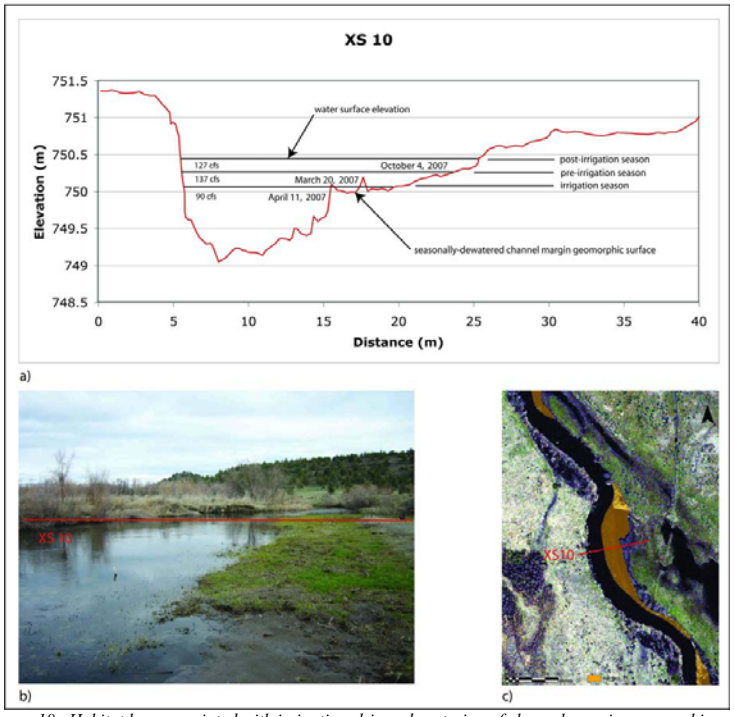

Figure 18. Habitat loss associated with irrigation-driven dewatering of channel margin geomorphic surfaces: a) irrigation season water withdrawals and seasonally variable aquatic vegetation growth substantially alter water surface elevations; b) channel margin geomorphic surface partially inundated prior to initiation of irrigation season (March 20, 2007); c) orange polygons in planform map represent geomorphic surfaces inundated during non-irrigation season and dewatered during the irrigation season.

Qualitative observations suggest sand-sized bed materials are continuously mobile throughout the water year, while gravel-sized bed materials are only mobile during flood events. Consequently, gravels patches are observed to accumulate sand-sized materials throughout the summer, often covering available gravels during the irrigation season. Fine-sediment accumulations are largely removed from gravel patches with increased flow following cessation of irrigation practices and decreased aquatic macrophyte growth during fall senescence.

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8. Habitat Mapping

In July 2006, we performed a site reconnaissance of in-channel and floodplain localities throughout the Nelson Ranch. Reconnaissance goals included the identification, categorization, and mapping of in-channel and channel-margin aquatic habitat. Habitat mapping was performed to quantify the amount of different habitat types available to salmonids rearing along the Nelson reach. The described habitat types were then used as sample sites for the various studies (i.e. fish, invertebrate, food web, aquatic macrophyte, water temperature, and geomorphic) taking place along the Nelson reach.

8.1. Methods

Initial site reconnaissance indicated that habitat typing methods typically utilized in salmonid-bearing streams in California (Flosi et al. 1998) were inappropriate for the Nelson Ranch study reach. The relatively low-gradient and largely spring-fed Shasta River along the Nelson Ranch reach exhibits minimal variation in water surface gradient and substrate composition, largely precluding first-order habitat discrimination using the typical classification categories of riffles, runs and pools (Flosi et al. 1998). Following available CDFG typing methodologies (Flosi et al. 1998), initial reconnaissance observations typed the vast majority of available in-channel habitat as "glide" intermittently augmented by backwater and corner pools. Furthermore, initial fish snorkel survey efforts identified extensive use of local habitats not described using traditional typing methods, necessitating the identification and mapping of stream-specific habitat units for sampling purposes. Consequently, a site-specific habitat classification system was created to physically describe 100% of the wetted channel. The current classification system includes six types of channel margin and/or in-channel aquatic habitat, including emergent vegetation (EV), active cut banks (CB), point bars (PB), large woody debris (LWD), aquatic macrophytes (AM), and perennial and/or ephemeral backwaters (BWp/BWe). Similar to CDFG protocols, homogenous habitat areas with a length of one channel width or greater were considered distinct habitat units and thus mapped individually.

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Emergent vegetation habitat type consists primarily of rushes (*Scirpus* sp.), cattails (*Typha latifolia*), and reeds (*Sparganium emersum*), typically found at rivers edge (Figure 19a). Cut bank habitat is located at the outside edge of meander bends in the river. In most cut bank habitat, large blocks of bank material have sloughed into the river providing a velocity refuge for fish (Figure 19b). Point bar habitat is found at the inside bend of meanders and consists of a gradual slope into the river (Figure 19c). Substrate on point bars consists of a mixture of gravel and sand. Large woody debris in the Shasta River is different from that normally classified as LWD in most rivers where juvenile salmonids rear (Figure 19d). Refuge provided by LWD in the Shasta River is defined as trees, four to six inches in diameter or larger that have fallen into the river, or submerged roots of trees growing at the rivers edge. These sources of LWD provide a local velocity refuge for fish and not necessarily geomorphic structure as found in other juvenile salmonid rearing rivers. Mid-channel aquatic macrophyte habitat is most often in predominately linear reaches of the river and typically has a gravel substrate (Figure 19e). On this gravel substrate, aquatic macrophytes provide a velocity refuge for fish and substrate for benthic macroinvertebrates. Backwater habitat areas, both perennial (BWp) and ephemeral (BWe), are typically characterized by zones of low flow velocity. Perennial backwater areas are generally found in large eddies on the downstream ends of point bars, in large pools formed

immediately downstream from irrigation diversions, or adjacent to excessively eroded cut banks at the outside of meander bends (Figure 19f). Ephemeral backwater areas, generally inundated only during winter baseflow and flood flows, are typically found in remnant channels/oxbows abandoned following meander cut-offs during apparent channel avulsion events. Ephemeral backwater areas are typically colonized by woody riparian vegetation.

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a)

b)

c)

d)

e)

f)

Figure 19. Habitat types described along the Nelson reach: a)Emergent vegetation, b)Active cut bank, c)Point bar, d)Large woody debris, e)Aquatic Macrophyte, and f)Backwater.

Field mapping of channel margin and/or in-channel aquatic habitat units was conducted on approximately 1:1,500 scale aerial photographs provided by The Nature Conservancy, California (TNC). Habitat areas reflect visual observations made in July 2006, and are not necessarily

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representative of habitat availability during different water year types and at different flow magnitudes.

8.2. General Observations

The density and spatial distribution of habitat areas varies considerably. Upstream from the GID diversion, the lack of meander bends virtually eliminates perennial backwater, cut bank and point bar habitat areas in this upstream reach, with in-channel and channel margin habitat area dominated by emergent vegetation (EV) and aquatic macrophytes (AM). Factors potentially contributing to this observed lack of meander bends and associated habitat diversity include: 1) valley/channel slopes are greater and topographic constrictions more prevalent above the GID diversion, physically precluding formation of the tortuous meanders which facilitate backwater, point bar and cut-bank habitats observed downstream; and 2) backwater effects from the GID flashboard dam largely cover habitat areas dependent on channel bed/bank morphologies (e.g. point bar and cut-bank) resulting from stream meander processes. The dominant drivers of habitat simplification upstream from the GID diversion are presently unknown, but it is possibly a function of the backwater from the GID diversion. Currently the GID flashboard dam is slated for removal, an action which will hypothetically create more heterogeneous summer aquatic habitat upstream for at least a portion of the 1.6 km (1 mi) backwater effect from the dam. Downstream from the GID diversion, tortuously meandering channel morphologies appear to facilitate significantly greater variability in available habitat area (Figure 20, Figure 21).

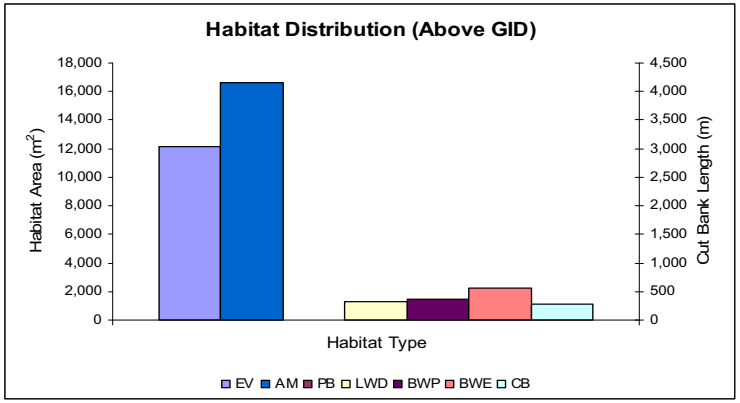

Figure 20. Habitat distribution above GID dam. Habitat types include emergent vegetation (EV), aquatic macrophytes (AM), point bar (PB), large woody debris (LWD), perennial back water (BWP), ephemeral backwater (BWE), and cut bank (CB).

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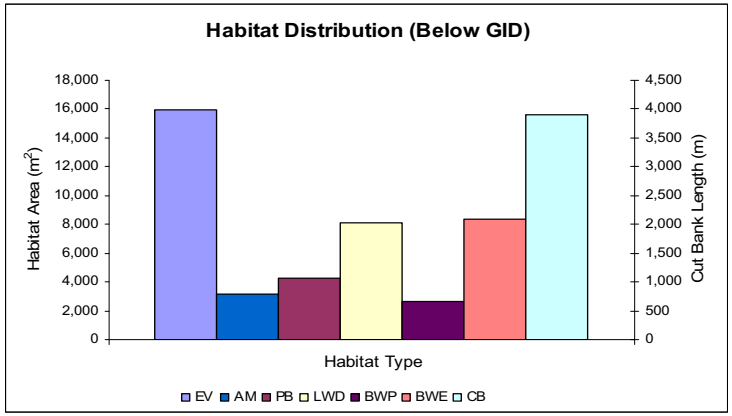

Figure 21. Habitat distribution below GID dam. Habitat types include emergent vegetation (EV), aquatic macrophytes (AM), point bar (PB), large woody debris (LWD), perennial back water (BWP), ephemeral backwater (BWE), and cut bank (CB).

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9. AQUATIC MACROPHYTES

Aquatic plants are extremely abundant in the Shasta Valley reaches of the Shasta River. A survey of the stream conducted in August of 2003 (NCRWQCB 2004) found roughly 50% of the valley streambed covered with aquatic plants. Observations by Center for Watershed Science staff confirm that aquatic plants are widespread on the Nelson Ranch reach. During data collection efforts on the Nelson Ranch in 2006, aquatic macrophytes appeared to reach peak abundance by the end of September.

Aquatic macrophytes discussed in this section include plants rooted in the wetted stream bed, and which are either facultative or obligate submersed plants. This excludes plants such as *Typha latifolia* and *Juncus acuta* that never grow submerged, but includes plants like *Veronica* spp, that can grow submerged or emergent. Algae was not considered together with aquatic plants in this study.

The impetus to examine aquatic macrophytes was based on the hypothesis that these plants could drive other key processes in the reach, such as regulation of nutrients and provision of habitat for invertebrates and fish, as well as affecting channel roughness and river stage. The quantitative description of aquatic plant coverage on the ranch presented in this section was motivated by a need to gain insight into the role of aquatic macrophytes in the stream ecosystem.

9.1. Methods

To assess macrophyte distribution and growth, thirteen sites were established consisting of transects through the various habitat types to maximize coincidence with the fish-survey transects. Sites were selected to represent five of the six previously described habitat types (Table 3). The habitat types surveyed include:

- AM sites that are generally straight sections of the stream, with depth rarely exceeding one meter, and symmetrical in cross-section.
- PB sites with sharp bends and well-established point bars formed on the one bank and depths as great as 1.8 meters on opposite banks, and very asymmetrical cross-sections.
- The single EV site surveyed was a u-shaped channel, depth above 1.6 meters for most of the cross-section, and in a straight section of the stream.
- CB sites are bends in the stream with the right bank steeply eroding and occasionally sloughing chunks of bank.
- BW sites are sharp bends in the stream with several meters or more of flow reversal occurring on the right margin and depth to 1.8 meters.

No LWD sites were included because of safety considerations and the difficulty of observations. All of the AM sites were included. Each transect was surveyed once per month (with exceptions noted in Table 3 below) for eight months (March through October). The survey consisted of traversing the river along a tape-transect and identifying the beginning and end points for each patch encountered. The location, species, and depth were recorded throughout the transect. The longitudinal extent of each patch above and below the transect were also recorded starting in May. Left and right edges of the wetted channel were recorded for each transect.

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Table 3. Sites surveyed for aquatic macrophytes.

Site	Habitat Type	River-mile	# of Surveys	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AM5	Aquatic Macrophyte	27.38	8	x	x	x	x	x	x	x	x
CB5	Cut Bank	27.45	6	x	x	x	x		x	x	
PB5	Point Bar	27.84	7	x	x	x	x	x	x	x	
AM4	Aquatic Macrophyte	28.17	7	x	x	x	x	x	x	x	
PB3	Point Bar	28.98	7	x	x	x	x	x	x	x	
BW3	Backwater	29.11	6		x	x	x	x	x	x	
AM3	Aquatic Macrophyte	29.31	7	x	x	x	x	x	x	x	
CB2	Cut Bank	30.07	7	x	x	x	x	x	x	x	
PB2	Point Bar	30.18	7	x	x	x	x	x	x	x	
AM2	Aquatic Macrophyte	30.35	8	x	x	x	x	x	x	x	x
EV1	Emergent Vegetation	31.15	4	x	x			x	x		
BW1	Backwater	31.35	6	x	x	x	x	x		x	
AM1	Aquatic Macrophyte	31.87	8	x	x	x	x	x	x	x	x

The program sampling frequency was approximately monthly at each site, but if the surveyor was unable to wade the stream safely, the effort was abandoned for that month. In September, four extra transects, two upstream and two downstream of the original transects (at six-foot intervals), were surveyed at sites AM1, AM3, and AM5.

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Due to the low elevation of the late-fall sun, it was only feasible to consistently identify plants for a few hours of the day without significantly changing survey methods. In addition, the change in coverage between September and October appeared to be minor. For these reasons, the choice was made to collect multiple transects at three sites during the October sampling, rather than change methods to allow for data collection at single transects at all sites. The three sites sampled in October (AM1, AM2, and AM5) were surveyed along four extra transects in similar fashion to the extra transects surveyed in September. These extra transects surveyed in September and October were used to examine within-site variation.

To compare diversity between sites and months, Shannon's diversity index (Shannon,1948) values were calculated using the formula:

$$H' = \sum_{i}^{n} p_i \log p_i$$

where H' is the index, p_i is the proportion of total habitat area covered by the i^{th} category of coverage, and n is the number of categories. The total habitat area is taken to be the sum of the transect lengths, and the proportion is the intersected length of each transect, with each plant species counting as one category. This effectively treats each species as a separate habitat type, and all areas with no plant cover as a single habitat type, nonetheless, this measure of diversity can be used to compare the species distribution and diversity between different habitat types. This method was chosen rather than Simpson's Diversity Index because Simpson's method requires counting individual plants, which would have been prohibitive in this study.

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Flow velocity measurements were taken above, at the upper margin, and within several patches of single species, during the April and October sampling events. These measurements are not intended for analysis but merely to provide some typical values; however, they are included for discussion below.

9.2. Aquatic Macrophyte Coverage

Averaged across all transects, total percent cover ranged from a low of 26 percent in March to a high of 73 percent in September then declined to 68 percent in October (Figure 22). All values fall within one standard deviation of each other. The mean value used to determine standard deviation was the mean of all transects surveyed in a particular month. Because the various habitat types sampled were diverse in their total coverage, the magnitude of this standard deviation is not unexpected.

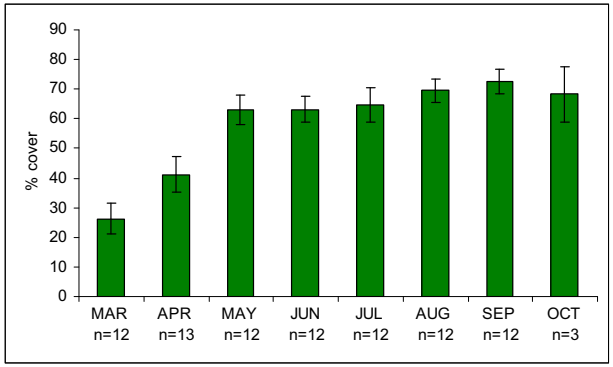

Figure 22. Percent cover averaged across all site types (with standard error).

When only the AM-type sites were taken into consideration, a similar pattern holds; however, the peak of the growth occurred during August, rather than September (Figure 23). Coverage increased rapidly in all transects during March, April, and May, then seemed to approach an equilibrium for the rest of the summer months. Typical late season aquatic plant coverage on small streams ranges between 15 percent and 70 percent (Wolfert 2001, Riis et al. 2001), putting the study region at the high end of the distribution.

42-36 cont.

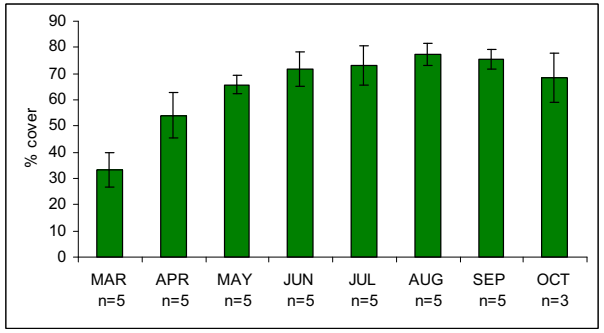

Figure 23. Percent cover averaged across all aquatic macrophyte type sites (with standard error).

Overall, the CB sites had the highest percent coverage, followed by AM sites, with PB and BW site types having similar, but usually lower coverage (Figure 24). Insufficient information on EV was available to make a meaningful comparison.

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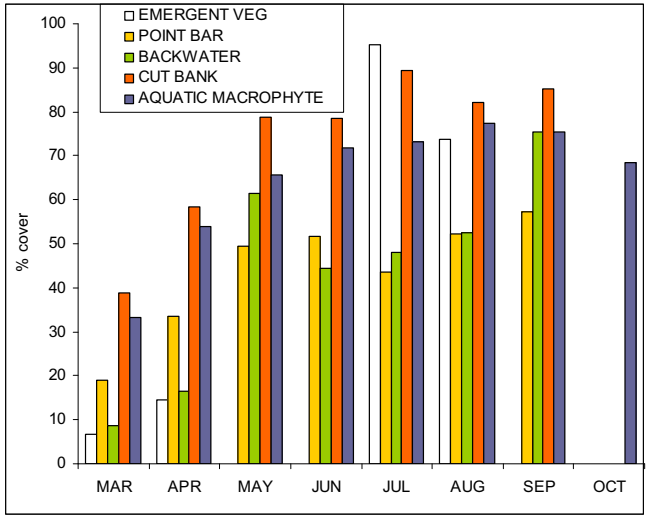

Figure 24. Percent cover of aquatic macrophytes by site type.

42-36 cont.

9.3. Species Present

Six species of rooted, fully aquatic macrophytes were differentiated in this study (Table 4). *Potamogeton pectinatus* and *Zannichellia palustris* were indistinct in the earlier part of the season and have very similar habits. *Zannichellia palustris* was not understood to be present until late in the season, and only occurred in a few transects, with low coverage. The two species have been treated as one for the purpose of this study. *Veronica anagalis-aquatica* and *V. catenata* are known to hybridize, essentially identical when not in flower, and were not identified to species in the field. The plant labeled as "Unknown 1" was never observed to flower and has not been identified. All of the identified rooted aquatic macrophytes observed were perennials, and all are native to California except for the *Veronica* spp.

Table 4. Species encountered in the aquatic macrophyte survey transects.

Name	Common	Habit
Elodea canadensis	Common Waterweed	Stoloniferous
Potamogeton pectinatus	Fennel-leaf Pondweed	rhizomatous, tuberous
Zannichellia palustris	Horned Pondweed	Rhizomatous
Ranunculus aquatilus	Water Buttercup	semi-stoloniferous
Veronica anagalis-aquatica	Water Speedwell	rhizomatous, crosses with *V. catenata*
Veronica catenata	Chain Speedwell	rhizomatous, crosses with *V. anagalis-aquatica*
Myriophyllum sibiricum	Milfoil	Rhizomatous
Unknown 1	?	stoloniferous?

It should be noted that this list is not exhaustive of all the aquatic plant species present in the Nelson Ranch section of the Shasta River. Emergent species such as *Typha latifolia* were not considered in this study; non-rooted species such as *Lemna minor* are not included in this analysis; and there are several additional submerged, rooted macrophytes known to be present in the stream that did not appear in the transects. Appendix A of NCRWCQB (2004) includes a more extensive list and description of aquatic and semi-aquatic plants in the Shasta River.

Averaged across the study area, from March to September, *Elodea canadensis* accounted for the largest transect coverage. In October, *Potamogeton pectinatus* was the dominant plant in the transects. These two species, along with *Ranunculus aquatilus*, made up about 87 percent of the observed plant distribution averaged across all sites and months. *Myriophyllum sibiricum* was generally the least common species observed, and occurred in small patches. The unknown species and the *Veronica* spp. followed roughly similar patterns over the study period, peaking in abundance much earlier, and much lower, than the more abundant species. Figure 25 shows the relative percent coverage of each species averaged across all habitat types for each month of the study.

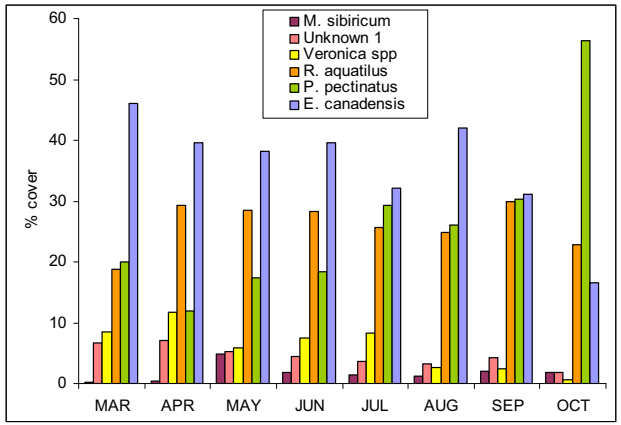

Figure 25. Percent cover of aquatic macrophytes by species and month across all sites.

42-36 cont.

Assemblages of plant species at the different site types are shown in Figure 26. In AM sites, *R. aquatilus* and *P. pectinatus* were the most abundant species, followed closely by *E. canadensis*. In BW and CB sites, and to a lesser extent, PB sites, *E. canadensis* was far more abundant than the next most abundant species. Because only one EV site was surveyed, it is difficult to say if it is representative of the type.

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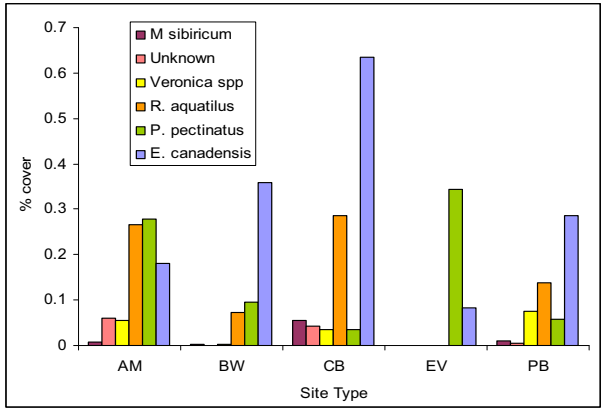

Figure 26. Percent cover of aquatic macrophytes by species and site across all months.

42-36 cont.

9.4. Aquatic Macrophyte Diversity

Shannon's Diversity Index values for each site type on a monthly basis are shown in Figure 27. For sites other than BW, diversity appears to peak in May and then decline slightly during the summer with an increase in late summer. The BW site data suggests that H' lags a month or two behind, with a peak occurring in June or July. The most diverse site types seem to be the CB and AM sites.

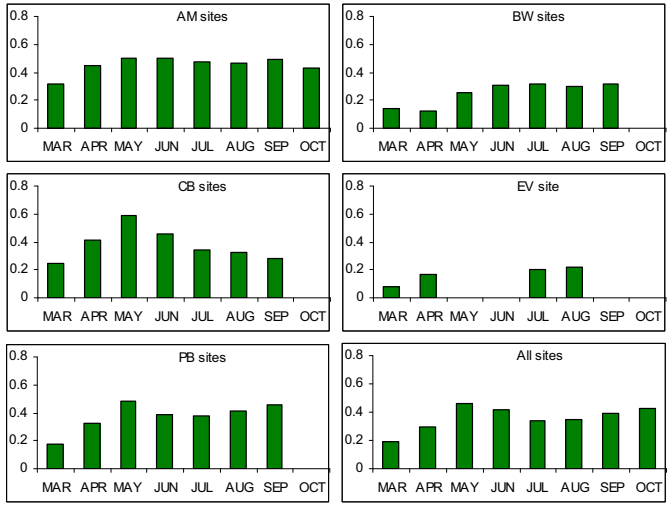

Figure 27. Shannon's diversity index for each site type.

42-36 cont.

The AM sites, shown individually in Figure 28, indicate a fairly wide distribution of values represented within this single site type, with AM2 having nearly twice the diversity of AM1 on average throughout the growing season.

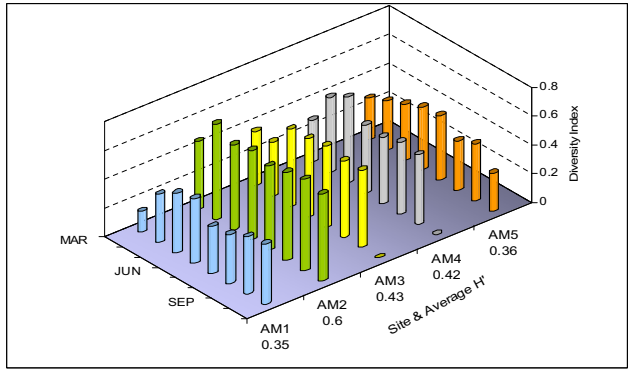

Figure 28. Shannon's diversity index for all five aquatic macrophyte sites (AM 3 and AM4 not surveyed in October).

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Within-site variability was only examined in AM sites during September and October. For the sites that were sampled at multiple transects, the average standard deviation of per-species percent cover between transects at a site, was 0.056. In comparison, the average standard deviation between sites was 0.106. This means that nearly twice as much variability occurred between sites as occurred between transects at the same site, as an average of the percent cover of each species.

9.5. Patch Morphology and Plant Behavior

The various species can be grouped by their growth patterns in flowing water. *E. canadensis*, *R. aquatilus*, and the unknown sp. all have similar morphology at the patch scale, although they have different leaf and shoot morphology, and the unknown tended to occur in smaller patches (less than 5 square meters) than the other two (as large as 40 square meters for *E. canadensis*, and up to 12 square meters for *R. aquatilus*). Patches of these three species tend to be dense and close to the bed of the stream in places with appreciable flows; the stream bed is rarely visible below a patch. The upstream edges of patches tended to be sparsely rooted with larger stems. The downstream edges of patches tend to have a ragged appearance, and accumulate fine sediment. These species generally were only in motion at the downstream edge of the patch. Water velocities within patches of these species were always very near zero, and low velocity regions form at the downstream edge of each patch (Table 5). Patches of these species either overlapped other patches, or were surrounded by uncolonized substrate.

42-36 cont.

Potamogeton typically occurred in more open patches such that the bed surface was often visible beneath the patch. Patches were generally large, ranging up to 40 square meters. Usually, the entire patch was in motion. Upstream edges of patches were sparse, as with the three species discussed above, but downstream edges of *Potamogeton* were less ragged and more diffuse. Typically, water velocities within the patch were 10 percent or less of the velocity above the patch, but not as low as with the denser growth forms (Table 5). Potamogeton patches were sometimes isolated and sometimes overlapping with other species.

M. sibiricum tended to grow in very diffuse, small patches or as isolated individuals. Patches rarely overlapped other species. *Veronica* that grew as an emergent that tended towards larger, though still thinly distributed, patches. Emergent *Veronica* was often detached from the substrate and had floated downstream to catch in branches or stream edge vegetation. These detached plants were counted as cover when they included whole, relatively undamaged plants. The *M. sibiricum* patch for which velocities are given in Table 5 consisted of only a few plants in a very small patch, which likely explains the higher within-patch and downstream velocities observed.

Table 5. Water velocities above, at the top margin, within, and downstream of several species of aquatic plants. These data were not collected with controls for water velocity, depth, position in cross-section, or plant density. All values in meters per second.

Species	Above	Top Margin	Within	Downstream
Elodea canadensis	0.59	0.46	0.01	very low
Myriophyllum sibiricum	0.55	0.52	0.18	0.42
Potamogeton pectinatus	0.72	0.58	0.03	0.2
Potamogeton pectinatus	0.59	0.38	0.05	0.31
Potamogeton pectinatus	0.71	0.54	0.06	0.34
Ranunculus aquatilus	0.62	0.39	0	very low

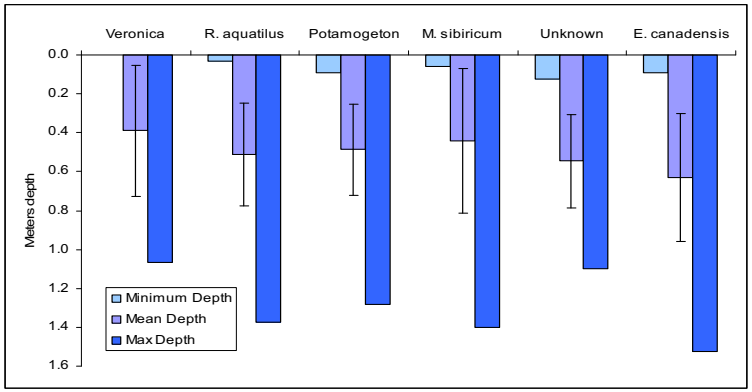

Figure 29. Depth of flow at center of aquatic macrophyte patch for all sites throughout the sampling period. Standard deviation is shown as error bars on the mean depth values.

42-36 cont.

9.6. Summary

Rapid growth of rooted plants that survive the winter high flows, and rapid colonization of bare ground, occurred during the months of March and April. During that time, *Elodea canadensis* dominated the coverage. Throughout the summer, *Potamogeton pectinatus* increased in coverage, appearing to take over space from some or all of the other species. *Ranunculus aquatilus* and *Elodea canadensis* both stayed relatively constant during the summer. *Myriophyllum sibiricum*, *Veronica*, and the unknown plant all diminished in percent cover during the summer. By October, *Potamogeton* began to dominate the coverage.

This apparent succession has not been examined closely in the Shasta River and specific causes are unknown at this time. One possible scenario is that *E. canadensis* has better establishment characteristics, or recovers from winter scouring sooner than other species. Barrat-Segretain and Bornette (2000) found *E. canadensis* had greater regeneration ability (development of propagules by fragments) than several other species, particularly in the spring.. These other species included

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a *Potamogeton* species, *Sparganium emersum,* a *Ranunculus* species, and two other species that are not represented in the Shasta River.

Once a patch of any of the species is established, (i.e. *E. Canadensis* or *R. aquatilus*) sediment accumulates within the patch and in its downstream eddy (Sand-Jensen 1998). This sediment may provide substrate for establishment of plants that are better late-season performers. Downstream accumulation of sediment may also lead to downstream extension of the parent patch; however, more detailed longitudinal measurements may be needed to determine if this occurs in the Shasta River.

Transects were placed in such a way as to maximize coincidence with the fish-survey transects. In retrospect, this may not have been the best way to gather information about the distribution and abundance of aquatic macrophytes at the reach scale, because this resulted in some transects oriented perpendicular to the flow while others were not. Specifically, the AM, PB, and EV habitat type transects ran perpendicular to the flow of the stream, while the CB type transects ran parallel to flow, and the BW type transects ran across a chord of a circular flow pattern (i.e. an eddy). Because patches tend to be longer in the parallel-to-flow direction than in the normal-to-flow direction, and elongate over the growing season, the high abundance of the CB sites (Figure 24) may be an artifact of this sample design.

Flow velocities in macrophyte beds are often dramatically reduced (see Green 2005 for a review and discussion of this topic). Shih and Hughes (2002) conducted flume studies that produced values comparable to those observed during this study. This reduction of flow velocities amounts to a blockage of the stream channel, raising the water level at a given discharge. During the course of this study, it was observed that terraces above the normally wetted channel were inundated for a month or more during the late summer. These were regions vegetated entirely with terrestrial plants. Though this does coincide with the maximum coverage of aquatic plants, it is not possible to determine with the present dataset if the flow restriction caused by aquatic plants was critical to this wetting.

The ecological impact of increased stage to discharge ratio was not examined in this study. However, prolonged wetting of riparian terraces that might be dry without the contribution of aquatic plants may contribute to increased riparian vegetation growth, resulting in increased shade and reduced stream temperatures. Wetted edges may also provide low-velocity habitat for invertebrates and juvenile fish.

42-36 cont.

9.7. Methodological Modifications for Consideration

Although a considerable amount of information was derived under the current study design and field sampling, several lessons were learned from the effort. One change that would ease comparison of sites would be to include transects normal to flow at all site types. Also, throughout the sampling season, multiple same-day transects at a select number of sites would lend insight as to the reliability of the methodology.

A second consideration for future study would be to assess the impact of aquatic macrophyte coverage on water surface elevation as a function of flow. As noted previously, channel roughness increased considerably with increased macrophyte growth. In order to quantify the

contribution to stage increases of aquatic macrophyte-induced roughness, water surface slope and stage would need to be collected at each site at the time of each sample event.

Another observation of this study was that not all patches have the same thickness or density. There are several reasons to investigate this aspect of patch architecture, including the potential that the use of aquatic plants by stream fauna likely relates to the density of the patch. Additionally, surface observations may miss underlying layers of plant species that are not obvious from above, and patch density and form may affect roughness characteristics. To capture patch architecture, sufficient randomly located vertical transects should be made along each cross-stream transect to examine the vertical structure of the patches. This would provide a more accurate representation of abundance, could lend insight into succession, and allow further between-site and between-site-type comparisons. Due to the early-summer dominance of dense forms and the apparent late-summer dominance of the diffuse *Potamogeton*, a more thorough understanding of patch vertical density and extent will have direct bearing on important habitat variables for invertebrates and the fish that prey upon them.

Patterns of plant distribution should respond to flow velocity, substrate, and light availability (Riis et al. 2001, Chambers et al. 1991, Lacoul and Freedman 2006). Depth may be a useful proxy for light availability, but observations during this study indicate highly variable turbidity in the stream. Measurements of photosynthetically active radiation may be valuable for explaining the distribution of plants in the stream.

In order to understand nutrient cycling in the Shasta River, biomass and growth rates of aquatic plants must be assessed. This will require destructive sampling (harvest), and such sampling will have direct impacts on the site, and indirect impacts on downstream sites. Therefore, harvest should be conducted at sites other than the transect sites.

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10. Macroinvertebrate and food web sampling

Food web studies provide a framework for understanding the key interactions that structure ecological communities. In streams and rivers, most organisms consume an array of food items and, in turn, ultimately serve as prey for other organisms. Food webs provide fundamental information concerning which species in a community interact and insights into how such interactions influence the flow of energy, dynamics of populations, and functioning of ecosystems.

We used seasonal macroinvertebrate surveys in conjunction with natural abundance stable isotope analysis to determine food web structure and the important energetic pathways that sustain juvenile salmonids in the Nelson Ranch reach of the Shasta River. Macroinvertebrates were targeted because they represent an ecologically important group of organisms that serve as the primary link between the energetic base of the food web (i.e., organic matter sources such as algae and detritus) and fishes. Moreover, certain macroinvertebrate taxa are known to be extremely sensitive to environmental conditions (e.g., temperature, dissolved oxygen, turbidity, etc.) and community assessments can provide valuable insights into stream health (Barbour et al. 1999, Davis et al. 2001).

Natural abundance stable isotope analysis has been widely applied in ecological systems to elucidate sources of organic matter and the trophic pathways through which this matter is transferred (Peterson and Fry 1987, Michener and Schell 1994, Pinnegar and Polunin 2000). The use of stable carbon isotopes is based upon the observation that the ratio of the heavy to light isotope (^{13}C:^{12}C; expressed as $\delta^{13}C$) changes little with each trophic transfer (DeNiro and Epstein 1978, Fry and Sherr 1984). Hence, $\delta^{13}C$ values are effectively conserved up the food chain and may be used to discriminate between alternative carbon resources when the $\delta^{13}C$ values of the potential sources are sufficiently distinct.

In contrast with carbon, nitrogen stable isotope ratios (^{15}N:^{14}N or $\delta^{15}N$) increase by approximately 2-4‰ (mean = 3.4‰) with each step in the food chain (see Vander Zanden and Rasmussen 2001, Post 2002). Thus, an organism's $\delta^{15}N$ signature provides an indirect measure of its relative trophic position and ecological role in the community. Although stable isotope analysis provides less diet resolution than traditional gut content analysis, it addresses some of the limitations associated with diet studies. Stable isotope analysis provides information on those food items that are actually assimilated and converted to consumer biomass rather than those that are simply ingested. Moreover, stable isotope analysis provides time-integrated information on food preferences and is less subject to short-term bias (Creach et al. 1997).

Our specific research objectives at the Nelson Ranch site were to:

1. generate seasonally specific taxonomic lists for the macroinvertebrate community,
2. identify the important sources of organic matter to stream consumers,
3. determine temporal variability in the structure of the aquatic food web, and
4. develop a baseline understanding of the important trophic pathways that support juvenile salmonids.

To that end, macroinvertebrate and stable isotope samples were collected seasonally in 2006 and 2007. Because stable isotopes yield time-integrated dietary information (O'Reilly et al. 2002), we collected samples at the end of each season we sought to characterize. Specific collection dates were 9-10 November (fall), 9-10 March (winter), 7-8 June (spring), and 2-3 September (summer).

42-36 cont.

10.1. Methods

Macroinvertebrate Sampling

To determine the composition of the macroinvertebrate community and identify potential prey items for juvenile salmonids, we collected representative samples from the benthic environment (kick sampling), the water column (drift sampling), and a variety of additional habitat types (multi-habitat sampling).

Kick Sampling

Macroinvertebrate samples collected for taxonomic determination were comprised of nine individual kick samples. Samples were distributed in a 3 x 3 grid pattern that covered ~100 m^2 of fairly homogeneous substrate. A standard kick net (500 μm mesh) was placed immediately

downstream of the target sample area and approximately 0.09 m^2 of the streambed was vigorously disturbed for one minute. The nine individual kick samples were combined in a bucket and the entire sample was elutriated to remove sand, silt, and gravel. The composite sample was subsequently preserved in 95 percent ethyl alcohol and returned to the laboratory for additional processing. A duplicate macroinvertebrate sample was collected for analysis of natural abundance stable isotope ratios (described in detail below). Location of the sampling grid and collection methods remained constant across dates, allowing us to produce taxonomic lists and examine temporal variation in relative abundances.

Drift Sampling

Given the potential importance of invertebrate drift to salmonid production in the Shasta River, we initiated a pilot study during the final two collection periods (i.e., spring and summer) to quantify the relative contribution of terrestrial versus aquatic invertebrates to daytime drift. Three drift nets (363 μm mesh; mouth opening = 0.12 m^2) were positioned ~20 m upstream of the area used to collect benthic macroinvertebrate samples. Drift nets were evenly spaced across the channel, dividing the channel into quarters. To ensure that both animals floating on the water surface and suspended in the water column were sampled, each net was positioned so that the top was ~10 mm above the water surface. On 7 June, drift sampling was initiated at 15:44 h and terminated at 21:12 h (~30 min after sunset). Drift sampling was reinitiated for a second time on 8 June at 05:06 h (~30 min before sunrise) and terminated at 15:43 h. Material collected during the two sample periods was combined for laboratory identification and enumeration. Drift sampling on 2 September was similar, except sampling was completed in one day. Individual drift nets were treated as replicates and sub-sampled to a count of 150 organisms. Drifting animals were categorized as terrestrial or aquatic in origin, enumerated and processed for subsequent biomass determination and stable isotope analysis. All aquatic macroinvertebrates captured in the 2 September drift samples were identified to the lowest practical taxonomic unit.

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Multi-habitat Sampling

Supplementary multi-habitat sampling was carried out during the Apr-Jun and Jul-Sep sampling dates. Our aim was to target habitat types not sampled as part of the normal taxonomy sampling. Specifically, the multi-habitat sample was a composite of samples collected from river margins, emergent vegetation, pools, and sandy substrate. Multi-habitat samples were thoroughly searched for additional taxa not found during the course of taxonomic sampling.

Stable Isotope Field Methods

To characterize important carbon sources to the Shasta River food web, we collected four types of organic matter on each sampling date: epilithic biofilms (i.e., matrix of algae, bacteria, fungi, protozoans and non-living organic matter), seston, detritus, and aquatic macrophytes. We randomly selected five stones from the study reach for biofilm sampling. The surface of each stone was scraped with a stiff brush and dislodged material was suspended in a small volume of distilled water. The resultant slurry was collected on pre-combusted (500˚C for 4 h) Whatman GF/F filters (47 mm diameter; 0.7 μm effective pore size) after being passed through a 250 μm sieve to remove any small invertebrates present.

Seston (suspended fine particular organic matter (FPOM); particles > 0.45μm to < 1 mm) was sampled by filtering stream water through pre-combusted GF/F filters until the filters were

lightly colored. Generally, less than 2.5 liters of filtered stream water produced sufficient material for isotopic analyses. Five replicate seston samples were collected on each sampling date. Seston filters were immediately placed in individually labeled opaque bags and cryogenically frozen in the field. Detrital samples (coarse particulate organic matter (CPOM); particles >1 mm in diameter) were handpicked from the streambed and consisted mainly of decomposing aquatic macrophyte fragments, twigs, and conditioned terrestrial leaf litter.

Aquatic macrophytes were collected by hand from various locations in the study reach. Individual samples were selected randomly, but every attempt was made to target all species present during each sampling period. Harvested samples were vigorously agitated in stream water to dislodge clinging invertebrates (epibiota) before being placed in individually labeled polyethylene bags and frozen on dry ice. In the laboratory, samples were briefly thawed and thoroughly examined under 10X magnification to ensure the absence of epibiota that could potentially alter macrophyte stable isotope values. Only aboveground biomass was prepared and submitted for stable isotope analysis.

Aquatic macroinvertebrates for stable isotope analysis were qualitatively sampled using a kick net and by handpicking organisms from the substrate. Samples were then passed through a 500 μm sieve and all retained material was frozen (-80˚C) until taxonomic identification and stable isotope preparation. We limited our analysis of macroinvertebrates to those taxa whose relative abundances represented greater than 1 percent of the entire invertebrate assemblage on each date.

42-36 cont.

Fish samples were obtained from California Department of Fish and Game and consisted of both incidental mortalities associated with rotary screw trap operation at the Nelson Ranch site and intentionally sacrificed fish. Our dependence on contributed samples resulted in different members of the fish community being available for analysis on each sample date. No samples were available for the April-June sampling period. All fish samples were frozen and transported to the laboratory for dissection and processing. Dissection protocols consisted of using a scalpel and forceps to remove muscle tissue from behind the dorsal fin and above the lateral line. All dissections were performed under 10X magnification to insure only dorsal muscle tissue was excised. Entire digestive tracts were concurrently removed and archived (-80˚C) for future gut content analysis. Excised muscle samples were placed in pre-ashed (2 h at 400˚C) glass scintillation vials and prepared for natural abundance stable isotope analysis as detailed below. Fish species analyzed during the course of this investigation included: Chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout (*O. mykiss*), tui chub (*Gila bicolor*), Klamath smallscale sucker (*Catostomus rimiculus*), speckled dace (*Rhinichthys osculus*), marbled sculpin (*Cottus klamathensis*), and lamprey ammocoetes (*Lampetra* sp.).

Laboratory Methods

Macroinvertebrate Taxonomic Identification

Macroinvertebrate samples for taxonomic determination were repeatedly rinsed in a 500 μm mesh brass sieve to separate animals from silt and debris. All retained material was evenly distributed over a standardized sorting grid and randomly subsampled to reach a minimum count of 500 organisms (± 25 organisms). The balance of the sample was then searched for large and rare taxa (i.e., invertebrate taxa not found in the subsample but present nonetheless). Large and

rare taxa were excluded from subsequent quantitative analyses but included in the taxonomic list generated for each sample period (Appendix).

Aquatic macroinvertebrates were identified to the California Stream Bioassessment Procedure Level II (CSBP-II) standard, using Merritt and Cummins (1996), Smith (2001), and Thorp and Covich (2001) as well as various taxonomic-specific references. Larval Chironomidae were slide mounted using Euparal (BioQuip; Rancho Domingo, CA) and identified to genus when possible using Wiederholm (1983) and Merritt and Cummins (1996). Specimens in poor condition or in very young instars were left at the next highest taxonomic level. Ostracoda and Oligochaeta were identified to class. Taxonomic determinations and associated counts were entered into the California Environmental Data Analysis System (CalEDAS) database, a regional adaptation of software developed by the US EPA for processing macroinvertebrate data. CalEDAS stratifies information on benthic macroinvertebrates and generates a series of descriptive metrics that have known responses to the effects of pollutants or other environmental stressors (Barbour et al. 1999). We selected 10 common metrics that included various measures of taxonomic richness, functional feeding group membership, and organism tolerance values. Tolerance values are a measure of an organism's ability to survive and reproduce in the presence of known levels of stressors (Bressler et al. 2006). Tolerance values range from zero (highly intolerant) to 10 (highly tolerant). Functional feeding group designations are based on how an organism acquires food and include: (1) *collectors*, which gather or filter fine particulate organic matter; (2) *shredders* which consume coarse particulate organic matter; (3) *scrapers* (grazers) which consume epilithic biofilms; (4) *predators*, which capture and feed on other consumers; and (5) *omnivores*, which consume both plant and animal matter. A description of the specific metrics examined in this study is provided in Table 6.

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Table 6. Benthic macroinvertebrate metrics and their expected responses to ecological perturbation.

Macroinvertebrate Metric	Metric Description	Expected Response to Disturbance
EPT Index	Number of taxa (genus or species) in the orders Ephemeroptera, Plecoptera, and Trichoptera	Decrease
Percent CG + CF Individuals	Percent of the macrobenthos that collect and gather (CG) or filter (CF) fine particulate organic matter	Increase
Percent Chironomidae	Percent of the macrobenthos that belongs to the family Chironomidae	Increase
Percent Predators	Percent of the macrobenthos that capture and consumes other animals	Variable
Percent Scrapers	Percent of the macrobenthos that grazes upon epilithic biofilms (periphyton)	Variable
Percent Tolerant	Percent of all tolerance-rated organisms in a sample that are classified as highly tolerant (tolerance values > 7 out of 10)	Increase
Tolerance Value	Value between 0 and 10 weighted by abundance of individuals with designated tolerances	Increase
Percent Shredders	Percent of the macrobenthos that shreds coarse particulate organic matter	Decrease
Taxonomic Richness	Total number of unique taxa (Genus level taxonomic resolution)	Decrease
Shannon Diversity Index	Measure of sample diversity that incorporates taxonomic richness and evenness	Decrease

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Stable Isotope Analyses

Samples for stable C and N isotope analysis were dried at 60°C for ≥ 48 h in a laboratory oven. Dried samples were ground to a fine, homogenous powder using a mortar and pestle and packaged in 5 X 8 mm tin capsules prior to analysis. For samples collected on filters, dried material was transferred from filters when possible otherwise entire filters were ground in a Wig-L-Bug® amalgamator (Crescent Dental Corp., Chicago, IL. USA), encapsulated and analyzed. Snail body tissues were excised from their shells to avoid potential carbonate interference. Sample weights were approximately 1.0, 3.0, and 30.0 mg for animals, plants, and filters, respectively. All isotopic analyses were performed at the stable isotope facility at the University of California at Davis using a Europa Scientific Hydra 20/20 isotope ratio mass spectrometer. Analysis of replicate blank GF/F filters indicated that filters contributed negligible amounts of background C and no measurable N. Stable isotope results are presented using the delta (δ) value notation to reflect the ratio of the heavier to lighter isotope and expressed as the per mil (‰) deviation from accepted standards (PeeDee Belemnite limestone for $\delta^{13}C$ and atmospheric nitrogen for $\delta^{15}N$) according to the following equation:

$$\delta^{13}C \text{ or } \delta^{15}N\ (‰) = \left(\frac{R_{sample}}{R_{standard}} - 1\right) \times 1000$$

where $R = {}^{13}C:{}^{12}C$ or ${}^{15}N:{}^{14}N$. A more positive δ value (or less negative for carbon) is deemed as isotopically enriched and indicates that the sample contains more of the heavier isotope (e.g., ^{13}C or ^{15}N).

Trophic relationships within the Shasta River food web were inferred using graphical interpretation of carbon and nitrogen stable isotopes in conjunction with stoichiometric data (C:N molar ratios) on potential carbon resources. Plant C:N ratios serve as indicators of food quality (Elser et al. 2000) and empirical studies have shown preferences by herbivorous invertebrate consumers for food items with lower C:N ratios (Burns and Ryder 2001, Menéndez et al. 2001)

Stable nitrogen isotope ratios ($\delta^{15}N$) were used to estimate the trophic position of fish and invertebrate taxa. Aquatic consumers rarely occupy discrete trophic positions (levels) as portrayed by simple food chain models (e.g., not all primary consumers = trophic position 2, secondary consumers = trophic position 3, etc.). Rather, organisms exist in reticulate food webs that often include complex ecological interactions such as omnivory, cannibalism, and reciprocal predation (Sprules and Bowerman 1998). $\delta^{15}N$ values are especially informative in that they provide a continuous measure of a consumer's realized (non-discrete) trophic position that integrates the flow of energy and material through multiple pathways (Vander Zanden et al. 1997). We estimated the trophic position of key consumer taxa during each sample period using the following equation:

$$\text{Trophic Position}_{consumer} = \left(\frac{\delta^{15}N_{consumer} - \delta^{15}N_{baseline}}{3.4}\right) + 2$$

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where $\delta^{15}N_{consumer}$ is the $\delta^{15}N$ of the aquatic consumer for which trophic position is being estimated, $\delta^{15}N_{baseline}$ is the mean $\delta^{15}N$ signature of the baseline organism, the denominator value of 3.4 represents the average trophic fractionation (‰) per trophic level (Minagawa and Wada 1984, Post 2002) and the constant 2 is the expected trophic position of the baseline organism (i.e., primary consumer). We selected the riffle beetle *Optioservus* sp. (Coleoptera: Elmidae) as our baseline indicator in the Shasta River because they demonstrated low $\delta^{15}N$ values compared to other invertebrate scrapers and were common during all sampling events. *Optioservus* is classified as a scraper in California streams (California Department of Fish and Game 2000) and we assume the bulk of their diet is derived from autochthonous production (i.e., diatoms and green algae). Vander Zanden and Rasmussen (2001) and Anderson and Cabana (2007) provide detailed discussions on the use of baseline $\delta^{15}N$ values to estimate trophic position in aquatic food webs.

10.2. Macroinvertebrate Findings

Macroinvertebrate Survey

Our macroinvertebrate sampling was designed to generate four seasonally specific taxonomic lists. Due to cost constraints and the nature of the study goals, all sampling events are unreplicated. Therefore, drawing statistically significant conclusions beyond taxa presence is impossible. However, several interesting observations can be made based on the data and are discussed below.

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The most striking seasonal change in community composition occurred in the tolerant Dipteran family Chironomidae (non-biting midges; family-wide tolerance value of 6). While virtually absent during three of the sampling periods, chironomid abundance jumped to 22.8 percent in Apr-Jun (chironomid abundance for Oct-Nov, Dec-Mar, and Jul-Sep was 1.4, 1.4, and 2.3 percent, respectively; Table 7). The marked increase in chironomids was driven by two genera in particular: the collector-gatherer *Cricotopus* sp. (tolerance value of 7) and the collector-filterer *Rheotanytarsus* sp. (tolerance value of 6; CDFG 2000).

Table 7. Seasonal comparison of macroinvertebrate metrics calculated for the Nelson Ranch reach of the Shasta River. Individual metrics are defined in Table 6.

Macroinvertebrate Metric	Sampling Period			
	Oct-Nov	Dec-Mar	Apr-Jun	Jul-Sep
EPT Index (%)	28%	68%	54%	25%
Percent CG + CF Individuals	68%	77%	84%	81%
Percent Chironomidae	1%	1%	23%	2%
Percent Predators	3%	3%	3%	2%
Percent Scrapers	28%	20%	10%	14%
Percent Tolerant	52%	5%	15%	48%
Tolerance Value	6.09	4.82	5.41	6.26
Percent Shredders	1%	0%	0%	0%
Taxonomic Richness	32	28	42	33
Shannon Diversity Index	2.58	1.70	2.82	2.45

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It is important to note that high densities of *Cricotopus* and *Rheotanytarsus* are often associated with stressed ecosystems (CDFG 2000). Consequently, the large increase in their relative abundances may be indicative of a significant temporal change in stream health. One possible explanation for this increase is that high water temperatures caused an ecological perturbation, resulting in a rise in chironomid abundance. It is also possible that, by chance, the Apr-Jun sample included more patches of midges than the other three samples. However, we believe this explanation unlikely because the sample was a composite and the same location was sampled during all four sampling events. Nevertheless, without sufficient replication this possibility cannot be ruled out. A third explanation is that chironomid abundance naturally increases in the spring, independent of changes in environmental conditions. One way to parse out natural cycles of abundance versus changes in water quality would be to establish and sample one or more reference sites in conjunction with the Nelson Ranch site. In this way, natural variability in abundance could be factored out from shifts in abundance due to changing local conditions. If a suitable reference site can be established for the upstream Nelson Ranch site, the hypothesis that the aquatic community is being adversely impacted by warm water inputs could be empirically tested. Low water temperatures combined with low midge abundances at a reference site would provide strong evidence that the Nelson Ranch is highly influenced by warm water inputs from Big Springs.

Ecologists often consider high taxonomic richness to indicate high ecological integrity (and water quality). Therefore, ostensibly it appears that ecological integrity improved somewhat in Apr-Jun where taxonomic richness was notably higher than other seasons (Table 7). However,

one result of the dramatic increase in midge abundance during Apr-Jun was that the largest taxonomic richness value also occurred during this sampling period (Richness = 42 unique macroinvertebrate taxa). The elevated richness metric was largely driven by the fact that 20 different chironomid taxa were identified during this period. By comparison, the other three sampling periods only averaged 4.3 unique chironomid taxa each. Thus, the increase in taxonomic richness during the April-June period resulted from the addition of tolerant organisms to the community and may not signify higher ecological integrity.

Another interesting aspect of the macroinvertebrate data was the almost complete absence of Plecoptera (stoneflies) from the Nelson Ranch invertebrate community. This finding is especially notable because previous macroinvertebrate surveys conducted within the basin (e.g., DWR unpublished data, Great Northern Corporation 1999) reported the presence of multiple Plecopteran families. Stoneflies are regarded as a highly sensitive order of aquatic insects that require cold, well-oxygenated water with low turbidity, and stable substrates (Merritt and Cummins 1996). Because stoneflies were infrequently encountered during our sampling efforts, we believe that they are indeed rare at the Nelson Ranch site. However, as with chiromonids, abundance data would be much more robust with the addition of reference sites.

Collector-gatherer insects dominated the macroinvertebrate assemblage at the Nelson Ranch site. In fact, during each sample period, the top three numerically dominant macroinvertebrates all belonged to the collector-gatherer feeding guild (Table 8). Both the Jul-Sep and Oct-Nov sampling dates were dominated by the scud *Hyalella* sp. (Amphipoda: Hyalellidae), while Dec-Mar and Apr-Jun were dominated by the mayfly *Baetis* spp. (Ephemeroptera: Baetidae). Although invertebrate predators were rare in the riffle habitats targeted by our taxonomic sampling, they were considerably more abundant in the multi-habitat samples. While multi-habitat samples precluded quantitative analysis, we observed that they were typically dominated by pool dwelling predators (i.e., Corixidae and Odanota) (see taxonomic list Appendix).

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Table 8. The three most dominant macroinvertebrate taxa and their proportion of the total sample during each sample period. A complete list of taxa is presented in Appendix.

Oct- Nov		Dec- Mar		Apr- Jun		Jul- Sep	
Hyalella sp.	23%	*Baetis* spp.	59%	*Baetis* spp.	31%	*Hyalella* sp.	31%
Ostracoda	15%	Oligochaeta	10%	*Hyalella* sp.	11%	Oligochaeta	11%
Baetis spp.	14%	*Optioservus* sp.	10%	*Diphetor hageni*	8%	*Baetis* spp.	9%
Total	52%		80%		50%		51%

Invertebrate Drift

The Shasta River has very little woody and herbaceous riparian habitat upstream of our study site and hence limited potential for inputs of terrestrial invertebrates. Unsurprisingly, aquatic organisms dominated daytime invertebrate drift, both numerically and in terms of biomass (Table 9, Figure 30). Mean daytime invertebrate drift density was approximately 3.4 times greater during the Apr-Jun sampling event than in Jul-Sep (Table 9) suggesting a general decrease in food supply through the summer months. Taxonomic examination of the Jul-Sep drift samples revealed that drift was comprised mainly of Chironomidae (not identified past family), *Simulium* sp. (Diptera: Simuliidae), Baetidae, and *Hyalella* sp. (in order of relative dominance).

Table 9. Density and biomass of daytime invertebrate drift samples collected during the Spring (Apr-Jun) and Summer (Jul-Sep).

Drift Metric	Season	
	Apr-Jun	***Jul-Sep***
Total Invertebrates · 100 m^{-3}	63.77	17.22
Aquatic Inverts · 100 m^{-3}	58.67 (92%)	15.50 (90%)
Dry Mass Aquatic (mg · 100 m^{-3})	7.10 (98%)	2.08 (97%)
Terrestrial Inverts · 100 m^{-3}	5.10 (8%)	1.72 (10%)
Dry Mass Terrestrial (mg ·100 m^{-3})	0.17 (2%)	0.06 (3%)

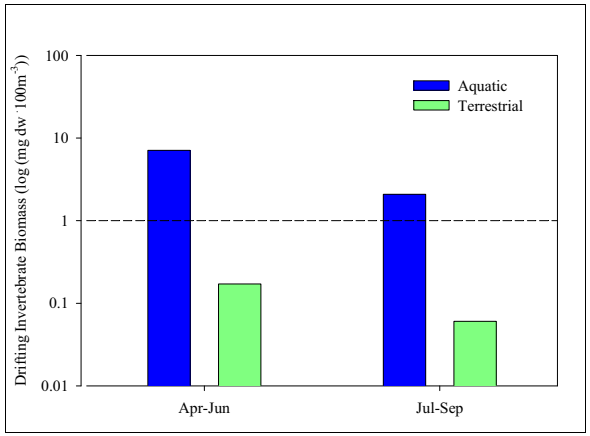

Figure 30. Drifting invertebrate biomass (mg dry weight · 100 m^{-3}) for aquatic and terrestrial insects in the Shasta River. Drift biomass consisted mainly of larval aquatic insects. Note log scale.

10.3. Stable Isotope Findings

As outlined previously, carbon isotope values ($\delta^{13}C$) provide information on the primary energy sources that fuel aquatic production, while nitrogen isotopes ($\delta^{15}N$) allow discrimination among trophic levels. Furthermore, C:N molar ratios serve as measures of food quality with high C:N ratios indicating nutritionally poor (refractory) food resources. Collectively, seasonal variation in the C and N stable isotope ratios of organic matter (epilithic biofilms, seston, detritus, and macrophytes), macroinvertebrates, and fish provide critical insight into the structure of the food web and the energetic pathways that support anadromous salmonids.

In the following section we present and discuss the results of our seasonal stable isotope analyses. For each season, we begin our discussion by examining the energetic base of the food

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web and move to progressively higher trophic levels (i.e., from sources of organic matter to macroinvertebrates to fish). Plots of $\delta^{15}N$ versus $\delta^{13}C$ are presented to help illustrate the flow of nutrients from sources to consumers. For visual clarity, unique numbers have been used in place of names to identify the isotopic position of the various food web components in all dual isotope plots (i.e., Figures 26, 28, 30 and 32). A key to the numbering convention is provided in Table 10.

Table 10. Key to the numbering convention used in C and N stable isotope diagrams (i.e., Figures 26, 28, 30, and 32). We limited our analysis of benthic macroinvertebrates to those taxa whose relative abundances represented greater than 1% of the entire invertebrate assemblage on each sample date.

No.	Food Web Component	No.	Food Web Component	No.	Food Web Component
	Primary Carbon Sources		**Macroinvertebrates Cont.**		**Macroinvertebrates Cont.**
1	Detritus[†]		Collector-Filterers		Predators
2	Epilithic Biofilms	**14**	*Simulium* sp.	**24**	*Hetaerina americana*
3	Macrophytes[‡]	**15**	Sphaeriidae	**25**	*Ophiogomphus* sp.
4	Seston		Scrapers		Drifting Invertebrates
	Macroinvertebrates	**16**	*Gyraulus* sp.	**26**	Aquatic Origin
	Collector-Gatherers	**17**	*Juga* sp.	**27**	Terrestrial Origin
5	*Amiocentrus aspilus*	**18**	*Optioservus* sp.		**Fishes**
6	*Baetis* spp.	**19**	*Physa* sp.	**28**	Chinook Salmon
7	*Diphetor hageni*	**20**	*Protoptila* sp.	**29**	Marbled Sculpin
8	*Gammarus* sp.	**21**	*Rhithrogena* sp.	**30**	Lamprey ammocoete
9	*Hexagenia limbata*	**22**	*Vorticifex* sp.	**31**	Speckled Dace
10	*Hyalella* sp.		Omnivores	**32**	Steelhead Trout
11	Oligochaeta	**23**	*Brachycentrus* sp.	**33**	Klamath Smallscale Sucker
12	*Paraleptophlebia* sp.			**34**	Tui Chub
13	*Tricorythodes* sp.				

[†]Detrital samples typically contained a mixture of conditioned organic matter derived from both aquatic (autochthonous) and terrestrial (allochthonous) sources.
[‡]Macrophyte samples consisted of multiple plant species.

Fall: October – November

The $\delta^{13}C$ of detritus (-28.97 ± 0.90‰) differed significantly from that of epilithic biofilms (-25.36 ± 0.81‰) during the Oct-Nov sample period (p = 0.02; Table 11). The detrital pool was comprised mainly of macrophyte fragments with small amounts of conditioned terrestrial leaf litter. The mean C:N ratio of detritus was both high (57.5) and extremely variable (1 SE = ± 16.28; range = 8.75 to 75.63; Figure 31). The high C:N ratio of detritus suggests that much of the coarse particulate organic matter available to macroinvertebrate consumers was of very low nutritive quality. High C:N ratios may result from extremely recalcitrant starting materials (e.g., macrophytes with high lignin or cellulose content) or plant matter that is in early stages of decomposition. A decrease in the C:N ratio is typically associated with colonization by heterotrophic organisms which add particulate nitrogen to the detrital pool (Thornton and McManus 1994, Pagioro and Thomaz 1999). Sheldon and Walker (1997) report that macroinvertebrate consumers preferentially select food resources with C:N ratios below 10, and that the maximum C:N ratio for maintaining the growth of primary consumers is approximately

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17. Hence, a mean detrital C:N ratio of 57.53 suggests that much of the detritus during the late fall may be of insufficient quality to contribute to carbon flow through the Nelson Ranch aquatic food web.

Seston had a mean $\delta^{13}C$ value of -28.23 ± 0.17‰ (Table 11). While mean seston $\delta^{13}C$ was similar to the mean $\delta^{13}C$ of detritus, the mean C:N ratio of seston was significantly lower (Figure 31). In general, most primary carbon sources had similar $\delta^{15}N$ values of approximately 5.0‰. However, seston samples were uniquely enriched with ^{15}N relative to other primary carbon sources ($\delta^{15}N$ = 7.17 ± 3.16‰) and the variability in seston $\delta^{15}N$ was exceptionally high (range = -0.62 to 18.18‰).

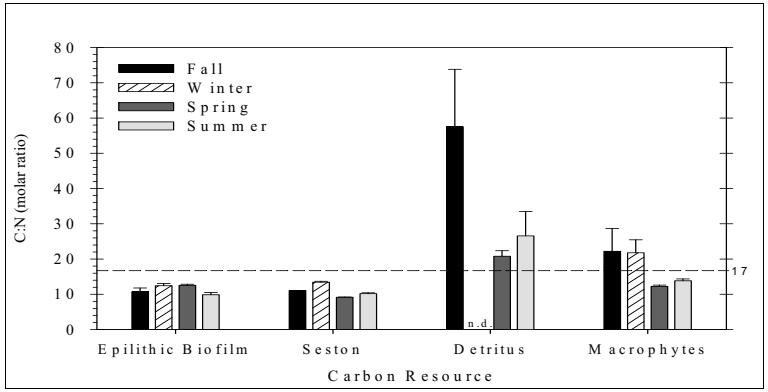

Figure 31. Seasonal changes in C:N ratios (molar) of select basal (primary) carbon resources in the Shasta River. Data are presented as means ± 1 standard error. The dashed line represents a C:N of 17, a reported maximum ratio for maintaining the growth of macroinvertebrate consumers (see Sheldon and Walker 1997). n.d. = no data collected.

The majority of benthic macroinvertebrate $\delta^{13}C$ values fell between the mean values for detritus and periphyton (Table 11, Figure 32). This suggests that invertebrate production during the fall was fueled chiefly by autochthonous production. Mean macroinvertebrate $\delta^{13}C$ values ranged from -29.44‰ for the omnivorous caddisfly *Brachycentrus* sp. (Trichoptera: Brachycentridae) to -24.63‰ for the herbivorous snail *Gyraulus* sp. (Gastropoda: Planorbidae). $\delta^{15}N$ values ranged from 5.52‰ for *Hyalella* sp., the numerically dominant organism during the fall (Table 8) to 13.02‰ for oligochaete worms. Most invertebrates occupied the trophic role of primary consumers and had mean trophic positions between 1.9 and 2.3 (Figure 33). Larval dragonflies of the genus *Ophiogomphus* (Odonata: Gomphidae) had a mean trophic position of 2.9 reflecting their ecological role as invertebrate predators (secondary consumers) in the food web. The extremely elevated $\delta^{15}N$ signature of oligochaetes (Table 11) resulted in a high trophic position (TP) estimate (TP > 4.0) relative to the rest of the invertebrate assemblage (Figure 33).

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Most fish taxa had very similar carbon and nitrogen isotope values (Figure 32). Fish $\delta^{13}C$ values generally fell within ~1.0‰ of the mean $\delta^{13}C$ value for the entire macroinvertebrate assemblage. This suggests that fish are feeding principally on the benthic macroinvertebrate community and that most of the carbon that fuels fish production is of autochthonous origin. However, Steelhead trout (mean FL = 108.5mm) were a notable exception as they had the most isotopically depleted mean $\delta^{13}C$ value of all the fishes analyzed (Table 11, Figure 32). This unique $\delta^{13}C$ signature suggests that a considerable portion of the carbon ultimately assimilated by juvenile steelhead was derived from either non-aquatic sources or some carbon source that we failed to characterize. It is possible that allochthonous inputs in the form of terrestrial insects represent an important component of the diet of juvenile steelhead at the Nelson Ranch site during the fall.

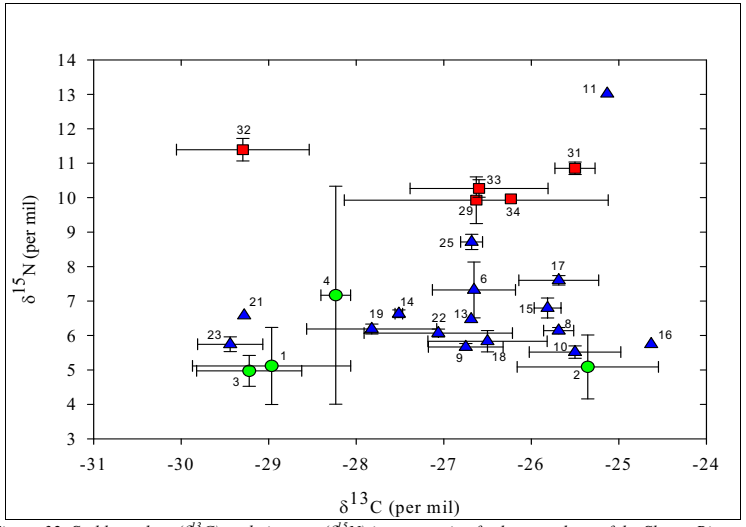

Figure 32. Stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope ratios for key members of the Shasta River aquatic food web during Oct-Nov 2006. Circles designate basal carbon resources, triangles represent macroinvertebrates, and squares signify fish taxa. Data are presented as mean values ± 1 SE. A key to numerical codes is provided in Table 10.

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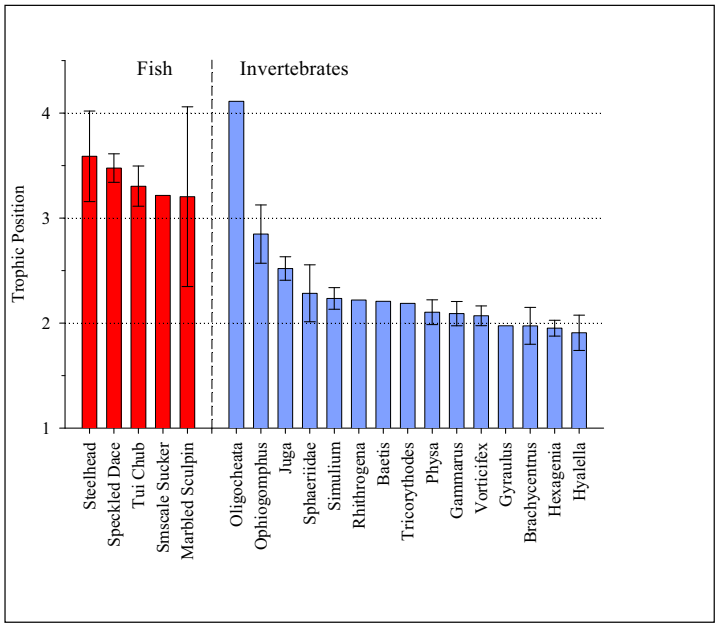
Table 11. Food web components analyzed for C and N stable isotope analysis. Delta (δ) values reflect the ratio of the heavier to lighter isotopes (i.e., ^{13}C:^{12}C and ^{15}N:^{14}N) and are expressed as the per mil (‰) deviation from the standards PeeDee Belemnite and atmospheric N_2 for C and N, respectively. Values for each food web component are presented as the mean ± 1 SE. n.d. = no data collected.

	Oct-Nov 2006		Dec 2006- Mar 2007		Apr -Jun 2007		Jul-Sept 2007	
Food Web Component	$\delta^{13}C$(‰)	$\delta^{15}N$ (‰)	$\delta^{13}C$ (‰)	$\delta^{15}N$ (‰)	$\delta^{13}C$ (‰)	$\delta^{15}N$ (‰)	$\delta^{13}C$ (‰)	$\delta^{15}N$ (‰)
Primary Carbon Sources								
Detritus[1]	-28.97 ± 0.90	5.12 ± 1.12	n.d.	n.d.	-28.15 ± 0.17	5.59 ± 0.03	-26.44 ± 2.00	7.53 ± 0.34
Epilithic Biofilm	-25.36 ± 0.81	5.09 ± 0.93	-27.98 ± 0.82	5.06 ± 0.39	-26.55 ± 1.29	4.14 ± 0.14	-26.72 ± 0.61	4.55 ± 0.27
Macrophytes[1]	-29.22 ± 0.60	4.97 ± 0.45	-26.63 ± 0.59	7.18 ± 0.20	-24.34 ± 0.43	5.69 ± 0.26	-25.06 ± 0.62	5.39 ± 0.27
Seston	-28.23 ± 0.17	7.17 ± 3.16	-28.94 ± 0.08	5.15 ± 1.34	-27.42 ± 0.03	4.36 ± 0.24	-26.40 ± 0.14	5.46 ± 0.37
Macroinvertebrates								
Collector-Gatherers								
Amiocentrus aspilus	n.d.	n.d.	-33.67 ± 0.57	3.73 ± 0.28	n.d.	n.d.	n.d.	n.d.
Baetis sp.	-26.66 ± 0.47	7.32 ± 0.81	-31.12 ± 0.21	7.09 ± 0.11	-26.42 ± 0.05	6.20 ± 0.03	-24.67 ± 0.26	5.78 ± 0.12
Diphetor hageni	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-24.94 ± 0.23	6.24 ± 0.08
Gammarus sp.	-25.69 ± 0.17	6.14 ± 0.09	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Hexagenia limbata	-26.75 ± 0.47	5.67 ± 0.11	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Hyalella sp.	-25.50 ± 0.52	5.52 ± 0.18	-27.17 ± 0.29	5.61 ± 0.05	-24.29 ± 0.05	5.38 ± 0.06	-22.57 ± 0.06	5.43 ± 0.04
Oligochaeta	-25.13	13.02	-27.89	7.78	n.d.	n.d.	-25.22 ± 0.19	6.27 ± 0.12
Paraleptophlebia sp.	n.d.	n.d.	n.d.	n.d.	-26.87 ± 0.11	5.89 ± 0.04	n.d.	n.d.
Tricorythodes sp.	-26.69	6.47	n.d.	n.d.	-26.43 ± 0.06	5.40 ± 0.03	-25.17 ± 0.13	4.82 ± 0.48
Collector-Filterers								
Simulium sp.	-27.51 ± 0.04	6.63 ± 0.11	n.d.	n.d.	-26.71 ± 0.11	5.81 ± 0.03	-24.84 ± 0.14	6.05 ± 0.06
Sphaeriidae	-25.81 ± 0.15	6.80 ± 0.29	-26.19 ± 0.14	5.71 ± 0.17	n.d.	n.d.	-25.01	5.79
Scrapers								
Gyraulus sp.	-24.63	5.75	n.d.	n.d.	n.d.	n.d.	-24.75 ± 0.16	5.52 ± 0.09
Juga sp.	-25.69 ± 0.46	7.60 ± 0.14	-25.00 ± 0.33	6.96 ± 0.23	-22.86 ± 1.48	7.87 ± 0.25	-23.92 ± 0.06	8.27 ± 0.13
Optioservus sp.	-26.50 ± 0.68	5.83 ± 0.31	-26.82 ± 0.35	5.12 ± 0.13	-26.94 ± 0.21	5.59 ± 0.04	-26.31 ± 0.17	5.25 ± 0.10
Physa sp.	-27.82 ± 0.74	6.19 ± 0.14	n.d.	n.d.	n.d.	n.d.	-25.56 ± 0.23	6.19 ± 0.04
Protoptila sp.	n.d.	n.d.	-31.37 ± 0.09	6.92 ± 0.37	-28.61 ± 0.19	6.20 ± 0.08	-30.39 ± 0.10	5.85 ± 0.00
Rhithrogena sp.	-29.28	6.58	-33.22 ± 0.18	6.67 ± 0.04	-31.36 ± 0.11	5.85 ± 0.07	n.d.	n.d.
Vorticifex sp.	-27.06 ± 0.85	6.07 ± 0.12	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Omnivores								
Brachycentrus sp.	-29.44 ± 0.37	5.75 ± 0.22	n.d.	n.d.	-28.72 ± 0.29	6.08 ± 0.07	-25.63 ± 0.16	6.38 ± 0.06
Predators								
Hetaerina americana	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-24.73 ± 0.10	7.45 ± 0.07
Ophiogomphus sp.	-26.68 ± 0.13	8.72 ± 0.22	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Drift (Aquatic Insects)	n.d.	n.d.	n.d.	n.d.	-28.20 ± 0.02	5.68 ± 0.03	-25.57 ± 0.15	6.41 ± 0.41
Drift (Terrestrial Insects)	n.d.	n.d.	n.d.	n.d.	-27.11 ± 0.55	5.81 ± 1.12	-25.99 ± 0.08	7.89 ± 0.26
Fishes								
Chinook Salmon	n.d.	n.d.	-26.20 ± 1.63	9.87 ± 0.49	n.d.	n.d.	n.d.	n.d.
Marbled Sculpin	-26.63 ± 1.51	9.93 ± 0.68	n.d.	n.d.	n.d.	n.d.	-23.96 ± 0.62	9.22 ± 0.27
Lamprey ammocoete	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-23.16	5.38
Speckled Dace	-25.50 ± 0.14	10.85 ± 0.20	-27.33 ± 0.66	10.57 ± 0.25	n.d.	n.d.	-24.64 ± 0.48	10.24 ± 0.36
Steelhead Trout	-30.06 ± 0.90	11.23 ± 0.59	-19.43	16.65	n.d.	n.d.	-26.03 ± 1.40	10.61 ± 0.69
Klamath smallscale sucker	-26.23	9.97	n.d.	n.d.	n.d.	n.d.	-24.46	9.44
Tui Chub	-26.60 ± 0.96	10.27 ± 0.31	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

42-36 cont.

Trophic position estimates based on stable nitrogen isotope ratios indicate that steelhead trout occupy the highest trophic position among the fishes examined (mean trophic position = 3.6, Figure 33). In general, all fish had mean trophic position estimates of ≥ 3.2, with marbled sculpin demonstrating the lowest mean trophic position (3.2) and the most variability among individuals (95 percent confidence interval = 2.3 to 4.1, *N*=3; Figure 33).



42-36 cont.

Figure 33. Mean trophic position estimates for aquatic consumers in the Shasta River during the fall 2006 sample period. Error bars indicate 95% confidence intervals.

Winter: December – March

The mean $\delta^{13}C$ signature of epilithic biofilm (-27.98 ± 0.82‰) was intermediate between that of seston (-28.94 ± 0.08‰) and aquatic macrophytes (-26.63 ± 0.59‰; Table 11). However, individual biofilm samples were highly variable ranging from –30.40 to –25.64‰. Macrophyte abundance was greatly reduced during this sampling period as much of the plant biomass had earlier senesced and been entrained during elevated flow events. Remaining macrophytes were significantly enriched in both ^{13}C (+2.59‰) and ^{15}N (+2.21‰) relative to the previous sampling period (Table 11).

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Seston and epilithic biofilms had respective mean C:N ratios of 13.5 and 12.4, while macrophyte C:N was 21.8 (Figure 31). Mean $\delta^{15}N$ values of epilithic biofilm and seston were 5.06 ± 0.39‰ and 5.15 ± 1.34‰, respectively. The $\delta^{15}N$ signature of macrophytes (7.18 ± 0.20‰) was more ^{15}N-enriched than values for any of the primary consumers in the food web except oligochaete worms (Table 11, Figure 34). The elevated mean $\delta^{15}N$ of macrophytes, coupled with their high C:N ratios (i.e., low nutritive value), suggests that live plants were not being directly utilized as a food source by primary consumers. Although some macroinvertebrate taxa have been reported to graze on live macrophytes (Berg 1949, Gower 1967, Suren and Lake 1989) direct consumption is thought to be fairly uncommon in lotic ecosystems (Mann 1988). Rather, live macrophytes principally contribute to carbon flow in food webs by serving as substrata for epiphytic biofilms or as refugia from predators (France 1995).

42-36 cont.

Aquatic macroinvertebrates demonstrated a wide range in $\delta^{13}C$ values (Table 11, Figure 34). Four invertebrate taxa had mean $\delta^{13}C$ values that were depleted (more negative) relative to the mean $\delta^{13}C$ of the potential basal carbon sources analyzed: *Amiocentrus aspilus* (Trichoptera: Brachycentridae), *Rhithrogena* sp. (Ephemeroptera: Heptageniidae), *Protoptila* sp. (Trichoptera: Glossosomatidae), and *Baetis* spp. (Ephemeroptera: Baetidae; Figure 34). However, considering the large variability in epilithic biofilm $\delta^{13}C$, it is probable that these consumers were utilizing the epilithon as their primary carbon source. Moreover, because *Baetis* was the numerically dominant macroinvertebrate during this sample period (representing >59 percent of the assemblage; Table 8), epilithic biofilms likely supported a significant portion of the trophic productivity during the winter months.

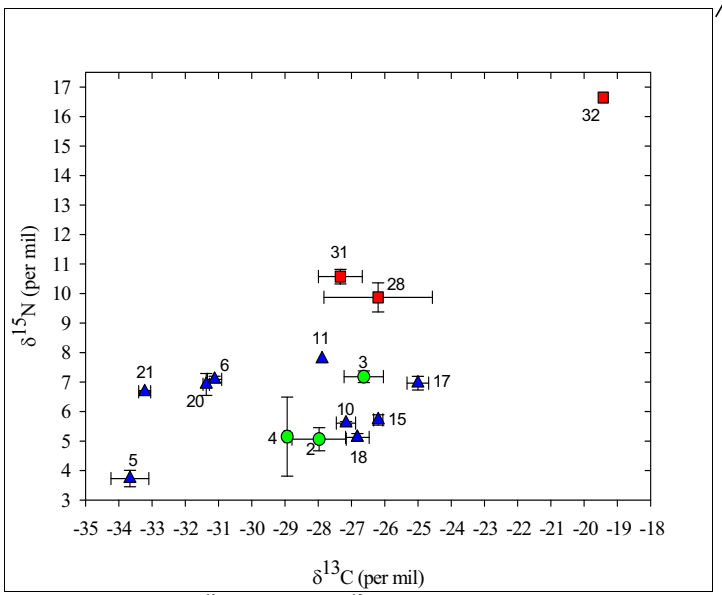

Figure 34. Stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope ratios for key members of the Shasta River aquatic food web during the Dec 2006-Mar 2007 sampling period. Circles designate basal carbon resources, triangles represent macroinvertebrates, and squares signify fish taxa. All data are presented as the mean ± 1 SE. Food web numerical codes are provided in Table 10.

42-36 cont.

The two most ^{13}C-enriched invertebrates were sphaeriid clams (-26.19 ± 0.14‰) and the pleurocerid snail *Juga* sp. (-25.00 ± 0.33‰). Sphaeriids are filter-feeding bivalves and have been reported to feed on both suspended and deposited organic matter (Hornbach et al. 1984). However, sphaeriid $\delta^{13}C$ signatures in the Shasta River did not match up well with the mean carbon signature for seston (Figure 34, Table 11). While this does not preclude the utilization and assimilation of seston by sphaeriids, it suggests that they are most likely deposit feeding and obtaining a significant portion of their carbon from fine particulate organic matter (FPOM) on the sediment surface. Detrital material typically becomes enriched with ^{13}C as it is processed and converted to increasingly smaller sized particles (i.e., from CPOM to FPOM). Although the mechanism behind this change in $\delta^{13}C$ during decomposition is unresolved (Finlay 2001) the alteration is both predictable and useful for inferring the exploitation of different particulate carbon sources (McNeely et al. 2006).

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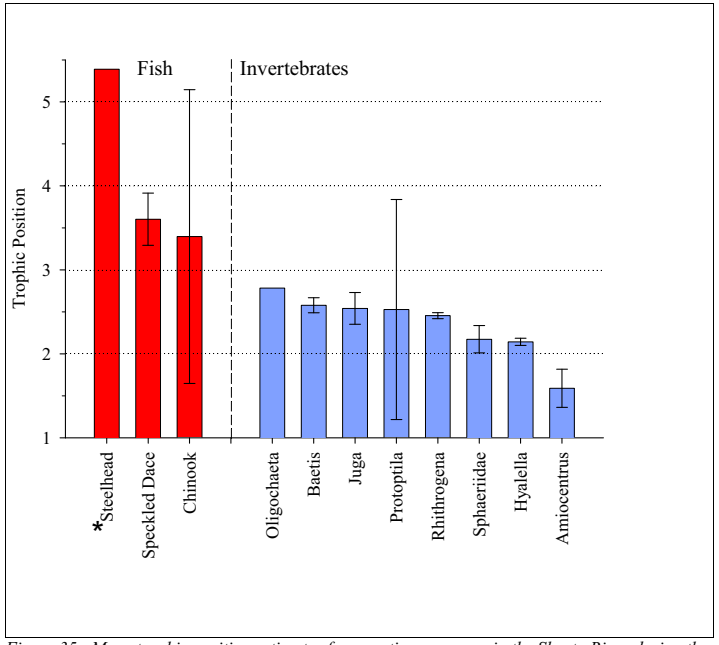

*Figure 35. Mean trophic position estimates for aquatic consumers in the Shasta River during the Dec 2006 -Mar 2007 sample period. Error bars represent 95% confidence intervals. *The extreme trophic position estimate for steelhead trout is due to the presence of a residual maternal isotope signal in the tissues of the fish (N=1, FL = 27mm; see discussion in text).*

Macroinvertebrate $\delta^{15}N$ signatures ranged from a high of 7.78‰ for oligochaete worms to a low of 3.73‰ for *Amiocentrus aspilus* (Figure 34). The mean $\delta^{15}N$ signature of *A. aspilus* was much lower than mean $\delta^{15}N$ values determined for any basal carbon source, but overlapped with the range of values determined for both seston and epilithic biofilms. Furthermore, trophic position (TP) estimates for *A. aspilus* were remarkably low with a mean TP of 1.6 (95 percent confidence interval = 1.4 to 1.8; *N*=5). Oligochaetes once again had the highest estimated trophic position among primary consumers (TP = 2.8) suggesting a general propensity for detritivory in the Shasta River (Figure 35). The remainder of the primary consumer guild had mean trophic position estimates ranging between 2.1 (*Hyalella* sp.) and 2.6 (*Baetis* spp.; Figure 35).

Stable isotope ratios were determined for three members of the fish community: speckled dace, Chinook salmon, and steelhead trout (Table 11). Speckled dace (mean FL = 74

42-36 cont.

mm; *N*=3) tissues had mean $\delta^{13}C$ and $\delta^{15}N$ signatures of -27.33 ± 0.66‰ and 10.57 ± 0.25‰, respectively. Speckled dace were depleted by -1.83‰ relative to $\delta^{13}C$ values obtained for the previous (Oct-Nov) sample period, while both mean $\delta^{15}N$ values and trophic position estimates exhibited little change between dates (Table 11, Figure 35).

Two young-of-the-year (YOY) Chinook salmon (FL = 71 mm and 48 mm) were provided for isotopic analysis. Mean Chinook $\delta^{13}C$ was -26.20 ± 1.63‰ and individual values were -27.82 and -24.56‰, with the smaller fish being more ^{13}C-enriched (less negative). This was also the case with $\delta^{15}N$ as the smaller Chinook had a markedly higher $\delta^{15}N$ signature than the larger fish (10.37 vs. 9.38‰). We interpret the elevated $\delta^{13}C$ and $\delta^{15}N$ values observed for the smaller (and presumably younger) fish to indicate the presence of marine-derived nutrients (MDN), specifically in the form of residual maternal yolk (see Gende et al. 2002, Naiman et al. 2002 for reviews of MDN in freshwater ecosystems). As YOY salmonids grow, their C and N isotope ratios systematically decline as they deplete their maternal yolk and begin to feed exogenously (Doucett et al. 1996). However, the time required for juvenile salmon to reach isotopic equilibrium with their riverine diet is highly variable and poorly understood. Power and Finlay (2001) found that juvenile steelhead in the South Fork Eel River drainage maintained a maternal (marine) signal until they reached standard lengths >50 mm. While such enriched isotope ratios are ultimately transient in YOY salmon, they can greatly obscure the interpretation of both diet and trophic position. For example, although the mean trophic position estimate for Chinook salmon produced a reasonable value (TP = 3.4), the 95 percent confidence interval around the mean was quite large (1.6 to 5.2; Figure 35). Further evidence of a marine-derived isotopic influence in the Shasta River food web comes from a single YOY steelhead trout (FL = 27 mm) with extremely elevated $\delta^{13}C$ (-19.43‰) and $\delta^{15}N$ (16.65‰) values (Figure 34). The enriched $\delta^{15}N$ value, in particular, produced a grossly inflated trophic position estimate of 5.2. Clearly, efforts to understand trophic linkages in salmonid food webs must recognize that assimilation of marine-derived nutrients and biomass, be it in the form of dissolved nutrients, gametes, carcass material, or predation on YOY fish, could lead to significant shifts in the stable isotope ratios of many organisms. However, the degree to which marine-derived nutrient subsidies influence food web structure and salmonid productivity in the Shasta River basin is presently unknown and warrants additional investigation.

Spring: April - June

There was considerable overlap among epilithic biofilms and seston in both $\delta^{13}C$ and $\delta^{15}N$ values during the Apr-Jun sample period (Figure 36). Furthermore, biofilm $\delta^{13}C$ values were once again highly variable with individual samples ranging from -31.68 to -24.99‰. Detritus during this period was comprised mainly of conditioned terrestrial leaf litter and contained very little macrophyte biomass. Mean detrital $\delta^{13}C$ and $\delta^{15}N$ were -28.15 ± 0.17‰ and 5.59 ± 0.03‰, respectively. Aquatic macrophytes displayed the most enriched $\delta^{13}C$ and $\delta^{15}N$ values of all the potential basal resources analyzed (Table 11, Figure 36). Interestingly, seston, detritus, and macrophytes all exhibited their lowest C:N ratios during this sampling period. Mean macrophyte C:N was especially notable as it decreased by approximately 9.5 from the prior sampling period (Figure 31).

42-36 cont.

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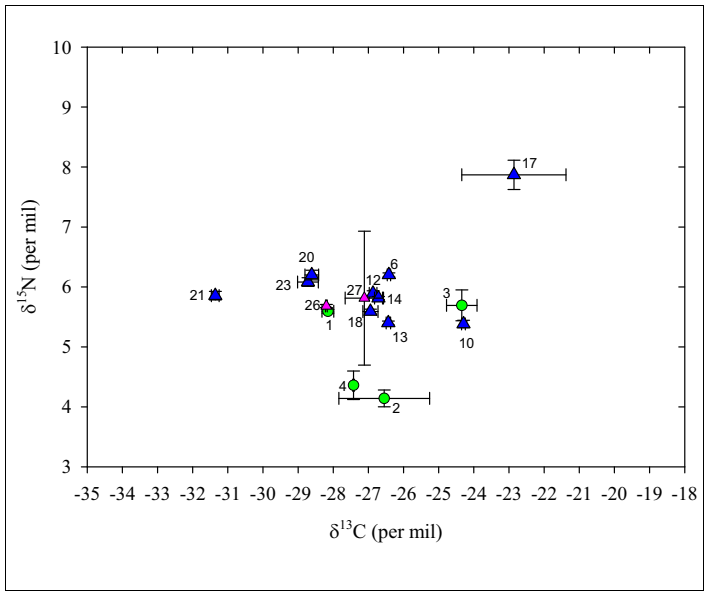
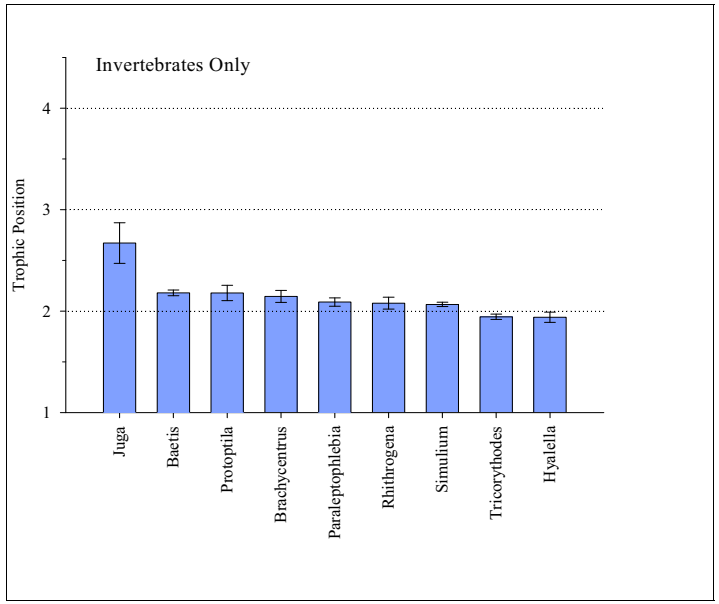


42-36 cont.

Figure 36. Stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope ratios for selected members of the Shasta River aquatic food web during the Apr–Jun 2007 sampling period. Circles designate basal carbon resources and triangles represent macroinvertebrate taxa. Drifting aquatic and terrestrial invertebrates are identified by numerical codes 26 and 27, respectively. All data are presented as mean isotope ratios ± 1 SE. Numerical codes are provided in Table 11.

The majority of macroinvertebrate taxa had carbon signatures that closely matched the mean $\delta^{13}C$ of epilithic biofilms (Figure 36). In fact, mean $\delta^{13}C$ values for every macroinvertebrate anyalzed fell within the range of carbon isotope values derived for epilithic biofilms. The heptageniid mayfly *Rhithrogena* sp. was the most isotopically depleted invertebrate with respect to carbon (mean $\delta^{13}C$ = -31.36 + 0.11‰) while *Juga* sp. was the most enriched (mean $\delta^{13}C$ = -22.86 ± 1.48‰). *Juga* also had the highest mean $\delta^{15}N$ signature (7.87 ± 0.25‰) and consequently the highest trophic position estimate (Figure 37) among the invertebrates sampled. Excluding *Juga*, the mean $\delta^{15}N$ value for primary consumers was 5.80 ± 0.04‰ (*N*= 48), a trophic enrichment of 1.66‰ over mean epilithic biofilm $\delta^{15}N$. By comparison, *Juga* sp. was enriched in ^{15}N by 3.73‰ over mean biofilm $\delta^{15}N$. Trophic position estimates for primary consumers yielded surprisingly little variability among taxa. The highest mean trophic position (after *Juga*) was occupied by *Baetis* spp. (TP = 2.2), while *Tricorythodes* sp. (Ephemeroptera:

Leptohyphidae) and *Hyalella* sp. shared the lowest estimated trophic position of 1.9 (Figure 37).



42-36 cont.

Figure 37. Mean trophic position estimates for aquatic consumers in the Shasta River during the Apr-Jun 2007 sample period. Only macroinvertebrates were analyzed during this sample period. Error bars indicate 95% confidence intervals.

Stream drift plays a central role in lotic food web dynamics as drifting insects are a commonly reported prey item of many stream fishes (Mundie 1974, Hunt 1975, Wipfli 1997, Nakano et al. 1999, Nakano and Murakami 2001). We sorted samples of drifting invertebrates into two factions according to origin (i.e., terrestrial vs. aquatic), and determined stable isotope ratios for each group independently. Drifting aquatic insects had a mean $\delta^{13}C$ value of -28.20 ± 0.02‰ while those of terrestrial origin were slightly more ^{13}C-enriched with a mean $\delta^{13}C$ of -27.11 ± 0.55‰ (Figure 36). The mean $\delta^{15}N$ signatures of drifting aquatic and terrestrial insects were very similar (5.68 ± 0.03 vs. 5.81 ± 1.12‰, respectively) but terrestrial $\delta^{15}N$ was highly variable (range = 4.70 to 6.93‰).

Summer: July - September

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Primary carbon sources during this period were more variable with respect to $\delta^{13}C$ values than during previous sampling periods. Detritus had a mean $\delta^{13}C$ value of -26.44‰ (Table 11) but individual observations ranged from –22.45 to –28.49‰. Moreover, the mean C:N ratio of detritus was approximately 27 (Figure 31) and detrital material was considerably ^{15}N-enriched relative to nearly all primary consumer taxa (Figure 38). Mean epilithic biofilm $\delta^{13}C$ was –26.72 ± 0.61‰ and exhibited little change from the previous sampling date (Table 11). Biofilm C:N reached its lowest levels of the entire study with a mean C:N ratio of 9.9 (Figure 31).

Thirteen distinct invertebrate taxa were analyzed during this sample period (Table 11, Figure 38). Most primary consumers clustered into a single group centered on a $\delta^{13}C$ value of approximately -25‰, suggesting exploitation of the same primary carbon source (Figure 38). Accounting for isotopic fractionation, epilithic biofilms are most likely fueling the bulk of invertebrate production during this period as well. However, interpretation is hindered by large variability in biofilm $\delta^{13}C$ and incomplete characterization of all potential organic matter sources (e.g., epiphytic biofilms or FPOM).

Among invertebrates, the caddisfly *Protoptila* sp. was appreciably ^{13}C-depleted relative to the rest of the invertebrate assemblage (Figure 38). In fact, *Protoptila* consistently yielded depleted mean $\delta^{13}C$ values across all sample periods (Table 11). *Juga* were again distinctively enriched with mean $\delta^{13}C$ and $\delta^{15}N$ values of –23.92 ± 0.06 and 8.27 ± 0.13‰, respectively. Curiously, both *Juga* and *Protoptila* are classified as scrapers in California rivers (CDFG 2000). Despite belonging to the same functional feeding guild, these two taxa are clearly utilizing vastly different carbon sources in the Shasta River (Figure 38). The most ^{13}C-enriched taxon was *Hyalella* sp. with a mean $\delta^{13}C$ of -22.57 ± 0.06‰. Although generally classified as a collector-gatherer in California (CDFG 2000), *Hyallela* is known to have extremely wide-ranging feeding habits. Published sources describe the consumption of detritus, epiphytic growth on rooted aquatic plants, and filamentous algae (Cooper 1965, Koslucher and Minshall 1973).

Drifting invertebrates of both aquatic and terrestrial origin had similar $\delta^{13}C$ signatures (Table 11). However, mean $\delta^{15}N$ values were distinct with terrestrial insects being enriched by +1.48‰ over drifting aquatic insects (Figure 38).

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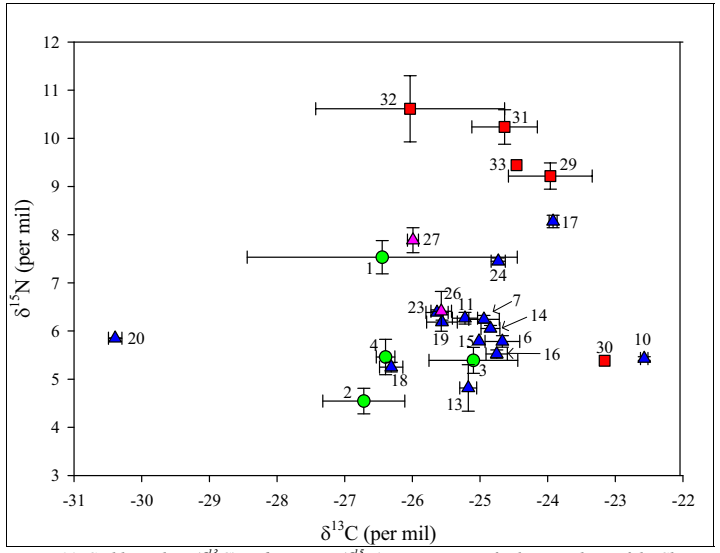

Figure 38. Stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope ratios for key members of the Shasta River aquatic food web during the Jul–Sep 2007 sampling period. Circles designate basal carbon resources and triangles represent macroinvertebrate taxa. Drifting aquatic and terrestrial invertebrates are indicated by numerical codes 26 and 27, respectively. All data are presented as mean values ± 1 SE. A key to numerical codes is provided in Table 10.

The predatory damselfly *Hetaerina americana* (Odonata: Calopterygidae) had mean $\delta^{13}C$ and $\delta^{15}N$ values of –24.73 ± 0.10 and 7.45 ± 0.07‰, respectively. *H. americana*, as a secondary consumer in the food web (trophic position = 2.7; Figure 39) was predictably enriched in ^{15}N, but only by 1.55‰ over the mean $\delta^{15}N$ value for all primary consumers (5.90 ± 0.08‰, *N*=49; *Juga* sp. omitted).

Steelhead trout had the most variable isotope values of the stream fishes analyzed. Steelhead $\delta^{13}C$ ranged from -23.23 to -29.90‰ (mean = -26.03 ± 1.40‰) and $\delta^{15}N$ ranged from 9.22 to 11.89‰ (mean = 10.61 ± 0.69‰; Figure 38). All steelhead during this sample period were >65 mm FL and presumably beyond the influence of any confounding maternal isotope signal. As was the case during the fall (Oct-Nov), steelhead occupied the highest trophic position among the fishes analyzed (Figure 39). Speckled dace (mean FL = 65mm) $\delta^{13}C$ and $\delta^{15}N$ signatures demonstrated considerable overlap with steelhead, but dace were slightly ^{13}C-enriched (mean $\delta^{13}C$ = -24.64 ± 0.48‰). Speckled dace mean $\delta^{13}C$ values varied by almost 2.5‰ across sample dates, while $\delta^{15}N$ values remained fairly constant over time (Table 11). Carbon isotope

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signatures for marbled sculpin (-23.96 ± 0.62‰) and a solitary Klamath smallscale sucker (-24.46‰) were similar to the mean $\delta^{13}C$ value for speckled dace (Figure 38). Sculpin and sucker mean $\delta^{15}N$ values were nearly identical at 9.22 (±0.27‰) and 9.44‰, respectively. As was the case for the Oct-Nov 2006 sample period, $\delta^{13}C$ values for all fish taxa generally fell within ~1.0‰ of the mean $\delta^{13}C$ value for the entire macroinvertebrate assemblage. A single lamprey ammocoete was also analyzed during this sample period. Lamprey ammocoetes are generally found in soft sediments and thought to feed primarily on detrital material (Moyle 2002). The ammocoete was ^{13}C-enriched ($\delta^{13}C$ = -23.16‰) relative to the bulk of the aquatic community (Figure 38). Furthermore, the ammocoete had a $\delta^{15}N$ value of 5.38‰ and a trophic position estimate of 2.0 (Figure 39) confirming its role as a primary consumer within the food web.

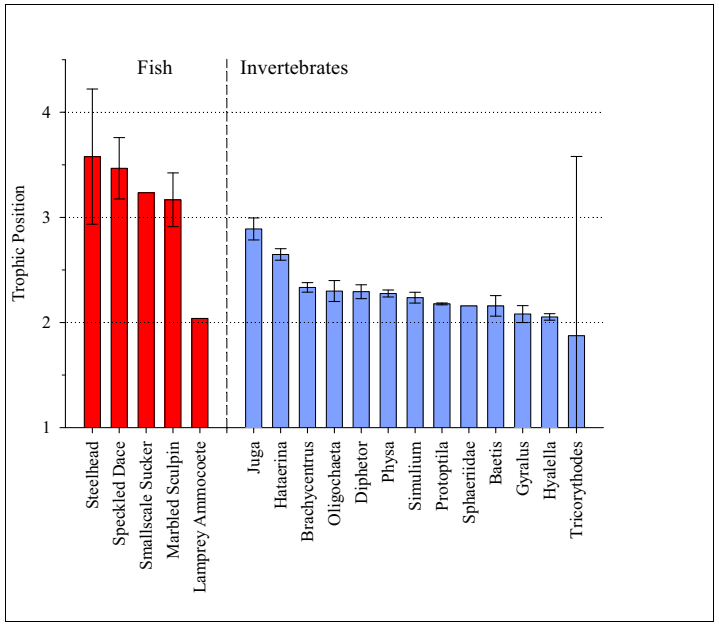

Figure 39. Mean trophic position estimates for aquatic consumers in the Shasta River during the Jul-Sep 2007 sample period. Error bars indicate 95% confidence intervals.

10.4. Summary

Our results demonstrate that natural abundance stable isotope analysis is a powerful tool for identifying important sources of organic matter and trophic linkages in the Shasta River watershed. We found that epilithic biofilms served as the primary energy source

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fueling food web productivity throughout the year. Although aquatic macrophyte standing crops were high on most sample dates, the high lignin and cellulose content of live plants (i.e., high C:N ratios) rendered them a poor quality food resource and precluded their direct consumption by most aquatic herbivores. The detrital pool at the Nelson Ranch site consisted chiefly of macrophyte fragments, while allochthonous (terrestrial) materials generally represented a very minor fraction of the total pool. Similar to live macrophytes, detritus had elevated C:N ratios and was of poor nutritive value throughout the year.

We identified a total of 2,046 organisms representing 68 unique taxa as part of our seasonal macroinvertebrate surveys. Members of the collector-gather and collector-filterer functional feeding guilds consistently dominated the macroinvertebrate community. This suggests that fine particulate organic matter (FPOM; particles of organic matter < 1 mm) serves as a critical link between dissolved nutrients, epilithic biofilms, and secondary production. Shredders were conspicuously scarce on all dates, presumably due to the dearth of allochthonous material. While the relative abundances of most invertebrate taxonomic groups remained fairly consistent over time, non-biting midges (Chironomidae) exhibited a dramatic spike in abundance during the April-June sample period. Drifting invertebrates represent an important food resource for stream fishes and our results indicate that drift density (prey availability) decreases through the summer months at the Nelson Ranch site. We found that most drifting invertebrates were of aquatic origin as terrestrially-derived organisms accounted for ≤ 10% of the total drift density and ≤ 3% of the total drift biomass.

Our findings provide novel and important information regarding the structure and function of the aquatic community at the Nelson Ranch site. However, significant data gaps still exist and continued sampling is necessary to advance our understanding of the key ecological and trophic interactions that support juvenile salmonids in the Shasta River basin. Specifically, future studies should aim to:

1. Quantify temporal and spatial changes in biomass (e.g., standing stocks of organic matter, macroinvertebrates, etc.) and important ecological rates such as inputs of allochthonous material, invertebrate emergence and drift, and secondary production. Such knowledge would greatly improve our understanding of ecosystem-level processes and provide important baseline information from which the efficacy of alternative management practices and restoration activities may be assessed.

2. Characterize the stable isotope signatures of additional sources of organic matter that have emerged as potentially important contributors to carbon flow in the Shasta River (e.g., various size fractions of particulate organic matter and epiphytic biofilms).

3. Generate comprehensive information on the fish community during each season. Specifically, fish distribution and abundance data should be coupled with stable isotope and gut content analyses to confirm trophic relationships and quantify

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important food web interactions. Future trophic investigations should target scales (habitat types) that are ecologically relevant to fish at different stages in their life cycle.

11. Fish Surveys

Snorkel surveys were conducted in the Shasta River to determine fish abundance and diversity within various habitats as hydrologic conditions changed throughout the 2007 water year. During water year 2007 we conducted 352 reach snorkel surveys along the Nelson Ranch on the Shasta River. During snorkel surveys we observed eight species of fish in the six different habitats types defined for the Nelson reach. Below we discuss observations of salmonids found in the Shasta River (coho salmon, Chinook salmon, and steelhead) during the seasons (fall, winter, spring, and summer) of the 2007 water year. Along with observations of fish, we introduce the ecological trap conceptual model for coho salmon within the Shasta River and highlight restoration goals for resource managers.

11.1. Methods

Snorkel surveys are a non-invasive method to determine relative abundance and habitat usage but are not a surrogate for population estimates. Because of the presence of coho (a federally threatened species), snorkel surveys were determined to be the method with the lowest level of impact when determining habitat usage by fishes. To conduct snorkel surveys, the Nelson Ranch was divided into five approximately 1.6 km sub-reaches and within each sub-reach, there was a replicate of each habitat type. As noted above, typical habitat typing methods did not provide sufficient variability to identify utilized habitats, and a site-specific habitat classification system was created to physically describe 100% of the wetted channel. Recall, the previously habitat defined classification system (Habitat Mapping) included six types of channel margin and/or in-channel aquatic habitat, including point bars (PB), active cut-banks (CB), perennial and/or ephemeral backwaters (BWp/BWe), large woody debris (LWD), emergent vegetation (EV) and aquatic macrophytes (AM) (Figure 40). The survey was completed moving upstream and fish were only counted within one meter of each side of the surveyor. We conducted snorkel surveys one to two times per month depending on hydrologic conditions (Table 12). River turbidity made sampling difficult during winter months and thus, few samples were conducted from November through March. As aquatic macrophytes became dense during summer, several sites were no longer readily surveyed. In this case, one downstream float survey was conducted in each of the 1.6 km reaches where the surveyor floated downstream, counting fish near the thalwag of the river. Reaches varied between 100 and 200 meters in length. During all surveys, the surveyor identified fish species and age class, and recorded the information on a wrist slate. A second snorkel surveyor occasionally conducted concurrent surveys to verify fish numbers and species counts. When the second surveyor was present, fish numbers and species counts were compared to the regular surveyor's data. On all occasions, data from both surveyors were similar. After a reach survey was completed, instream cover, substrate type and exposed substrate were qualitatively estimated and recorded. Water quality parameters were measured after

42-36 cont.

each survey using a YSI 6820 data sonde. Water quality parameters recorded were temperature, dissolved oxygen, turbidity, pH, and conductivity.

Figure 40. Map of snorkel survey sites along the Nelson Ranch. Different colors denote different habitat types.

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Table 12. Number of snorkel surveys conducted in each habitat type during each sampling period. The number of surveys was dependent on hydrologic conditions, aquatic macrophyte density, and safety concerns.

	Aquatic Macrophyte	Backwater	Cut Bank	Emergent Vegetation	LWD	Point Bar
Oct. 2006-1	5	5	5	5	4	4
Nov. 2006-1	5	5	5	5	2	4
March 2007-1	2	0	1	5	2	4
April 2007-1	4	1	4	5	1	4
April 2007-2	5	5	5	5	2	4
May 2007-1	5	5	6	6	5	4
May 2007-2	5	5	6	6	5	4
June 2007-1	5	5	5	6	5	4
July 2007-1	5	5	5	6	5	4
July 2007-2	5	5	5	3	4	4
August 2007-1	5	5	4	3	4	3
August 2007-2	5	5	4	3	4	2
Sep. 2007-1	5	5	3	3	3	2
Sep. 2007-2	5	5	4	3	4	2

11.2. Coho Salmon (*Oncorhynchus kisutch*)

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During fall 2006, 47 adult coho were counted entering the mouth of the Shasta River (CDFG unpublished data). Due to low numbers of returning adults, low juveniles counts were expected in the Shasta River. We observed juvenile coho on the Nelson Ranch during spring and early summer when visibility was good and water temperatures were relatively cool. We observed schools of 0+ and 1+ coho in a single backwater and LWD habitat in April and May 2007. Juvenile coho were often observed in schools of five to 15 individuals. Common features in the habitats where coho were observed were relatively deep water and the presence of woody debris. Often times, coho mixed with schools of juvenile steelhead and Chinook. When water temperatures warmed and stage dropped in mid-May, coho observations on the Nelson Ranch declined (Figure 41). A single coho was observed in a backwater habitat in June and early July. After 3 July, no coho were observed on the Nelson Ranch. The increase in temperature and decrease in water stage coincided with peak out migration at the mouth of the Shasta River (CDFG personal communication). Mean weekly maximum temperatures (MWMT) over 18°C (64.5°F) began in early April and remained over 18°C (64.5°F) for most of the summer through mid-September (Figure 42). Welsh et al. (2001) found that in the Mattole River watershed, streams with MWMT's greater than 18°C (64.5°F) contained no coho salmon during summer, while all streams sampled with MWMT's less than 16.3°C (61.3°F) contained coho during summer. Productivity within the Shasta River likely increases the maximum water temperature that coho may rear, but it is unknown what the maximum temperature is and how coho respond in the unique high productivity-elevated temperature conditions found in the Shasta River. Future studies on coho and habitat utilization should focus on large-scale seasonal movements and how water temperature affects movement between habitats longitudinally along the Shasta River.

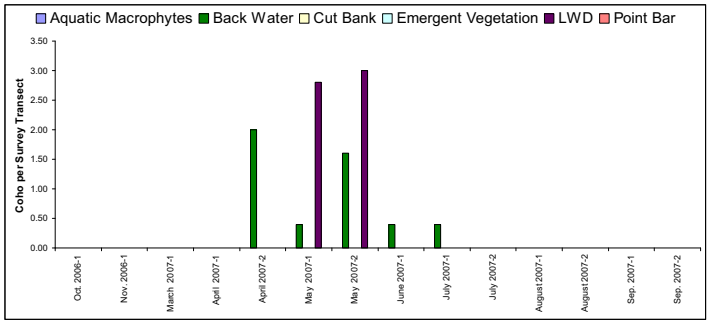

Figure 41. Juvenile coho salmon observed in various habitats during snorkel surveys on the Nelson Ranch. After water temperatures warmed in May, very few coho were observed along the Nelson Ranch. The June and July observations consisted of one fish each in a backwater habitat.

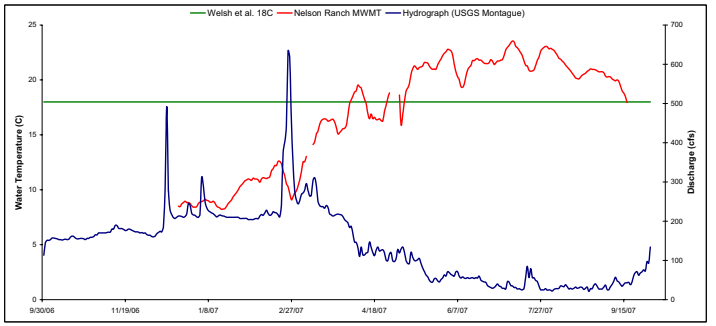

Figure 42. Mean weekly maximum temperature (MWMT) is from the upstream property boundary of the Nelson Ranch, with the 18°C (64.5°F) coho threshold line derived from Welsh et al. (2001). Hydrograph is from USGS Montague gauge (11517000).

42-36 cont.

11.3. Coho Salmon Ecological Trap Conceptual Model

Due to low number of returning adult coho, insufficient observations were made during the 2006-07 season to present year-in-the-life conditions on the Nelson Ranch. However, the coho salmon life history in the Shasta River is presented herein and the ecological trap conceptualization is discussed. Coho salmon typically return to the Shasta River between November and January. Due to the timing of returning adult coho, accurate counts are often difficult to make due to high winter flows. CDFG has been conducting adult counts as conditions allowed since 2001 and run sizes ranged from a low of 46 in 2006 to a high of 373 in 2004 (CDFG unpublished data). Spawning and egg incubation occurs between December and March and juveniles emerge between February and April. Coho juveniles can have several different life history strategies that result in differences

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in rearing location and outmigration timing (Lastelle 2006). In the Shasta River juvenile coho exhibit two different life history strategies. One life history strategy is that after emergence coho rear in the Shasta until water temperatures increase, and then they leave the Shasta River and seek cooler temperatures downstream in the Klamath River, tributaries to the Klamath or the Klamath Estuary. The second life history strategy is remaining in the Shasta River throughout the summer and winter, and then emigrating the following spring. This second life history strategy is only available to fish born in the upper reaches where water temperatures remain relatively cool throughout the summer (see Ecological Trap discussion below).

Coho salmon in the greater Klamath River watershed have been reduced to such low population numbers that NOAA Fisheries has listed the population at "threatened" (NRC 2004). Coho populations in the Shasta River (a tributary to the Klamath) are very small and have been in decline for many years. A conceptual model that may help to explain the decline in coho populations is that the current flow regime and thermal conditions in the Shasta River acts as an "ecological trap" for the coho salmon life history. An ecological trap is a scenario that occurs when an animal preferentially chooses a habitat that ultimately reduces its survivability or reproductive success over a habitat of apparent similar quality where survivability and reproductive success are much higher (Robertson and Hutto 2006). The coho salmon life history strategy makes them more susceptible to anthropogenic ecological traps than other Pacific salmon species. Because juveniles rear for a year in rivers, they are more likely to perish prior to seaward migration due to anthropogenic alteration of the landscape than other salmon species that leave freshwater during their first year. To date there has been no described system in the literature where a fish population has been susceptible to an ecological trap. Identification of an ecological trap may help explain the cause of declining coho populations in the Shasta River and guide future management actions. Unless the underlying effects of the ecological trap conceptual model can be ameliorated, coho in the Shasta River have an increased risk of extinction over time.

Although data is sparse, it is hypothesized that the Shasta River, under current conditions, acts as an ecological trap for two life stages of coho salmon, returning adults and rearing juveniles. Adult coho returning to spawn in the Shasta River divide almost equally between two locations with suitable spawning habitat (B. Chesney, CDFG, personal communication 2006). One spawning area consists of the 7 km (4.3 mi) above the confluence with the Klamath River in the canyon section of the river. The other spawning area is 55 km (34 mi) above the Klamath confluence near the Big Springs complex (Ricker 1997). During late fall and winter when adults return, there is little difference in habitat quality between the two spawning areas. It is not until mid-spring and into summer that large differences in juvenile rearing habitat quality exist between the two locations. The primary degradation of habitat is seasonal elevated water temperatures, which are the result of the region's Mediterranean climate, geographic location, and historical and current land and water use practices (NRC 2004, Watercourse 2003a)

42-36 cont.

One element of the ecological trap for adult coho salmon is the lack of environmental cues during winter about future summer conditions, i.e., where their progeny will rear, this applies to the population that spawns in the Shasta River canyon. During summer, temperatures in the canyon are lethal for juvenile coho salmon (Watercourse 2003b, G. Stutzer USFWS unpublished data 2007). The progeny of adult coho that spawn in the canyon cannot migrate upstream to relatively cool water reaches due to the considerable distance (48 km (30 mi)), steep river sections, and other barriers (e.g., flashboard dams installed for irrigation). This limits the options for juvenile coho hatched in the canyon to outmigration into the Klamath River. Unfortunately, mainstem conditions during summer in the Klamath River are not much better for rearing (e.g., elevated water temperatures, disease) than those found in the lower Shasta River. There are areas where thermal refugia are present in the Klamath, but those areas are small and competition is high between coho and other more competitive juvenile salmonid species (Sutton et al. 2007, NRC 2004). What causes the ecological trap for adult coho that choose to spawn in the Shasta River Canyon is reduced fitness, due to low survivability of their progeny. Because coho salmon are semelparous, this does not allow for experience-based learning behavior, which might act as a rescue from the ecological trap and promote future spawning in habitats that result in a higher fitness (Kokko and Sutherland 2001).

The Shasta River acts an ecological trap for juvenile coho that emerge from the gravels in the Upper Shasta River above the Nelson Ranch during late winter and early spring. After emergence, juvenile fish distribute downstream from upstream spawning locations. During this time of year, rearing conditions are good throughout the entire length of the Shasta River. Juvenile coho move downstream, leaving habitat that will provide good potential for survivability in summer, and entering habitat that will provide very low survivability during summer. Similar to adult coho choosing spawning locations in the Shasta River, there are no environmental cues for juvenile coho to discourage distribution into rearing areas that in a few of months will experience elevated water temperatures. As water temperature warms downstream, upstream migration opportunities are largely unavailable due to water and land use practices reducing baseflow and associated loss of habitat, increasing water temperatures, barriers (e.g., flashboard dams), and other factors. As with juvenile coho that emerge in the canyon reach, these fish must leave the Shasta River and enter the Klamath River. Thus, coho that migrate downstream early in the year will suffer from lower survivability and thus a reduced fitness compared to fish that remain in upstream rearing habitat where temperatures remain relatively cool year-round. Due to current low population numbers, density dependence is not an issue in upstream locations where potential over summer rearing habitat is available.

Currently, much of the Shasta River does not provide suitable over-summering water temperatures for juvenile coho with the exception of isolated reaches above the Nelson Ranch. If the ecological trap hypothesis holds unless upper reaches of the Shasta River are managed for cold water maintenance during summer periods and restored to suitable over-summering habitat, then coho face an increasing risk of extirpation from the Shasta River over time. If year-round cold water habitat is restored in the Shasta River, then the negative effects of the ecological trap could be minimized to the point where coho populations could potentially stabilize and even increase through time.

42-36 cont.

11.4. Chinook Salmon (*Oncorhynchus tshawytscha*)

Historically, the Shasta River was one of the most productive salmon streams in California, with runs of Chinook salmon over 80,000 returning adults in the 1930's (NRC 2004). Since the closure of Dwinnell dam in 1928, Chinook salmon numbers have decreased dramatically (Figure 43). Between 2001 and 2006, Chinook returns averaged 4,566 adults per year with a high of 11,093 and a low of 978 (CDFG unpublished data). A reduction in spawning habitat is likely one of the primary reasons for the decline of Chinook populations over time. Closure of Dwinnell Dam blocked 33 percent of river but likely, a much higher percentage of the high-quality spawning habitat (Wales 1951). Consctuction of Dwinnell Dam not only cut off access to spawning habitat upstream of the dam, but altered habitat conditions downstream. Through time, the combination of lower summer flows and less frequent and smaller magnitude peak winter flows, resulted in sedimentation of fine material within the gravels and encroachment of riparian vegetation. This reduction in stream size resulted in a considerable loss of spawning habitat in the reach from Dwinnell Dam to Big Springs Creek. It is possible that the gradual loss of spawning habitat below Dwinnell Dam allowed Chinook salmon populations to be maintained at relatively high numbers for several years after closure of Dwinnell, but ultimately the combined loss of both upstream and downstream habitat leads to numbers more consistent with current conditions. Recent spawning habitat surveys have shown that from Dwinnell Dam to the mouth, the quality of spawning gravels is poor (Ricker 1997). Currently little spawning takes place on the Nelson Ranch. During WY 2007, eight redds were observed along the Nelson reach. The limited spawning activity is due to the lack of high quality spawning gravels. Low gradient, lack of upstream gravel recruitment, and abundance of fine sediments within the Nelson reach limits suitable spawning gravels.

42-36 cont.

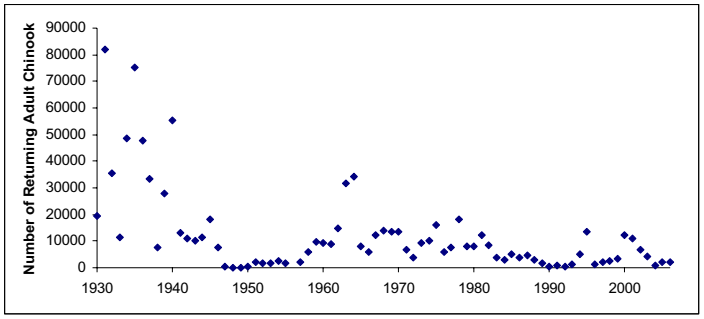

Figure 43. Number of adult Chinook entering the Shasta River between 1930 and 2006. Note the dramatic decline from the early 1930's to the mid 1940's. Data source KRISWEB and CDFG unpublished data.

Fall: October - November

Adult Chinook salmon returned to the Nelson Ranch starting in October as irrigation diversions were terminated and flashboard dams were removed following the end of

irrigation season on 1 October. During October and November, adult female Chinook find suitable locations to dig redds. During WY 2007, we observed eight Chinook redds on the Nelson Ranch, all of which were in the upper two miles of the reach. After Chinook dig redds and spawn, they die soon there after, providing nutrients to the aquatic and terrestrial ecosystems.

Atypical behavior during spawning was observed during a reconnaissance dive on 4 October 2006 near the top of the property. Specifically, juvenile Chinook salmon were observed in a Chinook redd with an adult female and two adult males present. Juvenile Chinook held immediately behind the female and were occasionally hit with her tail as she was digging, this was similar behavior to mature male parr observed in the Salmon River, Idaho (Gebhards 1960). CDFG personal operating the screw trap immediately downstream of where the juvenile Chinook were observed noted that juvenile Chinook caught in the trap were sexually mature. Upon further otolith analysis, these mature juvenile Chinook salmon were found to be less than a year old (J. Reader, CDFG personal communication). This is the first time that mature male parr have been found in the Shasta River, but mature male parr have been documented in the Fall Creek hatchery, on the Klamath River above Iron Gate dam in the 1950's prior to the construction of Iron Gate dam in 1961 (Robertson 1957). Robertson (1957) also found that mature parr that spawned did not die after spawning and produced viable progeny when crossed with an adult female. Mature male parr are very rare in nature and are most often found in spring-run Chinook salmon that are born earlier than fall-run fish and thus are able to grow more rapidly and mature at an early age (Larsen et al. 2004). It is unknown how mature parr contribute to the population in the Shasta River or Klamath Basin in general, but the life history strategy may help the population hedge bets against poor migratory conditions downstream. More study is needed to determine what impact mature parr have in the overall Chinook population in the Shasta River.

42-36 cont.

Winter: December – March

As with late October and November, turbidity in the Shasta River was high throughout the winter season and did not allow for snorkel surveys. From December through February the Chinook eggs deposited in the gravels during October and November begin to mature and emerge from the gravels as alevins (sac fry). The alevins and fry seek slow moving water with cover until they are large enough to inhabit deeper faster habitats. During March, the river began to clear and snorkel surveys were again possible. In March, when snorkel surveys resumed, we observed juvenile Chinook in point bar, cut-bank and emergent vegetation habitat types (Figure 44). During this time, juvenile Chinook were the largest of the juvenile salmonids observed. The Chinook were often in habitats where relatively high velocities were observed.

Spring: April - June

As irrigation season began, water stage throughout the reach fell and juvenile Chinook left shallow emergent vegetation habitat and took residence primarily in point bar, backwater, and LWD habitats (Figure 44). These habitats provide deeper water, cover, and were close to higher velocities regions. A second reduction in water took place in May when the discharge was reduced from 131 cfs (3.71 cms) to 86 cfs (2.44 cms) at the

top of the Nelson reach. After this reduction in flow, we observed no schools of juvenile Chinook. It appears that as water temperature warms and river stage drops, most juvenile Chinook follow a typical fall-run ocean type life history and leave the Shasta River for the ocean. A small number of juvenile Chinook over-summer in the Shasta River, thus exhibiting a stream type life history.

Summer: July - September

Throughout the summer sampling season, juvenile Chinook were observed on several occasions. Juvenile Chinook were generally found in deep mid-channel aquatic macrophytes or on the edge of backwater habitat where velocities were relatively high. Juvenile Chinook observed during summer were often found mixed with schools of juvenile steelhead. Chinook observed during summer months were fish that could develop into mature male parr in fall or will leave for the ocean as 1+ smolts. Over wintering habitat for 1+ Chinook is not known at this time in the Shasta River, because of difficulties in winter surveying and relatively low numbers that leave as 1+ smolts.

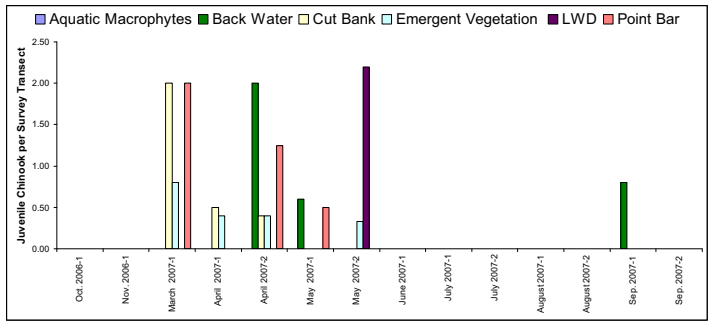

Figure 44. Juvenile Chinook salmon observed in various habitats during snorkel surveys on the Nelson Ranch. The majority of juvenile Chinook left by June, but several juveniles were observed to over-summer along the Nelson Ranch.

11.5. Steelhead (*Oncorhnychus mykiss*)

Steelhead trout are the most abundant salmonid on the Nelson Ranch. Steelhead reside in the river year-round and have high water temperature tolerances relative to coho salmon, the other salmonid the utilize the Shasta River throughout the year (Richter and Kolmes 2005). We observed several age classes of steelhead on the Nelson Ranch throughout the year. The most common age class was 0+ fry (fry that emerged the previous spring). 0+ steelhead were first observed in March, when the water first clears enough to begin snorkel surveys, and were observed through October (Figure 45). One year old and older steelhead were observed from June through September (Figure 46).

Fall: October - November

Steelhead have a close relationship with other species of anadromous fish in certain rivers and in the Shasta River the presence of fall-run Chinook salmon may play an important

42-36 cont.

role in the steelhead lifecycle. During the beginning of October, adult Chinook salmon returned to the Shasta River. Returning salmon provide a food source for juvenile steelhead in the form of dislodged invertebrates from the digging of the redd and from eggs that do not get buried and thus, become entrained in the drift. Salmon carcasses likely provide an additional food source in the form of direct feeding on the flesh and from invertebrates feeding on the salmon flesh (Bilby et al. 1998). During snorkel surveys in early October, schools of 0+ steelhead were observed feeding immediately behind the redds where female salmon were digging. Despite seeing 0+ steelhead behind salmon redds in October, we observed very few steelhead in the survey transects. This was consistent with a declining trend that was observed throughout the summer (Figure 45) and discussed in more detail below.

After the first week of October, turbidity in the river made snorkel surveys difficult. Several attempts were made at snorkeling during the winter season, but turbidity was too high to observe fish. Over-wintering habitat along the Nelson Ranch is an important element that has not been quantified at this time. To determine over-wintering habitat a more detailed study using radio telemetry, PIT tags, or other method will likely need to be implemented.

Winter: December – March

Adult Winter-run steelhead enter the river and spawn during December through March. As with late October and November, turbidity in the Shasta River was high throughout the winter season. During March, the river began to clear and snorkel surveys were again possible. During March, steelhead recently emerged from the gravels and were found in shallow water edge habitat along the Nelson Ranch. Juvenile steelhead were found during March in shallow water habitats associated with EV, CB, PB, and LWD. The common features of all of the shallow water habitats utilized by steelhead fry were that there was refuge from high velocities and protection from predators.

Spring: April - June

Irrigation season begins on 1 April, thus habitat in the Shasta River changes dramatically for steelhead fry, as well as other species. On 1 April, river stage dropped dramatically, reducing the amount of shallow-water habitat available (Figure 2). As river stage dropped, steelhead fry were displaced from many shallow-water habitats and were forced to find different, newly available shallow-water habitats in other locations.

As the spring season progressed, water temperatures warmed and aquatic macrophytes began to grow in the main channel. This provided an increase in habitat available to the growing steelhead fry. Point bar habitat is a transitional habitat with variable depth and often contained aquatic macrophytes, emergent vegetation, and woody debris in small patches. Point bar habitat was the most densely populated during May when steelhead fry were too large to utilize the remaining shallow-water habitat, yet not large enough to utilize mid-channel habitat (Figure 45). By June, aquatic macrophytes had become well established and juvenile steelhead had begun to utilize this productive and bioenergetically favorable habitat. Aquatic macrophytes provide a velocity refuge for

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steelhead and a substrate for aquatic invertebrates, the primary food source for juvenile steelhead.

During June, several pods of adult summer-run steelhead were observed in survey reaches and while walking along the river. These fish appeared to be bright from the ocean and not resident rainbow trout. They were often observed feeding on an abundant hatch of *Hexagenia* mayflies, which hatched in large numbers from May through July. Summer/Spring-run steelhead are likely to be adversely affected by high water temperatures and barriers that limit migration throughout the Shasta River.

Summer: July - September

During summer along the Nelson Ranch, the dominant aquatic habitat feature is aquatic macrophytes. Aquatic macrophytes displaced certain other habitat types (emergent vegetation and backwaters), but provided mid-channel habitat that the now larger juvenile steelhead occupy. The majority of steelhead observed between July and September were in mid-channel aquatic macrophyte habitat (Figure 45). Another trend observed in juvenile steelhead on the Nelson Ranch was declining numbers from July through September. We currently do not know why numbers declined throughout the summer season. Possible explanations are migration to different reaches of the river, natural mortality, or some other unknown reason. Additional study is needed to determine large-scale movement of the steelhead in the Shasta River.

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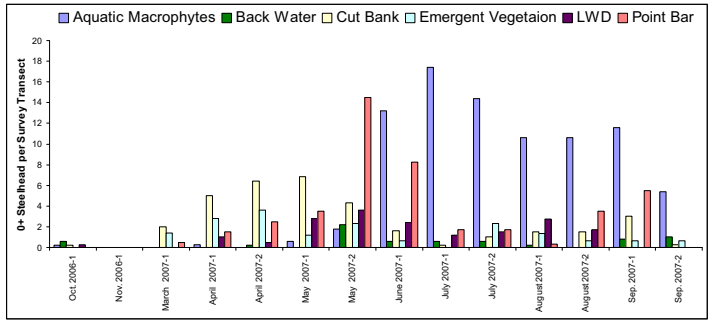

Figure 45. Young of the year steelhead observed in various habitats during snorkel surveys on the Nelson Ranch. Early in the season, newly emerged steelhead utilized protected cut bank and emergent vegetation habitats. As flows dropped and the steelhead grew, they utilized transitional point bar habitat then primarily utilized mid-channel aquatic macrophyte throughout the summer.

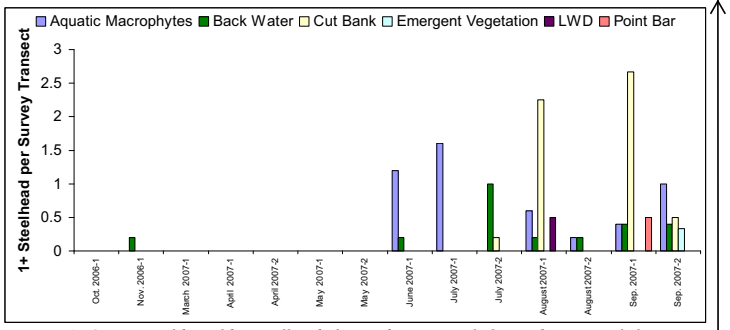

Figure 46. One-year-old or older steelhead observed in various habitats during snorkel surveys on the Nelson Ranch. 1+ steelhead are found primarily in deeper water habitats or locations where food is abundant (aquatic macrophytes).

11.6. Summary

The Nelson Ranch provides unique and potentially very high quality habitat for rearing juvenile salmonids. Of the many available habitats, seasonal growth of aquatic macrophytes creates bioenergetically favorable habitat that provides a substrate for aquatic macroinvertebrates (juvenile salmonid food source) and a velocity refuge for rearing salmonids during summer. For salmonids that have higher temperature tolerances (steelhead and Chinook), growth rates are high and in the case of male Chinook allows for sexual maturation during the first year after hatching. Juvenile coho were observed in deep water habitats where woody debris was present during late spring and early summer, but were not observed as temperatures increased. Despite the abundance of available habitat, water temperatures along the Nelson Ranch are a limiting factor for juvenile coho salmon rearing along the Nelson Ranch. These findings suggest that until water temperature conditions are reduced (e.g., through management actions), juvenile coho will be unable to over summer under current conditions on the Nelson Ranch or other locations downstream with the possible exception of currently unknown locations of thermal refugia.

42-36 cont.

12. Report Summary

The Shasta River on the Nelson Ranch is a highly productive system with significant potential for restoration of salmonid habitat. The unique hydrology and abundant aquatic macrophytes provide various habitats for fishes during all life stages. Currently the primary limiting factor to salmonids on the Nelson Ranch is elevated water temperature. The quality and quantity of spawning habitat is also low. If water temperatures along the Nelson Ranch can be reduced (e.g., through management actions), then the abundant habitat and high natural productivity could support relatively large populations of salmonids, including the federally- and state-listed coho salmon

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42-36 cont.

Comment Letter 42

From: T Connick [tdhc@sonic.net]
Sent: Tuesday, December 09, 2008 11:55 AM
To: SHASTADEIR@dfg.ca.gov
Cc: Garayalde SVRCD
Subject: Comments - draft EIR

Shasta River Watershed-wide Permitting Program -- Comments

December 9, 2008
I have several concerns and comments relating to the Permitting Program and its implementation.
To that portion of the program addressing the Incidental Take Permits (ITPs):

1. Page B-17 D-14 Liability
    a. Why would the responsible party need to indemnify, and hold harmless the Department, its agents, officers, and employees from and against any Claim if they are fulfilling requirements mandated in the California Environmental Quality Act ("CEQA"), the California Endangered Species Act (CESA), or fulfilling the requirements mandated by the Fish and Game Code on behalf of the State? The scope of the work covered under the Watershed-wide permitting program should be no different than the work for an individual permit, so why is this language needed.

2. Page B-18 D-15 Liability
    a. If the Department is not endorsing or authorizing the projects as they have presented them in their documents what are they doing? Why are we doing it?

3. Page B-18 & 19 D-17 Access
    a. The Right of Entry Agreement Form (Exhibit 3) **was not included**.
    b. As far as I know the State has access to all waterways of the State and would not need and additional entry agreement.
    c. A liability issue arises if one needs to indemnify a landowner where a project site is located that is not owned by the diverter from the actions of the Department or of the SVRCD. How will this work? Who covers this liability? What if insurance companies refuse to write such a policy, or a policy at a reasonable cost, to cover the actions of a third party on property one does not own? Will the DFG and SVRCD have insurance to cover their action in this situation?
    d. What happens if the landowner where an historical project site has been located will not grant access to perform the new requirements mandated by this agreement (head gates, fish screens, fencing, riparian restoration, etc). This would seem to be a requirement the State will need to litigate if it is to enforce CESA or Fish and Game code section 1602 requirements. Can the State force a third party to participate by allowing construction on their property?

e. Will the SVRCD have insurance listing the participants as additionally insured under their policy?

The SVRCD's program was presented originally as a way to comply with the CESA and the 1602 requirements relating **only** to ITP requirements, but now has expanded to include California Environmental Quality Act ("CEQA").

4. What are the current "biological goals and objectives of the permit" at this time so a benchmark can be established to judge the effectiveness of the "Adaptive Management" model. The effectiveness of the fish restoration efforts and the impacts to the County and its communities.
5. Have the biological goals and objectives been depicted in a GIS format that is accessible for review and comment on line and in real time. What is the web site?
6. What will this watershed look like in; 1 year, 5 years, 10 years, and at the end to meet whatever this "Adaptive Management" model morphs into.
7. The agricultural community was marginalized again when it was stated that the impacts imposed by this environmental review and Incidental Take Permits (ITPs) were minimal because of other regulations. The impact to the agricultural community needs to be treated the same, and to the same extent, as it is for the fish – each new governmental regulation and requirement needs to be reviewed and assessed cumulatively – not separately.

The last time I sent comments addressing this permitting issue, a funny thing happened, only review comments that were approving of the project were posted on line and only ones received on the last day. Is this the Departments standard practice to post only comments that further their own objectives? It would appear that the process is not very transparent nor is it subject to legitimate concerns about the program implementation. If this is not the case where can ALL the comments be reviewed in real time as they are received and not selectively posted?

T Connick
tdhc@sonic.net

Comment Letter 44

Emmerson Investments, Inc.
21305 Slough Road
Weed CA 96094

December 9, 2008

Mr. Bob Williams
Department of Fish and Game
601 Locust Street
Redding, California 96001

Subject: Shasta River Watershed-wide Permitting Program DEIR

Dear Mr. Williams,

We are a landowner in the Shasta River watershed, with property bordering both the Shasta River below Dwinell Reservoir and Parks Creek. We also have a variety of water rights exercised by diverting water from both of these streams.

We understand and appreciate the problem of providing incidental take coverage to multiple water users to protect coho while they continue to use their land for agricultural production and open space conservation. Following are some comments and observations regarding the Draft Environmental Impact Report for the Shasta River Watershed-wide Permitting Program. 44-1

We commend your decision to use the current condition as a baseline for conducting the CEQA analysis rather than some past era.

Our most serious concern is that you are attempting to require Agricultural Operators into participating in a program re-defining their adjudicated water rights. The conditions for a Streambed Alteration Agreement (SAA) are designed to avoid take, so an Agricultural Operator may not need an "incidental take permit" (ITP). Under this draft Watershed Management Program, an ITP becomes a requirement for participation in the Program. Several major differences exist between the conditions for an ITP and a SAA. For instance, only under the ITP 1) may a sub-permittee lose their water if it is perceived that fish may be stranded 2) will a sub-permittee have to be part of a Contingency Plan [to augment stream flows] for Dry and Critically-Dry Water Years 3) must a sub-permittee grant access to DFG personnel for research and monitoring, not just compliance inspections. 44-2

By signing up for the Program, sub-permittees must forego the use of arbitration to settle a disagreement with DFG on the conditions of a SAA. We're unclear as to the necessity for this. If an Agricultural Operator elects to obtain a SAA outside the Program for one diversion, have they lost the opportunity to participate in the Program for all other SAAs they may need? 44-3

Many of the measures in the ITP and the Master List of Terms and Conditions (MLTC) for SAAs are, in our view, recovery standards even though you list them under avoidance and minimization obligations. DFG has stated that the Coho Recovery Strategy was fundamental in establishing the measures and MLTC. The California Supreme Court has determined that "the landowner is only required to mitigate its own impacts on the species" ([EPIC v. CDF 44 Cal.4th 459 (2008)] at page 511). For example, "All sub-permittees shall allow riparian revegetation planting and exclusion fencing to occur along designated stream reaches located on their property," (Draft ITP Section E.4); "The grazing management plan...shall explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat," (Draft ITP Section E.5); "No later than five years after the effective date of their sub-permit all sub-permittees shall replace their push-up dams [placed and operated under approved BMPs] with vortex weirs or some other diversion method," (Draft ITP Section F.3); "In areas where the slopes of streambanks on a sub-permittee's property have become unstable due to actions by the sub-permittee and restabilization measures are necessary to re-establish vegetation, the sub-permittee shall implement bioengineered bank stabilization techniques to prevent additional erosion from occurring," (Draft ITP Section H.) What is the process for determining culpability? 44-4

We're also concerned that the Program, as presented, sets an extremely ambitious and difficult to meet timeframe for accomplishing changes in how water, land, and livestock are managed in the watershed. Sub-permittees such as ourselves, will be required to commit a *very significant* amount of time away from our other responsibilities (including preparing our SAA notifications) to protect our interests in meetings where the numerous action plans and priority lists are created as well as to participate in educational programs. 44-5

We question whether the Department is the appropriate authority to determine such issues as whether a sub-permittee is "using [water] in accordance with a valid water right" (Draft ITP Section XV.A.2), using a reliable means of verifying water use (IBID)

The DEIR does not address the impacts from the number of new pumps and non-electric motors that may be required for tailwater management. 44-6

The DEIR inadequately describes the impact to water quantity, and therefore also quality, from misguided "upslope forest management" on the National Forest lands that has allowed an overgrowth of trees to draw off water that would otherwise become part of the streamflow in the Shasta River and its tributaries. 44-7

In addition, the scope of work being proposed for the SVRCD and Agricultural Operators is going to be expensive. You are asking people to sign up hoping that public-money grants and other outside money for the actions in the Program will be available to share the cost. However, if the funds don't materialize, the individual sub-permittees and the SVRCD (subsidized by fees from sub-permittees) are still liable and "solely responsible for any costs" incurred to implement the measures itemized. Any number or combination of projects could conceivably be part of an individual sub-permit. The more numerous the projects the more the timeline plays in to increase the impact of the cost. It may not 44-8

be realistic to assume that the current economic condition will generate the same level of funding that we've witnessed in the past few years. 44-8 cont.

We suggest that there should be some mechanism to use the CEQA analysis represented by this DEIR to expedite the CEQA analysis of SAAs even if the applicant is not signed up for or has "opted out of" the Program. 44-9

We have a keen interest in seeing healthy, productive watersheds in the Shasta and Scott Rivers both for fisheries and livestock grazing. We are concerned that many landowners will not have the resources or time to meet the requirements of the draft ITP. We look forward to continuing discussions with you in the near future to better refine this approach and meet all our mutual goals. 44-10

Sincerely,

Red

A.A. "Red" Emmerson

December 2, 2008

Bob Williams, Staff Environmental Scientist
Conservation Planning
California Department of Fish and Game
Northern California – North Coast Region
601 Locust Street
Redding, California 96001

California Department of Fish and Game

RE: The Scott & Shasta EIR & ITP

In the Shasta EIR on page 31 of Chapter 4 it says "The Program would therefore not contribute to loss of economic viability of farming and ranching enterprises,..." If D.F.+G. determines that coho are at risk in an area of the river directly below a water users diversion, then that user must stop diverting (all or part) his water. It does not say for how long, and it does not take into account the priority of this right. In our situation if we were unable to irrigate for even a relative short period of time (1 to 2 weeks) this would have a huge economic impact to our operation. 45-1

In appendix B, under E. Access it says that if my project site is located on another 45-2

Sincerely,

Bruce Fiock
Printed Name

Address

City

person's propoty, then I am to have that landowner give D.F.+G. permission to access the project site using a Right of Entry Agreement Form. this form was attached to Exhibit 3. Where is this? What happens if the landowners refuses to sign the Right of Entry Agreement Form?

45-2 cont.

My last question is can a water user sign the S.A.A. and not sign up for the I.T.P., or must they sign both?

45-3

Sincerely
Bruce E. Fiock

Bruce E. Fiock
1615 Oberlin Rd
Yreka, CA. 96097

845 East Los Angeles Avenue
805-526-0917
805-526-9809 fax

Novy Ranches

Fax

To: Mr. Bob Williams/Dept. of Fish and Game **From:** Dr. Lowell Novy

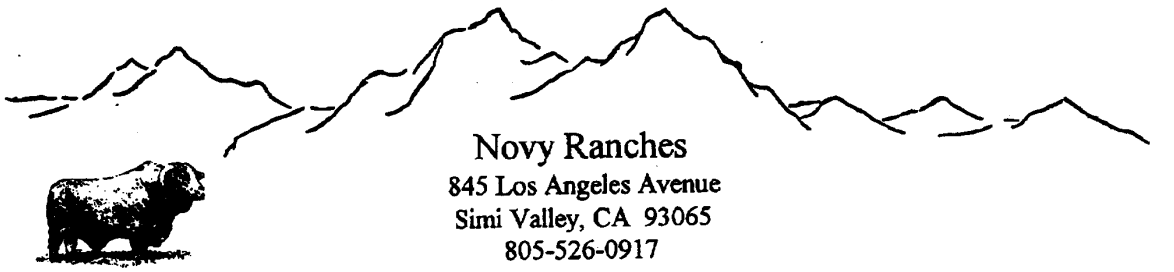
Fax: 530-225-2381 **Pages:** 19

Phone: 530-225-2300 **Date:** 12/9/2008

Re: Draft Environmental Impact Report (DEIR) **CC:**

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

• **Comments:**



Novy Ranches
845 Los Angeles Avenue
Simi Valley, CA 93065
805-526-0917

December 5, 2008

Mr. Bob Williams
Department of Fish and Game
601 Locust Street
Redding, CA 96001

RE: **Shasta Watershed-Wide Permitting Program Draft Environmental Impact Report**

Dear Mr. Williams:

My name is Lowell Novy. I provide these comments on the Shasta River Watershed-Wide Permitting Program Draft Environmental Impact Repost (DEIR) issued by the Department of Fish and Game on October 10, 2008. I am concerned that the DEIR does not adequately address the direct, indirect and cumulative impacts of the proposed action on the water rights, the loss of water quality, the loss of in stream water flow in the Shasta River and it lacks a thorough study and policy statement pertaining to groundwater mining above the Big Springs Complex. I support the aim of efficiency to assist the increase in stream flow and water quality of the Shasta River. However, I am concerned that the program's present approach to groundwater will prevent or limit the effectiveness of the program. The DEIR acknowledges, but does not mitigate the potential impact of increased groundwater pumping (se DEIR, p. 3.2-42 – 3.2-43). Rather than propose additional investigation and analysis, the DEIR cites the uncertainty of the relationship between groundwater and surface water as the basis, at least in part, of finding that the potential impact is insignificant and so does not require mitigation (see id). This is error. There is existing information which shows that increased groundwater pumping diminishes surface water. Thus, while the program may adequately address surface water diversions, it does not adequately address the issue of increased groundwater pumping impairing surface waters, leaving a significant potential impact unaddressed. I request that the Department of Fish and Game (DFG) undertake due diligence to investigate the relationship between groundwater and surface water in the basin, and propose measures adequate to mitigate the potential for increased groundwater pumping to impair surface water. I also request that the DFG consider a modified Instream Flow Alternative which includes monitoring and reporting of groundwater pumping in locations where there is potential nexus with surface water. This will provide additional information regarding pumping, the full extent of which is not known, and help regulators better understand the relationship between groundwater and surface water.

46-1

46-2

46-3

I am a landowner (cattle rancher) located on the reach of the Shasta River between Big Springs and Highway A12. I have both pre-1914 and adjudicated water rights from the Shasta River. I have ranched this land since 1976.

As any of the old timers can testify, the yesteryears scene at Big Springs Lake was extraordinary. In the late 1970's, one could stop near Big Springs and watch the pipe enclosed artesians flow constantly approximately 12 inches above the level of their casings. This flow seemed relatively constant all year long. In recent years, I have never seen any of the cased artesians spill above their casings. These waters were and are a major source of flow for the Shasta River. 46-4

There have been major changes in the volume of water produced from the aquifers in the Big Springs area.

The gauging of the water from Big Springs and Little Springs Lakes has changed from approximately 100 cfs in earlier years to very low cfs during some summer days at the height of irrigation season. The reduction of these cold waters (56-58 degrees F) which used to be available for the Shasta River has resulted in warmer water temperature and lower flow rates in the Shasta River. 46-5

The historic water production by the Big Springs Creek and Spring Complex is discussed in the Technical Memorandum to Matt St. John of the North Coast Regional Water Quality Control Board from Mike Deas, Watercourse Engineering, Inc. dated Feb. 1, 2006.

In this technical memorandum, it further states that "Big Springs Irrigation District no longer pumps water from Big Springs Lake, but rather has drilled water supply wells upgradient, and pumps from groundwater. Review of Watermaster Service records indicate that BSID stopped withdrawing water directly from the lake around 1983. In addition, there are numerous other smaller wells and springs utilized for irrigation in this area that could reasonably be presumed to be drawing on water that would otherwise contribute to the Big Springs complex. These include the Basey Wells (or Pacy Wells), periodically used by the Montague Water Conservation District to supplement water from the Dwinnell Reservoir and the subject of court action by the users of Big Springs Lake. An agreement was reached in 1986 between E. J. Louie, A.H. Newton Jr., and the Montague Water Conservation District wherein the parties agreed that when the flows of Big Springs recede from 17.5 cfs to 10.0 cfs, Montague Conservation District would do the following: 46-6

- Turn off the Basey pumps until the flow of Big Springs was 17.5 cfs or pay A.H. Newton, Jr. the additional power costs to use his own pumps.

- If flows of Big Springs fall below 10.0 cfs, Montague Water Conservation District will shut off Basey Pumps until flow returns above 10.0 cfs. (Shasta Valley Watermaster Service records, 1987).

These statements seem to imply that groundwater produced upgrade of Big Springs and the water produced by the Big Springs complex which feed the Shasta river are directly connected.

This then implies that future groundwater development above Big Springs will continually reduce the flow of water within the Shasta River which will eventually endanger the present water rights holders. Even now, lower priority water rights owners have been withheld from their adjudicated volumes due to the lessened in stream flows in the Shasta River.

It is my firm belief that if there is continued loss of stream flow caused by groundwater pumping above Big Springs, all water rights on the Shasta River will be in jeopardy.

If the Shasta River is to be returned to its historical health, it is imperative to have groundwater policy that will return the flow of waters to the Big Springs complex to its historical levels. 46-6 cont.

Attached is a copy of the Technical Memorandum.

SPECIFIC DEIR STATEMENTS FOLLOWED BY COMMENTS.

S-6 / Instream Flow Alternatives

Comments:

Nowhere does this section include an alternative groundwater mining or a comprehensive groundwater analysis for the groundwater policy. 46-7

S-8 / Environmentally Superior Alternatives

Comments:

No evaluation or comparisons of alternatives can be complete without a comprehensive groundwater study and policy. This study should include potential climate change due to the present global warming. 46-8

Chapter 2 – Project Description (2-1 Footnote 1)

The program defines "Agricultural Operator" as any natural person or any partnership, corporations, limited liability company, trust, or other type of association or any public agency as defined in CEQA Guidelines 15379, who diverts water from a stream by means of an active diversion in the Program Area for an agricultural purpose, or is involved in an agricultural operation on property in the Program Area through which or adjacent to which a stream flows. The Program defines "active diversion" as a surface water diversion that has been operated at least one out of the last five years. 46-9

Comments:

Since it has been stated that groundwater production reduces the in stream flow of water in the Shasta River, it is my opinion that active diversion should include groundwater production affecting the Big Springs Complex. This DEIR must analyze a policy that includes a comprehensive groundwater plan

3.2 – 3

Water from melted snow percolates down through porous volcanic rocks, follows the gradient and flows subsurface toward the Shasta River Valley (Shasta Valley), and eventually manifests as springs and seeps somewhere on the valley margins or floors. As such, Mount Shasta is a constant source of surface and spring flow to the Shasta River and its eastern tributaries. 46-10

Comments:

This paragraph states that most of the water feeding the Shasta River comes to the Shasta River via underground aquifers. No DEIR can be complete without a thorough study and a comprehensive groundwater policy.

3.2 – 8

Groundwater dynamics exert a strong influence on the volume and quality of surface flow in the Shasta River and its tributaries.

"For examples, historic flows at the mouth of Big Springs Creek were apparently on the order of 100 to 120 cfs and were largely unaffected by climate variability (SVRCD, 2005)."

Comments:

This DEIR must be analyzed for an alternative that includes a comprehensive groundwater policy.

3.2 – 12

"Water diversion, primarily for agricultural purposes have led to decreased surface flows in the spring and summer months, thereby reducing the amount of in stream habitat and locally increasing ambient surface water temperatures."

46-10 cont.

Comments:

Prior to the extensive groundwater mining in the 1980's, stream flow and ambient surface water temperatures were adequate to support a healthy river system. This supports the relationship between groundwater pumping and impairment of surface water. Thus, the DEIR should address and mitigate the potential significant impacts of groundwater pumping on surface waters. It should require monitoring and reporting and a framework for developing a comprehensive groundwater policy.

3.2-19

The exceptionally high productivity of the aquifers and the large recharge area make groundwater one of the most important and resilient resources in the Shasta Valley. However, groundwater was not part of the adjudication of water rights in the Program Area, and little is known about its influence on surface flows (NRC, 2004). Most of the surface water resources in the Program Area are fully appropriated and adjudicated. As a result, those who seek additional water or domestic use must rely on groundwater. According to information summarized by DWR (1994), annual groundwater well installation peaked dramatically in the 1970's, leveled off in the 1980's, and has continued at a relatively steady rate up to the present. Approximately 17.9 percent of the irrigated acreage in the Program Area uses groundwater exclusively, the remaining irrigated acreage uses either surface water exclusively, the remaining irrigated acreage uses either surface water exclusively, or some combination of groundwater and surface water (DWR, 2006).

Comments:

No DEIR can be complete without an in depth study of groundwater production and a comprehensive groundwater policy.

3.2 – 19

The causes of high temperature include chronic low flow due to agriculture diversions, lack of riparian shading, and the addition of warm irrigation tailwater.

46-10 cont.

Comment:

This statement is misleading. The only major change on the Shasta River Reach above A12 during the last 30 years is the increased groundwater production above Big Springs. This groundwater production has resulted in the loss of 40-100 cfs of water at the 56-58 degree F. The temperature of the remaining in stream Shasta River water has been warmed.

No discussions on water quality in the Shasta River can be worthwhile without a comprehensive groundwater analyses and policy.

3.2 – 25

Eastern Volcanic Area and Big Springs Creek

The eastern volcanic area sub-watershed refers to the vast area to the east of the Shasta River between the upper Shasta River watershed and the Little Shasta River watershed. The geology of this area is dominated by recent lava (mainly basalt) flows emanating from Mount Shasta, and to a lesser degree by older (i.e., late Pleistocene and Tertiary) lava flows in its northern portion. Most of the eastern streams that cross the lava flows of the high Cascades normally do not maintain surface flow as far west as Shasta Valley, owing to the porous nature of the lava (Mack, 1960). Concerning the Program, the dominant hydrologic feature o this sub-watershed is Big Springs in the Shasta River downstream of Big Springs Creek (NCRWQCB, 2006a).

As summarized by SVRCD (2005):

46-11

Big Springs Creek (along with its only tributary, Little Springs Creek) presents the most visibly important component of the entire Shasta River as its major source of cold water in summer. While less visible, the entire area around Big Springs, the lower end of Parks Creek, and for several miles upstream/downstream of the Big Springs Creek confluence the area is dotted with springs, named and unnamed, that collectively create nearly all the in stream flow of the Shasta in the summer. In this area ground water apparently originating from the porous volcanic slopes of Mount Shasta, Whaleback and Herd Peak encounter the relatively impermeable volcanic debris flow deposits, and are forced to surface, discharging at approximately 56-58 degree F (13-14 degree C) year round. In addition to high quality water, gravels are also located in the large patches in this portion of the reach, and present substantial spawning areas.

Historically flows at the mouth of Big Springs Creek were apparently on the order of 100 to 120 cfs and were largely unaffected by climatic variability. Unfortunately, lack of access to this entire area for the scientific investigation severely limits the ability to report directly on current conditions.

Comments:

Again, it seems apparent that there can be no satisfactory DEIR without a comprehensive study of groundwater production that leads to a comprehensive groundwater policy.

3.2 – 27

The objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of the nation's water.

46-11 cont.

Comments:

As stated previously, there is evidence in the record which shows that groundwater pumping diminishes surface waters. Reduced instream flows impair the designated, beneficial uses of affected waters, including coldwater fish habitat and spawning. The DEIR does not propose to mitigate the potential impact of increased groundwater pumping on surface flows, nor does it propose to investigate the relationship between groundwater and surface water or to require groundwater monitoring and reporting. As such, the DEIR does not provide adequate basis to assure the program will comply with the CWA.

3.2 – 34

Applicable Local/County Regulations

Siskiyou County General Plan

The Conservation Element of the Siskiyou General Plan (Siskiyou County, 1973) includes some general objectives relating to hydrology, water resources, and water quality. These objectives include:

- To preserve and maintain streams, lakes and forest open space as a means of providing natural habitat for species of wildlife;

- To preserve the quality of existing water supply in Siskiyou County and adequately plan for the expansion and retention of valuable water supplies for future generations and to provide for a comprehensive program for sustained multiple use of watershed lands through reduction of fire hazards, erosion control and type-conversion of vegetation where desirable and feasible.

46-12

Comments:

With mined groundwater being pumped from the Big Springs aquifers thereby reducing the in stream flow of the Shasta River; it is mandatory that Siskiyou County has a comprehensive ground water policy.

3.2 – 34

Significance Criteria

Significance Criteria or thresholds, listed in Appendix G in the California Environmental Quality Act (CEQA) Guidelines may be used to determine the significance of project's potential impacts.

3.2 – 35

Using these [significance] criteria, a project or program would normally result in a significant hydrology –and water quality –related impact if it would:

Groundwater

- Substantially deplete groundwater supplies or interfere with groundwater recharge

Surface Water Drainages

- Substantially alter channel stability (erosion or sedimentation rates) through increases or decreases in flow or sediment supply.

- Substantially alter channel stability by changing the course of hydraulic characteristics of stream or river.

Water Quality

- Cause or contribute to violations of ambient water quality objectives by substantially 1) reducing dissolved oxygen concentrations and 2) altering the ambient temperature of receiving waters such that one or more beneficial uses are adversely affected.

- Otherwise substantially degrade water quality or provide substantial additional sources of polluted runoff, including degradation of stream or river characteristics related to cold freshwater habitat.

Comments:

The program has the potential to increase groundwater pumping. This may result in depletion of groundwater supplies or interfere with groundwater recharge. Based on evidence of the connectedness of groundwater and surface water in this area, increased groundwater pumping may decrease surface flows and affect hydraulic characteristics of the Shasta River. Plainly, these are significant hydrology- and water –quality-related impacts under CEQA. However, the DEIR does not include adequate analysis of or propose appropriate mitigation for such impacts. See DEIR, pp. 3.2-42 – 3.2-43. This is error under CEQA. *See* 14 CCR sections 15002(g), 15382, 15091.

46-13

3.2 – 42

The Program could result in an increase in the extraction of groundwater, which could contribute to the decreased baseflows and increased ambient water temperatures in the Shasta Ricer and its tributaries (Less Than Significant).

"However, the Program could indirectly result in an increase in the use of groundwater if the measures that apply to the surface water diversions included in the Streambed Alteration Agreements (SAAs), the ITP, and sub-permits issued under the Program pose regulatory, economic, or other burdens that an Agricultural Operator could avoid by *substituting* all or part of its surface water diversion(s) for groundwater. The extraction of groundwater for irrigation is not a Covered Activity under the Program.

Increased use of groundwater during dry conditions in order to curb the consumptive use of surface water, as proposed by the Program, could decrease groundwater discharge into the Shasta River and its tributaries. A reduction in groundwater discharge could decrease baseflow volumes and could contribute to increased temperatures. Groundwater and subsurface flow contribute cool water, directly and indirectly (e.g., by means of spring and seep maintenance) to surface stream channels in the Program Area.... During low flow conditions, if groundwater is pumped in the proximity of a flowing stream or subsurface channel such that the subterranean flow is impacted than that groundwater extractions could result in a decrease in stream flow and, concomitantly, an increase in water temperatures in the nearby stream." 46-14

Comments:

I agree that the program could potentially increase groundwater pumping in order to allow Agricultural Operators to avoid burdens imposed by SAAs, ITP, and other sub-permits. I agree that this may adversely affect water quality (e.g., temperature). Poor water quality and decreases in instream flow will impair coldwater habitat. Decreases in instream flow will also adversely impact downstream water uses, an impact omitted from the analysis. These potential impacts are significant and require mitigation. *See* 14 CCR sections 15002(g), 15382, 15091.

I strongly disagree with the finding that the potential increase in groundwater is insignificant: "Because it is not likely that the Program would cause a substantial increase in the use of groundwater, the level of any impacts associated with such use would be low." DEIR, p. 3.2-43. The DEIR does not provide any evidence to support the factual findings on which its ultimate finding with regard to the significance of groundwater pumping impacts is based. *See* id at p.3.2-42. Further, the argument that the program will not contribute to an increase in groundwater pumping, but the SAAs, ITP, and sub-permits might (*see* DEIR, p. 3.2 – 42), does not make sense given that the program is comprised of the SAAs, and the ITP.

The potential impacts associated with the increased groundwater pumping are significant, and as such should be mitigated under CEQA.

3.3 – 24 46-15

Shasta River from Dwinnell Dam to County Road A12

3.3 – 26

Current Habitat Function and Primary Limiting Factors

However, the stream water temperatures are raised significantly by the tailwater return flows from flood irrigation and possibly as a result of groundwater extraction (i.e., a decrease in cold groundwater accretions to the channel).

46-15 cont.

Comments:

Even the salmon are affected by the lack of adequate ground water policy.

3.3 – 31

Big Springs Creek

Big Springs Creek (along with its only tributary, Little Springs Creek) presents one of the most visibly important components of the entire Shasta River for Salmonids, as it is a major source of cold water for the Shasta River during the summer. Currently, most of the water from the spring is diverted for irrigation.

46-16

Comments:

According to previous material in this DEIR the main reason for the loss of 40 to 100 cfs from the Big Springs Area is due to groundwater extraction upgrade from Big Springs Lake. This DEIR must analyze and provide an acceptable comprehensive groundwater policy for the Big Springs Area if the Shasta River is to become a viable body of water again.

3.3 – 32

Documented surface water rights in Big Springs and Little Springs creeks amount to approximately 28 cfs (Webb 2008). While Big Springs Creek typically maintains substantial flow at its confluence with the Shasta River, the entire flow of Little Springs Creek is often diverted for flood irrigation during much of the summer. Prior to the mid 1980s, in addition to the above two diversions, the Big Springs Irrigation District (BSID) also utilized a surface water diversion from Big Springs Lake, but found itself increasingly restricted in order to assure that higher priority water users further downstream received their water. Eventually the BSID drilled several relatively shallow wells and effectively abandoned their surface water right for unregulated groundwater, presumably originating from the same aquifer that feeds Big Springs Creek and the other springs in the area.

46-17

Comments:

Irrigation District (BSID) could not get as much water from their Big Springs Lake surface rights as they wanted. They then drilled into the aquifer upgrade from Big Springs Lake and are producing additional water from the unregulated groundwater. This groundwater presumably would have entered Big Springs Lake at 56 – 58 degrees F which would then have fed the Shasta River. It seems obvious that a comprehensive groundwater policy must be established.

3.3 – 36

Streamflows

As discussed in Chapter 3.2, Geomorphology, Hydrology, and Water Quality, in this Draft EIR, the present hydrologic regime of the Shasta River is affected by the surface water diversions, groundwater pumping, and Dwinnell Dam. Runoff peaks generally occur during the winter and late spring and are associated with the rain and/or rain on snow events. Flows decline rapidly with the onset of the irrigation season in March and April, which reduces baseflow volumes during the spring and summer months. Flow slowly begins to increase in September and October when most of the seasonal irrigation diversions cease. Winter baseflow conditions typically are 180 to 200 cfs, regardless of precipitation, and similar flows probably existed historically throughout the year (NRC, 2004). Surface diversions and loss of flow from springs due to groundwater withdrawals have reduced summer flows to approximately ten percent of their historic rates (NRC, 2004). Figure 3.2 – 7, presented in Chapter 3.2, depicts unimpaired flow estimates in comparison to measured flow volumes for the Shasta River from 2002 – 2005. 46-18

Comments:

It is again obvious that one of the main players in the Shasta River watershed is groundwater. It is imperative to have this DEIR address a comprehensive groundwater study with an ensuing groundwater policy.

3.3 – 39

Along with excessive water temperatures discussed below, impaired streamflows are likely the most significant factor limiting coho salmon and the CDFG fish species of special concern in the Shasta River watershed. It is important to recognize that the effects of water diversions on coho salmon and the other CDFG fish species of special concern and their habitats are in many instances the cumulative result of the water diversions in total throughout the watershed. While some individual diversions might not significantly affect fisheries resources and their habitat because, for example, they are already screened or the amount of water diverted is small, the total volume of water diverted in the watershed results in degraded conditions that contribute to mortality and other adverse impacts to fisheries resources and aquatic habitat quality within the Program Area. This is another reason the Program is watershed-wide. 46-19

Comments:

It seems odd that this DEIR speaks so eloquently about water diversions being negative but doesn't address the loss of 100cfs of cold clean water by the drilling of wells above Big Springs.

3.3 – 40

Along with impaired streamflows, excessive water temperatures are likely the most significant factor limiting coho salmon survival in the Shasta River watershed.

46-20

Comments:

Both streamflow and excessive water temperature could be mitigated if a comprehensive groundwater policy would replace the 100 cfs of cold artesian spring water that has been taken from the Shasta River.

4 – 31 - 4.2.2

Geomorphology, Hydrology, and Water Quality

Short term impacts to water quality, stream channel configuration, and stream flow are identified as significant impacts in Chapter 3.2, Geomorphology, Hydrology, and Water Quality (Impacts 3.2-1 and 3.2-3). These impacts are related to construction activities in and around the bed, banks, and channel of streams, and operation and maintenance of instream structures.

Comments:

46-21

The DEIR's Analysis of the cumulative impacts on Geomorphology, Hydrology, and Water Quality omits any discussion of the cumulative impacts of increased groundwater pumping as a result of the program, increased development, climate change and other activities. The next iteration of the environment should analyze such impacts which potentially significant.

The DEIR does not include any analysis of the cumulative impacts of the program on climate change. There is evidence to suggest that climate change will have significant effects on hydrology in snow-fed basins such as the Shasta River. See Van Kirk, Robert W. and Seth W. Naman, "Relative Effects of Climate and Water Use on Base-Flow Trends in the Lower Klamath Basin, JAWRA Journal of American Water Association, Vol. 44, No.4 (Aug. 2008), pp. 1035-1052. The DEIR does not consider whether the program will contribute to hydrologic impacts caused by climate change. The DEIR's omission of such analysis is error.

5-2

Alternatives

"Each of the three alternatives [No Program, Instream Flow Alternative, and Parks Creek – Upper Shasta River Bypass], its potential environmental impacts, and its ability to meet basic Program objectives as compared with the Program is described below."

46-22

Comments:

The DEIR does not consider an alternative which includes groundwater pumping and monitoring. I request that the DFG evaluate a modified Instream Flow alternative which includes groundwater monitoring and reporting. In establishing conditions for ITP, the DFG is not limited to measures which are mandatory under existing law. See 14 CCR section 783.4. Rather the DFG may require that the

Agricultural Operators, DWR and SVRCD undertake measures not strictly required under the existing law as necessary to prevent take of listed coho salmon. Consistent with Fish and Game Code section 2053, the DFG should consider a modified Instream Flow Alternative which includes groundwater monitoring and reporting, appropriate limitations on groundwater use, and provides a framework for establishing a comprehensive groundwater policy in the basin. I believe this modified alternative will better achieve the program objective of protecting coho salmon and their habitat. It will also better protect the interests of downstream users.

46-22 cont.

Global Warming will probably invite more groundwater extraction above Big Springs. I am concerned that as less water is available for the Shasta River, those of us who have adjudicated water rights may not be able to exercise those rights due to the lack of in stream flow.

46-23

It is my opinion that this DEIR needs to incorporate a thorough groundwater study which results in a comprehensive groundwater policy.

Respectfully submitted,

Lowell L. Novy, D.V.M.

(1)

ATTACHMENT

TECHNICAL MEMORANDUM

TO: Matt St John, North Coast Regional Water Quality Control Board

FROM: Mike Deas, Watercourse Engineering, Inc.

COPIES: Josh Viers, University of California, Davis
Michael Johnson, University of California, Davis

RE: Big Springs Creek and Spring Complex – Estimated Quantification

DATE: February 1, 2006

Summary

Review of available information suggests that Big Springs Creek water rights are on the order of 55 cubic feet per second (cfs), however, not all of these rights are met in all years. In addition, Big Springs Creek contributions to the Shasta River are estimated to be on the order of 60 cfs, but vary seasonally. It is estimated that Big Springs Creek historically (pre-diversion) delivered on the order of 100 to 125 cfs to the Shasta River.

Big Springs Creek and Spring Complex: Estimate of Shasta River Contributions

Glacial melting on Mount Shasta and mountain precipitation are principal sources of groundwater recharge in the Shasta Valley. A portion of this recharge reaches the Shasta River through spring discharge in the vicinity of Big Springs (DWR, 1991). The Big Springs Creek complex, for purposes of this discussion, includes Big Springs proper (assumed to originate at the eastern end of Big Springs Lake), Big Springs Lake, Big Springs Creek, Little Springs and the channel between Little Springs and Big Springs Creek (Figure 2). Examining historic Shasta River flow and temperature data from locations downstream and upstream of the Big Springs Creek confluence, it is postulated that the springs complex may also extend into the Shasta River proper. The extent and quantification of the springs complex is incomplete. Nonetheless, there is sufficient information to identify the potential range of contributions from the Big Springs Creek complex to the Shasta River.

Big Springs Lake and Little Springs Water Rights

Quantification of water rights at Big Springs Lake and Little Springs is well documented (

Table 1). Documented water rights to Big Springs Lake total approximately 47.5 cfs and rights to Little Springs total approximately 7.6 cfs. Although the combination of water rights for Big Springs Lake and Little Springs is on the order of 55 cfs, review of historic Watermaster Service records indicates that the water diversions from Big Springs Lake averages approximately 40 cubic feet per second (cfs) during the irrigation season.

(2)

Table 1. Big Springs Lake and Little Springs water rights (source: Water Master Service Records, DWR)

Entity	Big Springs Lake	Little Springs
Big Springs Irrigation District [A]	30	-
Newton [B]	7.5	-
Busk [C]	10	3.1
Louie	-	4.5
Total	47.5	7.6

[A] Big Springs Irrigation District abandoned their surface water right and now meets district demand from groundwater wells, possibly due to frequent curtailment by the Watermaster.

[B] Previously Brahs et al

[C] Previously Louie

Big Springs Irrigation District (BSID) no longer pumps water from Big Springs Lake, but rather has drilled water supply wells upgradient, and pumps from groundwater. Review of Watermaster Service records indicates that BSID stopped withdrawing water directly from the lake around 1983.

In addition, there are numerous other smaller wells and springs utilized for irrigation in this area that could reasonably be presumed to be drawing on water that would otherwise contribute to the Big Springs complex. These include the Basey wells (or Pacy Wells), periodically used by the Montague Water Conservation District to supplement water from Dwinnell Reservoir and the subject of court action by the users of Big Springs Lake. An agreement was reached in 1986 between E.J. Louie, A.H. Newton, Jr., and the Montague Water Conservation District, wherein the parties "agreed that when the flows of Big Springs recede from 17.5 cfs to 10.0 cfs, Montague Water Conservation District would do the following:

- Turn off the Basey pumps until the flow of Big Sprigns was 17.5 cfs or pay A.H. Newton, Jr. the additional power costs to use his own pumps.
- If flows of Big Springs fall below 10.0 cfs, Montague Water Conservation District will shut off the Basey pumps until flows return to above 10.0 cfs." (Shasta Valley Watermaster Service Records, 1987)

Review of Watermaster Service Records suggests that the first season this agreement was implemented was in 1987.

Contributions to the Shasta River

Using water rights information, coupled with measured Shasta River flows above and below Big Springs Creek, an estimate of the contributions of the total potential springs complex to Shasta River flow can be made.

Available Flow Measurements

Shasta River flow measurements made during the late spring through summer period in 2002 at Louie Road (above Big Springs Creek) and at the Grenada Irrigation District (GID) diversion dam (below Big Springs Creek) indicated that the net accretion between these two locations ranged from approximately 55 cfs to over 80 cfs (Watercourse, 2004a, 2004b). This data was augmented with a combination of direct measurements within Big Springs Creek, Little Springs Creek, and Shasta River locations immediately above and below Big Springs Creek by the California Department of Public Works in

1922 and 1923 during the Shasta River Adjudication Proceedings (California, 1925) prior to the Shasta River adjudication. These latter data are the most detailed measurements of flows in the vicinity of Big Springs Creek. Although conditions may have changed over the last 80 years, the 2002 measurements largely corroborate the earlier measurements.

Big Springs Creek Inflows

As reported in the water supply and use report to support adjudication proceedings, it was not possible to obtain satisfactory discharge records in the creek proper due to extensive aquatic vegetation (California, 1925). Thus, measurements within Big Springs Creek were augmented through daily stream flow measurement carried out in the Shasta River upstream and downstream of Big Springs Creek to estimate the tributary input. The exact locations of these flow measurements are not known, but are presumed to be fairly close to the creek because the objective of the work was to capture creek inflows to the Shasta River. The results of these efforts for 1922 and 1923 are shown in Figure 1.

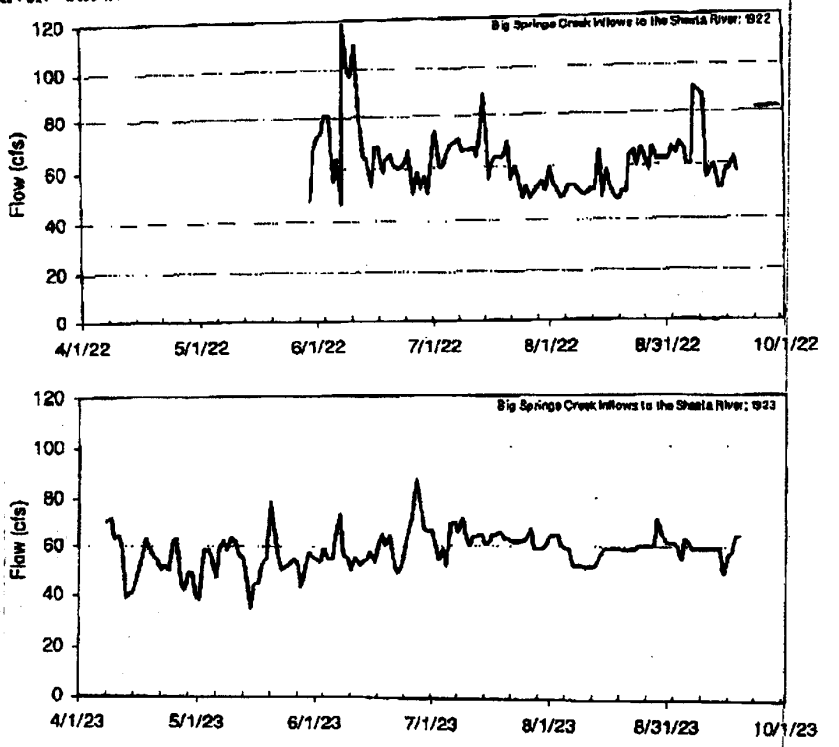


Figure 1. Daily Big Springs Creek inflow to the Shasta River: 1922 (top) and 1923 (bottom) (California, 1925)

There are several aspects of Figure 1 that are illustrative. One attribute that is unlike most streams in California during the summer period is the generally stable nature of Big Springs Creek. Summary statistics (Table 2) indicate that the mean flow was consistently on the order of 60 cfs, and that although the maximum and minimum values varied

considerably, the standard deviation was small. This is consistent with the 2002 flow observations.

Table 2. Summary statistics for daily flow in Big Springs Creek above the confluence with the Shasta River

Statistic	1922 (cfs)	1923 (cfs)
Mean	63.4	58.0
Maximum	118	87
Minimum	46	35
Standard Deviation	13.2	7.7

A second attribute, related to the first, is that the flow does not exhibit a typical seasonal reduction through the summer period, rather the spring signal is persistent through the summer and into early fall. In the 1923 record there appears to be an increase in flow as the summer season progresses: an observation that is noted in the Watermaster Service records.

Also apparent in the record is a notable amount of variation in Big Springs Creek inflow to the Shasta River. Daily records of diversions and irrigation practices were not available for this report. However, it is reasonable to assume that variations in cropping patterns, land use, and other practices could yield short term variability in creek flows.

A summary of individual daily measurements from the 1922-23 season (California, 1925) is presented in Table 3. These estimates may not determine if there are additional spring flow contributions to the Shasta River directly from the Big Springs complex. Nonetheless, the results suggest that Big Springs Creek historically (pre-diversion) delivered on the order of 100 to 125 cfs to the Shasta River.

Table 3. Summary of flows observed on individual days during the 1922 and 1923 irrigation seasons (California, 1925)

Date	Big Spring Creek Gage #1	Big Sp. Water Cons. Diversion Gage #3	Louie Bros Main Chanel Diversion Gage #40	Louie Bros Small Canal Diversion	Stallcup & Sons Diversions Gage #3	Total Diversion From Big Springs	Little Spring Creek Diversion	Total Flow of Big Spring Creek & Little Spring Creek
5-24-1922	112.2	0	1.4	0	0	1.4	0	113.6
6-05-1922	80.5	28.2	5.4	3	7.4	44	0	124.5
6-21-1922	79.9	28.1	7.4	2.8	7.4	45.7	0	125.5
10-12-1922	108.5	0	0	0	0	0	2.2	110.7
10-12-1922	104.4	0	0	0	0	0	2.2	106.6
10-17-1922	118.5	0	0	0	0	0	4	122.5
10-17-1922	96.5	0	0	0	0	0	4	100.5
10-21-1922	114	0	0	0	0	0	3.8	117.8
10-21-1922	99.9	0	0	0	0	0	3.8	103.7
11-04-1922	117.3	0	0	0	0	0	4.8	122.1
5-04-1923	58.2	31.8	7.6	2	7.2	48.6	7.8	114.4
5-07-1923	54.6	31.6	7.6	2	7.2	48.4	7.8	110.8
5-07-1923	61.1	31.6	7.6	2	7.2	48.4	7.8	117.1
6-04-1923	54.1	34.2	5.4	2	7.2	48.8	7.6	110.5
Average								114.3

*Note: values may not add up due to rounding and transcription errors due to old records

Factors that may affect this estimate include, but are not limited to:

- the relatively short data record
- additional pumping that may affect the inflow to Big Springs Lake (not only pumping early in the 20th century at the time of the flow measurements, but approximately 80 years of water resources development in the region, e.g., Basey wells)
- applied water irrigation efficiency
- annual variability in base flow within the Shasta River as well as springs inflow
- other water diversions and inflows (unassociated with the Big Springs Complex) between Louie Road and GID
- meteorological conditions
- variations in land use and applied water from Big Springs Lake and Little Springs

Current quantification of flows in and around the Big Springs complex would provide much needed detail in this unique reach of the Shasta River.

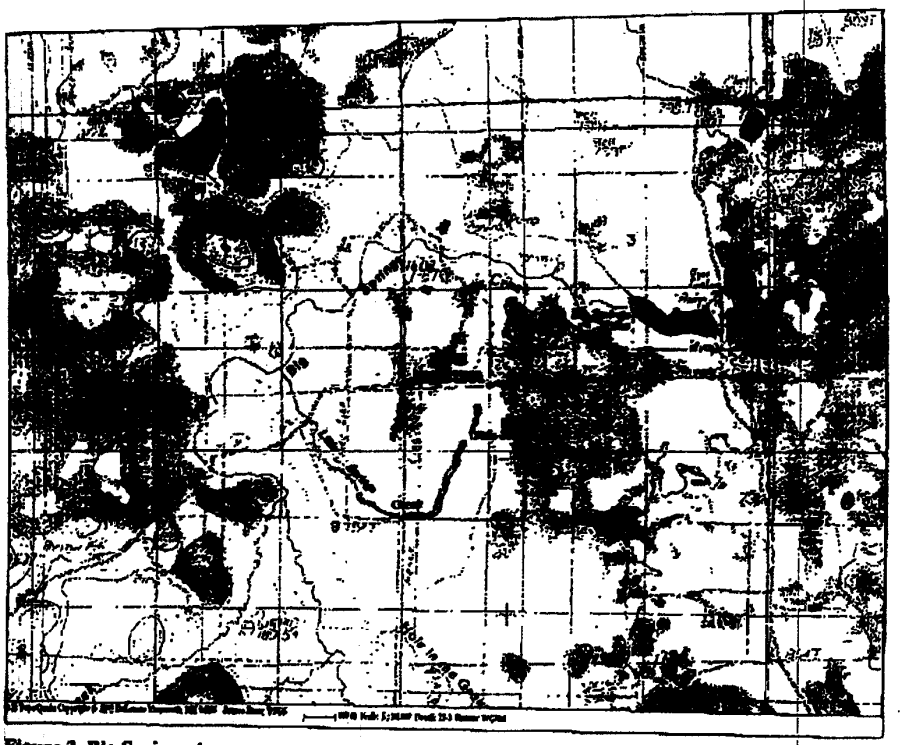


Figure 2. Big Springs Area

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Shasta River and Scott River Watershed-Wide Permitting Programs
Draft Environmental Impact Reports

The public is invited to provide comments or concerns related to the environmental analysis of the Shasta River and/or Scott River Watershed-Wide Permitting Program Environmental Impact Report(s).

Name: Brian Rice

Address: 4516 Ball mtn. Rd

City, State, Zip: Montague CA 96064

Telephone:

E-mail:

Circle which document you are commenting on:

(Shasta EIR) **Scott EIR**

Comments may be submitted tonight or mailed to:

Mr. Bob Williams, Staff Environmental Scientist

Conservation Planning (CDFG)
601 Locust Street
Redding, CA 96001
(530) 225-2300 (phone)
(530) 225-2381 (fax)

Comment:

EIR Comment

with the implementation of this program there will be significant impacts on agriculture - decrease in land values, property taken out of the williamson act, private property rights being infringed upon. why was this not addressed in the EIR. 47-1

ITP comment

This is in response to the so called access agreement. This again is an infringement on private property rights. If does not 47-2

Feel free to use the back or extra sheets if necessary.
Thank you for your participation!

Specify how many people will be on your property, how long they will be there, what there tour intentions are. This to me is unacceptable.

47-2 cont.

Brian Rice

Comment Letter 48

HIDDEN VALLEY RANCH

13521 Big Springs Road, Montague, CA 96064
530-938-4100, FAX 530-938-4110 jroggenbuck@cox.net

SOUTHERN CALIFORNIA OFFICE
17Regatta Way, Dana Point, CA 92629
949-661-3232, FAX 949-661-8525 jroggenbuck@cox.net

November 30, 2008

Mr. Bob Williams
Department of Fish & Game
601 Locust Street
Redding, CA 96001

RE: Shasta River Watershed-Wide Permitting Program Draft Environmental Impact Report (DEIR)

Dear Mr. Williams,

As the owner of ranch property within the Shasta River Watershed, and intending to participate in the ITP Program, I wish to thank you and those involved in the creation of this document. But more importantly, I thank you for the opportunity to provide comment to the degree that it may build upon this work and make a better product for all involved.

After reviewing the complete document, I have a number of comments and recommendations to offer for consideration in the attached sheets. These comments are from the prospective of the "Agricultural Operator" and could help the lay-person to better understand what is being proposed/required by this action as well as to express deep concerns and potential adverse impacts to our ranch operation.

I request this document **NOT** be certified until after these concerns are properly addressed and to the satisfaction of those so impacted.

48-1

Sincerely,

J. Roggenbuck, Owner
Hidden Valley Ranch

Attachment – 3 Pages

CC W/ Attachments:

Mr. Richard Kuck, Chairman
Shasta Valley Resource Conservation District
215 Executive Court, Suite A
Yreka, CA 96097

Ms. Adriane Garayalde, District Administrator
Shasta Valley Resource Conservation District
215 Executive Court, Suite A
Yreka, CA 96097

SUBMITTED BY
HIDDEN VALLEY RANCH
J. Roggenbuck, Owner

COMMENTS TO SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM (DEIR)

NOVEMBER 30, 2008

1. The summary section provides a discussion of the general activities to take place under the PROGRAM, conditions, requirements and monitoring. However, there is no discussion as to measurement toward success of the PROGRAM. How is one to know if the efforts made by the parties involved actually enhance the Coho salmon fishery? It is not sufficient to require expenditures, in some cases extreme, by sub-permittees without having some bench-mark goals to measure against. Because this is a summary section, and this issue is not addressed, one would expect it to be included it in the main body and the ITP. Unfortunately, there is no discussion as to measurable goals that is easily found. In addition to measurable goals, a discussion as to what course of action is to be taken or expected at the terminus of the PROGRAM should also be considered. If measurable goals are made in less than the term of the PROGRAM, is involvement in the PROGRAM deemed complete and no other action is to be required? Such a discussion is not evident. 48-2
2. Section 2.3.1 ITP GENERAL CONDITION D places an unfair financial burden on the agricultural operator to develop, repair, or maintain facilities to which he may not be able to afford. This is especially hard if such a repair is caused by the actions of another and out of control of the AO. This condition needs further consideration to include an exemption process for the AO. As stated in my public comment in Yreka, if Cal-Trans has decided to build a road, it does not require the land owner to "build, repair, and maintain" the facility at the landowner's expense. Just the opposite occurs. Cal-Trans buys the land it needs and performs it's duty accordingly. While I am not suggesting The Department of Fish & Game begin buying private property, I am suggesting that if this program is important to CADFG, then CADFG should put up the means to build, repair, and maintain that which it deems is required for this program to be successful. It is bad enough that the program is "taking" private property out of its historic use and dictating another use. In some cases, this alternate use could be detrimental to the continued economic viability of the landowner. 48-3

3. Section 2.2.2 SPECIFIC CONDITIONS in the MLTC addresses the requirements holders of an SAA must comply with. These requirements are similar to those of the old DFG 1602 permit which then raises the question as to what happens to existing 1602 permits? Will an Agricultural Operator with an existing 1602 permit need to file for an SAA or be "grand-fathered in"? This is not addressed here or anywhere else in the document. Having gone through the process to obtain a permit under CADFG rules and procedures, and having met them satisfactorily, Why should I as a landowner have to change anything now? Why is there no provision to incorporate such existing permits into this process? 48-4

4. Section 2.3.2 Additional Obligations in the ITP…… this section places financial burdens on the sub-permittees to meet criteria of the regulator. Without other sources of funding made available to the sub-permittee, such efforts will most likely not get done, and if they are, may not be maintained. This situation may lead small operators to financial ruin as their agricultural income cannot support the expense. The lead agency requiring the conditions must step up and be a financial partner on a permanent basis to be able to achieve these requirements. 48-5

5. Section 2.3.5 SVRCD REPORTING REQUIREMENTS should include a process where-by the sub-permittees have an opportunity to review and provide comment on the report to be filed with the CDFG, especially the 5 year and final reports. This would keep the sub-permittees involved throughout the Program. 48-6

6. Page 3.1-27 PROGRAM FUNDING/ RESTRICTIONS on LAND USE CHANGES indicates the CDFG and SVRCD **MAY** provide funding through other sources to help off-set costs to the AO. The following paragraph leaves the reader the impression that if the AO cannot survive financially, too bad! In some respects, this could be construed as an illegal take of private property rights by the Agency. Either clarify the intent, commit to funding, or take away the funding burden of the AO to install and maintain facilities the CDFG and SVRCD identify as needed on the private property. Clearly, if the AO is to initiate a project to enhance his/her operation and that project falls under the review of the Program, then expenses for those modifications should be born by the AO. But the language in these two paragraphs does not indicate that to be the case. As stated in my public comment, if I come to you, I can expect to pay for the work I want done. If you come to me, you should pay for the work you want done. I believe, as do others, that involvement in this process is paramount to extortion as we must sign on or be dealt with as a violator of law if we do not, even though we have here-to-for met all requirements under law. 48-7

7. Section 3.2.2 REGUALTORY SETTING. This section addresses the numerous agencies that exist and have regulatory review over the watershed. It is not clear if sub-permittees will be required to file their own application for any project falling under the scope of the program or if the agricultural operator need only to notify the SVRCD in a timely manner. As part of the process for seeking a sub-permit under the Program, it would be most appropriate for the inclusion of a flow chart to assist the applicant, whom ever that might be, to negotiate through the maze of agencies. Absent a flow chart, language should be included that provides the AO a clear direction as to obtaining the necessary permit when a project is identified. A flow chart will help the reader, the regulatory agencies, and the AO with a clear idea of the steps and timelines involved thus leading to the need to plan ahead. 48-8

8. Page 3.2-38 identifies the dates during which work will normally be done during the year to reduce any impacts to Coho. Unfortunately, these dates exceed the dates given for bird species. Since the dates to work around nesting birds is more restrictive, these should also conform to the dates for Coho consideration. Again, a flow chart would help any applicant to recognize these constraints. However, in both cases regarding dates for 48-9

work, the June 1 or July 31 date is critical when it comes to an emergency repair necessary to continue to receive water for livestock/crops. Any delay could be devastating to the health of the crop/herd. 48-9 cont.

9. Mitigation Measure 3.2-3a addresses livestock and vehicle crossings **installed** under the Program. Are existing crossings to be evaluated or grand-fathered or will a permit application now become required. This section needs to address such conditions. 48-10

10. GENERAL QUESTION with regard to mitigation measures – has consideration been given to the development of environmental "credits" if an AO performs activities not associated with the Program to enhance habitats at the expense of the AO? This might be similar to those "credits" existing under the EPA with respect to power producers. If an operator can enhance the habitat for species not listed in this document, shouldn't the AO get credit for that effort in some way? 48-11

11. Page 3.4-32 addresses distances from work sites to avoid nesting activities of certain bird species. These distances can impact regular daily ranch activities not related to any work around the river/stream. As such, a separate environmental document should be considered as it relates to impacts to bird populations in the Program area. Does participation in the Program automatically expose an AO to constraints surrounding bird species they wouldn't otherwise have to deal with in their day-to-day operations? 48-12

12. Page 3.4-34 MITIGATION MEASURE 3.4-3B discusses grazing limits and intensity as it is to be included in a grazing management plan. Will CDFG/SVRCD provide a form for the AO to fill out? How will such plans be developed? Is it a "one size fits all" or on an individual basis to account for differences in terrain, scale of operation, size of herd, etc.? 48-13

13. Page 3.5-14 addresses mitigation measures for cultural resources. Given the potential for such resources to present themselves after a flood, and that analysis of such resources can become time consuming, is there an avenue for an exemption to the AO (sub-permittee) if any delay should cause the work to extend well into the restricted time periods? This consideration is critical when looking to make repairs to diversion systems so as to be able to receive water during critical irrigation periods. 48-14

14. Appendix A – Should it be determined the comments made above are of merit and the DEIR is modified to reflect these comments, the DITP needs to reflect them as well where appropriate. Will the ITP be a codified document (similar to Fish & Game Code Sec. 1600,*et seq.*)? 48-15

This concludes the list of comments.

Comment Letter 49

Shasta River and Scott River Watershed-Wide Permitting Programs
Draft Environmental Impact Reports

The public is invited to provide comments or concerns related to the environmental analysis of the Shasta River and/or Scott River Watershed-Wide Permitting Program Environmental Impact Report(s).

Name: BLAIR SMITH

Address: 5821 Ball Mtn. Rd.

City, State, Zip: MONTAGUE, CALIF 96064

Telephone: 530-459-3167

E-mail:

Comments may be submitted tonight or mailed to:

Mr. Bob Williams, Staff Environmental Scientist

Conservation Planning (CDFG)
601 Locust Street
Redding, CA 96001
(530) 225-2300 (phone)
(530) 225-2381 (fax)

Circle which document you are commenting on:

(Shasta EIR) ITP Scott EIR

Comment: With reference to the ITP report on page 39 - paragraph I Water divisions. It states "Water divisions covered under this catagory includes only the division of surface water through a conduit or opening from stream channels or slough within the Shasta River watershed by an Agricultural operator for Agricultural purposes in accordance with a valid water right including one specified in the following Court decree Shasta River (1932)"

However, on page A-30, A-31 it state in part" The Department (F+G) shall instruct DWR to reduce or cease the division and/or change the timing or manner of the division and take any othe measures within DWR's

49-1

Feel free to use the back or extra sheets if necessary.

Thank you for your participation!

over

Control that the Department determines are necessary to correct or avoid Stranding and DWR Shall Implement those measures immediately."

DWR does not take its orders from Fish & Game regarding adjudicated water rights. DWR has the responsibility of measuring the water for the Judge of the Superior Court of Siskiyou County to the adjudicated water rights of the Shasta River decree of 1932 Therefore the above Statement A-30, A-31 is unacceptable and is in Conflict with the Statement on page A-39

49-1 cont.

To: Bob Williams, Staff Environmental Scientist
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

RE: Shasta Watershed Incidental Take Permit Environmental Impact Report – Comments

I have reviewed the draft Environmental Impact Report (EIR) prepared by the California Department of Fish and Game (CDF&G) for the Shasta River Watershed and its Agricultural Diverters, and offer the following comments and suggestions.

First I have to compliment the group of people who put this document together. It is very readable, contains an enormous amount of data, appears to be very well researched and sourced, it gives a reader a good sense of the issues, synergies, and conflicts. That said there are 3 areas that I feel need additional amplification or an increase in scope.

Those areas are: work load, and funding for the Resource Conservation District (RCD); Calls for additional flows to manage temperature or prevent "stranding"; and a real world review of the economic impact this program and affiliated environmental regulations are having, and could have on the residents of Siskiyou County.

50-1

I didn't have to read too far into the document to realize that the SVRCD and their staff are the ones who will do the heavy lifting in rolling out this program. CDF&G, the North Coast Regional Water Quality Control Board (NCRWQCB), and the State Water Resources Board (SWRB), retain overall authority and compliance decisions. However, the RCD is responsible for almost all the tasks associated with implementing and maintaining the program. These tasks include training and outreach, administration and application support, preliminary engineering, agency approvals, project management, program design (in the case of the "dry or low water year" program), measuring, monitoring, and reporting.

SVRCD RESOURCES

This program affects every diverter in the valley and per CDF&G's timetable the work has to happen by mid 2009 with the RCD being the point of contact for most activities. The department of fish and game has stated they expect up to 400 sub-permittee's to participate. It's not difficult to envision most if not all of the current SVRCD human resources being dedicated to this program for at least the first year and heavy involvement for the next 3 or 4 years. The implementation of this plan may also require RCD staff to have special skills not currently available within the staff. The RCD is currently in need of additional office space. Implementing this program will exacerbate this need.

The other side of the resources issues identified above is the funding process to support these activities. With the fast track implementation envisioned suitable funding must be

50-2

readily available. However, none is identified in the EIR, and using grant funding would probably move compliance out several years. 50-2 cont.

ADDITIONAL FLOWS AND STRANDING

The whole intent of the ITP program, in concert with the California Endangered Species Act (CESA), is the restoration of Salmonid habitat and protection of juvenile fish in the watershed. The EIR in several places talks about juvenile (Coho primarily) becoming "stranded" due to low flows in a river or stream. Additionally, in a number of sections in the document, the authority of the SWRB, NCRWQCB, CDF&G, and the Siskiyou County 1932 adjudication decree are mentioned as guides/authorities for allocating surface water. Indeed it seems all claim to play some role in deciding what water goes where and when. Today the final authority on Shasta Valley water allocations is the 1932 adjudication degree.

The adjudication and assignment of rights isn't compatible with the requirements of the proposed permitting process. The adjudication and allocation conflict needs to be resolved before the ITP program can move forward. A solution that the EIR should look into is a design that will provide diverters with the ability to continue their operations at current levels and keep enough water in the rivers and streams to meet the criteria of the regulatory agencies. One option to look into is the development of an efficient water distribution system. I have heard estimates that as much as 50% of a diverters allocation can be lost in the current distribution system. If an efficient watershed wide distribution or delivery system is designed and deployed the need for additional flows and concerns about "stranding" could be addressed. 50-3

This type of solution can only be achieved if diverters in the valley are willing to revisit the 1932 adjudication and develop a new method for allocation of water. This may not seem like an appealing idea at first. However, with further reflection it may be the best way for diverters to protect their interests (agricultural operations and land values) and focus resources on a solution rather than legal costs. This approach may provide the kind of collaboration the agencies are looking for as well.

Resolving this issue has to be explored in the EIR. Resolving the allocation issue in an acceptable way will dictate the success or failure of this and affiliated programs.

COUNTYWIDE ECONOMIC IMPACT

The EIR seems to make light of the economic impact this program and the affiliated environmental regulations and efforts have on all Siskiyou County residents not just those in agriculture. Due to previous regulatory decisions, the economy of Siskiyou County has been in decline for a number of years. The timber industry has virtually disappeared. The young working people looking for opportunities have to leave the County and the loss of tax revenues from business closings is evident everywhere. 50-4

The primary tax revenues for the County are generated by agricultural operations and property values. Unsettled regulatory questions have already made some properties along the Klamath River un-saleable. Landowners and agricultural operators throughout the County are already concerned that the land they own is losing value due to uncertainty about water rights to support operations.

Devaluation of property is having, and will continue to have, real and dramatic impacts on services throughout the County. The EIR deems these impacts insignificant, as a property owner and resident of Siskiyou County I don't.

The EIR, at a minimum, must include a Countywide assessment of the economic impact of the program. This assessment should look at the impacts if the adjudication question is resolved (with sustained agricultural operations) and, if not resolved, the impact of a protracted legal debate. Either of these scenarios will have an economic impact. The anticipated degree and the positive or negative effect is what must be identified. This information will be invaluable for planning future endeavors in the County.

50-4 cont.

Again, kudos to those whose efforts produced this document one of the best I've seen. For this program to truly succeed it needs to mitigate the impacts not only for the fish and the watershed, but the lives and livelihoods of the people of Siskiyou County as well. I hope that the issues I've raised and the concerns I voiced will be helpful in making this program a success. Thank you for giving me this opportunity.

50-5

Regards,

Tom Wetter
Lake Shastina, CA

I have several comments I want to make on the Shasta ITP. I will start with the most substantive, and let the lesser ones come at the end. Some of these comments will likely also apply to the Scott ITP. 50.1-1

DFG data presented on page 3.3-17 in table 3.3-5, while admittedly in part a projection, hasn't been give adequate consideration in the ITP EIR. The sole purpose of this or any ITP it to assure:

1. that normal and customary activities are able to continue, in this case ranching and farming,
2. at the same time providing adequate assurances that the listed species will not suffer further declines.

The projected numbers of returning adult coho clearly show what can only be described as a downward spiral to extirpation for coho in the Shasta. For the ITP to be successful at accomplishing either of its two purposes, that cannot be allowed to happen. And judging from the projections of the table, that outcome isn't very far off. This year's coho returns, while still incomplete, suggest that the table's projections may unfortunately be right on target[1].

An adequate[2] response to this unfolding disaster would need to be a strongly focused set of ITP actions starting immediately to protect and improve survival in the only area of the Shasta where coho are currently still found to be able to spawn, hatch, and rear—the area encompassing the Shasta mainstem a few miles upstream and downstream of Big Springs Creek, Big Springs Creek itself, Lower Parks Creek, and various springs throughout this area (See ITP figure 3.3-5). As presently proposed, all mitigations are general, generic and basin-wide. As such, none of these prescriptions except screening are likely to yield any effective increase in survival until water temperatures become more broadly tolerable. While that is a good long-term target, we don't appear to have time to focus on that approach alone. Given the seemingly short t timeline, the ITP needs to focus on water temperatue reductions in the only area in the Shasta coho are currently rearing, actions very rapidly need to include eliminating tailwater in this upper Shasta River area, minimizing the commingling of hot, poor quality water from Shastina, protecting/rehabilitating Big Springs Creek (and other smaller spring creeks in the area) to reduce thermal loading (aerial observations suggest that Big Springs Creek has been widened by long-term livestock use to over 100 feet wide, greatly increasing thermal loading), keep livestock out of water courses throughout the system to allow the stream to recover form, function, and riparian vegetation to increase shade (and reduce thermal loading). Of these, specifically addressing problems in Big Springs Creek would seem to be the most effective in the near term and the most doable. In addition, there should be a spring flow monitoring program initiated in these areas to monitor spring flow temperatures and volumes to allow early detection of reductions in those critical flows, and there needs to be developed effective measures to supplement current cold water 50.1-2

[1] As of 11/21, DFG had only counted 8 adult coho returning to the Shasta, the lowest number since comprehensive coho counting efforts began in 2001. The second lowest number as of that date was 24 in 2002 when the total return was 110 adult coho.

[2] Adequate=protective of ranchers and farmers by assuring the ITP is available to them.

inflows. There needs to be a requirement of forming a cold water inflows plan which would be protective of coho in all years, something much more important than a dry year plan. This is critical because coho year classes exhibit strong and weak classes, which do not necessarily coincide with hydrologic year-type. Further, because the Shasta River is over allocated but managed by the watermaster, essentially every year takes on characteristics of a dry year.

50.1-2 cont.

Without such a focused effort, all the other more system-wide measures proposed in the ITP will be of little value. If the coho decline continues as projected, the ITP apparently will be terminated and ranchers and farmers will be left to deal with whatever problems, risks and expenses are left in the wake of its failure. Further, DFG efforts, and all the local time, effort and money spent on trying to craft a workable and adequate ITP will have been wasted. No one will benefit if this is the outcome.

50.1-3

Other issues:

1. On page 2-19 of the Shasta, and page 2-20 of the Scott, the topic of Bioengineered bank protection is addressed. In footnote 10, the preparers of the EIR improperly define Bioengineering as "*Bioengineered Bank Stabilization structures use a combination of living plants such as willow or other living trees, shrubs, and other inert materials such as gravel and rip-rap. Bioengineered structures tend to provide more aquatic and riparian habitat attributes than conventional bank stabilization structures*"

This definition is incorrect, mis-characterizes bioengineered work, and needs to be corrected to much more accurately describe the bioengineered approach to stabilization. The following provides an easily accessed description of the history and range of such work: http://www.wsdot.wa.gov/eesc/design/roadside/SB/pdf/Soil%20bioeng.pdf
It also includes a reference section with other documents on the topic.

Bioengineering is definitely not merely the incorporation of some organic materials into rip-rap, but is instead the well planned substitution of organic materials (logs, tree., whips, brush, etc. in a carefully crafted approach that may or may not be intended to live, but which is expected to provide sufficient stabilization to a site to assure that either the materials used in the structure, or those that are subsequently planted in the structure, or that otherwise colonize the site are able to grow and provide the long-term stabilization desired with their root systems; a stabilization that is flexibly self-sustaining through normal plant growth, repair and regeneration, unlike any approach that relies on rip-rap for its basic foundation.

50.1-4

2. The MLTC includes a requirement likely to be utilized on most or all planting projects that requires a survival rate of 80%. This level of survival should be attainable in a nursery environment where water, soil, shade and competition can be closely controlled, but is not reliably attainable when trying to plant trees along a highly altered system in a desert environment like the Shasta. It also fails to address what should be the true desired future condition—some number of trees/plants surviving per acre, per linear foot, or similar metric at some defined time interval after planting. It is, after all the actual

50.1-5

number of target plants on the site that survive that matters, not what percent lived or died along the way. Put differently, planting 10 trees with an 80% survival on an acre will not yield the same amount of shade, bank protection or eventual wood in the stream as would be gotten from planting the same area with 100 trees with only 30% survival. Success must be defined for such projects, but needs to focus on the important results—trees per acre, etc. not simply by picking an arbitrary % survival as the requisite measure of success.

50.1-5 cont.

3. For reasons that are not entirely clear, the DFG on page S-4 in the Shasta ITP is proposing that the RCD act as DFG's eyes and ears in seeking individual ITP holders who for whatever reason fail to live up to the terms of their individual ITPs. While there clearly needs to be someone doing such oversight and subsequent enforcement, it is neither wise nor appropriate to shift this responsibility to the RCD. The DFG is the only agency with the authority to issue the ITPs, the only one with the authority to revoke them, and the organization with enforcement responsibility The RCD is and has been working with landowners for many years, but their ability to do what DFG clearly was unable to do in terms of moving fish and water quality restoration efforts forward has been predicated on the RCD not serving as a tattle tale for every legal violation that might be encountered. The only result of this transfer of responsibility to the RCD will be the elimination of the ability of the RCD to continue to work with the very people who need to be making the improvements.

50.1-6

4. Concerns about when and under what circumstances termination (Shasta ITP page a-34—XXVII Termination) of the ITP might occur should be clarified to note whether loss of a year class refers to loss of a year class within the Shasta River only, or of the entire SONC, and if loss of a year class is the return of zero fish, one fish only, or some other less-than-genetically-survivable number.

50.1-7

Thank you very much for the opportunity to comment, and the long effort to bring things to this stage.

Sincerely,

David Webb

Reporter's Transcript of Proceedings

* * *

Public Hearing

Tuesday, November 18, 2008

7:00 p.m.

City of Fort Jones Library
Fort Jones, California

Paula M. Friday, CSR 5669

COLEMAN & ASSOCIATES
Court Reporters
P.O. Box 7
Yreka, Ca 96097

(530) 842-1455

Comment Letter 51

Tuesday, November 18, 2008 - 7:00 p.m.

Fort Jones, California

* * *

MR. STOPHER: Good evening. My name is Mark Stopher. I am with the Department of Fish and Game, and I will do some introductions with the representatives of the Fish and Game and our consultants who prepared the EIR here in a few minutes.

We do have a short PowerPoint presentation tonight, and it's going to be a little tough to see from the back of the room. So you might consider moving forward. It might be also easier to hear the speakers if you move forward. It's up to you, but probably would be a little bit easier on the audio-visual part if you did so.

We are going to use the PowerPoint to introduce what we are going to be doing tonight, and I believe it will probably be pretty explanatory for you.

What we are going to do tonight is go through a few introductions of representatives of the Department of Fish and Game and ESA, our consulting firm here tonight. We will talk about the purpose of the watershed-wide permitting programs. We will give you an overview of CEQA. That means the California Environmental Quality

Act.

This hearing tonight is in fulfillment of a requirement of under the California Environmental Quality Act that we solicit public comments, suggestions, criticisms of proposed projects and the analysis that we have done.

We will give you the overview of the draft EIRs in terms of just the content. I will tell you where to find them if you haven't seen them already. We have copies of them on compact disks at the back table back there which can be available to you.

And then the bulk of the evening or as long as we need is public participation.

When you came in tonight, we asked you to sign in and fill out a speaker card. A speaker card is simply a three-by-five card with your name on it. And once we get the public participation, we will figure out how many we have. It doesn't look like -- sometimes you have so many people you have to divide up the time into small increments. I don't think that is going to be a problem tonight.

And we will be interested in hearing your comments both verbally; if you have something to give us in writing, that's fine, too. If you want to fill out one of the comment sheets that we have back there, we

will be glad to receive that tonight as well.

So to begin, our representatives of Department of Fish and Game tonight, my name is Mark Stopher. I am the program manager out of Redding. I manage the development of this program.

Kaitlin Beene (phonetic), who works on this, reports to me. She is not going to be able to be here tonight.

Bob Williams is our staff environmental scientist responsible for CEQA compliance, for managing the CEQA contract for the EIRs and making sure that we adhere to the process required by law.

Tonight we have representatives from Environmental Science Associates: Tom Roberts, project director; Dan Sicular, who is the project manager; and Mike Podlech, who is an aquatic ecologist. They are all responsible for major parts of the EIR.

So the purpose of the programs: I know that you can't read this unless your eyesight is far better than mine. It is to provide an alternative means through a streamlined, comprehensive permitting framework for farmers and ranchers to continue routine agricultural activities while complying with Fish and Game Code Section 1600 and the California Endangered Species Act as it relates to the coho salmon, which are listed as

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threatened in this part of California.

When we say Fish and Game Code Section 1600, you might also have heard the term streambed alteration agreement. They are essentially synonymous.

So what the permitting programs are: A cooperative joint effort between the Department of Fish and Game and the Siskiyou RCD and the Shasta Valley RCD on the other side of the hill here.

Individual agricultural operators can participate by becoming subpermittees under an incidental take permit. They can get their own incidental take permit and they rely upon activities performed by the RCDs as well. And obtaining a stream alteration agreement.

Covered activities related to agricultural diversions, agricultural activities, and as well as key coho recovery tasks are permitted under these programs.

Now, in your presentation, Dan, you cover the CEQA document, you don't describe the permits themselves, do you?

MR. SICULAR: Right.

MR. STOPHER: Okay. The programs include avoidance, minimization and mitigation measures that are effective in addressing potential impacts.

Now, Section 1600 has been around for a long

time, since 1961. The California Endangered Species Act has been around for less time in various forms from the early '80s. But substantial diversions of water are activities which are regulated by Section 1600, and the take of coho salmon which occurs because of the cumulative diversion of water is also regulated by the Fish and Game Code, in this case the California Endangered Species Act.

This program is intended to give you a streamlined way to get through both of those regulatory processes and less cost and less regulatory burden for agricultural operators.

So program implementation, this lays out what we would expect to see over the next several months.

In March 2008 -- well, currently the EIRs are available for public review and comment. This is part of that public review and comment process. The public review comment period, as you will see in another slide later on, is going to end on December 9th.

VOICE FROM AUDIENCE: Mark, that needs to be marked 2009.

MR. STOPHER: So the public comment period ends on December 9th, 2008. Anything that is in the mail postmarked by then will be within that period.

It's a 60-day review period. It's longer than

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what is required by law.

We will -- from that point until March 2009 we will be looking at all the comments, considering the information in those as to whether or not we conducted our analysis appropriately, whether or not we overlooked issues that we didn't consider, whether there are impacts that have not been adequately analyzed but have been pointed out by reviewing members of the public, and we intend to produce a final environmental report on or around the first of March, 2009, at which time we would then certify that document.

That would begin a 60-day enrollment period for agricultural operators to tell us if they want to participate in the watershed-wide permitting program. They would tell us by submitting the notification and submitting a permit application, which the resource conservation districts will be prepared to help individual operators understand, fill out and submit.

And implementation begins as well as soon as we certify the EIR. If we -- we should get some notifications on the first day, we are not going to wait until the end of the sixtieth day to begin processing those. We will begin processing those as they come in the door. We hope that we get enough of them that there actually ends up being a backlog but basically have them

there.

Let me go back one slide, please.

So I mentioned the 60-day enrollment period. This is the time when we would be doing outreach, probably doing some workshops at RCD board meetings. We would be open to any other type of public outreach that would help people understand what that choice is at that time. We will maybe be doing press releases to let folks know the enrollment period is open.

At the end of that period, we will be looking to determine whether or not there are diversions out there who we believe are subject to 1600 who we haven't yet heard from. We will probably be making phone calls to remind them that the enrollment period has been open, is now closed, but would you still like to please send us -- notify us.

That will probably continue -- we haven't figured that out exactly yet -- two weeks, three weeks. If we have not heard at that point in time and we have not been notified about existing agricultural diversions or other activities subject to a streambed alteration agreement, we will be having our enforcement folks make contacts and ask if you would like to submit paperwork to notify us. Because at the end of the day, we want everybody in the watershed-wide permitting program or

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permitted through their own actions and as few as possible cases where we have to consider enforcement actions.

So Dan is going to take the middle course in this presentation and then I will finish up and then we will be in the public participation phase.

MR. SICULAR: My name is Dan Sicular, and I am with ESA, Environmental Science Association, in San Francisco, and Department of Fish and Game contracted with ESA to prepare the Environmental Impact Reports for the watershed-wide permitting programs. So our role in this whole process is to act as third party outside, objective analysts to do what the California Environmental Quality Act would have us do, and that is to assess the potential for adverse environmental effect of the action that they are considering.

What the California Environmental Quality Act does is, it provides the public and public agency decisionmakers with information about a pending project and particularly about its possible environmental impacts.

To summarize this, analyzing the program, disclosing both what the program is about and also its potential for adverse environmental impacts.

Where we identify those kinds of effects,

coming up with ways of mitigating or reducing the severity of those impacts; and where we identify those, those become incorporated into the program. And also responding to public comments on -- at a couple of stages in the process, including this stage, the Draft Environmental Impact Report stage.

Here in California, the California Environmental Quality Act, permitting actions of state agencies are subject to the act, so the State has to analyze its own permitting actions in terms of potential environmental impacts, go through the same CEQA process that a developer would if they are planning a new subdivision or Caltrans has to when they are planning a new highway segment. So pretty much any and all state actions are subject to CEQA. It's not an option. And when CDFG is considering the approval of a proposed permitting program, that program must first be analyzed under CEQA.

So our approach to the CEQA analysis for these programs, first of all, CDFG decided early on to have two separate EIRs, one for each watershed-wide permitting program, a separate one for the Scott and Shasta. Because this is an analysis of a permitting action, not all the activities that are going to take place under this program are known in great detail so there are some

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aspects of the program that are covered at a broader, sort of a general view, not what we call a programmatic level of analysis. Others are much more specific.

But, for example, when CDFG later on goes on to issue incidental take permits and streambed alteration agreements, they may need to do some follow-up work to look at site significant impacts, for example, impacts to local site-specific biological resources, rare plants and animals, and also cultural resources, archaeological and paleontological resources.

The CEQA analysis has to include a clear statement of the objectives of the permitting program. Those are included in both of those documents.

And also public participation in the process is required at a couple of stages by law. And for this particular process for these programs, CDFG has gone considerably beyond what is required by law.

For example, the law does not require a public hearing at this stage but CDFG, I believe, is interested in as much public input as possible and therefore decided to hold this series of public hearings.

Just a brief overview of the draft EIRs before we hear your comments, and that is what we are really here for tonight.

I would like to talk a little bit about the

baseline for the document. This is unfortunately a somewhat confusing aspect of the whole deal.

The baseline is just that. It's the baseline. It's the point of departure from which we begin our analysis. So we don't go back to the beginning of time to look at changes in the environmental and physical environmental that have occurred, say, since European descendants got to this part of the country. We start at the beginning of the permitting action. For this project, that was in 2005 when the RCD submitted their applications and CDFG accepted those applications as complete.

So that's the time layer. The conditions that prevailed at that time, those conditions are included in the baseline. We don't consider those impacts of the programs.

So some of the activities of the program covers, such as the diversion of water for irrigation, we consider them historic, ongoing activities that over time that will cause and will continue to cause environmental impacts. These activities and their impacts are part of a baseline and are expected to continue regardless of the program. And therefore, these ongoing history activities and their impacts are not considered impacts of the program but we do discuss them in the environmental

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setting or the existing conditions discussion in the EIRs.

A little bit more about this. What we do in the draft EIR is, we analyze the difference between those baseline conditions and the future conditions that would occur if the programs are approved and implemented.

For those changes in the environment that we determine to be significant -- and there is a whole discussion in the EIR about what constitutes a significant impact -- the draft EIRs identify feasible mitigation measures to reduce those impacts to less than significant, if possible.

As I said, those mitigations measures then become incorporated into the program and are implemented with the program.

For these programs, the programs are expected to reduce some of these environmental impacts caused by historic, ongoing activities by requiring agricultural operators to incorporate measures that will protect fish and wildlife resources and to avoid, minimize and fully mitigate any intake of coho salmon that might occur incidentally to these activities.

So while we are not required to identify these ongoing historic activities as impacts of the programs, or mitigate them, as a consequence of the activities

authorized and conditions under the programs, there will be a net benefit to the environment by changing the way that some of these historic and ongoing activities occur.

Some of the major conclusions of the draft EIR -- and you can find these in the executive summary. It's a fairly trim 15- or 20-page long executive summary. So if you don't want to look through the whole three inches of the document, you can just look at that.

Each of the two program EIRs for the Shasta and Scott watersheds identifies ten significant impacts and 11 less than significant impacts.

We also found that all the significant impacts can be mitigated through a combination of measures that were already built into the programs and also additional measures that we came up with while we were writing the EIRs. So that means that the programs will not result in any significant unavoidable impacts, as we call them.

The programs will not result in significant growth-inducing impacts. They won't encourage growth in the Shasta or Scott valleys or result in promote irreversible environmental changes to the landscape.

And through the alternatives analysis -- each EIR includes an analysis not only of the program as proposed by CDFG and the RCDs but also alternatives -- we also found that the programs themselves are

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environmentally superior or preferable to the alternatives that we analyzed, even though we tried to come up with something better.

The introduction to the EIR reviews the structure of the programs, the scope and organization of the draft EIRs and also addresses generally some of the major issues that were brought up in scoping comments from the scoping sessions and comment letters we received two years ago.

Chapter two, project description, is really the detailed description of what these programs will look like. There is an overview. There is a clear statement of the objectives from the perspective of the Department of Fish and Game, the RCDs, and also agricultural operators. We go into quite a bit of detail about the program permitting structure. We recite the covered activities and what both the streambed alteration agreements and the incidental take permits will look like. We do that in quite a bit of detail.

We also include in the backs of both of the EIRs the actual draft ITP and streambed alteration agreement master list of terms and conditions. That's a long list, about 110, I think, conditions that will be -- the relevant ones will be applied to each individual streambed alteration agreement. Those are included as

appendices in the EIRs.

Chapter three is sort of a nuts and bolts of the environmental impact analysis, and these are the various areas that we look at, land use and agriculture, so we look at whether the programs are likely to have a negative effect on the continuation of agriculture or will encourage land use particularly away from agricultural land uses in the Shasta and Scott valleys, look at hydrology and water quality and stream geomorphological, biological resources both from a fisheries and aquatic resources perspective, and also terrestrial resources and wetlands.

We have chapter on cultural resources. That is historical, archaeological, and paleontological resources.

Hazards and hazardous materials, and also public utilities service systems and energy, including an analysis of greenhouse gas emissions and climate change effects of the program.

Chapter four is the cumulative analysis. And here we look at the possibilities of the effects of these programs to combine with adverse effects of other programs and projects and whether that could possibly result in a cumulative affect. So individually the programs may not -- or the programs themselves may not

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result in a negative effect, but combined with other regulatory programs, for example, the TMDL process or processes on both the Shasta and Scott Rivers have the option of the regulatory regime. We looked at these programs in combination with all of those.

And we also looked at the whole suite of restoration activities that have been occurring in these two valleys in and near streams and whether some of the very site-specific effects that we have identified for this program, particularly around restoration activities, could combine with others to cause a significant effect, and we didn't find any.

Chapter five is the alternatives analysis. CEQA requires that we examine the range of reasonable alternatives to the project or program which would feasibly obtain most of the basic objectives of the project program that would avoid or substantially lessen any of the significant effects of the project or program.

So we need to go through a whole exercise of trying to think up alternatives, alternative ways of achieving the same objectives that were laid out by the Department of Fish and Game or the RCDs but that may have lesser environmental effects.

So we looked at several alternatives that we

found not to be feasible or to meet the requirements of CEQA and we rejected those. We have a brief description of them. And then for each of the two EIRs, we identified a no-program alternative that is required by CEQA, and that is essentially what would happen if these programs were not adopted and implemented, what would happen in the absence of these programs, no program.

Also, what we call an instream flow alternative where, in addition to the elements of the program itself, CDFG and the RCDs would also work to develop more offstream storage or other sort of alternative water sources to -- primarily to augment stream flows for the benefit of coho salmon and other species.

The Shasta EIR includes a third alternative, and that is looking at the possibility of a fish bypass structure between Clarks Creek and the upper Shasta River above Dwinnell dam to allow fish passage to the upper part of the Shasta River.

The public participation aspects of the process, at the scoping stage which was two long years ago -- I know we have been working on this for a long time -- the notice of preparation was issued October 19th. That began a comment period -- a 30-day period of comment on the scope of the environmental review. And we received quite a number of letters.

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We also held scoping meetings here in this room and also up in Yreka on the 24th and 25th of October, 2006. And comments received included comments on key issues and concerns, possible constraints to the successful implementation of the programs. We got several ideas for alternatives and other opportunities for restoring fish or coho salmon, protecting coho salmon and managing watershed.

And to the extent that we could, we incorporated these comments into the preparation of the two draft Environmental Impact Reports.

Here at this stage of the Environmental Impact Report itself, the two documents released that were released in the beginning of October of this year, there is a 60-day comment period, so you have 60 days to comment on the scope of the analysis as well as the accuracy and completeness of the analysis. CDFG is receiving written and oral comments at these public hearings and is also receiving letters, e-mails and faxes to their offices.

CDFG will accept comments on the draft EIRs up to -- and they need to be postmarked by five p.m. on December 9th, 2008. And we will then begin the process of responding to comments.

By law, we are required to respond to every

comment received, whether it's received in writing or orally at a public hearing. So we will respond to all comments.

And I am going to turn it back to Mark now.

MR. STOPHER: I have already suggested that if you didn't fill out a speaker card, one of those three-by-five cards, if you came in and didn't know you wanted to speak but now you do, Bob Williams will give you a speaker card.

Do you know how many we have now, Dan?

MR. SICULAR: I think nine.

MR. STOPHER: Let's -- as you have noticed, we have a court reporter so we have a transcript of tonight's hearing to make sure that we have got everything correctly. And it helps to have the speaker card so we have your name and match it up against the transcript and the list of attendees tonight.

Time limit -- for those people that filled out a speaker card, how many of you think you need more than five minutes?

VOICE FROM AUDIENCE: Five minutes and 20 seconds.

MR. STOPHER: I don't think we are going to need a time limit. Many of us have been at public hearings that you have only three minutes but it might go

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until 2:00 in the morning.

We will accept comments on either written -- on either document, so if you live in the Shasta Valley and came tonight because you can't be in Yreka tomorrow night, we will accept comments on the Shasta EIR tonight either verbally or in writing.

We are going to ask that you please limit your comments to the approach that we used in the EIRs, the accuracy and completeness of the environmental analysis.

And we are -- our responsibility here and obligation is to make sure that we listen to you dutifully. We will give you an opportunity to review the document. So we are interested in hearing about what you think of the environmental analysis, what you think of the alternatives. And if you believe some of the -- our interpretations of the analysis are wrong, that's fair game as well.

We are not here tonight to respond to you, in the sense of saying, "No, you didn't understand that" or help you give a little more information or interpret it for you. The document speaks for itself, and we want to make sure that we don't make any confusion with respect -- we don't want to confuse what the document says. So you are responding to what is in the EIR. We might be able to respond to questions about the process. For

example, we have already laid out how things are going to lay out in time, but we are not here to reiterate the alternatives or reassess those alternatives or mitigation measures.

So, again, we will not be responding to comments tonight. All responses to comments will be in writing and will become part of the final EIR. SO when you see the final EIR in March, there will be an appendix and every comment letter we got, every e-mail we got, the testimony from people, testimony tonight and tomorrow tonight, and it will be -- we will break it up into issues presented in every one of those and we will respond to every one of them.

We also would expect that the final EIR will be somewhat different than the EIR. I have never worked on an Environmental Impact Report that wasn't influenced and changed as a result of public input. So I do not want to leave you with the impression that we take the draft EIR and change the cover and staple the comments on the back. That isn't what happens. There is likely to be substantive revisions in the EIR before it becomes final based upon the public input we get.

And then we also have comment cards if you need a piece of paper, and Bob Williams has those back there.

So availability of the EIRs, we have a limited

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number of EIRs. It will turns out it costs about $100 each to produce. So we obviously are limited in terms of the number we can produce. We have handed some of them out to organizations. We have the EIR on compact disk here tonight. You can also find it on the Fish and Game website at this location. The libraries in Montague, Fort Jones, Yreka and Redding also have the document. It's available at Fish and Game offices at the Yreka screen shop, the Shasta Valley Wildlife Area, the Redding Fish and Game office and the Eureka Fish and Game office on Second Street in Eureka. It's also available at the RCD offices in Etna and Yreka.

So it is readily available.

Again, please submit written comments to Bob Williams, Department of Fish and Game. If you send it by regular mail, please mail it on the 9th. We will accept them by e-mail as well or fax.

So I just want to reiterate again a little bit about the process. We have been up here many times talking to people. I am sure that some of you have never seen me before, this is a new face for you.

This program was developed as an alternative to the regular permitting process under 1600 and the California Endangered Species Act, both of which are fairly lengthy, costly processes. But this process, it

provides an umbrella, an Environmental Impact Report, that covers permitting under the watershed-wide permitting program as it's constructed.

Usually, there is a fee associated with a 1600 agreement, anywhere from a couple of hundred dollars to several thousand dollars. That fee has already been paid for the watershed-wide permitting program. If you enroll in the watershed-wide permitting program, there is no fee for a 1600 permit for you.

The California Endangered Species Act, there is no fee for that permit process under state law. However, as Dan Sicular was saying earlier on, that is a discretionary decision made by the department initiating those permits. It has environmental effects, so we have to comply with the California Environmental Quality Act.

In this case, the CEQA preparation has already been done. The Department of Fish and Game found the funds to pay for ESA to provide professional help for us to complete this project. So if you enroll in the watershed permitting project, there is no CEQA cost.

If you decide that "I understand that I have to meet those obligations under Section 1600 CESA but I don't want to be part of that program," for whatever reason, you don't have to be. You can get your own 1600 agreement, get your own incidental take permit but you

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are also responsible to CEQA, which is likely to be quite expensive. I don't know if it's 5,000 or $30,000, but it is expensive. It's the choice you have.

The third choice that you have, if you are conducting activities that are regulated by CESA and 1600 is to find a legal recourse, either assert that we don't have that jurisdiction, hire attorneys if we conduct an enforcement action. That's an option to you as well, probably not any cheaper than the second course.

By far, in terms of economic cost and in terms of time frames, the watershed-wide permitting program is cheaper and faster and easier, in my opinion, for an individual landowner to implement than the other alternatives.

So I just want to make sure that you understand that those are the processes that are going to go forward as we get into spring and summer of this year.

And with that, we are going to move into the public participation phase.

If you want to stretch, we will move things around and start calling names off the list.

(Pause in proceedings.)

MR. STOPHER: Let's get started, please. Dan is going to read off the names, and please come up. If you have something you can give us in writing, you can do

that before or after you begin to speak, whichever you wish. And just let us know when you are finished.

MR. SICULAR: We have a microphone here if people need it, whatever your preference.

The first speaker is Marcia Armstrong.

MS. ARMSTRONG: Do you want me up there?

Marcia Armstrong, Siskiyou County Fifth District Supervisor.

We have an ordinance that requires coordination, early presentation to the Board of Supervisors in Siskiyou County. We also have a resolution that cites all of the citations. It mentions our jurisdiction. And nothing has been presented to the Board of Supervisors. No effort has been made. I am told that we simply just don't have time. It's required by our ordinance and by your own statute, so I would check that out. 51.1-1

It's the holiday season, a really lousy time to release something like this. We would request an extension of the deadline. 51.1-2

Did you do an economic impact analysis on the cumulative effects on agriculture regulations? You don't have to answer that, but that is one of my comments. 51.1-3

And you mention that after you have gone through and seen whether people have signed up for the 51.1-4

1603 for the incidental take permit, you would make visitations to everybody, hoping to get everyone in the valley. There are probably agriculturists who don't believe that they are required to have -- that they are not impacting endangered species. SO I hope you will keep that in mind. 51.1-4 cont.

This does not preclude our written presentation and comments that we will be making to you.

Thank you.

MR. SICULAR: Thank you.

The next speaker is Mark Baird, and he will be followed by Jeff Fowle.

MR. BAIRD: I have a few questions.

First of all, we were led to believe when this process all started that the big permit was going to be the only we were required to sign. So this is news to me that now all of a sudden there are going to be subpermits for this and subpermits for that. 51.2-1

And a permit implies possible denial and also implies possible future permits to come.

First of all, my first comment is, when is enough enough? Are you guys finished this time with this CEQA and environmental impact and all this other stuff? Or next year is it going to be TMDL and or the year after that it's going to be A, B, C, D, E, F, G. That's one's 51.2-2

comment I have to make.

I don't think you are finished. I think you are going to keep going until we don't have the water and the people who fill swimming pools in Los Angeles do have the water. That's what I think. I think all this is just a load of eyewash for the public. 51.2-2 cont.

Second of all, did you do any research to find out whether coho salmon are actually native to this watershed, because we have been led to believe that they are not, because the water in the Scott River has always been too warm for coho salmon. We were led to believe that coho salmon were originally planted here in the early '50s or possibly the '40s and a few of them lived and now it's our responsibility to pay and pay and pay and give up our rights and give up our water and make sure the ten fish left live. 51.2-3

I am a pilot and I fly over the ocean all the time. When I come into the coast of the United States, I will see thousands and thousands of ships within a couple of hundred miles of this coast line, they look like small towns and they are drift-netting hundreds and thousands of square miles of ocean and cleaning all of the fish out. 51.2-4

And I submit to you that it's not the depth of the water in French Creek that causes these salmon not to

come back; it's the Japanese and the Korean fishing fleets. So one of my comments is, and did you take a look at that or we are just going to pay for their activities as well?

The next thing I have to say is, I also submit that this entire process is coercion because you say we have three choices, submit or pay. We can either pay for lawyers if we don't think we mitigate. You guys have lots of lawyers and their time is free. But we would have to pay for our own lawyers. Or we can get our own permits and pay. And our Environmental Impact Report is going to be tens of thousands of dollars, just like this Environmental Impact Report cost all of us through our tax dollars.

So to me, yeah, I might sign up for the permit, but I do it under duress because it is coercion and nothing more.

The next comment: You are looking at ways to mitigate the effects on these fish and the salmon, but do you also consider that the Department of Fish and Game also includes other types of species?

For example, have you looked at the impact of wetland pasture or the lack of wetland pasture on migratory birds, ducks, geese, all the other animals that enjoy flood irrigated pastures during the season which

51.2-4 cont.

51.2-5

51.2-6

will not enjoy that benefit as they did not -- when they dried up the Tulelake basin a couple of years ago. I can't even imagine how many thousands of birds died over that. And that was all about salmon and fish and water.

Also, we have a deer wintering area, a couple of three quarters of a section of deer wintering area. Those deer come down to the pasture at night and they eat and they drink. If we stop irrigating that pasture, there won't be any grass and they won't have anything to drink. And the bear and everything else.

51.2-6 cont.

And I think you kind of get the idea.

The baseline of the EIR, irrigation causes ongoing environmental impact. Now, we are not going to stop that historic practice, as you say in your own words, well, unless you don't play ball. Because if you don't play ball by signing up for all this stuff, then enforcement action is to follow. So that seemed like quite a bit of doubletalk to me. You are not going to stop us from irrigating but you sure as heck will stop us from irrigating if we don't play ball.

51.2-7

I have been irrigating my pasture for 15 years through a pipe with diversion. I have never in 15 years pulled a dead fish out of that pipe. I have pulled crows and all kinds of things, possums, all kinds of things. But what the fish used to do is they would stream

51.2-8

upstream until the water got warm and they didn't like it and then they would turn around and swim back.

Now that you have built the fish screen at the head of our ditch, now for the first time in 15 years they are finding dead fish. They are finding the fish because they can't get out of your fish screens that you had built, where they could swim back out of the ditch.

51.2-8 cont.

So I submit that your science is flawed, your engineering is flawed, your methods are flawed, and on and on and on. I think you get the picture.

51.2-9

That's pretty much it for me.

MR. SICULAR: Jeff Fowle, followed by -- I believe Doug Jenner is next.

MR. FOWLE: I am here tonight representing Siskiyou County Farm Bureau, and I will start off by clarifying that all the comments I make tonight pertain to the Scott, and all but points four and eight, those two do not pertain to -- they are exclusive to the Scott and do not pertain to the Shasta.

51.3-1

First of all, we recognize the potential positive outcome this program could have resulted in for the entire Scott River watershed, the people, the economy, the fish and the wildlife environment.

However, as it has been presented in this document that I spent the last three weeks digesting, I

found inconsistencies, implications, assumptions and voids in data. And it causes great concern regarding the future of the entire watershed. 51.3-1 cont.

I will highlight a few of the areas of concern at this time, and a full dissertation of our positions and suggested changes and modifications supported by scientific and legal documentation will be submitted by the December 9th deadline. 51.3-2

Here is a concern that put our members in potential risk and jeopardy as it currently reads or as follows:

Number one, the program assumes that agriculture is the major, and I quote major, cause of the decline in salmonic numbers without sufficient scientific support. There is a strong emphasize on flow. However, the focus has been limited to 15 percent of the watershed that is privately owned agricultural land. 51.3-3

Change, the EIR needs to address the evapotranspiration of the uplands and present the potential increase of flows that could be attained through an increase in proper harvesting and thinning.

Point two: The program encroaches on private property and water rights. First, the DFG's description to access private property as it reads in the document is unacceptable. Access to private property shall be at the 51.3-4

discretion of the subpermittee in terms of notification and timing. Access may be restricted to DFG employees only, no third parties, and also at the will of the subpermittee in the presence of said subpermittee. 51.3-4 cont.

Second, the program is inconsistent at best in explanation of its restrictions on grazing. It's mentioned four times in the report. Two are similar, the other two are different. It should be noted that grazing is an important and essential tool for managing riparian habitat. The Department of Fish and Game, and this is a point, shall accept R-Mak (phonetic) grazing plans as necessary tools to allow grazing. Further, the department shall not control nor restrict grazing outside of the riparian fenced corridors as was stated once within the document. 51.3-5

Third, the program is beyond its authority placing restrictions on ground disturbing activities adjacent to the channel. It was ambiguous.

The point is that activities that occur outside of the channel in the normal process of agricultural business shall not be restricted nor managed by the Department of Fish and Game. 51.3-6

Four: The program expects participants to reduce diversion use, and they, quote/unquote, may be paid for the reduction. This is unacceptable. 51.3-7

All reductions in diversion use shall be voluntarily and subpermittees shall be compensated for the reduction at a fair market value. If compensation cannot be made, the reduction in diversion is at the discretion of the subpermittee. 51.3-7 cont.

Third main point: We believe there is an incorrect assessment that the program's impact on agricultural is less than significant. If the true objective is to recover salmon, existing open space must be maintained, and that open space is provided through agriculture. For agriculture to remain as well as the open space, it must be profitable as well as sustainable. Without profitability, agriculture is not sustainable. 51.3-8

One accurate statistic that was noted in the EIR is that the average net annual income of agricultural operations is only $7,000 above poverty level. Any increase of operation or decrease in yield should be noted as a significant negative impact. 51.3-9

The EIR does not contain a cost benefit analysis.

Further, the EIR does not take into account the cumulative economic impacts as is required by NEPA, the National Environmental Policy Act. This program, as it's written, will cause a net crease in cost to DWR, who will 51.3-10

undoubtedly be passing that increase on to the participant.

51.3-10 cont.

It should be noted that any additional costs that arise from the implementation of the program for services performed by DWR shall be paid by the Department of Fish and Game.

51.3-11

Also, the program will potentially reduce diversion of water with no guarantee of compensation, thus resulting in a loss of production. It should be noted that all reductions of diversions shall be voluntarily and be compensated at fair market value.

51.3-12

Third, the program will hold the participant accountable for cost of avoidance, minimization and potentially, if the funding is not available, mitigation measures that would, as specified in the document, be picked up under normal circumstances by the RCD.

It needs to be noted that any cost associated through the implementation of projects required by the department through the program should be paid for in full or at least in share from outside sources. At no time should the subpermittee be held accountable for the full cost of the project or mitigation measure.

51.3-13

Fourth point: Mitigations pertain to livestock and vehicle crossings are unrealistic. It's stated in the EIR that the maximum allowable width of crossing is

51.3-14

25 feet. That is not reasonable as the average width is over 50 feet. Ultimately, this will prohibit all crossing of the river by livestock and vehicles, thus increasing GHG emissions. 51.3-14 cont.

As a side note, there is no discussion of the impact to the elk herd. On our place currently are 12 head that crosses the river daily in three prime spawning reasons from September to May. And that's coho spawning time. 51.3-15

Fifth, conclusions and statements in the EIR regarding commodities grown in trends and crop value are inaccurate. I like Caltrans, but I really question using them as a cite and a source of predicting crop values. It's absurd at best.

Second, the statement regarding the trend of decreasing drain acreage does not take into account the drain issue is rotationally, every six to seven years, as the table from which the statement refers is on a ten-, a three- and a nine-year data gap respectfully.

Third, the statement regarding trends of crop acreage does not take into account the marketability of the crops in the cited years. 51.3-16

Sixth, the EIR briefly discusses the option of landowners withdrawing from Williamson contracts as a result of the program. However, your consultant 51.3-17

dismissed this as a viable option, believing that existing county regulations and stipulations served as a significant barrier and fails to address the second option of landowners enrolling in a reserve program. Withdrawals from Williamson contracts in whole or in part are very realistic, especially today with land values falling. It's going to allow landowners the option to cancel contracts with less of an economic burden.

In fact, several applications to withdraw have been approved within the last two years.

Furthermore, enrolling agricultural land into reserves is the other option, which is an allowable use under the Williamson Act and could have potentially devastating impacts on the county. This was not addressed in the EIR.

51.3-17 cont.

Seventh, the EIR fails to address potential impacts of the program on a holistic level. Reduction of diversions and complete dedications within some reaches back to stream river flow combined with proposed efficiency measures could have a very significant negative impact on residential wells, wetlands, birds and other wildlife that depend on that diverted water for life processes and groundwater recharge.

51.3-18

Subpermittees, this needs to be added, shall not be held accountable or responsible for any negative

51.3-19

impacts resulting from implemented projects as dictated by the program. 51.3-19 cont.

Eight, as noted in the EIR, the Scott River is not a stable system. The natural rain and snow events will never allow the Scott River system as it currently exists to recover, at least in its current geomorphological condition. And subpermittees should not be held financially responsible for the continued repair and reconstruction of the projects that are damaged and destroyed due to natural events. 51.3-20

Finally, the program sadly eliminates the option of arbitration for the subpermittee. All subpermittees should be able to maintain the right to arbitrate. 51.3-21

In closing, if the true objective of the DFG is to restore the salmonic populations, they need to act, as an example, with other state and federal agencies, and take a sincere and objective look at all of the limiting factors for salmonic populations and start addressing issues on a holistic level.

The focus for the past 16 years has been on agriculture and implementing public policy on private lands. This ITP implies that 15 percent of the watershed is responsible and will somehow miraculously solve the problems for the remaining 85 percent. 51.3-22

I ask you, is this reasonable and is this practical? We believe that with the proper changes and modifications, this program does have the potential to be a valuable tool. It is our sincere hope that the department makes the necessary adjustment to yield a product of value.

51.3-22 cont.

Thank you.

MR. STOPHER: Jeff, are we going to get comments in writing?

MR. FOWLE: About 63 pages worth right now.

MR. SICULAR: The next speaker, I believe it is Doug Jenner; is that correct? Followed by Caroline Luiz.

MR. DOUG JENNER: I haven't read the full thing yet, but I feel like I am being railroaded and the RCD -- I don't know the mitigation level, I don't know what we are signing on to if we sign up with them, exactly, and what the mitigation levels are. And then you say if we want to go it on our own, it is going to cost us all of this money and the economic picture doesn't look too good going on our own. And I feel like we are being railroaded down the track and I don't like that.

51.4-1

MR. SICULAR: Caroline Luiz followed by Erica Terence.

MS. LUIZ: I think everybody has kind of said it, to cover what I want to talk about, but I agree with

51.5-1

Doug that I think we are being railroaded on that.

I would like to say that it seems -- the whole report seems subjective. There is no one really sure what is going on or what is going to happen or how much money it's going to cost or what the permit will involve.

And I have been to the Department of Fish and Game two or three years ago when the incidental take first came out and nobody could give me a straight answer. They all told me I didn't need the permit, it wasn't necessary. They didn't have any paperwork for it. And I talked to, like, three or four different people in the office. So it seems strange to not be able to lay everything down in concrete and deal with it.

51.5-1 cont.

MR. SICULAR: Thank you.

Erica Terence, followed by Nick Jenner.

MS. TERENCE: My name is Erica Terence. I am with Klamath River keeper, and I was -- I grew up in the salmon watershed a couple of watersheds over and in communities where livelihoods and cultures depend on healthy fish runs. You will find me coming back to that point.

51.6-1

When you guys talk about reduce -- streamlining the process and reducing regulatory burdens and cost burdens, that all sounds great, but I didn't find a lot in the document that really answers specifically how

51.6-2

these programs might reduce those burdens.

We have some concerns about financially how these programs are going to work, who is going to pay for them. It seems to us that when you create this kind of overlap in authority and overlap in oversight between the Department of Fish and Game and the RCDs locally here that we are setting ourselves up for introducing problems in terms of oversight enforcement, and really costs. Who is going to pay for the mitigation measures? Is it going to end up being the landowners and the Scott Valley farmers or the taxpayers?

51.6-2 cont.

We didn't find a lot of answers in this document specifically to those questions and we are concerned about that. Particularly, it seems like a potential flaw in the program. We would like to see further addressed since, as we understand it, RCDs are not able to fund legally required mitigation projects, and again it seems like that burden, that cost burden, is going to be passed right over onto landowners and potentially taxpayers and we are concerned about that.

51.6-3

But, you know, overall the biggest problem that we see with this document is that it might be doing a restoration project here or a restoration project there and those are great. We applaud landowners and agencies working together and trying to get more coho back in the

51.6-4

stream, more water back in the channel, the flood plane reconnected to the Scott River channel, but until we fix problems like groundwater pumping, until we fix people who are outside the diversion limits or not having permits enforced in terms of diversion limitation, we are not going to see the abundance of fish that we need to see for our cultures and economies downstream. We aren't going to see the abundance of fish that is going to satisfy ESA requirements.

And we really would urge the Department of Fish and Game to go back and reconsider. In our current climate, we have just seen some political changes. We are likely to see a different kind of interpretation of the Endangered Species Act and different appointments.

And in our community locally around here, what we really need to do is address the fundamental problems of dewatering, groundwater pumping, and instream flows and water quantity and quality that is going to ultimately lead us to the kind of abundance where we can talk about how many coho we can take and be okay and be within our ESA requirements.

I heard somebody talk earlier about harvesting fish in other parts of the world, and that is certainly a problem. We try to really watch how many fish we take downstream because, again, until we have that abundance

51.6-4 cont.

51.6-5

of fish, none of us are going to be in the clear for ESA requirements and permitting and costs to cover the permitting and agencies are going to be running around trying to cover all this new ground. 51.6-5 cont.

It seems to me, again, that it opens up a lot of new questions for whose authority is it to regulate when you have an RCD sharing part of the responsibility with Fish and Game, whose responsibility is it to oversee the Endangered Species Act. 51.6-6

So I hope those are clear. We will also submit written comments. We will be submitting detailed legal and biological analyses, and we thank you guys for being here tonight to hear the comments of the people in the community. 51.6-7

MR. SICULAR: Nick Jenner followed by John Jenner.

MR. NICK JENNER: I just have a few things. I haven't read this massive book cover to cover yet either.

I will just start, baseline, I don't know exactly how you guys came up with your baseline figure. I don't know how many things you took into account. But as far as a lot of these diversions, they have been going on for 150 years, 100 years plus, and we haven't been doing anything different that whole length of time. We 51.7-1

opened our headgates now, of course, there is fish screens on them. We haven't been changing our practices. They have been doing the same thing for 150 years. 51.7-1 cont.

As far as your impact levels, I think you had two different kinds of levels, potentially impact and serious impact, and you kind of said that we won't know if any of these impacts apply to our site specifically until you actually go to our site and continue this EIR that's been done. 51.7-2

First of all, I don't know how you can come up with an EIR without setting foot on anybody's headgate or diversion. If I wanted to put a hazardous waste material site in and just told the government, "Oh, it's okay, I will put it in but I will get that EIR to you after I put it up," I don't think they would go for that. And I don't see how this EIR can be valid without even setting foot on any of these diversions yet to check them out. 51.7-3

As far as incidental take, what difference does it matter if you have an incidental take permit or you don't and you accidentally kill a fish? Either way, the fish is dead, and what good is a piece of paper just to say you are okay if you do accidentally kill a fish?

Why make it such a burden on us to have that piece of paper in our hand where the outcome is going to be a dead fish one way or another if you happen to 51.7-4

possibly kill a fish?

I don't know why the Fish and Game doesn't do more mitigation. If you got out and actually walked these channels, some of the streambeds the gravel is so full they are up over field levels outside the banks. If we landowners could get some help by the Fish and Game or other departments to help clear the debris and excess gravel out of these streams, I think you would find that the water would run longer through the channel, it would be cleaner, smaller material, not huge boulders, more apt for spawning conditions.

And I know the fish -- we are all working towards the same thing. We want to help, too, but there is only so much we can do. And when it gets to the burdensome part where we have to spend our money to keep our job, that just doesn't seem right to me.

That's it.

MR. SICULAR: John Jenner followed by Jim Harris.

MR. JOHN JENNER: I am a little disappointed in this meeting because the landowners that I have talked to, we are all unsure of where we stand.

I have read a little bit in this book and I am opposed to quite a few articles. I am opposed to fencing. I am opposed to a take of water. I am opposed

51.7-4 cont.

51.7-5

51.8-1

to the cost analysis that this could cost us. It might not cost us right at the moment, but historically when you get involved with the government, it is going to cost you down the road and the State of California is not in very good financial thing right now.

51.8-1 cont.

I also would wonder about this EIR, how you came up with this EIR and you never set foot on a lot of this land here, so how can you come up with an EIR without going out and looking at this and telling the landowner what they are looking at?

We possibly may be able to work with you but we won't know that until we go out there and look, until we say, okay, you should do this and you should do that.

51.8-2

And then also I wonder about the recourse that the farmer has, you know, and it goes along with what I am talking about right now and what everybody else is talking about. We are giving comments. Who is going to go through these comments and -- where are these comments going to stack up? Are they going to be just throwed (sic) to the side and say, "Well, here are the comments"? Who is to say? They are thrown to the side and this is the document we have and that is the way it is.

What recourse do we have as landowners to be able to work through this thing? And right now I think everybody is unsure about what is going on and I don't

51.8-3

think this thing should even come to a head here the 9th of December. You need to have more information meetings and let people know what to expect. And I don't think you guys have told us one thing tonight about what to expect.

51.8-3 cont.

MR. SICULAR: Thank you.

I have a card for Jim Harris.

MR. HARRIS: I will be submitting some comments in writing but I do have some questions about it.

My main concern is how the program encroaches on landowner use -- landowners' rights.

I am a French Creek diversion user. And from experience already, Fish and Game comes onto our place without any notice. I have not received one call in the three years that I have been running the ranch on French Creek to notify me that Fish and Game would be on our property. They have left gates open which, in turn, left cows on the highway, on Highway 3, so at 9:00 at night I have had to run out and get 100 head of cows off the highway.

51.9-1

Secondly, they come in, they bring equipment in, no notification of that, working cows, all of a sudden, trucks, trailers, fish tanks show up, opening gates.

My main concern about this is the encroachment

on our private land and what effect that will have. And my other comments will come in writing. 51.9-1 cont.

MR. SICULAR: Thank you.

Does anybody else whose name I did not call or who would like to speak.

Sir?

MR. HAMMOND: Carl Hammond.

And one of the things -- I have got a couple of things, but knowing that they put a fish screen in the Youngs dam, spent about $600,000 or something, the fish don't go up it. Now they are looking to have to take that out and put in probably another million bucks.

When you do these projects, it seems like some accountability ought to be going in. It shouldn't be trial and error and the property owners -- and that's what a lot of this is going to be -- is kind of footing the bill, because, you know, we are paying taxes on that land. 51.10-1

Basically you are saying, well, the fish are everybody's property, the same way with elk. Those things are the same thing. Like elk going into the river, what difference is between a cow and an elk walking and killing a fish? Yet you are saying that cow ought to be nailed, actually the owner, because he didn't keep the cow out. And those elk live in the river. 51.10-2

Hell, they go right in there and waller.

I think you have got things that need to really be addressed before we get stuck with the bill. I have been watching a lot of this government stuff right now and it's just like, well, the Ford bailout, didn't you guys know this was coming? We told you what you better be doing. And actually, that's almost the same thing that is happening on this. And all we have been doing is buying time, trying to get through it, and it's just more encroachment, more encroachment.

And I will tell you what, I have watched all the predators that get in there and eat those fish. Somebody ought to be held accountable for something like that. If you guys are going to be the law enforcement on it and things like that happen, you ought to be -- if you have got to rid of them to have fish, then you should do that.

A lot of this you are just saying this is all nature. And I mean, there is too much things that is left up to nature and there doesn't seem to be accountability. Personally, I would like to see it. I am getting to the point I don't really care about it, but somebody has to put the food on the table and I am not sure that you guys are doing the job to get that done.

MR. STOPHER: Is there anybody else that would

51.10-2 cont.

like to speak tonight?

MR. BAIRD: I would like to add just one more comment. Mark Baird.

Our ranch was established somewhere in the early 1860's. The ditch to our ranch from Mill Creek was dug somewhere in the late 1850's, and it basically has been in continuous use, as somebody else pointed out, for darn near 150 years.

I am sure during that period of time there was salmon running all over this watershed. We are not the only ones that are causing the loss of habitat. You should look at outside makers.

51.11-1

And as far as greenhouse glasses, hell, look around you, it's a bunch of grass and trees. Every acre of grass supplies enough oxygen for 50 people in some city somewhere. Take the water, the grass will be gone. Take the water, the farmers will be gone. And on my place there will be a thousand one-acre parcels and a thousand septic tanks and a thousand wells to replace that ranch, because if I can't farm it, I will use the land for something else. I don't have any choice. So think about that when you are talking about taking this water.

51.11-2

MR. STOPHER: Anybody else?

MR. NICK JENNER: One more comment. Nick

51.12-1

Jenner.

I know also late in the summer when the streams begin to dry up, we could go around and in these last existing puddles, you can see hundreds and thousands of fingerlings in there. And we have called the Fish and Game before and told them exactly what is going on, there is some pools down here, come down here with traps and get these fish, take them upstream, downstream, do whatever you're going to do. And they flat said, "Well, no, we cannot do anymore. We can't trap these to move them."

51.12-1 cont.

And these are fish you can actually see, you can actually do something about to save them, and you guys are coming up with this whole list of stuff to do for possibly injuring -- I don't even know the numbers. Nobody knows the numbers we could be possibly injuring. But here are fish that you can actually help, that you can actually save, and nothing is being done about it anymore, it seems.

MR. STOPHER: Anybody else like to provide testimony for the record?

I thank you for joining us tonight. And again, I understand that this public hearing stage and the CEQA process is frustrating from the public respect, because we are here to take testimony and not to have a dialogue.

You have been here many times, people from the RCD have been here a number of times, including last week with SOSS. I am sorry that we haven't had a chance to have a dialogue on every issue here previously. I expect that we will have additional opportunities in the future.

We will be accepting more testimony on both EIRs tomorrow tonight in Yreka, and that's at the county courthouse at 7:00 p.m. If you have something to add to your comments, I would invite you to join us there.

And again, we will be looking forward to getting any written, e-mail or faxed comments in the next couple three weeks.

(Whereupon the public portion of the hearing was concluded and the hearing was adjourned at 8:25 p.m.)

* * *

CERTIFICATE

STATE OF CALIFORNIA)
) SS.
COUNTY OF SISKIYOU)

I, PAULA FRIDAY, CSR 5669, Court Reporter, do hereby certify that the foregoing transcript, consisting of pages 1 through 52, is a true, complete, and correct transcription of my shorthand notes taken on October 10 and 11, 2006, in the aforementioned matter.

DATED: December 2, 2008, at Yreka, California.

_____
PAULA FRIDAY, CSR 5669

Reporter's Transcript of Proceedings

* * *

Public Hearing

Wednesday, November 19, 2008

7:00 p.m.

Siskiyou County Courthouse
Yreka, California

Ronald W. Coleman, CSR 1596

COLEMAN & ASSOCIATES
Court Reporters
P.O. Box 7
Yreka, Ca 96097

(530) 842-1455

Wednesday, November 19, 2008 - 7:00 p.m.
Yreka, California
* * *

MR. STOPHER: Welcome. My name is Mark Stopher. I am with the Department of Fish and Game. I have had the pleasure of meeting some of you before.

We have a public hearing tonight on the Draft Environmental Impact Report for the Shasta Valley watershed-wide permitting program. We did a similar hearing last night over in Scott Valley in Fort Jones.

This public hearing -- I will probably explain this in a couple of ways tonight. This is a public hearing.

The Draft Environmental Impact Report is currently available for your review and comments. We released it in early October to the public and to other agencies and organizations. And this is a formal period for folks to tell us if we adequately evaluated the potential effects of the project that's described in the EIR, an opportunity to provide information about the alternatives that we evaluated and any other alternatives people believe ought to be part of the mix, an opportunity for people to do the same with respect to the mitigation measures as to whether or not they are

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implementable, whether there are others that might be effective as well, or whether or not some that we proposed are not going to be effective as we portray them to be in the document in a public hearing.

In a public hearing, this is a formal opportunity for us to receive your comments either verbally or in writing. If you are not able to do that tonight, the period extends through the first part of December. We are looking for any written comments to be postmarked no later than the evening of December 9th.

It is a 60-day comment period. The law requires that we can provide a 45-day period so we have extended that an extra two weeks at the outset. We do not plan to extend that. I anticipate we will get some requests for extension. I can't imagine us extending that comment period. And I will explain the reason a little bit later this evening for that.

So unlike some of the other meetings that I have had an opportunity to meet with some of you where you can ask questions and I can respond to them and have a dialogue and answer your questions, both about the immediate topic or any other topic, tonight is about receiving your testimony.

And Bob Williams, who is here, has asked you to fill out a speaker card simply with your name on it. We

will take those cards and provide everybody an opportunity to address the department and provide us with any verbal testimony you want to give us.

We are recording with a court record tonight the entire proceedings. So we will make a transcript from that so that we have an accurate representation of what you told us.

Once you speak, we will simply thank you for your testimony and ask for the next speaker.

We've had some -- again, we have had opportunities previously for more informal dialogue, and we will have some more after the public hearing phase is over. But we are not in a position during the public review period to go afield with discussing the alternatives and mitigation measures with you and discussing the project in detail.

And the reason for that is that we want to make sure that we don't put any alternative view of the project or description of the project or the impacts or mitigation in the record during this time period, because sometimes if you have a -- if you do that, you know, what I say might not match up perfectly because I don't remember exactly how the document describes it. And It's very important that we not have two different versions of that on the record at this point in time.

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So as you'll hear a little bit and we'll go over it again more briefly later, the public review period will end on December 9th. After that point in time we will take nearly three months to take all of those comments and evaluate them, read 'em.

What we will do is take the written comments and break them up into discrete comments. One letter might have five, ten, 12, 15 different points it makes. We will respond in the Final Environmental Impact Report to every one of 'em.

And in addition, the Final Environmental Impact Report may be different than the draft. The project description may be different based on the public input we got. Our assessment of mitigation measures may be different. Our assessment of the impacts may be different.

I have been involved with quite a few EIRs in the past. And every one of them has changed from the draft to the final stage based upon the contributions and the comments from the public.

We expect to be providing the document -- the Final EIR to the public in March, early March of 2009. And that will then begin -- assuming we proceed with the watershed-wide permitting program, which is described as the project in here, we will be proceeding with the

enrollment period for that project. We project that enrollment period to extend for 60 days.

We will be asking people to submit notifications for streambed alteration agreements and applications for incidental take permits into the program to us during that time period.

Shasta Valley RCD will be available to help you with preparing those materials, provide some guidance through that process.

And we will begin implementing immediately based on what we receive. We will start scheduling site visits and meeting with landowners and moving forward with the project. We are not going to wait until the end of the 60 days to actually start implementing.

At the end of the 60 days, we will look at the past letters of intent we have had or information we have about other people who might have been diverting water who we have not received an application from. We will contact them, provide them with the enrollment period that has now expired, would they still like to send us a notice of application. So we want to give people, again, plenty of time to do that. We will follow up again so that we will take ownership to remind them.

It is our intent to do public outreach during that period of time in the communities, meeting with the

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RCDs and other organizations, irrigation districts, if we need to, private parties if we need to to help explain what is needed.

At the end of that enrollment period and the follow-up contacts with people, if there are people who are conducting agricultural diversions who we have not yet heard from, we will follow up again. And that follow-up will be by one of our enforcement people, law and protection warden, and that person will then invite those individuals to submit applications for those permits.

If at some point in time, and I don't know exactly when that will be, there is reason to believe there is diversion going on without having applied for either one of those, we will ask our enforcement people to do an investigation and take from it there, wherever that would be.

In the spring, as this program unfolds, as we've said at other meetings, individuals diverting water will have several choices in front of them. One of them will be to obtain a 1600 agreement and incidental agreement take permit through this watershed-wide permitting program. Let's call that door A.

Under that option, there is no fee for the 1600 agreement. There are no costs associated with the CEQA

document that would be required for otherwise issuing you a permit, because that has been already handled. It is in the EIR that we prepared for this project.

Door B is you have got an owner who said, "Well, I want to get a 1600, an incidental take permit, but I don't want to be part of that watershed-wide permitting program." That is a choice that is available to anybody as well. They may notify the department for a streambed alteration agreement. There is a fee associated with that. Depending upon the activity, it can range from $200 to a few thousand dollars, depending upon the size of the operation.

They would also need to apply for an incidental take permit. There is no fee for that. Before we could issue a permit, however, we would have to comply with the California Environment Quality Act. And typically, that would be done with either an initial study or Environmental Impact Report and be prepared at the cost of the applicant. That could be very spendy. It could be ten -- $10,000, perhaps triple that. That would be the obligation of the landowner. That's door B.

Door C would be, "I don't want to be in the watershed-wide permitting program and I am not interested in applying for any other permits either." That's the -- that's the option that would end up requiring quite a bit

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of attorneys' time, because we would be pursuing an investigation and then probably filing a case for failure to notify for a streambed alteration agreement with the district attorney.

One of the things that we heard last night repeatedly was that people who provided testimony made a recommendation that none of those things, door A, B, and C, are not the choices but basically we continue status quo as we have been for the past several decades.

That is not an alternative that is analyzed in the EIR and is not an alternative that we are prepared to go forward with, so the EIR lays out in considerable detail what the watershed-wide permitting programs are as Dan Sicular will present the particulars of that document. It provides a comprehensive analysis of the environmental setting, the effects of the project and the mitigation measures for the project.

And I would advise you to read it. We will give you some locations and access to where you might get a copy of that. If you don't have time to read the whole document -- it is substantive -- I would suggest that you read the executive summary very closely. It's about 20 pages. You pay close attention to chapter two and read the others as you find time.

So at one point or another tonight we will

probably reiterate most of that.

So the agenda for tonight is, first of all, we will introduce the representatives of the Department of Fish and Game and our consultants who are here, talk about the purpose of the programs. I have already covered some of that. This will be somewhat redundant.

Dan Sicular will give an overview of the Environmental Quality Act as it applies to these particular projects. He will give you an overview of the contents of this specific Draft EIR, where you find different parts of the EIR, give you different information within the EIR, and talk about the public participation process, what there has been and what is happening now.

Representing the Department of Fish and Game, myself, Mark Stopher, I am the conservation program manager out of our Redding office. I have overall responsibility for streambed alteration agreements, the California Endangered Species Act, our participation in the California Environmental Quality Act, and overall responsibility for this program.

The project leader for this is Kaitlin Beene. She is not able to join us tonight.

But I am joined by Bob Williams, who is over here managing the paperwork here tonight. He is the

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contract manager for the EIR and responsible for managing that process and working with our consultants, who are also here tonight.

Tom Roberts, who is the project director. Dan Sicular is the project manager. Dan will be giving the overview of CEQA and the EIR itself.

Mike Podlech is here. He is the aquatic ecologist who participated substantially in developing these documents, both this side and the Scott side, too.

So the purpose of this program -- and we have been working on it for several years now -- is to an provide alternative means through a streamlined, comprehensive permitting framework for farmers and ranchers to continue routine agricultural activities while complying with Fish and Game Code 1600 and the California Endangered Species Act as it relates to coho salmon.

One of the keys here is the watershed-wide permitting program is an alternative to the usual process where every individual is totally responsible for submitting their notifications and applications and then responsible for the CEQA, the California Environmental Quality Act -- pardon my jargon here -- compliance and the costs associated with that.

By streamline, we mainly mean simpler and

faster, but we have been working on it for three or four years.

But the permitting programs are -- they are a cooperative effort between the Department of Fish and Game and the resource conservation districts, the Shasta Valley RCD, Lake Siskiyou RCD.

Individual agricultural operators participate by becoming subpermittees for -- they get a permit, incidental take permit. What we are referring here to is a subpermit because it is related to another permit that the RCD will have itself, SAA -- in this case that means streambed alteration agreements.

Covered activities related to agricultural diversions. Covered activities under these programs are agricultural diversions, other agricultural activities and coho recovery tasks.

And the programs include avoidance, minimization and mitigation measures that we believe to be effective in addressing potential impacts.

You might recall the coho salmon recovery plan developed by the department and approved by the Fish and Game Commission in 2004 included a specific complement for the Scott and Shasta Valleys. There was a statewide recovery plan and there was a Scott-Shasta recovery team that contributed an element which laid out a recovery

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strategy for coho salmon in these two valleys.

A specific recommendation of that team was that we develop -- that the department develop a watershed-wide permitting program. So this is the product of that direction several years later. The permits are entirely consistent with what the Shasta-Scott recovery team recommended in that document.

Next, please.

This is the schedule that we are looking at through the rest of the spring. March 2009, we will certify the Final EIR. We expect that to happen early in the month. And that will be the -- the gate that allows us to go forward with these programs. We can't issue these permits until we have complied with the California Environmental Quality Act. We expect to complete that and certify in March of 2009. That will commence a 60-day enrollment period, and it begins also the implementation period.

We will receive notifications and applications, meet with landowners, do site inspections, begin writing incidental take permits, subpermits, and streambed alteration agreements.

And I am going to turn it over to Dan here to handle the CEQA part, and I will come back for the last part.

MR. SICULAR: My name is Dan Sicular. I am with ESA, Environment Science Associates, a consulting firm based in San Francisco. And we were contracted by the Department of Fish and Game to prepare these two Environmental Impact Reports. Those are the two programs for the Shasta and Scott River watershed-wide permitting programs. So we have been working on that for about the last two plus years.

What I will be talking about this evening just briefly is to give you a little bit of overview of what the California Environmental Quality Act is and what it does and what it requires and then talk a little bit about the contents of these particular environmental reports we completed a draft of which are out for your review.

So, the California Environmental Quality Act is state law that provides the public and public agency decisionmakers with information on projects and programs before they are adopted.

And particularly, it spells out -- it requires documents that spell out what these projects are and what their potential is for causing Environmental Impact Reports. That way the public is informed of potential impacts of a decision before it is made and the decisionmakers are informed of the consequences of the

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decision they are about to make.

So what an Environmental Impact Report does is to analyze a project, describe it, analyze it, disclose the potential for impacts, to develop mitigation measures to reduce or eliminate significant environmental impacts where they may occur, and also to take public comment on the documents and on the projects and to respond to those comments.

For a permitting action of this kind -- and this is a new permitting or regulatory program that is being proposed by a California state agency. State agencies are subject to state law, so in California any state action with environmental effects must be analyzed under CEQA. So the Department of Fish and Game has to prepare environmental documentation under CEQA prior to taking actions on regulatory programs of this kind.

Our approach for this particular set of programs, the Shasta and Scott programs, is to complete two separate Environmental Impact Reports on parallel tracks so the documents are quite similar, except that they differ in that the environmental setting, the geographic setting in which they occur, is described in the reports. There is some difference in the way that we look at impacts because of the difference in setting, though programs are great or similar between the two

watersheds, we maintain this idea of two separate EIRs throughout the whole program.

There are both what we call programmatic and also project levels of analysis. The programmatic level of analysis looks at the general picture because we can't predict at this point all of the particular actions that may occur that these programs are adopted and implemented.

Some of the -- some of the aspects we looked at as sort of a broad programmatic level, while others we have much more specific idea of what's going to occur and we can look at in more detail.

The documents include a clear statement of the objectives of the permitting programs from the perspective of the Department of Fish and Game, the RCDs, and also the participating agricultural operators. And throughout the process the Department of Fish and Game has ensured that participation not only complies with the requirements of state law but that there are additional opportunities, including this one. This hearing is not required under state law, but the department is interested in taking as much input and providing as many opportunities to the public for input as possible.

So to give you a quick overview of the Draft

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EIRs -- and they have had been out now since early October. I don't know if you have gotten a chance to take a look at them. We will tell you where you can obtain them if you haven't. We do have CD copies here on the table, which you are welcome to take. There are also paper copies in several locations. We are pretty much out -- there are a few paper copies left that you can request, but we're pretty close to being out of those and they are rather expensive to print.

There are some in the libraries and Fish and Game offices.

But to give you a quick overview of the draft EIRs, I want to take a minute and discuss the baseline that we use for the analysis.

Now, with an Environmental Impact Report, we don't -- we start with the existing environmental setting, so what is here now is taken to be a part of existing environment. And we don't analyze the impacts of what is currently occurring. So we begin our analysis at the time that the RCDs submitted their applications for incidental take permits back in 2005 and that those were accepted as complete by the Department of Fish and Game.

So what this means is that some of the activities that the program covers, such as the diversion

of water for irrigation or historic ongoing activities, some of these activities at least in some places and times have likely caused and will likely continue to cause environmental impacts. However, these activities and their impacts are considered part of the baseline. And they are expected to continue regardless of whether the program is offered.

These ongoing historic activities and their impacts are discussed as part of the environmental setting and not considered new environmental impacts, impacts that will be a consequence of the program.

What we do in the Draft EIRs is to analyze the likely physical changes in the environment that will occur from the baseline if the programs are implemented. For those changes that are determined to have the potential to cause a significant environmental effect -- and we have in these documents to describe when an effect becomes significant. There is an important distinction under CEQA. But when we find a significant effect, CEQA requires us to come up with feasible mitigation measures to reduce or avoid those impacts and then to conclude whether we think that those mitigation measures will in fact be effective in reducing the impacts to less than significant.

Now, while it is not required, the programs are

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also expected to reduce environmental impacts caused by some of these historic ongoing activities by requiring agricultural operators to incorporate new measures to protect fish and wildlife resources and to avoid, minimize and fully mitigate any take of coho salmon that might occur incidental to those activities.

So from the perspective of our CEQA analysis and also from the department's perspective, these programs do more than just mitigate the effects of continuing but they also address some of the past effects.

Some of the major conclusions of the Draft EIR is each of these two areas, the Scott and Shasta watersheds, identifies ten significant impacts and 11 less-than-significant impacts. We found that all the significant impacts can be mitigated to a less-than-significant level. So we are left with no unavoidable impacts.

We also found that the programs will not result in significant growth impacts; that is, we don't expect them to introduce new growth in these watersheds. And we don't expect to see any irreversible environmental changes in the landscape.

And part of the environmental impact requirement is to look at alternatives to this program.

We found that the programs themselves are environmentally preferable to the alternatives analyzed.

I will just briefly go over the contents of the EIR. Most of those major conclusions that I just went over, you can find all of those in the executive summaries. Mark said that is about a 20-page-long chapter and is relatively easy to get to.

I would also suggest, actually, that particularly if you are considering becoming a participant in this program, that you read the actual text of the incidental take permit and the massive stream agreement, the massive list of terms and conditions, because those are what you would actually be dealing with.

Those are reproduced in full in the appendices to the documents. You can take a look at those. They are written in fairly plain English. And if you don't quite understand what these programs are actually going to accomplish or try to accomplish or what effect they are going to have on you and your operations, I think that is a good place to start.

So, the introduction to the EIR reviews the structure of the programs, the scope and organization of the document itself, and also addresses issues raised in the scoping comments.

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Some of you may have been at one or other of the scoping meetings that we held back in October of 2006, or you may have submitted comments -- scoping comments prior to our beginning work on the EIRs.

Some of the major issues or general issues raised in these comments are addressed in chapter one of the document.

Chapter two is the project description. This summarizes the context of the incidental take permit and the streambed alteration agreement. It provides an overview of the programs, the structure, the objectives of the program participants; that's Fish and Game, the RCD and agricultural operators who will be participating. And it reviews in some detail the contents of the incidental take permit, draft incidental take permit and the streambed alteration agreement massive list of terms and conditions. That is a list of about a hundred and ten conditions.

If you become a participant in this program, what Fish and Game will do is, when they are issuing a streambed alteration agreement, they will pick and choose off this master list of a hundred and ten conditions those that apply to your operation.

Chapter three is the heart of the environmental impact analysis, and these are the topic areas that we

cover; land use and agriculture, including a review of potential economic effects of the programs, their implementation, hydrology and water quality and stream geomorphology, biological resources, both in the prospective of aquatic fisheries resources and also terrestrial wetland resources.

We have a chapter on cultural resources and potential cultural resources impacts, historical, archaeological and paleontological resources, hazards and hazardous materials, and finally, public utilities service systems and energy. That includes what is now required by law; that is, an analysis of potential for climate change effects, so looking at greenhouse gas emissions associated with the programs.

Chapter four is the cumulative analysis. Here we look at the combined effects of the program with other similar overlapping of regulatory programs and activities. So we look not only at what would occur if these programs are implemented, but also the effects of these programs in conjunction with, for example, the TMDLs that are pending here in the Shasta and also in the Scott.

For example, if you look at the option nine, regulatory regime; we also look it all of the restoration activities that have been occurring on the Shasta River

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and the Shasta River watershed over the last several years. We look at stream specific effects because the intent of restoration work is to restore. There are effects, short-term effects, that are negative in nature.

Chapter five is the alternatives analysis. CEQA requires that we look at a range of reasonable alternatives to the project that would feasibly attain most of the basic objectives of the project or program but would avoid or substantially lessen any of the significant environment effects.

So we look at a range of possible alternatives to the program. Some of these were suggested by people in their scoping comments. Others are ones that we thought of ourselves or worked out in conjunction with Fish and Game. Some of them we found don't meet the requirements for determining what a feasible alternative is under CEQA, so we reject them and say why.

So in the Shasta, I think we have got a half dozen or so, so we consider them and then reject. Then we have three alternatives that we do examine and compare the environmental effects of those alternatives with the program itself, and those alternatives of no program alternative; required by law that we look at an alternative of what if the program doesn't happen, what would the effects of that be.

Another one we call the instream flow alternative. That is where, in addition to the elements of the program, Fish and Game were to work with other agencies and develop additional sources of water for agricultural use. That would include offstream storage facilities and possibly bringing in water from outside the basin, particularly from the upper Klamath.

And we also look at an alternative that would involve picking a new bypass channel from Parks Creek to the upper Shasta above Lake Shastina to enable fish to bypass Dwinnell dam and reach spawning areas in the upper Shasta River.

Public participation, I mentioned at the scoping stage that we had a round of public participation at that point. We -- the department issues what is called a notice of preparation for the EIR that is going to be prepared. That was October 19th, 2006, just over two years ago. That began a 30-day period for the public and agencies to comment on the scope of the environmental review.

We held two scoping meetings here in Yreka and Fort Jones on the 24th and 25th of October, and we received quite a number of scoping comments. These included several issues regarding -- about the fisheries and agricultural operations, concerns of people about the

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effectiveness of the program or the effects on their operations, of constraints to successful operation of the program and, as I mentioned, potential alternatives.

And to the extent that we could, we incorporated these comments into -- into the preparation of the Draft EIR.

I think I am going to turn it back to Mark. Thank you.

MR. STOPHER: So the Draft EIRs were released to the public in -- was it early October, mid October? The 10th of October. So they have been available for a week -- five weeks, and you have another three weeks or so to get public comments in. It's a 60-day period. We are accepting written and oral comments tonight.

Everything you say will be recorded by the court reporter and put in the record. We have some comment forms if you would like to write something down as a comment tonight and leave that with us. If you have already prepared a letter, that's fine. We will take that tonight.

You can also provide verbal testimony tonight and follow up with a letter during the comment period as well. We will accept both letters and electronic mail. If you are going to send a document by mail, though, please try to have it postmarked by December 9th at five

p.m.

Is that a Monday, Bob?

MR. WILLIAMS: It is a Tuesday.

MR. STOPHER: That will conclude the 60-day comment period. And we will take those comments, we will assimilate them and prepare responses again to every comment. There will be an appendix in the back of the EIR, and it could become quite lengthy.

I once worked on an EIR where we had 18,000 comments and responded to every one. We will certainly respond to every one here. And we will incorporate suggestions that cause us to make modifications into the Final Environmental Impact Report that we release to the public next winter. Our projection is around the first part of March.

So, for tonight's hearing, we have some speaker cards up here already. If you want to speak, please fill out a three-by-five card. All we need is your name.

Just to let us know how many people we have for that, of the people what have already indicated they wish to speak, does anybody think they will take more than five minutes for their testimony? Just so I have an idea. Unless we get a lot more cards, there's no reason to put time limits on people. We have seven cards up here already. We won't have any time limit.

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We will accept comments on either document, meaning if you were unable to attend the Scott Valley meeting last evening and you have comments on that, we will accept those tonight. Comments on anything on the Shasta EIR will be accepted as well.

The comments -- the ones that will be most useful to us will be those that are comments to the approach that we used to describe the environmental setting, the accuracy and completeness of our environmental analysis; recommendations on mitigation measures, those are perfectly appropriate.

We are not able to respond to the comments tonight. For example, if you say, "Why did you develop that mitigation measure," that would be your comment. "Please explain why you developed that mitigation measure." There is not going to be a back-and-forth dialogue about that tonight.

All responses to comments will be in writing and available in the public record to everybody, whether they attended this meeting or not, and will become part of the Final EIRs.

I might add that the Final EIR is a decision document under the California Environmental Quality Act. There is not an additional review period for that. It is an information document at that point in time. You can

provide us comments if you want, but we have already made the decision and it isn't going to -- the process is then complete with respect to -- with respect to CEQA.

It does start a 30-day clock for anybody who believes that we failed to proceed in the manner required by law to file their lawsuit if they wish to. However, we can begin implementation as soon as we certify the document and provide notice to the state clearinghouse.

I believe I already said we have comment cards or sheets of paper for you to fill out. You can get those from Bob tonight if you wish.

We have compact disks of the EIR available here tonight. You can go to the Department of Fish and Game website at this location and download it. It might take you a while on the computer to do that but it's readily accessible there.

It's also available for inspection at the libraries in Etna, Fort Jones, Montague, Mt. Shasta, Weed, Yreka, and Redding. It is available at the California Department of Fish and Game offices, the Yreka screen shop, the Shasta Valley wildlife area at the office in Redding, and also at our office in Eureka. And it's available at the Resource Conservation District offices in Etna and Yreka.

We do not have a large number of the hardbound

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copies. We have distributed pretty much all that we have. There were a limited number, quite expensive.

Written comments again go to Bob Williams, Department of Fish and Game, 601 Locust Street. You can send by regular mail, fax them to him, or you can e-mail them to either one of these e-mail addresses.

Is that the last one?

So does anybody else wish to speak tonight that hasn't already submitted a speaker card.

There are 28 or 29 of you here. We only have seven cards. I have not known people in Shasta Valley to be shy.

Again, there is no specific time limit. The critical thing in providing testimony, if you come up front, that would be nice. But if you can speak from the back and speak loudly and clearly enough for our court reporter to hear you, that will probably work, too. If it doesn't, we will stop you and ask you to come forward.

The first thing you need to do, though, for the record is to state your name clearly so that we can get that in the record.

So Dan is going to go through the cards and ask people to come up. I put them in order.

MR. SICULAR: The first speaker is Jim Cook, followed by Blair Smith.

MR. COOK: Actually, because I am representing the County or the county supervisors, I would prefer to last so I can support the speakers in front of me.

MR. STOPHER: Mr. Smith?

MR. SMITH: I am Blair Smith from Little Shasta. And I do want it recorded as a matter of record.

I would like to talk to the adjudicated water rights. I got the book and I read the last half it on the water rights. I haven't finished the first half. That is quite a challenge, really. But I will go ahead with it. However, tonight a neighbor has it and he is reading it. So the more people who get ahold of that, the better. 52.1-1

And I would like to read a couple of articles out of the ITP. And this is on page 839, and it is the top of the first item, water diversions.

Water diversions covered under this category include only the diversions of surface water through a conduit or opening from streams, channels or sloughs in the Shasta River watershed by an agricultural operator for agricultural purposes in accordance with valid water rights, including one specified in the following court decree. That's the Shasta River adjudication proceedings of 1932. 52.1-2

And we were pleased to see that included in

there.

And then it contradicts itself in a way because, coming back to page 30 and at the bottom of the page, the paragraph says, for the purpose of the permit, strained stranding is defined as a situation in which coho salmon are in a location with poor adequate habitat conditions due to reduction in flow from which they cannot escape.

The department shall instruct DWR -- and I question that point -- to reduce or cease the diversion and/or change the timing or manner of the diversion and take any other measures within DWR's control that the department determines unnecessary to correct or avoid stranding.

And DWR shall implement these measures immediately. However, before DWR instructing DWR as described above, the department will avoid such take by some means other than by reducing or ceasing the diversion or changing the timing or manner of the diversion, all in accordance with Section 18.

What bothers us about that, that indicates that the Department of Fish and Game, if they feel that downstream that the fish aren't getting enough water, they can take our adjudicated water to increase the water flow in the stream.

52.1-2 cont.

And the water they are taking is a private property right that we use in our living. We have to irrigate our irrigation lands. In other words, you are taking money out of our pockets, you might say.

I have talked with some of the Fish and Game people and hoped that they could find another source of water to implement that stream rather than take our adjudicated water rights. So far, they haven't come up with an answer on that particular aspect. This particular taking is a serious matter as far as our adjudicated water rights are concerned.

And we certainly don't favor that action at all.

52.1-2 cont.

MR. STOPHER: Thank you.

MR. SICULAR: Richard Kuck, followed by Jack Rogenbuck.

MR. KUCK: I am Richard Kuck, chairman of Shasta Valley RCD at this present time.

And we have put together some of our concerns that we feel we are going to have problems in implementing this program.

And I would like to start off by saying the Shasta Valley Resource District has taken this opportunity to formally comment upon the Shasta River watershed-wide permitting program. While the district

52.2-1

supports a watershed approach to permitting for incidental take, ITP, and 1600 permit coverage, we have some concerns regarding the program as it is written now. The following is a list of our concerns: 52.2-1 cont.

Funding of mitigation projects: As the master permit holder, RCD has taken on the responsibility of implementing the mitigation measures for the permit. It has always been our concern that current funding relied upon for implementation of projects may not be available to fund projects once they are considered as mitigation for the permit.

The Shasta Valley RCD has initiated contact with funders to request a formal determination by each respective agency as to whether they could continue funding the projects listed as mitigation measures for this permit. To date, NRCS and Fish and Wildlife Service determined that they still will be able to fund mitigation under this permit. 52.2-2

Shasta Valley RCD has not, however, received any official word of other funding sources such as NOAA, BOR, California State Resource Control Board, the US Forest Service and private entities.

So that brings up another concern, future funding allocations: In light of the current economic situation, both federal and statewide, we would like to

formally express concerns about significant budget cuts that may affect the RCDs' and the landowners' ability to implement activities identified in this permit.

The Shasta Valley RCD would like to recommend that efforts begin both at state and federal levels to secure funding to support ongoing activities identified in this permit, budget shortfalls.

52.2-2 cont.

Success rate of riparian planting: This has been a big issue with us. During the development of the permitting program, staff and board, Shasta Valley RCD, has continually expressed concerns over the requirements of the master list of terms and conditions requiring 80 percent success rate of riparian planting after five years, page B-24.

In over 20 years of conducting riparian planting projects in the Shasta River watershed, we have never been able to achieve this level of success in plantings and feel that this requirement is unreasonable, unrealistic, and virtually sets the RCD and the landowners implementing projects up for failure.

The RCD is a member of the Shasta River Riparian Working Group, one of whose goals is to begin understanding why past planting efforts have not been successful to develop and recommend methods to ensure that future planting efforts will be successful.

52.2-3

The Shasta RCD strongly recommends that success criteria identified in the MLTC rely on the recommendations and findings determined by the multi-agency working group of which the California Department of Fish and Game is a member.

Furthermore, requiring an unrealistic success rate of riparian planting in five years is inconsistent with the time lines associated with many grant funds, including funds through the California Department of Fish and Game Fishery Restoration Grant Program.

And therefore, burdens to achieve this unrealistic success rate at the end of five years will fall unfunded, therefore unsupported, and on the shoulders of the RCD and the landowners.

52.2-3 cont.

Limitations of grazing management for riparian areas: The incidental take permit, page A-24 E5, states that approved grazing management plans must show how grazing will result in improved riparian function and enhance aquatic habitat.

However, the Draft EIR, the ITP, does not specifically mention how improved riparian functions or enhanced aquatic habitat is measured or determined and leaves this determination to interpretation and is very subjective.

Additional clarification is needed in how this

52.2-4

will be measured.

Secondly, grazing management has been shown in numerous studies to benefit riparian areas if done correctly. Requiring that riparian function and enhanced aquatic habitat occurs before obtaining permission to graze could limit grazing's ability to manage for invasives or to improve overall success of riparian growth along waterways.

52.2-4 cont.

This is our last big issue. I think everyone is having a problem with that.

It's compliance monitoring: Attachment three of the incidental take permit's monitoring and adaptive management plan's Compliance monitoring section, A-45, lists RCD as being responsible for determining if a subpermittee is fulfilling the terms and conditions of their subpermit.

It also states that RCD shall immediately notify the department of subpermittees who the RCD believes are not fulfilling or implementing a term or condition of the subpermit.

The RCD has strong concerns with a Shasta Valley RCD functioning in a regulatory capacity in the form of compliance monitoring.

Division nine, chapter 13, article nine, of the general powers of the district gives no regulatory

52.2-5

enforcement ability to the district.

Further, RCD is concerned about the perception by the community of the RCD in any regulatory role and does not want this permitting program to jeopardize the trust gained by the community and the RCD's ability to continue assisting landowners with meeting permit obligations. 52.2-5 cont.

Thank you.

MR. STOPHER: Thank you. Richard, are you going to be providing that in writing?

MR. KUCK: Yep.

MR. STOPHER: The next speaker is Jack Rogenbuck, followed by Brian Favero.

MR. ROGENBUCK: My name is Jack Rogenbuck. I am a landowner on the Shasta River.

I would like to say that I find the document very thorough, so much so that you included monitoring endangered bird species as part of the coho salmon habitat rehabilitation effort. And as a consequence of that, you have working periods to which you can work on your diversion that are in conflict and it actually shortens your working period. 52.3-1

And that led me to think about the addition of a flow chart in the document that will help a landowner understand what the time frames are when they have to

proceed to notify the RCD or DFG to work in the streambed doing maintenance on the diversion or whatever it is they have to do.

52.3-1 cont.

Secondly, as Richard said, I found no discussion in the document on measured outcomes. I had a hard time understanding why we are going to go through this effort for ten years without knowing what are we trying to get to at the end of the line and making all this expense by either public entities or regulatory agencies or private landowners, without knowing what we are going to try and achieve. Are we going to get one more fish up the river? Are we going to get a hundred fish or what? What is the objective? How are we going to measure it?

52.3-2

So I had to agree with what Richard said wholeheartedly, and I hope that that is addressed further.

Lastly, I am going to submit all of this in writing with a whole bunch of other comments, but the big thing that I really came here to say was, if everybody here agrees that the watershed approach is in the complete public interest, not just landowners, not just the regulatory entities impacting the river itself, but everybody in the State of California, it is a public interest effort, then I liken what we are doing here to

52.3-3

what Caltrans does when they go out and build a freeway. They work with the landowner and they pay the landowner for the right to cross their land and take it from their private ownership.

That's not the case in what I read here, in that you are going to require the landowners to pay to develop, repair and maintain the facility. Caltrans doesn't require the private property owner which they brought the highway for to develop it, maintain it and repair it. They bear that cost.

As such, I think that should be the responsibility of the regulatory agency. If I came to you and said, "Hey, I am going to build a project," I should bear the cost for that. But if you come to me, RCD is going to come -- DFG is going to come and say, "We think you need to do this, this, and this," then I think those are the entities that are on the hook for that. I am giving up portions of my private property already, and as Mr. Blair said there, that my water right is an adjudicated right.

You start taking that away -- and it says here does not affect existing water rights. If I don't have a 1602 or 1605 permit, you have taken away my right, because I can't draw water out of the river then and I might still have an impact, so on, so forth, so I am

52.3-3 cont.

being forced to comply and sign on for this program.

In a sense, you are taking my private property out there when you come and look and say, "Well, we need you to do this, this and this," you have to fence so many feet away as it said in this document from the center of stream.

You take 35 feet of pastureland away on either side, in some cases in my property I can't get to other portions of the ranch then because it is already in what I call your jurisdiction.

52.3-3 cont.

So, I think that there has to be some other effort and analysis done on requiring landowners to pay or not. And I am not too keen on the idea about coming in and saying, "Well, you have to do this and you have to do that," if your baseline was, "Here is what you have been doing and nobody has had a problem with it."

I had a 1602 permit for maintenance on our diversion seven years ago. I did the initial study following all of Fish and Game's requirements. I have done all of the work. We did a renewal of that.

And it's my understanding when this starts, that permit is gone, null and void. It seems counterproductive to me. And the way this is written and how I read it, the incentive to participate is going by quicker every day.

52.3-4

I will submit the rest of my comments in writing before the deadline. Thank you for this opportunity.

52.3-4 cont.

MR. SICULAR: Thank you.

Brian Favero followed by Malina Marvin.

MR. SICULAR: Yes. My name is Brian Favero. And I do believe I am going to rescind my privilege to speak in favor of written comments that I will submit prior to December 9th. Thank you.

52.4-1

MR. SICULAR: Malina Marvin followed by Tom Wetter (phonetic).

MS. MARVIN: I am Malina Marvin. I am with Klamath River Keeper. We are preparing substantive technical comments which we will submit by December 9th in writing.

There are a few issues we just want to go over, since you have guys came all the way here.

And one thing we did want to communicate is you guys have put a lot of hard work into this. The RCDs have put a lot of hard work into this as well. And we appreciate everyone's time and energy.

I think everyone has more or less the same goals in mind. And that said, I want to offer our take, no pun intended, in as constructive of a way as I can.

52.5-1

Our primary issue right now -- and again, we're

52.5-2

still just going through this document, but our primary issue is that it has got a dangerous emphasis on what I call bandaid solutions and dangerous avoidance of the big picture of what a restoration has to look like on the Scott and Shasta Rivers.

We can't keep looking at symptoms and dealing with symptoms without addressing the root cause of those symptoms. While in some ways this particular document is not intended to address root causes, it might end up perpetuating them by only addressing symptoms.

I think that in this day and age, you know, if we can put a man on the moon, we can figure out how to fully restore the Scott and Shasta Rivers so everyone can be satisfied.

52.5-2 cont.

And to that end, I think the Klamath River Keeper feels like there is only one way we are going to keep the ESA, the Endangered Species Act, burden off the backs of the landowners in the Scott and Shasta Valley. The only way to do that is to fully restore these watersheds. And while landowners and RCDs have made huge strides for restoration, people have worked very hard and poured a ton of money and time and energy into it, a lot of that work is going to be in vain if we ignore the elephant in the room.

As far as we are concerned, those are the

52.5-3

Dwinnell dam on the Shasta River and the groundwater pumping on the Scott. We feel the Shasta Draft Environmental Impact Report rejects Dwinnell dam removal on indefensible grounds, and we will go into that in our written comments, and the same with groundwater pumping on the Scott River. 52.5-3 cont.

There is a point at which, you know, all of the riprap and boulder weirs and large debris aren't going to get us anywhere if fish can't get upstream and if there is no water for them to let them swim through.

Aside from all of that, we have also concern about financial assures for mitigation of the projects. We are sure that concerns a lot of people. We don't want to see financial burdens put on the landowners. It just kind of shoots the program in the foot and creates a lot of -- a lot more problems than it solves. 52.5-4

And then another big concern for us is that programmatic ITPs are intended to extend coverage for take to activities or restoration projects that would otherwise be considered legal.

So you have got to know that this blanket ITP is covering diversions, water rights that are legal and that the public can see that. 52.5-5

Siskiyou County is moving towards private watermaster service, and Klamath River Keeper has

significant concern that we are going to lose public access to the water data. And we don't see any provisions within the DEIRs that are going to point out who is following the letter of the law and who is not.

And so as an organization that defends environmental laws, we have to raise the question when we can't see how environmental laws are going to be complied with through this EIR.

52.5-5 cont.

That's the bulk of my concerns at the moment. We are still reading through this and are interested in hearing what other community members think.

Ultimately, our organization functions to represent the public interest in water quality and fisheries on the Klamath and its tributaries. And we thank you for your time.

52.5-6

MR. SICULAR: Thank you.

Next speaker, Tom Wetter. And there are no other speakers, and the last would be Jim Cook.

AUDIENCE PARTICIPANT: Tom may not have made it. He has another meeting.

52.6-1

MR. SICULAR: We will go ahead and move to Jim.

Anybody else wish to speak? I think Jim wanted to go last. Anybody else wish to add to their prior comments?

MR. COOK: I am disappointed. I wanted to hear somebody else talk for a while.

I am representing solely myself as a Board of Supervisors member. I am not representing the Board of Supervisors at this time. We will be preparing additional comments as the board.

I am also representing Michael Kobseff, who is another member of the Board of Supervisors. His district also includes the Shasta River.

My review is not complete, nor is the County's review complete. We will be completing that review and submitting comments as a board and probably as individuals. 52.7-1

I do believe that this watershed-wide permit idea is the correct way of doing this permit rather than individuals.

I want to start right off saying the idea to start off was a good one and still is a good one. And I believe, as a board and as individuals, we will eventually agree with the major conclusions as I understand them now and as you presented them, the major conclusions being that this permit will make all of the impacts less than significant.

However, I believe that some of the mitigation measures are excessive, some them may not be necessary, 52.7-2

and some of them will be unclear. We will be working with the RCD. You have already heard some of their concerns. And we will be submitting those comments, also. 52.7-2 cont.

I understand that you were given comments by another supervisor, Marcia Armstrong, on the Scott River. I was not at that meeting and, as I understand her comments, I would like her comments translated to the -- from the Scott to Shasta, also. I believe some of those were in procedure.

We're not sure that your procedure has been entirely correct. And just as some of our friends from the environmental community who just love to sue everybody over procedure, I think that you could have done a different procedure or modified the procedure to be a little more effective. 52.7-3

For instance, this is a hearing and you are not answering questions. I think you could have had a meeting to begin with and answered those "why" type of questions that she suggested.

But I would like to thank the audience for being here. I hope they do submit substantive comments on this document about how it is going to affect their properties and their livelihoods because they are the actual people who made the dinner that you guys all ate 52.7-4

tonight, and I would hope that they would make comments about how this affects them and we will be making comments.

52.7-4 cont.

And thank you for coming.

MR. STOPHER: Has anybody reconsidered and wish to speak tonight?

Well, that concludes the public hearing.

Again, there is a couple of more weeks to help provide additional testimony.

Following the close of the comment period, as I have already said, we will be going through those comments and considering any information that you provide that might cause us to reevaluate, reconsider, and make different choices. And we will be working with the RCDs and local individuals and local entities to do some outreach where we have further informal dialogue that we were unable to have tonight.

I do thank you for coming. We appreciate your comments on this topic.

(Whereupon the public hearing was concluded at 8:10 p.m.)

* * *

STATE OF CALIFORNIA)
) ss
COUNTY OF SISKIYOU)

I, RONALD W. COLEMAN, CSR 1596, Court Reporter, County of Siskiyou, do hereby certify that the foregoing transcript, consisting of pages 1 through 48, is a true, complete, and correct transcription of my shorthand notes taken on November 19, 2008, in the aforementioned matter.

Executed this 4th day of December, 2008, at Yreka, California.

_____
RONALD W. COLEMAN, CSR

CHAPTER 4
Text Changes to the Draft EIR

The following edits have been made to the Draft EIR and incorporated as part of the Final EIR. Where edits have been made to the Draft EIR, additions to the document are underlined and deletions are shown as ~~strikeout~~.

Draft EIR Page S-4

> **Monitoring Program**
>
> The ITP will require SVRCD to establish a monitoring program to track the implementation of the mitigation measures for which it is responsible, and to determine the effectiveness of those measures in improving conditions for coho salmon. ~~determine whether or not Agricultural Operators are fulfilling the terms and conditions required by their sub-permits, and to determine the effectiveness of the conditions in the ITP and sub-permits to avoid, minimize, and fully mitigate the incidental take of coho salmon in the Program Area.~~ Sub-permittees are responsible for monitoring the terms and condition of their sub-permit. SVRCD will be available to assist sub-permittees in fulfilling monitoring responsibilities related to the diversion of water and livestock or vehicle crossings. CDFG is responsible for any and all compliance monitoring.

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> The Program already contains several provisions to increase instream flows, including SVRCD's ITP Flow Enhancement Mitigation Obligation (Article XIII.E.2(a)), Additional SVRCD and Sub-Permittee Avoidance and Minimization Obligation A: Water Management (Article XV), and MLTC Conditions 26 ~~25~~ (bypass flows at diversions).

TABLE S-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Impacts	Mitigation Measures	Significance after Mitigation
3.2 Geomorphology, Hydrology, and Water Quality		
3.2-1: Certain construction activities performed under the Program could result in increased erosion and sedimentation and/or pollutant (e.g., fuels and lubricants) loading to surface waterways, which could increase turbidity, suspended solids, settleable solids, or otherwise decrease water quality in surface waterways (Significant).	**3.2-1c:** The MLTC includes the following conditions which will reduce the potential for construction-related impacts to water quality: A. Water Diversions: Conditions 33, 36, and 41 ~~31, 34, and 39~~; C ~~B~~. Instream Structures: Conditions 62, 64-66 ~~58-60~~; E ~~C~~. Use of Vehicles in Wetted Portions of Streams: Conditions 73-75 ~~65-67~~; F ~~D~~. Pollution Control: Conditions 76-84 ~~68-75~~; G ~~E~~. Erosion and Sediment Control: Conditions 85-93 ~~76-84~~; I ~~F~~. Dewatering: Conditions 98-101, 103, 105-107 ~~89-92, 94, 96-98;~~ and J ~~G~~. Ground-Disturbing Activities: Condition 122 ~~108~~.	
3.2-3: Installation and operation of instream structures permitted under the Program could alter channel stability and degrade water quality by increasing turbidity downstream (Significant).	**3.2-3b:** MLTC Conditions 37, 43, 47, and 55 ~~35, 41, 45, and 53~~ would ensure that boulder weirs are sized to resist wash-out and do not create lifts in the stream channel that exceed twelve (12) inches, and that instream structures shall be designed and implemented in accordance with CDFG's Salmonid Stream Habitat Restoration Manual.	
3.3 Biological Resources: Fisheries and Aquatic Habitat		
3.3-1: Construction, maintenance, and other instream activities associated with various Covered Activities may result in impacts to fisheries resources and their habitat (Significant).	***Mitigation Measures Identified in this Draft EIR*** **3.3-1c:** ITP General Conditions (g) and (h) (Article XIII.E.1) limit the season for instream equipment operations and work related to structural restoration projects to the period from July 1 to October ~~31~~. Similarly, ITP Additional Avoidance and Minimization Measure D (Livestock and Vehicle Crossings) (Article XV.D.) and conditions in the MLTC limit the use of stream crossings to the same period. ~~However, based on documented adult coho salmon migration timing in the Shasta River (Hampton, 2006), coho salmon may enter the Shasta River prior to October 31. Furthermore, the Chinook salmon spawning season occurs even earlier in the season, depending on streamflows. Therefore, as specified under Mitigation Measure 3.2-1d (Chapter 3.2 Geomorphology, Hydrology, and Water Quality) the season for instream construction activities, equipment operations, and stream crossing utilization shall be limited to the period of July 1 through October 15.~~ If weather conditions permit and the stream is dry or at its lowest flow, instream construction activities and equipment operations	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Impacts	Mitigation Measures	Significance after Mitigation
3.3 Biological Resources: Fisheries and Aquatic Habitat (cont.)		
3.3-1 (cont.)	may continue after October 15, provided a written request is made to CDFG at least five days before the proposed work period variance. Written approval from CDFG for the proposed work period variance must be received by SVRCD or Agricultural Operator prior to the start or continuation of work after October 15. If work is performed after October 15 as provided above, SVRCD or Agricultural Operator will do all of the following: • Monitor the 72 hour forecast from the National Weather Service. When there is a forecast of more than 30 percent chance of rain, or at the onset of any precipitation, the work shall cease. • Stage erosion and sediment control materials at the work site. When there is a forecast of more than 30 percent chance of rain, or at the onset of any precipitation, implement erosion and sediment control measures.	
3.4 Biological Resources: Botany, Wildlife, and Wetlands		
3.4-1: The Program could result in impacts to special-status plant or animal species (Significant).	***Mitigation Measures Proposed as Part of the Program*** **3.4-1a:** ITP General Conditions (g) and (h) (Article XIII.E.1) stipulate that instream work on structural restoration projects and instream equipment operations shall occur from July 1 to October 15 ~~31~~. This restricts noise and other sources of disturbance during most of the nesting season for special-status riparian birds. **3.4-1c:** Master List of Terms and Conditions (MLTC) Condition 109 ~~100~~ stipulates that, prior to ground-disturbing activities, work sites shall be surveyed for special-status plant species by a qualified botanist. Special-status plant surveys shall be conducted following the *Guidelines for Assessing Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities* (CDFG, 2000). The survey report, including the methodology and survey findings, shall be provided to CDFG for review and approval prior to any ground-disturbing activities. MLTC condition 110 ~~101~~ further states that if any special-status plant species are identified at a work site, CDFG shall identify one or more of the following protective measures, but not limited to these measures, to be implemented at the project site before work may proceed: • Fencing to prevent accidental disturbance of special-status plants during construction;	Less than significant

TABLE S-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Impacts	Mitigation Measures	Significance after Mitigation
3.4 Biological Resources: Botany, Wildlife, and Wetlands (cont.)		
3.4-1 (cont.)	• On-site monitoring by a qualified botanist during construction to assure that special-status plants are not disturbed; and/or • Redesign of proposed work to avoid disturbance of special-status plant species.	
3.4-3: ITP Covered Activity 10, the grazing of livestock within the riparian exclusion zone ~~bed, bank, or channel of a stream~~ different from current operations (i.e., not part of baseline conditions), could impact sensitive habitat and special-status species (Significant).	***Mitigation Measures Proposed as Part of the Program*** **3.4-3a:** ITP Additional SVRCD and Sub-Permittee Avoidance and Minimization Obligation E.5 (Article XV) stipulates that livestock grazing be done in accordance with a grazing management plan prepared by the sub-permittee and approved by CDFG. The grazing management plan shall address the timing, duration, and intensity (number of livestock grazing per unit area [i.e., stocking rate]) of livestock grazing within the riparian zone and shall explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat. Grazing plans completed in accordance with the ITP shall include, in addition to other specified requirements, a means to prohibit livestock from entering live streams. ~~***Mitigation Measures Identified in this Draft EIR***~~ ~~**3.4-3b:** The ITP stipulation noted in Mitigation Measure 3.4-3a does not constitute complete mitigation because the actual restriction is not sufficiently specific. Mitigation Measure 3.4-3b clarifies "intensity" to stipulate the number of livestock allowable per unit area (i.e., stocking rate). Grazing plans completed in accordance with the ITP shall include, in addition to other specified requirements, a means to prohibit livestock from entering live streams.~~	Less than significant.
3.5 Cultural Resources		
3.5-1: Impacts to known and unknown cultural resources may result either directly or indirectly during the implementation and operational phases of a Covered Activity under the Program (Significant).	***Mitigation Measures Proposed as Part of the Program*** **3.5-1a:** Master List of Terms and Conditions (MLTC) Condition 111c ~~102~~ states that prior to any ground-disturbing activities, the responsible party shall contract with at least one qualified archaeologist and paleontologist to complete cultural and paleontological resource surveys, to identify any previously recorded and unknown historical resources, unique archeological resources, or unique paleontological resources, using standard survey protocols. The survey report must be provided to the California Department of Fish and Game (CDFG) for review and approval prior to any ground-disturbing activities.	Less than significant level.

TABLE S-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Impacts	Mitigation Measures	Significance after Mitigation
3.5 Cultural Resources (cont.)		
3.5-1 (cont.)	**3.5-1b:** MLTC Condition 112 ~~103~~ notes that if any potentially significant historical resources, unique archaeological resources and/or paleontological resources are identified at the work site, CDFG shall consult with the consulting archaeologist or paleontologist to identify one or more of the following protective measures, or site specific measures, to be implemented at the project site before work may proceed: • Redesign of proposed work to avoid disturbance of cultural or paleontological resources; • Fencing to prevent accidental disturbance of cultural or paleontological resources during construction; and/or • On-site monitoring by a cultural and/or paleontological resource professional during construction to assure that resources are not disturbed. **3.5-1c:** MLTC Condition 116 ~~104~~ states that the responsible party shall report any previously unknown historical resources, unique archaeological resources, and paleontological remains discovered at the site to CDFG and other appropriate agencies. **3.5-1d:** MLTC Condition 117 ~~105~~ states that if cultural resources such as lithic debitage, groundstone, historic debris, building foundations, or bone are discovered during ground-disturbing activities, work shall cease within 20 meters (66 feet) of the discovery. Furthermore, work near archaeological finds shall not resume until a professional archaeologist has evaluated the materials and offered recommendations for further action. **3.5-1e:** MLTC Condition 122 ~~108~~ states that the responsible party shall instruct all persons who will be completing any ground-disturbing activity at a worksite to comply with conditions set forth in the SAA MOU and to inspect each work site before, during and after completion of ground-disturbing activity at the work site. ***Mitigation Measures Identified in this Draft EIR*** **3.5-1f:** Prior to carrying out MLTC Condition 111c ~~102~~, the archaeologist/paleontologist shall; a.) contact the Native American Heritage Commission for a Sacred Lands File check and a list of appropriate Native American contacts for consultation concerning the project site and, if necessary, to assist with the development of mitigation measures; and b.) make a determination ~~shall first be made~~ as to whether the area has had an adequate archaeological	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Impacts	Mitigation Measures	Significance after Mitigation
3.5 Cultural Resources (cont.)		
3.5-1 (cont.)	survey by a professional archaeologist and whether any historic or prehistoric sites have been recorded within a ¼-mile radius of the project area. This records review may be conducted at NE/CHRIS on a case-by-case basis for each project. Alternatively, a professional archaeologist will be contracted to conduct a watershed-wide records search at NE/CHRIS and prepare a map showing the previous surveys and recorded sites. An update of this information would then be prepared at least every two years. This map, which will show the locations of archaeological sites, would be considered confidential and made available only to individuals on an as-needed basis. **3.5-1g:** If none of the protective measures described in MLTC Condition 112 ~~103~~ can be implemented, then an archaeological data recovery program (ADRP) shall be implemented, unless the professional archaeologist determines that the archaeological resource is of greater interpretive use than research significance and that interpretive use of the resource is feasible. The project archaeologist and CDFG shall meet and consult to determine the scope of the ADRP, and the project archaeologist shall prepare a research design for the project which shall be submitted to CDFG for review and approval. This document shall identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The document will specifically identify the scientific/historical research questions being asked, the archaeological resources' expected data classes, and how the expected data classes would address the applicable research questions. Following approval of the plan by CDFG, the ADRP shall be implemented and a report prepared. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. All significant cultural materials recovered shall be, as necessary, subject to scientific analysis, professional museum curation, and a report shall be prepared by a qualified archaeologist according to current professional standards. If the recovered artifacts are from a prehistoric site, the local Native American groups will be consulted relative to the disposition of these materials. **3.5-1h:** If built historical resources (e.g., structures, buildings, or similar) that qualify for listing in the California Register of Historic Resources (CEQA *Guidelines,* § 15064.5)) are identified through the implementation of measure MLTC Condition 111c ~~102~~ and cannot be	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Impacts	Mitigation Measures	Significance after Mitigation
3.5 Cultural Resources (cont.)		
3.5-1 (cont.)	avoided through implementation of measure MLTC Condition112 ~~103~~, SVRCD or the Agricultural Operator will comply with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (Standards) which would, in accordance with CEQA *Guidelines,* § 15064.5(b)(3), reduce potential impacts associated with the alteration or modification of a historical resource (including historic districts and individually eligible resources) to a less-than-significant level. If both avoidance and compliance with the Standards are infeasible, the Covered Activity in question shall be changed or not pursued, such that the historical resource is not destroyed or altered. Activities that would result in such disturbance are not authorized under the Program because SVRCD or the Agricultural Operator would be unable to mitigate the impact to a point where clearly no significant effect on the environment would occur.	
3.5-2: Covered Activities could adversely affect known or unknown paleontological resources (Significant).	***Mitigation Measures Proposed as Part of the Program*** **3.5-2a:** Implement **Mitigation Measures 3.5-1a – 3.5-1e** (MLTC Conditions111, 112, 116, 117, and 122 ~~102, 103, 104, 105, and 108~~), as described above. ***Mitigation Measures Identified in this Draft EIR*** **3.5-2b:** MLTC Condition 117 ~~10~~5 (see Mitigation Measure 3.5-1d) states that if cultural resources such as lithic debitage, groundstone, historic debris, building foundations, or bone are discovered during ground-disturbing activities, work shall cease within 20 meters (66 feet) of the discovery. Work near the archaeological finds shall not resume until a professional archaeologist has evaluated the materials and offered recommendations for further action. This measure does not, however, specify the criteria for protecting paleontological resources. Therefore, in the event of an unanticipated paleontological discovery during ground-disturbing activities, the following measure shall be implemented: • Temporarily halt or divert work within 20 meters (66 feet) of the find until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards (SVP, 1995 and SVP, 1996). • Document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines, § 15064.5.	Less than significant

TABLE S-1 (Continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

Impacts	Mitigation Measures	Significance after Mitigation
3.5 Cultural Resources (cont.)		
3.5-2 (cont.)	• Notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. • If CDFG determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the CDFG for review and approval.	
3.6 Hazards and Hazardous Materials		
3.6-1: Construction activities could result in discovery and release of previously unidentified hazardous materials into the environment (Significant).	***Mitigation Measures Proposed as Part of the Program*** **3.6-1a:** The Program's incidental take permit (ITP) General condition (b) (Article XIII.E.1) states that the Shasta Valley Resource Conservation District (SVRCD) "and any sub-permittee shall immediately stop, contain, and clean-up any fuel, lubricants, or other hazardous materials that leak or spill while engaged in a Covered Activity. SVRCD or the sub-permittee shall notify the Department immediately of any leak or spill of hazardous materials into a stream or in a place where it can pass into a stream. While engaged in a covered activity, SVRCD and all sub-permittees shall store and handle hazardous materials at least 150 feet away from the edge of mean high water elevation of any stream and properly dispose any unused or leftover hazardous materials offsite. Exceptions to this provision may be provided in individual sub-permits for pre-existing structures with adequate containment facilities." MLTC Conditions 76 through 84 ~~68 through 75~~ of the Programs streambed alteration agreement Master List of Terms and Conditions (MLTC) contain similar provisions.	Less than significant

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- **Monitoring Program**

The ITP will require SVRCD to establish a monitoring program to track the implementation of the mitigation measures for which it is responsible, and to determine the effectiveness of those measures in improving conditions for coho salmon. ~~determine whether or not Agricultural Operators are fulfilling the terms and conditions required by their sub-permits, and to determine the effectiveness of the conditions in the ITP and sub-permits to avoid, minimize, and fully mitigate the incidental take of coho salmon in the Program Area.~~ Sub-permittees are responsible for monitoring the terms and condition of their sub-permit. SVRCD will be available to assist sub-permittees in fulfilling monitoring responsibilities related to the diversion of water and livestock or vehicle crossings. CDFG is responsible for any and all compliance monitoring.

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Also under the Program, in order for a SAA notification to be complete, the applicant must include a copy of an executed ITP or sub-permit (described below) issued by CDFG under the Program, unless CDFG has determined a sub-permit is not required as described above. Agricultural Operators must also include an agreement signed by the Agricultural Operator that will allow non-enforcement CDFG personnel and SVRCD personnel access to the sub-permittee's property ~~where Covered Activity will occur for purposes of monitoring~~ to determine whether the terms and conditions of SVRCD's ITP and SAAs or the Agricultural Operator's SAA and sub-permit are fulfilled and are effective. If the Covered Activity will occur on property not owned by the Agricultural Operator, the access agreement must be signed by the owner of the property.

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SVRCD will also be required to conduct monitoring activities to determine whether or not the terms and conditions of their ITP ~~each sub-permit~~ are being fulfilled and are effective. In order to ensure that SVRCD will be able to meet this obligation, the sub-permits will include provisions that allow SVRCD and CDFG to enter a sub-permittee's property and other private property Covered Activities might affect and/or where Covered Activities occur. Sub-permittees will be responsible for monitoring the terms and conditions of their sub-permits by completing the appropriate implementation and effectiveness monitoring checklists for their Covered Activities and submitting them to CDFG. CDFG is responsible for any and all compliance monitoring.

Draft EIR Pages 2-10 and 2-11

ITP and MLTC Covered Activity 2: Water Diversion Structures. This category includes only the following activities relating to water diversion structures:

c) Installing, operating, maintaining, and removing push-up dams. "Push-up dam" is defined as a temporary diversion structure created by using motorized equipment (for

example loaders, backhoes, or excavators) to move bedload within the stream channel to form a flow barrier that seasonally diverts the flow of the stream;

d) Installing, operating, maintaining, and removing other temporary diversion structures that are not push-up dams. "Other temporary diversion structure" is defined as any temporary structure (other than a push-up dam) used to divert water seasonally from a stream and is typically made with materials such as hay bales, hand-stacked rocks and cobble, tarps, wood, and/or a combination of these materials placed in the channel with or without the use of motorized ~~heavy~~ equipment;

f) Installing headgates and measuring devices, sized appropriately for the authorized diversion, that meet CDFG's and/or DWR's standards on or in a diversion channel, which usually is done by excavating the site to proper elevation using large machinery, positioning the headgate and measuring device at the appropriate elevation, and installing rock or other "armoring" around the headgate to protect the structure. During installation, the streambank could be affected by the construction of concrete forms and other necessary construction activities. Where diversions are under the control of the State Watermaster Service, the headgate or valve and measuring device design shall also be approved by DWR.

Draft EIR Page 2-11

ITP and MLTC Covered Activity 4: Stream Access and Crossings. This category includes only the moving of livestock and vehicles across flowing streams or intermittent channels and/or the construction, maintenance, and use of stream crossings at designated locations where potential spawning gravels, incubating eggs, and fry are not present based on repeated site specific surveys.

Draft EIR Page 2-13

ITP Covered Activity 10: Grazing Livestock. This activity includes the grazing of livestock within the riparian exclusion zone ~~adjacent to the channel or within the bed, bank, or channel~~ of the Shasta River or its tributaries in accordance with a grazing management plan approved by CDFG. The grazing plan will address the timing, duration, and intensity (number of livestock allowable per unit area [i.e., stocking rate]) of livestock grazing within the riparian zone and will explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat. In addition, the grazing plan will describe the means by which the livestock will be prohibited from entering live streams.

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ITP Covered Activity 11: Water Management. This activity includes water management, water monitoring, and watermastering (either state or Special District ~~private~~) activities, including the operation of headgates in conjunction with measuring devices to assure that each diversion is operated in compliance with its associated water right or adjudicated volume.

Draft EIR Page 2-13

ITP Covered Activity 12: Permit Implementation. This includes other activities associated with the implementation of avoidance, minimization, and mitigation measures required by the ITP, a sub-permit, or a SAA.

Draft EIR Page 2-13

ITP Covered Activity 13: Monitoring. This includes activities associated with the determination of whether or not the required terms and conditions of the ITP, a ~~each~~ sub-permit, or a SAA are being fulfilled and are effective.

Draft EIR Page 2-13, Footnote 9

Also, as stated above, under ITP Covered Activity 10, any grazing of livestock within the riparian exclusion zone ~~adjacent to the channel or within the bed, bank, or channel~~ of the Shasta River or its tributaries may only occur in accordance with a grazing management plan that will result in improved riparian function and enhanced aquatic habitat. In addition, a grazing management plan will describe the means by which livestock will be prohibited from entering live streams.

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2.2 Conditions in the Proposed MLTC

The MLTC contains 130 ~~114~~ separate conditions (see Appendix B for full language). These are divided into general and specific conditions.

2.2.1 General Conditions in the MLTC

The proposed MLTC contains 20 ~~19~~ general conditions, primarily administrative, that will be included in all SAAs issued under the Program. General conditions are organized in the MLTC under the following sections: *A.* ~~1)~~ "Administrative"; *B.* ~~2)~~ "Amendments"; *C.* ~~3)~~ "Suspension and Revocation"; *D.* ~~4)~~ "Liability"; *E.* ~~5)~~ "Access"; and *F.* ~~6)~~ "Other Laws." The "Other Laws" section in the MLTC requires the holder of a SAA issued by CDFG under the Program to comply with all local, state, and federal laws before commencing a Covered Activity, which includes CESA.

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2.2.2 Specific Conditions in the MLTC

The specific conditions are organized in the MLTC under the following sections: a. ~~1)~~ "Water Diversions"; b. ~~2)~~ "Riparian Restoration and Revegetation"; c. ~~3)~~ "Instream Structures"; d. ~~4)~~ "Habitat and Species Protection"; e. ~~5)~~ "Use of Vehicles in Wetted

Portions of Streams"; f. ~~6)~~ "Pollution Control"; g. ~~7)~~ "Erosion and Sediment Control"; h. ~~8)~~ "Bank Stabilization"; i. ~~9)~~ "Dewatering"; j. ~~10)~~ "Ground-Disturbing Activities"; and k. ~~11)~~ "Monitoring."

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ITP General Condition c: This condition requires sub-permittees to provide non-enforcement CDFG representatives written consent to access the sub-permittee's property for the specific purpose of verifying compliance with, or the effectiveness of, required avoidance, minimization, and mitigation measures and/or for the purpose of fish population monitoring, provided CDFG notifies the sub-permittee at least 48 hours in advance. The sub-permittee is entitled to be present or have a representative present. Sworn peace officers may enter private lands if necessary for law enforcement purposes pursuant to Fish and Game Section 857 or as otherwise authorized by law.

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ITP General Condition g: This condition allows instream work on structural restoration projects by SVRCD or a sub-permittee to occur only from July 1 to October 15 ~~31~~ when coho salmon are least likely to be present and/or when water temperatures exceed the tolerance levels of coho salmon. If the work needs to be completed before July 1 or after October 15 ~~31~~, SVRCD or the sub-permittee may request a variance from CDFG in writing. If CDFG grants the request, the work must be completed in accordance with the avoidance, minimization, mitigation, and monitoring measures CDFG might specify in granting the variance.

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ITP General Condition h: Under this condition, instream equipment operations by SVRCD or a sub-permittee will occur when coho salmon are least likely to be present and/or when water temperatures exceed the tolerance levels of coho salmon, which is generally from July 1 to October 15 ~~31~~, except as otherwise provided in the Best Management Practices (BMPs) adopted pursuant to the ITP. SVRCD must contact CDFG to verify when such operations may begin each year prior to their commencement. If work needs to be completed before July 1 or after October 15, SVRCD is required to request, in writing, a variance from CDFG. If CDFG grants the variance, the work will be completed in accordance with the avoidance, minimization, mitigation, and monitoring measures CDFG specifies in granting the variance.

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In addition to general conditions described above, the proposed ITP includes the specific obligations described below that SVRCD and/or each sub-permittee, except DWR, must implement in order to avoid and minimize the incidental take of all life stages of coho salmon in the Program Area when engaged in a Covered Activity (see **Figure 2-2**).

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ITP Additional Avoidance and Minimization Obligation D: Livestock and Vehicle Crossings. The ITP contains provisions to reduce the potential for take of coho salmon from livestock and vehicles crossing streams. Those obligations include: a prohibition on livestock and vehicles crossing flowing streams between October 15 ~~31~~ and July 1, except in designated, CDFG-approved crossing lanes, and criteria for site selection and crossing design, construction, periodic inspection, and maintenance.

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ITP Additional Avoidance and Minimization Obligation E: Riparian Fencing/Grazing of Livestock in Riparian Areas. The ITP includes several provisions for riparian fencing and restriction of livestock from riparian areas intended to improve the condition of the riparian vegetation for the benefit of coho salmon. These include a requirement that, within one year of the effective date of the ITP, SVRCD develop a Riparian Fencing Plan for CDFG review and approval that prioritizes areas for riparian protection; a requirement for sub-permittees to install, maintain, and repair exclusion fencing in accordance with the Riparian Fencing Plan; a requirement for sub-permittees to allow the planting of riparian revegetation and installation of livestock exclusion fencing along designated stream reaches located on their property, and restrictions on sub-permittees' grazing of livestock within a fenced riparian area. High priority areas identified in the priority plan will be addresses as soon as practical.

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ITP Additional Avoidance and Minimization Obligation F: Push-Up Dams. The ITP requires SVRCD, within six months of the effective date of the ITP, to consult with CDFG to prepare and adopt a set of BMPs that govern the construction, operation, and removal of push-up dams. The BMPs will specify the conditions under which such dams may be constructed, including work windows and the type of equipment that may be used for construction and removal; provisions to allow fish passage; and measures to minimize stream sedimentation and other water quality impacts. Once they are approved by CDFG, sub-permittees who uses push-up dams will implement the BMPs to minimize dam-related impacts. Within five years of the effective date of their sub-permit, sub-permittees will replace their push-up dams with boulder ~~vortex~~ weirs or some other CDFG approved diversion method, unless CDFG determines that an alternative method is not feasible.

Draft EIR Pages 2-18 and 2-19

ITP Additional Avoidance and Minimization Obligation G: Other Temporary Diversion Structures. The ITP requires SVRCD to consult with CDFG to prepare and adopt a set of BMPs that govern the construction, operation, and removal of temporary diversion structures other than push-up dams. The BMPs will specify the conditions under which these other temporary diversion structures may be used, including work windows and a

description of the construction methods which may be used to construct and remove them with or without the use of motorized ~~heavy~~ equipment; provisions to allow fish passage; and measures to minimize stream sedimentation and address other water quality issues.

Within two years of the effective date of the ITP, any sub-permittee who uses an "Other Temporary Diversion Structure" will request in writing that SVRCD and CDFG assess the structure. If CDFG determines the structure will not comply with the Fish and Game Code, even after implementation of the BMPs, the sub-permittee will replace the structures within five years of the determination with a boulder ~~vortex~~ weir or some other structure approved by CDFG.

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ITP Additional Avoidance and Minimization Obligation H: Bioengineered Bank Stabilization. In areas where the slopes of streambanks on a sub-permittee's property have become unstable due to actions by the sub-permittee and re-stabilization measures are necessary to re-establish vegetation, the sub-permittee shall implement bioengineered bank stabilization techniques[1] to prevent additional erosion from occurring. The techniques to be implemented must be consistent with methods identified in the most recent version of CDFG's *Salmonid Stream Habitat Restoration Manual*, and must be approved by CDFG on a site-by-site basis. Any bank stabilization required pursuant to a sub-permit will be implemented within three years of the effective date of the sub-permit.

Draft EIR Page 2-19

ITP Additional Avoidance and Minimization Obligation I: Irrigation Tailwater Reduction and/or Capture. Under the ITP, SVRCD will assist sub-permittees in the design and implementation of tailwater reduction and capture systems. SVRCD will inventory and prioritize tailwater sources for remediation and submit the priority list of sites to CDFG for its review and approval within two years of the effective date of the ITP. High priority areas identified in the priority plan will be addressed as soon as practical. Tailwater capture systems will be consistent with the standards contained in U.S. Department of Agriculture's Natural Resources Conservation Service guidelines. Any sub-permittee whose property is on the priority list must have tailwater reduction and capture systems in place by the expiration of their sub-permit.

Draft EIR Page 2-20

ITP Article XVII.C requires DWR to meet with CDFG on a weekly basis during the diversion season and inform CDFG of any points of diversion in the watermastered areas where stranding is probable. CDFG will then work with SVRCD and sub-permittees to correct or avoid such stranding by some means other than reducing or ceasing the diversion

[1] Bioengineered bank stabilization structures use a combination of living plants, such as willow or other riparian trees, shrubs, and inert materials such as gravel and rip-rap. Bioengineered structures tend to provide more aquatic and riparian habitat attributes than conventional bank stabilization structures.

and/or changing the timing or manner of the diversion in accordance with ITP Article XVIII (see below). Under ITP Article XVII.E., ~~A~~as a last resort, CDFG will inform the sub-permittee of the required measures to be implemented to reduce stranding. CDFG will ~~instruct~~ work with DWR to implement such ~~to reduce or cease the diversion and/or change the timing or manner of the diversion and take any other~~ measures within DWR's control ~~that CDFG determines are necessary to correct or avoid stranding, which DWR will implement immediately~~.

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d) If reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is determined by CDFG to be the only available measure to avoid or minimize stranding, CDFG will work with SVRCD and the sub-permittee and, if applicable, DWR, to take such action.

Draft EIR Pages 2-21 – 2-22

One component of the Contingency Plan shall be the Diversion Ramp-Up Management Plan (Management Plan). During the irrigation season, significant changes in stream flow occur when agricultural water users cease or begin diverting water at the same time. A rapid decrease in flow can result in the stranding of fish in shallow pools and side channels below diversions, as well as a loss of critical rearing habitat. To address this problem, SVRCD, in consultation with CDFG and DWR, will be required to develop and implement a Management Plan to coordinate and monitor irrigation so as to minimize rapid reductions in instream flows and the possible stranding of coho salmon. SVRCD will submit the Management Plan to CDFG for its review and approval within three ~~one~~ years from the effective date of the ITP. SVRCD and the sub-permittees would begin implementing the Management Plan immediately upon CDFG's approval.

Draft EIR Page 2-24

2.3.4 Monitoring and Adaptive Management Program

The proposed ITP requires SVRCD to establish a monitoring program to track the implementation of the mitigation measures for which it is responsible, and to determine the effectiveness of those measures in improving conditions for coho salmon (Monitoring Program). In addition, SVRCD is available to assist the sub-permittees in fulfilling monitoring responsibilities related to the diversion of water and livestock or vehicle crossings. SVRCD will fund all monitoring activities it is responsible for performing. The Monitoring Program is summarized below and is more fully described in ITP Attachment 3. ~~the to determine whether the sub-permittees are fulfilling all sub-permit terms and conditions, the implementation of avoidance, minimization, and mitigation measures identified in the ITP and any sub-permit, and the effectiveness of those measures in improving conditions for coho salmon.~~

~~Under the terms of the ITP, SVRCD will be responsible for instituting a comprehensive monitoring program. Under this Program, SVRCD will be responsible for confirming and monitoring the implementation of the mitigation measures for which they are responsible. They will also be responsible for monitoring to determine whether the sub-permittee is fulfilling the terms and conditions of their sub-permits. The monitoring program will include a means to: 1) confirm and monitor the implementation of the minimization and avoidance measures for which the sub-permittees are responsible; and 2) identify sub-permittees who are not fulfilling the terms and conditions of their sub-permits. SVRCD will be required to notify CDFG immediately of sub-permittees who are not fulfilling a term or condition of their sub-permit.~~

~~SVRCD's monitoring program will also be used to determine the effectiveness of the avoidance, minimization, and mitigation measures identified in the ITP and sub-permits, and the extent to which the objectives of those measures are being or have been met. The results of the effectiveness monitoring will be used as a basis for an adaptive management program to refine future avoidance, minimization, and mitigation measures.~~

1. SVRCD shall be responsible for determining if it is fulfilling the terms and conditions of this Permit by instituting a comprehensive monitoring program. The program shall include a means to confirm and monitor the implementation of the mitigation measures for which it is responsible.

2. The sub-permittee shall be responsible for monitoring the terms and condition of their sub-permit by completing the appropriate implementation and effectiveness monitoring checklists for their Covered Activities and submitting them to the Department. SVRCD is available to assist the sub-permittee in completing the water diversion and livestock and vehicle crossings checklists.

3. The SVRCD shall inspect the screen, headgate, measuring device, diversion structure and livestock and vehicle crossings annually and is available to assist the sub-permittee in filling out the qualitative effectiveness monitoring checklists for those Covered Activities.

4 If during any field review of a sub-permittees water diversion facilities and/or livestock or vehicle crossing, the SVRCD identifies a sub-permittee who may not or has not implemented the terms and conditions of their sub-permits the SVRCD shall inform the sub-permittee and work with the sub-permittee to develop a strategy for implementing the terms and conditions of the sub-permit.

5. At the discretion of either the SVRCD or the sub-permittee, the Department will be notified in order to assist in the development of an implementation strategy.

6. If the SVRCD and the sub-permittee cannot agree upon an acceptable strategy for implementation of the terms and conditions of the sub-permit, or the implementation of a term or condition of this Permit which requires the SVRCD to implement certain mitigation measures on the property of sub-permittees, the Department shall be notified.

7. SVRCD shall summarize the results of its monitoring activities in each of its Annual Reports (described below). Analysis of the past year's monitoring activities and the monitoring data shall be provided to the Department at that time.

8. After revocation, relinquishment, expiration, or termination of the Permit, SVRCD shall deliver a Final Report (described below) to the Department analyzing all of the avoidance, minimization, and mitigation measures implemented pursuant to this Permit, including an evaluation of their effectiveness.

9. SVRCD's obligations under this Permit shall not end until the Final Report has been deemed complete by the Department (Section XVI.C), regardless of when the Permit expires, or is revoked, relinquished, or terminated.

10. SVRCD shall conduct photo monitoring to document the installation, operation, maintenance, and effectiveness of all avoidance, minimization, and mitigation activities (individually, "project") for which it is responsible under this Permit.

    Photo monitoring shall be used to document current conditions, implementation and effectiveness by:

    - documenting pre- and post-site conditions;
    - identifying key steps taken during and after the completion of a project;
    - determining whether a project was correctly implemented pursuant to SVRCD and Department guidelines; and
    - document ongoing maintenance of the project.

    Sequential photographs shall be taken over time in order to show changes in site conditions. At a minimum, photographs shall be taken at three different times: before project implementation, directly after project implementation, and again at a later date appropriate to the particular project.

11. SVRCD shall conduct monitoring activities prior to and immediately after project implementation for those projects for which it is responsible. Data collection shall include pre-project implementation checklists, implementation checklists and photo monitoring.

12. SVRCD and Department project evaluators shall have access to photographs and project files to take with them on site visits.

13. SVRCD shall conduct qualitative effectiveness monitoring after project implementation, and annually thereafter, for all mitigation measures for which it is responsible pursuant to this Permit by filling out the qualitative effectiveness monitoring checklist and conducting photo monitoring for those particular project types.

14. SVRCD shall identify at least one specific objective for each project installed pursuant to this Permit. The objective shall be documented in project files by SVRCD and shall be reported to the Department in the Annual Report.

15. SVRCD shall conduct quantitative effectiveness monitoring of 10% of all instream measures implemented. For purposes of quantitative effectiveness monitoring

instream measures shall include: spawning gravel enhancement (if determined necessary), instream habitat structures, livestock and vehicle crossings, fish passage improvements, and instream flow.

Draft EIR Pages 2-24 – 2-25

No later than six months after the ITP expires (or is relinquished, revoked, or terminated), SVRCD will be required to submit a Final Report to CDFG. The Final Report will include: 1) a copy of the implementation database with notes showing when each avoidance, minimization, and mitigation measure was implemented; 2) all available information about the incidental take of coho salmon the ITP covers; 3) information about the impacts the Covered Activities have had on coho salmon, notwithstanding the implementation of the avoidance, minimization, and mitigation measures; 4) the beginning and ending dates of all construction activities the ITP ~~or any sub-permit~~ covers; 5) an assessment of the effectiveness of the ITP's ~~and sub-permits'~~ terms and conditions to avoid, minimize, and mitigate impacts on coho salmon; 6) recommendations on how those terms and conditions might be changed to more effectively avoid, minimize, and mitigate such impacts in the future; and 7) any other pertinent information.

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3. DWR will meet with CDFG in person or by telephone on a weekly basis during the diversion season in order to inform CDFG of any points of diversion in the watermastered areas where stranding is probable. CDFG will make a determination regarding whether or not any diversion is causing or will cause the stranding of coho salmon. For the purpose of this ITP, "stranding" is defined as a situation in which coho salmon are in a location with poor aquatic habitat conditions, due to a reduction in flow, from which they cannot escape. ~~CDFG will instruct DWR to reduce or cease the diversion and/or change the timing or manner of the diversion and take any other measures within DWR's control that CDFG determines are necessary to correct or avoid stranding and DWR will implement those measures immediately. However, before instructing DWR as described above, CDFG will make every effort to work with SVRCD and the sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion.~~

4. CDFG will make every effort to work with SVRCD and sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion.

5. If CDFG determines that reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is the only available measure to avoid or minimize stranding, CDFG will inform the sub-permittee of the required measures to be implemented to reduce stranding. CDFG will work with DWR to implement such measures within DWR's control.

Draft EIR Pages 3.2-11 and 3.2-12

Lake Shastina inflow is primarily derived from the Shasta River. However, inflows from Carrick Creek, other smaller intermittent streams, other surface and subsurface inflow, as well as precipitation contribute to the reservoir. Additionally, up to 14,000 ~~cfs~~ acre-feet per year of water from Parks Creek is diverted from October 1 to June 15 into the Shasta River upstream of Dwinnell Dam for storage in Lake Shastina under an MWCD water right.

Draft EIR Page 3.2-13

Livestock grazing is a Covered Activity under the Program and, similar to some other Covered Activities, it is not new; rather, it has been occurring in the Program Area for decades. Hence, authorizing livestock grazing as part of the Program will not cause the level of grazing to increase or result in any impacts in addition to those that are already part of baseline conditions in the Program Area. In fact, the Program will likely reduce the impacts of grazing by excluding livestock from some riparian areas by installing and maintaining fencing (see ITP and MLTC Covered Activity 5). Also, where riparian fencing is constructed as part of the Program, any grazing of livestock within the riparian exclusion zone ~~adjacent to the channel or within the bed, bank, or channel~~ of the Shasta River or its tributaries may only occur in accordance with a grazing management plan that will result in improved riparian function and enhanced aquatic habitat.

Draft EIR Pages 3.2-37 and 3.2-38

Of particular concern regarding potential erosion and pollutant impacts is the time of year when construction activities would be allowed. The risk of erosion, sediment delivery, and pollutant loading would be of most concern during the winter and spring, when significant rainfall and runoff occurs. To minimize this risk, the season for instream equipment operations and work related to structural restoration projects is limited to the period from July 1 to October 15 ~~31~~, according to ITP General Conditions (g) and (h) (Article XIII.E.1). Much of this season typically experiences little rainfall and runoff. However, summer thunderstorm events and early winter storms could still occur during the period from July 1 to October 15 ~~31~~, and the potential for early storms increases substantially in the second half of October. Therefore, though the Program measures and regulatory requirements would be adequate to control potential construction-related water quality impacts through the early fall, allowing the construction period to continue ~~through the end of~~ after October 15 poses a potentially significant impact to water quality. If work needs to be completed before July 1 or after October 15, SVRCD is required to request, in writing, a variance from CDFG. If CDFG grants the variance, the work will be completed in accordance with the avoidance, minimization, mitigation, and monitoring measures CDFG specifies in granting the variance.

Draft EIR Page 3.2-38

Mitigation Measure 3.2-1c: The MLTC includes the following conditions which will reduce the potential for construction-related impacts to water quality:

A. Water Diversions: Conditions 33, 36, and 41 ~~31, 34, and 39~~;
C ~~B~~. Instream Structures: Conditions 62, 64-66 ~~58-60~~;
E ~~C~~. Use of Vehicles in Wetted Portions of Streams: Conditions 73-75 ~~65-67~~;
F ~~D~~. Pollution Control: Conditions 76-84 ~~68-75~~;
G ~~E~~. Erosion and Sediment Control: Conditions 85-93 ~~76-84~~;
I ~~F~~. Dewatering: Conditions 98-101, 103, 105-107 ~~89-92, 94, 96-98~~; and
J ~~G~~. Ground-Disturbing Activities: Condition 122 ~~108~~.

Draft EIR Page 3.2-41

Mitigation Measure 3.2-3b: MLTC Conditions 37, 43, 47, and 55 ~~35-41, 45, and 53~~ would ensure that boulder weirs are sized to resist wash-out and do not create lifts in the stream channel that exceed twelve (12) inches, and that instream structures shall be designed and implemented in accordance with CDFG's Salmonid Stream Habitat Restoration Manual.

Draft EIR Page 3.3-27, Footnote 10

As discussed in Chapter 3.2, livestock grazing is a Covered Activity under the Program, but similar to some other Covered Activities it is not new; rather, it has been occurring in the Program Area for decades. Hence, authorizing livestock grazing as part of the Program will not cause the level of grazing to increase or result in any impacts in addition to those that are already part of baseline conditions in the Program Area. In fact, the Program will reduce the impacts of grazing by excluding livestock from some riparian areas by installing and maintaining fencing (see ITP and MLTC Covered Activity 5). Also, where riparian fencing is constructed as part of the Program, any grazing of livestock within the riparian exclusion zone ~~adjacent to the channel or within the bed, bank, or channel~~ of the Shasta River or its tributaries may only occur in accordance with a grazing management plan that will result in improved riparian function and enhanced aquatic habitat.

Draft EIR Page 3.3-49

Mitigation Measure 3.3-1c: ITP General Conditions (g) and (h) (Article XIII.E.1) limit the season for instream equipment operations and work related to structural restoration projects to the period from July 1 to October 15 ~~31~~. Similarly, ITP Additional Avoidance and Minimization Measure D (Livestock and Vehicle Crossings) (Article XV.D) and conditions in the MLTC limit the use of stream crossings to the same period. ~~However, based on documented adult coho salmon migration timing in the Shasta River (Hampton, 2006), coho salmon may enter the Shasta River prior to October 31. Furthermore, the Chinook salmon spawning season occurs even earlier in the season, depending on streamflows. Therefore, as specified under Mitigation Measure 3.2-1d (Chapter 3.2 Geomorphology, Hydrology, and Water Quality) the season for instream construction activities, equipment operations, and stream crossing utilization shall be limited to the period of July 1 through October 15.~~ If weather conditions permit and the stream is dry or at its lowest flow, instream construction activities and equipment operations may continue after October 15, provided a written request is made to CDFG at least five days before the

proposed work period variance. Written approval from CDFG for the proposed work period variance must be received by SVRCD or Agricultural Operator prior to the start or continuation of work after October 15.

Draft EIR Page 3.4-7, Footnote 5

As discussed in Chapter 3.2 and below under Section 3.4.3, livestock grazing is a Covered Activity under the Program, but similar to some other Covered Activities it is not new; rather, it has been occurring in the Program Area for decades. Hence, authorizing livestock grazing as part of the Program will not cause the level of grazing to increase or result in any impacts in addition to those that are already part of baseline conditions in the Program Area. In fact, the Program will reduce the impacts of grazing by excluding livestock from some riparian areas by installing and maintaining fencing (see ITP and MLTC Covered Activity 5). Also, where riparian fencing is constructed as part of the Program, any grazing of livestock within the riparian exclusion zone ~~adjacent to the channel or within the bed, bank, or channel~~ of the Shasta River or its tributaries may only occur in accordance with a grazing management plan that will result in improved riparian function and enhanced aquatic habitat.

Draft EIR Pages 3.4-22 and 3.4-23

Potential impacts to common plant and wildlife species were determined by CDFG to be less than significant based on the abundance of the species, the small area disturbed by the Covered Activities, and/or the ability of wildlife to move away from any disturbance. CDFG species of special concern which could occur in the vicinity of Covered Activity sites include northwestern pond turtle (*Actinemys marmorata marmorata*), long-eared owl (*Asio otus*), northern harrier (*Circus cyaneus*), yellow-breasted chat (*Icteria virens*), and American badger (*Taxidea taxus*). CDFG has determined the Program's impacts on these species to be less than significant because the potential for any one of them to be present at a project site is low, the Program's timing restrictions for instream work (July1 to October 15 ~~31~~) would avoid potential impacts to nests and den sites, and their ability to move away from and avoid areas of active construction.

Draft EIR Page 3.4-31

Mitigation Measure 3.4-1a: ITP General Conditions (g) and (h) (Article XIII.E.1) stipulate that instream work on structural restoration projects and instream equipment operations shall occur from July 1 to October 15 ~~31~~. This restricts noise and other sources of disturbance during most of the nesting season for special-status riparian birds.

Draft EIR Page 3.4-31

Mitigation Measure 3.4-1c: Master List of Terms and Conditions (MLTC) Condition 109 ~~100~~ stipulates that, prior to ground-disturbing activities, work sites shall be surveyed for special-status plant species by a qualified botanist. Special-status plant surveys shall be conducted following the *Guidelines for Assessing Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities* (CDFG, 2000). The survey report, including the methodology and survey findings, shall be provided to CDFG for

review and approval prior to any ground-disturbing activities. MLTC ~~c~~Condition 110 ~~101~~ further states that if any special-status plant species are identified at a work site, CDFG shall identify one or more of the following protective measures, but not limited to these measures, to be implemented at the project site before work may proceed:

Draft EIR Page 3.4-33, under Impact 3.4-2

Crossing construction and use as a Covered Activity may include the placement of a boulder weir on the downstream side of the crossing at or near grade and placement of angular quarry rock within the crossing location. Constructing and using the crossing for livestock or vehicles can adversely affect stream and riparian special-status species. Although disturbances are temporary and intermittent, movement of livestock and vehicles can mobilize sediment, decreasing habitat quality for aquatic species, destabilize streambeds and banks, and inhibit the growth or reduce the vigor of riparian or instream vegetation. ITP Additional SVRCD and Sub-Permittee Avoidance and Minimization Obligation D.1 and 3 (Article XV), however, prohibit livestock and vehicles crossing flowing streams between October 15 ~~31~~ through July 1, except in designated, CDFG-approved crossing lanes. Further, the ITP and sub-permits include the following restrictions:

Draft EIR Page 3.4-33

Impact 3.4-3: ITP Covered Activity 10, the grazing of livestock within the riparian exclusion zone ~~bed, bank, or channel of a stream~~ different from current operations (i.e., not part of baseline conditions), could impact sensitive habitat and special-status species (Significant).

Grazing of livestock within the riparian exclusion zone ~~adjacent to the channel or within the bed, bank, or channel,~~ of the Shasta River or its tributaries in accordance with a grazing management plan approved by CDFG is a Covered Activity under the ITP.

Draft EIR Pages 3.4-33 and 3.4-34

Mitigation Measures Proposed as Part of the Program

Mitigation Measure 3.4-3~~a~~: ITP Additional SVRCD and Sub-Permittee Avoidance and Minimization Obligation E.5 (Article XV) stipulates that livestock grazing be done in accordance with a grazing management plan prepared by the sub-permittee and approved by CDFG. The grazing management plan shall address the timing, duration, and intensity (number of livestock allowable per unit area [i.e., stocking rate]) of livestock grazing within the riparian zone and shall explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat. Grazing plans completed in accordance with the ITP shall include, in addition to other specified requirements, a means to prohibit livestock from entering live streams.

~~*Mitigation Measures Identified in this Draft EIR*~~

~~**Mitigation Measure 3.4-3b:** The ITP stipulation noted in Mitigation Measure 3.4-3a does not constitute complete mitigation because the actual restriction is not sufficiently specific.~~

~~Mitigation Measure 3.4-3b clarifies "intensity" to stipulate the number of livestock allowable per unit area (i.e., stocking rate) per unit of time. Grazing plans completed in accordance with the ITP shall include, in addition to other specified requirements, a means to prohibit livestock from entering live streams.~~

Draft EIR Page 3.4-34

Because MLTC Specific Terms and Conditions 21 ~~20~~ through 130 ~~114~~ are comprehensive and either meet or exceed the provisions which are normally included within CWA section 404 permits, this impact is considered less than significant and requires no further mitigation.

Draft EIR Page 3.5-14

Mitigation Measures Proposed as Part of the Program

Mitigation Measure 3.5-1a: Master List of Terms and Conditions (MLTC) Condition 111c ~~102~~ states that prior to any ground-disturbing activities, the responsible party shall contract with at least one qualified archaeologist and paleontologist ~~to~~. The archaeologist/paleontologist will complete cultural and paleontological resource surveys, to identify any previously recorded and unknown historical resources, unique archeological resources, or unique paleontological resources, using standard survey protocols. The survey report must be provided to the California Department of Fish and Game (CDFG) for review and approval prior to any ground-disturbing activities.

Mitigation Measure 3.5-1b: MLTC Condition 112 ~~103~~ notes that if any potentially significant historical resources, unique archaeological resources and/or paleontological resources are identified at the work site, CDFG shall consult with the consulting archaeologist or paleontologist to identify one or more of the following protective measures, or site specific measures, to be implemented at the project site before work may proceed:

Draft EIR Page 3.5-15

Mitigation Measure 3.5-1c: MLTC Condition 116 ~~104~~ states that the responsible party shall report any previously unknown historical resources, unique archaeological resources, and paleontological remains discovered at the site to CDFG and other appropriate agencies.

Mitigation Measure 3.5-1d: MLTC Condition 117 ~~105~~ states that if cultural resources such as lithic debitage, groundstone, historic debris, building foundations, or bone are discovered during ground-disturbing activities, work shall cease within 20 meters (66 feet) of the discovery. Furthermore, work near archaeological finds shall not resume until a professional archaeologist has evaluated the materials and offered recommendations for further action.

Mitigation Measure 3.5-1e: MLTC Condition 122 ~~108~~ states that the responsible party shall instruct all persons who will be completing any ground-disturbing activity at a worksite to comply with conditions set forth in the SAA MOU and to inspect each work site before, during and after completion of ground-disturbing activity at the work site.

Mitigation Measures Identified in this Draft EIR

Mitigation Measure 3.5-1f: Prior to carrying out MLTC Condition 111c ~~102~~, the archaeologist/paleontologist shall; a.) contact the Native American Heritage Commission for a Sacred Lands File check and a list of appropriate Native American contacts for consultation concerning the project site and, if necessary, to assist with the development of mitigation measures; and b.) make a determination ~~shall first be made~~ as to whether the area has had an adequate archaeological survey by a professional archaeologist and whether any historic or prehistoric sites have been recorded within a ¼-mile radius of the project area. This records review may be conducted at NE/CHRIS on a case-by-case basis for each project. Alternatively, a professional archaeologist will be contracted to conduct a watershed-wide records search at NE/CHRIS and prepare a map showing the previous surveys and recorded sites. An update of this information would then be prepared at least every two years. This map, which will show the locations of archaeological sites, would be considered confidential and made available only to individuals on an as-needed basis.

Mitigation Measure 3.5-1g: If none of the protective measures described in MLTC Condition 112 ~~103~~ can be implemented, then an archaeological data recovery program (ADRP) shall be implemented, unless the professional archaeologist determines that the archaeological resource is of greater interpretive use than research significance and that interpretive use of the resource is feasible. The project archaeologist and CDFG shall meet and consult to determine the scope of the ADRP, and the project archaeologist shall prepare a research design for the project which shall be submitted to CDFG for review and approval. This document shall identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The document will specifically identify the scientific/historical research questions being asked, the archaeological resources' expected data classes, and how the expected data classes would address the applicable research questions. Following approval of the plan by CDFG, the ADRP shall be implemented and a report prepared.

Draft EIR Page 3.5-16

Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. All significant cultural materials recovered shall be, as necessary, subject to scientific analysis, professional museum curation, and a report shall be prepared by a qualified archaeologist according to current professional standards. If the recovered artifacts are from a prehistoric site, the local Native American groups will be consulted relative to the disposition of these materials.

Mitigation Measure 3.5-1h: If built historical resources (e.g., structures, buildings, or similar) that qualify for listing in the California Register of Historic Resources (CEQA *Guidelines,* § 15064.5)) are identified through the implementation of measure MLTC Condition 111c ~~102~~ and cannot be avoided through implementation of measure MLTC Condition 112 ~~103~~, SVRCD or the Agricultural Operator will comply with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (Standards) which would, in accordance with CEQA *Guidelines,* § 15064.5(b)(3), reduce potential impacts associated with the alteration or modification of a historical resource (including historic districts and individually eligible resources) to a less-than-significant level.

Mitigation Measures Proposed as Part of the Program

Mitigation Measure 3.5-2a: Implement **Mitigation Measures 3.5-1a – 3.5-1e** (MLTC Conditions 111, 112, 116, 117, and 122 ~~102, 103, 104, 105, and 108~~), as described above.

Mitigation Measures Identified in This Draft EIR

Mitigation Measure 3.5-2b: MLTC Condition 117 ~~10~~5 (see Mitigation Measure 3.5-1d) states that if cultural resources such as lithic debitage, groundstone, historic debris, building foundations, or bone are discovered during ground-disturbing activities, work shall cease within 20 meters (66 feet) of the discovery.

Draft EIR Page 3.5-17

MLTC Condition 119 ~~106~~, which states, "In the event of inadvertent discovery of human remains during project construction, work shall cease within 20 meters (66 feet) of the discovery location, and any nearby area reasonably suspected to overlie adjacent to human remains (See Public Resources Code, § 7050.5).

Draft EIR Page 3.5-18

MLTC Condition 120 ~~107~~, which states, "The responsible party shall insure that the immediate vicinity where Native American human remains are located, according to generally accepted cultural or archeological standards or practices, is not damaged or disturbed by further ground-disturbing activity until the responsible party has discussed and conferred with the most likely descendents regarding their wishes, taking into account the possibility of multiple human remains, as provided in Public Resources Code, § 5097.98. Work may resume if NAHC is unable to identify a descendant, or the descendant fails to make a recommendation."

MLTC Condition 122 ~~108~~, which states, "[T]he responsible party shall instruct all persons who will be completing any ground-disturbing activity at a worksite to comply with conditions set forth in this Agreement and shall inspect each work site before, during and after completion of ground-disturbing activity at the work site."

MLTC Conditions 119, 120, and 122 ~~106, 107, and 108~~ would ensure that impacts to previously undiscovered human remains are less than significant.

Draft EIR Pages 3.6-6 and 6.6-7

Mitigation Measure 3.6-1a: The Program's incidental take permit (ITP) General condition (b) (Article XIII.E.1) states that the Shasta Valley Resource Conservation District (SVRCD) "and any sub-permittee shall immediately stop, contain, and clean-up any fuel, lubricants, or other hazardous materials that leak or spill while engaged in a Covered Activity. SVRCD or the sub-permittee shall notify the Department immediately of any leak or spill of hazardous materials into a stream or in a place where it can pass into a stream. While engaged in a covered activity, SVRCD and all sub-permittees shall store and handle hazardous materials at least 150 feet away from the edge of mean high water elevation of any stream and properly dispose any unused or leftover hazardous materials offsite. Exceptions to this provision may be provided in individual sub-permits for pre-existing structures with adequate containment facilities." Conditions 76 through 84 ~~68 through 75~~ of

the Program's streambed alteration agreement Master List of Terms and Conditions (MLTC) contain similar provisions.

Draft EIR Page 3.7-2

Montague Water Conservation District. MWCD provides water to a service area of approximately 19,500 ~~13,000~~ acres ~~of farmland~~ located primarily in the area north of the Little Shasta River and east of the Shasta River, and also to the City of Montague.

Draft EIR Page 3.7-10

Construction within stream channels is limited in the Program to the period of July 1-October 15 ~~31~~. This overlaps with the diversion season. It is possible, therefore, that some water supply construction projects could interrupt service. Periods of service interruption are, however, likely to be temporary and of short duration, and are therefore considered less than significant.

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The Program already contains several provisions to increase instream flows, including SVRCD's ITP Flow Enhancement Mitigation Obligation (Article XIII.E.2.(a)), Additional SVRCD and Sub-Permittee Avoidance and Minimization Obligation A: Water Management (Article XV), and MLTC Conditions 26 ~~25~~ (bypass flows at diversions).

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Impact 3.4-3: ITP Covered Activity 10, the grazing of livestock within the riparian exclusion zone ~~bed, bank, or channel~~ of a stream different from current operations (i.e., not part of baseline conditions), could impact sensitive habitat and special-status species (Less Than Significant with Mitigation).	Greater Impact	Same Impact	Same Impact

APPENDIX A

Shasta River Watershed-Wide Permitting Program Incidental Take Permit

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California Department of Fish and Game
NORTHERN REGION
601 LOCUST STREET
REDDING, CA 96001
California Endangered Species Act
Incidental Take Permit No. 2081-2005-026-01
SHASTA VALLEY RESOURCE CONSERVATION DISTRICT
SHASTA RIVER WATERSHED-*WIDE*~~-COHO~~ PERMIT*TING* PROGRAM

I. INTRODUCTION

The Department of Fish and Game is issuing this permit ("Permit") to the Shasta Valley Resource Conservation District ("SVRCD" or "Permittee") pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and section 783 *et seq.* in title 14 of the California Code of Regulations. The California Endangered Species Act ("CESA") (Fish & G. Code, § 2050 *et seq.*) prohibits the take[1] of endangered, threatened, or candidate[2] species, unless the Department authorizes, by permit, the take of such species ("take authorization"). The Department may issue such a permit, referred to as an "incidental take permit," if the take is incidental to an otherwise lawful activity and the other conditions set forth in section 2081, subdivisions (b) and (c), are met.

II. PERMITTEE INFORMATION

A. Name

Shasta Valley Resource Conservation District

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[1]Pursuant to Fish and Game Code section 86, "'take' means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill."

[2]"Candidate species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department for addition to either the list of endangered species or the list of threatened species or a species for which the Commission has published a notice of proposed regulation to add the species to either list. (See Fish & Game Code, § 2074.2.)

B. Name and Title of Principal Officer

Richard Kuck, Chairman
Board of Directors
Shasta Valley Resource Conservation District

C. Contact Person

Richard Kuck, Chairman
Board of Directors
Shasta Valley Resource Conservation District
530-842-6121, ext. 106

D. Mailing Address

Shasta Valley Resource Conservation District
215 Executive Court, Suite A
Yreka, CA 96097

E. Agent for Service of Process

Adriane Garayalde, District Administrator
Shasta Valley Resource Conservation District

III. EFFECTIVE DATE AND TERM OF PERMIT

This Permit shall be executed in duplicate original form and shall become effective once a duplicate original is acknowledged by signature of the Permittee on the last page of the Permit and returned to the Department's Office of the General Counsel, with a copy to the Department's Northern Region in Redding, California. The authorization under this Permit to take the Covered Species listed below shall expire ten years from the effective date of the Permit, unless the Department renews the Permit, the Department revokes or terminates the Permit prior to its expiration, or the SVRCD relinquishes the Permit prior to its expiration.

IV. DESCRIPTION OF PERMIT PROGRAM

This Permit establishes a program with SVRCD through which SVRCD, the Department of Water Resources ("DWR") or any other entity approved by the Department that agrees to perform DWR's obligations under this Permit, and those agricultural operators (defined below) who choose to participate in the

Program will be authorized to take coho salmon (*Oncorhynchus kisutch*) incidental to an activity this Permit covers, defined below as a "Covered Activity" ("Program"). Under the Program, agricultural operators will receive incidental take authorization for coho salmon by means of an individual "sub-permit." The sub-permittee will be required to execute the sub-permit and be responsible for complying with its terms and conditions. The Department will determine the terms and conditions in this Permit that apply to the sub-permittee's particular Covered Activity or Covered Activities and incorporate them into the sub-permit by reference and/or by writing. The Department may also include terms and conditions in a sub-permit that are not included in this Permit, if the Department determines that such additional terms and conditions are necessary to avoid, minimize, or mitigate the take of coho salmon incidental to a Covered Activity. The purpose of the Program is to assist agricultural operators to comply with CESA and to complete projects consistent with the goals of the "Recovery Strategy for California Coho Salmon" (2004) ("Recovery Strategy") and projects identified in the Shasta Watershed Restoration Plan.

V. PROGRAM AREA

The Program Area is the Shasta River watershed, including the Shasta River and its tributaries, in Siskiyou County as shown in Attachment 1, "Shasta River Watershed Map" ("Program Area").

VI. AGRICULTURAL OPERATOR

For purposes of this Permit, "agricultural operator" is defined as any natural person or any partnership, corporation, limited liability company, trust, or other type of association or any public agency, as defined in CEQA Guidelines, §15379, who diverts water from a stream by means of an active diversion in the Program Area for an agricultural purpose, or is involved in an agricultural operation on property in the Program Area through which or adjacent to which a stream flows "Active diversion" is defined as a surface water diversion that has been operated at least one out of the last five years.

VII. COVERED ACTIVITIES

The Permit and any sub-permit issued under the Program shall apply only to take incidental to the following activities that occur in the Program Area and are otherwise lawful (referred to collectively as "Covered Activities," and individually as a "Covered Activity"): 1) the diversion of water from streams, channels, or sloughs for irrigation or watering of stock by any means, including instream pumps; 2) the installation, operation, maintenance, and removal of devices and

structures used to divert water; 3) the installation, operation, and maintenance of fish screens; 4) the movement of livestock and vehicles across flowing streams and the construction*, maintenance, and use* of livestock and vehicle crossings and livestock watering lanes; 5) the installation and maintenance of riparian exclusion fencing; 6) riparian restoration or revegetation activities; 7) the installation, maintenance, and repair of instream habitat improvement structures; 8) the installation and maintenance of stream gages; 9) barrier removal and fish passage projects; 10) the grazing of livestock within the ~~bed, bank, or channel of a stream~~ *riparian exclusion zone* under specified conditions; 11) water management, water monitoring, and watermastering activities; 12) activities associated with the implementation of avoidance, minimization, and mitigation measures required by the Permit or any sub-permit; 13) activities associated with monitoring efforts required by this Permit or any sub-permit; and 14) activities associated with conducting research on coho salmon. The Covered Activities are more fully described in Attachment 2, "Covered Activities." This Permit does not, and any sub-permit shall not, cover water use for domestic, municipal, industrial, or mining purposes, power production for commercial purposes, and pesticide/herbicide use.

VIII. COVERED SPECIES

The Permit authorizes the take of coho salmon and no other species in the Program Area incidental to a Covered Activity ("coho salmon"). Coho salmon that occur in the Program Area are listed under CESA as a threatened species. Take authorization under any sub-permit issued under the Program shall also be limited to coho salmon.

IX. INCIDENTAL TAKE AUTHORIZATION

The Permit authorizes SVRCD and its employees, contractors, agents to take coho salmon incidental to a Covered Activity, subject to the terms and conditions of the Permit. The Permit does not authorize the intentional take of coho salmon, take of coho salmon from an activity that is not a Covered Activity, or take of coho salmon that results from a violation of a term or condition of the Permit. Any sub-permit issued under the Program shall likewise authorize the sub-permittee, its employees, contractors, and agents, to take coho salmon incidental to a Covered Activity, subject to the terms and conditions of the sub-permit. The sub-permit shall not authorize the intentional take of coho salmon, take of coho salmon from an activity that is not a Covered Activity, or take of coho salmon that results from a violation of a term or condition of the sub-permit.

X. FULLY-PROTECTED SPECIES

This Permit does not, and sub-permits shall not, authorize the take of any species listed in Fish and Game Code sections 3511, 4700, 5050, or 5515, referred to as "fully-protected" species.

XI. RECOVERY STRATEGY

In February 2004, the Fish and Game Commission adopted the Recovery Strategy. The Recovery Strategy emphasizes cooperation and collaboration, and recognizes the need for funding, public and private support for restoration actions, and maintaining a balance between regulatory and voluntary efforts to meet the goals of the Recovery Strategy. The Shasta and Scott River watersheds were identified for a pilot program to address coho salmon recovery issues and solutions related to agriculture and agricultural water use in Siskiyou County. In addition to identifying recommendations for the pilot program, the Shasta-Scott Recovery Team identified the need to develop a programmatic implementation framework (i.e., an incidental take permit program) that works toward the recovery of coho salmon, while affording take authorization to agricultural operators. The avoidance, minimization, and mitigation actions required by this Permit are consistent with the recovery tasks identified in the Shasta-Scott Pilot Program of the Recovery Strategy.

XII. SUB-PERMIT PROGRAM ADMINISTRATION AND STRUCTURE

After the Permit takes effect, a 60-day sub-permittee enrollment period shall begin. Any agricultural operator who would like to enroll in the Program after the initial enrollment period closes may do so from January 1 to February 28 each year.

After an agricultural operator enrolls in the Program, the SVRCD will assist the operator in obtaining a sub-permit from the Department. The sub-permit will include measures the sub-permittee will be responsible for implementing to avoid and minimize impacts to coho salmon that may result from a Covered Activity. An agricultural operator may obtain authorization to take coho salmon incidental to a Covered Activity by obtaining a sub-permit after enrolling in the Program, or a separate incidental take permit issued by the Department. Nothing in this Permit gives to SVRCD the authority to issue a sub-permit or provide take authorization to agricultural operators in any form.

XIII. CONDITIONS OF PERMIT AND SUB-PERMIT APPROVAL

A. SVRCD shall coordinate this Permit on behalf of all agricultural operators who participate in the Program. Such agricultural operators will receive authorization to take coho salmon incidental to a Covered Activity pursuant to a separate permit reviewed and issued by the Department, described above and hereinafter as a "sub-permit." An agricultural operator who participates in the Program and obtains a sub-permit is referred to above and hereinafter as a "sub-permittee."

B. SVRCD shall be responsible for implementing the mitigation and monitoring requirements that apply to it in this Permit.

C. All mitigation measures identified in this Permit that are implemented by the SVRCD or a sub-permittee since the date that the Department deemed the application of this Permit complete (April 28, 2005) shall be counted in any determination of whether the SVRCD or a sub-permittee has fully mitigated for the take of coho salmon this Permit or any sub-permit authorizes.

D. SVRCD shall comply with the terms and conditions of this Permit that apply to it within the timeframes set forth below and in Attachment 3, "Monitoring and Adaptive Management Plan" ("MAMP"), and shall comply with all other applicable requirements of this Permit and the MAMP. Each sub-permittee shall comply with the terms and conditions of this Permit that apply to him/her that are included in the sub-permit within the timeframes set forth below and in the MAMP, and shall comply with all other applicable requirements of the MAMP.

E. SVRCD and each sub-permittee shall fully implement and adhere to the conditions below that apply to them.

1. General conditions

(a) SVRCD shall conduct an education program for all sub-permittees within sixty days of the close of each sub-permittee enrollment period, described below. The education program shall consist of a presentation by a person or persons knowledgeable about the biology of coho salmon, the terms of the Permit, and CESA. The education program shall include a discussion of the biology of coho

salmon, their habitat needs, their threatened status under CESA, and the avoidance, minimization, and mitigation measures required by this Permit. A fact sheet containing this information shall also be distributed to all sub-permittees. Upon completion of the education program, the sub-permittees shall sign a form acknowledging that they attended the education program and understand the avoidance, minimization, and mitigation measures required by this Permit. SVRCD shall be responsible for preparing the presentation, the fact sheet, and acknowledgment form; for distributing and collecting the forms; and for making the completed forms available to the Department upon request. SVRCD shall submit the presentation, fact sheet, and acknowledgment form to the Department for its prior review and approval.

(b) SVRCD and any sub-permittee shall immediately stop, contain, and clean-up any fuel, lubricants, or other hazardous materials that leak or spill while engaged in a Covered Activity. SVRCD or the sub-permittee shall notify the Department immediately of any leak or spill of hazardous materials into a stream or in a place where it can pass into a stream. While engaged in a covered activity, SVRCD and all sub-permittees shall store and handle hazardous materials at least 150 feet away from the edge of mean high water elevation of any stream and properly dispose any unused or leftover hazardous materials offsite. Exceptions to this provision may be provided in individual sub-permits for pre-existing structures with adequate containment facilities.

(c) Sub-permittees shall provide non-enforcement Department employees written consent to access the sub-permittee's property for the specific purpose of verifying compliance with, or the effectiveness of, the avoidance, minimization, and mitigation measures required by this Permit or a sub-permit and/or for the purpose of fish population monitoring in the Shasta River and its tributaries, provided the Department notifies the sub-permittee at least 48 hours in advance, whether verbally or in writing. *The sub-permittee is entitled to be present or have a representative present. Sworn peace officers may enter private lands if necessary for law enforcement purposes pursuant to Fish and Game Section*

857 or as otherwise authorized by law.

(d) Each sub-permittee shall be solely responsible for any costs the sub-permittee incurs to implement any avoidance or minimization measures required under a sub-permit and SVRCD shall be solely responsible for any costs it incurs to implement any mitigation and monitoring measures required under this Permit.

(e) SVRCD's mitigation obligations under this Permit shall end only when the SVRCD has implemented the avoidance, minimization, and mitigation measures identified in this Permit, for which it is responsible, that are necessary to fully mitigate for authorized take of coho salmon that occurred while this Permit and all sub-permits was in effect and the Final Report (described below) is deemed complete pursuant to Section XVI.C, regardless of whether the Permit has expired, been revoked, relinquished, or terminated.

(f) SVRCD shall submit to the Department an irrevocable letter of credit or another form of security other than a bond ("Security") approved by the Department's Office of the General Counsel in the principal sum of $100,000. The Security shall allow the Department to draw on the principal sum if the Department, in its sole discretion, determines that SVRCD or a sub-permittee has failed to comply with any of the avoidance, minimization, mitigation, or monitoring measures in this Permit or a sub-permit for which the SVRCD or sub-permittee is responsible. The Department shall not execute this Permit until after the Department has approved the Security.

If the Department draws on the Security, it shall use the amount drawn to implement the avoidance, minimization, mitigation, and monitoring measures the SVRCD or sub-permittee has failed to implement, unless the Department determines, in its sole discretion, that the measure can no longer be successfully implemented or will not be effective, in which case the Department may use the amount drawn to fund other measures within the Program Area that will more effectively avoid, minimize, or mitigate impacts on coho salmon caused by a Covered Activity.

(g) Instream work on structural restoration projects by SVRCD or a sub-permittee shall occur from July 1 to October *15* ~~31~~ when coho salmon are least likely to be present and/or when water temperatures exceed the tolerance levels of coho salmon. If the work needs to be completed before July 1 or after October *15* ~~31~~, SVRCD or the sub-permittee shall request a variance from the Department in writing. If the Department grants the request, the work shall be completed in accordance with the avoidance, minimization, mitigation, and monitoring measures the Department specifies in granting the variance.

(h) Instream equipment operations by SVRCD or a sub-permittee shall occur when coho salmon are least likely to be present and/or when water temperatures exceed the tolerance levels of coho salmon, which is generally from July 1 to October *15* ~~31~~, except as otherwise provided in BMPs adopted pursuant to Section XV.F below. SVRCD will verify with the Department when such operations may begin each year prior to their commencement. *If the work needs to be completed before July 1 or after October 15, SVRCD shall request a variance from the Department in writing. If the Department grants the request, the work shall be completed in accordance with the avoidance, minimization, mitigation, and monitoring measures the Department specifies in granting the variance.* To the extent possible, all such work shall be done from outside the channel. All refueling of machinery shall be done no less than 150 feet away from the edge of the mean high water elevation of any stream. Access without specific Department approval is allowed to correct emergency problems demanding immediate action (as defined in Public Resources Code section 21060.3)

(i) SVRCD and each sub-permittee shall comply with Fish and Game Code section 1600 *et seq.*, if applicable.

2. Mitigation obligations of SVRCD

SVRCD's mitigation obligations are described below.

(a) Flow enhancement

The practice of diverting water from coho salmon-bearing streams increases the risk of take. To mitigate potential take of coho salmon from the diversion of water in streams where coho salmon occur, SVRCD shall implement the programs below to provide for or support the instream needs of coho salmon at specific life-cycle stages.

(i) Development and implementation of Shasta River Water Trust. SVRCD shall develop a locally-based Shasta River Water Trust ("Water Trust") specific to the conditions in the Shasta River watershed. The SVRCD shall develop a guidance document ("charter") that governs the Water Trust. The charter shall be subject to the Department's approval. The Water Trust shall provide instream flows by leasing or purchasing water from sub-permittees or other willing water right holders for instream beneficial use. The Water Trust shall use the income generated from the endowment that funds the Water Trust, or from other sources, to lease or purchase water from sub-permittees or others for instream beneficial use in accordance with guidelines prepared by SVRCD and approved by the Department. SVRCD shall begin developing the Water Trust immediately upon the effective date of the Permit. A forbearance agreement with the sub-permittee or other water right holder shall be required when leasing or purchasing water for one year or less. Water leased or purchased for greater than one year shall be dedicated to instream beneficial use pursuant to Water Code section 1707.

(ii) Improve baseline instream flows and/or water quality. The SVRCD shall improve baseline instream flows and/or water quality within critical reaches of the

Shasta River and its tributaries and at critical life stages of coho salmon by either installing water efficiency and/or water management improvement projects on sub-permittees properties or changing/adding points of diversion to keep flows instream to point of use. Within one year of the effective date of this Permit, SVRCD will provide to the Department, for its review and approval, a list of priority stream reaches for flow enhancement based on coho life stage, need and work with sub-permittees to address overall irrigation efficiency, and delivery considerations to accomplish aquatic habitat improvement. Generally, a Water Code section 1707 water transfer/dedication for instream benefits will be pursued where the net water savings is consistent with the State Water Resources Control Board policy.

(iii) Develop and implement a Contingency Plan for Dry and Critically-Dry Water Years. SVRCD shall submit a detailed Contingency Plan for Dry and Critically-Dry Water Years ("Contingency Plan") to the Department for its review and approval within three years of the effective date of the Permit. The Contingency Plan shall identify the criteria to determine when a year is dry or critically-dry and describe a process by which SVRCD will coordinate with sub-permittees to augment stream flows. SVRCD shall determine whether the water year will be dry or critically-dry by April 1st, based on the criteria in the Contingency Plan. Measures contained within the Contingency Plan will incorporate the best available information on both surface and groundwater (where relevant) to minimize the likelihood that critical coldwater flows to the Shasta River and its tributaries are impaired. In addition, the Contingency Plan will identify data gaps and will include a strategy to avoid stranding as defined in Section XVII.C. One component of the Contingency Plan shall be the Diversion Ramp-up Management Plan.

During the irrigation season, significant changes in stream flow occur when agricultural water users

cease or begin diverting water at the same time. A rapid decrease in flow can result in the stranding of fish in shallow pools and side channels below diversions, as well as a loss of critical rearing habitat. To address this problem SVRCD, in consultation with the Department and DWR, or functional equivalent watermaster, shall develop and implement a Diversion Ramp-Up Management Plan ("Management Plan") to coordinate and monitor irrigation so as to minimize rapid reductions in instream flows and the possible stranding of coho salmon. SVRCD shall submit the Management Plan to the Department for its review and approval within *three* ~~one~~ years from the effective date of the Permit. SVRCD and the sub-permittees shall begin implementing the Management Plan immediately upon the Department's approval.

(iv) Install alternative stock water systems. Water is diverted for stock watering purposes and/or off-stream storage in October, November, and December each year after diversions for irrigation cease. In those years when the seasonal rains arrive late, such diversions can limit the ability of returning adult coho salmon to reach potential spawning areas in tributaries to the Shasta River. To address that problem, SVRCD shall identify priority areas where additional instream flows in the fall will contribute significantly to adult coho migration. A priority plan shall be prepared by SVRCD that identifies where, if any, alternative stock watering systems may be beneficial for coho salmon. The priority plan shall be submitted to the Department for its review and approval within one year from the effective date of this Permit. The priority plan shall take into consideration groundwater availability, off stream storage capacity, and the feasibility of altering farm management practices.

If it is both practical and feasible to implement alternative stockwatering systems in the priority areas identified in the plan, the SVRCD shall install an average of two alternative stock watering systems or

other flow improvement measures per year during the term of the Permit. The watering systems shall use groundwater, off stream water storage, or other appropriate method, rather than surface water. Minimizing surface water diversion in the fall will facilitate adult coho salmon access to spawning areas. For purposes of this Permit, an alternative stock water system means the wells, tanks, pumps, water lines, watering troughs, and other physical components used to provide groundwater or stored water to livestock.

Where alternative stock watering systems are installed, in years when access is flow-limited and could be materially improved by the use of alternate stock watering systems, the diversion of surface water may begin after spawning has ceased or the natural stream flow has increased to the point where the affected diversion is no longer a significant factor for improving access to potential spawning areas.

Sub-permittees shall receive a reimbursement of the cost per day for running the alternative stock water system from the Water Trust or equivalent means if funds are available.

No sub-permittee shall be required to forego exercise of a right to divert for stock water purposes for more than four consecutive years. Within one year of the execution date of this Permit, the SVRCD shall develop and administer a program, subject to Department review and approval, to rotate the periodic exercise of diversion rights among sub-permittees to best enhance instream flows while preserving diversion rights from forfeiture.

(b) Habitat improvement

(i) Spawning gravel enhancement. SVRCD shall work with the Department to develop and implement a Spawning Gravel Enhancement Plan ("Gravel Enhancement Plan"). The Gravel Enhancement Plan

shall identify areas where gravel for coho salmon spawning could be placed effectively and where gravel can be recruited, and prioritize all immediately-needed gravel enhancement projects throughout the Program Area. SVRCD shall submit the Gravel Enhancement Plan to the Department for review and approval within two years from the effective date of the Permit.

SVRCD shall identify priority areas for the placement of gravel and/or flows that will maintain gravel quality in the Gravel Enhancement Plan. The SVRCD shall design and install constrictors and/or other spawning area enhancement structures at a total of five priority stream reaches where spawning gravels are not plentiful, if deemed necessary in the Gravel Enhancement Plan. SVRCD shall complete all gravel enhancement projects prior to the expiration of this Permit.

(ii) Instream habitat improvement structures. SVRCD, in consultation with the Department and sub-permittees, shall identify locations in the Program Area where instream habitat improvement structures would benefit coho salmon, and list those locations in order of priority. SVRCD shall submit the priority list to the Department for its review and approval within one year from the effective date the Permit. SVRCD shall install at least twenty instream habitat improvement structures at sites identified on the priority list prior to the expiration date of this Permit. At least ten of those structures shall be installed within five years from the effective date of the Permit. Instream habitat improvement structures may include large and small woody debris and boulder structures to improve pools and cover in areas where potential for over-summering exists.

(iii) Riparian planting. SVRCD and the sub-permittees shall prepare and submit to the Department for its review and approval a priority list of areas currently being used by coho salmon for spawning and rearing

within two years of the effective data of this Permit. Before this Permit expires SVRCD shall plant eight (8) linear miles of streambank (measured on one side of the river) of riparian habitat in the areas included on the priority list to improve instream cover and shade canopy, improve channel stabilization, and trap or hold sediment. Three (3) miles of streambank shall be planted within five years of the effective date of the Permit**.**

(c) Barrier removal/fish passage

Significant barriers exist in the Shasta River system that prevent fish passage or limit historical access. Some older structures that impede fish passage are considered "legacy projects." Restoration of passage at those sites involves efforts that go beyond minimization, and for purposes of this Permit are considered mitigation measures. SVRCD will continue to work toward eliminating the fish passage barriers identified below.

(i) Araujo Dam Demobilization and Water Quality Improvement Project. SVRCD shall continue to work with the Department on the permanent removal of Araujo Dam, a seasonally-used flashboard dam built in 1856 that five landowners use to irrigate agricultural lands.

(ii) Shasta Water Association's Dam Demobilization and Water Quality Improvement Project. SVRCD shall continue to work with the Department on the removal of a flashboard dam built in 1912 that approximately 130 individual landowners use.

(iii) Grenada Irrigation District Fish Barrier Removal Project. SVRCD will develop final engineered drawings for removal of the fish passage barrier at the Grenada Irrigation District diversion and construct the new diversion structure design within eight years of the execution date of the Permit.

XIV. MONITORING PROGRAM

SVRCD shall establish a monitoring program to *track the implementation of the mitigation measures for which it is responsible, and to* determine ~~if the sub-permittee is fulfilling all sub-permit terms and conditions, implementation of the avoidance, minimization, and mitigation measures identified in the Permit and any sub-permit, and~~ the effectiveness of those measures in improving conditions for coho salmon ("Monitoring Program"). *In addition, the SVRCD is available to assist the sub-permittee in fulfilling monitoring responsibilities related to the diversion of water and livestock or vehicle crossings.* SVRCD shall fund all monitoring activities it is responsible for performing. The Monitoring Program is summarized below and is more fully described in Attachment 3.

~~A. Compliance Monitoring~~

~~SVRCD shall conduct monitoring activities to verify that the avoidance, minimization, and mitigation measures identified in this Permit are being implemented in accordance with the requirements below.~~

1. SVRCD shall be responsible for determining if it is fulfilling the terms and conditions of this Permit by instituting a comprehensive monitoring program. The program shall include a means to confirm and monitor the implementation of the mitigation measures for which it is responsible.

2. The sub-permittee shall be responsible for monitoring the terms and condition of their sub-permit by completing the appropriate implementation and effectiveness monitoring checklists for their Covered Activities and submitting them to the Department. SVRCD is available to assist the sub-permittee in completing the water diversion and livestock and vehicle crossings checklists.

~~SVRCD shall be responsible for determining if the sub-permittee is fulfilling the terms and conditions of their sub-permits by instituting a comprehensive monitoring program. The program shall include a means to: (1) confirm and monitor the implementation of the minimization and avoidance measures for which the sub-permittees are responsible, and (2) identify sub-permittees who are not or who have not implemented the terms and conditions of their sub-permits. SVRCD shall immediately notify the Department of sub-permittees who SVRCD believes are not fulfilling or implementing a term or condition of their sub-permit.~~

3. The SVRCD shall inspect the screen, headgate, measuring device, diversion structure and livestock and vehicle crossings annually and is available to assist the sub-permittee in filling out the qualitative effectiveness monitoring checklists for those Covered Activities.

4 If during any field review of a sub-permittees water diversion facilities and/or livestock or vehicle crossing, the SVRCD identifies a sub-permittee who may not or has not implemented the terms and conditions of their sub-permits the SVRCD shall inform the sub-permittee and work with the sub-permittee to develop a strategy for implementing the terms and conditions of the sub-permit.

5. At the discretion of either the SVRCD or the sub-permittee, the Department will be notified in order to assist in the development of an implementation strategy.

6. If the SVRCD and the sub-permittee cannot agree upon an acceptable strategy for implementation of the terms and conditions of the sub-permit, or the implementation of a term or condition of this Permit which requires the SVRCD to implement certain mitigation measures on the property of sub-permittees, the Department shall be notified.

7 ~~3.~~ SVRCD shall summarize the results of its monitoring activities in each of its Annual Reports (described below). Analysis of the past year's monitoring activities and the monitoring data shall be provided to the Department at that time.

8 ~~4.~~ After revocation, relinquishment, expiration, or termination of the Permit, SVRCD shall deliver a Final Report (described below) to the Department analyzing all of the avoidance, minimization, and mitigation measures implemented pursuant to this Permit, including an evaluation of their effectiveness.

9 ~~5.~~ SVRCD's obligations under this Permit shall not end until the Final Report has been deemed complete by the Department (Section XVI.C), regardless of when the Permit expires, or is revoked, relinquished, or terminated.

10 ~~6.~~ SVRCD shall conduct photo monitoring to document the installation, operation, maintenance, and effectiveness of all avoidance, minimization, and mitigation activities (individually, "project") *for which it is responsible* ~~required~~ under this Permit ~~and any sub-permit~~.

Photo monitoring shall be used to document current conditions, implementation and effectiveness by:

- documenting pre- and post-site conditions;
- identifying key steps taken during and after the completion of a project;
- determining whether a project was correctly implemented pursuant to SVRCD and Department guidelines; and document ongoing maintenance of the project.

Sequential photographs shall be taken over time in order to show changes in site conditions. At a minimum, photographs shall be taken at three different times: before project implementation, directly after project implementation, and again at a later date appropriate to the particular project.

11 ~~7.~~ SVRCD shall conduct monitoring activities prior to and immediately after project implementation for those projects for which it is responsible~~, using photographs and checklists for documentation. That information shall include pre-project and pre-treatment checklists. That information shall include pre-project and pre-treatment checklists. The pre-treatment checklist shall be used during monitoring to help judge effectiveness of the project~~. *Data collection shall include pre-project implementation checklists, implementation checklists and photo monitoring.*

12 ~~8.~~ SVRCD and Department project evaluators shall have access to photographs and project files to take with them on site visits.

~~B. Effectiveness Monitoring~~

~~SVRCD shall determine the effectiveness of the avoidance, minimization, and mitigation measures identified in this Permit and sub-permits and the extent to which the objectives of those measures have been met in accordance with the requirements below.~~

13 ~~1~~. SVRCD shall conduct *qualitative* effectiveness monitoring ~~before and~~ after project implementation*, and annually thereafter, for all mitigation measures for which it is responsible pursuant to this Permit by filling out the qualitative effectiveness monitoring checklist and conducting photo monitoring for those particular project types.*

14 ~~*2.*~~ SVRCD shall identify at least one specific objective for each project installed pursuant to this Permit. The objective shall be documented in project files by SVRCD and shall be reported to the Department in the Annual Report.

15 ~~*3.*~~ SVRCD shall conduct quantitative effectiveness monitoring ~~for all measures implemented pursuant to this Permit and any sub-permit. In addition, SVRCD shall conduct quantitative effectiveness monitoring~~ of 10% of all instream measures implemented. *For purposes of quantitative effectiveness monitoring instream measures shall include: spawning gravel enhancement (if determined necessary), instream habitat structures, livestock and vehicle crossings, fish passage improvements, and instream flow.*

XV. ADDITIONAL SVRCD AND SUB-PERMITTEE AVOIDANCE AND MINIMIZATION OBLIGATIONS

In addition to any other obligations in this Permit that apply to SVRCD and sub-permittees, SVRCD and each sub-permittee shall implement the measures described below to avoid and minimize the incidental take of *all life stages of coho salmon, including the eggs, alevins, juveniles (i.e., fry, parr, and smolt), and adults* ~~adult and juvenile coho salmon~~. SVRCD shall describe the implementation status of each of the following avoidance and minimization measures in each Annual Report (described below).

A. Water Management

1. Compliance with water rights

Each sub-permittee shall divert and use water in the Program Area pursuant to, and in accordance with, a valid and existing right at all times. *Such compliance includes diverting water at the authorized point of diversion(s), in the authorized amount, and during the authorized period(s), and using it for the authorized purpose(s) and at the authorized place(s) of use.* SVRCD shall not be responsible

for enforcing the sub-permittees' compliance with their right(s) to divert and use water in the Program Area.

2. Verification of the quantity of water diverted

Each sub-permittee shall verify that the quantity of water the sub-permittee is diverting or using is in accordance with a valid water right. Verification shall be performed by the watermaster for diversions that are controlled by a watermaster. In the absence of a watermaster, verification shall be performed by some other reliable means as determined by the Department. The quantities diverted at each diversion shall be reported to the Department on at least a monthly basis in the form of a database or in some other form approved by the Department.

3. Headgate and gage installation

a. All sub-permittees shall install a locking headgate or valve, *sized appropriately for the authorized diversion,* that can regulate flow, and a functional measuring device or flow meter, on any structure or facility used to divert water, whether by pumping, through a ditch, pipe, or flume, or by some other means ("diversion") ~~that meet Department criteria~~ to facilitate better control and monitoring of water delivery within three years of the effective date of the Permit.

b. The designs for headgates or valves and measuring devices in State Watermaster or Special Watermaster District Service areas shall be approved by Department of Water Resources (DWR) or said Special District, if applicable, in coordination with the Department. In areas where there is no watermaster service the designs shall be approved by the Department. All measuring devices and methods of water measurement shall be constructed and maintained to meet a ±5% measuring accuracy criteria.

c. SVRCD shall prepare a priority plan that identifies locations where headgate and measuring device installation is a priority and shall submit the list to the Department for review and approval within one year of the effective date of this Permit.

B. Fish Screens

1. All sub-permittees shall be responsible for fitting their diversions, including diversions for stock water, with fish screens that meet Department and the National Oceanic and Atmospheric Administration National Marine Fisheries Service's ("NMFS") criteria for steelhead fry as they exist at the time the screen will be installed. Fish screens shall be in place and maintained at all times water is being diverted, and SVRCD, in consultation with the Department, shall inspect the screens at least once a year during the irrigation season to verify that this requirement is being fulfilled and to *ensure* ~~assure~~ that the screens are in good working condition.

2. Any unscreened diversion operated by a sub-permittee within the known range of coho salmon in the Program Area shall have a fish screen installed on or in the diversion no later than four years from the effective date of the Permit, or within two years from the date of the sub-permit, whichever date is later.

3. Each sub-permittee shall supply sufficient bypass water as determined by the Department on a case-by-case basis and, if necessary, construct or install a bypass channel or device, to carry fish, stopped by the fish screen, back to the channel from which they were diverted.

4. If a screen needs to be removed for cleaning or repair, the sub-permittee shall ensure that a replacement screen is installed immediately after the screen is removed or, alternatively, that no water is flowing through the area where the screen is located.

5. Each sub-permittee shall regularly inspect and clean all fish screens as necessary to remove debris, properly operate the bypass, and prevent over-topping of the fish screen.

C. Fish Passage Improvements

There are an estimated 92 active diversions in the Program Area within known or presumed areas of coho use. Of those, an estimated 5 impede fish passage to some extent ("fish barriers"). To address this problem, SVRCD and each sub-permittee whose diversion is a fish barrier shall

comply with the below requirements in an effort to eliminate all the fish barriers**.**

1. Each sub-permittee whose diversion is a fish barrier shall provide volitional fish passage for both adult and juvenile coho salmon, both upstream and downstream within five years of the effective date of their sub-permit. Where such passage is inadequate, the sub-permittee shall submit plans to improve passage to the Department for review and approval. As a part of the review the Department will make a determination regarding whether or not engineered drawings are necessary for the project. If the Department determines that engineered drawings *are* ~~to be~~ necessary, the sub-permittee shall submit such *drawings* ~~plans~~ to the Department for *its* review and approval prior to implementing the project. Annual reports that document progress to provide adequate fish passage at a diversion that is a fish barrier shall be provided to the SVRCD by the owner of the diversion. SVRCD shall submit the sub-permittees' annual reports to the Department with the SVRCD's Annual Report (described below).

2. SVRCD shall review and prioritize in the form of a written list the diversions sub-permittees use in the Program Area based on existing fish passage conditions, the impacts of the current diversion method and operation on coho salmon, the presence of coho salmon, the habitat that would be available to coho salmon were the barrier removed, and a cost-benefit estimate. SVRCD shall submit the priority list to the Department for its review and approval within one year from the effective date of the Permit. The priority list shall be used to focus efforts to remove fish barriers in the most critical areas early in the Program.

3. SVRCD shall coordinate with the Department to develop a curriculum for a fish passage workshop within eight months from the effective date of the Permit, and shall conduct a fish passage workshop for those persons who own, operate, or use diversions that are likely to obstruct passage within one year from the effective date of the Permit.

4. All diversion structures operated by sub-permittees shall comply with all provisions of the Fish and Game Code within five years of the effective date of the sub-permit

D. Livestock and Vehicle Crossings

1. Livestock and vehicles may not cross a flowing stream from October *15* ~~31~~ through July 1 to avoid any possible damage to coho redds, except on designated lanes where measures to prevent spawning have been taken or where spawning is deemed unlikely, as documented by a Department fisheries biologist or a Department-approved coho spawner surveyor. The Department shall approve coho spawner surveyors who have demonstrated competency in identifying and classifying spawning habitat. Instream installation of any crossing improvements shall occur when coho salmon are the least likely to be present and/or when water temperatures exceed coho tolerance levels, generally July through October or when the channel is dry. SVRCD will verify with the Department when any construction activities can be undertaken on a site-by-site basis.

2. Due to the uniqueness of the landscape and conditions throughout the Program Area, SVRCD will work with landowners and the Department on the appropriate placement for improved crossing areas. Sites will be selected to avoid impacts on potential spawning habitat and coho redds. SVRCD shall develop a list of priority locations for livestock and vehicle crossing construction and shall submit the list to the Department for review and approval within one year of the effective date of this Permit. *High priority areas identified in the priority plan will be addressed as soon as practical.* The Department will have final approval of the location and design of the crossing area prior to use.

3. The crossing sites shall meet the following criteria:

   (a) Crossing sites shall not be located in the tails of pools, known spawning habitat, or identified, suitable spawning habitat.

   (b) Approaches must be no steeper than 3:1, and should be sloped with clean and angular base rock.

   (c) Angular rock shall be applied to the crossing during the period of July 1 through October *15* ~~31~~. The diameter of angular rock shall be determined in consultation with

SVRCD so as to eliminate the risk of angular rock becoming a grade control affecting channel conditions.

(d) In locations where the stream crossings occur on intermittent streams, application of rock shall occur when the stream channel is dry.

4. In order to ensure the crossing structures remain in operable condition, SVRCD shall monitor them annually for shifting of the base rock. During the monitoring visit, SVRCD shall evaluate fish passage and the approaches to the crossing. If the crossing is exacerbating erosion and contributing fine sediment to the stream, SVRCD shall note that in its Annual Report and the sub-permittee shall be responsible for implementing reasonable measures to correct the problem as soon as practicable.

5. All sub-permittees with livestock and vehicle crossings shall meet the crossing criteria identified above, unless otherwise determined by the Department, prior to the expiration date of their sub-permit.

E Riparian Fencing/Grazing of Livestock in Riparian Area

1. SVRCD shall prepare a plan that identifies in order of priority riparian locations in the Program Area that if fenced to exclude livestock would benefit coho salmon ("Riparian Fencing Plan"). High priority areas identified in the priority plan will be addressed as soon as practical. SVRCD shall submit the Riparian Fencing Plan to the Department for review and approval within one year from the effective date of the Permit. SVRCD shall select and prioritize the riparian locations based on coho use of the stream segment adjacent to or near the riparian location; the severity of the impact livestock have on the stream segment adjacent to or near the riparian location; the ability of livestock to access the stream and; the condition of the vegetation in the riparian location.

2. The sub-permittees shall be responsible for installing livestock exclusion fencing in accordance with the Riparian Fencing Plan. SVRCD shall work with the sub-permittees to identify funds that can be used to offset the cost of installing exclusion fencing in an effort to protect an average of two miles of additional stream every year (once the Riparian Fencing Plan has been approved) based on the priority list in the Riparian Fencing Plan. Until the exclusion fencing

is installed, the sub-permittees shall take all reasonable precautions in regard to the watering and movement of livestock on or within the bed, banks, or channel of the Shasta River or its tributaries to ensure minimal adverse impacts to coho habitat.

3. The sub-permittees shall build any exclusion fencing approximately 35 feet from the edge of the stream bank and shall make reasonable efforts to include the existing riparian vegetation within the fenced area. A sub-permittee may deviate from the 35-foot setback requirement, provided the deviation is minor and approved by SVRCD. Sub-permittees shall be responsible for maintaining and repairing all exclusion fencing built on their property in good working order. If the exclusion fencing will be built in an area prone to flooding, or other special circumstances exist, the sub-permittee shall consult with and get the approval for any deviations from these standards from both the SVRCD and the Department to address those circumstances before the exclusion fencing is built. If after the exclusion fencing is built, flood damage impacts more than 50% of it, SVRCD, the sub-permittee, and the Department shall meet to determine the proper course of action to take.

4. All sub-permittees shall allow riparian revegetation planting and exclusion fencing to occur along designated stream reaches located on their property.

5. Sub-permittees may not graze livestock within a fenced riparian area unless the grazing is done in accordance with a grazing management plan prepared by the sub-permittee and approved by the Department. The grazing management plan shall address the timing, duration, and intensity *(number of livestock allowable per unit area [i.e., stocking rate])* of livestock grazing within the riparian zone and shall explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat. *In addition, the grazing plan shall describe the means by which the livestock will be prohibited from entering live streams.*

F. Push-Up Dams

1. In consultation with the Department, SVRCD shall prepare and adopt a set of Best Management Practices ("BMPs") governing the construction, operation, and/or removal of push-up dams within 6 months of the effective date of this Permit. The BMPs shall specify

the conditions under which these push-up dams may be used, including, but not limited to, work windows during which the dams may be constructed and removed; provisions to allow dam passage by both adult and juvenile coho salmon; measures to minimize downstream sedimentation, turbidity, and other water quality impacts; and a description of the type of equipment that may be used to construct and remove the dams. Push-up dams are defined as temporary diversion structures created by using *motorized equipment (for example* loaders, backhoes, or excavators) to move bedload within the stream channel to form a flow barrier that seasonally diverts the flow of the stream.

2. Any sub-permittee who uses push up dams in streams within the Program Area shall implement the BMP's, once approved by the Department, to minimize dam-related impacts.

3. No later than five years after the effective date of their sub-permit all sub-permittees shall replace their push-up dams with *boulder* ~~vortex~~ weirs or some other diversion method, provided the Department approves the method, unless the Department determines that an alternative method is not feasible. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

G. Other Temporary Diversion Structures

1. In consultation with the Department, SVRCD shall prepare and adopt a set of Best Management Practices ("BMPs") governing the construction, operation, and/or removal of temporary diversion structures other than push-up dams within 6 months of the effective date of this Permit. The BMPs shall specify the conditions under which these other temporary diversion structures may be used, including, but not limited to, work windows during which they may be constructed and removed; provisions to allow passage by both adult and juvenile coho salmon; measures to minimize downstream sedimentation, turbidity, and other water quality impacts and a description of the construction methods that may be used to construct and remove the structures. Temporary diversion structures are defined as any temporary structure (other than a push-up dam) used to seasonally divert water from a stream that is typically made with *materials such as* hay bales, hand-stacked

rocks and cobble, tarps, wood, or a combination of these materials, placed in the channel *with or* without the use of *motorized* ~~heavy~~ equipment.

2. Within two years from the effective date of the Permit, any sub-permittee who uses an other temporary diversion structure in streams within the Program Area shall request the SVRCD and the Department to assess the structure. The request shall be in writing. If the Department determines that the other temporary diversion structure will comply with the Fish and Game Code, then the sub-permittee may use such structure, provided that specific BMPs shall be added to the sub-permit to minimize dam-related impacts.

3. If the Department determines that the other temporary diversion structure will not comply with the Fish and Game Code, even with implementation of BMPs, the sub-permittee shall within five years of such determination replace the other temporary diversion structure with a *boulder* ~~vortex~~ weir or some other diversion method approved by the Department.

H. Bioengineered Bank Stabilization

In areas where the slopes of streambanks on a sub-permittee's property have become unstable due to actions by the sub-permittee and re-stabilization measures are necessary to re-establish vegetation, the sub-permittee shall implement bioengineered bank stabilization techniques to prevent additional erosion from occurring. The techniques to be implemented shall be consistent with methods identified in the most recent version of the Department's California Salmonid Stream Habitat Restoration Manual and shall be approved by the Department on a site-by-site basis. *Any bank stabilization required pursuant to a sub-permit shall be implemented within three years of the effective date of the sub-permit.*

I. Irrigation Tailwater Reduction and/or Capture

SVRCD shall assist sub-permittees in the design and implementation of tailwater reduction and capture systems. SVRCD shall inventory and prioritize tailwater sources for remediation and submit the priority list of sites to the Department for its review and approval within two years of the effective date of the Permit. *High priority areas identified in the priority*

plan will be addressed as soon as practical. Any tailwater capture system implemented pursuant to this Permit or any sub-permit shall be consistent with the standards outlined by Natural Resources Conservation Service guidelines, and shall be constructed so as not to have negative impacts on the stream either during or after construction. The sub-permittees whose property is on the priority list shall have tailwater reduction and capture systems in place by the expiration of their sub-permit.

J. Dwinnell Dam and the Montague Water Conservation District

Since 1928, Dwinnell Reservoir has stored water for the Montague Water Conservation District ("MWCD"). MWCD releases water to district members for irrigation purposes. Dwinnell Reservoir contains populations of non-native fish. Therefore, releases from the reservoir likely exacerbate existing problems of predation on coho salmon. To avoid that problem, MWCD shall screen their summer discharge from Dwinnell Reservoir into the Shasta River. In addition, MWCD shall prepare a feasibility study to investigate the design and implementation of fish screens on both the Parks Creek and Little Shasta River diversions. The feasibility study shall evaluate the water budget for intake and delivery operations and propose water management measures at Dwinnell Dam to improve coho habitat downstream of the dam. The feasibility study shall also investigate the possibility of providing fish passage at Dwinnell Dam.

XVI. SVRCD REPORTING

A. Annual Report

1. After the effective date of the Permit and until the Permit expires or terminates, SVRCD shall provide the Department an Annual Report by April 30th each year that covers the period of time from February 1 the previous year to January 31 of the current year.

2. Each Annual Report shall include, at a minimum, the following information: 1) a general description of the status of the Program, including a description of all avoidance, minimization, and mitigation measures that were implemented during the previous year; 2) a copy of an implementation database with notes showing the current implementation status of each avoidance, minimization, and mitigation measure; 3) the results of all monitoring activities conducted pursuant to the Permit; and 4) all monitoring data.

B. Five-Year Report

1. Five years after the effective date of the Permit, SVRCD shall conduct a comprehensive review of the Program and submit its findings in the form of a Five-Year Report to the Department. As part of its review, SVRCD shall evaluate coho recovery task implementation and community participation. The Five-Year Report shall include an analysis of the Program beginning on the effective date of the Permit, as well as the activities that have been implemented. The Five-Year Report shall include the Annual Report for the fifth year and recommended adaptive management actions to improve operations.

C. Final Report

1. No later than six months after the Permit expires, is revoked, or relinquished, or terminated, and all measures necessary to fully mitigate for take during the term of the Permit have been implemented, SVRCD shall provide the Department with a Final Report. SVRCD shall prepare the Final Report and include, at a minimum: 1) a copy of the implementation database with notes showing when each avoidance, minimization, and mitigation measure was implemented; 2) all available information about the incidental take of coho salmon the Permit covers; 3) information about the impacts the Covered Activities have had on coho salmon notwithstanding the implementation of the avoidance, minimization, and mitigation measures; 4) the beginning and ending dates *of* all construction projects the Permit ~~or any sub-permit~~ covers; 5) an assessment of the effectiveness of the Permit's ~~and sub-permits'~~ terms and conditions to avoid, minimize, and mitigate impacts on coho salmon; 6) recommendations on how those terms and conditions might be changed to more effectively avoid, minimize, and mitigate such impacts in the future; and 7) any other pertinent information.

The Department shall have sixty days from receipt of the Final Report to notify the SVRCD of any information the Department believes is missing from the Final Report. If the Department does not notify the SVRCD that the Final Report is incomplete within sixty days of receipt, the Final Report shall be deemed complete. Any such notice of incompleteness shall specify the information the Department believes is missing. The SVRCD shall have sixty days

thereafter to provide the missing information, if it is available to the SVRCD, or if it cannot provide the missing information, an explanation that is acceptable to the Department of why the information is not available to the SVRCD. When the SVRCD has provided the missing information, or an explanation why it cannot provide missing information, the Final Report shall be deemed complete.

XVII. DEPARTMENT OF WATER RESOURCES SUB-PERMIT OBLIGATIONS

DWR as a sub-permittee shall be responsible for complying only with the following terms and conditions:

A. To assist with the implementation and compliance monitoring of this Permit and sub-permits, DWR shall provide to the Department water use data for all diversions with watermaster service in the Program Area, including, but not limited to the name of the diverter, the location of the diversion, the quantity of water that may lawfully be diverted and used, the dates the watermaster visits each diversion, and the estimated or measured quantity of water diverted by the watermaster on each visit. DWR shall provide the data in the form of a database on a monthly basis from April to November each year by the second week of each month following data collection.

B. DWR shall implement the Shasta River Decree pursuant to provisions of the Water Code in the adjudicated portions of the Shasta River Watershed~~, unless the Department instructs DWR otherwise pursuant to Section XVII.C below~~. As part of that responsibility, the DWR watermaster, or a functional equivalent, shall verify that each sub-permittee is in compliance with their respective water right(s). The watermaster shall create a database of all diversions visited on a monthly basis to verify compliance with water rights and shall provide this data monthly to the Department.

C. DWR shall meet with the Department in person or by telephone on a weekly basis during the diversion season in order to inform the Department of any points of diversion in the watermastered areas where stranding is probable. The Department shall make a determination regarding whether or not any diversion is causing or will cause the stranding of coho salmon. For the purpose of this Permit, “stranding” is defined as a situation in which coho salmon are in a location with poor aquatic habitat conditions, due to a reduction in flow, from which they

cannot escape. ~~The Department shall instruct DWR to reduce or cease the diversion and/or change the timing or manner of the diversion and take any other measures within DWR's control that the Department determines are necessary to correct or avoid stranding and DWR shall implement those measures immediately. However, before instructing DWR as described above, the Department will make every effort to work with SVRCD and sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion, all in accordance with Section XVIII.~~

D. The Department will make every effort to work with SVRCD and sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion.

E. If the Department determines that reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is the only available measure to avoid or minimize stranding, the Department shall inform the sub-permittee of the required measures to be implemented to reduce stranding. The Department shall work with DWR to implement such measures within DWR's control.

XVIII. STRANDING

If the Department determines that a diversion covered by a sub-permit is causing or will cause the stranding of coho salmon, the Department shall take the steps in the order below to avoid or minimize such stranding:

A. The Department shall determine whether or not the sub-permittee is in compliance with the sub-permit.

B. If the sub-permittee is not in compliance with the sub-permit, the Department shall contact the sub-permittee to determine why they are not in compliance and take appropriate action, whether or not in accordance with Section XIX.

C. In either case, the Department shall consult with the SVRCD and sub-permittee to determine whether there are any measures the SVRCD and/or sub-permittee can take to avoid or minimize stranding.

D. If reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is *determined by*

the Department to be the only available measure to avoid or minimize stranding, the Department shall work with the SVRCD and sub-permittee and, if applicable, DWR to take such action.

XIX. SUSPENSION AND REVOCATION

If the SVRCD or a sub-permittee fails to comply with any term or condition in the Permit or sub-permit, the Department may suspend or revoke the Permit or sub-permit in accordance with subsection 783.7 of title 14 of the California Code of Regulations. The SVRCD or the affected sub-permittee may seek reconsideration of or appeal a suspension or revocation pursuant to section 783.8 of title 14 of the California Code of Regulations. If, during the term of this Permit or any sub-permit, these regulations are amended or superseded, then the criteria and procedures specified in the regulations in effect at the time of the suspension, revocation, reconsideration or appeal shall apply.

XX. COMPLIANCE WITH OTHER LAWS

The Permit authorizes SVRCD to take coho salmon incidental to a Covered Activity in accordance with CESA. The Permit does not satisfy any other local, state, or federal laws or necessarily entitle SVRCD to complete any Covered Activity. SVRCD is responsible for complying with all other applicable local, state, and federal laws that apply to a Covered Activity, including the following provisions in the Fish and Game Code: section 1600 *et seq*., 5901, and 5937. Any sub-permit issued by the Department will likewise authorize a sub-permittee to take coho salmon incidental to a Covered Activity in accordance with CESA, will not satisfy any local, state, or federal laws, other than CESA, or necessarily entitle the sub-permittee to complete any Covered Activity. The sub-permittee will be responsible for complying with all other applicable local, state, and federal laws, including the following provisions in the Fish and Game Code: section 1600 *et seq*., 5901, and 5937.

XXI. ENFORCEMENT

A. This Permit does not authorize or require SVRCD to bring an enforcement action against a sub-permittee who is not in compliance with its sub-permit. Such enforcement will be the sole responsibility and at the sole discretion of the Department.

B. Nothing in this Permit precludes the Department from pursuing an enforcement action against the SVRCD or a sub-permittee instead of or in addition to suspending or revoking the Permit or any sub-permit.

XXII. LIABILITY

SVRCD shall be solely responsible for any violation of the terms and conditions of the Permit applicable to SVRCD, whether committed by SVRCD or any person acting on behalf of SVRCD to complete a Covered Activity, including SVRCD's agents, officers, employees, contractors, or sub-contractors. Each sub-permittee shall be solely responsible for any violation of the terms and conditions of the Permit applicable to sub-permittee, whether committed by sub-permittee or any person acting on behalf of sub-permittee to complete a Covered Activity, including sub-permittee's agents, officers, employees, contractors, or sub-contractors. The Department shall not hold SVRCD responsible for sub-permittee's non-compliance with the terms and conditions of the Permit applicable to sub-permittee or its sub-permit.

~~Sub-permittees shall be solely responsible for complying with the terms and conditions of their sub-permits. The Department shall not hold SVRCD responsible for sub-permittee's non-compliance with the terms and conditions of a sub-permit. SVRCD and each sub-permittee shall be severally liable for the actions of their own employees, contractors and agents.~~

XXIII. FORCE MAJEURE

The SVRCD and sub-permittees shall not be responsible for the damage or destruction of any fencing, fish screen, or any other device, facility, or structure the Permit or any sub-permit requires ("property"); the failure to perform an avoidance, minimization, or mitigation measure the Permit or any sub-permit requires; or the take of coho salmon due to any natural cause beyond the SVRCD's or sub-permittee's control, including, without limitation, fire, flood, storm, and earth movement, provided, however, the SVRCD or sub-permittee: 1) notifies the Department in writing within two weeks after the event occurs, describing the event and the property damage or destruction and/or the measures the SVRCD or sub-permittee cannot perform because of it; 2) repairs or replaces the damaged or destroyed property and/or resumes performance of the avoidance, minimization, or mitigation measure as soon as practicable after the event ends; and 3) notifies the Department in writing within two weeks of repairing or replacing the property and/or resuming performance, unless the Department and the SVRCD or sub-permittee agree otherwise. This clause is intended to excuse SVRCD or sub-permittee only if the damage to the property, failure to perform the measure, or take of coho salmon could not be avoided by the exercise of due care by that party.

XXIV. ASSIGNMENT AND TRANSFER

The Permit and any sub-permit may not be assigned or transferred without the written consent of the Department in accordance with Department's CESA regulations, specifically section 783.6, subdivision (a), of title 14 of the California Code of Regulations.

XXV. RENEWAL

This Permit and any sub-permit may be renewed in accordance with the Department's CESA regulations, specifically section 783.6, subdivision (b), of title 14 of the California Code of Regulations.

XXVI. RELINQUISHMENT

A. The SVRCD may relinquish the Permit, and a sub-permittee may relinquish a sub-permit, subject to and in accordance with the conditions below:

1. Relinquishment by sub-permittee. A sub-permittee may relinquish a sub-permit by providing notice to the Department and the SVRCD of intent to withdraw from the Program and relinquish the sub-permit. The termination of the sub-permit will be effective immediately upon receipt *by the Department* of the relinquishment notice *from the sub-permittee*. A terminated sub-permit may be reinstated by the Department*, at the request of the sub-permittee, within 60 days of receipt of the* relinquishment notification. The new sub-permit will include all of the conditions of the original sub-permit and any new conditions that the Department determines are necessary. After the sub-permit expires, the sub-permittee shall no longer be required to comply with the avoidance and minimization measures identified in the sub-permit, and shall no longer have authorization under CESA to take coho salmon. Likewise, after the sub-permit expires, the sub-permittee shall no longer have authorization under the Streambed Alteration Agreement Program for activities subject to Fish and Game Code section 1602. After the sub-permit expires, the SVRCD shall be responsible to fully mitigate any authorized take of coho salmon that occurred when the sub-permit was in effect.

2. Relinquishment by SVRCD. The SVRCD may relinquish this Permit by providing notice *to* ~~of~~ the Department and all sub-

permittees of its intent to withdraw from the Program and relinquish the Permit. The Permit shall expire *upon receipt by the Department of the relinquishment notice from the SVRCD* ~~60 days after the Department receives the notice~~. All sub-permits will expire upon expiration of the Permit, which the SVRCD shall state in its notice to sub-permittees. After the Permit expires, the SVRCD shall: 1) no longer be required to comply with the Permit; 2) have no continuing financial or other obligations under the Permit and Program with the exception of the costs of implementing any measures required pursuant to Section XXVI.A.2.(4) *immediately* below; 3) no longer have authorization under CESA to take coho salmon; 4) continue to implement the mitigation measures the Permit requires until the Department determines that take of coho salmon that occurred during the time the Permit and all sub-permits were in effect has been fully mitigated; and 5) prepare and submit to the Department the Final Report

XXVII. TERMINATION

This Permit may be terminated by the Department at its sole discretion if circumstances or new information provides evidence that continued program implementation *would jeopardize* ~~may result in jeopardy to~~ coho salmon, or if such termination is required by law or court order. For the purpose of the Permit, "jeopardy" includes, but is not limited to, ~~to~~ the probable extirpation of any coho salmon cohort in the Shasta River watershed.

XXVIII. NOTICES

Written notices, reports, and other communications required by or relating to the Permit shall be delivered to the Department by first-class mail to the addresses below, unless the Department instructs SVRCD otherwise. Notices, reports, and other communications should reference the Program name, the name of the Permittee (i.e., SVRCD), and the Permit number (i.e., 2081-2005-026-01) in the cover letter or other submitted document.

Original cover with attachment(s) to:

Gary *B.* Stacey, Regional Manager
Northern Region
California Department of Fish and Game
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and:

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Unless SVRCD is notified otherwise, the Department's Regional Representative for purposes of addressing and Permit-related issues is:

Caitlin Bean, Staff Environmental Scientist
California Department of Fish and Game
Northern Region
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XIX. AMENDMENTS

The Department may amend this Permit at any time during its term with the concurrence of SVRCD. The Department may amend any sub-permit at any time during its term with the concurrence of the SVRCD and the sub-permittee. If the amendment is required by law, the Department shall amend the Permit or sub-permit regardless of whether the SVRCD or the sub-permittee concurs with such amendment. *This Permit may only be amended in accordance with section 783.6(c) of the California Code of Regulations, title 14.*

XXX. CESA FINDINGS

To be completed after environmental review of the Program.

XXXI. ATTACHMENTS

The following documents are attached to this Permit and incorporated herein by reference:

Attachment 1, “Shasta River Watershed Map”
Attachment 2, “Covered Activities”
Attachment 3, “Monitoring and Adaptive Management Plan”

Issued by the Department of Fish and Game on [date]

_____

Gary *B.* Stacey, Regional Manager
Northern Region

APPROVED AS TO FORM:

_____

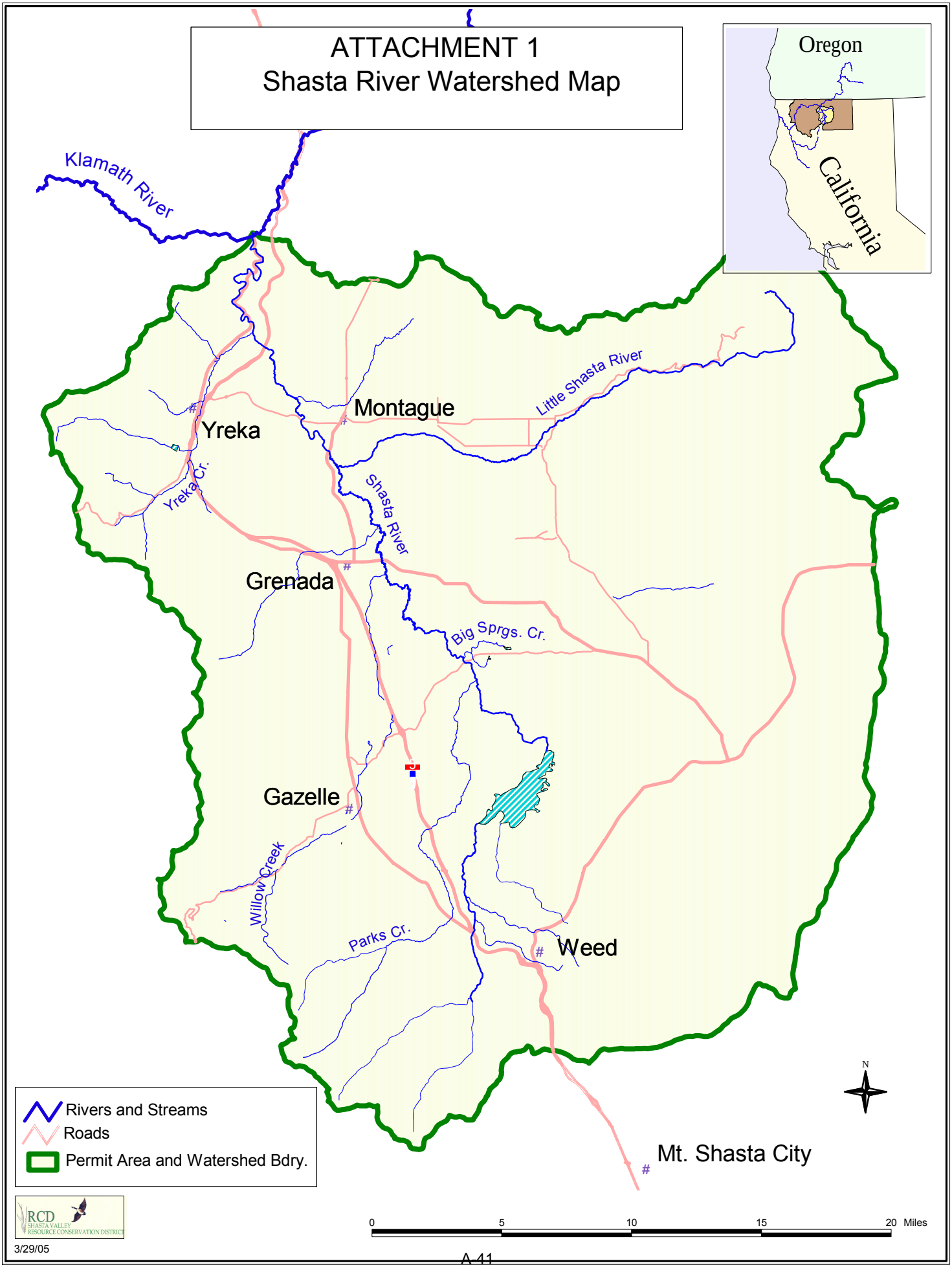
Ann Malcolm, General Counsel

ACKNOWLEDGMENT

The undersigned: 1) warrants that he or she is acting as a duly authorized representative of the Permittee, 2) acknowledges receipt of this Permit, and 3) agrees on behalf of the Permittee to comply with all terms and conditions of the Permit.

By: _____ Date: _____

Printed Name: _____ Title: _____


ATTACHMENT 1
Shasta River Watershed Map
Oregon
California
Klamath River
Little Shasta River
Montague
Yreka
Yreka Cr.
Shasta River
Grenada
Big Sprgs. Cr.
Gazelle
Willow Creek
Parks Cr.
Weed
Mt. Shasta City
N
Rivers and Streams
Roads
Permit Area and Watershed Bdry.
RCD
SHASTA VALLEY RESOURCE CONSERVATION DISTRICT
0
5
10
15
20 Miles
3/29/05

ATTACHMENT 2

COVERED ACTIVITIES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

The Program covers the fourteen (14) categories of activities described below that are subject to the provisions of the California Endangered Species Act.

1. Water Diversions

Water diversions covered under this category include only the diversion of surface water through a conduit or opening from streams, channels, or sloughs within the Shasta River watershed by an agricultural operator for agricultural purposes in accordance with a valid water right, including one specified in the following court decree: Shasta River (1932).

2. Water Diversion Structures

This category includes only the following activities relating to water diversion structures:

a. Ongoing management and/or maintenance of existing flashboard dams, including the placement of boards into concrete abutments across the wetted channel to build head to divert water, and the removal of the boards.

b. Ongoing maintenance, management, and repair of boulder weirs.

c. Installing, operating, maintaining, and removing push-up dams. “Push-up dam” is defined as a temporary diversion structure created by using *motorized equipment (for example* loaders, backhoes, or excavators*)* to move bedload within the stream channel to form a flow barrier that seasonally diverts the flow of the stream.

d. Installing, operating, maintaining, and removing other temporary diversion structures that are not push-up dams. “Other temporary diversion structure” is defined as any temporary structure to divert water seasonally from a stream and is typically made with *materials such as* hay bales, hand-stacked rocks and cobble, tarps, wood, and/or a combination of these materials placed in the channel *with or* without the use of heavy equipment.

e. Installing or placing pumps and sumps and maintaining existing pumps and sumps within or adjacent to the active channel of a stream, which sometimes requires the use of large machinery within or adjacent to the active channel.

f. Installing headgates and measuring devices*, sized appropriately for the authorized diversion,* that meet the Department *and/or Department of Water Resource*'s standards on or in a diversion channel, which usually is done by excavating the site to proper elevation using large machinery, positioning the headgate and measuring device at the appropriate elevation, and installing rock or other "armoring" around the headgate to protect the structure. During installation, the stream bank could be affected by the construction of concrete forms and other necessary construction activities.

3. Fish Screens

This category includes only the installation, operation, and maintenance of the types of fish screens described below, provided they meet the Department's and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service's ("NMFS") criteria for steelhead fry as they exist at the time the screen is installed. Installing a fish screen usually includes site excavation, forming and pouring a concrete foundation and walls, excavation and installation of a fish bypass pipe or channel, and installation of the fish screen structure. Heavy equipment is typically used for excavation of the screen site and bypass. If the fish screen is placed within or near flood prone areas, typically rock or other "armoring" is installed to protect the screen. The average size of the bed, channel, and/or bank area affected by the installation of a bypass pipe or channel ranges from 40 to 100 square feet. Types of fish screens include:

a. Self-cleaning screens, including flat plate self-cleaning screens, and other self-cleaning designs, including, but not limited to, rotary drum screens and cone screens, with a variety of cleaning mechanisms, consistent with Department and NMFS screening criteria.

b. Non-self cleaning screens, including tubular, box, and other screen designs consistent with Department and NMFS screening criteria.

4. Stream Access and Crossings

This category includes only the moving of livestock and vehicles across flowing streams or intermittent channels and/or the construction*, maintenance,*

and use of stream crossings at designated locations where potential spawning gravels, incubating eggs, and fry are not present based on repeated site specific surveys. Factors considered when selecting a crossing location include the stream gradient, channel width, and the ability to maintain the existing channel slope. Generally, to construct a crossing, a boulder weir is placed on the downstream side of the crossing and angular quarry rock is placed in the crossing location; the width of the crossing does not exceed 25 feet; the crossing spans the entire width of the channel; the crossing is "keyed" into the bank on each side; the approaches on both sides do not exceed a slope of 3:1; and bank armoring (usually using quarry rock) is added where needed.

5. Fencing

This category includes only the installation and maintenance of livestock exclusion fencing to protect riparian zones including the construction of fencing along livestock and vehicle crossings and livestock watering lanes.

6. Riparian Restoration and Revegetation

This category includes only the restoration, including revegetation of riparian areas, consistent with the methods specified in the most current edition of the Department's *Salmonid Stream Habitat Restoration Manual*, or as otherwise approved in writing by the Department. The most current edition of the manual is available at http://www.dfg.ca.gov/*fish/Resources/HabitatManual.asp* ~~nafwb/index.html~~. Typically, riparian vegetation is planted within or adjacent to the active channel, and often in or near the wetted channel. Plantings include herbaceous perennials, emergent species, native grasses, trees, and shrubs. Planting methods vary by species, site, and size of material planted, ranging from hand planting to using a backhoe or excavator. For riparian trees, planting densities range from 130 to 300 plantings per acre, depending on the restoration goals (e.g., shading, sediment trapping, and bank stabilization), substrate, and hydrology. Trees and cuttings range in size from small rooted plugs to large diameter pole plantings. When installing pole plantings, heavy equipment may be used to excavate to or below water table depth. Maintenance activities include the occasional use of hand tools, portable pumps, pick-up trucks and/or water trucks in or near the bed, bank, or channel, for irrigation, debris removal, and replanting of restoration sites.

7. Instream Structures

This category includes only the installation, maintenance, and repair of the following instream structures consistent with the methods specified in the most current edition of the Department's *Salmonid Stream Habitat Restoration Manual*, available at http://www.dfg.ca.gov/*fish/Resources/HabitatManual.asp* ~~nafwb/index.html~~:

a. structures to protect the bed and banks of streams;

b. bioengineered habitat structures;

c. deflectors;

d. boulder clusters;

e. boulder weirs for instream habitat or to replace flashboard dams, push-up dams, and other temporary diversion structures;

f. large woody debris; and

g. spawning gravels ~~s~~ to enhance spawning habitat

8. Stream Gages

This category includes the installation and maintenance of stream gages in the active stream channel, usually using pipe 2" or greater in diameter. Typically, the pipe is secured to the bank by notching it into the bank and by then attaching it to the bedrock, a boulder, or a concrete buttress. Generally, heavy equipment is not needed to install and maintain stream gages.

9. Barrier Removal and Fish Passage Projects

The projects listed below are covered under this category, although the Department may add others to the list in the future. Each project will provide access to historic fish spawning and rearing habitat.

a. Araujo Dam Demobilization and Water Quality Improvement Project.

b. Shasta River Water Association's Dam Demobilization and Water Quality Improvement Project.

c. Grenada Irrigation District Fish Barrier Removal Project.

10. Grazing livestock

Grazing of livestock adjacent *within the riparian exclusion zone* ~~to the channel or within the bed, bank, or channel,~~ of the Shasta River or its tributaries in accordance with a grazing management plan approved by the Department. The grazing plan shall address the timing, duration, and intensity *(number of livestock allowable per unit area [i.e., stocking rate])* of livestock grazing within the riparian zone and shall explain how the proposed management plan will

result in improved riparian function and enhanced aquatic habitat. *In addition, the grazing plan shall describe the means by which the livestock will be prohibited from entering live streams.*

11. Water Management

Covered activities include water management, water monitoring, and watermastering (either State or ~~private~~ *Special District*) activities~~;~~ including*:*

1. the operation of head gates in conjunction with measuring devices to assure that each diversion is operated in compliance with the associated water right or adjudicated volume;

2. the ongoing management and/or maintenance of existing flashboard dams, including the placement of boards into concrete abutments across the wetted channel to build head to divert water, and the removal of the boards;

3. the ~~actions related to water diversion construction; operation, repair, minor alteration, replacement, and removal; the installation,~~ operation, maintenance, repair, minor alteration, replacement, and removal of headgates and measuring devices ~~on or~~ in a diversion channel;

4. the ~~installation,~~ operation, repair, ~~minor alteration, removal, replacement~~ and maintenance of stream gages in the ~~active~~ stream channel*; and*

5. ~~Water management activities~~ infrequently ~~require~~ moving equipment or vehicles across flowing streams or intermittent channels ~~and/or the construction of stream crossings~~ at designated locations where potential spawning gravels, incubating eggs, and fry are not present based on repeated site specific surveys.

12. Permit Implementation

Other activities associated with the implementation of avoidance, minimization and mitigation measures required by this Permit*, a sub-permit,* or a Streambed Alteration Agreement.

13. Monitoring

Activities associated with the determination of whether or not the terms and conditions of this ITP, *a* ~~each~~ sub-permit, or a SAA are being fulfilled and are effective.

14. Research

Activities associated with conducting studies to improve our understanding of salmonid distribution, natural history, population dynamics, etc. in the Shasta River watershed.

SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

MONITORING AND ADAPTIVE MANAGEMENT PLAN

(ATTACHMENT 3 OF THE SHASTA RIVER WATERSHED-WIDE INCIDENTAL TAKE PERMIT)

TABLE OF CONTENTS

~~ATTACHMENT 3~~

~~MONITORING AND ADAPTIVE MANAGEMENT PLAN~~

I. Introduction

This Attachment describes the SVRCD's Incidental Take Permit Monitoring and Adaptive Management Plan (Monitoring Plan). Monitoring includes observation, detection, and recording of environmental conditions, resources, and effects of ~~c~~*C*overed ~~a~~*A*ctivities and Permit avoidance, minimization, and mitigation measures ("conservation measures") for the Covered Species. The ~~evaluation of~~ monitoring information will provide the basis ~~for assessing compliance with terms and conditions of the Permit and~~ for assessing success of the Permit in attaining biological goals and objectives. An adaptive management approach will guide the manner in which information collected by the SVRCD through monitoring and directed research, as well as new information collected by others, will be used to continually evaluate and improve implementation of the Covered Species conservation measures. Collecting and analyzing data through monitoring and research are essential components of adaptive management.

The SVRCD has been conducting environmental monitoring in the Shasta Valley watershed since 1992. To date, monitoring has focused on gathering information on the environmental condition of the riparian and stream environments, condition of anadromous salmonid habitat, and anadromous salmonid populations within the watershed. The SVRCD expects to continue to conduct or participate in these types of monitoring efforts during the duration of the Permit *and will also focus attention and staffing to monitoring and other activities required by the Permit*. ~~However, the SVRCD will be focusing much of its attention and staffing to monitoring and other activities required by the Permit.~~

II. Goals of the Monitoring Plan

The goals of the Monitoring Plan are to evaluate the ~~compliance,~~ implementation~~,~~ and effectiveness of conservation measures required pursuant to this Permit ~~and all sub-permits~~. To meet the goals, this ~~m~~*M*onitoring ~~p~~*P*lan provides guidance so that the SVRCD *can* ~~and the Department can~~ document ~~and assess the compliance,~~ implementation and effectiveness of the conservation measures and assure that the projects are meeting the objectives of th*is* ~~e~~ Permit. In addition, the Monitoring Plan provides guidance regarding adaptive management. Adaptive management will be employed to modify and refine conservation measures based upon the results of implementation and effectiveness monitoring, to maximize effectiveness of coho recovery actions and landowner participation.

III. Scope of Area to be Monitored

The overall program area is the Shasta River watershed, including the Shasta River and its tributaries, in Siskiyou County. Because the Permit is watershed-wide and there is uncertainty as to which agricultural operators will become sub-permittees, the geographic scope of monitoring activities will be only those properties of agricultural operators who become sub-permittees *or within stream reaches where activities occur and appropriate permissions have been received*.

IV. Monitoring ~~Approaches~~ *Terms and Conditions*

The SVRCD will be conducting several types of monitoring pursuant to this Monitoring Plan. *All monitoring requirements of the SVRCD and sub-permittees are further described in the SVRCD Monitoring Table (Appendix 2).* The SVRCD may request sub-permittees to ~~collect~~ *provide* some monitoring data required for the Annual Report. Strictly defined, "monitoring" is the systematic and usually repetitive collection of information, typically used to track the status of a variable or system. This ~~m~~*M*onitoring p*P*lan includes t*wo*~~hree~~ components: ~~compliance monitoring,~~ implementation monitoring and~~,~~ effectiveness monitoring. *The Department is responsible for any and all compliance monitoring. This Monitoring Plan is not intended to and does not delegate any regulatory authority to the SVRCD. Tables illustrating compliance requirements for each conservation measure identified in this Permit are provided in Appendix 1.* Below are ~~descriptions of~~ *the general conditions of the Monitoring Plan* ~~the types of monitoring that will be conducted and key components of each approach~~.

~~A. Compliance Monitoring~~

~~Compliance monitoring is conducted to determine whether the conservation measures agreed for particular designated sites are in place and operating; collection and evaluation of data, including self-monitoring reports, and verification to show whether permitted conditions are in compliance with the limits and conditions specified in the Permit or sub-permit. This type of monitoring is done to ensure that permit and/or sub-permit conditions and statutory requirements have been met~~

~~Compliance monitoring tracks the status of Permit condition implementation, to verify that the measures required by the Permit are being implemented as specified. The degree of compliance is determined by comparing field information with conditions of compliance as specified by the Permit and/or sub-permit.~~

A. General Monitoring Conditions

1. SVRCD shall be responsible for determining if it is fulfilling the terms and conditions of this Permit by instituting a comprehensive monitoring program. The program shall include a means to confirm and monitor the implementation of the mitigation measures for which it is responsible.

2. *The sub-permittee shall be responsible for monitoring the terms and condition of their sub-permit by completing the appropriate implementation*

and effectiveness monitoring checklists for their Covered Activities and submitting them to the Department. SVRCD is available to assist the sub-permittee in completing the water diversion and livestock and vehicle crossings checklists.

~~SVRCD shall be responsible for determining if the sub-permittee is fulfilling the terms and conditions of their sub-permits by instituting a comprehensive monitoring program. The program shall include a means to: (1) confirm and monitor the implementation of the minimization and avoidance measures for which the sub-permittees are responsible, and (2) identify sub-permittees who are not or who have not implemented the terms and conditions of their sub-permits. SVRCD shall immediately notify the Department of sub-permittees who SVRCD believes are not fulfilling or implementing a term or condition of their sub-permit.~~

3. The SVRCD shall inspect the screen, headgate, measuring device, diversion structure and livestock and vehicle crossings annually and is available to assist the sub-permittee in filling out the qualitative effectiveness monitoring checklists for those Covered Activities.

4 If during any field review of a sub-permittees water diversion facilities and/or livestock or vehicle crossing, the SVRCD identifies a sub-permittee who may not or has not implemented the terms and conditions of their sub-permits the SVRCD shall inform the sub-permittee and work with the sub-permittee to develop a strategy for implementing the terms and conditions of the sub-permit.

5. At the discretion of either the SVRCD or the sub-permittee, the Department will be notified in order to assist in the development of an implementation strategy.

6. If the SVRCD and the sub-permittee cannot agree upon an acceptable strategy for implementation of the terms and conditions of the sub-permit, or the implementation of a term or condition of this Permit which requires the SVRCD to implement certain mitigation measures on the property of sub-permittees, the Department shall be notified.

7~~3~~. SVRCD shall summarize the results of its monitoring activities in each of its Annual Reports *(described below)*. Analysis of the past year's monitoring activities and the monitoring data shall be provided to the Department at that time.

8~~4~~. After relinquishment, revocation, expiration, or termination of the Permit, SVRCD shall deliver a Final Report (described below) to the Department analyzing all of the avoidance, minimization, and mitigation measures

implemented pursuant to this Permit, including an evaluation of their effectiveness.

9~~5~~. SVRCD's obligations under this Permit shall not end until the Final Report has been deemed complete by the Department (Section XVI.C), regardless of when the Permit expires or is revoked, relinquished, or terminated.

10~~6~~. SVRCD shall conduct photo monitoring to document the installation, operation, maintenance, and effectiveness of all ~~avoidance, minimization, and~~ mitigation activities (individually, "project") required under this Permit ~~and any sub-permit~~.

Photo monitoring shall be used to document current conditions, implementation and effectiveness by:

- documenting pre- and post-site conditions;
- identifying key steps taken during and after the completion of a project;
- determining whether a project was correctly implemented pursuant to SVRCD and Department guidelines; and
- document ongoing maintenance of the project.

Sequential photographs shall be taken over time in order to show changes in site conditions. At a minimum, photographs shall be taken at three different times: before project implementation, directly after project implementation, and again at a later date appropriate to the particular project,

11~~7~~. SVRCD shall conduct monitoring activities prior to and immediately after project implementation *for those projects for which it is responsible*, using photographs and checklists *(Appendix 3)* for documentation. That information shall include pre-~~project and pre-treatment~~ *implementation* checklists. The ~~pre-treatment~~ *implementation* checklist shall be used during ~~monitoring~~ *project construction* to help ~~judge effectiveness of the project~~ *determine if the project was installed as designed and to document any variances from the design*.

12~~8~~. SVRCD and Department project evaluators shall have access to photographs and project files to take with them on site visits.

~~9. A primary avoidance measure required by the Permit is that all sub-permittees comply with valid water right(s). California Department of Water Resources (DWR) currently provides watermaster service for agricultural water use in portions of the Shasta River watershed. As a sub-permittee to this Permit, DWR shall provide water use verification data to~~

~~the Department, as specified in the Permit, on a monthly basis from April to October each year for the duration of the Permit. The SVRCD may identify an alternative watermaster service or other verification methods approved by the Department to verify that each sub-permittee that participates in this Permit Program is in compliance with their water right.~~

~~In addition to the water use verification data:~~

- ~~The watermaster shall report to the Department any sub-permittees that are not complying with their adjudicated water rights.~~
- ~~Within ten working days upon receiving such notification from the watermaster, the Department shall consult with the sub-permittee regarding the non-compliance.~~

B. Implementation Monitoring

Implementation monitoring is conducted to document whether or not management practices were applied as designed. Project and contract administration is a part of implementation monitoring. Implementation monitoring will be conducted by the SVRCD to verify that permitted activities and projects have been carried out and completed according to the conditions specified for the activity or project. The level of successful implementation is determined by comparing field information with performance criteria developed for each activity and practice implemented.

Generally, performance criteria set standards for the reliability of a product in terms of actual output; for each element in a unit of competency, performance criteria describe the tasks against which agents or products are assessed; ~~M~~*m*inimal level by which an objective is considered to be attained; qualitative or quantitative criteria which the agent or product is to satisfy in performing its functional requirements.

Implementation monitoring includes:

- ~~Establishing p~~*P*hoto-monitoring ~~sites~~ prior to implementation of each activity, following the procedures set forth in this Monitoring Plan;
- Photo-documenting pre- and post- site conditions;
- Identifying and photographing key steps taken during project implementation;
- Making a determination regarding whether or not a project was implemented correctly and in compliance with permit requirements;
- Filling out a project type-specific, implementation field check-lists;
    - Note: The implementation checklists *shall* ~~will~~ be completed after every project is implemented;
- Within ten working days, the SVRCD shall notify the Department in writing when either:
    - An activity or project has not been implemented according to specified conditions;

    - An activity or project has failed for other reasons not associated specifically to how the activity or project was implemented;
    - For all such projects, the SVRCD shall take additional photographs to document its findings;
- All information from implementation monitoring will be recorded in the SVRCD's database.
- Status of implementation shall be reported to the Department annually.

C. Effectiveness Monitoring

Effectiveness monitoring is conducted to determine if some activity is having the desired effect; documenting how well the management practices meet intended objectives for the defined area [can evaluate the cause and effect relations between management activities and conditions of the dependent resources]; evaluating and documenting the total effectiveness of site-specific actions; determining the degree to which the biological system responds to management activities as expected

In order to provide information for adaptive management within the Permit, the SVRCD will conduct effectiveness monitoring to determine effectiveness of specified activities and practices and document habitat and fishery response of activities carried out under the Permit to benefit the Covered Species. Effectiveness monitoring evaluates the success of the Permit in meeting its stated biological objectives. Effectiveness monitoring will be conducted in three, tiered approaches: qualitative habitat effectiveness, quantitative habitat effectiveness, and quantitative fish-response.

Effectiveness monitoring has three main monitoring objectives:

- To evaluate the effectiveness of specific permitted activities and practices and restoration measures in achieving aquatic resource protection and restoration objectives on a site scale, and determine factors that influence effectiveness.
- To provide the Department with evaluations of effectiveness of projects within the watershed for comparison to similar activities in similar watersheds for the purposes of improving the effectiveness such activities and practices.
- To document overall effectiveness of activities and practices carried out under the Permit for the duration of the Permit for purposes of adapting management with the watershed to protect the Covered Species.

Effectiveness monitoring shall occur, at a minimum annually. Monitoring frequency shall be based on the project type.

The following conditions apply to all effectiveness monitoring:

1. *SVRCD shall conduct qualitative effectiveness monitoring after project implementation, and annually thereafter, for all mitigation measures for which it is responsible pursuant to this Permit by filling out the qualitative effectiveness monitoring checklist and conducting photo monitoring for*

those particular project types. ~~SVRCD shall determine the effectiveness of the avoidance, minimization, and mitigation measures identified in this Permit and sub-permits and the extent to which the objectives of those measures have been met.~~

~~2. SVRCD shall conduct effectiveness monitoring before and after project implementation.~~

2~~3~~. SVRCD shall identify at least one specific objective for each project installed pursuant to the Permit. The objective shall be documented in project files by SVRCD and shall be reported to the Department in the Annual Report.

3~~4~~. ~~SVRCD shall conduct qualitative effectiveness monitoring for all conservation measures implemented pursuant to this Permit and any sub-permit. In addition,~~ SVRCD shall conduct quantitative effectiveness monitoring of 10% of all instream measures implemented. *For purposes of quantitative effectiveness monitoring instream measures shall include: spawning gravel enhancement (if determined necessary), instream habitat structures, livestock and vehicle crossings, and fish passage improvements.*

~~5 The SVRCD shall annually document conservation measure effectiveness using effectiveness check-lists or field sheets for restoration.~~

Note: When appropriate, the Department will provide revised checklists prior to each successive field season after the Permit is executed.

4~~6~~. Within ten working days, the SVRCD shall notify the Department in writing when, while conducting effectiveness monitoring, the SVRCD determines:

a. An activity or project has been impacted, rendered inoperative, or destroyed due to an environmental (e.g., flooding) or human-caused *event* (e.g., vandalism) ~~conditions~~ *outside the control of the sub-permittee*;

~~b. An activity or project has been impacted, rendered inoperative, or destroyed due to other reasons;~~

b~~c~~. For all such projects, the SVRCD shall utilize the photo-monitoring site to document its findings;

5~~7~~. All information from effectiveness monitoring activities shall be recorded in the SVRCD's database.

6~~8~~. Status of effectiveness shall be reported to the Department annually in the ~~Status~~ *Annual* Report.

D. Qualitative Effectiveness Monitoring for Habitat Change

Qualitative effectiveness monitoring consists of utilizing both permanent photo-monitoring sites and field checklists to determine condition/change. For each activity carried out under the Permit, the SVRCD, ~~in conjunction with the sub-permittees and~~ under the guidance and technical support of the Department, will conduct the following tasks.

1. Annually utilize ~~the established~~ photo-monitoring sites to document habitat conditions/changes as a result of the implementation of the conservation measure;

2. Annually document the effectiveness of the selected activities and practices, using the ~~post-treatment,~~ qualitative *effectiveness monitoring* checklists; Note: Use of these checklists will commence one year after activities and practices under the Permit have occurred;

3. Annually summarize the findings and results of qualitative effectiveness monitoring in the Annual Report.

E. Quantitative Effectiveness Monitoring for Habitat Change

Quantitative effectiveness monitoring consists of the use of scientifically valid field monitoring methodologies and analyses to determine condition change of specific habitat conditions affected by the conservation measure. For the ten-percent of the activities where quantitative monitoring is being carried out under the Permit, the SVRCD, ~~in conjunction with the sub-permittees and~~ under the guidance and technical support of the Department, will conduct the following tasks:

1. At a minimum, annually conduct quantitative effectiveness monitoring, using project-specific methodologies; Application of quantitative habitat effectiveness monitoring shall not start sooner than after the initial rain season or major storm event after activities and practices have been initiated;

2. Annually analyze habitat data gathered from the monitored activities and practices;

3. Annually report to the Department the findings of the analysis of the quantitative data, including, but not limited to, the degree of individual and collective effectiveness of the monitored activities and practices.

F. Quantitative Effectiveness Monitoring for Fish Response

Quantitative effectiveness of fish response consists of the use of scientifically valid field monitoring methodologies and analyses. For ten-percent of the instream habitat enhancement measures carried out under the Permit quantitative effectiveness monitoring will be conducted to determine fish response to specific habitat conditions enhanced by the activity. The SVRCD, ~~in conjunction with the sub-permittees and~~ under the guidance and technical support of the Department, will conduct the following tasks:

1. Annually conduct quantitative fish-response monitoring, using project-specific methodologies; Note: Application of quantitative fish-response monitoring will not start sooner than is applicable to project-type, after activities and practices have been initiated;

2. Annually analyze fish data gathered from the monitored activities and practices;

3. Annually report to the Department the findings of the analysis of the quantitative data, including, but not limited to, the degree that fish appear to be responding to the specific conservation measure implemented at the monitoring site.

V. Methods of Data Collection

Different types of monitoring will be applied at different times and frequencies in relation to each of the conservation measures required pursuant the Permit. Specific monitoring approaches for each conservation measure shall be identified.

~~A. Methods of Data Collection~~

All data will be collected in the field, at the project site-specific level. Project sites may have data recorded in three forms; photographs, field notes, and *checklists* ~~field data sheets~~.

A~~1~~. Photographs

~~Permanent p~~*P*hotograph sites shall be set up for every conservation measure*, for which the SVRCD is* ~~for~~ *responsible, for* the purposes of ~~compliance and~~ implementation *and effectiveness* monitoring. These same sites will be used for qualitative effectiveness monitoring of selected projects. The SVRCD may opt to utilize photographs for additional effectiveness monitoring, when the SVRCD believes photographs will enhance its ability to report on effectiveness of implemented activities and practices.

SVRCD shall conduct photo monitoring to document the installation, operation, maintenance, and effectiveness of all ~~avoidance, minimization, and~~ mitigation activities (i.e., conservation measure) required under the Permit ~~and any sub-permit~~.

Photo monitoring shall be used to document ~~compliance,~~ implementation and effectiveness by:

- documenting pre- and post-site conditions;
- identifying key steps taken during and after the completion of a project;
- determining whether a project was correctly implemented and is in compliance with SVRCD and Department guidelines; and
- document ongoing maintenance of the project.
- facilitate the evaluation of how well the project met the objectives
- document unanticipated problems or negative outcomes to an activity,

Sequential photographs shall be taken over time in order to show changes in site conditions. At a minimum, photographs shall be taken at three different times: before project implementation, directly after project implementation, and again at a later date appropriate to the particular project. The photo sequence should include pre- project photos taken of the project area before the project is implemented, post-project photos taken directly after project implementation, and post-project photos taken during subsequent effectiveness monitoring, all from the same photo point.

B~~2~~. *Checklists* ~~Field data sheets~~

~~Data sheets~~ *Checklists* specifically developed for monitoring will be used for recording monitoring information in a systematic and standardized approach *(Appendix 3)* . For all monitoring, the ~~data sheets~~ *checklists* are customized to the type of activity or practice being implemented. The categories of monitoring for which ~~field sheets~~ *checklists* have been developed are:

- *Pre-implementation monitoring*
- Implementation monitoring
- Qualitative effectiveness monitoring ~~of habitat change: pre-treatment condition~~
- ~~Qualitative effectiveness monitoring of habitat change: post treatment condition~~
- ~~Quantitative effectiveness: habitat change~~
- ~~Quantitative effectiveness: fish response~~

Baseline information shall be collected prior to project implementation to allow comparison to post-project conditions and effectiveness. This information will include pre-*implementation* ~~project and pre-treatment~~ checklists. The pre-*implementation* ~~treatment~~ checklist shall be used during monitoring to help judge effectiveness of the project.

Copies of ~~A~~all *checklists* ~~data sheets~~ shall be provided by the Department.

C~~3~~. Other Data

Where appropriate, the SVRCD may also use other methods to record field data such as field notes, Global Positioning System recorders, Hobo temperature recorders, or stream flow gauges to record pertinent monitoring information.

VI. Monitoring Timing, Frequency, and Duration

A. Timing of Monitoring

Two types of monitoring have to be initiated after the activity or practice sites are selected but before ground-work can commence. This must occur to ensure that the SVRCD collects data regarding pre-project conditions to assess post-project change. The establishment of ~~the permanent~~ photographic sites and collection of the qualitative, pre-*implementation* ~~treatment effectiveness~~ information must occur at this time.

Three types of monitoring take place after an activity or practice has been completed. Photographs documenting both implementation of the project and compliance with the Permit shall be taken. The implementation checklist ~~is~~ shall be completed. Last, any specific ~~compliance~~ *effectiveness monitoring* information shall be recorded.

The timing of effectiveness monitoring is based on the feature being measured, and how it responds to environmental conditions and seasonal differences. For habitat condition, the occurrence of storm events, the frequency and magnitude of these events, and the duration of the rain season all affect when one has to measure changes at a site. In addition, the presences of different life-stages of the Covered Species, and how each life stage may respond to a project, dictates the timing of field monitoring.

B. Frequency of Monitoring

~~Compliance m~~*M*onitoring frequency will be based on project type. It can be performed as infrequently as once a year (e.g., continued use of screening). However, a greater frequency might be necessary in some cases ~~(e.g., summer flow)~~.

Implementation monitoring occurs prior to and after completion of a specific project.

Effectiveness monitoring occurs at *various* ~~variable~~ frequencies, dependent on how rapidly or often the measured feature may change. Water and fish variables can change often and rapidly, requiring more frequent monitoring to be able to detect change. Other more stable or slower-changing variables, such as a functioning screen or dam or installed large woody debris, require less frequent monitoring. For the interim, the SVRCD, in consultation with the Department, will adhere to the following preliminary frequencies.

- More variable features: No less than annually and no more than weekly, given the appropriate seasonal window:
    - Seasonal window:
        - late November to January- adult fish, spawning grounds

- late February to May- fry and spring habitat conditions
- mid May until rain season- water flow and juveniles

C. Duration of Monitoring

Monitoring will continue for the duration of the Permit. ~~Compliance monitoring and use of the permanent photo sites will occur annually.~~ Implementation monitoring occurs prior to and after a conservation measure is completed. *Effectiveness monitoring and use of the photo sites will occur annually.* ~~For effectiveness monitoring, the type of project and the environmental feature's timing and duration of response determine when to terminate monitoring. However, since the Permit period is ten years, effectiveness monitoring for each of the projects, (that constitute the ten-percent being tracked) will span the lifetime of the Permit.~~

VII. Tracking and Reporting

A. Tracking

The SVRCD will develop and maintain a comprehensive database to track implementation of all aspects of the Monitoring Plan. All data from photographs, ~~field data sheets~~ *checklists*, and other recording technologies will be integrated in the monitoring database. *Data from* ~~C~~*c*ompleted ~~field data sheets~~ *checklists* will be entered into the database by SVRCD staff. The database will be structured to allow for future expansion and integration with external databases (e.g., linkage to agency or other GIS map libraries). The database will be structured to facilitate the following requirements:

- Inclusion of all types of recorded, field data;
- data documentation such that future users can determine why, how, and where data were collected;
- quality assurance and quality control of the data;
- access and use of the most current information in assessment and decision making for purposes of interpreting monitoring information and plan revision;
- evaluation of data by all appropriate SVRCD and Department database users, as appropriate;
- facilitation of data to produce monitoring reports;
- utilization of field data to conduct analyses, as appropriate.

Reports generated from this database will allow evaluation of the activities required by the Permit.

B. Reporting

1. Annual Report

After the effective date of the Permit and until the Permit expires or terminates, SVRCD shall provide the Department an Annual Report by April 30 each year that covers the period of time from February 1 to January 31 the previous year.

Each Annual Report shall include at a minimum, the following information:

a. a general description of the status of the Program, including a description of all avoidance, minimization, and mitigation measures that were implemented during the previous year;

b. a copy of an implementation database with notes showing the current implementation status of each avoidance, minimization, and mitigation measure;

c. the results of all ~~compliance,~~ implementation~~,~~ and effectiveness monitoring conducted pursuant to the Permit;

d. all monitoring data; and

e. an assessment of the efficacy of the monitoring program and recommended changes to the program based on interpretation of monitoring results.

Additionally, for reports subsequent to the first ~~Status~~ *Annual* Report and in particular the fifth year program review ~~Status~~ *Annual* Report the following shall be included:

f. an assessment of status and trend of monitored activities and practices;

g. an assessment of the effectiveness of each completed or partially completed measure in avoiding, minimizing, and/or mitigating for impacts from Covered Activities; and

h. a summary and analysis of all ~~compliance,~~ implementation~~,~~ and effectiveness of monitoring conducted on the avoidance, minimization and mitigation measures.

2. Five-Year Report

Five years after the effective date of the Permit, SVRCD shall conduct a comprehensive review of the Program and submit its findings in the form of a Five-Year Report to the Department. As part of its review, SVRCD shall evaluate coho recovery task implementation and community participation. The Five-Year Report shall include an analysis of the Program beginning on the effective date of the Permit, as well as the activities that have been implemented. The Five-Year Report shall include recommended adaptive management actions to improve operations.

3. Final Report

No later than six months after the Permit expires and all mitigation measures have been implemented, SVRCD shall provide the Department with a Final Report. SVRCD shall prepare the Final Report and include, at a minimum:

a. a copy of the implementation database with notes showing when each avoidance, minimization, and mitigation measure was implemented;

b. all available information about the incidental take of coho salmon the Permit covers;

c. information about the impacts the Covered Activities have had on coho salmon notwithstanding the implementation of the avoidance, minimization, and mitigation measures;

d. the beginning and ending dates of all construction projects the Permit ~~or any sub-permit~~ covers;

e. an assessment of the effectiveness of the Permit's and sub-permits' terms and conditions to avoid, minimize, and mitigate impacts on coho salmon;

f. recommendations on how those terms and conditions might be changed to more effectively avoid, minimize, and mitigate such impacts in the future; and

g. any other pertinent information.

VIII. Adaptive Management

Adaptive management is the process whereby management is initiated, evaluated, and refined *(Appendix 4)*.

- It recognizes and prepares for the uncertainty that underlies resource management decisions
- Continually evaluates and modifies management practices.
- Uses information gained from past management experiences to evaluate both success and failure, and explore new management options.

Based on the best scientific information currently available, the measures outlined in this Permit will effectively achieve the biological goals and objectives of the Permit. However, habitat conditions within the Permit area and the status of the Covered Species will likely change during the Permit period. Furthermore, it is possible that additional and different conservation measures, not identified in the Permit, will be developed or proven to be more effective in achieving the biological goals and objectives of the Permit than those currently identified for implementation. Last, results of the implementation and effectiveness monitoring may also indicate that some conservation measures, activities, and practices are more effective in achieving the biological goals and objectives of the Permit. To address 1) these uncertainties and 2) monitoring information, the SVRCD will have an on-going evaluation of the progress of Permit activities and practices through an adaptive management process to:

- in cooperation with the Department, gauge the effectiveness of Permit conservation measures and techniques to implement them;
- propose alternative or modified conservation measures as the need arises; and
- address changed and unforeseen circumstances.

The cornerstone of the Permit adaptive management process is the Monitoring Plan. Information collected through the monitoring will be used to manage watershed lands and provide information to direct future activities and practices to conserve the Covered Species and habitat. During the early phases of Permit implementation, monitoring will provide the SVRCD with the information necessary to improve the efficacy of techniques that are employed to better and more successfully enhance or restore Covered Species habitat. The adaptive management process will allow for the experience gained through early projects to shape and refine future activities.

The adaptive management program will be administered by the SVRCD. Responsibilities of the SVRCD for implementing the adaptive management plan include the following:

A. gather monitoring data, including relevant information developed by others, conducting appropriate data analysis, and maintaining an integrated database;

B. disseminate generated monitoring and research information and reports, including monitoring analysis and reports and research papers, minimally, to sub-permttees and the Department;

1. assess the effectiveness of conservation measures;

2. identify the need to modify existing or to adopt additional conservation measures;

3. identify the need to modify the monitoring program;

4. identify the need for and implementing experimental pilot and demonstration projects;

5. identify and prioritizing research needs and conducting limited directed research, as funding allows;

6. incorporate monitoring, research, and other adaptive management–related activities into annual work plans; and contacting Science Advisors, as needed, to solicit input regarding new scientific information relevant to implementation, important data gaps, monitoring and management methods, and data interpretation.

Under the direction of the Department and the SVRCD, the adaptive management process will also allow for scientific examination of the monitoring information for the purpose of evaluating the effectiveness of existing or proposed avoidance, minimization, and mitigation measures. The SVRCD will incorporate recommendations offered through these reviews, where appropriate, into implementation of the Permit. It is also intended that the adaptive management process will provide the basis for budget and funding decisions throughout the term of the Permit. Adaptive management, in conjunction with monitoring and research, will provide the SVRCD with a process to effectively address uncertainties associated with successful implementation of the Permit.

IX. Measurement of the Overall Success of the Program

The Department has developed priorities for long-term population monitoring of salmonids in the Shasta river watershed. The Department will conduct this critical monitoring using existing fisheries staff with additional funds necessary for equipment, operations, and temporary field personnel. Coho salmon monitoring is the primary objective. This effort will also dovetail with recommendations in the Coho Recovery Plan concerning limiting factors and trends, and prioritize geographic locations for restoration most benefiting these species. One of the primary goals of this effort is to provide sound and statistically defensible data to estimate the number of adult coho returning to the basin and the relationship to juvenile coho production in the Shasta River basin. Data collection methods include the operation of rotary screw traps to estimate juvenile abundance and carcass surveys to provide adult population estimates of coho salmon. These data will allow for an analysis of adult to juvenile ratio trends over time to determine if the permit program is resulting in a stable or increased production rate based on the ratio of juveniles per adult in the watershed.

Appendix 1.
Compliance Monitoring Tables

SVRCD RESPONSIBILITIES	QUANTIFICATION	DUE DATE
Education program	SVRCD prepares and delivers program to sub-permittees	Conducted within 60 days after close of each enrollment period
Develop and implement Water Trust	Submit charter documents to DFG	Begin developing charter documents immediately
List priority stream reaches to accomplish instream flow enhancement		Within one year.
Dry year plan		Within three years
Ramp up plan		Within three years
Alternative stock water priority plan		Within one year
Install alternative stock water systems	2 per year/ 20 total	Prior to expiration date
Program to rotate diversions		Within one year
Spawning gravel enhancement plan		Within two years
Install spawning gravel projects	5 priority reaches	Prior to expiration date
Priority plan for instream habitat improvement structure locations		Within one year
Install instream structures	10	Within five years
	20	Within ten years
Riparian planting priority list		Within two years
Riparian planting	3 miles	Within five years
	8 miles	Within ten years (prior to expiration date)
Araujo Dam Demobilization and Water Quality Improvement Project		Immediately
Shasta Water Association's Dam Demobilization Project		Immediately
Grenada Irrigation District Fish Barrier Removal		Within eight years

SVRCD RESPONSIBILITIES (cont.)	QUANTIFICATION	DUE DATE
Identify priority locations for headgates and gauges		Within one year
Inspection of fish screens	Annually during irrigation season	Annually
Prioritize fish passage sites		Within one year
Fish passage workshop		Within eight months
Priority list of livestock/vehicle crossings		Within one year
Monitor livestock crossings	Annually during spawning season	Annually
Riparian Fencing Plan	Install 2 mi. per year	Within one year
Push up dams – prepare BMPs		Within six months
Other temporary diversion structures - prepare BMPs		Within six months
Other temporary structures – assessment		Within two years
Tailwater priority list		Within two years

SUB-PERMITTEE TASK	QUANTIFICATION	DUE DATE
Participate in education program		Within 60 days after enrollment
Verification of water rights		Monthly
Headgate and gage installation		Within three years
Install fish screens		Within four years
Fish passage		Within five years
Livestock and vehicle crossings		Prior to expiration
Install riparian fencing	2 miles per year	Prior to expiration
Replace push dams		Within five years
Other temporary structure replacement		Within five years
Bioengineered bank stabilization		Within three years
Install tailwater system in priority sites		Prior to expiration
Utilize stock water system		During fall migration

DWR COODINATION TASK	QUANTIFICATION	DUE DATE
Participate in the development and implementation of Water Trust		Effective immediately
Participate in the development and implementation of the Dry Year Plan		Within three years
Participate in the development and implementation of the Ramp Up Plan		Within three years
Participate in the implementation of the program to rotate diversions		Within one year
Coordinate on the development of a priority plan for instream habitat improvement structure locations		Within one year
Coordinate with RCD to identify priority locations for headgates and gauges		Within one year
Review and approve headgate and measuring weirs in watermastered areas		Ongoing
DWR SUB-PERMITTEE TASK	**QUANTIFICATION**	**DUE DATE**
Verification of water rights compliance	database submittal	monthly
Implement decree	database submittal	Effective immediately
"Stranding" coordination		weekly phone call
Report any sub-permittees not complying with adjudicated water rights	**NA**	weekly phone call

Appendix 2.
SVRCD Monitoring Table

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)

Required Task	Goal and Objectives	Implementation and Compliance Monitoring	Effectiveness Monitoring[1]
Flow Enhancement			
(i) Development and Implementation of the Shasta River Water Trust	**Goal:** To provide instream flows in the Shasta River watershed by leasing or purchasing water from sub-permittees or other willing water right holders for instream beneficial use. **Objectives:** Develop a locally-based Shasta River Water Trust specific to the conditions in the Shasta River watershed to provide for, or support, the habitat needs of coho salmon at specific life-cycle stages.	**Implementation:** The RCD shall provide a narrative description of each action implemented under the Shasta River Water Trust. **Frequency:** Annually **Responsible Party: SVRCD** **Compliance:** Submittal of Shasta River Water Trust Charter, forbearance agreements, and instream flow dedication documents. **Compliance Timeframe:** Development of the Shasta River Water Trust by the RCD shall begin immediately upon the effective date of the Permit. **Responsible Party: SVRCD**	**Qualitative Habitat:** Submittal of Annual Water Trust Monitoring Report. **Frequency:** Annually **Responsible Party: SVRCD**
(ii) Improve baseline instream flows and/or water quality	**Goal:** Improve baseline instream flows and/or water quality within reaches of the Shasta River and its tributaries for specific life stages of coho salmon. **Objectives:** Develop a list of priority stream reaches for flow enhancement based on coho life stage and need. Work with sub-permittees to address irrigation efficiency needs or changing/adding points of diversion to keep flows instream to point of use. Install water efficiency and/or water management improvement projects based on the list of priority stream reaches.	**Implementation:** The RCD shall provide documentation of each water efficiency project, water management improvement project, and point of diversion change implemented in the prior year in the annual report. The narrative shall include a discussion of instream flow contributions and coho habitat benefits. **Frequency:** Annually **Responsible Party: SVRCD** **Compliance:** Submittal of a priority list of stream reaches for flow enhancement. **Compliance Timeframe:** Within one year of the effective date of the Permit. **Responsible Party: SVRCD**	
(iv) Develop & Implement a Contingency Plan for Dry and Critically Dry Water Years	**Goal:** Address coho salmon habitat needs during dry and critically dry water years. **Objectives:** Develop and implement a Contingency Plan for Dry and Critically Dry Water Years to provide guidance and management options that will minimize the likelihood that critical cold water flows to the Shasta River and its tributaries are impaired.	**Implementation:** The RCD shall provide a narrative description of the activities performed to implement the Contingency Plan during and dry and critically dry year. **Frequency:** Immediately after any dry or critically dry year. **Responsible Party: SVRCD** **Compliance:** Submittal of the Contingency Plan for Dry and Critically Dry Water Years. **Compliance Timeframe:** Within three years from effective date of the Permit. **Responsible Party: SVRCD**	
(iv) Diversion Ramp-up Management	**Goal:** Minimize the stranding of fish in shallow pools and side channels below diversions, as well as the loss of critical rearing habitat at the onset of the diversion season. **Objectives:** Develop a Diversion Ramp-up Management Plan to reduce fish stranding and the loss of rearing habitat at the onset of the irrigation season. Implement the Plan in	**Implementation:** The RCD shall prepare a narrative description of Diversion Ramp-up Management Plan implementation including the participants, dates, and volumes of water. **Frequency:** Annually **Responsible Party: SVRCD**	

[1] [1] To determine compliance over the term of the Permit qualitative effectiveness monitoring for habitat will document the requirements sufficiently.

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)

Required Task	Goal and Objectives	Implementation and Compliance Monitoring	Effectiveness Monitoring[1]
	coordination with the Watermaster and sub-permittees.	**Compliance:** Submittal of the Diversion Ramp-up Management Plan. **Compliance Timeframe:** The development of the Diversion Ramp-up Management Plan shall be completed within one year from the effective date of Permit. Implementation of the plan throughout the term of the Permit. **Responsible Party: SVRCD**	
(v) Install Alternative Stock water Systems	**Goal**: Reduce stock water diversions in the fall and early winter to increase instream flows for migrating adult coho salmon. **Objectives:** Develop an Alternative Stock Water Priority Plan and install two alternative stock water systems per year in areas identified in the Plan where increased flows in the fall will contribute significantly to adult coho migration.	**Implementation:** The RCD shall document installation of alternative stock water systems (including photomonitoring) to ensure that systems are installed as designed. **Frequency:** Before, during, and immediately after the installation of alternative stock water systems. **Responsible Party: SVRCD** **Compliance:** Submittal of the Alternative Stock water Priority Plan. **Compliance Timeframe:** The Alternative Stock Water Priority Plan shall be completed by the RCD within one year from the effective date of Permit. A total of twenty alternative stock water systems shall be installed by the expiration date of the Permit. **Responsible Party: SVRCD**	**Qualitative Habitat:** The RCD shall document the use of alternative stock water systems in the fall and early winter in a narrative form in the annual report. **Frequency:** Once annually during adult migration **Responsible Party: SVRCD**
Habitat Improvement			
(i) Spawning Gravel Enhancement	**Goal:** Provide high quality spawning habitat for coho salmon. **Objectives:** Develop a Spawning Gravel Enhancement Plan that identifies where gravel for coho salmon spawning could be placed effectively and where gravel can be recruited to improve spawning habitat conditions. Design and install constrictors and/or other spawning enhancement structures at a total of five priority stream reaches where spawning gravels are not plentiful, if determined necessary.	**Implementation:** Completion of IN checklists and photomonitoring of spawning enhancement projects, if determined necessary, to document proper installation. **Frequency:** Before, during, and immediately after the installation of spawning enhancement projects. **Responsible Party: SVRCD** **Compliance:** Submittal of the Spawning Gravel Enhancement Plan. **Compliance Timeframe:** The Spawning Gravel Enhancement Plan shall be completed by the RCD within two years of the effective date of Permit. If determined necessary, five gravel enhancement structures shall be installed by the RCD prior to the expiration of the Permit. **Responsible Party: SVRCD**	**Qualitative Habitat:** Completion of IN checklist and photomonitoring to document the effectiveness of spawning gravel enhancement projects for quality spawning gravel, retention of gravel and supplementation. **Frequency:** Once annually during adult migration and spawning **Responsible Party: SVRCD** **Quantitative[2] Habitat:** Will be determined in the Spawning Gravel Enhancement Plan. **Responsible Party: SVRCD** **Quantitative Fish Response:** Will be determined in the Spawning Gravel Enhancement Plan **Responsible Party: SVRCD**
(ii) Instream Habitat Improvement Structure	**Goal**: Improve habitat conditions by the installation of large and small woody debris or boulder structures to create pools and cover in areas where potential for over-summering exists. **Objectives:** Develop a priority list of locations where instream habitat improvement structures will benefit coho salmon and install at least 20 instream habitat structures at sites identified	**Implementation:** Completion of IN checklist and photomonitoring during instream structure project construction to ensure proper installation and function. **Frequency:** Before, during, and immediately after the installation of instream structure projects. **Responsible Party: SVRCD**	**Qualitative Habitat:** Completion of IN checklist and photomonitoring to document the effectiveness of instream habitat structures in enhancing or creating rearing habitat conditions for coho salmon. **Frequency:** Once annually **Responsible Party: SVRCD**

[2] All quantitative effectiveness monitoring is conducted for only 10% of a given project type in any single year with the exception of mitigation (legacy) projects implemented by the RCD which must be monitored annually.

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)			
Required Task	**Goal and Objectives**	**Implementation and Compliance Monitoring**	**Effectiveness Monitoring[1]**
	on the list.	**Compliance:** Submittal of the priority list of instream habitat improvement structure locations. **Compliance Timeframe:** The priority list of instream habitat improvement project locations shall be completed within one year from the effective date of Permit. Ten instream structures shall be installed within five years of the effective date of the Permit. Twenty instream structures shall be installed before expiration of the Permit. **Responsible Party: SVRCD**	**Quantitative Habitat:** Document site conditions at reference sites that provide suitable over-summering habitat for coho salmon including pool dimensions, depth, temperature, cover and velocity. The same data shall be collected from the instream habitat improvement project site. The two data sets shall be compared in order to determine if the instream habitat improvement project is creating conditions are suitable for over-summering coho salmon. **Timing:** During the summer at low flow conditions. **Responsible Party: SVRCD** **Quantitative Fish Response:** Completion of streambank and underwater surveys using methodologies in the California Salmonid Habitat Restoration Manual (CSHRM). **Timing:** During the summer at low flow conditions. **Responsible Party: SVRCD**
(iii) Riparian Planting	**Goal:** Increase riparian habitat for improved instream cover and shade canopy, improved channel stability and to trap sediment in areas currently being used by coho salmon for spawning and rearing **Objectives:** Develop a priority list that identifies areas where coho salmon spawn and rear that require riparian planting to increase habitat complexity and stream function. Plant eight linear miles of streambank (measured on one side of river) with riparian vegetation in areas identified on the priority list.	**Implementation:** Completion of RT checklist and photomonitoring of riparian planting projects to ensure they are installed as designed. **Frequency:** Before, during, and immediately after the installation of riparian planting projects. **Responsible Party: SVRCD** **Compliance:** Submittal of the priority list of locations where coho salmon spawn and rear. **Compliance Timeframe:** The priority list shall be completed within two years from the effective date of the Permit. Before the permit expires the RCD shall plant eight linear miles of streambank (measured on one side of river) with riparian vegetation. Three miles shall be planted within three years of the effective date of the Permit. **Responsible Party: SVRCD**	**Qualitative Habitat:** Completion of RT checklist and photomonitoring to document the effectiveness of riparian planting projects for establishment, long-term success, and instream benefits. **Frequency:** Once annually **Responsible Party: SVRCD**
Barrier Removal And Fish Passage			
(i) Araujo Dam Demobilization and Water Quality Improvement Project **Already Completed**	**Goal:** To provide volitional fish passage for migrating adult and juvenile coho salmon both upstream and downstream of the Aruajo Dam diversion structure. **Objectives:** To provide fish passage at the Araujo Dam diversion structure for adult and juvenile coho salmon.	**Implementation:** Completion of FB and DV checklists and photomonitoring of the fish passage project implementation to ensure proper installation. **Frequency:** Before, during, and immediately after the installation of the fish passage project. **Responsible Party: SVRCD** **Compliance:** Construct project to provide volitional fish passage. **Compliance Timeframe:** The RCD will continue to work toward eliminating the fish passage barrier during the term of the Permit. **Responsible Party: SVRCD**	**Qualitative Habitat:** Completion of FB and DV checklists and photomonitoring to document volitional fish passage criteria are being met. **Frequency:** Once annually during the low flow season **Responsible Party: SVRCD** **Quantitative Habitat:** Evaluation of the fish passage structure by taking measurements at the project location to assess fish passage criteria. Typically measurements may include comparing as-built conditions with existing conditions including jump height and an analysis of whether or not the boulders are shifting. In addition functionality of the low flow notch shall be assessed. Evaluation of the structure shall also include an assessment of any aggradation above the structure and any downcutting or scouring below the structure for two

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)			
Required Task	**Goal and Objectives**	**Implementation and Compliance Monitoring**	**Effectiveness Monitoring[1]**
			stream widths. **Frequency:** Once annually during the low flow season **Responsible Party: SVRCD** **Quantitative Fish Response:** Fish response monitoring will include the results of carcass counts, spawning surveys, radio telemetry data, or other adult survey data, if available **Frequency:** Once annually during adult migration and spawning **Responsible Party: SVRCD**
(ii) Shasta Water Association's Dam Demobilization and Water Quality Improvement Project **Already Completed**	**Goal:** To provide volitional fish passage for migrating adult and juvenile coho salmon both upstream and downstream of the diversion structure. **Objectives:** To provide fish passage at the Shasta Water Association Dam I for adult and juvenile coho salmon.	**Implementation:** Completion of FB and DV checklists and photomonitoring of the fish passage project implementation to ensure proper installation. **Frequency:** Before, during, and immediately after the installation of the fish passage project. **Responsible Party: SVRCD** **Compliance:** Construct project to provide volitional fish passage. **Compliance Timeframe:** The RCD will continue to work toward eliminating the fish passage barrier during the term of the Permit. **Responsible Party: SVRCD**	**Qualitative Habitat:** Completion of FB and DV checklists and photomonitoring to document volitional fish passage criteria are being met. **Frequency:** Once annually during the low flow season **Responsible Party: SVRCD** **Quantitative Habitat:** Evaluation of the fish passage structure by taking measurements at the project location to assess fish passage criteria. Typically measurements may include comparing as-built conditions with existing conditions including jump height and an analysis of whether or not the boulders are shifting. In addition functionality of the low flow notch shall be assessed. Evaluation of the structure shall also include an assessment of any aggradation above the structure and any downcutting or scouring below the structure for two stream widths. **Frequency:** Once annually during the low flow season **Responsible Party: SVRCD** **Quantitative Fish Response:** Fish response monitoring will include the results of carcass counts, spawning surveys, radio telemetry data, or other adult survey data, if available **Frequency:** Once annually during adult migration and spawning **Responsible Party: SVRCD**
(iii). Grenada Irrigation District Fish Barrier Removal Project	**Goal:** To provide volitional fish passage for migrating adult and juvenile coho salmon both upstream and downstream of the diversion structure. **Objectives:** To provide fish passage at the Grenada Irrigation District diversion structure for adult and juvenile coho salmon.	**Implementation:** Completion of FB and DV checklists and photomonitoring of the fish passage project implementation to ensure proper installation. **Frequency:** Before, during, and immediately after the installation of the fish passage project. **Responsible Party: SVRCD** **Compliance:** Construct project to provide volitional fish passage. **Compliance Timeframe:** Within eight years of the effective date of the Permit the RCD shall provide volitional fish passage at the Grenada Irrigation District diversion structure.	**Qualitative Habitat:** Completion of FB and DV checklists and photomonitoring to document volitional fish passage criteria are being met. **Frequency:** Once annually during the low flow season **Responsible Party: SVRCD** **Quantitative Habitat:** Evaluation of the fish passage structure by taking measurements at the project location to assess fish passage criteria. Typically measurements may include comparing as-built conditions with existing conditions including. In addition functionality of the low flow notch shall be assessed. Evaluation of the structure shall also include an

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)			
Required Task	**Goal and Objectives**	**Implementation and Compliance Monitoring**	**Effectiveness Monitoring[1]**
		Responsible Party: SVRCD	assessment of any aggradation above the structure and any downcutting or scouring below the structure for two stream widths. **Frequency:** Once annually during the low flow season **Responsible Party: SVRCD** **Quantitative Fish Response:** Fish response monitoring will include the results of carcass counts, spawning surveys, radio telemetry data, or other adult survey data, if available **Frequency:** Once annually during adult migration and spawning **Responsible Party: SVRCD**
XV. Additional SVRCD and Sub-permittee Avoidance and Minimization Obligations			
Headgate and Gage Installation	**Goals:** To ensure that all diversions operated by sub-permittees have the ability to regulate flow and record water delivery by the installation of Department and DWR approved headgates and measuring devices. **Objectives:** The preparation of a priority plan that identifies locations where headgate and measuring device installation is a priority. The installation of locking headgates and measuring devices to regulate flow.	**Implementation:** Completion of DV checklist and photomonitoring of headgate and gage projects to evaluate the proper installation and function of headgates and measuring devices. **Frequency:** Before, during, and immediately after the installation of headgate and gage structures. **Responsible Party: Sub-permittee** **Compliance:** Submittal of the Headgate and Gage Priority Plan. **Compliance Timeframe:** The Headgate and Gage Priority Plan is to be completed within one from the effective date of the Permit. **Responsible Party: SVRCD** **Compliance:** All diversions operated by the sub-permittees shall have locking headgates and measuring devices installed. **Compliance Timeframe:** Within three years from the effective date of the Permit all diversions operated by the sub-permittee shall have locking headgates and measuring devices. **Responsible Party: Sub-permittee**	**Qualitative Habitat:** Completion of DV checklist and photomonitoring to document the effectiveness of the headgates and flow measuring devices including function and condition. **Frequency:** Once annually during the diversion season. **Responsible Party: Sub-permittee**
Fish Screens	**Goal:** All diversions operated by sub-permittees shall be properly screened to meet Department and NMFS criteria for steelhead fry as they exist at the time the screen will be installed. **Objectives:** All diversions operated by the sub-permittees, including stockwater diversions, will be fitted with fish screens that meet Department and NMFS criteria as they exist at the time the screen will be installed.	**Implementation:** Completion of DV checklists and photomonitoring to ensure proper installation and function. **Frequency:** Before, during, and immediately after the installation of fish screens. **Responsible Party: Sub-permittee** **Compliance:** The installation and proper function of fish screens and bypass facilities. **Compliance Timeframe:** All diversions operated by sub-permittees shall have a fish screen installed on or in the diversion no later than four years from the effective date of the Permit, or within two years from the date of the sub-permit, whichever date is later. **Responsible Party: Sub-permittee**	**Qualitative Habitat:** Completion of DV checklist and photomonitoring to document the effectiveness and maintenance of fish screen facilities. **Frequency:** Annually during the irrigation season. **Responsible Party: SVRCD/Sub-permittee**

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)

Required Task	Goal and Objectives	Implementation and Compliance Monitoring	Effectiveness Monitoring[1]
Fish Passage Improvements	**Goal:** Provide volitional fish passage for all lifestages of coho salmon at water diversions operated by sub-permittees in the Program area. **Objectives:** Provide volitional fish passage at all water diversion structures operated by sub-permittees. Develop a priority list of fish passage barriers that will be used to address the most critical areas early in the Program. Develop a curriculum and hold a fish passage workshop for sub-permittees who own, operate, or use diversions that are likely to obstruct fish passage.	**Implementation:** Completion of FB checklist and photomonitoring of the diversion structure to ensure the proper implementation and installation of fish passage projects. **Frequency:** Before, during, and immediately after the installation or modification of a diversion structure. **Responsible Party: Sub-permittee** **Compliance:** SVRCD shall submit a priority list of diversions that sub-permittees use in the Program area where providing passage is critical and conduct a fish passage workshop. **Compliance Timeframe:** The fish passage workshop and priority list of diversion impacts to fish passage are to be completed within one year of the effective date of the Permit. **Responsible Party: SVRCD** **Compliance:** All water diversion structures operated by sub-permittees shall provide volitional fish passage at any barrier for which they are responsible. **Compliance Timeframe:** Within five years of the effective date of a sub-permit. **Responsible Party:** Sub-permittee	**Qualitative Habitat:** Completion of FB checklist and photomonitoring to document the effectiveness of juvenile and adult coho salmon passage. **Frequency:** Annually **Responsible Party: SVRCD** **Quantitative Habitat:** Evaluation of fish passage improvements by taking measurements at the project location to assess fish passage criteria. Typically measurements may include comparing as-built conditions with existing conditions, including jump height, scour immediately below the structure, and shifts in the boulders over time, if applicable. In addition assess low flow notch functionality. Evaluation of the structure shall also include an evaluation of the aggradation above the structure and downcutting below the structure for two stream widths. **Timing:** During the summer at low flow conditions. **Responsible Party: SVRCD** **Quantitative Fish Response:** Fish response monitoring will include the results of carcass counts, spawning surveys, radio telemetry data, or other adult survey data if available. **Timing:** During adult migration and spawning periods **Responsible Party: SVRCD**
Livestock and Vehicle Crossings	**Goal:** To minimize impacts to potential spawning habitat and coho redds caused by livestock and vehicles crossing flowing streams. **Objectives:** Develop a priority list of locations where the appropriate placement of improved livestock and vehicle crossings will minimizing impacts to potential spawning habitat and construct the crossing sites to meet criteria. All existing and installed livestock and vehicle crossings shall meet the crossing criteria identified in the Permit unless otherwise determined by the Department.	**Implementation:** Completion of CR checklist and photomonitoring **Frequency:** Before, during, and immediately after the installation or modification of a crossing **Responsible Party:** Sub-permittee **Compliance:** Development of a priority list of locations for livestock and vehicle crossing construction. **Compliance Timeframe:** Within one year of the effective date of Permit. **Responsible Party:** SVRCD **Compliance:** All livestock and vehicle crossings shall meet the crossing criteria identified in the Permit. **Compliance Timeframe:** Prior to the expiration date of the sub-permit. **Responsible Party: Sub-permittee**	**Qualitative Habitat:** Completion of CR checklist and photomonitoring to document the effectiveness of livestock and vehicle crossing to ensure consistency with design criteria (approach slope ratio, base rock consistency, distance from coho redds). **Frequency:** Annually **Responsible Party: SVRCD/Sub-permittee** **Quantitative Habitat:** Document any changes in stream channel habitat type above and below crossing location. **Timing:** During the coho salmon spawning period **Responsible Party: SVRCD** **Quantitative Fish Response:** Verification that coho salmon are not utilizing the crossing for spawning by completing redd surveys following methods in the CSHRM at or directly below the crossing location. **Timing:** During the coho salmon spawning period. **Responsible Party: SVRCD**
Riparian Fencing	**Goal:** Reduce livestock impacts in riparian zones and allow reestablishment of riparian vegetation/cover along stream segments utilized by coho salmon. **Objective:** The preparation of a Riparian Fencing Plan that will identify priority locations for exclusion fencing. Install an	**Implementation:** Completion of RF checklists and photomonitoring of exclusion fence installation and riparian vegetation within fenced zone. **Frequency:** Before, during, and immediately after the installation or modification of exclusion fencing. **Responsible Party: Sub-permittee**	**Qualitative Habitat**: Completion of RF checklist and photomonitoring to evaluate fencing for proper operation, livestock exclusion and structural integrity. **Frequency:** Annually **Responsible Party: Sub-permittee**

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)			
Required Task	**Goal and Objectives**	**Implementation and Compliance Monitoring**	**Effectiveness Monitoring[1]**
	average of two miles of additional stream every year.	**Compliance:** Submittal of the Riparian Fencing Plan. **Compliance Timeframe:** The Riparian Fencing Plan shall be submitted within one year from the effective date of Permit. Riparian fencing shall be completed at average of an additional two miles of stream annually after the riparian fencing plan is completed. **Responsible Party: SVRCD** **Compliance:** Any sub-permittee whose property is identified in the Riparian Fencing Plan shall install fencing. **Compliance Timeframe:** The sub-permittee shall install fencing at locations identified in the Riparian Fencing Plan by the expiration date of their sub-permit **Responsible Party: Sub-permittee**	
Gravel Push-up Dams	**Goal:** Reduce the impacts to coho salmon associated with the operation and maintenance of gravel push up dams by replacing them with boulder weirs or some other diversion method approved by the Department. **Objectives:** The replacement of all gravel push-up dams with boulder weirs or some other Department approved diversion method. The development of Best Management Practices (BMPs) governing the construction, operation and/or removal of gravel push-up dams currently in use.	**Implementation:** Completion of DV and FB checklist and photomonitoring of replacement of gravel pushup dams during construction and removal. **Frequency:** Before, during, and after the replacement of gravel push-up dams. **Responsible Party: Sub-permittee with a gravel push-up dam.** **Compliance:** Submittal of a BMP list. **Compliance Timeframe:** The BMP list shall be completed by the RCD within six months of the effective date of the Permit. **Responsible Party: SVRCD** **Compliance:** Any sub-permittee with a gravel push-up dam shall remove or replace it with an alternative diversion method unless the Department determines that an alternative method is not feasible. Until such time, the sub-permittee shall provide an annual report documenting progress to provide adequate fish passage at a diversion that is a barrier to the Department and the RCD. **Compliance Timeframe:** Within five years from the effective date of the sub-permit any sub-permittee with a gravel push-up dam shall replace it with an alternative diversion method unless the Department determines that an alternative method is not feasible. **Responsible Party: Sub-permittee with a gravel push-up dam**	**Qualitative Habitat:** Completion of DV checklist and photomonitoring and a narrative description of BMP implementation until the removal and replacement push-up dam. After removal of the gravel push-up dam the FB checklist shall be completed to document the effectiveness of the fish passage project. **Frequency:** Annually **Responsible Party: Sub-permittee** **Quantitative Habitat:** After the replacement of the gravel push-up dam with a boulder weir or some other diversion method, implementation and effectiveness surveys shall follow fish passage effectiveness monitoring methodology to determine if fish passage criteria are being met. Typically measurements may include comparing as-built conditions with existing conditions including jump height and an analysis of whether or not the boulders are shifting, if applicable. In addition functionality of the low flow notch shall be assessed. Evaluation of the structure shall also include an assessment of any aggradation above the structure and any downcutting or scouring below the structure for two stream widths. **Timing:** During the low flow season **Responsible Party: SVRCD** **Quantitative Fish Response:** Fish response monitoring shall include the results of carcass counts, spawning surveys, radio telemetry data, or other adult survey data, if available. **Timing:** During adult migration and spawning periods. **Responsible Party: SVRCD**
Other Temporary Diversion Structures	**Goal:** Reduce the impacts to coho salmon associated with the operation and maintenance of temporary diversion structures by replacing such structures with boulder weirs or some other diversion method approved by the Department.	**Implementation:** Completion of DV and FB checklist and photomonitoring of the replacement of any other temporary diversion structure during construction and removal. **Frequency:** Before, during, and after the replacement of a temporary diversion structure.	**Qualitative Habitat:** Completion of DV checklist and photomonitoring and a narrative description of BMP implementation until the removal or the replacement of the structure. After removal of the temporary diversion structure the FB checklist shall be completed to document the

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)

Required Task	Goal and Objectives	Implementation and Compliance Monitoring	Effectiveness Monitoring[1]
	Objectives: The replacement of temporary diversions that do not comply with Fish and Game Code with either a boulder weir or some other diversion method approved by the Department. The development of BMPs governing the construction, operation and/or removal of other diversion structures currently in use.	**Responsible Party:** Sub-permittee **with a temporary diversion structure** **Compliance:** Submittal of a BMP list. **Compliance Timeframe:** The BMP list shall be completed within six months of the effective date of the Permit. **Responsible Party: SVRCD** **Compliance:** Any sub-permittee with a temporary diversion structure shall request the SVRCD and the Department to determine whether the structure shall comply with Fish and Game Code. **Compliance Timeframe:** Within two years from the effective date of the sub-permit the sub-permittee shall contact the Department for a determination. **Responsible Party: Sub-permittee with a temporary diversion structure** **Compliance:** Any sub-permittee with a temporary diversion structure that does not comply with Fish and Game Code shall remove or replace it with an alternative diversion method. Until such time, the sub-permittee shall provide an annual report documenting progress to provide adequate fish passage at a diversion that is a barrier to the Department and the RCD. **Compliance Timeframe:** Within five years from the effective date of the sub-permit any temporary diversion operated by a sub-permittee that does not comply with Fish and Game Code shall remove or replace it with an alternative diversion method **Responsible Party: Sub-permittee with a temporary diversion structure**	effectiveness of the fish passage project. **Frequency:** Annually **Responsible Party: Sub-permittee** **Quantitative Habitat:** After the replacement of the temporary diversion structure with a boulder weir or some other diversion method, implementation and effectiveness surveys shall follow fish passage effectiveness monitoring methodology to determine if fish passage criteria are being met. Typically measurements may include comparing as-built conditions with existing conditions including the evaluation of fish passage criteria by taking measurements at project location to ensure volitional fish passage. Typical measurements may include jump height and an analysis of whether or not the boulders are shifting, if applicable. In addition functionality of the low flow notch shall be assessed. Evaluation of the structure shall also include an assessment of any aggradation above the structure and any downcutting or scouring below the structure for two stream widths. **Timing:** During the low flow season **Responsible Party: SVRCD** **Quantitative Fish Response:** Fish response monitoring shall include the results of carcass counts, spawning surveys, radio telemetry data, or other adult survey data, if available. **Timing:** During adult migration and spawning periods **Responsible Party: SVRCD**
Bioengineered Bank Stabilization	**Goal:** Restore natural stream-bank stability to allow for the re-establishment of riparian vegetation and prevent excessive erosion. **Objectives:** Implement bioengineered bank stabilization using techniques consistent with the latest version of the CSHRM.	**Implementation:** Completion of IN and RP checklist and photomonitoring of bioengineered bank stabilization projects to ensure that treatments have been installed as designed. **Frequency:** Before, during, and immediately after the installation of bioengineered bank stabilization projects. **Responsible Party: Sub-permittee** **Compliance:** Construction of bioengineered bank stabilization projects. **Compliance Timeframe:** Any bio-engineered bank stabilization project identified in a sub-permit shall be installed by the sub-permittee within three years of the effective date of the sub-permit. **Responsible Party: Sub-permittee**	**Qualitative Habitat:** Completion of IN and RP checklist and photomonitoring to document the effectiveness of the bioengineered bank stabilization projects at restoring natural stream-bank stability and re-establishment of riparian vegetation. **Frequency:** Annually **Responsible Party: Sub-permittee** Note: If bioengineered bank stabilization measures include structures that increase instream habitat, those structures shall be included in the 10% habitat effectiveness monitoring sample group.
Irrigation Tailwater Reduction and/or Capture	**Goal:** The elimination of tailwater by implementing tailwater reduction systems. **Objectives:** The inventory of tailwater sources and development of a priority list of tailwater sources for	**Implementation:** Completion of TW checklist and photomonitoring of tailwater projects or capture of tailwater returns to ensure consistency with NRCS guidelines. **Frequency:** Before, during, and immediately after the installation of tailwater reduction and/or capture structures.	**Qualitative Habitat:** Completion of TW checklist and photomonitoring to document the effectiveness of the operation of tailwater reduction and/or capture systems and to insure the project is consistent with the original design criteria. **Frequency:** Annually

Monitoring for Mitigation, Minimization, and Avoidance Activities Outlined in the SVRCD Incidental Take Permit (Permit)			
Required Task	**Goal and Objectives**	**Implementation and Compliance Monitoring**	**Effectiveness Monitoring[1]**
	remediation. The installation of tailwater reduction systems that are consistent with the Natural Resources Conservation Service (NRCS) guidelines.	**Responsible Party: Sub-permittee** **Compliance:** Submittal of the priority list of tailwater sources for remediation. **Compliance Timeframe:** The priority list shall be developed within two years from the effective date of Permit. **Responsible Party: SVRCD** **Compliance:** A sub-permittee whose property is identified on the priority list shall install a tailwater reduction and capture system **Compliance Timeframe:** The tailwater reduction and capture system on the sub-permittees property shall be in place by the expiration of their sub-permit. **Responsible Party: Sub-permittee**	**Responsible Party: Sub-permittee**
Dwinnell Dam and the Montague Water Conservation District	**Goal:** Eliminate the release of non-native fish from Dwinnell Reservoir and develop a plan to improve habitat conditions for coho salmon through management actions. **Objectives:** The screening of Dwinnell discharge into the Shasta river. The Preparation of a feasibility study to evaluate management actions to benefit coho salmon.	**Implementation:** Completion of photomonitoring to ensure proper installation of the screen installation. **Frequency:** Monitor before, during, and immediately after screen installation. **Responsible Party: CDFG** **Compliance:** Submittal of the Feasibility Plan and screen installation. **Compliance Timeframe:** During the term of the permit **Responsible Party: CDFG**	

Appendix 3.
Checklist Monitoring

Completion of monitoring checklists involves assembling relevant project information, visiting the project site and answering checklist questions, and making a summary judgment of implementation or effectiveness of each feature.

Each covered activity has three separate checklists corresponding to specific chronological time periods described above. CDFG will aid in the completion of the pre-implementation checklist and help determine what other checklist may be needed to ensure activities are properly monitored by using the appropriate checklist. Sub-permittees that do not require construction activities to meet the requirements of the Program will not be required to complete implementation checklists, completing only the effectiveness monitoring checklists. However, if operation or maintenance requires ground disturbing activities, these activities shall be described on a implementation checklist.

A. Assembling Monitoring Checklists

The number and type of project features to be monitored shall be determined by the Department during the initial site visit.

B. Completing Checklists

Once a project has been identified checklists shall be completed. Visit each project feature and answer the questions that pertain to the feature. Each checklist contains questions for a wide range of implementation and effectiveness criteria, not all of which will apply to every feature. Each checklist should be consistent with the previous checklist for the time sequence. If an additional checklist is used for a project, note that in the comments section. Many of the questions require an answer in the form of a three letter code. These codes are identified on a sheet attached to the checklist and are consistent for each checklist in the monitoring program.

C. Checklists

1. DV- WATER DIVERSION FACILITIES

These checklists are for activities related to the ***diversion of water and the diversion facilities. The facilities include headgates, fish screens, bypass conduits and measuring devices.*** Pre-implementation monitoring forms focus on the presence or absence of required structures and features, their condition and functionality and relevant criteria. Implementation checklists focus on improvements made to diversion structures to meet requirements of the Program. Effectiveness checklists focus on the functionality of the required structures

2. **CR-** LIVESTOCK AND VEHICLE CROSSINGS

These checklists are for ***livestock and vehicle crossings***. The pre-implementation monitoring form focuses on the existing physical features of the site and evaluates which crossing conditions need to be addressed. The Implementation checklist evaluates activities taken to meet the conditions for livestock and vehicle crossings identified in this Permit. The effectiveness monitoring checklist focuses on the functionality of the crossings over the life of the program and will allow informed decisions to be made regarding maintenance activities required.

3. **RF**–RIPARIAN FENCING

These checklists are for ***the installation of fencing for livestock exclusion from riparian zones.*** This feature may include fencing set back approximately 35 feet from the edge of bank or temporary fencing across stream. The pre-implementation checklist establishes the need for riparian exclusion fencing based on existing conditions. The implementation checklist evaluates the installation of fencing, records other features that may have been installed in conjunction with the riparian fencing and documents the post construction conditions. The effectiveness monitoring checklist evaluates the feature in meeting the goals of the exclusion fencing over time, and changes in the riparian and stream bank components of the project area.

4. **RT**-RIPARIAN RESTORATION AND REVEGETATION

These checklists are for ***any type of riparian planting activity or other riparian restoration activity consistent with the Salmonid Stream Habitat Restoration Manual.*** The checklists focus on riparian revegetation. The pre-implementation checklist focuses on the existing habitat conditions at the project location and the condition of the banks and channel. The implementation checklist focuses on planting of vegetation, including develop and adherence to an approved restoration plan and documents any project modification that may have occurred during implementation. The effectiveness monitoring checklist focuses on vegetation monitoring, maintenance and changes in the density and cover from planted vegetation. This checklist can also be used when nothing is planted but, an area is treated by fencing and has the same objectives as a planting project.

5. **IN**-INSTREAM HABITAT & BANK STABILIZATION

These checklists are for ***structures to protect the beds and banks of streams, including biotechnical features, habitat structures and other structures consistent with the Salmonid Stream Habitat Restoration Manual, including boulder weirs, large woody debris and spawning gravel enhancements***.

The pre-implementation checklist focuses on existing habitat and the physical characteristics of the project area. The implementation checklist evaluates the installation of the instream structures. The effectiveness monitoring checklist evaluates the changes in the habitat and physical structure of the project area over time and whether or not the desired features were created or maintained over time.

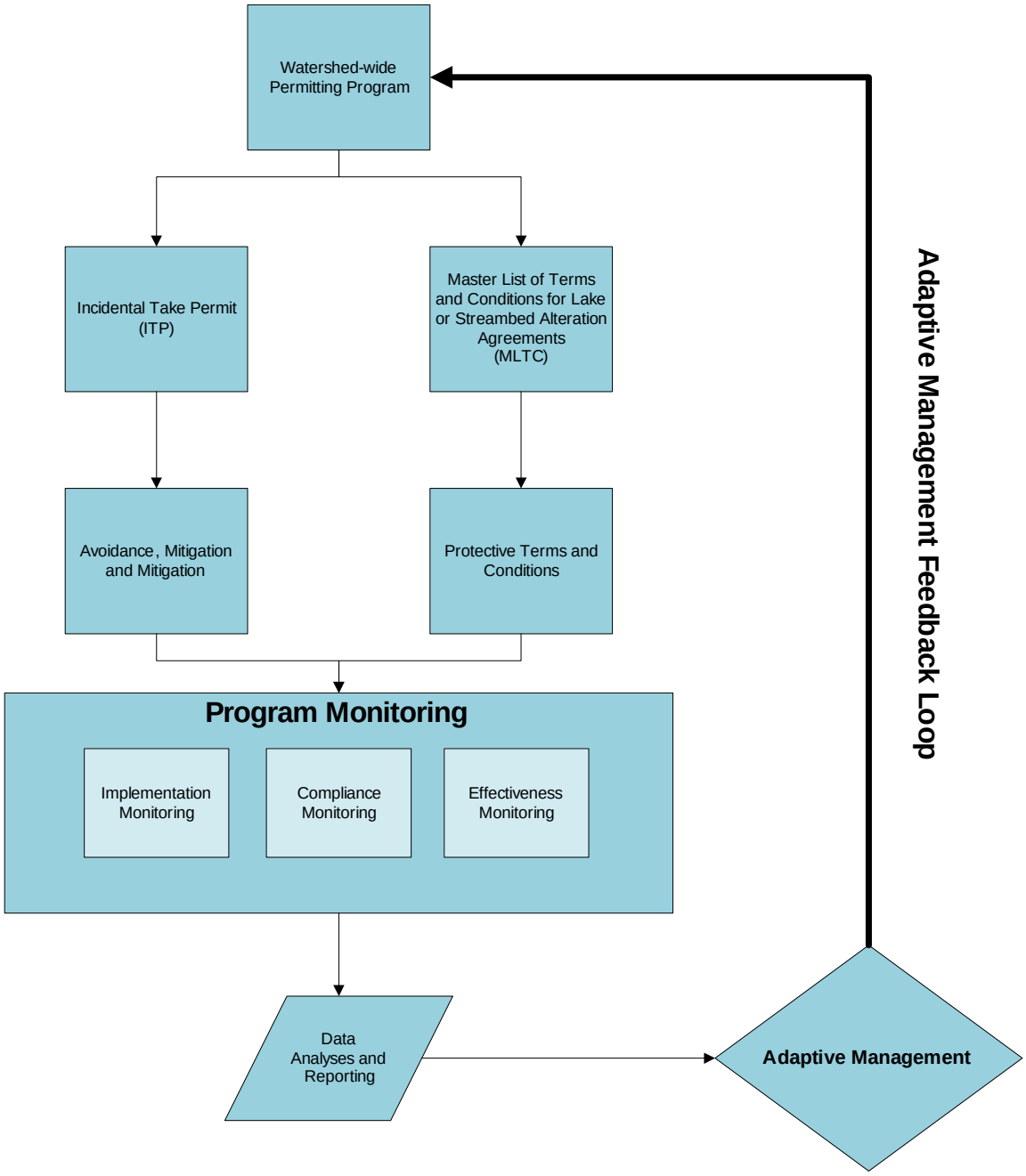
6. **FB** - BARRIER REMOVAL AND FISH PASSAGE

These checklists are for the ***removal of barriers that prevent volitional fish passage for access to historic spawning and rearing habitat.*** The pre-implementation checklist focuses on the type of barrier that exists and bed and channel conditions. Because of the unique nature of many barriers, a detailed description as well as opportunistic photos are required on the checklist . The implementation checklist evaluates the removal or modification of the structure, channel conditions and quantitative metrics. The effectiveness monitoring checklist evaluates the site to ensure that fish passage is maintained and that the physical features of the channel are intact and to determine if natural processes are maintained through the site.

7. **IT**-IRRIGATION TAILWATER REDUCTION AND CAPTURE

These checklists are for ***the installation of tailwater reduction and capture systems that are consistent with Natural Resource Conservation Service guidelines.*** The pre-implementation checklist focuses on the existing tailwater source including problems with the streambank, the amount of tailwater being delivered into the waterbody, and existing tailwater systems at the location. The implementation checklist focuses on the installation of a tailwater system and an evaluation of consistency with NRCS guidelines. The effectiveness monitoring checklist focuses on the effectiveness of the system at the reduction or elimination of tailwater entering the natural waterway and the maintenance and function of the tailwater system over time.

Appendix 4.
Adaptive Management Plan Feedback Loop



APPENDIX B

Streambed Alteration Agreement Memorandum of Understanding

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MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF FISH AND GAME AND
THE SHASTA VALLEY RESOURCE CONSERVATION DISTRICT
REGARDING THE SHASTA RIVER WATERSHED-WIDE
STREAMBED ALTERATION AGREEMENT PROGRAM

I. RECITALS

WHEREAS, the Legislature has declared that the protection and conservation of the State of California's fish and wildlife resources are of utmost public interest;

WHEREAS, the protection and conservation of fish and wildlife resources depend largely upon the preservation of the quality and quantity of the habitat that sustain them;

WHEREAS, the Department of Fish and Game ("Department") is the trustee for the state's fish and wildlife resources and responsible for administering and enforcing Fish and Game Code section 1600 *et seq.*;

WHEREAS, Fish and Game Code section 1602 requires an entity to notify the Department before beginning a project that will substantially obstruct or divert the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank, of a river, stream, or lake; use any material from the bed, channel, or bank of a river, stream, or lake; or result in the deposition or disposal of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, and requires the Department to prepare a Streambed Alteration Agreement ("Agreement") if it determines the project could substantially adversely affect a fish or wildlife resource;

WHEREAS, the Shasta Valley Resource Conservation District ("SVRCD") works in partnership with various parties to provide technical assistance and cost-sharing to private landowners to assist them with conservation projects on their property and to reduce erosion and sedimentation, in an effort to protect surrounding natural resources;

WHEREAS, SVRCD has been working closely with local community groups to create watershed plans and to protect and improve the biological functioning of their watersheds and natural resources while maintaining the economic viability of agriculture, and has been identified as an appropriate organization to assist local landowners in implementing those plans;

WHEREAS, the Department, with SVRCD's assistance, has developed the Shasta River Watershed-wide Permitting Program ("Permitting Program"), which is

designed to implement key recovery tasks for coho salmon and ensure that participants are in compliance with Fish and Game Code section 1600 *et seq*. and the California Endangered Species Act (Fish & G. Code, § 2050 *et seq.*);

WHEREAS, the Department, with SVRCD's assistance, has developed a Streambed Alteration Agreement Program ("Program") as part of the Permitting Program to coordinate and simplify the process for agricultural water diverters in the Shasta River watershed to comply with Fish and Game Code section 1600 *et seq.*;

WHEREAS, as part of the Program, the Department, with SVRCD's assistance, has prepared a Master List of Terms and Conditions for Streambed Alteration Agreements Issued Under the Shasta River Watershed-Wide Permitting Program ("MLTC"), attached hereto as Attachment 1, that covers agricultural water diversions and other agricultural activities in the Shasta River watershed; any projects directly related to such diversions; and restoration activities implemented by SVRCD, and includes general and specific measures that the Department and SVRCD agree are necessary to protect fish and wildlife resources that may be substantially adversely affected by such diversions or other agricultural activities and related projects, and restoration activities;

WHEREAS, the Department will prepare and approve or certify an environmental document in accordance with the California Environmental Quality Act ("CEQA") (Pub. Resources Code, § 21000 *et seq.*) for the Permitting Program before issuing Agreements under the program; and

WHEREAS, the purpose of this MOU is to describe the Program and the Department's and SVRCD's roles and responsibilities under the Program;

NOW, THEREFORE, THE DEPARTMENT AND SVRCD AGREE THAT:

II. PROGRAM ELIGIBILTY

A. The Program shall be limited to the activities described in Section III (Covered Activities) in Attachment 1.

B. SVRCD and each agricultural water diverter who is eligible for and wants to participate in the Program ("~~p~~*P*articipant") shall obtain a separate Agreement through the Program by including the information in Section III below.

III. PROGRAM PROCESS

A. ~~It is the sole responsibility of t~~*T*he ~~p~~*P*articipant ~~to~~ *shall* fill out and submit to the Department a *Permitting* Program ~~Notification~~ *Application* Package (*"Application* ~~notification~~") *which includes the information necessary for notification of lake or streambed alteration*. The ~~p~~*P*articipant *will complete the Application with the assistance*

of the ~~may submit the completed notification to~~ SVRCD ~~for assistance and/or review~~. *The complete Application Package is in Exhibit 1 of Attachment 1.* ~~If SVRCD determines that the notification should be modified, it shall describe for the participant the changes that should be made to the notification and offer to review the notification again after it is modified. If SVRCD determines that the notification does not need to be modified, it shall advise the participant to submit the notification to the Department. SVRCD shall initial and date any notification it recommends for submittal to the Department.~~

~~B. SVRCD's role in regard to reviewing and commenting on a participant's notification shall be advisory only. SVRCD shall not be responsible for a participant's failure to submit a notification to SVRCD for its review before it is submitted to the Department: the information included in the notification; or the completeness of the notification.~~

B ~~C~~. Within 15 days of receiving a*n Application* ~~notification~~, the Department will ~~confirm~~ *determine if* ~~that~~ the project is covered under the Program. If the Department determines the project is not covered under the Program, the Department shall explain to the ~~p~~Participant in writing that the project is not covered, and that if the ~~p~~*P*articipant wants the Department to process ~~the~~ *a* notification outside of the Program, the ~~p~~*P*articipant will need to submit a *notification and* notification fee to the Department ~~within 30 days from the date of the letter~~. ~~If the Department does not receive the notification fee within that time period, the Department will return the notification to the participant, unless the Department agrees otherwise.~~ If the Department confirms that the project is covered under the Program, the Department will begin processing the ~~notification~~ *Application* by first determining whether ~~the notification~~ *it* is complete in accordance with Fish and Game Code section 1602(a)(2) *and Title 14 of the California Code of Regulations Section 783.5 (b)*. The 30-day time period to determine whether the ~~notification~~ *Application* is complete shall begin on the date the Department confirms that the project is covered under the *Permitting* Program.

C ~~D~~. The Department will make every effort to provide the ~~p~~*P*articipant with two copies of a draft Agreement for review within 45 days after the ~~notification~~ *Application* is ~~complete~~ *determined to be* complete. *However, by signing the Application, the Participant has agreed that the 60-day time period for the Department to issue a draft Agreement as specified in Fish and Game Code section 1602(a)(4)(D) may be extended, if necessary, pursuant to Fish and Game Code section 1607 without further written authority.* ~~If the Department fails to provide a draft Agreement within 60 days after the draft notification is complete, the participant may begin the project without an Agreement, as provided in Fish and Game Code section 1602(a)(4)(D).~~ The draft Agreement will include the general measures *identified* in the MLTC for the Program that apply to all projects and the specific measures that particularly apply to the project described in the ~~p~~*P*articipant's ~~notification~~ *Application*. Upon receipt of the draft Agreement, the ~~p~~*P*articipant shall have 30 days to either accept or not accept the draft Agreement.

D ~~E~~. If the ~~p~~*P*articipant accepts the draft Agreement, the ~~p~~*P*articipant shall sign both copies and submit them to the Department. Upon receipt of the executed copies, the Department shall sign both. The Department shall then file a Notice of Determination with the State Clearinghouse relying on the environmental document approved or certified for the Permitting Program in accordance with CEQA. At the same time, the Department shall submit one original of the final Agreement to the ~~p~~*P*articipant, retain one original, and submit a copy of the original to SVRCD. Upon receipt of the final Agreement *and an Incidental Take Sub-permit (Sub-permit)*, the ~~p~~*P*articipant shall be authorized to complete the project and/or activity pursuant to the conditions in the Agreement *and the Sub-permit*.

E ~~F~~. The Department may include in the draft Agreement measures that are not in the MLTC, if the Department determines such additional measures are necessary to protect fish and wildlife resources the project could substantially adversely affect, and the Department meets any CEQA requirements that might apply before issuing the final Agreement.

F. For draft Agreements that include measures that are not in the MLTC to protect fish and wildlife resources pursuant to paragraph E above, the Participant shall work with Department staff to resolve any disagreement regarding only those measures. If the disagreement is not resolved between the Participant and Department staff, the Regional Manager shall be informed. Thereafter the Region Manager shall work with the Participant to resolve any disagreement regarding any measure that is not in the MLTC. The decision by the Regional Manager shall be final.

G. If the ~~p~~*P*articipant does not accept the draft Agreement, it shall notify the Department in writing that the draft Agreement is not acceptable. In that case, the dispute resolution provisions in Fish and Game Code section 1603, including arbitration, shall not apply. ~~Instead, the participant will need to obtain an Agreement from the Department outside the Program before beginning the project. In doing so, the participant will need to submit a new notification and notification fee outside the Program, all relevant provisions in Fish and Game Code section 1600 *et seq.* will apply, including the dispute resolution provisions in Fish and Game Code section 1603, and the Department will comply with CEQA before issuing a final Agreement.~~

H. If a draft Agreement is not accepted by the Participant, an Agreement from the Department outside the Program will be necessary before beginning any project that may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. The Participant will need to submit a standard notification and a notification fee. All relevant provisions in Fish and Game Code section 1600 et seq. will apply, including the dispute resolution provisions in Fish and Game Code section 1603. The Department is required to comply with CEQA before issuing an Agreement. The CEQA analysis conducted for the Permitting

Program will not be sufficient for 1602 notifications received outside of the Permitting Program.

I ~~H~~. The term of any Agreement that the Department issues to a ~~p~~*P*articipant through the Program may not exceed five years.

J ~~I~~. Fish and Game Code section 1605(a), (b), and (d) through (f) shall apply to any Agreement that the Department issues to a ~~p~~*P*articipant through the Program.

IV. AMENDMENT

This MOU may be amended only by mutual written agreement between the Department and SVRCD.

V. TERMINATION

The Department or SVRCD may terminate this MOU at any time by written notice to the other party, in which case the MOU will terminate 30 days from receipt of the notice by the other party. Termination of this MOU shall not affect any Agreements issued under the Permitting Program prior to termination; shall not preclude the Department from issuing Agreements under the Permitting Program after termination; and shall not preclude the Department from using Attachment 1 in issuing Agreements under the Permitting Program after termination.

VI. TERM

This MOU shall remain in effect for five (5) years from the date of execution, unless the Department and SVRCD terminate or extend it prior to its expiration. The term of this MOU may be extended only by mutual written agreement prior to its expiration.

VII. REPRESENTATIVES

The individuals named below shall serve as the Department and SVRCD representatives for the Program.

For the Department:

Donna L. Cobb, 1600 Program Supervisor
Department of Fish and Game
Northern Region
601 Locust Street
Redding, CA 96001
(530) 225-2314
dcobb@dfg.ca.gov

For SVRCD:

Adriane Garayalde
District Administrator
Shasta Valley Resource Conservation District
215 Executive Court, Suite A
Yreka, CA 96097

VIII. ACKNOWLEDGEMENTS

It is acknowledged that the purpose of this MOU is to set forth the roles and responsibilities of the Department and SVRCD with respect to the Program. This MOU does not affect SVRCD's rights and responsibilities under Fish and Game Code section 1600 *et seq.,* and does not constitute a waiver of SVRCD's rights and responsibilities to implement or maintain conservation practices in areas outside the Department's permitting authority.

IX. ATTACHMENTS

The following documents are attached to this MOU and incorporated herein by reference:

Attachment 1. Master List of Terms and Conditions
Exhibit 1. Application Forms and Instructions
Attachment A: Water Right Verification Form
Attachment B: Right of Entry Agreement
Exhibit 2. Program Area

~~I~~X. EFFECTIVE DATE

This MOU shall be effective immediately upon signature by the Department, which shall be after SVRCD's signature.

XI. SIGNATURE

SVRCD and the Department acknowledge and accept the terms and conditions of this MOU as evidenced by the following signatures of their duly authorized representatives.

SHASTA VALLEY RESOURCE CONSERVATION DISTRICT

By: _____ Date: _____

Richard Kuck
Chairman

CALIFORNIA DEPARTMENT OF FISH AND GAME

By: _____ Date: _____

Gary B. Stacey
Regional Manager
Northern Region

ATTACHMENT 1

MASTER LIST OF TERMS AND CONDITIONS FOR STREAMBED ALTERATION AGREEMENTS ISSUED UNDER SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

I. OVERVIEW

This attachment identifies the activities that are eligible for coverage under the Streambed Alteration Agreement Program ("Program") described in the attached Memorandum of Understanding ("MOU") between the Department of Fish and Game ("Department") and the Shasta Valley Resource Conservation District ("SVRCD"); the general terms and conditions that will apply in all instances; and the specific conditions that will apply to those activities as determined by the Department on a project-by-project basis.

A. Eligibility

As described in the MOU, the Program is limited to SVRCD and agricultural operators (defined below) in the Shasta River watershed (each one a "participant") that intends to conduct an activity that is described in Section III (Covered Activities) below and subject to Fish and Game Code section 1602. An activity is subject to Fish and Game Code section 1602 if it will result in or involve: 1) a substantial diversion or obstruction of the natural flow of a river, stream, or lake; 2) a substantial change to the bed, channel, or bank of a river, stream, or lake; 3) the use of any material from the bed, channel, or bank of a river, stream, or lake; and/or 4) the deposition or disposal of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

B. Procedure

Also as described in the MOU, to participate in the Program, each participant will need to complete a Program *Application* ~~Notification Package~~ ("*Application')* ~~attached hereto~~ *which is included in* ~~as~~ Exhibit 1*,* ~~("notification")~~ *Application Form and Instructions for Incidental Take Sub-permit and Streambed Alteration Agreement*. It is the sole responsibility of the participant to fill out a*n Application* ~~notification~~. However, SVRCD will assist participants in completing the *Application* ~~notification, on an as needed basis~~. If the activity is described in Section III below and is subject to Fish and Game Code section 1602 and the Department determines that the notification is complete, the Department will prepare a Streambed Alteration Agreement ("Agreement") that includes all of the general conditions in Section IV below, and some of the specific conditions in Section V below. The participant and the Department will comply with the procedure

described in paragraphs *B.* ~~C~~ through *J.* ~~G~~ in Section III in the MOU, which are incorporated herein by reference.

C. Term

The term of any Agreement issued under the Program may not exceed five (5) years. The Agreement may be extended, but only in accordance with Fish and Game Code section 1605(b) and 1605(d) through (f).

II. DEFINITIONS

For the purposes of this attachment and the Program, the following definitions apply:

"Active diversion" is defined as a *surface* water diversion that has been operated at least one out of the last five years.

"Agricultural operator" is defined in the Program as any natural person or any partnership, corporation, limited liability company, trust, or other type of association, or any public agency, as defined in CEQA Guidelines, § 15379, who diverts water from a stream by means of an active diversion in the Program Area for an agricultural purpose, or is involved in an agricultural operation on property in the Program Area through which or adjacent to which a stream flows. ~~"Active diversion" is defined as a surface water diversion that has been operated at least one out of the last five years.~~

"Bedload" is defined as sand, gravel, boulders, or cobbles transported by water in a stream over time; the part of the load that is not continuously in suspension or solution.

"Coffer dam" is defined as a temporary watertight dam or barrier used to divert stream flow or to otherwise exclude water from an in-channel work area during construction. Coffer dams are fitted with a conduit that diverts the stream flow to the natural stream channel downstream of the work site.

"Covered activity" is defined as any activity described in Section III (Covered Activities) below.

"Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors.

"Gravel" is defined to include gravel, rock, cobble, and any other aggregate material. It does not include fine sediment such as sand, silt, and clay.

"Push-up dam" is defined as a temporary diversion structure created by using *motorized equipment (for example* loaders, backhoes, or excavators) to move bedload

within the stream channel to form a flow barrier that seasonally diverts the flow of the stream.

"Other temporary diversion structure" is defined as any temporary structure (other than a push-up dam) used to seasonally divert water from a stream and is typically made with *materials such as* hay bales, hand-stacked rocks and cobble, tarps, wood, and/or a combination of these materials placed in the channel *with or* without the use of heavy equipment.

"Participant" is defined as SVRCD and any agricultural operator within the program area (defined below) who has chosen to participate in the Program because the activity the participant intends to complete is a covered activity that is subject to Fish and Game Code section 1602.

"Person" is defined as any natural person or any partnership, corporation, limited liability company, trust, or other type of association. (Fish & G. Code, § 67.)

"Program area" is defined as the Shasta River watershed, including the Shasta River and its tributaries, in Siskiyou County as shown in Exhibit 2 in this attachment.

"Project" is defined as any project described in Section III (Covered Activities) below.

"Qualified botanist" is defined as a person that has experience conducting floristic field surveys, knowledge of plant taxonomy and plant community ecology, familiarity with the plants of the area, including rare, threatened, and endangered species, familiarity with the appropriate state and federal statutes related to plants and plant collecting; and experience with analyzing impacts of development on native plant species and communities.

"Responsible party" is defined as any participant that enters into an Agreement under the Program.

"Special-status species" is defined as any species that meets the definition of "endangered, rare, or threatened species" in section 15380 in title 14 of the California Code of Regulations, also known as the "CEQA Guidelines."

"Stream" is defined to include any stream or river, whether perennial, intermittent, or ephemeral.

"Vehicle" is defined as any self-propelled device by which any person or property may be propelled, moved, or drawn upon (whether on or off-road), including, but not limited to, automobiles, trucks, backhoes, bulldozers, excavators, and tractors.

"Waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Wat. Code, § 13050(e).)

III. COVERED ACTIVITIES

The Program covers the nine (9) categories of activities described below (see A-I) that are subject to Fish and Game Code section 1602.

A. Water Diversions

Water diversions covered under this category include only the diversion of water through a conduit or opening from streams, channels, or sloughs within the Shasta River watershed by an agricultural operator for agricultural purposes in accordance with a valid water right, including one specified in the following court decree: Shasta River ~~#7035 (December 30,~~ 1932).

B. Water Diversion Structures

This category includes only the following activities relating to water diversion structures:

1. Ongoing management and/or maintenance of existing flashboard dams, including the placement of boards into concrete abutments across the wetted channel to build head to divert water, and the removal of the boards.

2. Ongoing maintenance, management, and repair of boulder weirs.

3. Installing, operating, maintaining, and removing push-up dams.

4. Installing, operating, maintaining, and removing other temporary diversion structures that are not push-up dams.

5. Installing or placing pumps and sumps and maintaining existing pumps and sumps within or adjacent to the active channel of a stream, which sometimes requires the use of large machinery within or adjacent to the active channel.

6. Installing headgates and measuring devices*, sized appropriately for the authorized diversion,* that meet the Department~~'s~~ *and/or the Department of Water Resources* standards on or in a diversion channel, which usually is done by excavating the site to proper elevation using large machinery, positioning the headgate and measuring device at the appropriate elevation, and installing rock or other “armoring” around the headgate to protect the structure. During installation, the stream bank could be affected by the construction of concrete forms and other necessary construction activities.

C. Fish Screens

This category includes only the installation, operation and maintenance of the types of fish screens described below, provided they meet the Department's and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service's ("NMFS") criteria for steelhead fry as they exist at the time the screen is installed. Installing a fish screen usually includes site excavation, forming and pouring a concrete foundation and walls, excavation and installation of a fish bypass pipe or channel, and installation of the fish screen structure. Heavy equipment is typically used for excavation of the screen site and bypass. If the fish screen is placed within or near flood prone areas, typically rock or other "armoring" is installed to protect the screen. The average size of the bed, channel, and/or bank area affected by the installation of a bypass pipe or channel ranges from 40 to 100 square feet. Types of fish screens include:

1. Self-cleaning screens, including flat plate self-cleaning screens, and other self-cleaning designs, including, but not limited to, rotary drum screens and cone screens, with a variety of cleaning mechanisms, consistent with Department and NMFS screening criteria.

2. Non-self cleaning screens, including tubular, box, and other screen designs consistent with Department and NMFS screening criteria.

D. Stream Access and Crossings

This category includes only the moving of livestock and vehicles across flowing streams or intermittent channels and/or the construction*, maintenance, and use* of stream crossings at designated locations where potential spawning gravel, incubating eggs, and fry are not present based on repeated site specific surveys. Factors considered when selecting a crossing location include the stream gradient, channel width, and the ability to maintain the existing channel slope. Generally, to construct a crossing, a boulder weir is placed on the downstream side of the crossing to maintain stream gradient and angular quarry rock is placed in the crossing location; the width of the crossing does not exceed 25 feet; the crossing spans the entire width of the channel; the crossing is "keyed" into the bank on each side; the approaches on both sides do not exceed a slope of 3:1; and bank armoring (usually using quarry rock) is added where needed.

E. Fencing

This category includes only the installation and maintenance of livestock exclusion fencing to protect riparian zones including the construction of fencing along livestock and vehicle crossings and livestock watering lanes.

F. Riparian Restoration and Revegetation

This category includes only the restoration, including revegetation of riparian areas, consistent with the methods specified in the most current edition of the Department's *Salmonid Stream Habitat Restoration Manual*, or as otherwise approved in writing by the Department. The most current edition of the manual is available at *http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp* ~~http://www.dfg.ca.gov/nafwb/index.html~~. Typically, riparian vegetation is planted within or adjacent to the active channel, and often in or near the wetted channel. Plantings include herbaceous perennials, emergent species, native grasses, trees, and shrubs. Planting methods vary by species, site, and size of material planted, ranging from hand planting to using a backhoe or excavator. For riparian trees, planting densities range from 130 to 300 plantings per acre, depending on the restoration goals (e.g., shading, sediment trapping, and bank stabilization), substrate, and hydrology. Trees and cuttings range in size from small rooted plugs to large diameter pole plantings. When installing pole plantings, heavy equipment may be used to excavate to or below water table depth. Maintenance activities include the occasional use of hand tools, portable pumps, pick-up trucks and/or water trucks in or near the bed, bank, or channel, for irrigation, debris removal, and replanting of restoration sites.

G. Instream Structures

This category includes only the installation, maintenance, and repair of the following instream structures consistent with the methods specified in the most current edition of the Department's *Salmonid Stream Habitat Restoration Manual*, available at http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp.

1. structures to protect the bed and banks of streams;

2. bioengineered habitat structures;

3. deflectors;

4. boulder clusters;

5. boulder weirs for instream habitat or to replace flashboard dams, push-up dams, and other temporary diversion structures;

6. large woody debris; and

7. spawning gravel to enhance spawning habitat.

H. Stream Gages

This category includes the installation and maintenance of stream gages in the active stream channel, usually using pipe two (2) inches or greater in diameter.

Typically, the pipe is secured to the bank by notching it into the bank and by then attaching it to the bedrock, a boulder, or a concrete buttress. Generally, heavy equipment is not needed to install and maintain stream gages.

I. Barrier Removal and Fish Passage Projects

The projects listed below are covered under this category, although the Department may add others to the list in the future. Each project will provide access to historic fish spawning and rearing habitat.

1. Araujo Dam Demobilization and Water Quality Improvement Project~~.~~

2. Shasta River Water Association's Dam Demobilization and Water Quality Improvement Project~~.~~

3. Grenada Irrigation District Fish Barrier Removal Project.

IV. GENERAL TERMS AND CONDITIONS APPLICABLE TO ALL COVERED ACTIVITIES

All of the general terms and conditions listed below (1-*20* ~~19~~) will be included in every Agreement the Department issues to a responsible party under the Program, regardless of the activity or activities the Agreement authorizes.

A. Administrative

1. The responsible party shall provide a copy of this Agreement to all persons who will be completing any part of the project or projects this Agreement authorizes, including, but not limited to, employees, contractors, and subcontractors. Copies of the Agreement and any amendments thereto shall be readily available at each work site at all times, and shall be presented to any employee of the Department or another governmental agency upon demand.

2. The responsible party shall notify the Department either by telephone or in writing (by e-mail, fax, or mail), at least five (5) days prior to initiation of any construction activities, unless this Agreement provides otherwise and at least five (5) days prior to completion of construction activities:

Department of Fish and Game
601 Locust Street
Redding, CA 96001
Attn: Streambed Alteration Program

E-mail: R1Streambed@dfg.ca.gov
Telephone: (530) 225-2367
Fax (530) 225-0324

3. This Agreement authorizes only the project or projects described herein. The responsible party shall notify the Department in accordance with Fish and Game Code section 1602 before beginning any project subject to that section that is not described herein. Failure to do so could result in enforcement action against the responsible party.

B. Amendments

4. The Department may amend this Agreement if it obtains new information that shows the project or projects this Agreement authorizes could substantially adversely affect fish and wildlife resources that were not considered at the time of, or by the original terms of the agreement, notwithstanding responsible party's compliance with the Agreement.

5. The responsible party may amend this Agreement at any time, but only if the Department agrees to the amendment in writing.

6. Any amendments to this Agreement shall be made in writing, signed by the responsible party and the Department, and attached to this Agreement.

7. The responsible party may request one extension of this Agreement for the period to expire when the Resource Conservation District Incidental Take Permit expires, provided that the request is made in writing prior to the expiration of its original term. The Department shall grant the extension unless it determines that the Agreement requires modification because the measures contained in the Agreement no longer protect the fish and wildlife resources that the activity may substantially adversely affect or there has been a substantial change in conditions. If the responsible party fails to request the extension prior to the Agreement's termination then the responsible party shall be required to submit a new ***Application*** ~~notification~~ and required information to the Department in order to complete a covered activity. Any activity conducted under an expired Agreement is a violation of Code section 1600 *et seq.*

C. Suspension and Revocation

8. The Department may suspend or revoke this Agreement at any

time if any of the following occurs:

a. The Department determines that the responsible party is not in compliance with its terms and conditions, provided that the Department provides the entity written notice that explains the basis for the suspension or revocation and provides the entity an opportunity to correct any deficiency before the Department suspends or revokes the Agreement.

b. The Department and the responsible party do not reach agreement with any amendment proposed pursuant to condition 4 above within 30 days of receiving notification by the Department.

c. Department personnel are not allowed access to property necessary to verify compliance with, or the effectiveness of, the terms and conditions in this Agreement.

9. Any suspension or revocation shall take effect immediately upon receipt of such notice by the responsible party, or in accordance with the instructions contained in the notice.

10. At the discretion of the Department, any action to suspend this Agreement may be limited in scope to address the specific problem or problems resulting in the suspension. Hence, the Department may limit the suspension to specified work or specified areas. The Department may lift any suspension when it has determined that responsible party has adequately addressed the problem or problems resulting in the suspension and that reinstatement of the Agreement will not cause harm to fish and wildlife resources.

11. Nothing in this Agreement precludes the Department from pursuing an enforcement action against the responsible party instead of or in addition to suspending or revoking the Agreement.

12. Nothing in this Agreement limits or otherwise affects the Department's enforcement authority.

D. Liability

13. The responsible party agrees that it is responsible for ensuring compliance with the terms of this Agreement, and that it is not excused from responsibility for a violation of the Agreement that occurs as a result of an act or omission by any person acting on behalf of the responsible party, including its agents, officers, employees, and contractors. In the event that any person acting on

behalf of the responsible party violates the Agreement, then the responsible party shall take the steps and incur the expense necessary to remedy the violation, if directed to do so by the Department or a court of competent jurisdiction. The responsible party's obligation to remedy the violation is intended for the benefit of the Department only, and shall be without prejudice to the responsible party's right to seek reimbursement, damages, or other relief from any person.

14. The responsible party agrees to defend, indemnify, and hold harmless the Department, its agents, officers, and employees from and against any Claim. For purposes of this agreement, "Claim" means any claims, damages, losses, judgments, liabilities, expenses, and other costs, including litigation costs and attorney's fees that arise out of, result from, or are in connection with the performance of the project or projects that this Agreement authorizes by the responsible party or its agents, officers, or employees, and that involve actual or alleged personal injury, death, or damage or destruction to tangible or intangible property, including the loss of use caused in whole or in part by any act or omission of the responsible party, its agents, employees, supplier, or anyone directly or indirectly employed by any of them, or anyone for whose acts or omissions any of them may be liable. Claim does not include: (1) any claims, damages, losses, judgments, liabilities, expenses, or other costs, including litigation costs and attorney's fees, arising out of and due solely to the negligence or willful misconduct of the Department, its agents, officers, and employees or (2) any claims, damages, losses, judgments, liabilities, expenses or other costs, including litigation costs and attorneys fees, arising out of actions or proceedings against the Department based on the Department's actual or alleged failure to comply with or otherwise properly administer its responsibilities under the California Fish and Game Code~~,~~ ***and*** the California Environmental Quality Act.

    If any action or proceeding is brought against the Department, its agents, officers, or employees by reason of any Claim, the responsible party shall, at the election of and upon written notice from the Department, defend such action or proceeding by counsel reasonably acceptable to the Department or reimburse the Department for all reasonable charges incurred for services of the California Attorney General.

    This indemnification shall not prohibit the responsible party from bringing any action against the Department, its agents, officers, and employees based on a right guaranteed by the state or federal Constitution.

15. This Agreement does not constitute the Department's endorsement of the project or projects this Agreement authorizes or the project design or an assurance by the Department that the project will be properly implemented.

16. All provisions of this Agreement shall remain in force throughout the term of the Agreement. After the Agreement expires, the responsible party shall remain responsible for implementing any mitigation or other measures specified in the Agreement to protect fish and wildlife resources, as required in Fish and Game Code section 1605(a)(2).

E. Access

17. By signing this Agreement, the responsible party shall provide non-enforcement Department personnel permission to access the project site described in this Agreement during normal business hours for the specific purpose of verifying compliance with, or the effectiveness of, the terms and conditions in this Agreement, provided the Department notifies the responsible party, whether verbally or in writing, at least 48 hours in advance of accessing the project site. If the project site is not located on the responsible party's property, the responsible party shall obtain permission from the landowner of the project site for Department personnel to access the site by providing the Department with an executed copy of the Right of Entry Agreement Form ~~attached hereto as Exhibit 3~~.

18. Sworn Peace officers may enter private lands if necessary for law enforcement purposes pursuant to Fish and Game Code 857.

F. Other Laws

19 ~~18~~. This Agreement does not relieve the responsible party from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or projects this Agreement authorizes, such as a permit issued by the U.S. Army Corps of Engineers ("ACOE") pursuant to section 404 of the Clean Water Act, authorization from the North Coast Regional Water Quality Control Board ("NCRWQCB") pursuant to section 401 of the Clean Water Act, a permit issued under the Porter-Cologne Water Quality Control Act, and authorization from NMFS or the U.S. Fish and Wildlife Service for the incidental take of a species listed as endangered or threatened under the Endangered Species Act .

20 ~~19~~. This Agreement does not relieve the responsible party from

complying with provisions in the Fish and Game Code other than section 1600 *et seq.*, including, but not limited to authorization of "take" of a State threatened or endangered species under the California Endangered Species Act (Fish & G. Code, § 2050 *et seq.*) and sections 5650, 5901, and 5937.

V. SPECIFIC TERMS AND CONDITIONS

In addition to the General Terms and Conditions in Section IV above, the Department will include some of the specific conditions listed below (*21-130* ~~20-110~~) in any Agreement it issues to a responsible party under the Program, depending on the type of project or projects the Agreement authorizes.

A. Water Diversions

21 ~~20~~. This Agreement does not authorize the maintenance, construction, or replacement of any temporary or permanent dam, or diversion structure or the filling of any channel, except as described herein.

22 ~~21~~. All water diversion facilities that the responsible party owns, operates, or controls shall be operated and maintained in accordance with current law and applicable water rights, including any specified in the following court decree: Shasta River #7035 (December 30, 1932).

23 ~~22~~. The responsible party shall divert and use water in accordance with a valid water right, including any limitations on when water may be diverted and used, the purpose for which it may be diverted and used, and the location(s) where water may be diverted and used.

24 ~~23~~. The responsible party shall verify that the quantity of water the responsible party is diverting or using is in accordance with a valid water right. Verification shall be performed by the watermaster for diversions that are controlled by a watermaster. In the absence of a watermaster, verification shall be performed by some other reliable means as determined by the Department. The quantities diverted at each diversion shall be reported to the Department on at least a monthly basis in the form of a database or in some other form approved by the Department,

25 ~~24~~. The responsible party shall install a locking headgate or valve *sized appropriately for the authorized diversion,* that can regulate flow, and a functional measuring device or flow meter *on any structure or facility used to divert water, whether by pumping, through a ditch, pipe, or flume, or by some other means ("diversion")* that meet Department criteria *to facilitate better control and monitoring of water delivery within three years of the effective date of the*

Agreement. ~~on or in all water diversion structures identified in this Agreement.~~ *The designs for headgates or valves and measuring devices in State Watermaster or Special Watermaster District Service areas shall be approved by DWR or said Special District, if applicable, in coordination with the Department. In areas where there is no watermaster service the designs shall be approved by the Department. All measuring devices and methods of water measurement shall be constructed and maintained to meet a ±5% measuring accuracy criteria.*

26 ~~25~~. Notwithstanding any right the responsible party has to divert and use water, the responsible party shall allow sufficient water to pass over, around, or through any dam the party owns or operates to keep in good condition any fish that may exist below the dam, as required by Fish and Game Code section 5937.

27 ~~26~~. All water diversion facilities shall be designed, constructed, and maintained so they do not prevent, impede, or tend to prevent or impede the passing of fish upstream or downstream, as required by Fish and Game Code section 5901. This includes, but is not limited to, maintaining or providing a supply of water at an appropriate depth and velocity to facilitate upstream and downstream migration of juvenile and adult salmonids.

28 ~~27~~. The responsible party shall provide volitional fish passage for both adult and juvenile salmonids, both upstream and downstream within 5 years of the effective date of this Agreement at all diversions subject to this Agreement. Where such passage is inadequate, the responsible party shall submit plans to improve passage to the Department for review and approval. If the Department determines that engineered drawings are necessary, the responsible party shall submit such drawings to the Department for its review and approval prior to implementing the project.

29. The responsible party shall notify the Department prior to closing a headgate or valve when fish stranding may occur in the diversion conduit.

30 ~~28~~. The responsible party shall install fish screens on any unscreened diversion that is subject to this Agreement. Fish screens and flow velocities shall meet Department and NMFS screening criteria to ensure the screens do not harm fish at any life stage by, for example, being drawn into an intake or being impinged against the screen. Where necessary, a bypass pipe or channel acceptable to the Department and NMFS shall be installed and maintained to allow screened fish to be returned safely to the stream. Fish

screens and bypass pipes or channels shall be in place and maintained in working order at all times water is being diverted.

31 ~~29~~. The responsible party shall regularly inspect all fish screens and bypass pipes or channels to verify that they are effectively protecting salmonids and other fish species in accordance with Department and NMFS fish screening criteria. When necessary, the responsible party shall clean and repair all fish screens and bypass pipes or channels. If a fish screen is removed for cleaning or repair, the responsible party shall ensure either that a replacement screen is installed immediately, or water is not flowing through the area where the screen is removed.

32 ~~30~~. When a bypass pipe is necessary, the bypass entrance(s) shall be installed and operated such that out-migrants (all life stages) can easily locate and enter them. All components of the bypass system, from entrance to outfall, shall be designed and operated to minimize the potential for debris blockage and must be sized to accommodate all life stages of fish and aquatic species which may be drawn into the diversion. Sufficient flow will be supplied from the diversion into a fish bypass to safely and efficiently return fish back to the stream. Bypass outfalls shall be designed and located so that there is sufficient depth and velocity to avoid injury and predation to all life stages of fish and aquatic life which may be directed into bypass pipe.

33 ~~31~~. All push-up and other temporary dams shall be constructed, operated, maintained, and removed using the Best Management Practices ("BMPs") provided with this Agreement.

34 ~~32~~. Push-up dam construction activities shall commence no earlier than May 1, unless otherwise authorized by the Department in this Agreement.

35 ~~33~~. The responsible party may commence push-up dam construction activities prior to May 1 if the Department has provided written verification to the responsible party that the construction activities will not substantially adversely affect an existing fish or wildlife resources, including the redds of anadromous fish species. The responsible party shall notify the Department at least seven (7) days in advance of any dam construction proposed to occur prior to May 1 so that it can survey the area and determine if the proposed activities will result in any adverse impacts to fish and wildlife resources.

36 ~~34~~. Push-up dam construction and removal shall be accomplished by

the operation of a bucket attached to a loader, excavator, or backhoe that is situated outside of the wetted portion of the stream channel. The responsible party shall, at a minimum, do the following:

a. check and maintain vehicles on a daily basis to prevent leaks of materials that could be deleterious to aquatic life, wildlife, or riparian habitat;

b. minimize disturbance to the stream bed and bank and keep turbidity of the water to a level that is not deleterious to aquatic life; and

c. allow the work area to "rest" to allow the water to clear after any activity that causes a plume of turbidity above background levels, resuming work only after the stream has reached the original background turbidity levels.

37 ~~35~~. Rock used for boulder weir construction shall be sufficient for the intended application, and sized to resist wash-out. The weir structure shall include a low point to maintain the thalweg of the stream. Weir elevations shall not create lifts in the stream channel that exceed twelve (12) inches. All engineered drawings shall be reviewed and approved by the Department Fisheries Engineering Team prior to the start of construction

38 ~~36~~. The responsible party shall contact the Department's fisheries program in Yreka at (530) 842-9322 at least five (5) days before installing any dam or instream structure that could result in stranding of fish, or before changing the operation of any existing dam or instream structure that could result in stranding of fish.

39 ~~37~~. Notwithstanding Fish and Game Code sections 6020–6028, where those statutes apply, the responsible party shall meet the requirements specified in conditions *30 and 31* ~~28 and 29~~ above.

40 ~~38~~. The following types of annual maintenance activities on push-up dams and other temporary diversion structures are authorized:

a. the removal of up to two (2) cubic yards of bedload, sediment, debris, and vegetation that directly obstructs or otherwise interferes with the proper function and operation of existing diversion structures and devices, including intake openings, gates, weirs, gages, and fish passage facilities; and

b. the annual installation and removal of a culvert pipe (if applicable)~~.~~;

41 ~~39~~. In completing any annual maintenance described in condition *40* ~~38~~ above, the responsible party shall comply with the following requirements:

a. vehicles shall only be used outside the wetted portion of the stream channel for annual maintenance;

b. bedload may only be removed to a depth that is needed to open water flows while maintaining the original thalweg for fish passage;

c. Where vehicles are used to remove bedload, sediment, debris, and vegetation that directly obstructs or otherwise interferes with the proper function and operation of existing diversion structures and devices, removal shall not extend more than twenty-five (25) linear feet in total.

42 ~~40~~. No later than 5 years after the effective date of this Agreement, the responsible party shall replace their push-up dams with ~~vortex~~ *boulder* weirs or some other Department approved diversion method unless the Department determines that an alternative method is not feasible.

43 ~~41~~. If rock/boulder weir(s) subject to this Agreement require the repair, realignment, or replacement of rock/boulder(s) to maintain proper operation the responsible party shall coordinate with the Department to determine the cause of the malfunction and shall submit plans for the proposed work to the Department for review and approval.

44 ~~42~~. The responsible party may annually remove up to two (2) cubic yards of sediment or other instream material from an existing pump intake area to maintain the efficient operation of the pump.

45 ~~43~~. All push-up and other temporary diversion structures, including plastic, shall be removed no later than five (5) days after the end of the period during which water may be lawfully diverted, unless otherwise authorized by the Department in this Agreement. If the dam is utilized for stockwatering purposes the dam shall be removed from the channel prior to winter storm flows.

46 ~~44~~. Within 2 years from the effective date of the Agreement, the responsible party shall have all other temporary diversion structures

authorized under this Agreement assessed to determine whether the structure complies with the Fish and Game Code (Code). If the other temporary structure does comply with the Code, then the responsible party may use such structure, provided that any specific BMPs added to the Agreement to minimize dam-related impacts shall be implemented. If the Department determines that the other temporary diversion structure does not comply with the Code, the responsible party shall replace the other temporary diversion structure with a vortex weir or some other diversion method approved by the Department within five years of the date of such determination.

B. Riparian Restoration and Revegetation

47 ~~45~~. Any habitat improvement projects shall be designed and implemented in accordance with the methods specified in the most current edition of the Department's *California Salmonid Stream Habitat Restoration Manual.* The most current edition of the manual is available at http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp.

48 ~~46~~ At least sixty (60) days before the responsible party intends to begin the restoration project, a restoration plan shall be submitted to the Department for review and approval. The plan shall be prepared by persons with expertise in northern California ecosystems and native plant revegetation techniques. The plan should include at a minimum the following information: (a) the location of the restoration site(s); (b) the plant species to be used at each site; (c) a schematic depicting the site(s); (d) the time of year the plantings will be made; (e) a description of the irrigation methodology or techniques that will be used to maintain the plantings consistent with condition 51 ~~100~~ below; (f) measures to control exotic vegetation on restoration site(s); (g) the success criteria to be employed; (h) a detailed monitoring program; and (i) contingency measures that will be implemented if the success criteria are not met.

49 ~~47~~. All restoration plantings shall have a success criterion of a minimum 80% survival rate after five (5) years. A final monitoring report shall be submitted to the Department that provides the data used to determine whether or not the survival criterion has been met.

50 ~~48~~. Plantings shall be installed between November 1, when there has been sufficient rainfall and April 1 unless otherwise authorized by the Department in this Agreement.

51 ~~49~~. If the irrigation system will use water from a stream, the system

shall meet NMFS's *Water Drafting Specifications* (August 2001). Restoration projects that are implemented within fish bearing streams also shall meet current Department and NMFS fish screening criteria for anadromous fish. When the plantings are sufficiently established, the irrigation system shall be removed.

52 ~~50~~. Large woody debris shall be left within the riparian zone to provide a source for future recruitment of wood into the stream.

53 ~~51~~. A final monitoring report shall be submitted to the Department for review and approval. The final report shall provide the data that shows that the success criteria have been met.

54 ~~52~~. The responsible party shall not be released from the maintenance and monitoring obligations described in this section until such time as the responsible party has requested and received written concurrence from the Department that the success criteria have been met.

C. Instream Structures

55 ~~53~~. Any instream structure shall be designed and implemented in accordance with the methods specified in the most current edition of the Department's *California Salmonid Stream Habitat Restoration Manual*. The most current edition of the manual is available at*:* http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp.

56 ~~54~~. Instream work shall occur only when salmonids are least likely to be present or affected by the project, July 1 through October *15* ~~31~~.

57. If weather conditions permit and the stream is dry or at its lowest flow, instream construction activities and equipment operations may continue after October 15, provided a written request is made to the Department at least five days before the proposed work period variance. Written approval from the Department for the proposed work period variance must be received by the responsible party prior to the start or continuation of work after October 15.

58. If work is performed after October 15 as provided above, the responsible party will do all of the following:

a. Monitor the 72 hour forecast from the National Weather Service. When there is a forecast of more than 30 percent chance of rain, or at the onset of any precipitation, the work shall cease; and

b. Stage erosion and sediment control materials at the work site. When there is a forecast of more than 30 percent chance of rain, or at the onset of any precipitation, implement erosion and sediment control measures.

59 ~~55~~. Significant fish habitat, such as pools, spawning sites, large woody debris structures, and shading vegetation, shall not be disturbed.

60 ~~56~~. The responsible party may repair damage to any instream structure authorized by this Agreement, provided the responsible party notifies the Department prior to commencing any repair activities.

61 ~~57~~. If the stream channel has been altered during the operation of a project or projects this Agreement authorizes, its low flow channel shall be restored without creating possible future bank erosion problems, a flat, wide channel, or a sluice-like area. The gradient of the streambed shall be returned to its pre-project grade, unless the gradient modification is intended as part of a restoration project, in which case the Department approval of the design must be obtained prior to project initiation.

62. New and replacement instream structures including boulder weirs, angular rock for bank protection, bioengineered habitat structures, large woody debris, fish ladders, and other channel restoration or protection measures shall meet the following criteria:

a. Sediment deposition upstream and erosion/scour and subsequent deposition downstream of these instream structures, during bankfull flow conditions, shall be avoided to the extent feasible, unless the intent of the particular structure is to facilitate such processes (e.g., gravel trapping);

b. Instream structures shall not alter channel hydraulics such that the project reach can no longer move the imposed sediment load (e.g., upstream supply) with the available range of sediment-transporting flows; this criterion shall focus on the transport of bed-material load;

c. Instream structures shall not lead to a permanent increase in the downstream transport of sediments that is outside the historical range of sediment flux; and

d. Instream structures shall be designed to withstand a given range of flows (e.g., some structures are permanent, such as

fish ladders, while other structures are "semi-permanent," such as placement of LWD). The range of flows that a particular structure will be designed to handle shall be quantified and rationalized.

63. All engineered structures such as fish ladders and boulder weirs designed for grade control, or for fish passage in proximity of a water diversion shall be designed by a qualified hydrologist, geologist, engineer, or other similarly qualified individual using methods and levels of rigor that have been established in the engineering and scientific community. If it is determined by the Department that the proposed structure would fail to meet the criteria identified in condition 62 or another performance standard identified by the Department, then the structure shall not be installed within that particular reach.

64 ~~58~~. Chemically-treated timbers that could harm aquatic life shall not be used for grade or channel stabilization structures, bulkheads, or other instream structures.

65 ~~59~~. Temporary instream structures that are not designed to withstand high flows and are constructed from materials that could be deleterious to aquatic life shall be removed from the project site prior to inundation by high flows.

66 ~~60~~. The responsible party shall ensure that all livestock and vehicle crossing sites and livestock watering lanes, whether temporary or permanent, meet the following criteria:

a. Crossing sites and livestock watering lanes shall not be located in the tails of pools, known spawning habitat, or identified, suitable spawning habitat;

b. All approaches shall be sloped with clean angular base rock and no steeper than 3:1;

c. Angular rock shall be applied to the crossing only between July 1 and October *15* ~~31~~. The diameter of the angular rock shall be defined in the *Application* ~~notification~~ and be specific for the site conditions. Designs shall be submitted to the Department for approval prior to project construction to eliminate the risk that the rock will become a grade control that would adversely affect channel conditions;

d. In locations where the stream crossings occur on intermittent streams, the angular rock shall be added only when the

stream channel is dry;

e. No native soil may be pushed into the watercourse high flow channel. If grading of the road surface is required, all material shall be graded away from the watercourse;

f. Constructed or re-constructed crossing or watering lanes shall have approaches treated to minimize sediment production and prevent tracking of soil into the crossing;

g. Approaches shall be armored with durable compacted rock from the edge of the watercourse for a minimum of fifty (50) feet, or to the nearest water bar or point where road drainage does not drain toward the crossing; and

h. Livestock and vehicles shall not cross flowing streams between October *15* ~~31~~ and July 1 except on designated lanes where measures to prevent spawning have been taken, or where a Department fisheries biologist or Department approved spawner surveyor verifies that redds are not present and/or will not be damaged. Survey findings shall be submitted to the Streambed Alteration Program for review and approval.

67 ~~61~~. Spawning gravel used for restoration projects shall be clean, pre-washed, uncrushed natural river rock. Gravel must be washed at least once and have cleanliness value of 85 or higher (California Test No. 227). Particle size shall be graded with at least 98% passing a 3-inch screen, 60-80% passing a two (2) inch screen, and 0-5% passing a half (½) inch screen (% by dry wt) or approved by the Department. Gravel must be completely free of oils or any other petroleum based material, clay, debris, and other types of organic matter. Gravel may be stockpiled near the injection site, but mixing with any earthen material is prohibited.

D. Habitat and Species Protection

68 ~~62~~. Except as specified in this Agreement, the disturbance, trimming, or removal of vegetation from the streambed or streambanks is prohibited without prior written approval from the Department.

69 ~~63~~. All work areas described in this Agreement shall be flagged or fenced with temporary fencing to prohibit unauthorized and unnecessary disturbance of vegetation.

70 ~~64~~. Any herbicide shall be handled and applied by a licensed applicator in accordance with all applicable, federal, state, local laws, regulations, procedures, and guidelines.

71. The permissible work window for individual work sites shall be further constrained as necessary to avoid the nesting or breeding seasons of special-status birds and terrestrial animals for which the Department determines impacts could be significant. At work sites with the potential for significant impacts to nesting special-status birds work shall be conditioned to start after July 31 when the young have typically fledged, potential impacts will be avoided, and no surveys will be required.

72. Where work after July 31 will still have the potential to significantly impact nesting special-status birds, work shall not begin until the potential for impacts no longer exists. The Department may advance the work window at individual work sites if:

a. There is no suitable habitat present. "Suitable habitat" varies between species and shall be determined by a qualified biologist in coordination with the Department;

b. Surveys completed by a qualified biologist determine nesting birds will not be affected, either because the animals are not present or the nests are safely distant or otherwise screened from the activity;

c. To prevent impacts to bank swallows (Riparia riparia) nesting areas, no fencing or planting action shall be allowed to change the cross-sectional profile of the stream (e.g., lay a cutbank back to an angle of repose for riparian planting) until after a survey is conducted by a qualified biologist that establishes that bank swallows are not using the area to be affected. No area supporting bank swallows shall be manipulated in any way;

d. To avoid potential impacts to sandhill crane (Grus canadensis) nesting and rearing activities, surveys for active nests shall be performed by a qualified biologist prior to the start of a project when a known sandhill crane nesting territory is located within 0.5 mile of the project site and the activity will occur during the typical nesting and rearing season (March 1 to August 15). If active nests are found, a no-disturbance buffer radius of up to 0.5 mile shall be required around the nest. The actual size of the buffer may

be modified based on an evaluation by a qualified biologist of the sensitivity of the birds to the level of project disturbance and approved by the Department. The no-disturbance buffer may be lifted prior to August 15, if it is determined safe to do so by a qualified biologist and approved by the Department in writing;

e. To avoid potential impacts to Swainson's hawk (Buteo swainsoni) nesting and rearing activities, surveys for active nests within 0.5 miles of a project site shall be performed by a qualified biologist when a project will occur in known Swainson's hawk nesting territory during the typical nesting and rearing season (March 15 to August 15). If one or more active Swainson's hawk nests are present within the 0.5 mile survey area, the active nest(s) shall be monitored by a qualified biologist prior to and during project activities. If, in the professional opinion of the qualified biologist, the nesting pair's behavior suggests agitation or disturbance by project activities, all activities in the area shall immediately stop pending consultation the Department. Following a review of the breeding pair's behavior, both as reported by the biologist and independently verified by the Department, the Department will determine whether the project may continue during the nesting season and, if so, the conditions under which they may continue. The no-disturbance buffer may be lifted prior to August 15, if it is determined safe to do so by a qualified biologist and approved by the Department in writing. If, during the non-breeding season, a Swainson's hawk nest is present in the project area and has been used within the past breeding season, the nest site shall not be disturbed pending consultation with the Department; and

f. To avoid potential impacts to willow flycatchers (Empidonax traillii) during the typical nesting and rearing season (May 15 to August 30), no project related activities shall occur within 300 feet of potential nesting habitat. A project may be performed within the 300-foot buffer zone if surveys for active nests are performed prior by a qualified biologist prior to the start of the project and no active nests are present.

E. Use of Vehicles in Wetted Portions of Streams

73 ~~65~~. Vehicles shall not be operated within the wetted portion of the stream channel unless specifically authorized in this Agreement.

74 ~~66~~. Vehicle operation in the wetted portion of a stream is authorized

when salmonids are least likely to be present (July 1 through October *15* ~~31~~).

75 ~~67~~. When operating vehicles in wetted portions of the stream channel or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, the responsible party shall, at a minimum, do the following:

a. check and maintain vehicles on a daily basis to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life, wildlife, or riparian habitat;

b. minimize the number of passes through the stream to avoid increasing the turbidity of the water to a level that is deleterious to aquatic life; and

c. allow the work area to "rest" after each individual pass of the vehicle that causes a plume of turbidity above background levels, resuming work only after the stream has reached the original background turbidity levels.

F. Pollution Control

76 ~~68~~. Vehicles driven and/or operated adjacent to the stream channel shall be checked and maintained on a daily basis to prevent leaks of materials that could be deleterious to aquatic life, wildlife, or riparian habitat.

77 ~~69~~. For all activities performed in or near a stream, where there is a potential for an accidental spill of deleterious substances, absorbent materials designated for spill containment and clean-up shall be present and available for use at the project site. Clean-up of all spills shall begin immediately. The responsible party shall notify the State Office of Emergency Services at 1-800-852-7550 and the Department immediately after any spill occurs, and shall consult with the Department regarding clean-up procedures.

78. The responsible party shall prepare a standard Hazardous Substance Discovery Plan that shall include provisions that would be implemented if any subsurface hazardous materials are encountered during construction. Provisions outlined in the Plan shall be followed by the responsible party and shall include immediately stopping work in a contaminated area and contacting appropriate resource agencies, including the Departments designated monitor, upon discovery of subsurface hazardous materials. The plan shall include the phone numbers of county and

state agencies and primary, secondary, and final cleanup procedures. The Hazardous Substance Discovery Plan shall be submitted to the Department for review and approval prior to the commencement of Program construction activities.

79 ~~70~~. Where they exist, the work site shall be accessed using roads and access ramps.

80 ~~71~~. The use or storage of petroleum-powered equipment shall be accomplished in a manner to prevent the potential release of petroleum materials into waters of the state.

81 ~~72~~. Stationary equipment such as motors, pumps, generators, and welders that contain deleterious materials, located within or adjacent to a stream shall be positioned over drip pans.

82 ~~73~~. All refueling of machinery and handling or storage hazardous materials shall be done no less than one hundred and fifty (150) feet away from the edge of any river, stream or lake. All unused or left over materials shall be transported offsite and properly disposed of.

83 ~~74~~. Staging and storage areas for machinery, equipment, and materials shall be located a minimum of thirty-five (35) feet beyond the banks of any stream or outside of the normal high-water mark whichever is further.

84 ~~75~~. No debris, soil, silt, sand, bark, slash, spoils, sawdust, rubbish, cement, or concrete or washings thereof; asphalt, paint, or other coating material; oil or petroleum products; or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state. When operations are completed, any excess materials or debris shall be removed from the work area and disposed of in a lawful manner.

G. Erosion and Sediment Control

85 ~~76~~. The responsible party shall prevent the discharge of sediment, and/or muddy, turbid, or silt-laden waters, resulting from the project, into the stream channel. Where necessary to prevent such discharge, the responsible party shall properly install and maintain sediment barriers (including, but not limited to, filter fabric fencing, fiber mats, weed free straw, or fiber wattles or rolls) capable of preventing downstream sedimentation/turbidity. Such devices shall be cleaned of all trapped sediment as necessary to maintain proper

function. Recovered sediment shall be disposed of where it shall not return to any river, stream, or lake. Such devices shall be completely removed from the channel, along with all temporary fills, upon completion of operations.

86 ~~77~~. Silt catchment basins shall be designed, located, and constructed to preclude any spills into a stream or lake during periods of high water levels.

87 ~~78~~. Silt catchment basins located within the stream shall be constructed of materials that are free of mud and silt. Upon completion of the project, all silt catchment basin materials along with the trapped sediments shall be removed from the stream in such a manner that sediment is not discharged into the stream.

88 ~~79~~. If the Department determines that turbidity/siltation levels resulting from a project or projects this Agreement authorizes constitute a threat to aquatic life, all activities associated with the turbidity/siltation shall cease until effective Department-approved sediment control devices are installed and/or abatement procedures are implemented.

89 ~~80~~. Downstream turbidity levels shall not exceed the standards identified in the NCRWQCB's "Water Quality Control Plan for the North Coast Region."

90 ~~81~~. Soils exposed by project operations shall be mulched to prevent sediment runoff and transport. Mulches shall be applied so that not less than 90% of the disturbed areas are covered. All mulches, except hydro-mulch, shall be applied in a layer not less than two (2) inches deep. Where appropriate, all mulches shall be kneaded or tracked-in with track marks parallel to the contour, and tackified as necessary to prevent excessive movement. All exposed soils and fills, including the downstream face of the road prism adjacent to the outlet of culverts, shall be reseeded with a mix of native grasses common to the area, free from seeds of noxious or invasive weed species, and applied at a rate which will ensure establishment.

91 ~~82~~. If necessary to prevent mobilization of loose soils, fiber mats shall be laid over loose soils prior to mulching and tracking.

92 ~~83~~. Soils adjacent to the stream channel that are exposed by project operations shall be adequately stabilized before rainfall is expected during construction, and immediately upon completion of construction, to prevent the mobilization of such sediment into the stream channels or adjacent wetlands. The responsible party shall

monitor National Weather Service forecasts to determine the chance of precipitation.

93 ~~84~~. All exposed soil or areas stripped of vegetation shall be restored with native vegetation local to the area.

H. Bank Stabilization

94 ~~85~~. For bank stabilization work, slopes shall not be steeper than 2:1 unless they are armored and the Department has approved the plans. Armoring shall consist of rock and/or native vegetation. Bank stabilization material shall extend up to the normal high-water mark.

95 ~~86~~. Rock slope protection ("RSP") and energy dissipater materials shall consist of clean rock appropriate for its intended application and sized and properly installed to resist washout. RSP slopes shall be supported with properly sized boulders "keyed" into a footing trench with a depth sufficient to properly seat the footing course boulders and prevent instability.

96 ~~87~~. No rock, rip-rap, or other RSP shall be placed in areas where native vegetation can become established or where bio-engineered bank stabilization can be accomplished, unless approved in advance by the Department.

97 ~~88~~. Native riparian plant species shall be used to stabilize banks.

I. Dewatering

98 ~~89~~. Any equipment work within the stream channel shall be performed in isolation from the flowing stream.

99 ~~90~~. Dewatering activities shall be implemented in accordance, and otherwise consistent with the most current edition of The Department's *California Salmonid Stream Habitat Restoration Manual*. The most current edition of the manual is available at http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp.

100 ~~91~~.A coffer dam or other flow barrier, approved by the Department, shall be constructed to temporarily divert the flow around the project site.

101 ~~92~~.Measures shall be taken immediately downstream of the work site to capture suspended sediment. Silt catchment fences shall be installed or a filter berm of clean river bedload shall be constructed. Silt fences and other non-native materials shall be removed from

the stream following completion of the project. Berms constructed out of native bedload may be left in place after breaching, provided they do not impede the stream flow or fish passage.

102 ~~93~~.The location of diversion points shall be approved by the Department prior to initiating the project.

103 ~~94~~.Construction of the flow barrier and/or the new channel shall begin in the downstream area and continue in an upstream direction, and the flow shall be diverted only when construction of the diversion is completed. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Diversion berms shall be constructed of onsite bedload of low silt content, inflatable dams, sand bags, or other materials approved by the Department. Barriers shall not be made of earth or other substances subject to erosion unless first enclosed by sheet piling, rock rip-rap, or other protective material. The enclosure and the supportive material shall be removed from the work site when the work is completed, and removal shall proceed from downstream in an upstream direction. Clean bedload may be left in the stream, but the barrier must be breached to return the stream flow to its natural channel and to provide fish passage.

104 ~~95~~.The intake pipe used to divert flow around the work site, either by pump or gravity flow, shall be fitted with a fish screen meeting Department and NMFS criteria to prevent entrainment or impingement of small fish.

105 ~~96~~.Any turbid water pumped from the work site shall be disposed of in an upland location where it will not drain directly into any stream channel.

106 ~~97~~.Dewatering shall be done in a manner that prevents the discharge of material that could be deleterious to fish, plant life, or bird life into any river, stream, or lake and maintains adequate flows to downstream reaches during all times natural flow would have supported aquatic life. Such flows shall be of sufficient quality and quantity to support fish and other aquatic life above and below the diversion. Normal flows shall be restored to the affected stream immediately upon completion of work at that location.

107 ~~98~~.Dewatering activities shall be conducted in such a manner so as to minimize downstream sedimentation and turbidity, and to minimize channel disturbance. The responsible party shall incorporate frequent equipment resting periods of no less than thirty (30) minutes to allow flows to clear.

108 ~~99~~.The following measures shall be taken to minimize harm and mortality to salmonids resulting from fish relocation and dewatering activities:

a. Fish relocation and dewatering activities shall only occur between July 1 and October *15* ~~31~~ of each year.

b. The responsible party shall minimize the amount of wetted stream channel that is dewatered at each individual project site to the fullest extent possible.

c. All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS *Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act* (June 2000) and the Department shall be contacted prior to any electrofishing.

J. Ground-Disturbing Activities

109 ~~100~~.Prior to ground-disturbing activities described in this Agreement, work sites shall be surveyed for special-status plant species by a qualified botanist. Special-status plant surveys shall be conducted following the *Guidelines for Assessing Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities* (Department 2000). The guidelines may be obtained from the Department or at: www.dfg.ca.gov/bdb/pdfs/guideplt.pdf. The survey report, including the methodology and survey findings, shall be provided to the Department for review and approval prior to any ground-disturbing activities.

110 ~~101~~.If any special-status plant species are identified at a work site the Department shall identify one or more of the following protective measures, but not limited to these measures, to be implemented at the project site before work may proceed:

a. fencing to prevent accidental disturbance of special-status plants during construction;

b. on-site monitoring by a qualified botanist during construction to assure that special-status plants are not disturbed; and/or

c. redesign of proposed work to avoid disturbance of special-status plant species.

111 ~~102~~.Prior to any ground-disturbing activities described in this Agreement, the responsible party shall contract or otherwise obtain the services of at least one qualified archaeologist and paleontologist ~~to~~. *The archaeologist/paleontologist shall:*

a. *Contact the Native American Heritage Commission for a Sacred Lands File check and a list of appropriate Native American contacts for consultation concerning the project site and, if necessary, to assist with the development of mitigation measures;*

b. Determine whether the area has had an adequate archaeological survey by a professional archaeologist and whether any historic or prehistoric sites have been recorded within a ¼-mile radius of the project area. This records review may be conducted at NE/CHRIS on a case-by-case basis for each project. Alternatively, a professional archaeologist will be contracted to conduct a watershed-wide records search at NE/CHRIS and prepare a map showing the previous surveys and recorded sites. An update of this information would then be prepared at least every two years. This map, which will show the locations of archaeological sites, would be considered confidential and made available only to individuals on an as-needed basis; and

c. *C*~~c~~omplete cultural and paleontological resource surveys to identify any previously recorded and unknown historical resources or unique archeological resources (i.e., cultural resources as described in CEQA (Pub. Resources Code, § 21083.2) and the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15064.5)) or unique paleontological resources, using standard protocols. The survey report, including the methodology and survey findings, shall be provided to the Department for review and approval prior to any ground disturbing activities.

112 ~~103~~.If potentially significant historical resources, unique archeological resources and/or paleontological resource sites are identified at the work site described in this Agreement, the Department, in consultation with the consulting archeologist or paleontologist, shall identify one or more of the following protective measures, but not limited to these measures, to be implemented at the project site before work may proceed:

a. redesign of proposed work to avoid disturbance of cultural or paleontological resources;

b. fencing to prevent accidental disturbance of cultural or paleontological resources during construction; and/or

c. on-site monitoring by a cultural and/or paleontological resource professional during construction to assure that cultural and/or paleontological resources are not disturbed.

113. If none of the protective measures described in MLTC Condition 112 can be implemented, then an archaeological data recovery program (ADRP) shall be implemented, unless the professional archaeologist determines that the archaeological resource is of greater interpretive use than research significance and that interpretive use of the resource is feasible. The project archaeologist and the Department shall meet and consult to determine the scope of the ADRP, and the project archaeologist shall prepare a research design for the project which shall be submitted to the Department for review and approval. This document shall identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The document will specifically identify the scientific/historical research questions being asked, the archaeological resources' expected data classes, and how the expected data classes would address the applicable research questions. Following approval of the plan by the Department, the ADRP shall be implemented and a report prepared.

Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical. All significant cultural materials recovered shall be, as necessary, subject to scientific analysis, professional museum curation, and a report shall be prepared by a qualified archaeologist according to current professional standards. If the recovered artifacts are from a prehistoric site, the local Native American groups will be consulted relative to the disposition of these materials.

114. If built historical resources (e.g., structures, buildings, or similar) that qualify for listing in the California Register of Historic Resources (CEQA Guidelines, § 15064.5)) are identified through the implementation of measure MLTC Condition 111c and cannot be avoided through implementation of measure MLTC Condition 112, the responsible party will comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties

(Standards) which would, in accordance with CEQA Guidelines, § 15064.5(b)(3), reduce potential impacts associated with the alteration or modification of a historical resource (including historic districts and individually eligible resources) to a less-than-significant level.

115. If both avoidance and compliance with the Standards are infeasible, the project in question shall be changed or not pursued, such that the historical resource is not destroyed or altered. Activities that would result in such disturbance are not authorized under the Program because responsible party would be unable to mitigate the impact to a point where clearly no significant effect on the environment would occur.

116 ~~104~~.The responsible party shall report any previously unknown historical resources or unique archeological resources, and paleontological remains discovered at the site to the Department and other appropriate agency(s).

117 ~~105~~.In the event of an inadvertent discovery of cultural resources such as lithic debitage, ground stone, historic debris, building foundations, or bone are discovered during a ground disturbing activity, work shall cease within twenty (20) meters (sixty-six (66) feet) of the discovery, as the CEQA Guidelines require (Cal. Code Regs., tit. 14, § 15064.5, subd. (f)). Work near the archaeological finds shall not resume until a professional archaeologist who meets the Secretary of the Interior's Standards and Guidelines (36 CFR Part 61) has evaluated the materials and offered recommendations for further action.

118. In the event of an unanticipated paleontological discovery during ground-disturbing activities, the following measure shall be implemented:

a. Temporarily halt or divert work within 20 meters (66 feet) of the find until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards which may be found at: http://www.vertpaleo.org/society/ethics.cfm);

b. Document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines, § 15064.5;

c. Notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find; and

d. If the Department determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the Department for review and approval.

119 ~~106~~.In the event of an inadvertent discovery of human remains during project construction, work shall cease within twenty (20) meters (sixty-six (66)) of the discovery location, and any nearby area reasonably suspected to overlie adjacent human remains (see Pub. Resources Code, § 7050.5). The county coroner shall be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, the responsible party shall comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission ("NAHC") (Pub. Resources Code, § 5097). The coroner will contact the NAHC.

120 ~~107~~.The responsible party shall ensure that the immediate vicinity where Native American human remains are located, according to generally accepted cultural or archeological standards or practices, is not damaged or disturbed by further ground disturbing activity until the responsible party has discussed and conferred with the most likely descendents regarding their wishes, taking into account the possibility of multiple human remains, as provided in Public Resources Code section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant fails to make a recommendation.

121. Water tanks and/or fire extinguishers shall be present at project construction sites and shall be available for fire protection during the fire season (approximately late spring to early fall). All construction vehicles shall have fire suppression equipment and construction personnel shall be required to park vehicles away from dry vegetation. The responsible party shall contact and coordinate with the California Department of Forestry and Fire Protection (CALFIRE) to determine the minimum amounts of fire equipment to be carried on the vehicles and appropriate locations for the water tanks/fire extinguishers. The responsible party shall submit verification of its consultation with CALFIRE and the Department.

122 ~~108~~.The responsible party shall instruct all persons who will be completing any ground disturbing activity at a worksite to comply with the conditions set forth in this Agreement and shall inspect each work site before, during, and after completion of any ground-disturbing activity at the work site.

123 ~~109~~.All temporary construction roads shall be decommissioned and recontoured, unless the Department specifies otherwise in this Agreement. In addition, road surfaces shall be de-compacted and revegetated.

124. The responsible party is encouraged to fuel all diesel equipment, including pumps, vehicles, and construction equipment, with a minimum 20 percent biodiesel (maximum 80 percent conventional diesel) blend (B-20).

125. The responsible party is encouraged to use renewable energy sources such as photovoltaic or wind power to power pumps.

K. Monitoring

126 ~~110~~.The responsible party shall conduct project monitoring prior to and after implementation to track the status of Agreement conditions and to verify that the measures required by the Agreement are being implemented as specified.

127 ~~111~~.The responsible party shall complete all checklists and data sheets provided by the Department with this Agreement.

128 ~~112~~.The responsible party shall conduct photo monitoring pursuant to the methodology and format provided by the Department with this Agreement and incorporated into this Agreement by reference.

129 ~~113~~.The responsible party shall provide to the Department a draft Annual Monitoring Report by January 30 each year that covers the period of time from January 1 to December 31 of the previous year for each year the Agreement is effective. The responsible party shall submit a final report to the Department within thirty (30) days of approval of the draft annual report.

130 ~~114~~.The annual monitoring report shall include at the minimum:

a. agreement number;

b. type of covered activity the project addresses;

c. project name (if appropriate);

d. purpose and summary of covered projects completed;

e. project implementation start and end-dates;

f. whether the project is on-going or completed;

g. detailed description of the results of monitoring completed;

h. summary of problems encountered and proposed modifications in project implementation to correct them; and

i. all monitoring data, copies of data sheets, checklists, digital images, photographs, and other monitoring information in digital and hardcopy format.

Exhibit 1

DEPARTMENT OF FISH AND GAME
SHASTA AND SCOTT RIVER WATERSHED-WIDE PERMITTING PROGRAM

Application Forms and Instructions for Incidental Take Sub-permit and Streambed Alteration Agreement

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CONTENTS

These instructions apply only to the Application Form for the Shasta and Scott River Watershed-wide Permitting Programs

PART I: FISH AND GAME CODE

STREAMBED ALTERATION AGREEMENT

Fish and Game Code (FGC) section 1602 requires any person, state or local governmental agency, or public utility to notify the Department of Fish and Game (Department) before beginning any activity that will do one or more of the following:

1. Substantially obstruct or divert the natural flow of a river, stream, or lake.
2. Substantially change the bed, channel, or bank of a river, stream, or lake.
3. Use the material from the bed, channel, or bank of a river, stream, or lake.
4. Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

FGC section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state.

INCIDENTAL TAKE PERMIT

The California Endangered Species Act (CESA) (FGC section 2050 *et seq.*) prohibits "take"[1] of any candidate species or species listed as threatened or endangered under CESA unless the take is authorized by the Department. The Department may authorize take through the issuance of an incidental take permit (ITP) pursuant to FGC section 2081(b) and (c) in CESA. The Department may only issue an ITP if certain criteria are met. For example, the take must be incidental to an otherwise lawful activity and minimized and fully mitigated. To obtain an ITP, an application must be submitted to the Department.

PART II: APPLICATION FORMS AND INSTRUCTIONS

APPLICATION PACKAGE

These application forms and instructions are specifically for the issuance of a Streambed Alteration Agreement (Agreement) and Incidental Take Sub-permit (Sub-permit) that authorizes activities covered under the Shasta and Scott River Watershed-wide Permitting Programs (Programs). These activities, referred to as Covered Activities under the Programs, are listed below and described in greater detail in Part VII:

1. The diversion of water from streams, channels, or sloughs for irrigation or watering of stock by any means, including instream pumps.
2. The installation, operation, maintenance, and removal of devices and structures used to divert water.
3. The installation, operation, and maintenance of fish screens.

[1]Take is defined in FGC section 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

4. The movement of livestock and vehicles across flowing streams and the construction and use of livestock and vehicle crossings and livestock watering lanes.
5. The installation and maintenance of riparian exclusion fencing.
6. Riparian restoration or revegetation activities.
7. The installation, maintenance, and repair of instream habitat improvement structures.
8. The installation and maintenance of stream gages.
9. Barrier removal and fish passage projects.
10. The grazing of livestock within the bed, bank, or channel of a stream under specified conditions.
11. Water management, water monitoring, and watermastering activities.
12. Activities associated with the implementation of avoidance, minimization, and mitigation measures required by the Permit or any sub-permit.
13. Activities associated with monitoring efforts required by this Permit or any sub-permit.
14. Activities associated with conducting research on coho salmon.

Activities that are not specifically covered under the Program will require authorization from the Department through the regular permitting processes for an Agreement and ITP.

APPLICATION PROCESS

To apply for an Agreement and a Sub-permit under one of the Programs for any of the Covered Activities listed above, you must complete the following steps:

Step 1: Complete the application form (SSWWPP 2023). The Siskiyou Resource Conservation District or Shasta Valley Resource Conservation District will provide assistance in completing the application form and any required enclosures and attachments.

Step 2: Submit the completed application form, with all required enclosures and attachments to the Department's Northern Region office:

Northern Region
Shasta-Scott Permitting Programs
601 Locust Street
Redding, CA 96001

Note: If you have any questions about the application process, required enclosures or attachments, or the status of your application, please contact Staff Environmental Scientist, Mike Harris, at (530) 225-2306 or mrharris @dfg.ca.gov.

PART III: INSTRUCTIONS FOR COMPLETING THE APPLICATION FORM

Instructions to complete the application form are outlined below. "Activity" means a Covered Activity under the Programs.

1. APPLICANT PROPOSING ACTIVITY

Provide the name, mailing address, telephone and fax numbers, and email address of the person or business proposing the Activity.

If the applicant is a business or local governmental agency, provide the name of the applicant's authorized representative above the name of the applicant.

2. CONTACT PERSON

Provide the name, mailing address, telephone and fax numbers, and email address of the person the Department should contact regarding the Activity, *if* different from the applicant or applicant's representative.

3. PROPERTY OWNER

Provide the name, mailing address, telephone and fax numbers, and email address of the owner of the property where the Activity will take place, *if* different from the applicant. If the Activity will be taking place on property owned by someone other than the applicant, the Right of Entry Agreement enclosed with this Application Form as Attachment A must be completed (see item 6 below).

4. LOCATION OF COVERED ACTIVITY

A. Address
Provide the street address where the Activity will take place (describe the location if there is no street address) and driving directions from the nearest major road or highway, known landmarks, access roads, and any other information that would allow a person not familiar with the area to find the Activity site. Enclose a 1:24,000 scale topographic map of the area covered by the application that is labeled to show the location of all Activities, diversion locations and waterbodies affected by the Activities with a reference to the nearest city or town, and provide driving directions from a major road or highway.

B. River, Stream, or Lake
Provide the names of the rivers, streams, or lakes in which or near where an Activity will take place. If the watercourse or waterbody is not named, write "unnamed tributary" in this box.

C. Tributary
Provide the name of the watercourse or waterbody to which the rivers, streams, or lakes specified in Box 5.B (above) are a tributary.

D. Covered Activity
Provide the name of each Activity from the map specified 4.A (above) in the boxes.

E. USGS 7.5 Minute Quad Map Names
Provide the name of the USGS 7.5 quadrangle map(s) that includes the property where the Activity will take place. The following Department website provides a link to the names of all the quadrangle maps:
http://imaps.dfg.ca.gov/viewers/cnddb_quickviewer/app.asp

F – H. Township, Range, and Section
Provide the township, range, section and ¼ section numbers of the property where the Activity will take place. Many county and city websites provide the township, range, section, and ¼ section numbers.

I. Coordinates
Provide either a centralized latitude and longitude or the UTM coordinates of the property where the Activities will take place and specify the datum to be used. Latitude and longitude information can be obtained using a Global Positioning System (GPS) or from the following website: http://bios.dfg.ca.gov.

J. Project Located Above Lake Shastina.
If the Activity is in the Shasta River watershed and is located above Lake Shastina (Dwinnell Dam), check "yes." If it is not, check "no."

5. COVERED ACTIVITY

For each Activity described in the application fill in the work period term and identify the Activity category by checking the applicable box(es).

6. PROPERTY ACCESS AND SITE INSPECTIONS

In order to validate the information contained in the application, and to identify the measures that must be incorporated into the Agreement and Sub-permit to protect fish and wildlife resources, the Department will need to conduct a site visit.

Box A. Check this box if the Activity is located entirely on the applicant's property. Check the appropriate sub-box for site visit notification.

Box B. Check this box if the Activity is located partially or entirely on another person's property. If this box is checked, the Right of Entry Agreement enclosed with this Application Form as Attachment A must be completed, signed by the landowner, and submitted with the application.

7. DESCRIPTION OF COVERED ACTIVITY

A. Describe the Activity
See the instructions on the application form and include all the specified enclosures.

B. Equipment
List all of the equipment and machinery that will be used to complete the Activity. If lubricants, solvents, chemicals, or other materials not normally found on construction sites will be present in the Activity area, list those materials in addition to the equipment and machinery that will be used to complete the Activity.

C. Water Presence
Check the applicable box. If "yes" is checked, complete Box 7.D. If "no" is checked, skip to Box 8.

D. Work in Wetted Channel
Check the applicable box. For some new, replacement, or repair/maintenance construction activities a plan to divert water around (i.e., to dewater) the construction site *may be required* which specifies the method of diversion or the drafting and the volume, and the timing of water diversion or drafting.

8. IMPACTS OF COVERED ACTIVITY

A. Modification to River, Stream or Lake
Describe the effects of the Activity on the natural flow, bed, channel, or bank of the river, stream, or lake. Quantify the effects and impacts in the Activity vicinity by noting the type, volume and dimensions of material displaced or other forms of site alteration. Also include any impacts to the riparian zone on or adjacent to the channel floodplain. The riparian zone is the area that surrounds a channel or lake and supports (or can support) riparian vegetation that is dependent on surface or subsurface water. Include the effects of the Activity to this zone at least to the outer (landward) edge of the line of the riparian vegetation.

B. Vegetation
Check the applicable box. If "yes" is checked, complete the following tables by specifying the type of vegetation (i.e., trees such as oak, willow, or sycamore, and plant communities, such as, freshwater marsh, wet meadow, willow thicket, riparian woodland, willow riparian woodland, desert wash scrub, alkali sink scrub, oasis, vernal pool, bog, non-native, or ornamental) that will be affected temporarily and/or permanently both in linear feet and total acres.

If trees will be removed as part of the Activity, specify the species of trees to be removed and (if available) the estimated number of trees of that species that will be removed and the range of trunk diameters measured at breast height. Trees can be grouped into size classes, for example, four oak trees approximately 10 to 20 inches in diameter. Attach a tree survey, if available.

C. Special Status Species
If special status species[2] are known to be present at or near the location of the Activity check the applicable box. If "yes" is checked, list each species and/or describe the habitat that will be affected.

D. Source
Identify the source or sources of information that were used to conclude that special status animal or plant species or habitat that may support such species are, or are not, present on or near the Activity site.

E. Biological Assessment or Study
Check the applicable box. If "yes" is checked, the biological assessment or study must be enclosed with the application. ***If "no" is checked or the biological assessment or***

[2] Special Status Species are endangered, rare or threatened animals or plant species as defined in CEQA Guidelines section 15380 (California Code of Regulations, title 14, section 15380) available online at http://ceres.ca.gov/topic/env_law/ceqa/guidelines/art20.html.

study enclosed with the application is inadequate, the Department may require the applicant to complete a biological study to evaluate the Activities potential impacts on biological resources before accepting the application as complete.

F. Hydrological Assessment or Study

Check the applicable box. If "yes" is checked, the hydrological study or survey must be enclosed with the application. ***If "no" is checked or the hydrological assessment or study enclosed with the application is inadequate, the Department may require the applicant to complete a hydrological study or provide other information on site hydraulics (e.g., flows, channel characteristics, and/or flood reoccurrence intervals) to evaluate the Activities potential impacts on hydrology before accepting the application as complete.***

9. ADDITIONAL INFORMATION FOR INCIDENTAL TAKE SUB-PERMIT

This section has been completed for the applicant in order to meet the information requirements for an application for an incidental take permit under the Department's CESA regulations**.**

10. SIGNATURE

If the applicant is a person, that person must sign the application in order for it to be valid. If the applicant is a business or local government agency, only a person who is an authorized representative of the business or agency may sign the application in order for it to be valid. ***Under no circumstances should any other person sign the application.*** If that occurs, the Department may determine the application is invalid and return it to the applicant.

PART IV: PROCESSING THE APPLICATION

Within 15 days of receiving the application, the Department will determine whether the Activities described in the application are Covered Activities. If the Department determines that the Activity is not a Covered Activity the applicant will be informed in writing, and the applicant will need to apply for an Agreement outside the Program.

If the Department determines that an Activity or Activities are Covered Activities, within 30 days of making that determination, the Department will determine whether the application is complete. If the application is incomplete, the Department will describe the information the applicant will need to provide to make it complete in writing. An application will only be complete if each of the following applies:

1. Each field in the application form has been completed, unless otherwise indicated.
2. As much detail as possible is provided so the Department can properly evaluate the Activity to determine whether an Agreement and/or a Sub-Permit is required.
3. All required enclosures are submitted with the application form, including but not limited to the Water Right Verification Form and Right of Entry Agreement, if applicable.
4. The application form is properly signed.

If during its review of the application the Department determines that a biological or hydrological study will be necessary in order to make a determination that the application is complete, the Department will notify the applicant.

If the Department determines that the application is complete, the Department will contact the applicant by telephone to schedule a site visit and begin preparation of an Agreement and a Sub-permit. The Department may suspend processing a complete application if the applicant or the owner of the property where the Activity will take place (if different from the applicant) refuses to allow Department to enter the property for a site inspection or if the applicant has requested to be present during the site visit and is unable to schedule a date for the inspection.

Agreement
If the Department determines that an Agreement is required, the Department will make every effort to issue a draft Agreement to the applicant within 45 days of receiving a complete application. FGC section 1607 allows for the extension of the standard 60-day time period the Department normally has to issue a draft Agreement under FGC section 1602(a)(4)(D). However, by signing the application form, the applicant agrees that the Department may extend the 60-day time period to issue a draft Agreement pursuant to FGC section 1607.

The draft Agreement will include those measures from the Master List of Terms and Conditions (MLTC) for the Programs that apply to the Activity described in the application. Additional conditions not included in the MLTC may be required to protect fish and wildlife resources based on field review. Upon receipt of the draft Agreement, the applicant will have 30 days to sign and return the draft Agreement.

Sub-permit
The Department will make every effort to issue a Sub-permit within the same time period that it takes to issue an Agreement (above). In some instances, the issuance of an Agreement may be delayed until the Sub-permit has been prepared.

PART V: CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The Department must comply with CEQA before it may issue an Agreement or Incidental Take Permit. As the lead agency under CEQA for the Programs, the Department prepared and certified an Environmental Impact Report for each Program. As a result, it is unlikely that the Department will need to take further action under CEQA before issuing an Agreement and Sub-permit. In any case, the Agreement and Sub-permit will not be valid until the Department receives a signed copy of the draft Agreement and Sub-permit from the applicant and the Department executes both.

PART VI: APPLICATION FORMS

The following forms are enclosed:

1. Shasta and Scott River Watershed-wide Permitting Programs Application Form (Form SSWWPP 2023)
2. Attachment A: Water Right Verification Form
3. Attachment B: Right of Entry Agreement

Complete one application form for all proposed activities. For a proposed activity that includes the diversion of water, the Water Right Verification Form must also be completed. If the activity will not occur on the applicant's property, a Right of Entry Agreement must also be completed.

PART VII: COVERED ACTIVITY DESCRIPTIONS

The Programs cover the following (14) categories of activities, referred to as Covered Activities:

1. Water Diversions

Water diversions covered under this category include only the diversion of surface water through a conduit or opening from streams, channels, or sloughs within the Scott and Shasta River watersheds, by an agricultural operator for agricultural purposes in accordance with a valid water right, including one specified in the one of the following court decrees: Shackleford Creek (1950), French Creek (1958), Scott River (1980) and Shasta River (1932).

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2. Water Diversion Structures

This category includes only the following activities relating to water diversion structures:

a. Ongoing management and/or maintenance of existing flashboard dams, including the placement of boards into concrete abutments across the wetted channel to build head to divert water, and the removal of the boards.

b. Ongoing maintenance, management, and repair of boulder weirs.

c. Installing, operating, maintaining, and removing push-up dams. "Push-up dam" is defined as a temporary diversion structure created by using loaders, backhoes, or excavators to move bedload within the stream channel to form a flow barrier that seasonally diverts the flow of the stream.

d. Installing, operating, maintaining, and removing other temporary diversion structures that are not push-up dams. "Other temporary diversion structure" is defined as any temporary structure to divert water seasonally from a stream and is typically made with hay bales, hand-stacked rocks and cobble, tarps, wood, and/or a combination of these materials placed in the channel without the use of heavy equipment.

e. Installing or placing pumps and sumps and maintaining existing pumps and sumps within or adjacent to the active channel of a stream, which sometimes requires the use of large machinery within or adjacent to the active channel.

f. Installing headgates and measuring devices, sized appropriately for the authorized diversion, that meet the Department and/or Department of Water Resources standards on or in a diversion channel, which usually is done by excavating the site to proper elevation using large machinery, positioning the headgate and measuring device at the appropriate elevation, and installing rock or other "armoring" around the headgate to protect the structure. During installation, the stream bank could be affected by the construction of concrete forms and other necessary construction activities.

3. Fish Screens

This category includes only the installation, operation, and maintenance of the types of fish screens described below, provided they meet the Department's and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service's ("NMFS") criteria for steelhead fry as they exist at the time the screen is installed. Installing a fish screen usually includes site excavation, forming and pouring a concrete foundation and walls, excavation and installation of a fish bypass pipe or channel, and installation of the fish screen structure. Heavy equipment is typically used for excavation of the screen site and bypass. If the fish screen is placed within or near flood prone areas, typically rock or other "armoring" is installed to protect the screen. The average size of the bed, channel, and/or bank area affected by the installation of a bypass pipe or channel ranges from 40 to 100 square feet. Types of fish screens include:

a. Self-cleaning screens, including flat plate self-cleaning screens, and other self-cleaning designs, including, but not limited to, rotary drum screens and cone screens, with a variety of cleaning mechanisms, consistent with Department and NMFS screening criteria.

b. Non-self cleaning screens, including tubular, box, and other screen designs consistent with Department and NMFS screening criteria.

4. Stream Access and Crossings

This category includes only the moving of livestock and vehicles across flowing streams or intermittent channels and/or the construction of stream crossings at designated locations where potential spawning gravels, incubating eggs, and fry are <u>not</u> present based on repeated site specific surveys. Factors considered when selecting a crossing location include the stream gradient, channel width, and the ability to maintain the existing channel slope. Generally, to construct a crossing, a boulder weir is placed on the downstream side of the crossing and angular quarry rock is placed in the crossing location; the width of the crossing does not exceed 25 feet; the crossing spans the entire width of the channel; the crossing is "keyed" into the bank on each side; the approaches on both sides do not exceed a slope of 3:1; and bank armoring (usually using quarry rock) is added where needed.

5. Fencing

This category includes only the installation and maintenance of livestock exclusion fencing to protect riparian zones including the construction of fencing along livestock and vehicle crossings and livestock watering lanes.

6. Riparian Restoration and Revegetation

This category includes only the restoration, including revegetation of riparian areas, consistent with the methods specified in the most current edition of the Department's *Salmonid Stream Habitat Restoration Manual*, or as otherwise approved in writing by the Department. The most current edition of the manual is available at http://www.dfg.ca.gov/nafwb/index.html. Typically, riparian vegetation is planted within or adjacent to the active channel, and often in or near the wetted channel. Plantings include herbaceous perennials, emergent species, native grasses, trees, and shrubs. Planting methods vary by species, site, and size of material planted, ranging from hand planting to using a backhoe or excavator. For riparian trees, planting densities range from 130 to 300 plantings per acre, depending on the restoration goals (e.g., shading, sediment trapping, and bank stabilization), substrate, and hydrology. Trees and cuttings range in size from small rooted plugs to large diameter pole plantings. When installing pole plantings, heavy equipment may be used to excavate to or below water table depth. Maintenance activities include the occasional use of hand tools, portable pumps, pick-up trucks and/or water trucks in or near the bed, bank, or channel, for irrigation, debris removal, and replanting of restoration sites.

7. Instream Structures

This category includes only the installation, maintenance, and repair of the following instream structures consistent with the methods specified in the most current edition of the Department's *Salmonid Stream Habitat Restoration Manual*, available at http://www.dfg.ca.gov/nafwb/index.html:

a. structures to protect the bed and banks of streams;

b. bioengineered habitat structures;

c. deflectors;

d. boulder clusters;

e. boulder weirs for instream habitat or to replace flashboard dams, push-up dams, and other temporary diversion structures;

f. large woody debris; and

g. spawning gravels to enhance spawning habitat

8. Stream Gages

This category includes the installation and maintenance of stream gages in the active stream channel, usually using pipe 2" or greater in diameter. Typically, the pipe is

secured to the bank by notching it into the bank and by then attaching it to the bedrock, a boulder, or a concrete buttress. Generally, heavy equipment is not needed to install and maintain stream gages.

9. Barrier Removal and Fish Passage Projects

This category includes the modification, removal and replacement of fish passage barriers in order to provide volitional fish passage for both adult and juvenile salmonids both upstream and downstream of the barrier. Typically these projects are engineered and the designs require Department review and approval.

The projects listed below are covered under this category, although the Department may add others to the list in the future. Each project will provide access to historic fish spawning and rearing habitat.

a. The installation and maintenance of a fish ladder at the Scott Valley Irrigation District diversion head.

b. The installation and maintenance of two or more boulder weirs and improved head works at Farmers Ditch.

c. The following barrier removal and fish passage projects on tributaries to the east fork of the Scott River:

    i. Rail Creek fish barrier removal project;

    ii. Grouse Creek low flow fish passage project;

    iii. Big Mill Creek fish barrier and channel restoration projects; and

    iv. Shackleford Creek confluence gravel aggradation maintenance.

d. Araujo Dam Demobilization and Water Quality Improvement Project

e. Shasta River Water Association's Dam Demobilization and Water Quality Improvement Project

f. Grenada Irrigation District Fish Barrier Removal Project

10. Grazing livestock

Grazing of livestock adjacent to the channel or within the bed, bank, or channel, of the Shasta Scott River or its tributaries in accordance with a grazing management plan approved by the Department. The grazing plan shall address the timing, duration, and intensity of livestock grazing within the riparian zone and shall explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat.

11. Water Management

Covered activities include water management, water monitoring, and watermastering (either State or private) activities; including the operation of head gates in conjunction with measuring devices to assure that each diversion is operated in compliance with the associated water right or adjudicated volume; the ongoing management and/or maintenance of existing flashboard dams, including the placement of boards into concrete abutments across the wetted channel to build head to divert water, and the removal of the boards; actions related to water diversion construction; operation, repair, minor alteration, replacement, and removal; the installation, operation, maintenance, repair, minor alteration, replacement, and removal of headgates and measuring devices on or in a diversion channel; the installation, operation, repair, minor alteration, removal, replacement and maintenance of stream gages in the active stream channel. Water management activities infrequently require moving equipment or vehicles across flowing streams or intermittent channels and/or the construction of stream crossings at designated locations where potential spawning gravels, incubating eggs, and fry are <u>not</u> present based on repeated site specific surveys.

12. Permit Implementation

Other activities associated with the implementation of avoidance, minimization and mitigation measures required by this Permit or a Streambed Alteration Agreement.

13. Monitoring

Activities associated with the determination of whether or not the terms and conditions of this ITP, each sub-permit, or a SAA are being fulfilled and are effective.

14. Research

Activities associated with conducting studies to improve our understanding of salmonid distribution, natural history, population dynamics, etc. in the Scott and Shasta River watersheds.

FOR DEPARTMENT USE ONLY					
Date Received	*Notification No.*	*Sub-permit No.*	*Water Right Verification*	*Entry Agreement.*	*Watershed*
			☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Shasta ☐ Scott

DEPARTMENT OF FISH AND GAME
SHASTA AND SCOTT RIVER
WATERSHED-WIDE PERMITTING PROGRAMS

Application for Incidental Take Sub-permit and Streambed Alteration Agreement

Complete EACH field unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT

Name			
Business/Agency			
Street address			
City, State, Zip			
Telephone		Fax	
Email			

2. CONTACT PERSON (*Complete only if different from applicant*)

Name			
Street address			
City, State, Zip			
Telephone		Fax	
Email			

3. PROPERTY OWNER (*Complete only if different from applicant*)

Name			
Street address			
City, State, Zip			
Telephone		Fax	
Email			

4. LOCATION OF COVERED ACTIVITY

A. Address or description of where each Covered Activity will occur. (*Include a 1:24,000 scale topographic map of the area covered by the application that is labeled to show the location of all Activities, diversion locations and waterbodies affected by the Activities with a reference to the nearest city or town, and provide driving directions from a major road or highway.*)
☐ *Continued on additional page(s)*

B. Rivers or streams affected by each Covered Activity	
C. What water body are the rivers or streams tributary to?	

D. Covered Activity *(use the label from the maps)*	E. USGS 7.5 Minute Quad Map name	F. Township	G. Range	H. Section and ¼ Section

☐ *Attached or continued on additional page(s)*

I. Coordinates (*If available, provide at least one centralized latitude/longitude or UTM coordinates and check the appropriate boxes.)*

Latitude/Longitude	*Latitude:*	*Longitude:*	
	☐ Degrees/Minutes/Seconds	☐ Decimal Degrees	☐ Decimal Minutes
UTM	*Easting:*	*Northing:*	☐ Zone 10 ☐ Zone 11
Datum used for Latitude/Longitude or UTM	☐ NAD 27	☐ NAD 83 or WGS 84	
J. If the location of the Covered Activity is in the Shasta River watershed, is it above Lake Shastina?	☐ Yes	☐ No	

5. COVERED ACTIVITY AND TERM *(Check each box that applies.)*

COVERED ACTIVITY/ACTIVITY CATEGORY	WORK PERIOD TERM		ONGOING OPERATION	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/ MAINTENANCE EXISTING STRUCTURE
	BEGINNING (*YEAR OR MONTH*)	ENDING (*YEAR OR MONTH*)				
Water Diversion*			☐	☐	☐	☐
Water Diversion Structures			☐	☐	☐	☐
Fish Screens			☐	☐	☐	☐
Stream Access and Crossings			☐	☐	☐	☐
Fencing			☐	☐	☐	☐
Riparian Restoration and Revegetation			☐	☐	☐	☐
Instream Structures			☐	☐	☐	☐
Stream Gages			☐	☐	☐	☐
Barrier Removal and Fish Passage Projects			☐	☐	☐	☐
Grazing Livestock in Riparian Exclusion Zone			☐	☐	☐	☐
Water Management			☐	☐	☐	☐
Permit Implementation			☐	☐	☐	☐
Monitoring			☐	☐	☐	☐
Research			☐	☐	☐	☐

***If a box in the Water Diversion row is checked, the Water Right Verification Form must be filled out and submitted with this application form.**

6. PROPERTY ACCESS AND SITE INSPECTION (*Check each box that applies.*)

A. ☐ The proposed Covered Activity is on my property and:

☐ I hereby authorize a Department representative to enter my property during normal business hours in order to evaluate the site where the Activity described in this application will take place and hereby certify that I am authorized to grant the Department such entry.

☐ I request the Department to first contact (*insert name)*_____ at (*insert telephone number*) _____to schedule a date and time to enter the property where the Covered Activity described in this application will occur. I understand that this may delay the Department's determination as to whether a Streambed Alteration Agreement or an Incidental Take Sub-permit is required and/or the Department's issuance of a draft Agreement and Sub-permit pursuant to this application.

B. ☐ The proposed Covered Activity is not on my property. You must complete the enclosed **Right of Entry Agreement** for the property where the Covered Activity is located for your application to be complete.

7. DESCRIPTION OF COVERED ACTIVITY

Describe each Covered Activity in detail below, including any structures that will be placed, built, or completed in or near the river or stream identified in Box 5.B above, and the type and volume of materials that will be used. Also:

- Provide an overview of the entire activity area (i.e., "bird's-eye view") showing the location of each structure and/or activity and significant area features.
- For construction projects enclose diagrams, drawings, and/or plans that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; photographs if available;, and where the equipment/machinery will enter and exit the activity area.

☐ *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the Covered Activity.

☐ *Continued on additional page(s)*

C. Will water be present during the proposed work period specified in Box 5 in the rivers or streams specified in Box 4.B?	☐ Yes ☐ No (*Skip to box 8*)
D. Will the proposed Covered Activity require construction work in the wetted portion of the channel? (*new, replacement or repair/ maintenance construction activities may require a plan divert water around work site*)	☐ Yes ☐ No

8. IMPACTS OF COVERED ACTIVITY

A. Describe the impacts to the bed, channel, and bank of the river or stream and associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

☐ *Continued on additional page(s)*

B. Will the Covered Activity affect any vegetation? ☐ Yes (*Complete the tables below.*) ☐ No

Vegetation Type	Temporary Impact	Permanent Impact
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)

☐ *Continued on additional page(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the activity site?

☐ Yes *(List each species and/or describe the habitat below)* ☐ No ☐ Unknown

☐ *Continued on additional page(s)*

D. Identify each source of information that supports a "yes" or "no" answer above in Box 8.C.

☐ *Continued on additional page(s)*

E. Has a biological assessment or study been completed for the activity site?

☐ Yes (*Enclose the biological study*) ☐ No

Note: *A biological assessment or study may be required to evaluate potential Activity impacts on biological resources.*

F. Has a hydrological assessment or study been completed for the activity or activity site?

☐ Yes (*Enclose the hydrological study*) ☐ No

Note: *A hydrological assessment or study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential activity impacts on hydrology.*

9. ADDITIONAL INFORMATION FOR INCIDENTAL TAKE SUB-PERMIT

A. The species to be covered by the incidental take sub-permit is limited to coho salmon (*Oncorhynchus kisutch*), which is listed as a threatened species under the California Endangered Species Act. The additional information that must be in an incidental take permit application under Department regulations (Cal. Code Reg., tit. 14, § 783.2) is included in the incidental take permit applications submitted by the Scott and Shasta Valley Resource Conservation Districts (RCD) for the Scott River (2081-2005-027-01) and Shasta River (2081-2005-026-01) Watershed-wide Permitting Programs, respectively. Those permit applications and the Department's jeopardy analysis for each of the Watershed-wide Permitting Programs are incorporated herein by reference.

B. A detailed monitoring plan has been developed for both the Shasta and Scott River Watershed-wide Permitting Programs. The purpose of these plans is to monitor the implementation and effectiveness of the avoidance, minimization, and mitigation measures developed for the Covered Activities.

C. Each RCD has submitted to the Department financial security in the principal sum of $100,000. The security allows the Department to draw on the principal sum if the Department, in its sole discretion, determines that a Program participant is failing to comply with any of the avoidance, minimization, mitigation, or monitoring measures required by the Watershed-wide Permitting Program(s).

10. SIGNATURE

I certify that the information submitted in this application is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to suspension or revocation of any Streambed Alteration Agreement or Incidental Take Sub-permit issued pursuant to this application and to civil and criminal penalties under the laws of the State of California.

I understand that this application applies only to the Covered Activity or Activities described herein.

By signing this application, I agree to waive the 60-day time period the Department has to issue a draft Streambed Alteration Agreement under Fish and Game Code section 1602(a)(4)(D).

_____ _____

Signature of Applicant Date

_____

Print Name

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

Applicant Name:_____
Activity Name:_____

ATTACHMENT A

SHASTA AND SCOTT RIVER WATERSHED-WIDE PERMITTING PROGRAMS WATER RIGHT VERIFICATION FORM

All applicants requesting authorization under a lake or streambed alteration agreement to divert surface water must demonstrate to the Department that they have a legal right to divert water by completing this attachment and submitting all required documentation. Applicants that have water rights that have been specified in a court or State Water Resources Control Board (SWRCB) decree or have a copy of a permit or license on file with SWRCB are required to complete Section I of this document. **Applicants who divert water based on a riparian water right that is not subject to adjudication under a decree must document their right to divert by completing Section II of this attachment.**

Section I. Adjudicated and/or Appropriative Water Rights

A. Check the appropriate boxes below that describe your water right and include the appropriate documentation.

- ☐ Adjudicated water right: Provide evidence that the water right has been adjudicated under a court or SWRCB decree as specified in Section B below.
- ☐ Post-1914 appropriative water right, including diversion for immediate use or storage that is not included in an adjudication. Attach a copy of the permit or license issued by the SWRCB.

B. Complete the diversion information table below. For diversion rate, use gallons per day (gpd) if rate is less than 0.25 cubic feet per second (cfs) (approximately 16,000 gallons per day). If the water right(s) has (have) been adjudicated in a decree, provide the required information and attach a copy of the adjudication or decree page(s) specifically describing your water right(s) and the adjudication map. If the parcel has been split, the ownership has changed since the adjudication, or the water right has been amended in any way, submit all materials illustrating these changes. Each water right should be entered into the table below (stock water rights, irrigation season rights, etc.). Use additional sheets if necessary. Additionally, include the most recent Statement of Water Diversion and Use that has been filed with the SWRCB for each water right identified. ***The Department will not accept a Statement of Water Diversion and Use unless it has been filed with the SWRCB.***[1]

WATER RIGHT INFORMATION		PURPOSE OF USE	DIVERSION RATE (cfs or gpd)	SEASON OF DIVERSION	
NAME OF DECREE OR LICENSE OR PERMIT NUMBER	DECREED DIVERSION NUMBER			BEGINNING DATE (month/day)	ENDING DATE (Month/day)

[1] A copy of the Statement of Water Diversion and Use may be downloaded from this website: http://www.waterrights.ca.gov/forms/updated_statement_062907.pdf or by contacting the SWRCB at (916) 341-5300

Section II. Riparian Water Rights That Are Not Adjudicated

For riparian water rights that are not adjudicated by a court or SWRCB decree, provide the additional information described below. Attach additional sheets as necessary to provide the required information. This information is essential for substantiating the beneficial use of riparian water rights. Additionally, attach the most recent Statement of Water Diversion and Use that has been filed for the subject water rights with the SWRCB. ***The Department will not accept a Statement of Water Diversion and Use unless it has been filed with the SWRCB.***

A. Attach a detailed map that depicts the place of use, the boundaries of each parcel, each stream or river from which the water is diverted, and the location of each point of diversion on the stream or river. Number and label features on the map including each diversion point. Use the numbers and labels from the map when completing the tables below.

B. Complete the table below indicating the average volume of water (in acre feet) diverted and applied at the place of use each month during the period of use at each point of diversion.

				Average Volume of Water (In Acre Feet)											
DIV. #	DIVERSION RATE (cfs or gpd)	PLACE OF USE		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
			Diverted												
			Applied												
			Diverted												
			Applied												
			Diverted												
			Applied												
			Diverted												
			Applied												
			Diverted												
			Applied												

C. Include with this attachment the average irrigation requirements for the crops and/or pasture land at each place of use. Note the parcel number where the crops and/or pasture land is located, along with the requirements. Information regarding average irrigation requirements may be available from the Natural Resource Conservation Service, U.C. Extension, or in the Department of Water Resource's Bulletin 113.

D. Complete the table on the next page indicating the number of acres irrigated and average amount of water (in acre feet) applied per acre ("duty of water") each month for each parcel and the place of use shown in the map. Indicate the method(s) used to apply the water to the crops and/or pasture land at the place of use. Duty of water can be calculated by dividing the

flow (in acre feet) at the place of use into the number of acres irrigated. Attach on a separate sheet all data, calculations, and any other information used to estimate the duty of water.

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

PARCEL NUMBER	PLACE OF USE	ACREAGE	DUTY OF WATER												METHOD OF APPLICATION
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	

B-67

ATTACHMENT B

SHASTA AND SCOTT RIVER WATERSHED-WIDE PERMITTING PROGRAMS

RIGHT OF ENTRY AGREEMENT
FOR THE BENEFIT OF A THIRD PARTY

This Right of Entry Agreement ("Entry Agreement") is made by and among the Department of Fish and Game ("Department"), **[*name*]** Resource Conservation District **("RCD"),** and **[*name of landowner*]** ("Landowner").

WHEREAS, Landowner understands that **[*name of participant*]** ("Program Participant") has submitted, or will be submitting to the Department an application for a Streambed Alteration Agreement ("Agreement") and Incidental Take Sub-permit ("Sub-permit") under the Shasta or Scott River Watershed-Wide Permitting Program;
;
WHEREAS, Landowner understands that non-enforcement Department employees ("Department employee") will need to access Landowner's property ("Property") for the specific purpose of verifying that Program Participant has met the terms and conditions in Program Participant's Agreement and Sub-permit;

WHEREAS, Landowner understands that RCD employees and contractors will need to access the Property for the specific purpose of evaluating the effectiveness of the terms and conditions in Program Participant's Agreement and Sub-permit; and

WHEREAS, Landowner understands that Program Participant's Agreement and/or Sub-permit might require Program Participant and/or **[*his/her*]** employees, contractors, and/or agents to complete certain activities on the Property;

NOW, THEREFORE, Landowner hereby grants to Department employees, RCD employees and contractors, and Program Participant and **[*his/her*]** employees, contractors, and/or agents permission to enter the Property for the limited purposes set forth above subject to the following provisions:

1. The Property to which this Entry Agreement applies is located on **[*name of waterbody*]**, tributary to the **[*name of waterbody*]**, in the County of Siskiyou, State of California, in Section **[*number*]**, Township **[*number*]** North, Range **[*number*]** West, MDB&M, Assessor's Parcel Number **[*number*]**.

2. Department employees may enter the Property only during normal business hours for the specific purpose of verifying that Program Participant has met the terms and conditions in Program Participant's Agreement and Sub-permit. Department employees may not enter the Property for any other purpose or use without obtaining Landowner's written consent.

3. RCD employees and contractors may enter the Property only during normal business hours for the specific purpose of evaluating the effectiveness of the terms and conditions in Program Participant's Agreement and Sub-permit. RCD employees and contractors may not enter the Property for any other purpose or use without obtaining Landowner's written consent.

4. Program Participant and/or **[*his/her*]** employees, contractors, and/or agents may enter the Property for the purpose of fulfilling the obligations in Program Participant's Agreement and/or Sub-permit, such as installing a headgate, gage, and/or fish screen on a water diversion structure or replacing a gravel push up dam or other temporary diversion structure ("obligations"). Such access shall be limited to the minimum extent necessary to accomplish Program Participant's obligations. Further, such access shall be contingent upon the following conditions below.

    a. Landowner shall be provided an opportunity to review the Program Participant's Agreement and Sub-permit prior to signature by Program Participant.

    b. Landowner shall be provided an opportunity to review and approve any contractor or sub-contractor hired to fulfill an obligation.

    c. Landowner shall be provided an opportunity to review and approve any engineered drawings and construction schedule specific to any obligations that will be fulfilled on the Property.

    d. Landowner approval shall not be unreasonably withheld and shall be provided within 15 days of review.

5. The Department and RCD shall notify Landowner and Program Participant, whether verbally or in writing, at least 48 hours in advance of entering the Property. Landowner is entitled to be present or have a representative present at any time a Department employee or RCD employee or contractor is on the Property.

6. Department employees and RCD employees and contractors shall limit their access to those portions of the Property where Department employees and RCD employees and contractors will perform their requisite evaluations ("requisite monitoring site") and those portions of the Property that Department employees and RCD employees and contractors must traverse to reach each site. Requisite monitoring sites shall be limited to the specific locations where activities expressly covered within Program Participant's Agreement and Sub-permit will be performed or have an effect over or sites otherwise specifically addressed in the Agreement and Sub-permit.

7. Department employees and RCD employees and contractors shall make every effort to avoid causing any damage to the Property while they are on the Property.

8. The Department and RCD shall be liable for any damage to the Property or to any personal property due to the negligence or willful misconduct of a Department employee or RCD employee or contractor while on the Property.

9. Landowner shall not be liable for any loss or damage to Department or RCD property or for the injury to or death of any Department employee or RCD employee or contractor that occurs when the employee or contractor is on the Property, unless the loss, damage, injury, or death is due solely to Landowner's negligence or willful misconduct.

10. The Department and RCD separately and independently agree to defend, indemnify, and hold harmless Landowner from and against all claims, damages, losses, judgments, liabilities, expenses, and other costs, including litigation costs and attorney's fees ("Claim" and, collectively, "Claims") arising out of, resulting from, or in connection with any act or omission by a Department employee or RCD employee or contractor while on the Property, except that this indemnification shall be inapplicable to Landowner with respect to a Claim due in part or solely to the negligence or willful misconduct of Landowner.

11. Landowner may revoke the permission for entry granted by this Entry Agreement at will, by providing revocation notice to the Department, RCD, and Program Participant in writing at least 30 days prior to the termination date specified in the notice. Such revocation shall be effective after 30 days or upon such later time, if any, that is specified in the revocation notice. Within 15 days of notification to all parties of Landowner's desire to revoke the permission for entry, all parties shall meet to identify and find a mutually acceptable solution if possible, provided that Landowner shall be under no obligation to agree to such a solution. No revocation shall take effect while there is potential for environmental degradation to occur as a result of an inability of the Department, RCD, or Program Participant to complete work begun prior to the notice of revocation. In such cases where completion of work is necessary to eliminate the potential for environmental degradation[1], work shall be completed as promptly as is reasonably possible, and revocation shall take effect upon completion of the work. In such cases where Program Participant's Agreement identifies

[1] For the purposes of this Right of Entry Agreement environmental degradation is the deterioration of the quality of the natural environment resulting from the incomplete implementation of projects required by the Program participants Agreement and Sub-permit

terms and conditions necessary to minimize the potential for environmental degradation, the Program Participant shall be responsible for continuing to implement the terms and conditions that the Entry Agreement requires until the Department determines that the potential for environmental degradation is eliminated, except that under no circumstances will the potential for environmental degradation extend the access allowed under this Entry Agreement for more than 180 days beyond the date the Landowner gives written notice of revocation to the Department, the RCD, and Program participant. Absent prior revocation by Landowner, this Entry Agreement shall expire upon expiration of Program Participant's Agreement and Sub-permit or when the mitigation measures and all requisite monitoring specified in the Agreement and Sub-permit have been successfully completed, whichever date is later, except that under no circumstances will the access allowed under this Entry Agreement extend more than 180 days after the Agreement and Sub-permit have expired.

12. The Department shall provide Landowner a copy of the fully executed Entry Agreement. Any amendment to this Entry Agreement shall be of no force and effect unless it is in writing and signed by the Department, RCD, and Landowner.

13. By signing this Entry Agreement, Landowner hereby warrants and represents that **[*he/she*]** has the authority to give the Department and its employees, the RCD and its employees and contractors, and Program Participant and **[*his/her*]** employees, contractors, and/or agents permission to enter the Property in accordance with the provisions herein.

14. Landowner's consent granted by this Entry Agreement is limited to entry by Department employees; RCD employees and contractors; and Program Participant and **[*his/her*]** employees, contractors, and agents and shall not be assigned. Any attempt by the Department, RCD, or Program Participant to assign this Entry Agreement shall automatically terminate it. No legal title, easement, or other interest in the Property is created or vested in the Department, RCD, or Program Participant by this Entry Agreement, and this Entry Agreement shall not be recorded against title.

15. This Entry Agreement shall become effective upon the Department's signature, which shall be after Landowner's and RCD's.

ATTACHMENT B

IN WITNESS WHEREOF, Landowner, RCD, and the Department have executed this Entry Agreement as set forth below.

LANDOWNER

_____ _____

[*NAME*] Date

_____

[*Add telephone number for notice above*]

_____

_____ _____

[*Add mailing address for notice above*] Date

[*NAME*] RESOURCE CONSERVATION DISTRICT

_____ _____

[*NAME*] Date
RCD

DEPARTMENT OF FISH AND GAME

_____ _____

GARY B. STACEY Date
Regional Manager
Northern Region

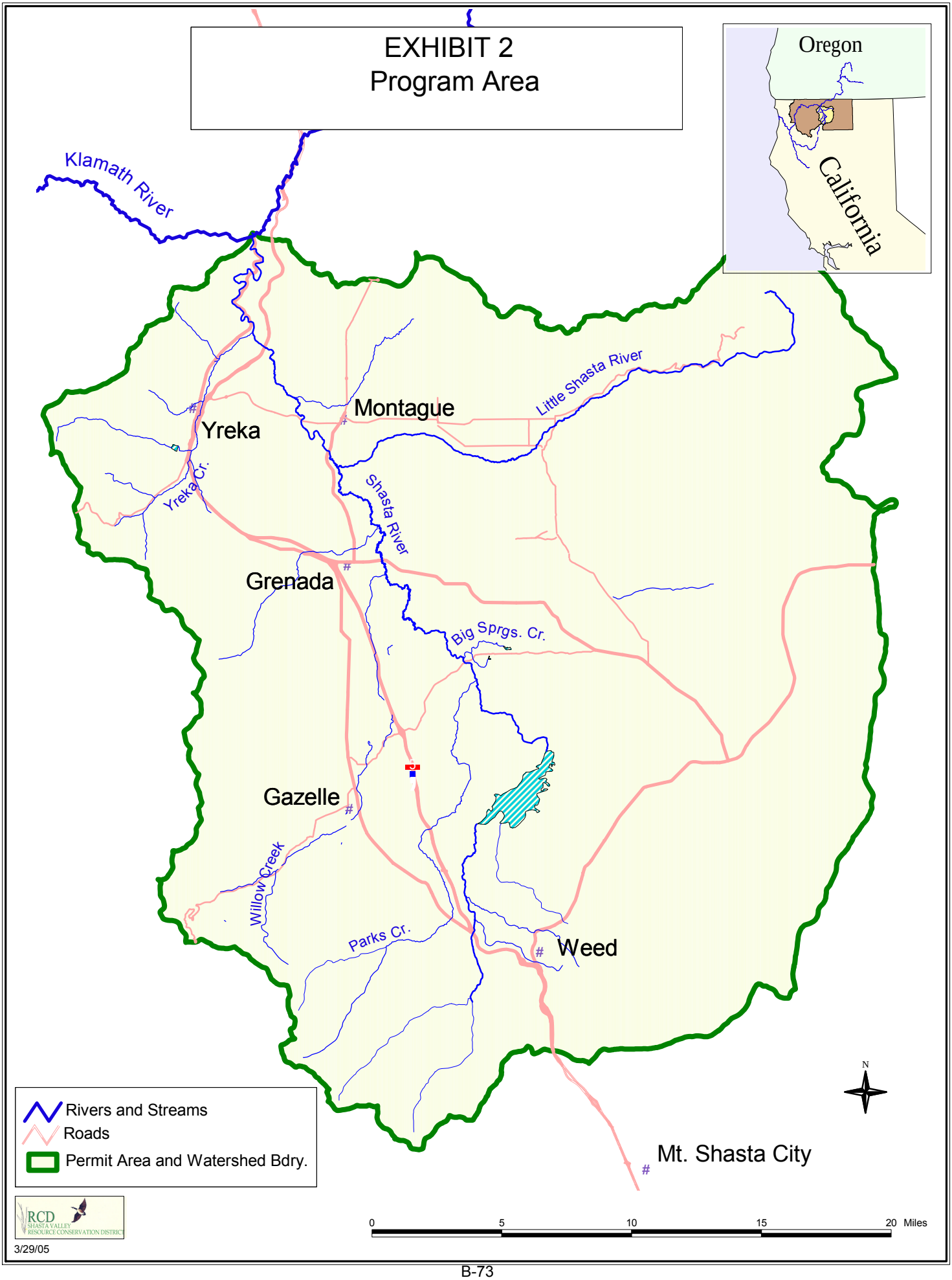
EXHIBIT 2
Program Area
Oregon
California
Klamath River
Little Shasta River
Montague
Yreka
Yreka Cr.
Shasta River
Grenada
Big Sprgs. Cr.
Gazelle
Willow Creek
Parks Cr.
Weed
Mt. Shasta City
N
Rivers and Streams
Roads
Permit Area and Watershed Bdry.
RCD
SHASTA VALLEY
RESOURCE CONSERVATION DISTRICT
0
5
10
15
20 Miles
3/29/05

APPENDIX C

Memorandum of Understanding Between the Department of Water Resources and the Department of Fish and Game on Procedures for Watermasters on the Scott and Shasta River Systems to Coordinate Actions to Avoid the Take of Coho Salmon

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JUN 0 6 2002

Mr. Rod McInnis
Acting Regional Administrator
National Marine Fisheries Service
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

Dear Mr. McInnis:

The Department of Water Resources currently provides watermaster service on the Shasta River and on five creeks in the Scott River watershed from April through September. This service was initiated by various court decrees beginning in 1958 for the Scott River and 1932 for the Shasta River.

DWR and the Department of Fish and Game have developed a Memorandum of Understanding to allow DWR to watermaster while protecting coho salmon. Attached is a copy of the MOU. To ensure full compliance with this MOU, DWR has appointed one of our senior managers, William J. Bennett, former Chief of DWR's Northern District, to work full-time on this and other Klamath and Scott and Shasta river issues. Further, we are extending our watermaster service for all 12 months. This will help ensure watermastered diversions do not exceed those specified in the decrees.

In addition to the MOU, there are many ongoing efforts to protect and restore the fisheries resource in the Scott and Shasta watersheds. Between the period of 1990-2000, nearly $5 million from State and federal funding has been spent on anadromous fish restoration efforts within the Scott Rivers and Shasta River watersheds. In the year 2001, nearly $3 million has been spent or funding obligated for additional restoration. DFG expects this funding level to continue or increase for the next 10 years as an integral part of a much larger focused Klamath River Basin Restoration Program.

The kind of restoration projects being implemented include fish screening, improved efficiency in water delivery systems, dedication of water to the stream for fish, erosion control through road decommissioning and stream crossing removal or repair, conservation easements to protect streamside buffers, riparian fencing, riparian plantings, construction of fish friendly seasonal diversion facilities, and improved fish passage over permanent diversion dams.

DWR and DFG are fully committed to working with all federal, Tribal, State, and local agencies and other stakeholders to reach a long-term solution to water issues in the entire Klamath Watershed including recovery of endangered species. We look forward to working with you to identify and develop an appropriate administrative mechanism or approach to help in the recovery of coho salmon in those watersheds and yet allow for beneficial use of water by local diverters.

Mr. Rod McInnis

Page 2 JUN 0 6 2002

We appreciate the opportunity to coordinate with the National Marine Fisheries Service on these matters. If you have any questions, you may contact Jonas Minton, DWR's Deputy Director, at (916) 653-8045, or Don Koch, DFG's Regional Manager, at (530) 225-2363.

Sincerely,

(sgd) Thomas M. Hannigan

Original Signed by
Robert C. Hight

Thomas M. Hannigan, Director
Department of Water Resources

Robert Hight, Director
Department of Fish and Game

Attachment

Dwight Russell:Lori Miles:Janiene Friend:Pat Separovich
C:\NMFS Draft-ltr-lm-0206042

Memorandum of Understanding Between the Department of Water Resources and the Department of Fish and Game on Procedures for Watermasters on the Scott and Shasta River Systems to Coordinate Actions to Avoid the Take of Coho Salmon

Recitals

1. Pursuant to Water Code Section 4000 et seq., the California Department of Water Resources provides watermaster service to water users on the Scott River and the Shasta River in Siskiyou County. These services involve the diversion and serving of water to water right holders pursuant to judicial decrees. In carrying out its watermaster services, DWR will conform with the existing judicial decrees including to hold diversions to the limits specified in those decrees. This task is complicated, however, by the fact that diversion facilities on these rivers vary from modern, screened and measured to unscreened, unmeasured diversions and turnouts. DWR watermasters will use their best efforts to carry out their duties in compliance with the decrees.

2. Pursuant to Fish and Game Code Section 2050 et seq., the California Department of Fish and Game is responsible for the administration of the California Endangered Species Act. DFG is also the trustee agency for the State of California with jurisdiction over the conservation, protection and management of fish, wildlife, native plants and habitat necessary for the biologically sustainable population of those species.

3. The Scott and Shasta rivers are spawning and rearing areas for Coho salmon (Oncorhynchus Kisutch), which is a candidate for listing under CESA.

4. Between the period of 1990-2000, nearly $5 million from State and federal funding has been spent on anadromous fish restoration efforts within the Scott River and Shasta River watersheds. In the year 2001, nearly $3 million has been spent or funding obligated for additional restoration. DFG expects this funding level to continue or increase for the next 10 years as an integral part of a much larger focused Klamath River Basin Restoration Program. The kinds of restoration projects being implemented include fish screening, improved efficiency in water delivery systems, dedication of water to the stream for fish, erosion control through road decommissioning and stream crossing removal or repair, conservation easements to protect streamside buffers, riparian fencing, riparian plantings, construction of fish friendly seasonal diversion facilities, and improved fish passage over permanent diversion dams.

5. DWR and DFG would like DWR to continue to provide watermaster service to the decreed right-holders, to assist water users in a manner that avoids the take of Coho salmon.

6. The purpose of this MOU is to coordinate actions between DFG and DWR on the Scott and Shasta rivers.

Agreement

1. The Department of Water Resources provides watermaster service on the Shasta River and on five creeks in the Scott River watershed. DWR will provide the Department of Fish and Game information on streamflow, diversions, and stream conditions, obtained and summarized from the watermasters' daily field logs, as described in Attachment A. This information will be conveyed by DWR to the person designated below by 9 a.m. of the day following.

2. DWR will otherwise cooperate with DFG in providing hydrologic and hydraulic information on the Scott and Shasta relevant to the needs of Coho salmon.

3. DWR's Northern District Chief, its Branch Chief over watermaster services, its Supervising Watermaster, and DFG's Regional Manager, its Fisheries Program Manager, and its Senior Fisheries Biologist will meet either in person or via weekly conference call to assure appropriate communication under this MOU.

4. DFG will timely inform DWR watermasters, by FAX, of any and all imminent or foreseeable take occurrences resulting from diversions under the control of the watermasters. The DFG Senior Fisheries Biologist below is responsible for informing DWR watermasters for this purpose.

5. DFG will advise DWR on the needs of the fishery in order to assist DWR to identify actions to implement reductions or cessation in diversions or changes in the timing or manner of the diversions as necessary to avoid the take of Coho Salmon.

6. DWR will implement the reductions or cessation in diversions or changes in the timing or manner of diversions subject to DWR Watermaster Service under the decrees as necessary to avoid the take of Coho Salmon.

7. As soon as possible, but no later than 24 hours after the fact, DWR will notify DFG of all reductions it has implemented to avoid take of Coho Salmon.

8. DWR reserves its unconditional right to terminate watermaster service on any and all creeks or streams subject to this MOU. DWR will give DFG 24 hours notice of its intention to do so.

9. DFG's designee for the purposes of this Agreement is: Senior Fisheries Biologist (530) 225-2866 or (530) 225-2381 fax. In the event the Senior Fisheries Biologist is unreachable, DFG's after hours dispatch is (916) 445-0045.

10. DWR's designee for the purposes of this Agreement is: Supervising Watermaster (530) 529-7369 or (530) 529-7322 fax. In the event the Supervising Watermaster is unreachable, DWR's after hours page should be used (916) 592-7332.

(sgd) Thomas M. Hannigan

Thomas M. Hannigan, Director
Department of Water Resources
Date: JUN 0 6 2002

Original Signed by
Robert C. Hight

Robert Hight, Director
Department of Fish and Game
Date: _____

Example Attachment A

This spreadsheet will expand as new information becomes available.

Watermaster Service Area: French Creek

Diversions

Date	Comment		Confluence of Scott River	Diversion # 5	Diversion # 4	Creek Below Diversion # 3	Diversion # 1
4/5/2002			1 - EBWM				
4/12/2002					5.34 - MBWM	12 - EBWM	1.25 - MBWM
4/15/2002				4.5 - EBWM			

EBWM - Estimated by Watermaster
MBWM - Measured by Watermaster
Numerical values in cubic feet per second

6/6/2002 11:39 AM
Attachment A.xls

APPENDIX D

Shasta and Scott River Watershed-wide Permitting Programs Application Process

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July 21, 2009

Shasta and Scott River Watershed-wide Permitting Programs

Application Process

Introduction:

The following steps describe the process by which an agricultural operator[1] (Applicant) may submit an Application for an Incidental Take Sub-permit and a Streambed Alteration Agreement (Application) to the Department of Fish and Game (DFG) through the Shasta and Scott River Watershed-wide Permitting Programs (Programs). To begin the application process the Applicant will complete an *Interest to Participate Form* (Interest Form) and pay an application fee. Completing the Interest Form (or the Application) does not commit any applicant to participate in either Program. The Applicant will be given the opportunity to withdraw from the process prior to signing a Incidental Take Sub-permit (Sub-permit) or Streambed Alteration Agreement (SAA) issued by DFG pursuant to either Program.

Step 1: Interest to Participate

1. Applicants who are interested in participating in the Programs shall complete the Interest Form and a *Property Information Form* (Property Form) for each applicable property (i.e. farm or ranch). In addition, each Applicant will be required to pay an application fee.

2. Applicants may obtain the Interest and Property Forms in the following ways:

- From the RCDs Offices
- From the RCD websites
  Shasta Valley – www.svrcd.org
  Scott Valley – www.sisqrcd.org

3. All forms and an application fee shall be submitted to the appropriate Resource Conservation District (RCD) to begin the application process.

For the Scott River Watershed
Siskiyou RCD
450 Main Street
Etna, CA 96027
Phone (530) 467-3975
Fax (530) 467-5617

For the Shasta River Watershed
Shasta Valley RCD
215 Executive Court, Suite A
Yreka, CA 96097
Phone: (530) 842-6121 ext 106
Fax: (530) 842-1027

[1] "agricultural operator" is defined as any natural person or any partnership, corporation, limited liability company, trust, or other type of association or any public agency, as defined in CEQA Guidelines, §15379, who diverts water from a stream by means of an active diversion in either Program Area for an agricultural purpose, or is involved in an agricultural operation on property in either Program Area through which or adjacent to which a stream flows

Step 2: Program Administration File Development

1. Upon receipt of the Interest and Property Forms, the RCD staff will:

   a Create a file that includes a copy of the Interest and Property Forms
   b. Enter information into the Client Tracking Database
   c. Process the application fee using Quickbooks and deposit the fee into a separate account maintained by the Siskiyou County Auditor.
   d. Enter information into the fee calculation tool – at the end of the 60-day enrollment period the annual fees will be determined and landowners will be notified in writing (see Step 6 for details regarding the fee collection).

Step 3: Application Assistance

1. Upon receipt of the Interest and Property Forms RCD staff will contact the Applicant to schedule an appointment. During the appointment the RCD staff member shall provide the Applicant with an Application and assist them in filling out the form. In addition, RCD staff will assist the Applicant in filling out the Water Right Verification Form and the Right of Entry Agreement, if applicable.

2. The Applicant will complete and sign the Application and other forms, as necessary, and mail or deliver the original(s) to DFG at the below address:

Shasta/Scott Watershed-wide Permitting Program
Northern Region
Department of Fish and Game
601 Locust Street
Redding, CA 96001

Step 4: Application Processing

1. DFG staff will assign a tracking number and enter the information from the Application into the DFG Project Tracking database.

2. DFG staff will send the tracking number to the appropriate RCD to notify them of the receipt of an Application.

3. DFG staff will review the Application for completeness.

4. If the Application is incomplete, DFG staff will contact the Applicant in writing (with a copy to the appropriate RCD) to request the necessary information.

5. When DFG staff determines that the Application is complete, the Applicant will be notified in writing and a PDF of the complete Application will be e-mailed to the appropriate RCD.

6. Upon receipt of the completed Application, RCD staff will complete the necessary database entry for each file and review to ensure database consistency.

Step 5: Site Visit

1. DFG staff will contact the Applicant to set up a site visit that will include the RCD staff.

2. During the site visit the following tasks will be performed:

a. DFG staff and the RCD staff will identify the avoidance and minimization measures that will be required of the Applicant.
b. DFG staff will confirm that the information on the Application is valid.
c. DFG staff will explain the format of the Sub-permit and SAA to the Applicant.
d. DFG staff and RCD staff will fill out the pre-project implementation checklists for water diversion, fish passage and livestock and vehicle crossings, if applicable.

3. A PDF of any pre-project implementation checklist completed during the site visit will be e-mailed to the appropriate RCD by the DFG.

Step 6: Draft and Final Sub-permit Issuance

1. DFG will send three unsigned hard copies of the draft Sub-permit to the Applicant for review and signature, and e-mail a PDF version to the appropriate RCD. Applicants are not required to sign the draft Sub-permit until after they have been notified of their annual fee and they sign a *Notice to Proceed.*

2. Each RCD will determine the first year annual fee for each Applicant at the end of the 60-day enrollment period. The RCD will send a letter to each Applicant informing them of their annual fee, minus the credit for their application fee. Included with the letter will be a *Notice to Proceed* form for the Applicant to confirm their interest in participating in the Permitting Program, to request consultation, or to withdraw their application.

3. If interested in participating in the Permitting Program after reviewing the annual fee, the Applicant will fill out and sign the *Notice to Proceed* form and send it, along with a check to cover their first year annual fee, to the RCD.

4. Upon receipt of the *Notice to Proceed* and a check in the amount of the annual fee, the RCD will deposit the check into the account maintained by the Siskiyou County Auditor and provide written verification to DFG that the fee has been paid.

5. The Applicant will sign the three hard copies of the Sub-permit and provide them to the RCD for signature.

6. The RCD will sign the three copies of the Sub-permit.

7. The RCD will return all three hard copies of the signed Sub-permit to DFG.

8. DFG will execute the three copies of the Sub-permit, retain one original, and send one original each to the Applicant and the RCD for their records.

Step 7: Draft and Final Streambed Alteration Agreement Issuance

1. DFG will send two unsigned hard copies of the draft SAA to the Applicant for review and signature.

2. The Applicant will sign the two copies of the draft SAA and return them to DFG.

3. Upon receipt of the signed copies of the SAA (from the Applicant), the DFG will execute the SAA, retain one and send one to the Applicant.