TUOLUMNE RIVER TECHNICAL ADVISORY COMMITTEE
DON PEDRO PROJECT - FERC LICENSE 2299

MODESTO IRRIGATION DISTRICT
TURLOCK IRRIGATION DISTRICT
CITY & COUNTY OF SAN FRANCISCO
CALIFORNIA DEPARTMENT OF FISH & GAME
U. S. FISH & WILDLIFE SERVICE

333 East Canal Drive
Turlock, CA 95381-0949
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TECHNICAL ADVISORY COMMITTEE MEETING

11MAR, 2004, 9:30 a.m.

Turlock Irrigation District, Lunch Room (2nd floor)

DRAFT AGENDA

1. Introduction
   A. Comments on draft agenda
   B. Correspondence since last meeting
2. **ACTION ITEMS**:
   A. Coarse Sediment Mngmt. Plan adjustments
   B. CBDA - Gravel Addition amendment
   C. Tasks associated with trout issues
   D. 2004 monitoring
3. General FSA Update:
   A. FSA/Order activity, expense tracking, and report status
   B. Review of activities from last meeting
   C. VAMP, Agency, and NGO updates
   D. Monitoring
      1. Water temperature model presentation (Dotan) – will be at 10 AM
      2. Other monitoring
   E. River operations and forecasts
   F. Restoration
      1. Funding, planning and implementation
      2. Project monitoring
      3. Other restoration information
4. Additional items
5. Next meeting and topics

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TECHNICAL ADVISORY COMMITTEE
DRAFT MEETING MINUTES of
11 March 2004

1. AGENDA & PRIOR MINUTES

A. The correspondence list will be expanded to include related FERC filings – several comments were made. Ford indicated there is a FERC web site with an electronic library.

B. Item 3C was discussed prior to Item 2 because of speaker time constraints.

2. ACTION ITEMS:

A. Review comments on the draft final of the Course Sediment Management Plan (CSMP) by TRTAC members and from project managers on the Merced and Stanislaus Rivers received indicated there was a need to look more closely at impacts on trout habitat during implementation of gravel infusion projects for expanding the aerial extent of existing riffles in the upper 10-12 miles. The comments focused on the process used to identify and select sites for gravel infusions and indicated there might also be additional ways to add more trout and salmon habitat in the long pools within the upper reaches of the river that would not involve existing riffles. However, the use of "dunes" to create the added habitat consumes a significantly larger quantity of aggregate than originally projected in the CSMP and subtle changes in the river hydraulics and stage. The CSMP will be finalized incorporating the comments discussed above.

B. The inchannel improvements used in the La Grange Gravel Infusion Project rely upon the CSMP as the basis of design. Fryer will be taking an amendment to the California Bay Delta Authority (CBDA) later this week requesting to expand the aerial extent of the riffles to be reconstructed under the Infusion Project. The presentation to the CBDA was to include the addition of the "dunes" to long pools as part of the design change for the project. The TRTAC concurred with the proposed presentation to the CBDA. Given that the quantity of aggregate would be less with use of "dunes", the TRTAC asked that the areas to be treated focus on the upper reaches of the river starting with SRP 1 at River Mile 51 above Old La Grange Bridge.

C. Trout related issues were discussed: DFG float surveys from La Grange to Turlock Lake have been done twice and angling has obtained 40 samples with 8 of 24 > 18".

3. GENERAL INFORMATION:

A. Ford presented FSA/Order activities and expense status; monitoring funds are nearly expended and the DFG invoice for the July 02 to June 03 period is needed; annual report items were reviewed

B. Ford presented information of the runoff forecasts and the associated VAMP releases. Heyne presented a summary of the proposed 2004 Spring Steelhead survey will be conducting by DFG; Blakeman provided handout of graphs with 2002-03 RST data

C. Dotan and Smith made a presentation on the water temperature modeling being done on the Stanislaus River. The work started in 1998 as a cooperative program with DFG, USFWS, NMFS, OID, SSJID, SEWD, & USBR. A HEC-5Q model (developed by Smith for COE) was used to look at 11 scenarios. Uses 6-hr and ½-mile x-section intervals on Stanislaus. The model includes temperature profiles through reservoirs and the graphics demonstrate the effects lowered reservoir storage from multi year droughts. The reservoirs are not modeled using either a 2D or 3D method, but these model types are used for the river reaches. The model can be used to evaluate different spring and fall pulse flows. Phase 2 with 3-yr CALFED contract – peer review panel on temperature criteria to be applied by species, time, and location.

D. Fryer provided a handout and update on the status of the TAC restoration projects; TRT working on CEQA document for Big Bend project; NMFS listing and critical habitat rules in progress; FOT reported Bobcat Flat is in CEQA process and about planting at Waterford

E. Ford presented the current DWR Basin Index information, with associated river operations forecast and flow schedules discussed.

4. ADDITIONAL ITEMS: CRRF provided report on trout habitat mapping, including many color photos

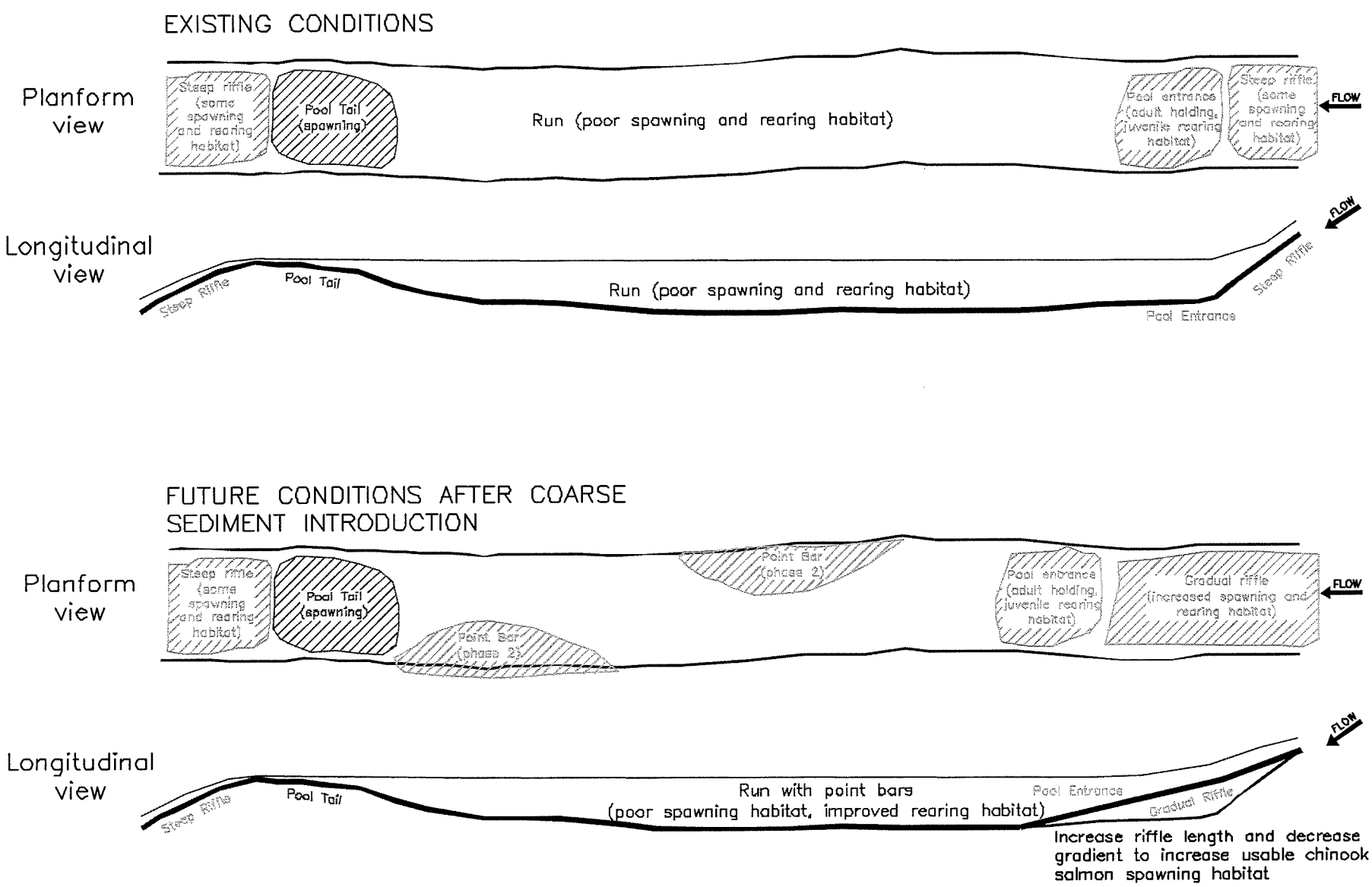
5. NEXT MEETING & TOPICS:

A. The TRTAC subgroup will meet on Monday 24 May 2004.

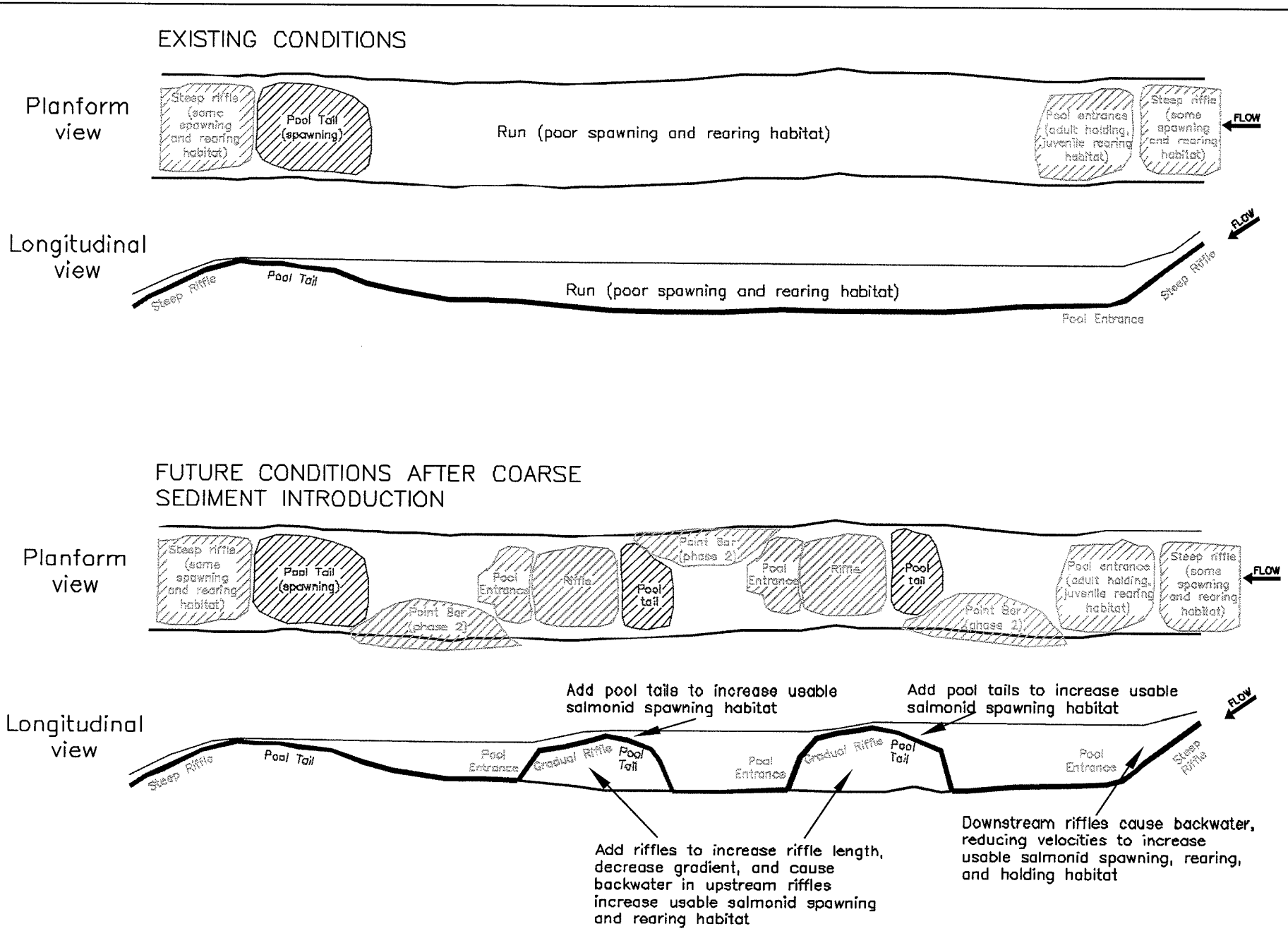
B. The next regular TRTAC meeting will be Thursday 10 June 2004 starting at 0930.

FERC 2299 TRTAC Meeting
11 March 2004

Name	Organization
Tim Ford	TID/MID
Wilton Fryer	TID
Patrick Koepele	TRPT
Jeff McLain	USFWS
Dave Boucher	FOTT
Allison Boucher	FOTT
Ron Yoshiyama	CCSF
John Chester	CCSF
Noah Hume	Stillwater Sciences
Tim Heyne	DFG
Dennis Blakeman	DFG
Madelyn Martinez	NMFS
Carl Mesick	CRRF
Avry Dotan	AD Consultants
Donald Smith	RMA, Inc



Conceptual drawing of original coarse sediment augmentation plan to extend steep riffles to increase Chinook salmon spawning and rearing habitat.



Conceptual drawing of <u>modifed</u> coarse sediment augmentation to avoid potential harm to existing salmonid habitat in steep riffles.

TURLOCK IRRIGATION DISTRICT

WATER PLANNING DEPARTMENT
MEMORANDUM

TO: TRTAC
FROM: Wilton Fryer
DATE: 10 March 2004 2003
RE: Project Status Update

Project	Funding	Status
SRP 9	Full	Construction completed, revegetation planted and maintained for two years, and final replacement planting completed in December 2003. NOC filed March 2003.
SRP 10 Dike	Full	Construction complete. NOC filed March 2003.
7\11 Segment	Full	Construction complete with remaining revegetation planted in December 2003. 7\11 Materials NOC filed March 2003. Limited irrigation & maintenance in 2004.
MJ Ruddy	Full	ROW appraisal continues under review by Interior Dept. with acquisition now scheduled for April 2004. Revised date for 2004 construction is pending completion of land acquisition.
Warner-Deardorff	Partial	Design at 90% stage, permitting well under way, and ROW appraisal on hold pending CBDA resolution of Directed Action review. Awaiting response from CALFED on Directed Action package submitted 21 November 2003.
Design Manual	Full	Final Report submitted 26 February 2004.
Course Sediment	Full	Final Report submitted to TRTAC 17 December 2003. Report to be modified to expand on methods and techniques to protect existing salmonid habitats during implementation.
La Grange Gravel	Full	An Amendment request has been submitted to CBDA in January 2004 to delete the aggregate mining and expand inchannel gravel infusion work. The amendment is to be heard 25 March 2004 and approval is expected to be linked to completing adjustments being made in the Course Sediment Management Plan.

Fine Sediment	Full	A revised Gasburg Creek watershed analysis is being reviewed. Upon completion of that analysis, DFG will be contacted regarding moving forward on the settling basin & site layout.
RM 43	Full	DWR contract in place, site reviews done, starting design and permitting process.
SRP 10	Partial	Draft design concepts being finalized along with earthmoving estimates in preparation for developing a project budget for the next CBDA funding cycle. Continue to look for alternative land acquisition funding.

State of California – The Resources Agency ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
San Joaquin Valley and Southern Sierra Region
1234 East Shaw Avenue
Fresno, California 93710

March 3, 2004

Tuolumne River Technical Advisory Committee (TRTAC)

Clarification of Tuolumne River Spring 2004 Steelhead Surveys

Dear TRTAC Members:

The purpose of this letter is to clarify specifically what steelhead surveys the Department of Fish and Game (Department) will be conducting in the Tuolumne River this winter and spring, and to advise you that Department staff (e.g., Mr. Dennis Blakeman) will be redirected to performing field work, rather than conducting report writing, during this time period per the TRTAC's request.

On January 28, 2004, the TRTAC subcommittee met to discuss various TRTAC related topics, one of which was the need for additional information to document the presence, and abundance, of steelhead in the Tuolumne River. The TRTAC, at this meeting decided:

1. Conducting steelhead surveys was a high priority;
2. Steelhead surveys (e.g., redd surveys) should be conducted this spring; and
3. It was advantageous to all parties to have Mr. Dennis Blakeman lead the redd survey, with Turlock Irrigation District (TID) providing temporary staff to assist Dennis as needed.

In response to the TRTAC's decision at this meeting to conduct steelhead surveys, I directed Dennis to do two things: a) contact Department staff who are currently conducting steelhead redd surveys in other Central Valley rivers (e.g., American River) and ascertain what methodologies are being employed; and b) develop a steelhead redd evaluation survey protocol for the Tuolumne River. Dennis completed this assignment in early to mid February 2004 (Tuolumne River redd survey protocol attached). Once this protocol was completed, I directed Dennis to initiate the Tuolumne River redd surveys. Dennis initiated the steelhead redd survey in mid February 2004.

Dennis will be conducting steelhead redd surveys on the Tuolumne River this winter and spring on a weekly basis as long as favorable conditions occur (e.g., good water clarity). During this time Dennis will survey the Tuolumne River by use of drift boat and/or use of snorkel, at his discretion, to detect, and verify, presence of steelhead redds in the Tuolumne River. Any live fish (e.g., steelhead) observed during the course of conducting redd surveys will be noted, and any dead fish (e.g., steelhead) observed during the course of conducting redd surveys will be collected for further analysis. No angling will occur while redd surveys are being conducted so as to avoid distractions, and prevent missing opportunities to document steelhead and/or their redds.

In addition to completing the steelhead redd survey, I have also, based upon TRTAC interest, directed Dennis to assist our Department statewide steelhead coordinator (Ms. Katie Perry) in collecting otoliths from adult steelhead taken from the Tuolumne River to ascertain, and document, the presence of steelhead (e.g., *Onchorhyncus mykiss* anadromous form) in the Tuolumne River. To this end, Dennis, assisted by Mr. Steve Walser and Mr. Tim Smith, will be conducting hook-and-line (e.g., angling) surveys on a weekly basis in the Tuolumne River. The Department has take authorization from NOAA Fisheries to enable harvest (e.g., kill) of both adult and juvenile steelhead in the Tuolumne River. To ensure that otoliths, and other documentary evidence verifying the presence of steelhead in the Tuolumne River is not compromised, my staff and I have developed a steelhead "chain-of-custody" tracking log (e.g., see attached) and electronic data filing system. This will enable the Department to ensure the integrity of its steelhead data and/or biological samples. As samples are sent to labs for further analysis, this information, and results, will also be catalogued with chain-of-custody linkage remaining intact.

To avoid confusion, and scheduling conflicts, I have instructed Dennis, when he sets up his Tuolumne River steelhead sampling schedule on a weekly basis to adhere to the following field survey priorities: 1) guided drift boat angling survey (one day per week); 2) redd survey (two days per week); and 3) shore angling survey (up to two days per week). This means that the first day scheduled is the guided drift boat angling survey, then the two days of redd surveys then, as time allows, shore angling. To help ensure that adult steelhead do not become more difficult to catch and collect (e.g., hook), no redd or shore angling surveys will be conducted the day before the guided drift boat survey is scheduled to occur. Additionally, to help keep the TRTAC and interested parties informed of the progress/status of the various steelhead surveys on-going in the Tuolumne River this spring, I have instructed Dennis (via the Department's official TAC representative Mr. Tim Heyne) to prepare bi-weekly e-mail updates so that summarized steelhead survey information can be dispersed in a timely fashion.

Having clarified Department efforts regarding steelhead studies being conducted this winter and spring, I now address the issue of outstanding reports. When the TRTAC made the decision that gathering steelhead information in the Tuolumne River this year was a high priority by default, redirection of the Department's only Tuolumne River dedicated staff person occurred. The TRTAC's decision to take advantage of the opportunity to collect additional steelhead information in the Tuolumne River this year, prior to the April 2005 FERC review of the performance of the FSA flow and non-flow measures is understandable. However, this change in priorities will delay somewhat the completion of outstanding reports. Namely, the 2003 Adult Salmon Escapement Survey Report, the Salmon Redd Use Report, and the 1998, 2002 and 2003 Rotary Screw Trap reports. The Department intends to complete these reports prior to the April 2005 FERC reporting deadline date as TRTAC priorities and Department staffing capabilities dictate. I remind the TRTAC that on an annual basis the Department completes two full, large scale, field efforts on the Tuolumne River (e.g., adult fall-run Chinook salmon and juvenile salmon out-migration surveys), along with conducting juvenile salmon survival tests, coded-wire-tag recovery and decoding, water temperature monitoring, as well as conducting reviews of various TRTAC reports, and responding to TRTAC's numerous data requests. For the most part, the Department has completed this Herculean effort (e.g., conducting various field studies and completing reports thereof) with just one full-time staff person dedicated to the Tuolumne River. That said, the Department recognizes the need, and importance of completing these outstanding reports and is committed to completing them.

If you need addition clarification, please call me at (559) 243-4014, extension 241.

Yours sincerely,

Dean Marston

Dean Marston
Senior Biologist Supervisor
(Marine/Fisheries)

Attachments

2003
Tuolumne River Rainbow/Steelhead Trout Redd Survey
Proposal

Objectives

The primary objectives are to locate Rainbow/Steelhead Trout redds, measure physical parameters of identified redds and determine presence of Rainbow/Steelhead Trout on redds. Other information to be obtained will be presence of Rainbow/Steelhead Trout in the Tuolumne River.

Sample Area

Area of Tuolumne River to be sampled is from river mile 52, below La Grange Dam powerhouse downstream to river mile 42, Turlock Lake State Park.

Methods

Use a drift boat to float down the river inspecting all potential steelhead spawning habitat. The drift boat will be maneuvered diagonally across river from bank to bank. When areas or channels of the river are to shallow, it will be walked or snorkeled. When a possible steelhead redd is observed it will be marked with GPS coordinates using a Garmin GPSmap 76S unit. Redd data will be entered onto a datasheet.

Data to be collected at each redd.

Species	Steelhead, chinook, lamprey, pikeminnow, sucker, unknown.
Depth	Water depth in centimeters measured near pot in a location to approximate depth prior to redd construction.
Redd Age	0=test redd, 1=fish on, 2=new still clear, 3=older some algae, 4=old obscure, 5=marker only.
Fish size	Estimated length of a fish on a redd, cm.
Fish size 2	Estimated length of a second fish on a redd, cm.
Velocity	Water velocity measured near the front of the redd in a location near the bottom where a fish would be when beginning to construct a redd (about 10-20 cm off the bottom).
Pot length (PL)	Length of pot parallel to flow.
Pot width (PW)	Maximum width of pot perpendicular to flow.
Pot depth (PD)	Maximum depth of excavation relative to the undisturbed stream bed = water depth in pot minus water depth to undisturbed stream bed.
Pot substrate (PS)	Size of dominant substrate in pot, visually estimated after calibrating with measuring device.
Tail spill length (TSL)	Length of tail spill parallel to flow.
Tail spill width 1 (TSW1)	Width of tail spill perpendicular to flow at 1/3 of the distance down from the upstream end of the tail spill.
Tail spill width 2 (TSW2)	Width of tail spill perpendicular to flow at 2/3 of the distance down from the upstream end of the tail spill.
Tail spill substrate	Size of dominant substrate in tail spill, visually estimated after calibrating with measuring device.
Marker	Denotes that a colored marker was placed on the redd.
Flow	River flow in cfs released to the river from La Grange Dam.
Method	Motor boat, drift boat, canoe, snorkeling, wading, aerial.

Redd measurements are from those used in the American River Steelhead Redd survey which are based on measurements used in California coastal spawning surveys (Gallagher 2002).

Gallagher, S.P. 2002. Salmonid spawning survey protocols for 2002 – 2003. California State Department of Fish and Game. 1031 South Main Street, Suite A. Fort Bragg, CA 95437. Draft 8 October 2002. 14p.

Tuolumne River
Rainbow/Steelhead Redd Survey

Page______of_______

Date:____/____/____ **Location:**____________________ **Secchi:**_________**ft.** **River Flow:**___________**cfs**

Start Time:_______________ **End Time:**________________ **River Temp:**___________**°C**

Redd_ID		Species		Depth	Redd Age		H_20 Velocity	
Fish Size 1				Fish Size 2			Marker Y / N	
Pot					**Tail Spill**			
Length	Width	PDepth	Substrate		Length	Width 1	Width 2	Substrate

Redd_ID		Species		Depth	Redd Age		H_20 Velocity	
Fish Size 1				Fish Size 2			Marker Y / N	
Pot					**Tail Spill**			
Length	Width	PDepth	Substrate		Length	Width 1	Width 2	Substrate

Redd_ID		Species		Depth	Redd Age		H_20 Velocity	
Fish Size 1				Fish Size 2			Marker Y / N	
Pot					**Tail Spill**			
Length	Width	PDepth	Substrate		Length	Width 1	Width 2	Substrate

Redd_ID		Species		Depth	Redd Age		H_20 Velocity	
Fish Size 1				Fish Size 2			Marker Y / N	
Pot					**Tail Spill**			
Length	Width	PDepth	Substrate		Length	Width 1	Width 2	Substrate

Redd_ID		Species		Depth	Redd Age		H_20 Velocity	
Fish Size 1				Fish Size 2			Marker Y / N	
Pot					**Tail Spill**			
Length	Width	PDepth	Substrate		Length	Width 1	Width 2	Substrate

Specimen Collection Information			Case Number: **DFG**
Collection			
Date:	Location:	GPS Coordinates:	
Time:	Method:	Collector/Agency:	
Species:	Fork Length:		Sex: M / F / Unk
☐ Whole Fish ☐ Head ☐ Otolith ☐ Scale ☐ Other:_____	Comments:		

Chain of Custody

Sample Type:

- ☐ Whole Fish
- ☐ Head
- ☐ Otolith
- ☐ Scale
- ☐ Other (describe)_____

From: (Print Name, Agency)	Signature:	Date:	Delivered via: ☐ US Mail ☐ In Person ☐ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: ☐ US Mail ☐ In Person ☐ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: ☐ US Mail ☐ In Person ☐ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: ☐ US Mail ☐ In Person ☐ Other:
To: (Print Name, Agency)	Signature:	Date:	

Chain of Custody (continued)			Case Number:
From: (Print Name, Agency)	Signature:	Date:	Delivered via: □ US Mail □ In Person □ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: □ US Mail □ In Person □ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: □ US Mail □ In Person □ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: □ US Mail □ In Person □ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: □ US Mail □ In Person □ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: □ US Mail □ In Person □ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: □ US Mail □ In Person □ Other:
To: (Print Name, Agency)	Signature:	Date:	
From: (Print Name, Agency)	Signature:	Date:	Delivered via: □ US Mail □ In Person □ Other:
To: (Print Name, Agency)	Signature:	Date:	

Case number will be "DFG04Txxxx".

DFG - for La Grange fish and Game,
04 - year,
T - Tuolumne(M- Merced Ri., S - Stanislaus Ri., J - San Joaquin Ri.),
xxxx - will be disc tag number which will be attached to fish (or other sample e.g. scales, otolith, - DNA, etc.)

In order to keep fish from different rivers separated when kept in freezer, the Stanislaus will use tag #'s 001-100, Tuolumne Ri. Will use 101-200, Mer. Ri. 201-300, San Joaquin Ri. 301-400

For example, the Case Number for the first fish on the Tuolumne Ri. Will be DFG04T101