# Attachment -C-

2005 Tuolumne River
Technical Advisory Committee Materials:

- List of 2005 TRTAC Activities/Materials
- March Meeting
- July Meeting
- Sep-Nov Meetings
- December Meetings

# 2005 TRTAC Activities & Materials

(underlined items are designated for inclusion in the FERC Report)
[For filings with FERC, go to http://ferris.ferc.gov/idmws/search/fercgensearch.asp ;
indicate date range of interest, enter P-2299 as Docket Number, and submit]

## Activities/Materials 15Dec2004-10Mar2005

* 16DEC: 2003 Spawning survey report (Blakeman)
* 16DEC: BDAT web link (Heyne)
* 16DEC: Several reference web links (McLain)
* 17DEC: Stanislaus Water Temperature Model Peer Review Panel Report (Marston)
* 21JAN: New FOT e-mail addresses (Boucher)
* 09MAR: Meeting agenda and material list (Ford)

==========

**Subgroup items:**

* 17DEC: Draft 2004 seine/snorkel report (Ford)

==========

**Select FERC filings available from FERC online e-library (listed by doc. date):**

* 17JAN: Comments of Friends of the Tuolumne, Inc in response to Turlock Irrigation District's 10/15/04 letter regarding the Coarse Sediment Management Plan etc for the Don Pedro Project under P-2299
* 27JAN: Turlock Irrigation District reports that the current minimum flow requirement of 150 cfs through March 31 exceeds the 105 cfs as shown on the table represented by a gage elevation of 169.38 feet pursuant to Article 38 under P-2299

++++++++++

## Activities/Materials 10Mar-13Jul2005

* 04 Apr: TRTAC update, including reports to FERC (Ford)
* 24 May: Request for new TRTAC meeting date (Koepele)
* 27 May: Reply to Koepele (Ford)
* 27 May: Reply to Ford (Walser)
* 03 Jun: Cancellation of 22 June meeting, flow schedule correspondence, and Scordelis contact info (Ford)
* 28 Jun: 13 July meeting agenda and other correspondence (Ford)

==========

**Subgroup items:**

* 10 Mar: 2004 Grayson RST report (Fuller)
* 11 Mar: Updated CWT analysis report (Hume)
* 16 Mar: 2004 spawning survey report (Blakeman)
* 24 Mar: 24 Feb 2005 Grayson seine report (Boucher)
* 29 Mar: Memo update on gravel addition project (Mierau)
* 19 Apr: Reminder of 20 Apr canal tour (Ford)

==========

**Select FERC filings available from FERC online e-library (listed by doc. date):**

* 24 Mar:  2004 Annual Summary Report Pursuant to Article 58 of the 1996 FERC Order issued July 31, 1996. Progress report submitted in 4 parts by TURLOCK & MODESTO IRRIGATION DIST. under P-2299.
* 24 Mar: 2005 Ten Year Summary Report pursuant to Paragraph G of the 1996 FERC Order issued July 31, 1996. Progress Report submitted by TURLOCK & MODESTO IRRIGATION DIST. under P-2299
* 28 Mar: Turlock & Modesto Irrigation District submits supplement to the 2005 summary report pursuant to Paragraph (G) of Order issued 7/31/1996 under P-2299.
* 04 May: Procedural Motion of California Rivers Restoration Fund, et al. under P-2299, et al.
* 19 May: Response of TURLOCK & MODESTO IRRIGATION DIST. to Motion for Establishment of Procedures under P-2299, et al.
* 24 May: The US Fish and Wildlife Service informs FERC that they will provide comments on Turlock Irrigation District & Modesto Irrigation District's 4/1/05, Ten Year Summary Report for the Don Pedro Project by 6/29/05 etc under P-2299.
* 06 Jun: Letter order informing Turlock Irrigation District, CA et al that the 2004 Lower Tuolumne River Annual Report, filed with FERC on 3/25/05 fulfills the reporting requirements of Paragraph (F) and (G) etc re the New Don Pedro Proj-2299.
* 24 Jun: Notice of filing of Fisheries Studies Report & study proposals, and soliciting comments, motions to intervene, and protests re Turlock and Modesto Irrigation Districts' Don Pedro Proj-2299.
* 27 Jun: The Friends of the Tuolumne, Inc requests that FERC establish procedures for a hearing on the 2005 Ten Year Summary Report for the Turlock and Modesto Irrigation Districts re New Don Pedro Project under P-2299.
* 11 Jul: Comments of California Rivers Restoration Fund under P-2299.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

## Activities/Materials 13Jul-21Sep2005

* 15Jul: Presentation file (ppt) from 13Jul meeting and some answers to questions (Hume)
* 26Aug: Districts 23Aug filing with FERC (Ford)
* 26Aug: Remove FERC staff from TRTAC lists (Scordelis)
* 15Sep: Agenda for 21Sep meeting (Ford)

==========

**Select FERC filings available from FERC online e-library (listed by doc. date):**

*21Jul: US Department of the Interior's provides comments in response to FERC's 6/24/05 Notice of Filing Fisheries Studies Report and Study Proposals re the New Don Pedro Hydro Proj-2299.
*25Jul: Motion/Notice of Intervention of California Rivers Restoration Fund et al. under P-2299
*25Jul: Motion/Notice of Intervention of National Marine Fisheries Service under P-2299, et al.
*25Jul: Motion/Notice of Intervention of CA Dept of Fish and Game under P-2299.
*25Jul: California-Nevada Chapter American Fisheries Society comments on ten-year summary report under P-2299.
*25Jul: Motion/Notice of Intervention and Comments of San Francisco City Attorney's Office under P-2299.
*25Jul: Motion/Notice of Intervention of San Francisco Bay Area Water Users Association under P-2299.
*25Jul: Comments of Stanislaus Flyfishermen under P-2299.

*25Jul: Request for Extension of Time of 120-days of Friends of the Tuolumne, Inc. under P-2299.
*17Aug: US Fish & Wildlife Service comments on the motion to intervene & comment of the City & County of San Franciso on the ten-year summary report on Fisheries Studies by the Turlock & Modesto Irrigation Districts under P-2299.
*23Aug: Pursuant to the Commission's Notice of June 24, 2005, Turlock Irrigation District and Modesto Irrigation District "Licensees" hereby submit their responses to the comments filed on the Licensees' 2005 Ten Year Summary Report (P-2299).
* 23Aug: American Fisheries Society's comments on Turlock & Modesto Irrigation District's ten-year summary report on the Don Pedro Project under P-2299.
* 20Sep: Notice of additional time of comment and response periods re Turlock and Modesto Irrigation Districts' Don Pedro Project under P-2299.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**Activities/Materials 21Sep-13Oct2005**

* 26Sep: Snorkel summary from 20-22Sep to subgroup (Kirihara)
* 06Oct: 21Sep meeting summary, flow schedule letter, PSP Task 6 list, and 13Oct agenda (Ford)
* 12Oct: Journal article on riparian vegetation recruitment by Stella, et al. (Hume)
* 13Oct: Handouts from 13Oct meeting - monitoring summary (ppt file), HEC cross-sections, PSP monitoring summary table

==========

**Select FERC filings available from FERC online e-library (listed by doc. date):**

* 30Sep: Turlock Irrigation District submits the revised Tuolumne River flow schedule for the 2005-2006 FERC fish flow year in accordance with Article 37 re Don Pedro Project under P-2299.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**Activities/Materials 13Oct-04Nov2005**

* 27Oct: Meeting notice (Ford), two reference articles (Vick), and Bobcat Flat monitoring (M&T)
* 01Nov: Agenda and project monitoring table (Ford/Vick)
* 03Nov: Grayson River Ranch Monitoring Report (Boucher)

==========

**Select FERC filings available from FERC online e-library (listed by doc. date):**

None

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**Activities/Materials 04Nov-08Dec2005**

* 28 Nov: Nov meeting summary (Ford)
* 05 Dec: Draft agenda for 08 Dec, material list, draft agendas for workgroup meetings of 07 & 14 Dec
* 07 Dec: Workgroup meeting on Monitoring PSP
* 08, 10, 17, 29Nov, 08Dec: Escapement summaries (Blakeman)

==========

**Select FERC filings available from FERC online e-library (listed by doc. date):**

* 22 Nov: Comment on Filing of FRIENDS OF THE TUOLUMNE under P-2299.
* 22 Nov: Additional Comments of the California Department of Fish and Game on the Ten Year Summary (Fisheries) Report filed by Turlock Irrigation District and Modesto Irrigation District for the New Don Pedro Project under P-2299.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

## Activities/Materials 08Dec2005-09Feb2006

* 08Dec, 03Jan: Escapement summaries (Blakeman)
* 14Dec: Workgroup meeting on Monitoring PSP
* 15Dec: Notes of 07 Monitoring PSP meeting (Vick)
* 29Dec: Notice of accident (Walser)
* 04Jan: Notice to subgroup list on flows (Ford)
* 23Jan, 02Feb: Seine summaries (Kirihara)
* 25Jan: Notice to subgroup list on flows and start of RST operations (Ford)
* 06Feb: Meeting notice, summary, and material list (Ford)
* 06Feb: Draft 2005 seine/snorkel report (Ford)
* 08Feb: Initial screw trap catch summary to subgroup (Fuller)

==========

**Select FERC filings available from FERC online e-library (listed by doc. date):**

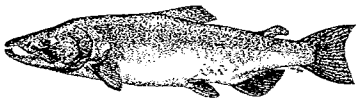
* 22Dec2005: TID/MID Responses to Comments submitted by CDFG and FOT.
* 22Dec2005: SFPUC Response to Comments on Ten-Year Summary Report on Fisheries Studies Conducted in the Tuolumne River and Recommendations for Additional Studies, etc. under P-2299.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

10MAR, 2005, 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. Monitoring activities
   B. Other items?
3. General FSA Update:
   A. Data and report status
   B. Agency and NGO updates
   C. Monitoring, including 2004 spawning survey update
   D. River operations and forecasts
   F. Restoration
4. Additional items
5. Next meeting and topics

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

10 March 2005
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

**Draft Meeting Summary**

1. Introduction
   A. No changes were made to the agenda
   B. Correspondence list was handed out at the meeting and reviewed.

2. General FSA Update:

A. A draft list of items for the 2004 annual report was handed out and reviewed. Blakeman will send out the 2004 spawning report, Ford will send out the 2004 Grayson RST report, and Hume will send out the CWT analysis update.

B. Agency & NGO updates:

Marston (DFG) is being assigned as Water Planning and Project Coordinator and Heyne (DFG) will be the SJR Salmon Project Coordinator and responsible for data needs. Battistoni (DFG) will be the Contract Manager for CALFED project compliance and milestones. Marston is planning a tour for modelers working on the basin temperature model through a TRI-Dam project funded by CALFED.

McLain reported that NMFS is preferred to NOAA Fisheries, steelhead critical habitat has been proposed, and the proposed listing will be in June.

Koepele reported on Big Bend planting – 30 acres N and 30 acres S of 180 total with more planting in April; some inundation is on site.

Boucher reported that RM43 plan is being reviewed and Grayson Ranch sloughs are partly flooded.

Mesick reported that AFRP may have a formal RFP process in April with review by CALFED. The CALFED Ecosystem Restoration Plan (ERP) may have a fall Proposal Solicitation Package (PSP).

C. Monitoring:

DFG had 2004 fall run estimates of 1600 Tuolumne (Schaeffer), 5000 Merced (incl. 1000 at hatchery) and 4000 Stanislaus (about 4400 at weir).

Ford stated the Districts were considering proceeding with RST sampling at Grayson similar to 2004.

DFG indicated they were interested in conducting a large CWT study if flows would be at least 4000 cfs and if funding was provided by AFRP. Total of 800K CWT planned for Merced and VAMP studies.

E. River Operations & Forecasts:

Ford provided handouts of recent basin flows and runoff forecasts – current La Grange flow is about 3000 cfs. There was some interest in having 5500 cfs later in March if feasible.

F. Restoration & Project Updates:

Fryer presented a written summary of the current TRTAC sponsored projects.

3. Additional Items:

A tour of the canals near La Grange was set for 20 April, 9 AM at the DFG office.

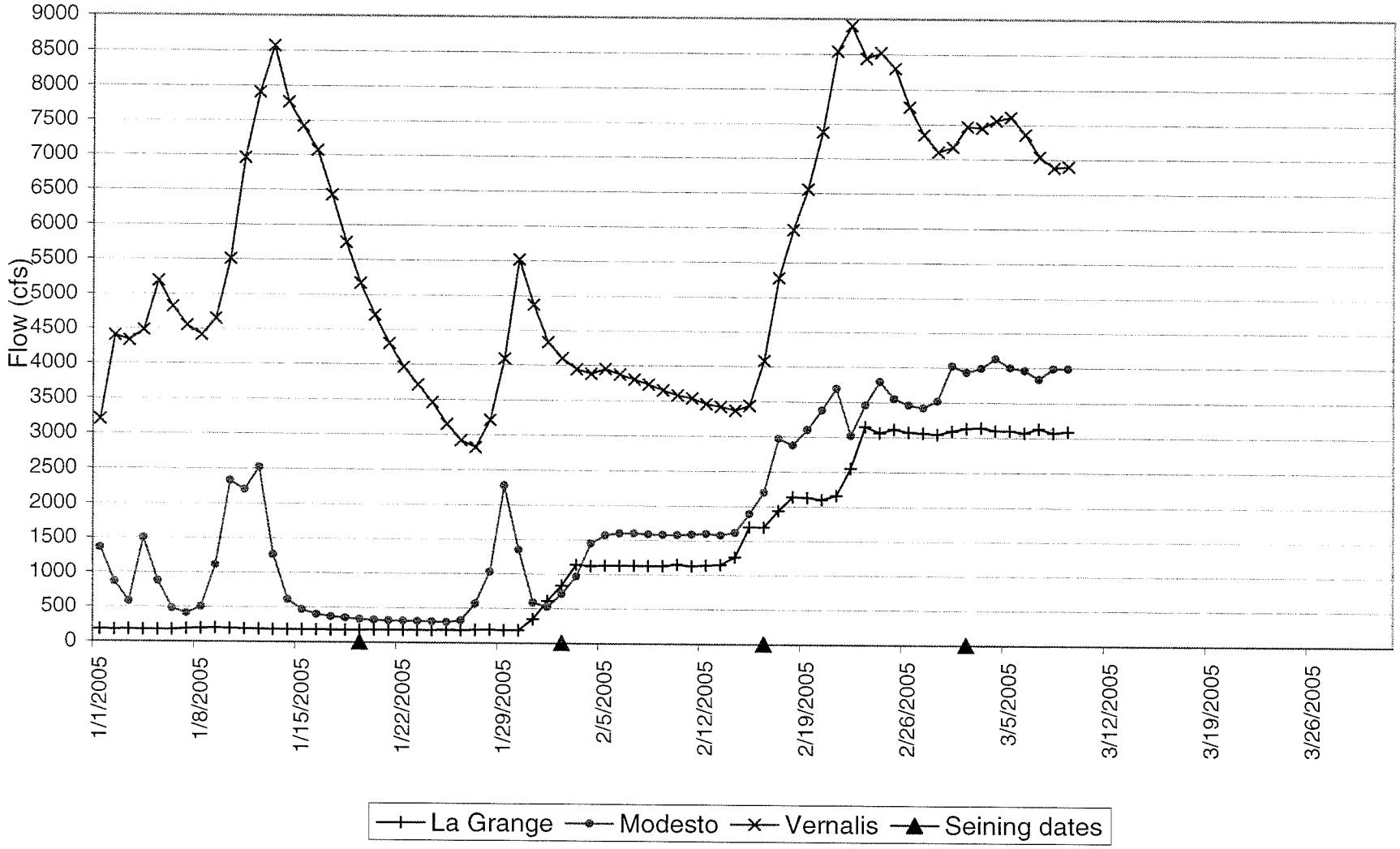
4. Next meeting and topics:

The next TRTAC meeting will be 22 June 2005 at TID. There may be a subgroup meeting prior to that date.

**FERC 2299 TRTAC Meeting**
**10 March 2005**

| Name | Organization |
|---|---|
| Tim Ford | TID/MID |
| Debbie Liebersbach | TID |
| Roger Masuda | TID |
| Bill Johnston | MID |
| Allison Boucher | FOT |
| Ron Yoshiyama | CCSF |
| Noah Hume | Stillwater Sciences |
| Dean Marston | DFG |
| Tim Heyne | DFG |
| Dennis Blakeman | DFG |
| John Battistoni | DFG |
| Carl Mesick | FWS/AFRP |
| Jeff McLain | NMFS |
| Patrick Koepele | TRT |

2005 Tuolumne and San Joaquin River daily mean flow
Provisional USGS data



From: http://cdec4gov.water.ca.gov/cgi-progs/iodir/WSI
(03/08/05)

SAN JOAQUIN VALLEY WATER YEAR TYPE INDEX (60-20-20)

| | Probability of Exceedence | | | | | |
|---|---|---|---|---|---|---|
| Forecast Date | 99% | 90% | 75% | 50% | 25% | 10% |
| Oct 1, 2004 | 0.9 | 1.5 | 1.9 | 2.8 | 3.6 | 4.8 |
| Nov 1, 2004 | 1.4 | 1.9 | 2.3 | 3.0 | 3.9 | 5.0 |
| Dec 1, 2004 | 1.6 | 2.0 | 2.4 | 3.0 | 3.8 | 4.8 |
| Jan 1, 2005 | 1.8 | 2.2 | 2.6 | 3.2 | 3.9 | 4.8 |
| Feb 1, 2005 | 2.7 | 3.2 | 3.5 | 4.0 | 4.5 | 5.1 |
| Mar 1, 2005 | 3.0 | 3.4 | 3.7 | 4.0 | 4.4 | 4.9 |

Water Year Index based on flow in million acre feet

Index = 0.6 * Current Apr-Jul Runoff (1)
+ 0.2 * Current Oct-Mar Runoff (1)
+ 0.2 * Previous Year's Index (2)

Notes:

(1) Runoff is the sum of unimpaired flow in million acre-feet at:
Stanislaus River below Goodwin Reservoir (aka inflow to New Melones Res.)
Tuolumne River below La Grange (aka inflow to New Don Pedro Reservoir)
Merced River below Merced Falls (aka inflow to Lake McClure)
San Joaquin River inflow to Millerton Lake

(2) Maximum 4.5 for previous year index term

Previous Water Year Indices:

| | | |
|---|---|---|
| 2004 = | 2.2 MAF | 66% of average |
| 1977 (Min) = | 0.8 MAF | 25% of average |
| 1983 (Max) = | 7.2 MAF | 217% of average |
| 1951-2000 average = | 3.3 MAF | |

Year Type Classification: Index based on flow in million acre-feet:

| | |
|---|---|
| Wet | Equal to or greater than 3.8 |
| Above Normal | Greater than 3.1, and less than 3.8 |
| Below Normal | Greater than 2.5, and equal to or less than 3.1 |
| Dry | Greater than 2.1, and equal to or less than 2.5 |
| Critical | Equal to or less than 2.1 |

This index, originally specified in the 1995 SWRCB Water Quality Control Plan, is used to determine the San Joaquin Valley water year type as implemented in SWRCB D-1641. Year types are set by first of month forecasts beginning in February. Final determination for San Joaquin River flow objectives is based on the May 1 75% exceedence forecast.

# TURLOCK IRRIGATION DISTRICT

## CIVIL ENGINEERING DEPARTMENT
## MEMORANDUM

TO: TRTAC
FROM: Wilton Fryer
DATE: 28 February 2005
RE: Restoration Projects - Status Update

| Project | Funding | Status |
|---|---|---|
| Completed Projects: | | |
| 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. HART NOC filed May 2004. A separate limited irrigation & maintenance agreement is in place for 2004, funded by MWD. |
| Design Manual | Full | Completed with Final Report submitted 26 February 2004. |
| Course Sediment | Full | Report was completed with modifications on methods and techniques to protect existing salmonid habitats during implementation. |
| Active Projects: | | |
| MJ Ruddy | Full | Appraisals under review by Interior Dept. Potential loss of funds from the 1999 allocation is still an issue, but the anticipated date is 30 April 2005. If acquisition cannot be started by then there is the potential for the USBR-CN Ops to pull the unused balance from the funding allocation because it has not been spent in the 5 years since it was granted. |
| Warner-Deardorff | Full | This project is split into 2 phases for funded. Under Phase I the design is at 90% stage with the remaining permitting and ROW appraisal on hold pending the outcome of the appraisal process for the MJ Ruddy project because the permits are |

| | | |
|---|---|---|
| | | linked. Work on contract with GCAP Services for remaining committed funds under Phase II is nearly complete. |
| La Grange Gravel | Full | The funding contract Scope of Work with GCAP Services is being amended as is the contract with McBain & Trush to delete the aggregate mining and expand inchannel gravel infusion work. Work on permits for mid summer inchannel work is under way. |
| Fine Sediment | Full | The DFG upstream erosion control issues have not yet been resolved to allow the settling basin construction to move forward for construction in 2005. DFG would still like to handle initial maintenance of the vegetation after planting. The riffle cleaning task of this project is on hold until completion of the 2005 summary FERC Report due in April 2005. |
| RM 43 | Full | Design work is completed. The permits and CEQA process is under way as part of the larger Bobcat Flat Project with public a public hearing scheduled for 19 April 2005. |
| SRP 10 | Partial | This project has been split into two phases. The design under Phase I is being finalized with habitat analysis using the River 2D modeling input from the SRP 9 monitoring. There is still a possibility that the Phase II funding for acquisition and construction would be considered in a PSP that is now anticipated to be in late summer 2005. AFRP is considering placing $4.5M in their 2006 budget to be used on this project. |

McBain & Trush | FISHERIES
HYDROLOGY
RIPARIAN ECOLOGY
STREAM RESTORATION
FLUVIAL GEOMORPHOLOGY
P.O. Box 663, Arcata, CA 95518 • 980 7th Street, Arcata, CA 95521
Phone: (707)826-7794 • Fax: (707)826-7795

**TECHNICAL MEMORANDUM:**
***Update on the Status of the Tuolumne River Sediment Transfusion Project***

**March 29, 2005**

*Prepared for:* *Turlock Irrigation District and*
*Tuolumne River Technical Advisory Committee*

*Prepared by:* *Darren Mierau*
*McBain and Trush, Inc.*

---

In October 2001, the Turlock Irrigation District (District) submitted a proposal to CALFED on behalf of the Tuolumne River Technical Advisory Committee (TRTAC) titled "*Tuolumne River Sediment Acquisition and Spawning Gravel Transfusion Project.*" The initial project proposed to purchase mineral rights to un-mined sediment at the Stanislaus County Joe Domecq County Park and at the Zanker Family properties, then process the material into suitable coarse sediment for augmentation at approximately 4-6 sediment transfusion sites. Because of local opposition to the mining plan and unresolved problems with long-term mineral ownership, the District modified the proposal to avoid the mining and processing portion of the project. In January 2005, the District was granted a Level 3 contract amendment from CALFED to change the scope of the project. The revised project is titled "Tuolumne River Sediment Transfusion Project." This memorandum summarizes revised project tasks and describes our proposed site design and implementation strategy.

The amendment request submitted to CBDA shifted the project tasks to solely the sediment transfusion design, implementation, and monitoring components so that project resources are fully focused on the critical need for coarse sediment augmentation. The information generated from this project will continue to benefit other restoration programs in the Central Valley. In that regard, the revised project has reallocated the original 'sediment acquisition and development' funds to implementation with commercially purchased sediment, and has allocated more funds to design and monitoring. The original CBDA proposal was revised to reflect the amendment request and is available on request. In summary, the updated project will:

(1) develop a digital terrain model (topography and bathymetry) of the river channel and floodplains from La Grange Dam to Peasely Creek RM 45.2 which is the reach proposed for the majority of sediment augmentation work. The digital terrain model will encompass the entire channel and floodplains, and will be used to develop a hydraulic model for the upper reach of the river (recommended by the Adaptive Management Forum), and to develop channel topographic designs;
(2) acquire low-altitude, orthorectified aerial photographs of the gravel-bedded zone down to and including SRP 10. These photos will be used in the design and monitoring of coarse sediment augmentation sites, and will be available for other Tuolumne River projects and monitoring tasks;
(3) address regulatory compliance (CEQA, NEPA, and ESA) and permits for Phases 3 and 4 of the Coarse Sediment Management Plan (CSMP) (see Table 17, pg. 76 of the CSMP for a list of augmentation sites and phases);

(4) place approximately 100,000 cubic yards of coarse sediment into the upper spawning reaches at approximately 6-9 different transfusion sites to restore salmonid spawning habitat and coarse sediment supply; the number of sites implemented depends primarily on sediment purchase and transportation costs;
(5) conduct baseline, as-built, and post-project monitoring of sediment augmentation and control sites, with monitoring tasks spanning two spawning seasons (winter of 2005-06 and 2006-07).

Before the gravel transfusion implementation can occur, we will develop conceptual designs, submit the designs to the TRTAC and other stakeholders for review, fulfill the regulatory compliance requirements (CEQA, NEPA, and ESA), prepare final engineering designs and construction specifications, and hire contractors to implement the project(s). Because of the time required to complete these steps, it is not feasible to implement all the sediment transfusion sites during the summer 2005 construction season. It may be feasible (and advantageous) to focus on implementing one site in 2005, while simultaneously preparing to implement the remaining sites in 2006. The Coarse Sediment Management Plan (CSMP) proposed a process for review of conceptual designs by the TRTAC and property owners (see Section 5.2.4 of the CSMP for a description of this process). This process will be used to guide development of conceptual designs for sediment transfusion sites.

Sediment transfusion sites were prioritized and grouped into implementation phases in the CSMP (Table 17, pg. 76), and this general framework will be followed in this project. Without knowing 2006 gravel costs and the final design gravel volumes for each site, we recommend preparing conceptual designs for up to 7 sites, but would likely have budget to implement only approximately 5-6 sites. Our initial recommendation for sites for which conceptual designs are prepared, and sites to be implemented in this project (subject to recommendations by the TRTAC) are provided in Table 1. Riffle 12 is listed as unfunded because the quantity of material required exceeds the anticipated funding available under the current grant.

Table 1.

| Site Name | RM | Polygon #'s [1] | CSMP Priority | CSMP Phase | Preliminary Volume ($yd^3$) | Recommended Implementation |
|---|---|---|---|---|---|---|
| Riffle A3/4 | 52.0 | 1-4 | High | 3 | 8,300 | 2006 |
| Riffle A5/6 | 51.2 | 5-7 | High | 3 | 26,000 | 2005 |
| Riffle $1A_2$ | 50.6 | 12 | Medium | 5 | 9,500 | 2006 |
| Riffle $1C_3$ | 50.0 | 18 | Medium | 4 | 11,000 | 2006 |
| Riffle 3A | 49.6 | 21-23 | High | 3 | 20,000 | 2006 |
| Basso Pool | 47.5 | 30-36 | High | 3 | 47,800 | 2006 |
| Riffle 12 | 45.8 | 46-49 | High | 3 | 65,000 | Unfunded |
| TOTAL VOLUME | | | | | 122,600 (excludes R12) | |

1. Polygons are presented in the habitat maps contained in Appendix B of the Coarse Sediment Management Plan
2. This site is a single gravel bar to be constructed along the north bank upstream of Old La Grange Bridge.
3. This site would include only the filling of the south bank backwater.

We propose the following strategy and timelines for project design and implementation:

- Develop conceptual designs for the Riffle A5/6 augmentation site, then submit a technical memorandum to the TRTAC and property owners describing the design objectives for review and approval (justification for selection of this site is described below). Target timeline: March-April 2005.
- Prepare environmental documents and obtain permits for the Riffle A5/6 site, with the goal of implementing this site in 2005. The environmental documents will address cumulative project

impacts for the Phases 3 and 4 sediment transfusion sites, but will provide detailed site descriptions and designs for only one site (presumably Riffle A5/6). Target timeline: March-August 2005.

- Develop the digital terrain model and hydraulic model for the upper gravel-bedded reaches from La Grange Dam to TLSRA (or RFB) in spring 2005, and commission an aerial photo flight for summer 2005 after streamflows have dropped to summer baseflow. Target timeline: March-July 2005.
- Implement gravel transfusion at Riffle A5/6 in August-September 2005. Implementation will be by construction subcontractor who will be responsible for acquiring sediments from material suppliers.
- Develop conceptual designs for the remaining sediment transfusion sites, then submit a technical memorandum to the TRTAC and property owners describing the design objectives, for review and approval. Target timeline: June-November 2005.
- Supplement environmental documents and amend permits to include detailed site descriptions and designs for the remaining sediment transfusion sites, once conceptual designs have been reviewed and approved by the TRTAC. Target timeline: November 2005 - June 2006.
- Implement sediment transfusion at an additional five or more sites in 2006. Implementation will be by construction subcontractor who will be responsible for acquiring sediments from material suppliers. Target timeline: July - September 2006.
- Monitor baseline conditions in 2005 at all proposed transfusion sites and control sites; monitor as-built conditions at all project sites in 2005-06, and conduct post-project monitoring at project and control sites in 2006-07.

The Riffle A5/6 site is located at River Mile 51 under the USGS cableway upstream of Old La Grange Bridge, and is recommended as the initial implementation site because (1) it was identified in the Coarse Sediment Management Plan (CSMP) as a high priority site in the upper river where the riffle was scoured away in the 1997 flood, (2) there is currently no spawning habitat at the site, (3) the adjoining property is owned by TID and MID, and (4) there is good access to the site. In addition, constructing the Riffle A5/6 site prior to the Riffle A3/4 site (upstream) is practical in terms of the geomorphic design, because it allows us to tier off the downstream elevation control at the Riffle A7 site completed by CDFG in 2002.

In addition to the ongoing design and permitting process, we will begin working with the TRTAC Monitoring Subcommittee to develop a monitoring plan specifically tailored to evaluate sediment transfusion projects. This monitoring plan will describe hypotheses, project objectives, and monitoring tasks, and will describe implementation of baseline, as-built, and post-project conditions at the selected sediment transfusion sites. The monitoring implementation for the baseline, as-built, and the first year of post-project monitoring is fully funded in this project.

We look forward to your review and comments on the proposed approach to the design and implementation of the Tuolumne River Sediment Transfusion Project. If you have questions or would like more information about the project, we are available at your convenience at (707) 826-7794.

Darren Mierau, McBain and Trush

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

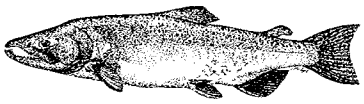
13 July, 2005, 10:00 a.m.
Turlock Irrigation District, Lunch Room (2nd floor)
*DRAFT AGENDA*

1. Introduction
   A. Comments on draft agenda
   B. Correspondence since last meeting
2. Overview presentation of 2005 10-year report
3. General Update:
   A. Data and report status
   B. Agency and NGO updates
   C. Monitoring update
   D. River operations and forecasts
   F. Restoration
4. Additional items
5. Next meeting and topics

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

13 July, 2005, 10:00 a.m.
Turlock Irrigation District, Lunch Room (2nd floor)

**Draft Meeting Summary**

1. Introduction
   A. Comments on draft agenda
   B. Correspondence since last meeting: list was reviewed
2. Overview presentation of 2005 10-year report:

Considerable time was spent going through PowerPoint presentation by Hume and several specific comments/corrections were provided: on 3-34 remove TRT from Grayson project list, describe steelhead instream work for Bobcat Flat and add Waterford to list on 3-35; Districts can compile additional comments. Hume will confirm specifics of model on pg. 4-8.

3. General Update: Data and report status: DFG is gathering water temperature data for basin model; their Sportfish report may be complete in two months
   A. Agency and NGO updates: McLain reported the green sturgeon final rule is expected next year – looking for evidence in SJR system, but not likely in Tuolumne; steelhead listing is delayed until end of year; spring run Chinook final rule was published recently. FOT reported that Waterford plantings look good – this will be first year without irrigation. Mesick requested any project ideas or requests as AFRP workplan is being updated. Walser stated that their biologist would be available this fall.
   B. Monitoring update: DFG Mossdale sampling is complete and CWT data is being gathered; carcass surveys are unfunded
   C. River operations and forecasts
   D. Restoration: A status update from Fryer was handed out and discussed. CALFED is reviewing projects where funds have not been expended and that might create more delay.

Part of Ruddy Project funding has been removed. RM43 project work is planned for about one month starting 22 August with lower flows – gravel to be added at six sites. DFG gravel work may proceed next year.

4. Additional items
5. Next meeting and topics:

   21 Sep 2005 at 9:30 AM, TID

**FERC 2299 TRTAC Meeting**
**13 July 2005**

| Name | Organization |
|---|---|
| Tim Ford | TID/MID |
| Robert Nees | TID |
| Debbie Liebersbach | TID |
| Roger Masuda | TID |
| Bill Johnston | MID |
| Donn Furman | CCSF |
| John Chester | CCSF |
| Ron Yoshiyama | CCSF |
| Nicole Sandkulla | BAWSCA |
| Allison Boucher | FOT |
| Dave Boucher | FOT |
| Patrick Koepele | TRT |
| Jen Vick | McBain&Trush |
| Noah Hume | Stillwater Sciences |
| Dean Marston | DFG |
| Dennis Blakeman | DFG |
| Tim Heyne | DFG |
| Carl Mesick | FWS-AFRP |
| Jeff McLain | NMFS |
| Steve Walser | CRRF |

# TURLOCK IRRIGATION DISTRICT

CIVIL ENGINEERING DEPARTMENT
MEMORANDUM

TO: TRTAC
FROM: Wilton Fryer
DATE: 12 July 2005
RE: Restoration Projects - Status Update

| Project | Funding | Status |
|---|---|---|
| Completed Projects: | | |
| 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. HART NOC filed May 2004. A separate limited irrigation & maintenance agreement is in place for 2004, funded by MWD. |
| Design Manual | Full | Completed with Final Report submitted 26 February 2004. |
| Course Sediment | Full | Report was completed with modifications on methods and techniques to protect existing salmonid habitats during implementation. |
| Active Projects: | | |
| MJ Ruddy | Partial | The appraisals are going through the third iteration and are under review by Interior Dept. In June $1,470,737 in project funds were deobligated because they had not been spent in the 5 years since they were awarded. There is funding left for land acquisitions and possibly construction, but not for revegetation or post project monitoring. |
| Warner-Deardorff | Full | This project is split into 2 phases for funded. There has been no change in the status of this project pending completion of the MJ Ruddy appraisal land acquisition process. Under Phase I the design is at 90% stage with the remaining permitting and |

| | | |
|---|---|---|
| | | ROW appraisal on hold pending the outcome of the appraisal process for the MJ Ruddy project because the mining permits are linked. Work on a contract with GCAP Services for remaining committed funds under Phase II is on hold. The Phase II submittal was made to CBDA in November 2004 and has still NOT been sent to a CBDA Science Panel in Davis for review. |
| La Grange Gravel | Full | The November 2004 funding contract Scope of Work amendment with GCAP Services is on hold because CBDA wants to sent it to a Science Panel in Davis for review along with the Course Sediment Management Plan. Work on permits for late summer 2005 inchannel work was stopped at the direction of CBDA staff because the original change request has still NOT been sent to the UC Science Panel for review. |
| Fine Sediment | Full | The DFG upstream erosion control issues have been identified. The landowners are being contacted for acceptance of work on their lands as additions to the settling basin construction. The project construction is scheduled to take place this summer. DFG is working with the adjacent landowner to allow construction of a portion of the basin on their land prior to DFG completing purchase of the property. The riffle cleaning task of this project is on hold pending an evaluation of conditions after the high flows this spring. |
| RM 43 | Full | Design work is completed. The permits are near completion as part of the larger Bobcat Flat Project. The CEQA process was completed with a public hearing held on 19 April 2005. Construction is scheduled for the end of August when flows in the river are expected to be 300 cfs for two weeks. |
| SRP 10 | Partial | This project has been split into two phases. The design under Phase I is scheduled to be finalized in August with habitat analysis using the River 2D modeling input from the SRP 9 monitoring. The Phase II PSP for funding acquisition and construction has not been scheduled. The landowner has indicated he would like to see the land acquisition take place in the summer of 2005 or he may be forced to put the parcel up for sale. AFRP is considering placing $4.5M in their 2006 budget to be used on this project. |

# 2005 Ten Year Summary Report

## Don Pedro Project
## FERC Project No. 2299

Tuolumne River Technical
Advisory Committee
July 13, 2005

## Organization



- Presentation format
- Background
- Report synopsis by section with questions
- Assessment of 1995 FSA Goals
- Next steps

## Background

**New Don Pedro Project**
**FERC Project No. 2299**

1964 FERC license for New Don Pedro Project
- Article 37 – Fishery Flows
- Article 39 – Study Program
- Article 58 – Monitoring Program

1972 Cooperative Article 39 study program (TID/MID/CDFG)

1987 Amended Article 39 study program (TID/MID/CDFG/USFWS)

1996 FERC accepts 1995 FSA (TID/MID/CDFG/USFWS/ CSPA/FOT/TRE/TRPT/BAWUA)
- 1) Changes to the Article 37 flows and Article 58 monitoring program,
- (2) Restrictions on flow ramping rates, and
- (3) Implementation of non-flow mitigative measures.
- (4) April 1, 2005 Ten Year Summary Report Review

## Background

**New Don Pedro Project**
**FERC Project No. 2299**

FERC Settlement Agreement (1995 FSA) summary

1-7 (procedural)

8 Strategy for Chinook salmon recovery
- Increase naturally occurring salmon populations
- Protect any remaining genetic distinction
- Increase salmon habitat in the Tuolumne River

9 Recovery goals
- Improvements in smolt survival and successful escapement in the Tuolumne River
- Increase in naturally reproducing Chinook salmon in this subbasin.
- Barring events outside the control of the agreement participants to the settlement, by 2005 the salmon population should be at levels where there is some resiliency so that some of the management measures described herein may be tested.

## Background

**New Don Pedro Project**
**FERC Project No. 2299**

1995 FSA Summary (*continued*)

10 Measures if goals are not achieved

Participants may withdraw from settlement agreement if good faith effort has not been made towards goals, or goals are not achieved because of factors within the control of the Districts

Factors within the control of the Districts include: New Don Pedro operations, La Grange flows within terms of License, Land use activities on District controlled lands

Factors outside control of the Districts include: Delta exports, commercial and sport fish harvest, land uses on non-District lands and riparian diversions below La Grange

11 Fishery flows

Revised flow schedules by water year type

Cooperative effort to obtain additional flows (e.g. Flood control rules, water sales, Turlock Area Drinking Water Project)

## Background

**New Don Pedro Project**
**FERC Project No. 2299**

1995 FSA Summary (*continued*)

12 Non-flow options

Identification of 10 habitat restoration projects partial funding. Goal of 2005 implementation.

13 Monitoring

Terminates 1986 study agreement, identified flow fluctuation study, juvenile seining, and temperature monitoring. Additional $1.35M for the following studies or monitoring elements:

CDFG spawner surveys,

Studies to assess on quality and condition of spawning habitat,

Relative density of fry to female spawners (gravel quality index)

Juvenile distribution and temperature relationship

Smolt survival indices (CWT Studies)

Smolt production (RST monitoring)

## Background

**New Don Pedro Project**
**FERC Project No. 2299**

1995 FSA Summary (*continued*)

14 TRTAC
- Cooperative information exchange
- Management Committee (TID, MID, CCSF, CDFG, USFWS)

15 Reporting (annual FERC Reports)

16 Flow fluctuations (ramping rate restrictions)

17 Flows above Don Pedro

18 Support for ancillary programs

19 Riparian habitat and recreation

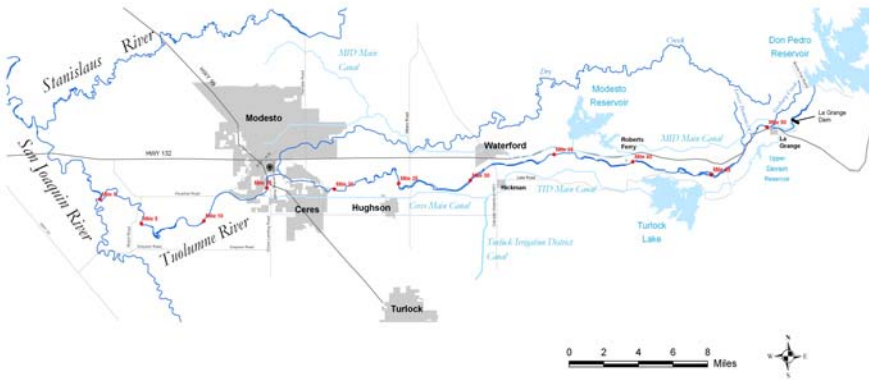
20 CDFG Staff position

21-26 (procedural)

## Background

**New Don Pedro Project**
**FERC Project No. 2299**

Map of Lower Tuolumne River



## 1-Purpose



1996 FERC Order Requirements for Ten Year Summary:

- Identify the non-flow mitigative measures implemented (Section 3.3)
- Results of monitoring related to the non-flow mitigative measures (Section 3.4)
- Results of fishery and habitat studies (Section 3.5)
- Results and discussion of monitoring studies related to the effects of flow release fluctuations on the salmon resources (Section 3.5.2.6)

1995 FSA Requirements not identified in the 1996 FERC Order

## 2-Introduction



2.1 Tuolumne River water development history

2.2 1995 FSA and 1996 FERC Order

2.3 San Joaquin River system and water development

2.4 Tuolumne River Chinook salmon life history

2.5 Major factors affecting Tuolumne River salmon

Water Management
River habitat modification
Riparian diversions
Delta and Bay development
State and Federal water export
Water quality issues

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.1 Program Administration

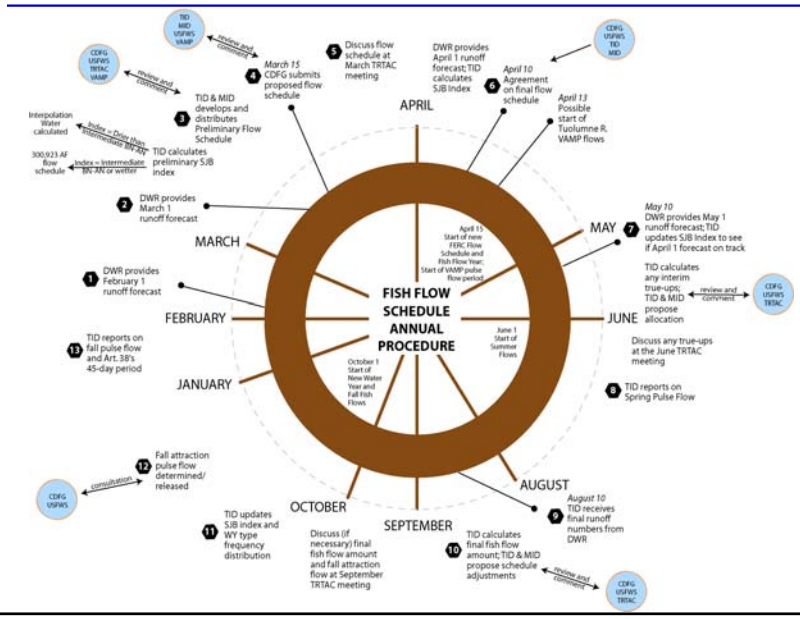
TID/MID administration
TRTAC administrative support and quarterly meetings
CDFG staff funding
Consultants (SWS, MT, HDR, Hart, Cramer)

## 3.2 Instream Flow Management

FERC Fish Flow determination (Appendix) and Schedule
San Joaquin River Agreement (VAMP)
Flood Management Flows
Cooperative efforts to obtain additional flows (Section 3.2.4)

# 3-Program Activities

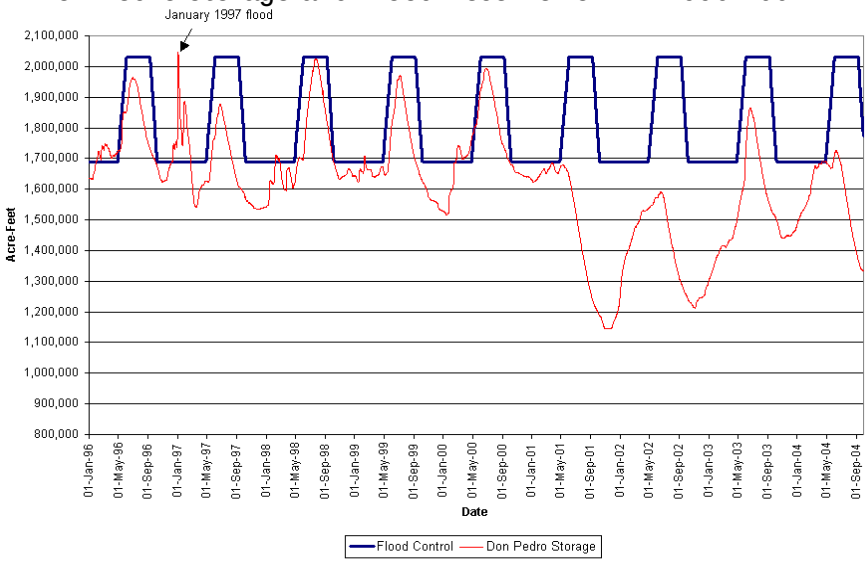
**New Don Pedro Project**
**FERC Project No. 2299**



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

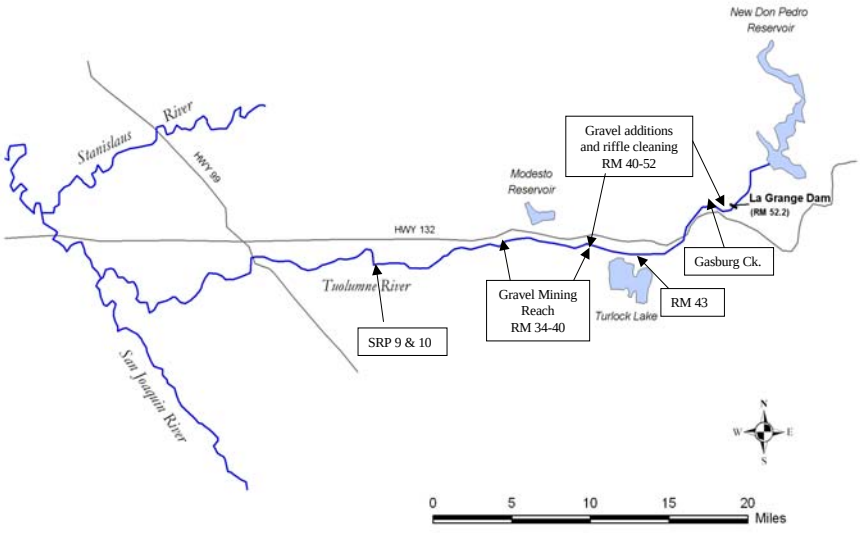
## Don Pedro Storage and Flood Reserve for WY 1996-2004




# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.3 Non Flow Measures (Habitat Restoration Projects)



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

| | Priority Projects | River Mile Location | Approx. River Mile Length | Funding and Potential Construction Activity Schedule | | | | Status and additional funding needed | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 2005 | 2006 | 2007 | (Funding millions) | | |
| | ***Channel and Riparian Restoration Projects*** | | | | | | | | |
| 1 | Gravel Mining Reach Phase I | 37.7-40.3 | 2.6 | | | | $7.135 | **Completed in 2003** | |
| 2 | Gravel Mining Reach Phase II | 36.6-37.7 | 1.1 | F | | | $6.455 | | |
| 3 | Gravel Mining Reach Phase III | 35.2-36.6 | 1.4 | D | F | | $11.397 | | |
| 4 | Gravel Mining Reach Phase IV | 34.2-35.2 | 1.0 | | | **X** | | Additional Required (1999 est.) | $3.340 |
| | ***Predator Isolation Projects*** | | | | | | | | |
| 5 | Special Run-Pool 9 | 25.8-26.0 | 0.2 | | | | $2.653 | **Completed in 2001** | |
| 6 | Special Run-Pool 10 | 25.0-25.4 | 0.4 | D | **X** | | $0.544 | Additional Required: | $4.200 |
| | ***Sediment Management Projects*** | | | | | | | | |
| 7 | Riffle Cleaning (Fine sediment) | 40-52 | several sites | F | F | | $1.028 | | |
| 8 | Gasburg Creek basin (Fine sediment) | near 50.3 | off river | F | F | | Included above | | |
| 9 | Gravel augmentation (Coarse sediment) | 40-52 | several sites | F | F | F | $4.552 | Scope/budget being reviewed by CBDA | |
| 10 | River Mile 43 (Coarse sediment) | 42.8-43.2 | 0.4 | F | | | $0.300 | | |
| | | | | | | ***Total:*** | ***$34.064*** | ***Total:*** | ***$7.54*** |

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.4 Project Monitoring (Physical Assessments)

**Pre-Project Geomorphic Studies (McBain & Trush CSMP)**

Coarse sediment deficit

Loss of channel confinement

Coarsening of channel bed

SRPs and other scour areas act as sediment traps

Bedload transport measurements, models

**Fine Sediment Studies (Stillwater)**

Gasburg Creek Sediment Sources

Dominici Creek bedload sampling

1992-1993 Gravel Cleaning analysis

# 3-Program Activities



## 3.4 Project Monitoring (Physical Assessments)

**Habitat Mapping (pre- and post project)**

- Riffle area losses between 1988-2000 surveys due to 1997 flood

| River Mile | Reach | Named Riffles | Estimated riffle area in 1988 ($ft^2$) | Estimated riffle area in 2001 ($ft^2$) | Percent Reduction in riffle area |
|---|---|---|---|---|---|
| 51.3 | A | A1–A6 | 67,803 | 15,751 | 76.8% |
| 49.2 | 1A | A7A–5B | 673,554 | 590,815 | 12.3% |
| 44.6 | 1B | 6–24 | 419,811 | 373,915 | 10.9% |
| 38.1 | 2 | 25–46 | 699,163 | 549,542[a] | 21.4% |
| 30.7 | 3 | 47–68 | 821,267 | 645,516[a] | 21.4% |
| 23.5 | 4 | 69–78 | 235,609 | 185,189[a] | 21.4% |

# 3-Program Activities

New Don Pedro Project
FERC Project No. 2299

## 3.4 Project Monitoring (Physical Assessments)

**Habitat Mapping (pre- and post project)**

- Riffle area increases due to recently implemented restoration projects

| Actual or Planned Completion: | | 2002 | 2003 | 2006 | TBD | TBD | TBD | TBD |
|---|---|---|---|---|---|---|---|---|
| River Mile | Reach | CSMP Phase 1 (CDFG 2002), Mining Reach Phase 1 (7/11 2002) | CSMP Phase 2 (CDFG 2003) | Mining Reach Phases 2 & 3 (Ruddy, Deardorff Project) | CSMP Phase 3 | CSMP Phase 4 | CSMP Phase 5 | CSMP Phase 6 |
| 51.3 | A | 120,436 | 57,252 | | 195,394 | - | - | - |
| 49.2 | 1A | | | | 250,353 | 237,478 | 249,822 | 57,871 |
| 44.6 | 1B | | | | 864,004 | 517,547 | 611,478 | 213,580 |
| 38.1 | 2 | 25,899 | | 135,000 | - | 417,600 | - | 2,316 |
| 30.7 | 3 | | | | - | - | - | - |
| 23.5 | 4 | | | | - | - | - | - |

- Rearing area losses in 7/11 project
- Rearing area increases in SRP 9 project

## 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

### 3.4 Project Monitoring (Biological Assessments)

- Increased Spawning Utilization at 7/11
- Bank e-fishing show no differences in pre- and post-project densities of bass at SRP 9
- Hydraulic modeling suggests potential for low, high velocity segregation of bass and Chinook juveniles through site
- Riparian habitat increases at 7/11, SRP 9/10

## 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

### 3.5 Riverwide Monitoring (FSA Section 13)

**Physical Assessments**

- **Studies to assess on quality and condition of spawning habitat**
- **Temperature**
- **Water Quality**

**Biological Assessments**

- **Spawner surveys**
- **Relative density of fry to female spawners**
- **Fry distribution and survival**
- **Juvenile distribution and temperature relationship**
- **Smolt survival indices (CWT Studies)**
- **Smolt production (RST monitoring)**
- **Invertebrate monitoring**
- *O. mykiss* **monitoring**

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring

| TRTAC IMPLEMENTATION | | FSA APPENDIX "A" | |
|---|---|---|---|
| **TRTAC CATEGORY** | **YEARS (9 from 1996–2004)** | **INITIAL FSA APPENDIX "A" CATEGORY** | **YEARS** |
| Spawning survey | 9 | A. Spawning survey | 10 |
| Supplemental redd counts | 2 | | |
| Spawning gravel and incubation studies | 3 | B. Spawning habitat quality | 4 |
| (addl. work done under project monitoring) | | (La Grange to Waterford) | |
| Seine (mid JAN-mid MAR) | 9 | C. Relative fry density/female spawners | 4 |
| Upper screw traps | 3 | (seining 15JAN-15MAR) | |
| Seine (mid JAN-mid MAR) | 9 | D. Fry distrib. & survival (fluctuation) | 4 |
| Upper screw traps | 3 | (screw traps 15JAN-15MAR; mark/recapture) | |
| Stranding survey | 5 | | |
| Thermographs | 9 | E. Juvenile distribution & temp. | 10 |
| Seine (mid MAR-MAY) | 9 | (seining 15MAR-15JUN; thermographs) | |
| Snorkel (summer) | 8 | | |
| Upper screw trap | 3 | | |
| Large paired CWT releases | 7 | F. Smolt survival | 10 |
| Mark/recapture & upper screw traps | 3 | (Large CWT, screw trap or trawl; | |
| Mossdale trawl | 7 | mark/recapture) | |
| Lower screw traps | 7 | | |
| Lower screw traps | 9 | G. Smolt production | 10 |
| (data on fry and juvenile production in some years) | | (screw trap) | (subject to other funding) |

Items in underline overlap into other original FSA categories; water temperature relates to all life stages

# 3-Program Activities

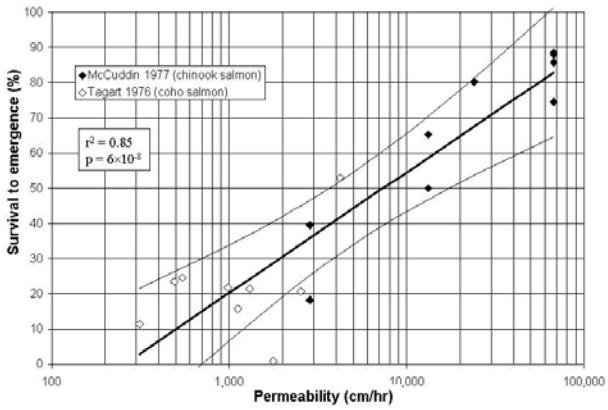
**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Physical Assessments)

Quality and condition of spawning habitat

Pre-1997 gravel quality – high amounts of fines low Survival to emergence

Post-1997 gravel quality – baseline permeability studies in 1998, survival to emergence model on permeability, survival to emergence experiments in 2001



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Physical Assessments)

### Water temperature monitoring

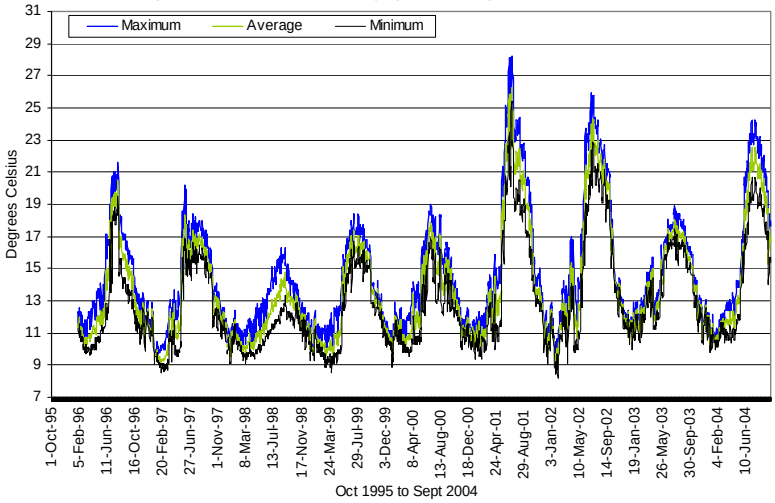
| River | Location | River Mile | Start date | End date | Comments |
|---|---|---|---|---|---|
| Tuolumne | La Grange powerhouse | 51.8 | 11/14/2001 | 9/30/2004 | |
| Tuolumne | Riffle A7 | 50.8 | 11/14/2001 | 9/30/2004 | Recorder was lost 6/02/03 and replaced 1/6/03 |
| Tuolumne | Riffle 3B | 49.0 | 1/18/1990 | 9/30/2004 | Recorder malfunction 1/5/00 to 4/9/01 |
| Tuolumne | Riffle 13B | 45.5 | 11/14/2001 | 9/30/2004 | |
| Tuolumne | Riffle 19 | 43.4 | 1/30/1996 | 9/30/2004 | |
| Tuolumne | Roberts Ferry | 40.4 | 8/11/1998 | 9/30/2004 | Recorder malfunction 1/5/00 to 8/1/00 |
| Tuolumne | Ruddy Gravel | 36.7 | 4/1/1987 | 9/30/2004 | Recorder malfunction 8/11/98 to 12/28/98 |
| Tuolumne | Charles Road | 24.9 | 6/22/1988 | 7/2/1996 | relocated to Hughson sewer |
| Tuolumne | Hughson Sewer | 23.6 | 3/20/1997 | 9/30/2004 | Out of water 11/00 to 2/01 and 9/12/03 to 1/5/04 |
| Tuolumne | Shiloh Road | 3.4 | 4/2/1987 | 9/30/2004 | Recorder was lost 4/11/01 and replaced 11/16/01 |
| San Joaquin | Dos Rios | 86.2 | 2/13/1996 | 9/30/2004 | Recorder malfunction 7/14/03 to 1/18/04 |
| San Joaquin | Gardner Cove | 80.0 | 1/27/1988 | 9/30/2004 | Out of water 9/26/03 to 2/19/04 |

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Physical Assessments)

### Water temperature monitoring (RM 43.4)



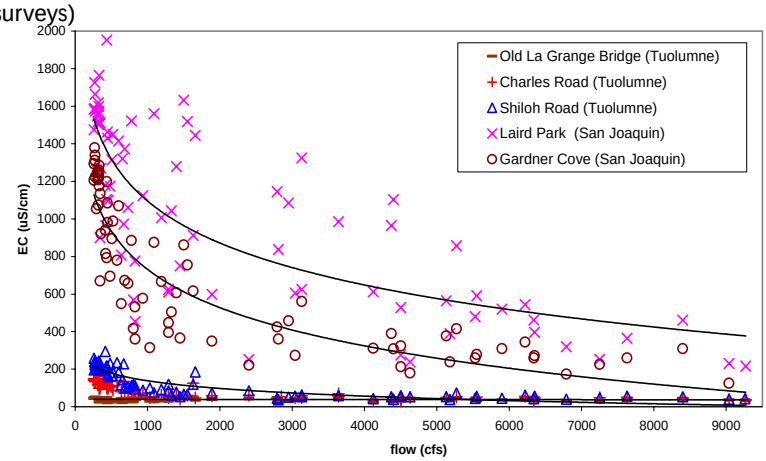
# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Physical Assessments)

Water Quality Monitoring

Physical water quality (EC, Turbidity, DO) in seine, snorkel and invertebrate surveys)

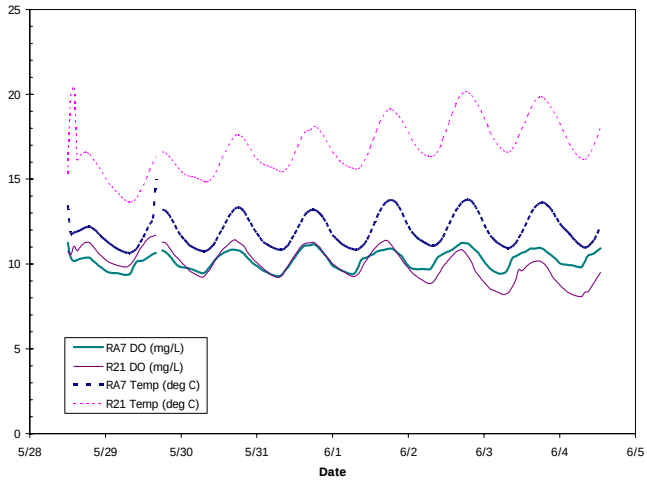



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Physical Assessments)

Water Quality Monitoring (2004 diel DO)

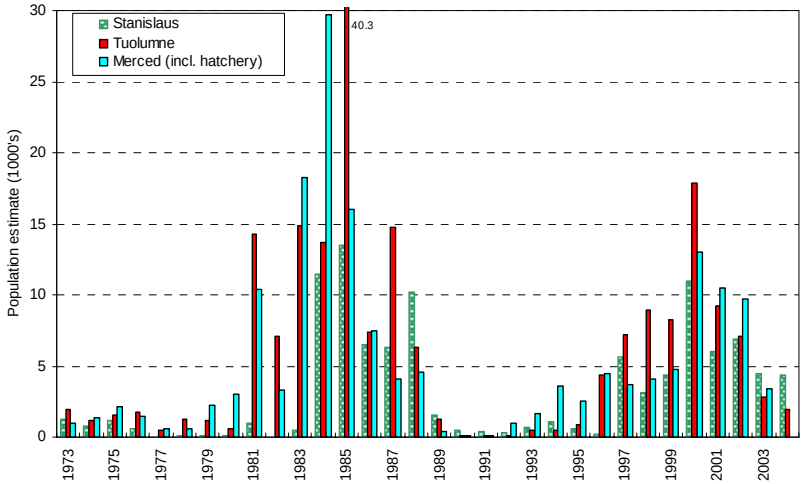


# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Spawning Surveys and Population Estimates (San Joaquin tributaries)

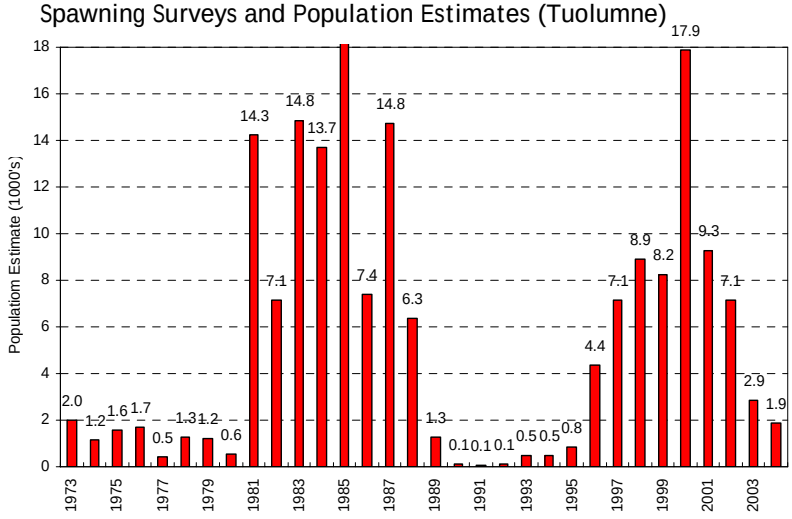



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Spawning Surveys and Population Estimates (Tuolumne)

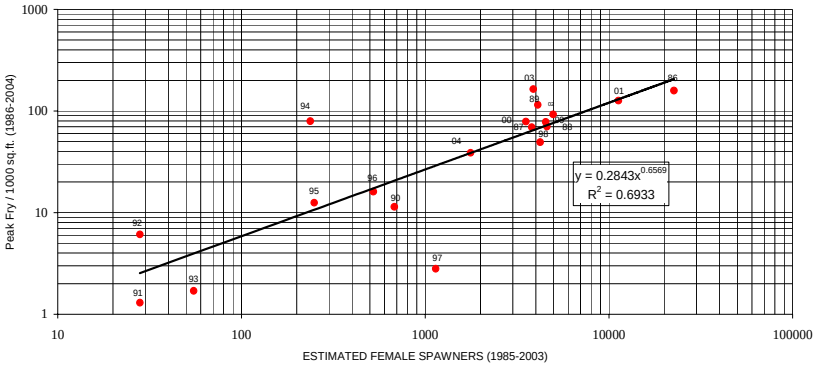


# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Seine Surveys (fry density vs. female spawners 1985-2003)

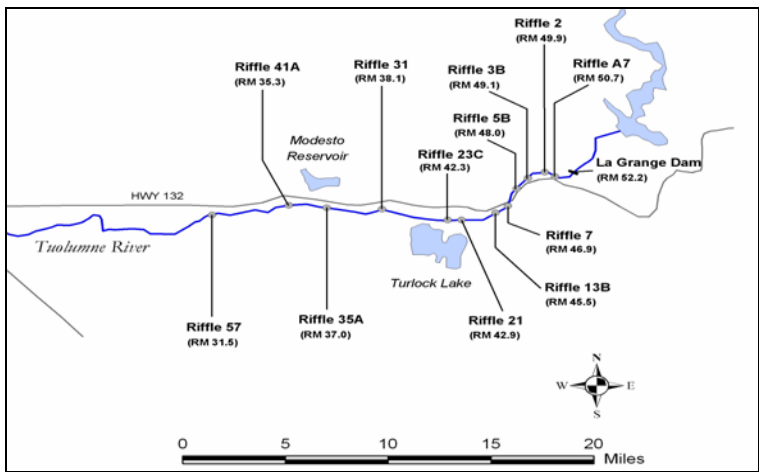



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Snorkel Surveys (12 site surveys, distribution of CHN, RBT and other spp., and abundance index)



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Rotary screw trap (RST) Monitoring and juvenile production

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Rotary screw trap (RST) Monitoring and juvenile production

| Lower RST sites and period of monitoring | | | | | Upper RST sites and period of monitoring | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Location | River mile | Period | La Grange Flow Range | Year | Location | River mile | Period | La Grange Flow Range |
| 1995 | Shiloh Rd. | 3.4 | April 25-June 01 | 4,750-8,710 | 1998 | TLSRA | 42.0 | February 10-April 13 | 3,191-7,941 |
| 1996 | Shiloh Rd. | 3.4 | April 18-May 29 | 1,970-6,790 | | 7/11 | 38.5 | April 15-May 31 | 2,086-6,641 |
| 1997 | Shiloh Rd. | 3.4 | April 18-May 24 | 219-2,860 | | Charles Rd. | 25.0 | March 27-May 5 | 2,086-6,641 |
| 1998 | Shiloh Rd. (1 trap) | 3.4 | February 15-July 01 | 2,040-8,010 | | Charles Rd. | 24.7 | May 5-June 1 | 2,202-4,981 |
| 1999 | Grayson Ranch | 5.2 | January 12-June 06 | 265-7,580 | 1999 | 7/11 | 38.5 | January 19-May 16 | 362-7,582 |
| 2000 | Grayson Ranch | 5.2 | January 09-June 12 | 274-6,610 | | Hughson | 23.7 | April 8-May 21 | 433-3,535 |
| 2001 | Grayson Ranch | 5.2 | January 03-May 29 | 138-3,400 | 2000 | 7/11 | 38.6 | January 10-February 27 | 310-3,663 |
| 2002 | Grayson Ranch | 5.2 | January 15-June 06 | 115-1,310 | | Deardorff | 35.5 | April 8-May 24 | 321-3,843 |
| 2003 | Grayson Ranch | 5.2 | April 01-June 06 | 180-1,340 | | Hughson | 23.7 | April 8-May 24 | 321-3,843 |
| 2004 | Grayson Ranch | 5.2 | April 02-June 09 | 132-1,440 | | | | | |

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Rotary screw trap (RST) Monitoring and juvenile production

| | | | | | | | Expanded | Total |
|---|---|---|---|---|---|---|---|---|
| | | Sampling Period | | Actual | "Fry" | "Smolt" | smolt est. | production |
| Year | Location | Start Date | End Date | Catch | estimate | estimate | (seasonal adj) | estimate |
| 1995 | Shiloh | 25-Apr | 1-Jun | 141 | na | 15,667 | 21,933 | |
| 1996 | Shiloh | 18-Apr | 29-May | 610 | na | 40,385 | 56,538 | |
| 1997 | Shiloh | 18-Apr | 24-May | 57 | na | 2,850 | 3,990 | |
| 1998 | Shiloh (1 RST) | 15-Feb | 1-Jul | 2,546 | | | | 1,615,673 |
| 1999 | Grayson | 12-Jan | 6-Jun | 19,311 | 1,042,805 | 30,864 | | 1,073,669 |
| 2000 | Grayson | 9-Jan | 12-Jun | 2,250 | 84,314 | 47,703 | | 132,017 |
| 2001 | Grayson | 3-Jan | 29-May | 6,478 | | | | 111,644 |
| 2002 | Grayson | 15-Jan | 6-Jun | 438 | | | | 14,540 |
| 2003 | Grayson | 1-Apr | 6-Jun | 359 | na | 7,261 | | |
| 2004 | Grayson | 2-Apr | 9-Jun | 509 | na | 13,134 | | |

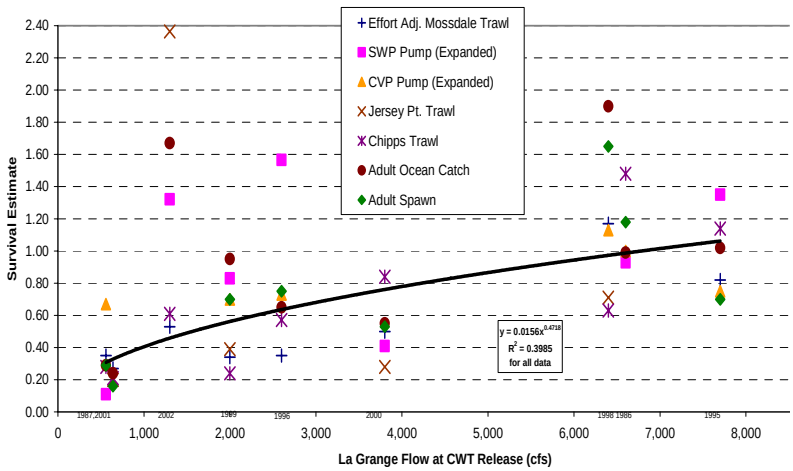
na: not available - no sampling during fry season

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Smolt Survival Indices (all sites)

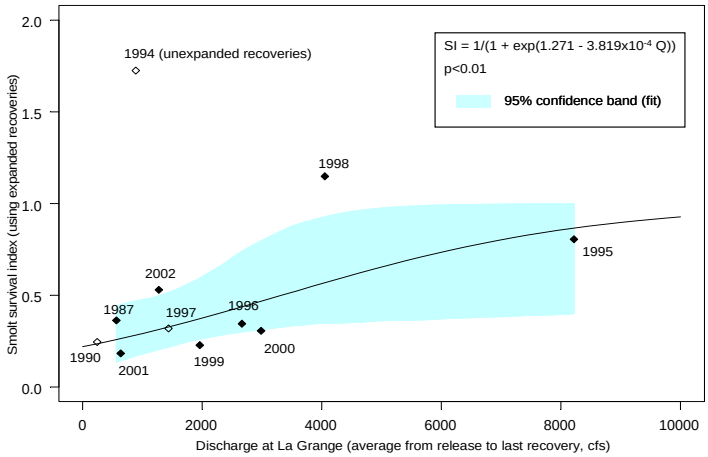


# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Smolt Survival Indices (Mossdale)




# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Smolt Survival Indices (Reach specific MMR studies)

| Year | Dates | Reaches: LG flow | Spawning 12 miles | Mining 13.5 miles | Sand-bedded 21.5 miles | Overall 47 miles |
|---|---|---|---|---|---|---|
| 1998 | 27-28APR | 4,050 | | 33% | | |
| | 6-7MAY | 2,300 | 100% | 25% | | |
| | 12-13MAY | 3,240 | | 13% | | |
| | 20-21MAY | 4,770 | | na | | |
| | | | | | | |
| | | | **12 miles** | **15 miles** | **18.5 miles** | **45.5 miles** |
| 1999 | 17-20APR all | 2,000 | 100% | 19% | 45% | 9% |
| | CWT | | 100% | 17% | 63% | 11% |
| | MMR | | | 6.6% | 5.8% | |
| | 28APR-1MAY all | 3,200 | 100% | 53% | 24% | |
| | | | | | | |
| | | | **12 miles** | **15 miles** | **18.5 miles** | **45.5 miles** |
| 2000 | 13-15APR MMR | 3,700 | 100% | 56% | 35% | 19% |
| | 27-28APR MMR | 1,300 | 100% | 100% | 9% | 9% |
| | 4-5MAY MMR | 2,350 | 100% | 40% | 18% | 7% |

CWT: large release groups at La Grange (about 75,000)
MMR: small release groups (about 1,000-7,500 each)
All: all release groups

# 3-Program Activities



## 3.5 Riverwide Monitoring (Biological Assessments)

Stranding Surveys

| Year | Date | Location | River mile | Flow reduction |
|---|---|---|---|---|
| 1996 | February 22 | OLGB to TLSRA | (50.5-42.0) | 5,000 to 3,000 |
| | June 4 | A3/A4 to TLSRA | (51.6-42.0) | 2,100 to 1,200 |
| 1997 | January 21 | R1B- R5 | (50.1-47.9) | 9,700 to 5,700 |
| | May 15 | RA7-R5 | (50.7-47.9) | 1,900 to 800e |
| 1999 | May 16-17 | OLGB to R5 | (50.5-47.9) | 3,500 to 500 |
| 2000 | March 18-20 | R1B-R17B | (50.1-44.2) | 7,000 to 4,000 |
| 2002 | May 2 | RA7-R5 | (50.7-47.9) | 1,300 to 900 |
| | May 3 | RA7-R5 | (50.7-47.9) | 900 to 600 |
| | May 17 | RA7-R5 | (50.7-47.9) | 540 to 193 (4 days) |
| | June 3 | A3/A4 to R5 | (51.6-47.9) | 226 to 99 (4 days) |

**Factors:**

1) salmon density,

2) flow reduction, minimum flow in the fluctuation cycle, ramping rate,

3) particular locations with higher stranding potential,

4) physical characteristics of sites in terms of slope and substrate categories.

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Biotic community assessments (fish species observed)

38 species in 15 families, including 14 native spp. In 7 families

*O. mykiss* surveys

Regularly observed in small numbers in seine and snorkel surveys since 1982

Additional midsummer snorkel surveys in 2000

Districts proposed angler surveys for otolith and genetic samples in 2000 (CDFG declined, no action on NOAA Section 10 Application)

CDFG e-fish collection of otolith and genetic samples in 2001 (no results as of 4/05)

Extended spawner surveys in 2004

CRRF map of O. mykiss habitat in 2004

Diel water quality survey in 2004

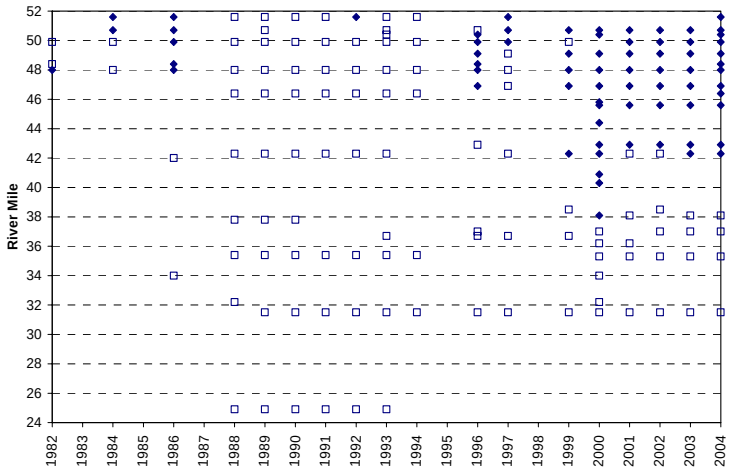
CDFG Angler survey in 2004

# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Biotic community assessments (*O. mykiss* in snorkel surveys)

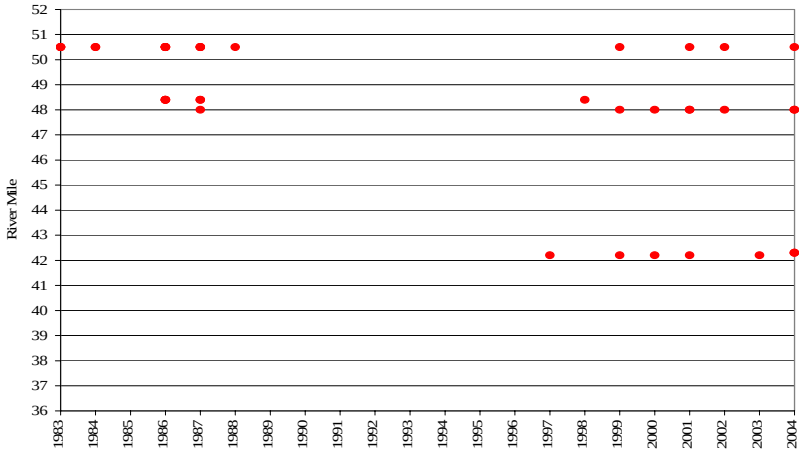



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Biotic community assessments (*O. mykiss* in seine surveys)

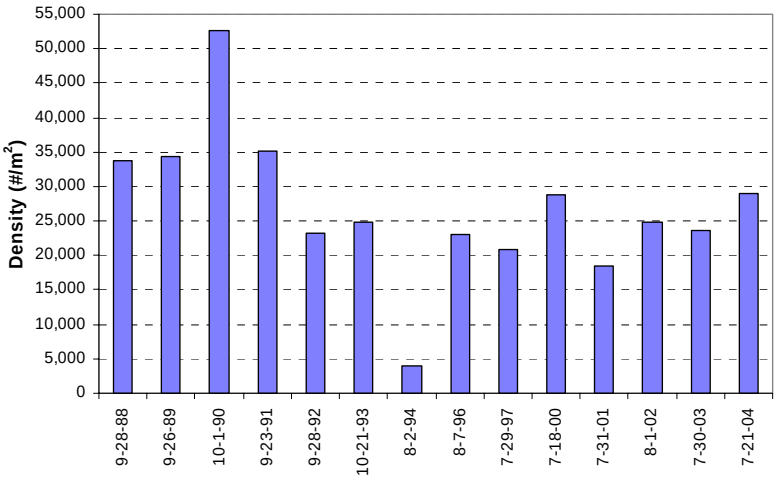


# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Invertebrate monitoring (Density)

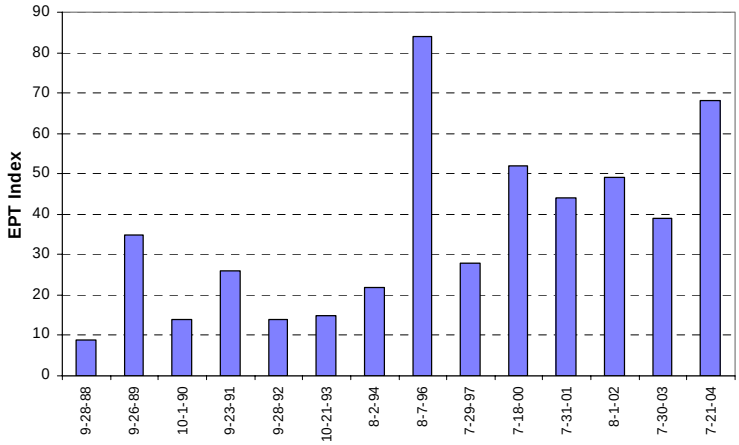



# 3-Program Activities

**New Don Pedro Project**
**FERC Project No. 2299**

## 3.5 Riverwide Monitoring (Biological Assessments)

Invertebrate monitoring (EPT Indices)



# 4-Assessment of Program



## 4.1 Programmatic (FSA Section 8 Goals)

Increase naturally occurring Chinook salmon population

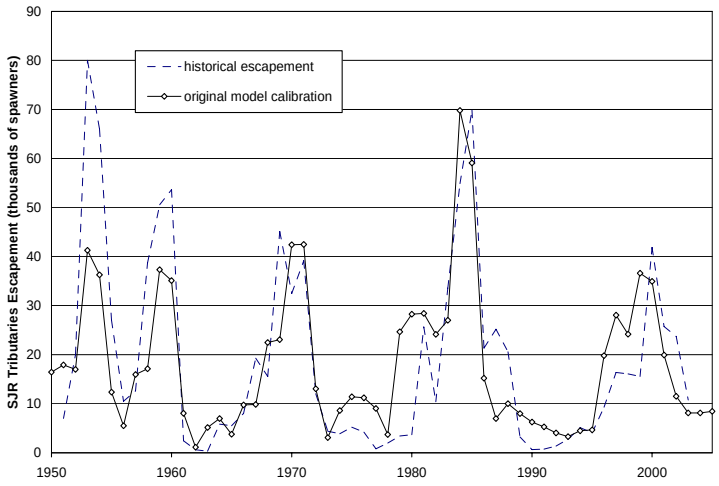
- Population models (EACH, Stock Recruit)
- Scaled historical flows from 1970-1992, with 1986 Study Plan flows extended to 2004
- Scaled historical flows from 1970-2004

# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.1 Programmatic (FSA Section 8 Goals)

Increase naturally occurring Chinook salmon population

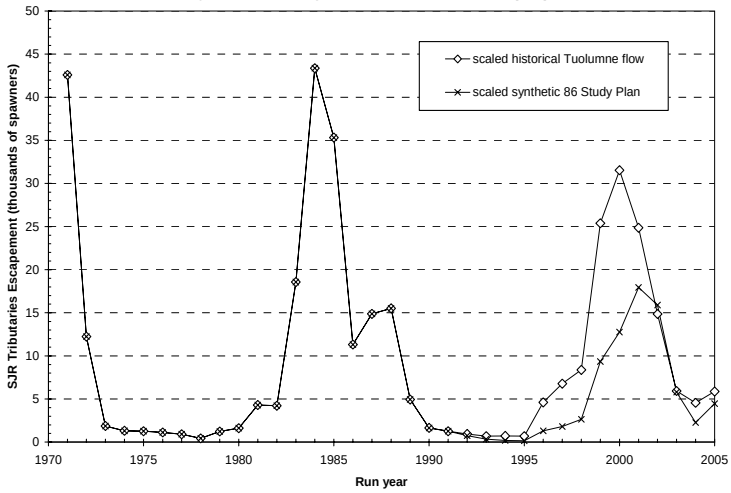


# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.1 Programmatic (FSA Section 8 Goals)

Increase naturally occurring Chinook salmon population

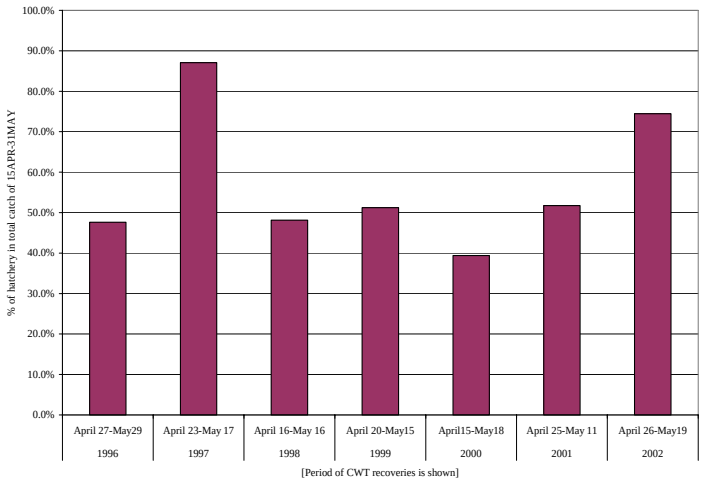



# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.1 Programmatic (FSA Section 8 Goals)

Protection of any remaining genetic distinction



# 4-Assessment of Program



## 4.1 Programmatic (FSA Section 8 Goals)

Increase salmon habitat in the lower Tuolumne River

- 1997 Flood event
- CSMP Objectives
- Spawning areas of planned and completed projects

| Reach | 1988 Riffle Areas | 2001 Areas mapped after 1997 flood (% of 1988 Area) | 2004 Areas including as-built mapping of completed restoration projects (% of 1988 Area) | Projected Future Riffle Area (% of 1988 Area) |
|---|---|---|---|---|
| A | 67,803 | 15,751 (23.2%) | 193,439 (285%) | 388,833 (573%) |
| 1A | 673,554 | 590,815 (87.7%) | 590,815 (87.7%) | 1,386,338 (206%) |
| 1B | 419,811 | 373,915 (89.1%) | 373,915 (89.1%) | 2,580,523 (615%) |
| 2 | 699,163 | 549,542 (78.6%) | 575,441 (82.3%) | 1,180,357 (169%) |
| 3 | 821,267 | 645,516 (78.6%) | 645,516 (78.6%) | 645,516 (78.6%) |
| 4 | 235,609 | 185,189 (78.6%) | 185,189 (78.6%) | 185,189 (78.6%) |
| Totals: | 2,917,207 | 2,360,728 **(80.9%)** | 2,564,315 (**87.9%**) | 6,366,756 (**218%**) |

# 4-Assessment of Program

New Don Pedro Project
FERC Project No. 2299

## 4.1 Programmatic (FSA Section 8 Goals)

Increase salmon habitat in the lower Tuolumne River

- Changes in spawning preferences before and after 1997

| River Mile | Reach | Named Riffles | Spawning Preferences from 1986–1996 spawner surveys | Spawning Preferences from 1997–2004 spawner surveys |
|---|---|---|---|---|
| 51.3 | A | A1–A6 | 2% | 4% |
| 49.2 | 1A | A7A–5B | 37% | 56% |
| 44.6 | 1B | 6–24 | 28% | 22% |
| 38.1 | 2 | 25–46 | 28% | 13% |
| 30.7 | 3 | 47–68 | 5% | 5% |
| 23.5 | 4 | 69–78 | < 1% | < 1% |

- Higher spawning use at completed 7/11 site
- Stock recruit simulations suggest augmentation through 2004 should restore escapement to 93% of 1988 (pre-FSA) levels
- Modeled escapement following all planned augmentation projects increases by 270% of 1988 (pre-FSA) levels

## 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

### 4.2 Comparative (FSA Section 9 Goals)

Improve smolt survival and escapement in the Tuolumne River

- CWT smolt survival studies (1996-2002), MMR studies and alternatives
- Predator reduction measures
- Improvements in juvenile rearing conditions
- Improvements in escapement levels

Increase in naturally reproducing salmon (7-30% hatchery origin)

Population Resiliency

- Population has shown the ability to rebound from $10^2$ to $10^5$ in one generation (3-4 years)
- Resumption of CDFG sport-fishing allowance of Chinook salmon
- Model results show post-FSA flow schedule in the absence of flood flow releases promotes a self-sustaining population of several thousand spawners

## 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

### 4.3 Factors within the Control of the Districts

Instream Flow Management

- Adhered to FERC flow schedule
- Maintain buffer to avoid instances of USGS gage re-rating below FERC minimums (1 instance)
- Cooperative development of pulse flow schedules
- VAMP flows
- 1997 Flood

Habitat Modifications

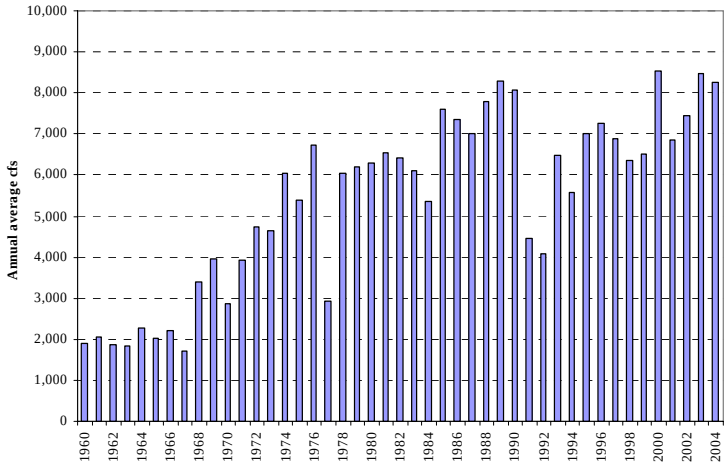
- Identified 10 Priority Restoration Projects
- Preliminary funding, leveraged into $33M through outside funding
- Two projects complete, work proceeding on remaining eight with funding

# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.4 Factors outside the Control of the Districts

Delta Issues (export and barrier operations)

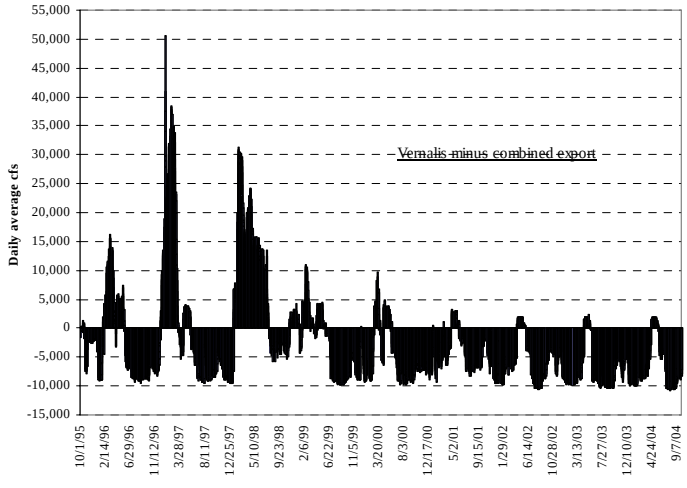



# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.4 Factors outside the Control of the Districts

Delta Issues (export and barrier operations)

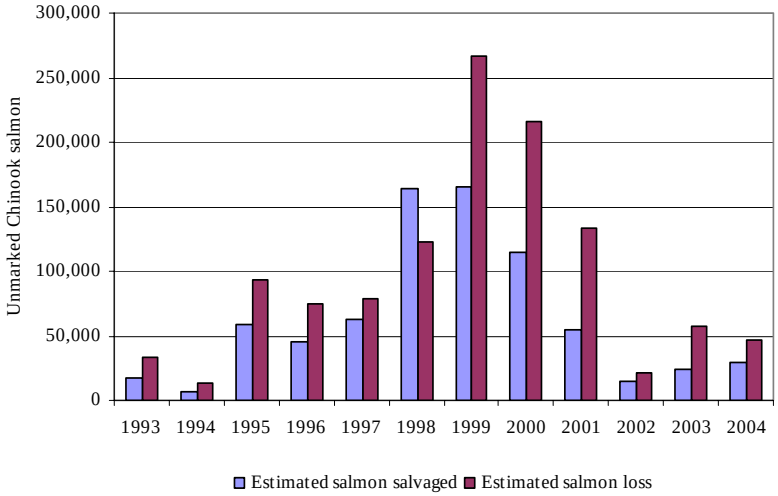


# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.4 Factors outside the Control of the Districts

Delta Issues (export and barrier operations)




# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.4 Factors outside the Control of the Districts

Delta Issues (Delta predation and mortality)

VAMP study releases Mossdale/Durham Ferry and Jersey Point)

| Study Year | Combined Differential Recovery Rate | Standard Error |
|---|---|---|
| 1994 | 0.133 | 0.099 |
| 1997 | 0.186 | 0.064 |
| 2000 | 0.187 | 0.019 |
| 2001 | 0.191 | 0.014 |
| 2002 | 0.151 | 0.013 |
| 2003 | 0.019 | 0.005 |
| 2004 | 0.026 | 0.010 |

# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.4 Factors outside the Control of the Districts

Delta Issues - Water Quality

- Nutrients
- Stockton DO
- Pesticides
- Herbicides

| Water Body | Pollutant | Source |
|---|---|---|
| San Joaquin River (Merced River to South Delta Boundary | Boron | Agriculture |
| | Chlorpyrifos | Agriculture |
| | DDT | Agriculture |
| | Diazinon | Agriculture |
| | EC | Agriculture |
| | Group A Pesticides | Agriculture |
| | Mercury | Resource Extraction |
| | Unknown Toxicity | Source Unknown |
| Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River) | Diazinon | Agriculture |
| | Group A Pesticides | Agriculture |
| | Unknown Toxicity | Source Unknown |
| Delta waterways (Western, Eastern and Stockton Ship Channel) | Organic enrichment/Low DO (Stockton Ship Channel only) | Municipal Point Sources; Urban runoff/Storm sewers |
| | DDT | Agriculture |
| | Diazinon | Agriculture; Urban runoff/Storm sewers |
| | EC (Western Delta only) | Agriculture |
| | Group A Pesticides | Agriculture |
| | Mercury | Resource Extraction |
| | Unknown Toxicity | Source Unknown |

Source: Central Valley Regional Water Quality Control Board. 2002. Clean Water Act Section 303(d) list of water quality limited segments. Approved by U.S. Environmental Protection Agency in July 2003. http://www.waterboards.ca.gov/tmdl/docs/2002reg5303dlist.pdf

Parameters: EC = electrical conductivity; DDT = dichlorodiphenyltrichloroethane; DO = dissolved oxygen

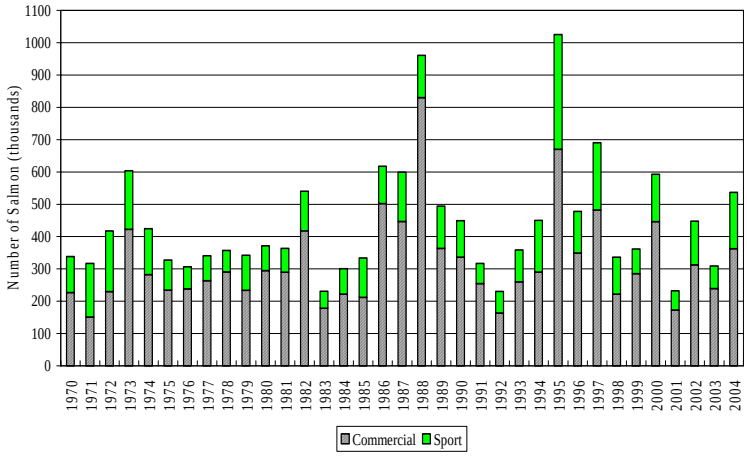
Group A pesticides = One or more of the Group A pesticides, including: aldrin, dieldrin, chlordane, endrin, heptachlor, epoxide, hexachlorocyclohexane (including lindane), endosulfan and toxaphene.

# 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

## 4.4 Factors outside the Control of the Districts

Ocean and Inland Harvest

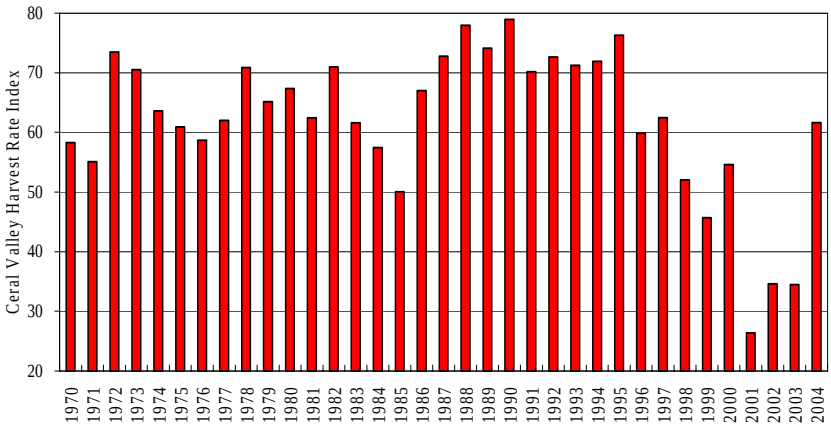


## 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

### 4.4 Factors outside the Control of the Districts

Ocean and Inland Harvest




## 4-Assessment of Program

**New Don Pedro Project**
**FERC Project No. 2299**

### 4.4 Factors outside the Control of the Districts

Land Use Activities (primarily historical impacts)

- Gold Dredging
- Aggregate Mining
- Clearing of Riparian Forests
- Bank Protection
- Urban growth into the floodplain

Agricultural and riparian diversions (screens)

Impacts of 1997 Flood

Achievement of 1995 FSA Goals

- Completed required actions including restoration project implementation
- Improved physical and biotic community indicators
- Limited by factors outside of Districts control (Delta export, HORB, DO

## 5-Next Steps



### 5.1 Continue Monitoring

Through Relicensing

- Spawner surveys
- Temperature Monitoring

Through 2008, and through relicensing subject to funding

- Seine surveys
- Snorkel surveys
- RST sampling
- Invertebrate sampling

### 5.2 Continue TRTAC and Reporting

TAC and Subcommittee meetings

Annual FERC Report

## 5-Next Steps

New Don Pedro Project
FERC Project No. 2299

### 5.3 Continue existing FERC Flow Schedules

### 5.4 Continue control of flow fluctuations

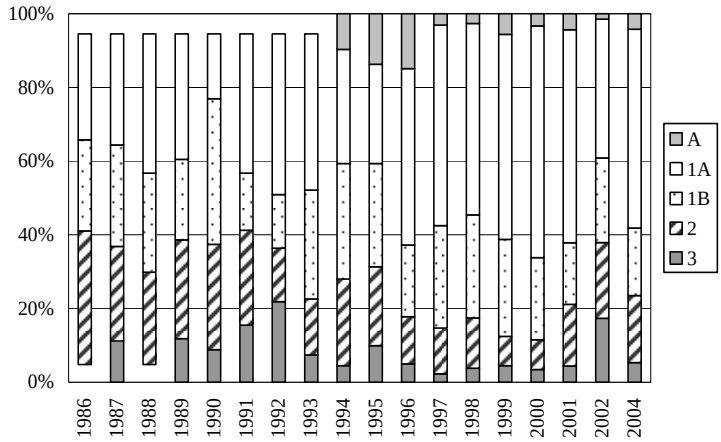
### 5.5 Continue implementation of restoration projects

## 5-Next Steps

**New Don Pedro Project**
**FERC Project No. 2299**

### 5.6 Additional Measures to be implemented under FSA Sections 8 and 9

Increase salmon spawning use through temporary spawning barriers




## 5-Next Steps

**New Don Pedro Project**
**FERC Project No. 2299**

### 5.7 Additional Measures to be implemented under FSA Sections 8 and 9

Additional Measures to Reduce Predation of Smolts in Tuolumne River

- Turbidity enhancement during outmigration pulse flows
- Predator removal (e-fish, angling, tournament)
- Spatial Separation of Predators and Prey (temperature, velocity)

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

21 September 2005
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

*DRAFT AGENDA*

1. Introduction
   A. Comments on draft agenda
   B. Correspondence since last meeting
2. Discussion on 2005 10-year report
3. General Update:
   A. Data and report status
   B. Agency and NGO updates
   C. Monitoring update
   D. River operations and forecasts
   F. Restoration
4. Additional items
5. Next meeting and topics

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

21 September 2005
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

**Draft Meeting Summary**

1. Introduction
   A. Comments on draft agenda - none
   B. Correspondence since last meeting – very limited (no handout)
2. Discussion on 2005 10-year report:

Ford: Handout of 20 Sep FERC notice of additional comment periods through 22 Nov and 22 Dec

Various issues and viewpoints were identified or discussed:

- How will monitoring and future analysis issues be decided?
- CALFED monitoring grant has been approved – grant agreement to be developed should have TRTAC approval and input;
- should revisit various priority lists and monitoring suggestions – need for clear plan
- support for more screw trap sampling - perhaps changes needed to other studies
- issues of TRTAC operations and conflict resolution should be resolved
- riverkeeper (independent – work with landowners)
- need for facilitator
- better DFG warden enforcement
- request that action items be identified in advance and e-mails have one subject
- modeling issues
- need to address adding NMFS more formally into process, including flow scheduling
- need for website to facilitate TRTAC operation/function and information access

**Action:** It was decided to have additional meetings scheduled to further discuss these and other issues raised through the FERC comment process. Issues identified for future meeting topics

include: monitoring/studies, TRTAC process (communication, data exchange, participation), flow scheduling and coordination with VAMP, etc., modeling, restoration projects, and other topics to be addressed as they are identified

**Action:** Mesick and Ford were assigned to review various monitoring elements for the next meeting

3. General Update:

   A. Data and report status – Heyne identified their Sportfish Report format has changed; Basin WT model should be in draft form by Mar 2006 from AD Consultants – Heyne reported that WT data is being collected from reservoirs and rivers and river cross sections are being used. Ford stated that a "project monitoring update report" through 2004 will be available – plan is to get any remaining data/reports caught up this year;

      **Action:** Districts will follow-up with DFG on Sportfish Reports and other data needs

      **Action:** FOT and TRT project seine data to be provided for inclusion with other seining data

   B. Agency and NGO updates:

      CCSF: Ramirez moving to them from CALFED

      CRRF: Walser reported large trout this summer down to near Waterford; possible spring run salmon seen; dead carp observed in lower Tuolumne and San Joaquin Rivers

      TPT: Koepele has two Nov canoe trips planned and planting days at Big Bend in Oct and Dec

      FOT: report on Bobcat Flat project status

   C. Monitoring update – Districts: snorkeling underway this week – many trout observed at upper sites; recent thermograph download – data should be available soon; invertebrate samples were again collected in summer – many fines at site below Bobcat Flat; Districts will provide assistance to DFG carcass survey again this year

   D. River operations and forecasts – DFG (Marston) has been coordinating fall schedules in the basin that are still being finalized; Tuolumne pulse will be about 500 cfs for two weeks; no excess flows will be released in near-term on Tuolumne; flow schedule process to be discussed further

   E. Restoration – Status update handout from Fryer; inchannel restoration work for the RM 43 project at Bobcat Flat is completed; Boucher reported that 16K cubic yards of gravel were added at 3 sites and 35K yards were stockpiled – a 5000 cfs floodplain channel was constructed; Heyne stated that DFG intends to do more gravel additions near La Grange in 2006 with 4-pumps funding; Ruddy project still is in jeopardy due to appraisal process – could affect Warner-Deardorff project as well; SRP10 land purchase may need to proceed

soon;

**Action:** overall restoration project status and selection will be reviewed

4. Additional items –

5. Next meetings and topics as noted – Meetings were set as follows (at TID at 9:30 AM): 13 Oct (monitoring, incl. review of past monitoring, agency monitoring, project monitoring, trout monitoring, CALFED grant, proposals in comments to FERC, special studies, etc.); 04 Nov (TRTAC process and communication; flow schedule process; website); 08 Dec (TBD). Quarterly meeting dates were selected for 2006 on 2nd Thursdays: 09 Mar, 08 Jun, 14 Sep, and 14 Dec.

**FERC 2299 TRTAC Meeting**
**21 September 2005**

| Name | Organization |
|---|---|
| Tim Ford | TID/MID |
| Robert Nees | TID |
| Debbie Liebersbach | TID |
| Roger Masuda | TID |
| Allison Boucher | FOT |
| Patrick Koepele | TRT |
| Ron Yoshiyama | CCSF |
| Noah Hume | Stillwater Sciences |
| Tim Heyne | DFG |
| Carl Mesick | FWS-AFRP |
| Jeff McLain | NMFS |
| Steve Walser | CRRF |

Task 6. Monitoring of Cumulative Effects on Target Populations [Chinook salmon and O. mykiss] This task would extend river-wide trend monitoring that, in the past, was funded by the FSA and CDFG. FSA funds are fully expended, and no additional funds are available. CDFG funds are not certain. Without additional, secure funding, these long-term monitoring efforts may be halted. Methods and reporting for all Chinook salmon, O. mykiss, and macroinvertebrate monitoring under Task 6 be consistent with the protocols and participants employed in 2004 monitoring activities.

6A. Juvenile Chinook salmon production and outmigration timing: Install and monitor two rotary screw traps near RM 5.5 from approximately January 1 through June 15 for three years. The trap would generally be operated 7 days/week and will be checked at least daily. Conduct up to six trap efficiency test releases each year. Test releases will use captured, wild juvenile salmon when available. When sufficient numbers of wild juvenile salmon are not available, hatchery-reared juvenile salmon will be used for the tests. [CDFG, S.P. Cramer]

6B. Juvenile Chinook salmon and O. mykiss distribution, abundance, and size (winter and spring): Conduct biweekly seining surveys from January through May at up to 18 locations from approximately RM 51.5 (near La Grange) through RM 0 (including two sites in the San Joaquin River) for three years. Sample locations would include approximately ten sites used during prior years, as well as additional sites within the Gravel Mining Reach, SRPs 9 and 10, Bobcat Flat, and coarse sediment augmentation projects. Data for Bobcat Flat will be extracted and provided to FOT. [Stillwater Sciences, S.P. Cramer]

6C. Juvenile Chinook salmon and O. mykiss distribution (summer): Conduct two snorkel surveys during June through September at up to 16 locations from RM 51.5 (La Grange Bridge) through RM 31.5 (near Hickman Bridge), including restoration project sites, to document summer distribution of juvenile Chinook salmon and O. mykiss. Data for Bobcat Flat will be extracted and provided to FOT. [Stillwater Sciences, S.P. Cramer]

6D. Chinook salmon adult escapement: Conduct weekly Chinook salmon carcass surveys and redd counts from upstream of La Grange (RM 51.6) to Geer Road (RM 26) from approximately October 15 through January 15 for three years to quantify adult escapement and document spawning distribution. [CDFG, S.P. Cramer]

6E. O. mykiss adult distribution: Conduct hook-and-line surveys from approximately RM 52 through RM 36.5 (within the M.J. Ruddy Reach) for three years to document distribution of adult O. mykiss. Surveys would be conducted approximately biweekly from November 1 through December 31 and weekly from January through June. [Stillwater Sciences, S.P. Cramer with local guide subcontractor (California Rivers Restoration Fund)]

6F. Benthic macroinvertebrate composition, abundance, and diversity indices: Conduct annual summer benthic macroinvertebrate monitoring (composition, abundance, and diversity indices) using the California Stream Bioassessment Procedure (CDFG 1999) over a three-year period. Three separate kicknet samples will be taken at six sites in the gravel-bedded reach; three Hess samples will also be collected at two of those sites. [Stillwater Sciences]

Task Deliverables: Quarterly progress reports; one draft and one final report for each task describing monitoring methods, results, and conclusions. Reports will be in a format consistent with reports included in the Districts 2003 FERC report (TID 2004).

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Turlock and Modesto Irrigation Districts Project No. 2299-057

# NOTICE OF ADDITIONAL TIME FOR OF COMMENT AND RESPONSE PERIODS

(September 20, 2005)

This notice applies to the Don Pedro Project, FERC No. 2299. The project is licensed to the Turlock and Modesto Irrigation Districts, and is located on the Tuolumne River in Stanislaus and Tuolumne Counties, California.

A Notice of Filing of Fisheries Studies Report and Study Proposals, and Soliciting Comments, Motions to Intervene, and Protests was issued on June 24, 2005, for the Ten-Year Summary Report on Fisheries Studies in the Tuolumne River. The report was filed with the Commission on March 25, 2005. The period for filing comments and/or motions ended July 25, 2005; the period for filing responses to comments and/or motions ended August 24, 2005.

Several parties requested on July 25, 2005, an additional 120 days to provide comments. This notice provides additional time for filing comments until November 22, 2005; and additional time for filing responses to comments until December 22, 2005.

For additional information contact Philip Scordelis at (415) 369-3335.

Magalie R. Salas
Secretary

TURLOCK IRRIGATION DISTRICT

CIVIL ENGINEERING DEPARTMENT
MEMORANDUM

TO: TRTAC
FROM: Wilton Fryer
DATE: 21 September 2005
RE: Restoration Projects - Status Update

| Project | Funding | Status |
|---|---|---|
| Completed Projects: | | |
| 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. HART NOC filed May 2004. A separate limited irrigation & maintenance agreement is in place for 2004, funded by MWD. |
| Design Manual | Full | Completed with Final Report submitted 26 February 2004. |
| Course Sediment | Full | Report was completed with modifications on methods and techniques to protect existing salmonid habitats during implementation. *CBDA has submitted the CSMP to the Science Panel for review along with the amendment to the La Grange Infusion Project.* |
| Active Projects: | | |
| MJ Ruddy | Full | The third set of appraisals for the project were rejected by Interior Dept., but the basis has not been supplied to the District. The 1999 funds have already been defunded. There is now the potential to loose the 2000 funds if the appraisal issues cannot be resolved and the land acquired by January 2006 because it has not been spent in the 5 years since it was granted. |

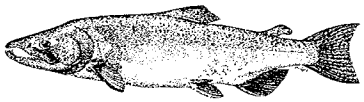
| | | |
|---|---|---|
| Warner-Deardorff | Full | This project is split into 2 phases for funding. Under Phase I the design is on hold at 90% stage with the remaining permitting and ROW appraisal on hold pending the outcome of the appraisal process for the MJ Ruddy project because the permits are linked. The Phase II directed action submittal from November 2003 has been sent to the Adaptive Management Forum in September to confirm that their issues are adequately addressed. |
| La Grange Gravel | Full | In September the submittal to CBDA from November 2004 was finally to the UC Science Panel in Davis for review along with the Course Sediment Management Plan. We have been allowed to do monitoring and aerial photo work associated with design and monitoring pending the Science Panel review. |
| Fine Sediment | Full | Design work on the upslope erosion control measures is near final review stage. DFG is working on arrangements with the adjacent landowner to allow construction on their portion of the project at the basin site prior to DFG acquiring the property. Funding from the riffle cleaning task has been moved over to the Gasburg Creek portion of the construction. |
| RM 43 | Full | The project started construction on 12 September and the final inchannel grading was completed this week. There will be some final grading outside the channel to complete this phase of the project. |
| SRP 10 | Partial | This project has been split into two phases. There is no Phase II funding for acquisition and construction identified. It might be possible to apply for a Prop 50 Grant by 18 October, but there are watershed group agreements that need to be in place before that time. AFRP may still be considering placing $4.5M in their 2006 budget to be used on this project. The landowner is concerned that Phase II is too far out for his needs. |

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org



## TECHNICAL ADVISORY COMMITTEE MEETING

13 October 2005
9:30 AM
Turlock Irrigation District, Room 152 (1st floor - WRRA area)

*DRAFT AGENDA*

1. Introduction
   A. Comments on draft agenda and meeting summary
2. Review Tuolumne monitoring programs and other evaluations:
   A. Riverwide elements through 2004 by all parties:
      1. FERC study program elements
      2. Other monitoring or assessments, including TR part of basin or valley-wide elements
   B. Restoration project monitoring through 2004 by all parties (Districts, agencies, NGOs)
   C. Monitoring in 2005 and beyond, including review of various suggested elements

      1. Riverwide:
         - Districts
         - CALFED grant
         - Trout-related elements
         - Other agencies: DFG, FWS, NMFS

      2. Restoration Project:
         - Districts
         - CALFED grant
         - Other agencies/NGO: DFG, FWS, NMFS, FOT, TPT

      3. Other monitoring or assessments, including TR part of basin or valley-wide elements
4. Additional items
5. Next meeting and topics

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

13 October 2005
9:30 AM
Turlock Irrigation District, Room 172 (1st floor – GM area)

**Draft Meeting Summary**

1. Introduction
   A. Comments on draft agenda and meeting summary – Mesick stated focus should be on #2C; McLain stated discussion of studies was OK, but not flows at this time.

2. Review Tuolumne monitoring programs and other evaluations: Ford went through a Powerpoint presentation/handout on A through C below. Vick provided a 2-page table of CALFED grants tasks and other monitoring

   A. Riverwide elements through 2004 by all parties:
      1. FERC study program elements
      2. Other monitoring or assessments, including TR part of basin or valley-wide elements: Suggestions were to list Water Quality (WQ) programs such as SWAMP and NAWQA and to depict all items here by year

   B. Restoration project monitoring through 2004 by all parties (Districts, agencies, NGOs)

   C. Monitoring in 2005 and beyond, including review of various suggested elements

      1. Riverwide: added seine and snorkel survey sites to be determined
         - Districts
         - CALFED grant
         - Trout-related elements: lavage could add info. on diet during angling survey
         - Other agencies: DFG, FWS, NMFS

      2. Restoration Project: Need to generally better inform group of changes/decisions affecting projects or their monitoring
         - Districts
         - CALFED grant
         - Other agencies/NGO: DFG, FWS, NMFS, FOT, TPT: Add riparian recruitment study and

Grayson Ranch monitoring

3. Other monitoring or assessments, including TR part of basin or valley-wide elements: Need to develop proposals for future opportunities; most listed are trout-related suggestions from prior meetings; need to follow-up on trout habitat suitability and temperature criteria review; pebble counts will be done for gravel addition sites; Mesick suggested examining food/floodplain dynamics from high flows as part of inquiry on how river functions and fish respond; priorities to be determined by TRTAC; discussion of potential reasons for salmon numbers, fish response from projects, issues of gravel additions (size, source, composition, etc.); need to review existing data on local rivers and then identify new evaluations

4. Additional items: HEC cross-section handout (17Sep2005 flight) for topographic river model; DFG basin thermograph location handout for basin model development

5. Next meeting and topics: 04Nov (see Sep summary); Mesick to develop list of questions/objectives and propose how to evaluate; others may pose similar list/issues for TRTAC evaluation

**FERC 2299 TRTAC Meeting**
**13 October 2005**

| Name | Organization |
|---|---|
| Tim Ford | TID/MID |
| Robert Nees | TID |
| Debbie Liebersbach | TID |
| Roger Masuda | TID |
| Allison Boucher | FOT |
| Patrick Koepele | TRT |
| Ron Yoshiyama | CCSF |
| Noah Hume | Stillwater Sciences |
| Tim Heyne | DFG |
| Dennis Blakeman | DFG |
| Carl Mesick | FWS-AFRP |
| Jen Vick | McBain&Trush |
| Steve Walser | CRRF |
| Jeff McLain (part only, by phone) | NMFS |

## TUOLUMNE RIVER MONITORING SUMMARY (DRAFT)
## Prepared for TRTAC October 13, 2005

**Legend to codes in table:**

| | |
|---|---|
| date: | year study implemented or reported |
| NI: | included in monitoring plan but not implemented |
| IP: | implementation pending |
| RC: | report complete |
| RP: | report pending |
| F: | funded from source other than Monitoring PSP |
| NF: | not funded from source other then Monitoring PSP |
| N/A: | not included in monitoring plan for project |

Monitoring implemented and funded from sources other than Monitoring PSP

Initial monitoring implemented from sources other than Monitoring PSP. PSP funds required to continue monitoring.

Area where funding may become available due to delays in implementation or funding from other sources

| MONITORING PSP TASK | | 2004 CALFED PSP | | | | PAST AND ONGOING MONITORING STATUS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2006 TOTAL | 2007 TOTAL | 2008 TOTAL | 2006-2008 TOTAL | | | | | | | | | | |
| *TASK 1.* | **PROJECT MANAGEMENT** | **$18,000** | **$18,000** | **$18,000** | **$54,000** | | | | | | | | | | |
| *TASK 2.* | **PUBLIC PARTICIPATION** | **$8,900** | **$9,300** | **$67,500** | **$85,700** | | | | | | | | | | |
| *2a.* | TRTAC participation | $8,900 | $9,268 | $9,654 | $27,822 | | | | | | | | | | |
| *2b.* | Brochure development | $0 | $0 | $25,177 | $25,177 | | | | | | | | | | |
| *2c.* | CALFED Science Conference + publications | $0 | $0 | $32,627 | $32,627 | | | | | | | | | | |
| *TASK 3.* | **CONTINUE 7/11, MJR, AND SRP9 PROJECT MONITORING** | **$138,100** | **$72,300** | **$140,500** | **$350,900** | **7/11** | | **Ruddy** | | **SRP 9** | | **SRP 10** | | **Bobcat Flat[4]** | |
| | | | | | | Pre-project | Post-project | Pre-project | Post-project | Pre-project | Post-project | Pre-project | Post-project | Pre-project | Post-project |
| *N/A* | Digital Terrain Mapping | | | | | complete | NI | complete | NF | complete | NI | complete | NF | 2004 | 2005, IP |
| *N/A* | Aerial photography | | | | | 1998, RP | 2002, RP | 1998, RP | NF | 1998, RP | 2002 | 1998, RP | NF | 2004 | 2005, IP |
| *N/A* | Habitat mapping | | | | | 1998/99, RP | 2002, RP | 1998/99, RP | NF | 1998/99, RP | NI | 1998/99, RP | NF | 2004 | 2005, IP |
| *N/A* | Habitat modeling | | | | | N/A | N/A | N/A | NF | 2004, RP | 2004 | 2005, RP | NF | N/A | N/A |
| *N/A* | Bioengineering photomonitoring | | | | | N/A | NI | ?? | NF | N/A | N/A | N/A | NF | N/A | N/A |
| *N/A* | Stochastic water surface monitoring | | | | | N/A | 2005 | N/A | NF | N/A | 2003/5 | 2005 | NF | 2003 (?) | ? |
| *N/A* | Electrofishing at prject and control sites | | | | | N/A | N/A | N/A | N/A | 1998/99, RP | 2003, RP | 1998/99, RP | NF | N/A | N/A |
| *N/A* | Juvenile salmon survival | | | | | N/A | N/A | N/A | N/A | 1998/99, RP | N/A | 1998/99, RP | N/A | N/A | N/A |
| *N/A* | Predation study | | | | | N/A | N/A | N/A | N/A | N/A | F, deferred 2005 | N/A | F, deferred 2005 | N/A | N/A |
| *N/A* | Pebble counts | | | | | 1998, RP | 2002, RP | 1998 (?) | NF | N/A | N/A | N/A | N/A | 2004 | 2005, IP |
| *N/A* | Bulk samples | | | | | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 2005, IP |
| *3a.* | Resurvey cross sections and longitudinal profiles | $28,552 | $9,027 | $22,189 | $59,767 | 1998/99, RP | 2002, RP | 1999, RP | | 1998/99, RP | 2002, RP | 1998/99, RP | NF | | 2005, IP |
| *3b.* | Deploy and maintain tracer rocks | $8,158 | $2,579 | $6,340 | $17,076 | | 2005 [3] | | | | | | NF | | 2005, IP |
| *3c.* | Map channel migration and other planform changes | $4,079 | $1,290 | $3,170 | $8,538 | | | | | | | | NF | | |
| *3d.* | Monitor peak flow water surface elevations (crest gages) | $11,220 | $4,367 | $3,259 | $18,846 | | | | | | | | NF | | |
| *3e.* | Continuous water surface monitoring (depth recorder) | $1,800 | $0 | $0 | $1,800 | | | | | | | | NF | | |
| *3f.* | Monitor planted vegetation | $21,840 | $0 | $22,890 | $44,730 | | as-built and Year 2 only, RP | | | as-built and Year 2 only, RP | | | NF | | |
| *3g.* | Monitor natural recruitment | $5,470 | $6,860 | $12,910 | $25,240 | | | | | | | | NF | | |
| *3h.* | Map spawning location and habitat characteristics | $20,500 | $21,012 | $21,538 | $63,050 | | | | | | | | NF | 2004 | 2005, IP |
| *3i.* | Conduct Siene Surveys | $0 | $0 | $0 | $0 | | | | | | | | NF | | |
| *3j.* | Monitor Groundwater | $13,254 | $3,546 | $3,978 | $20,777 | | | | | | | | NF | | |
| *3k.* | Monitor avian species | $15,000 | $15,000 | $15,000 | $45,000 | | | | | | | | NF | | |
| *3l.* | Report preparation and distribution | $8,201 | $8,604 | $29,296 | $46,101 | | | | | | | | NF | | |
| *TASK 4.* | **CONTINUE FINE SEDIMENT MANAGEMENT MONITORING** | **$51,700** | **$89,400** | **$199,200** | **$340,300** | **Fine Sediment Management** | | | | | | | | | |
| | | | | | | **Pre-project** | | | | | | **Post-project** | | | |
| *N/A* | Gasburg Creek Sediment Source Assessment | | | | | 2004, RC | | | | | | as-built and Year 1: F, IP (2006, 2007) | | | |
| *N/A* | Survival-to-Emergence Study | | | | | 2002, RP | | | | | | as-built and Year 1: F, IP (2006, 2007) | | | |
| *N/A* | Riffle cleaning pilot study | | | | | F, IP | | | | | | | | | |
| *N/A* | Pool cleaning literature review | | | | | 2002, RC | | | | | | | | | |
| *N/A* | Tributary sediment reconnaissance study | | | | | 2001, RC | | | | | | | | | |
| *N/A* | Tributary sediment monitoring | | | | | 2004, RP | | | | | | | | | |
| *4a.* | Quantify annual sediment accumulation | $0 | $13,106 | $12,537 | $25,643 | | | | | | | | | | |
| *4b.* | Monitor channel stability and riparian vegetation | $0 | $11,393 | $19,455 | $30,848 | | | | | | | | | | |
| *4c.* | Monitor tributary fine sediment contribution | $8,407 | $8,712 | $15,415 | $32,534 | | | | | | | | | | |
| *4d.* | Benthic Macroinvertebrate monitoring | $14,066 | $23,570 | $76,341 | $113,978 | | | | | | | | | | |

| MONITORING PSP TASK | | 2004 CALFED PSP | | | | PAST AND ONGOING MONITORING STATUS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2006 TOTAL | 2007 TOTAL | 2008 TOTAL | 2006-2008 TOTAL | | | | | |
| *4e.* | Quantify Chinook salmon spawning habitat selection and redd superimposition | $29,223 | $32,675 | $63,984 | $125,882 | | | | | |
| *4f.* | Report preparation and distribution | $0 | $0 | $11,475 | $11,475 | | | | | |
| *TASK 5.* | **AUGMENT BASELINE AND POST-PROJECT MONITORING FOR COARSE SEDIMENT AUGMENTATION** | **$169,500** | **$106,300** | **$139,000** | **$414,800** | **Coarse Sediment Management Plan** | **CDFG/CDWR Coarse Sediment Projects** | | **Coarse Sediment Transfusion Phase III[1]** | |
| | | | | | | | **Pre-project** | **Post-project** | **Pre-project** | **Post-project** |
| *N/A* | Develop Coarse Sediment Management Plan | | | | | 2004, RC | | | | |
| *N/A* | Develop monitoring plan | | | | | | | | Draft RP | |
| *5a.* | Document channel bed texture and monitor bed mobility thresholds | $19,221 | $20,182 | $21,191 | $60,594 | pebble counts | pebble counts | pebble counts, marked rocks | 2005 marked rocks | |
| *5b.* | Survey reach-scale channel cross sections and profile and quantify net sediment removal from augmentation sites: | $31,945 | $0 | $33,542 | $65,487 | | | | | |
| *5c.* | Sediment Transport Measurements at R4B | $33,938 | $35,635 | $37,417 | $106,990 | | | | 2005 | |
| | Develop and test a predictive sediment transport model[2] | | | | | | | | $50,000 NF | |
| *5d.* | Map planform geomorphic and habitat features | $24,830 | $0 | $0 | $24,830 | | | | | |
| *5e.* | Monitor spawning substrate permeability: | $27,588 | $16,967 | $11,594 | $56,149 | | | | | |
| *5f.* | Report Preparation | $31,932 | $33,529 | $35,205 | $100,666 | | | | | |
| *TASK 6.* | **MONITORING OF CUMULATIVE EFFECTS ON TARGET POPULATIONS [CHINOOK SALMON AND O. MYKISS]** | **$269,300** | **$280,400** | **$335,400** | **$885,100** | **River-wide Monitoring** | | | | |
| *N/A* | Water temperature | | | | | 1996-2005, RC (annual reports) | | | | |
| *N/A* | Water quality | | | | | 2004 | | | | |
| *N/A* | Juvenile salmon survival (CWT releases) | | | | | 1996-2002, RC (annual reports) | | | | |
| *N/A* | Fish stranding | | | | | 1996, 1997, 1999, 2000, 2002 | | | | |
| *N/A* | Riffle permeability | | | | | 2002, RC | | | | |
| *6A.* | Juvenile Chinook salmon production and outmigration timing | $131,748 | $131,748 | $131,748 | $395,243 | 1996-2005, RC (annual reports) | | | | |
| *6b.* | Juvenile Chinook salmon and O. mykiss distribution, abundance, and size (winter and spring) | $37,609 | $41,151 | $69,963 | $148,723 | 1996-2005 (seining surveys), RC (annual reports) | | | | |
| *6c.* | Juvenile Chinook salmon and O. mykiss distribution (summer) | $33,095 | $34,419 | $35,796 | $103,311 | 1996-2005 (snorkel surveys), RC (annual reports) | | | | |
| *6d.* | Chinook salmon adult escapement and spawning distribution | $18,961 | $18,961 | $18,961 | $56,883 | 1996-2005, RC (annual reports) | | | | |
| *6e.* | O. mykiss adult distribution | $34,000 | $34,000 | $34,000 | $102,000 | 1996-2005 (snorkel surveys), RC (annual reports) | | | | |
| *6f.* | Benthic macroinvertebrate composition, abundance, and diversity indices. | $13,904 | $20,091 | $44,911 | $78,906 | 1996, 1997, 2000-2005, RC | | | | |
| *TASK 7.* | **AERIAL PHOTOGRAPHY, ORTHORECTIFICATION, PHOTOGRAMMETRY, AND BATHYMETRY** | **$299,600** | **$0** | **$0** | **$299,600** | **Coarse Sediment Transfusion Phase III** | | | | |
| | | | | | | **Pre-project** | | **Post-project** | | |
| *7a.* | Air photo flight from LaGrange to San Joaquin River | $105,000 | $0 | $0 | $105,000 | 2005 | | NF | | |
| *7b.* | Install ground control points | $36,750 | $0 | $0 | $36,750 | 2005 | | NF | | |
| *7c.* | Orthorectify aerial photographs | $26,425 | $0 | $0 | $26,425 | 2005 | | NF | | |
| *7d.* | Photogrammetry/LIDAR topography | $26,425 | $0 | $0 | $26,425 | 2005 | | NF | | |
| *7e.* | Survey channel bathymetry | $105,000 | $0 | $0 | $105,000 | 2005 | | NF | | |
| | **TOTALS** | **$955,100** | **$575,700** | **$899,600** | **$2,430,400** | | | | | |

[1] The Sediment Trnasfusion Proposed Contract Amendment is curretnly being peer reviewed through UC-Davis. A response is expected in mid-October 2005. The originalproposal included $60,000 for monitoring. The amended proposal includes $400,000 for monitoring. Approximately $112,000 has been expended for bedload trnasport measurements (April 2005), marked rock placement and recovery (2005), and aerial photography and surveys for orthorectification. Channel bathymetry and LIDAR surveys were funded through augmentation design task.

[2] This model is referenced in Task 5C of the Monitoring PSP as funded under the Coarse Sediment Transfusion Project. The model is not inculded in the proposed amendment and is not currently funded.

[3] Included in Sediment Transfusion monitoring

[4] See also funding for Coarse Sediment Transfusion

HEC 2 Cross Section Locations
Sheet 1 of 2

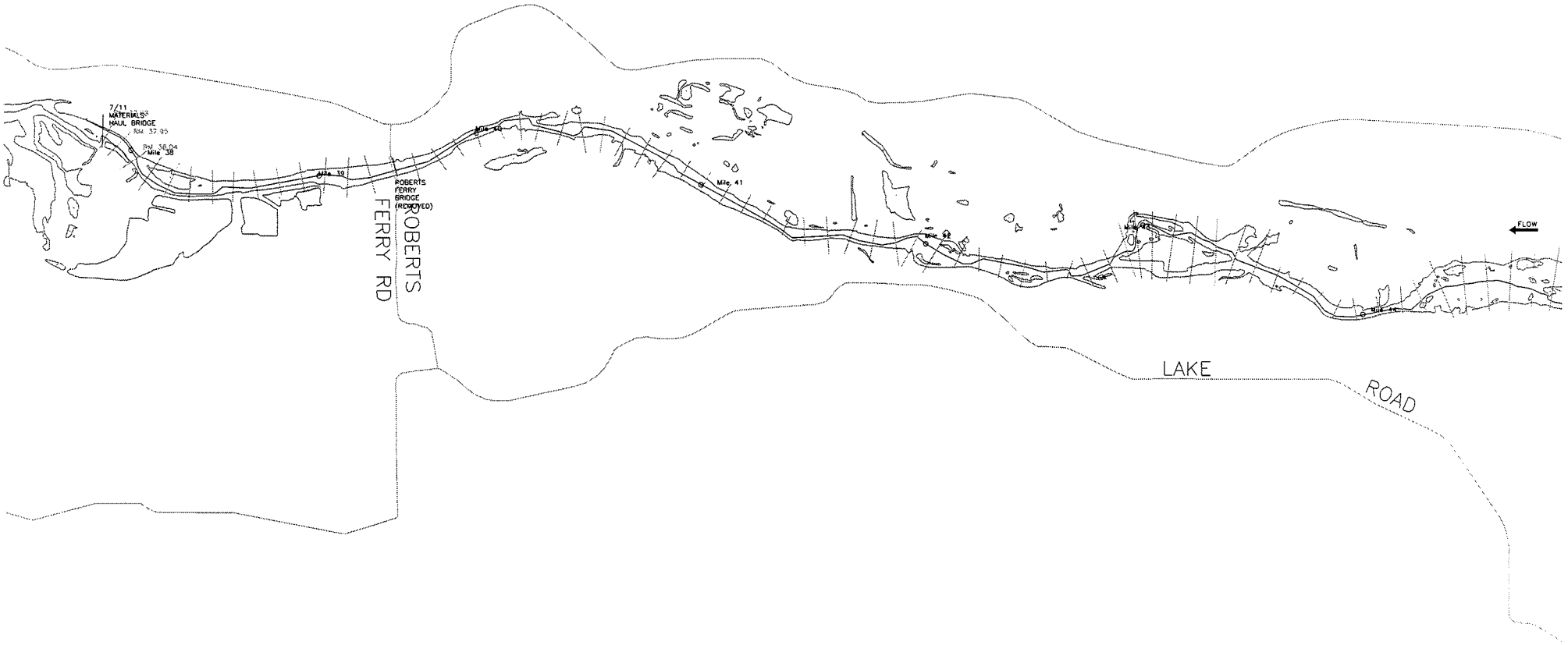
Notes:

1. River line approximate (Q = 620 cfs)
2. River mile markers from USGS map
3. Cross section spacing every 500 ft. starting from cross section number 2. (River Mile 37.95)
4. Cross section vertical datum (NAVD88 FT)
5. Cross section data pulled from April 05, Lidar and May 05, bathymetry surveys. Data is preliminary and may have gaps between bathymetry and Lidar surveys. Final surfaces will be available January 2006

NORTH

2000 1000 0 2000

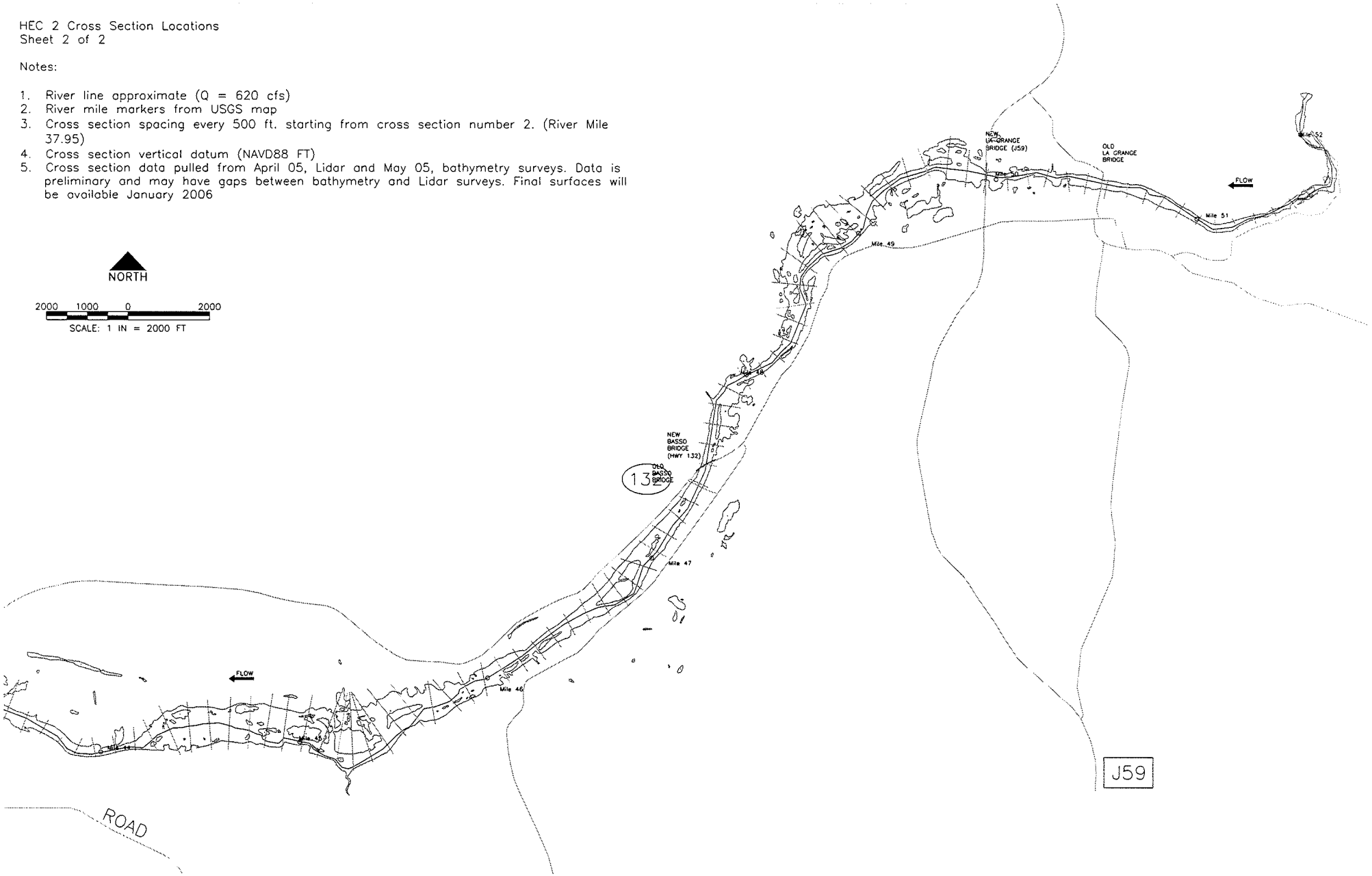
SCALE: 1 IN = 2000 FT

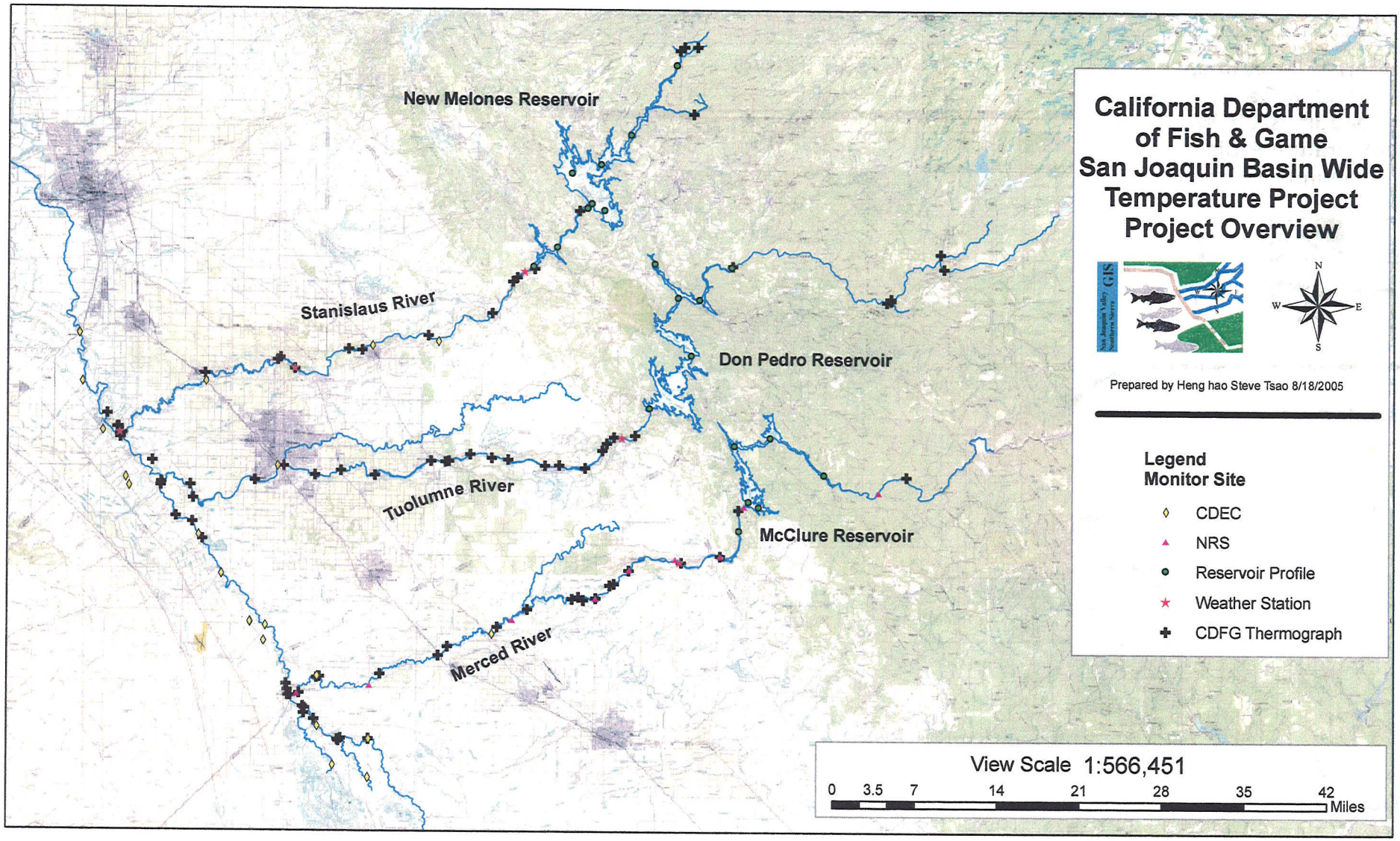


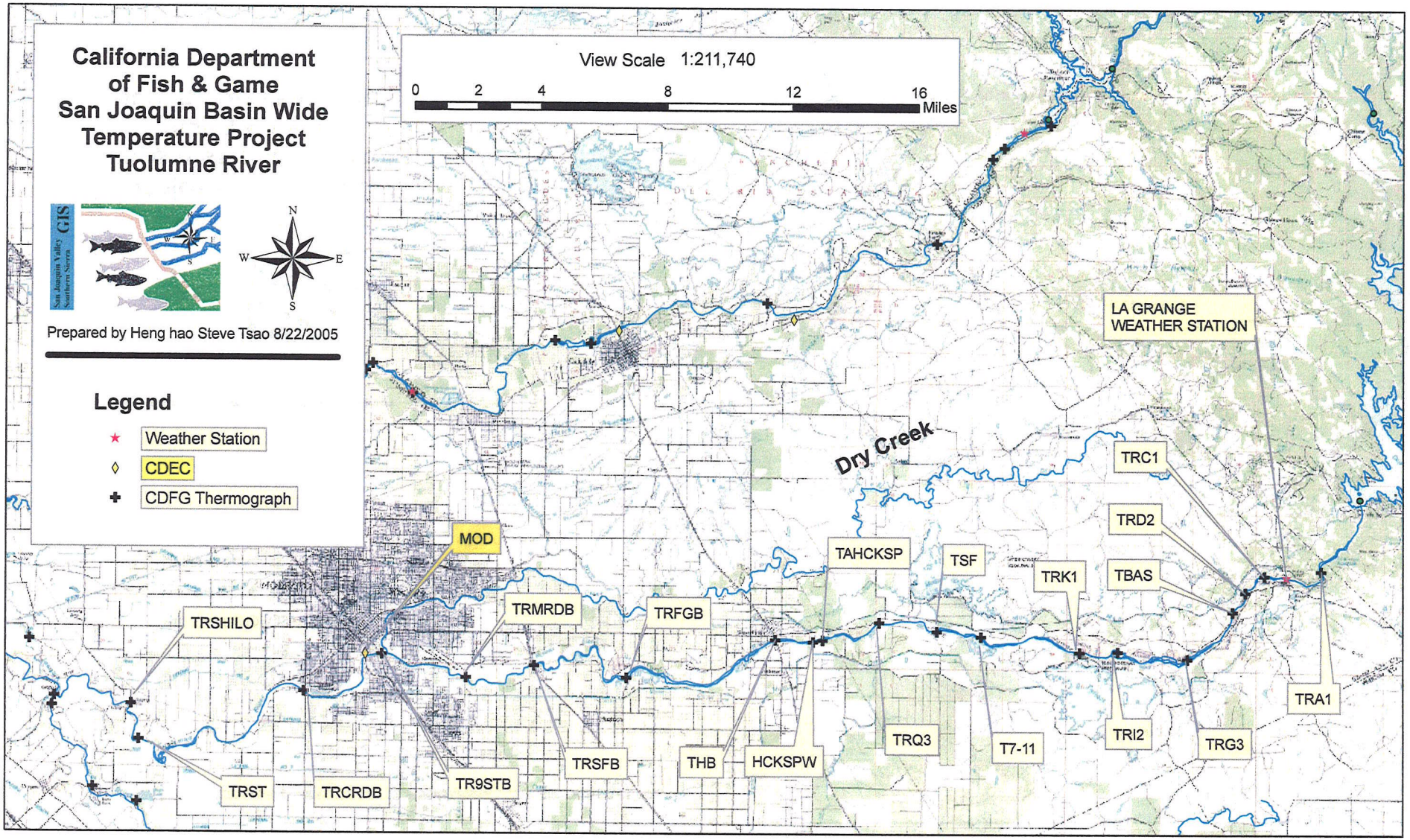
HEC 2 Cross Section Locations
Sheet 2 of 2

Notes:

1. River line approximate (Q = 620 cfs)
2. River mile markers from USGS map
3. Cross section spacing every 500 ft. starting from cross section number 2. (River Mile 37.95)
4. Cross section vertical datum (NAVD88 FT)
5. Cross section data pulled from April 05, Lidar and May 05, bathymetry surveys. Data is preliminary and may have gaps between bathymetry and Lidar surveys. Final surfaces will be available January 2006




New Melones Reservoir
Stanislaus River
Don Pedro Reservoir
Tuolumne River
McClure Reservoir
Merced River
California Department of Fish & Game
San Joaquin Basin Wide Temperature Project
Project Overview
Prepared by Heng hao Steve Tsao 8/18/2005
Legend
Monitor Site
CDEC
NRS
Reservoir Profile
Weather Station
CDFG Thermograph
N
W
E
S
View Scale 1:566,451
0 3.5 7 14 21 28 35 42
Miles


California Department of Fish & Game
San Joaquin Basin Wide Temperature Project
Tuolumne River
San Joaquin Valley Southern Sierra GIS
N
W
E
S
Prepared by Heng hao Steve Tsao 8/22/2005
Legend
Weather Station
CDEC
CDFG Thermograph
View Scale 1:211,740
0 2 4 8 12 16
Miles
LA GRANGE WEATHER STATION
Dry Creek
TRC1
TRD2
TBAS
TRK1
TSF
TAHCKSP
MOD
TRMRDB
TRFGB
TRSHILO
TRA1
TRI2
TRG3
TRQ3
T7-11
THB
HCKSPW
TRSFB
TR9STB
TRCRDB
TRST

# 13 Oct 2005 TRTAC Meeting

Review Tuolumne monitoring programs and other evaluations:

A. Riverwide elements through 2004 by all parties:

1. FERC study program elements

2. Other monitoring or assessments, including TR part of basin or valley-wide elements

B. Restoration project monitoring through 2004 by all parties (Districts, agencies, NGOs)

C. Monitoring in 2005 and beyond, including review of various suggested elements

1. Riverwide:
- Districts
- CALFED grant
- Trout-related elements
- Other agencies: DFG, FWS, NMFS

2. Restoration Project:
- Districts
- CALFED grant
- Other agencies/NGO: DFG, FWS, NMFS, FOT, TPT

3. Other monitoring or assessments, including TR part of basin or valley-wide elements

# Overview of FSA/Districts Riverwide Program Elements from 2005 10-yr Report (derived from pgs. 3-53, 3-130, 5-1)

**Elements of the Tuolumne River Fish Management Program Items contained in 2005 Ten-Year Summary Report to FERC**

| Riverwide | | | | | | | | | | | (proposed in 10-yr summary report) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monitoring Activity | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Water temperature | X | X | X | X | X | X | X | X | X | X | P | P | P | P | P | P | P | P | P | P | P |
| Water quality survey | | | | | | | | | X | | | | | | | | | | | | |
| Gravel quality study | | | X | X | | | X | | | | | | | | | | | | | | |
| Spawning surveys | X | X | X | X | X | X | X | X | X | X | P | P | P | P | P | P | P | P | P | P | P |
| Seining surveys | X | X | X | X | X | X | X | X | X | X | x | x | x | x | x | x | x | x | x | x | x |
| Snorkel surveys | X | X | X | X | X | X | X | X | X | X | x | x | x | x | x | x | x | x | x | x | x |
| Rotary screw trap -- Upper | | | X | X | X | | | | | | | | | | | | | | | | |
| Rotary screw trap -- Lower | X | X | X | X | X | X | X | X | X | X | x | x | x | x | x | x | x | x | x | x | x |
| Smolt survival CWT release | X | X | X | X | X | X | X | | | | | | | | | | | | | | |
| Stranding assessment | X | X | | X | X | | X | | | | | | | | | | | | | | |
| Invertebrate surveys | X | X | | | X | X | X | X | X | X | x | x | x | x | x | x | x | x | x | x | x |
| Angling surveys | | | | | | | | | | | x | x | x | | | | | | | | |
| | X = sponsored by Districts | | | | | | | | | | 3-yr CALFED funding | | | | P = proposed by Districts | | | | | | |
| | | | | | | | | | | | | | | | x = supported by Districts, subject to | | | | | | |
| | | | | | | | | | | | | | | | adequate funding sources | | | | | | |

## 2.A.1. Riverwide elements through 2004:
## FERC study program elements (from 2005 10-yr Report pg. 3-52)

1. Temperature monitoring
2. Spawning gravel and incubation studies
3. Fall spawning survey
4. Supplemental redd counts
5. Seining
6. Snorkel survey
7. Upper screw trap monitoring
8. Lower screw trap monitoring
9. Large CWT smolt survival releases
10. Mossdale Trawl
11. Mark/recapture smolt survival studies
12. Stranding surveys

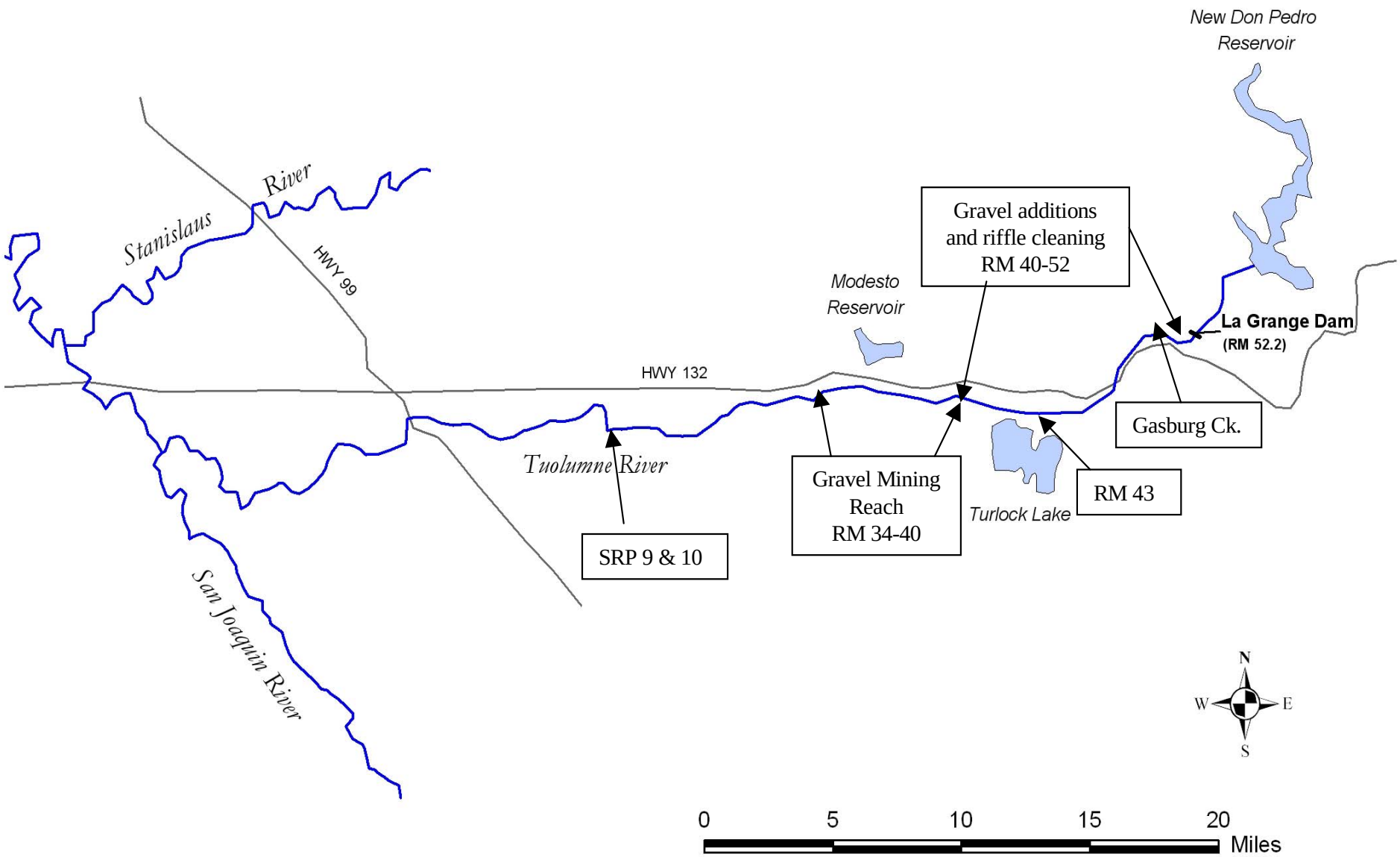
## 2.A.2. Other Riverwide monitoring or assessments, including Tuolumne River part of basin or valley-wide elements

Districts:
- Invertebrate sampling
- Water quality survey

DFG:
- Angling survey
- Winter/Spring float survey
- Trout genetic study
- Trout otolith study
- Trout scale study
- Temperature monitoring

Others??

# TRTAC Restoration Projects
# (2005 10-yr. Report pg. 3-23)



2.B. Restoration project monitoring through 2004 by all parties

SRP's (# 9)

| **Topic** | **Metric** |
|---|---|
| Channel morphology | Digital terrain mapping |
| | Cross section surveys and long profile |
| | Aerial photography |
| Hydraulics | Water surface elevation during high flows |
| Bed mobility | Tracer Rocks |
| Bass and Salmonid Habitat | Habitat mapping |
| | Habitat Modeling |
| Predator Abundance | Electrofishing at project and control sites |
| Juvenile salmon survival | Mark-recapture at rotary screw traps |
| Riparian vegetation | Plot-based survival, % cover, and growth |

Restoration project monitoring through 2004 by all parties

Gravel Mining Reach (7-11)

| **Topic** | **Metric** |
|---|---|
| Channel morphology | Digital terrain mapping |
| | Cross section surveys and long profile |
| | Aerial photography |
| Hydraulics | Water surface elevation during high flows |
| Bed mobility | Tracer Rocks |
| Bed texture | Pebble Counts |
| Salmonid Habitat | Habitat mapping |
| | Spawner Surveys |
| Bioengineering | Photomonitoring |
| Riparian vegetation | Plot-based survival, %<br>cover, and growth |

Restoration project monitoring through 2004 by all parties

DFG La Grange Gravel Additions

| **Topic** | **Metric** |
|---|---|
| Channel morphology | Cross section surveys |
| Hydraulics | Water surface elevation during high flows |
| Bed mobility | Tracer Rocks |
| Bed texture | Pebble Counts |
| Bed composition | Bulk samples |
| Salmonid Habitat? | Spawner surveys? |

Restoration project monitoring through 2004 by all parties

Grayson River Ranch (draft)

| **Topic** | **Metric** |
|---|---|
| Vegetation | Relevée plot samples |
| Avian census | Point counts in breeding season |
| Mammals | Trapping, transect and sign surveys, photo stations, track plate/scent stations |
| Fish | Seining (in 2005?) |
| Grading | Cross section surveys |

## 2.C. Monitoring in 2005 and beyond, including review of various suggested elements

1. Riverwide:

   - Districts

   - CALFED grant

   - Trout-related elements

   - Other agencies: DFG, FWS, NMFS

2. Restoration Project:

   - Districts

   - CALFED grant

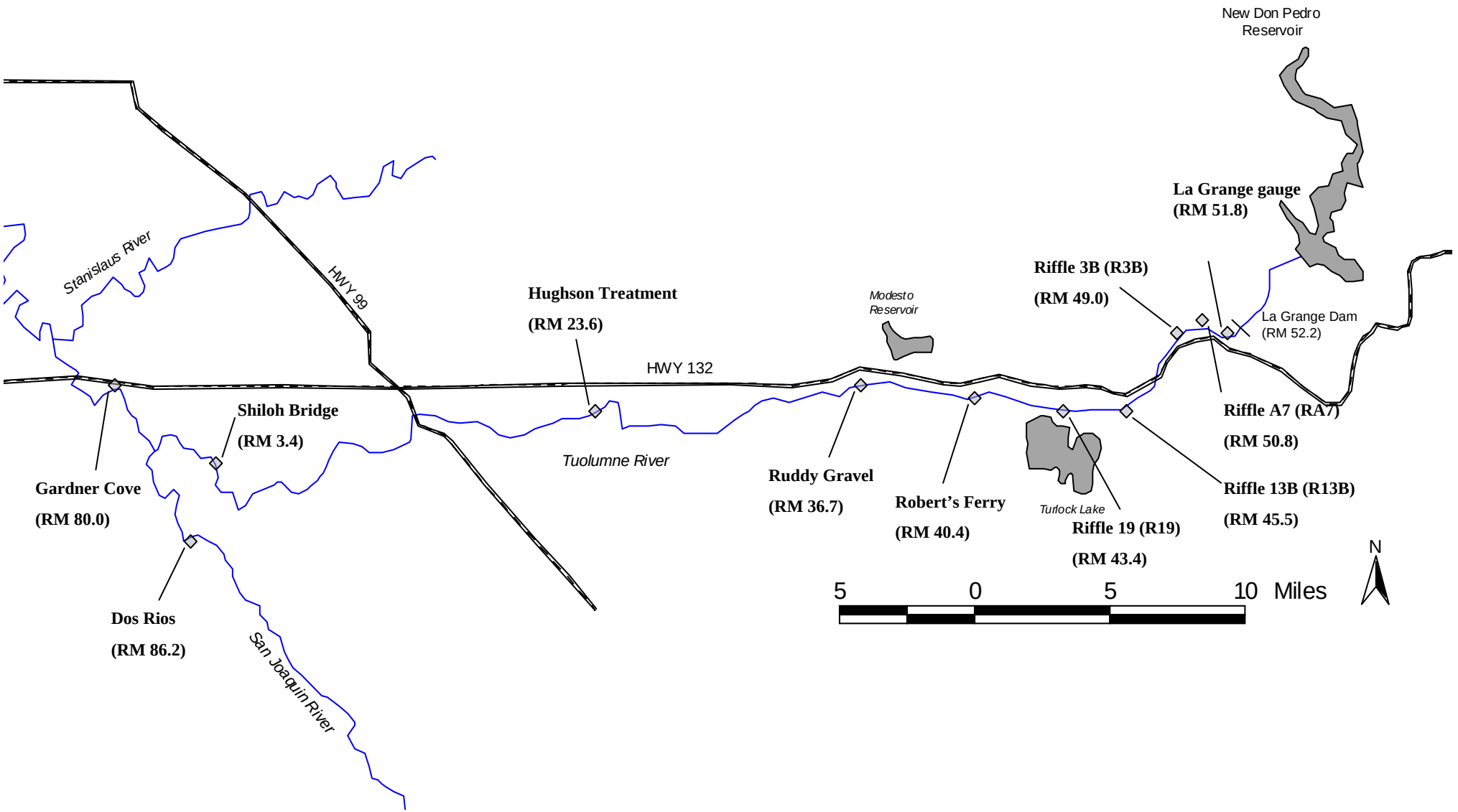
   - Other agencies/NGO: DFG, FWS, NMFS, FOT, TPT

3. Other monitoring or assessments, including TR part of basin or valley-wide elements

## 2.C.1. Riverwide monitoring: Districts/CALFED grant/trout monitoring

1. Temperature monitoring at 11 sites, incl. 2 on SJR (not in grant)
2. Fall spawning survey
3. Seining: Jan-May at 10 sites, incl. 2 on SJR (grant has up to 18 sites)
4. Screw trap monitoring: Apr-May (grant has Jan to mid-Jun)
5. Snorkel survey: 1-2 times in Jun-Sep at 12 sites (grant has up to 16 sites)
6. Invertebrate sampling at 6 sites
7. Angling survey: Nov-Dec biweekly, Jan-Jun weekly (grant period only – primarily targeting trout)

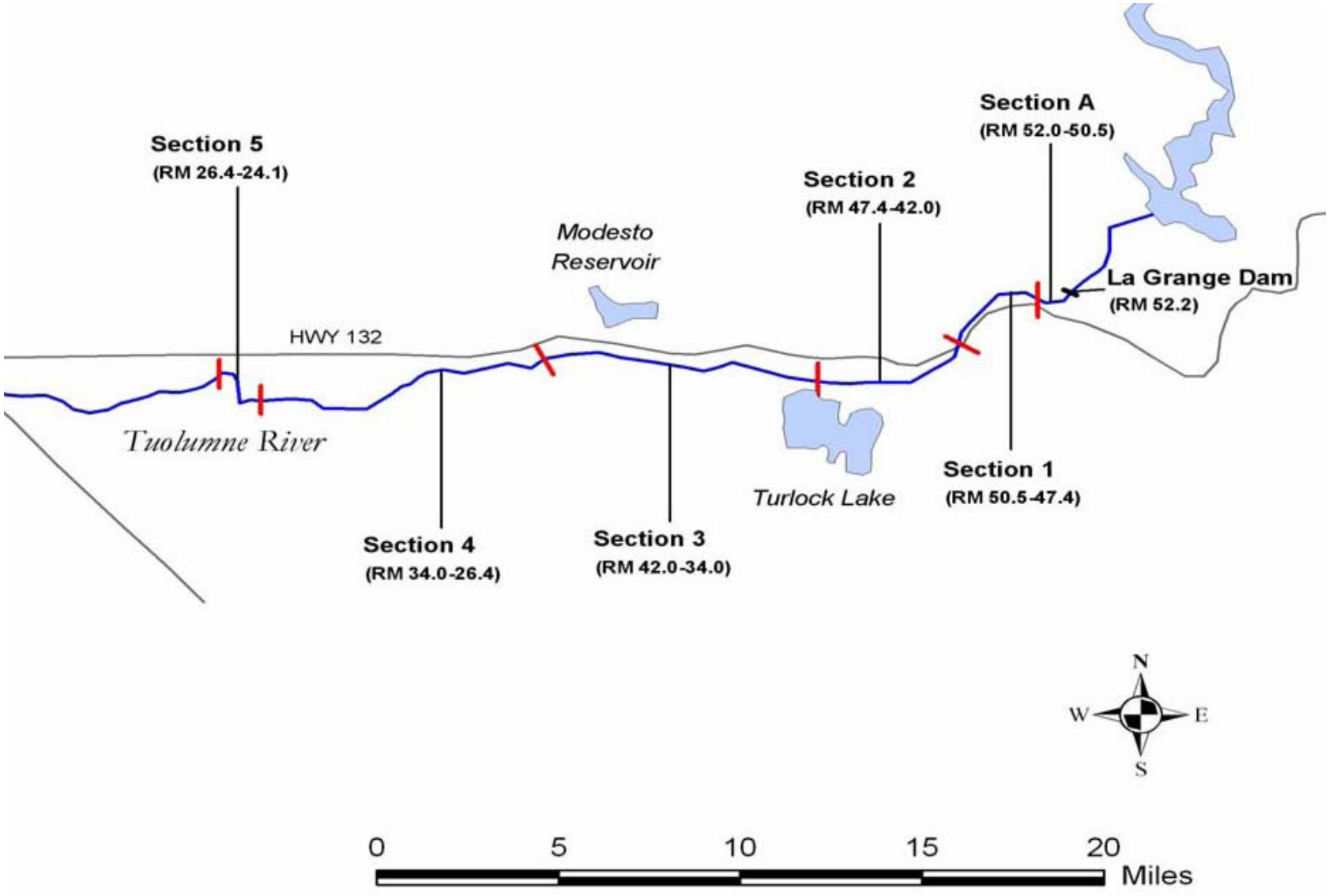
# Thermograph Sites
# (Report 2002-7 Fig. 1)



# Temperature monitoring

- Document water temperature patterns
- Analyze relative to flow, air temperature, and location
- Analyze relative to fish and invertebrate distribution
- Determine effect on San Joaquin River temperature
- Utilize for model development

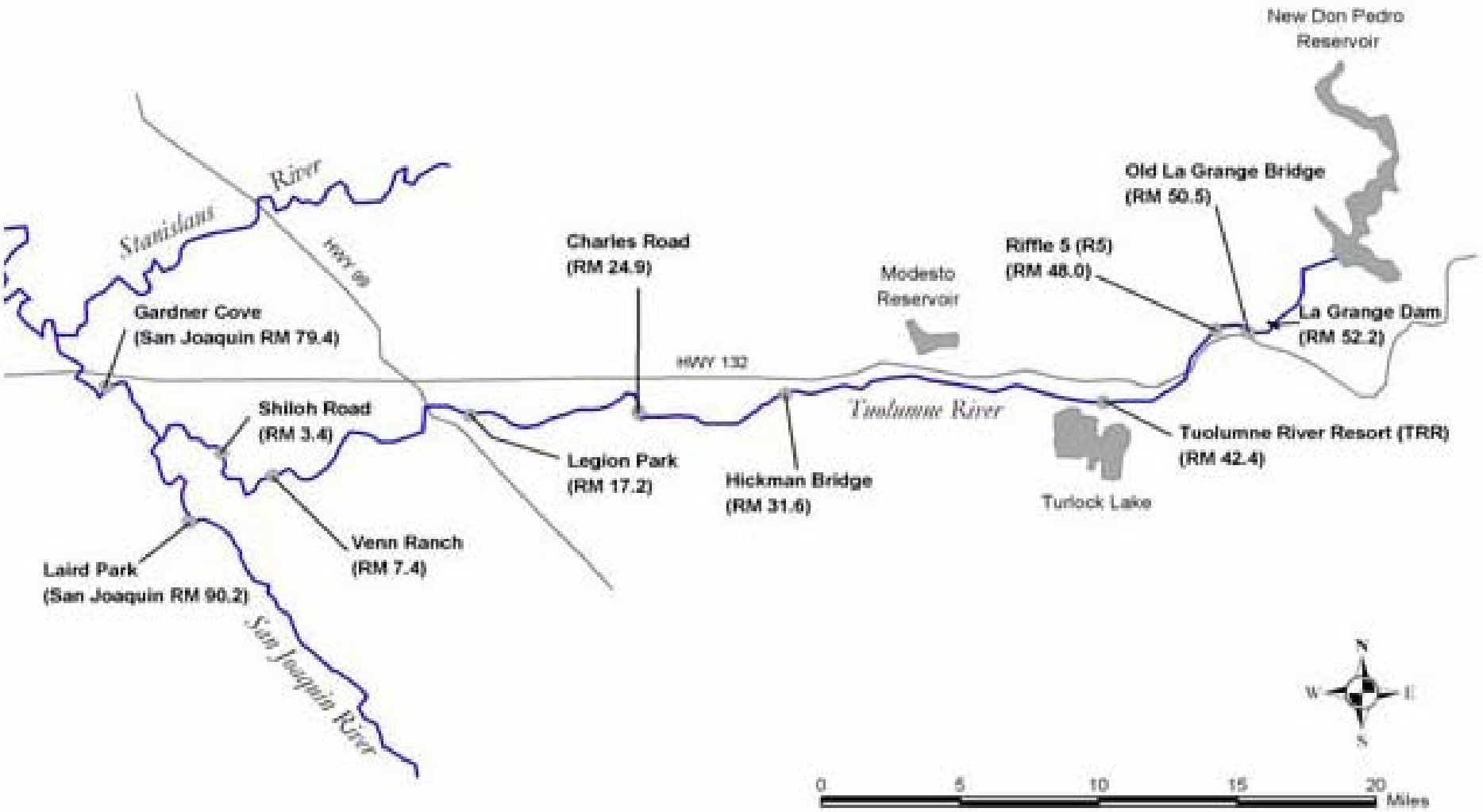
# Fall Spawning Survey Sections
# (2005 10-yr. Report pg. 3-23)



# Fall Spawning Survey

- Document size, abundance, distribution and timing of salmon spawning
- Develop estimate of run population
- Record index redd counts by riffle or series of riffles
- Determine age and hatchery composition of run
- Record seasonal and annual trends

# 2004 Seining Locations
(2005 10-yr. Report pg. 3-86)



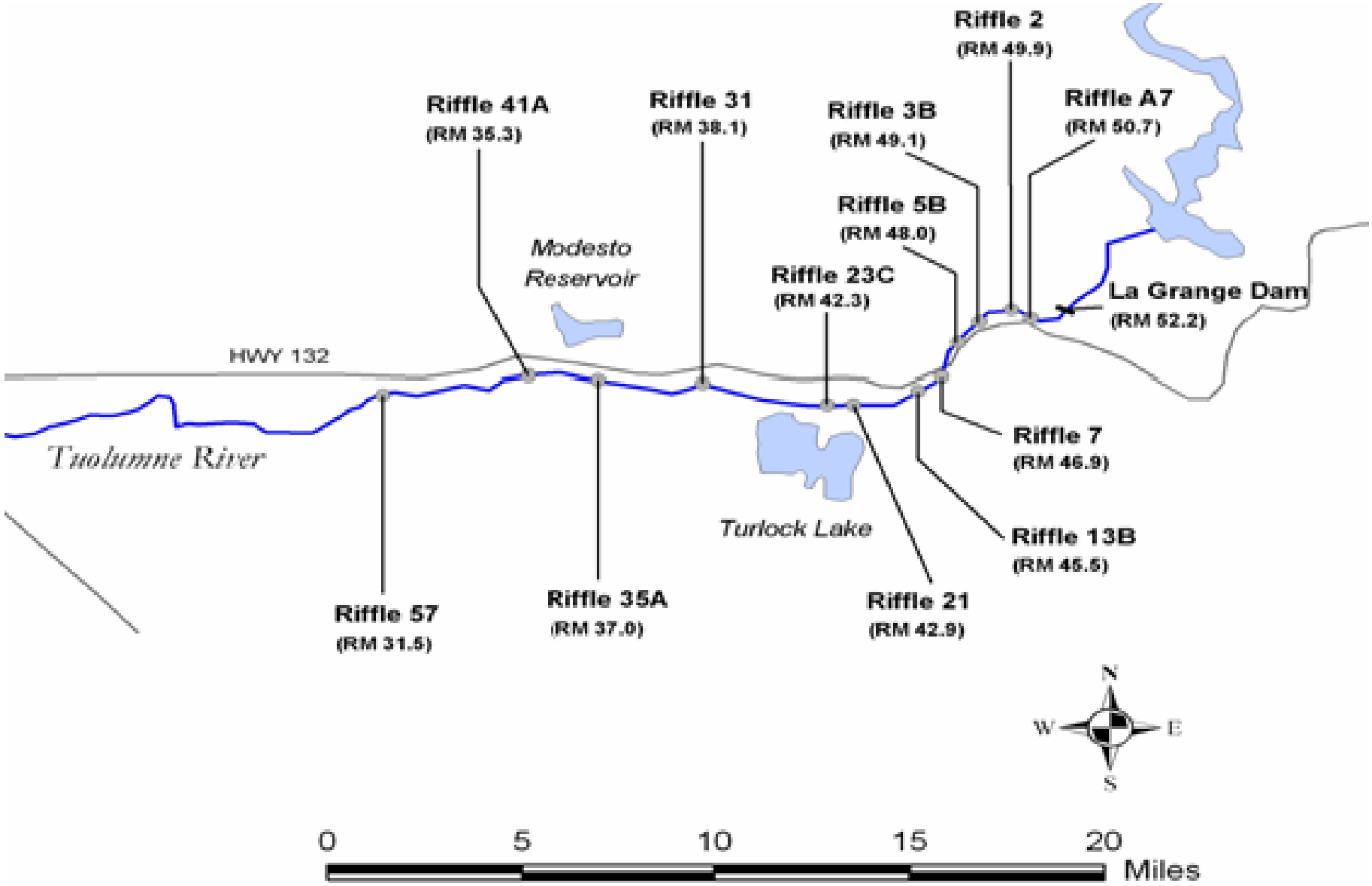
# Seining

- Document size, abundance, distribution and timing of juvenile salmon, trout, and other fishes
- Analyze relative to flow, temperature, and other factors
- Compare to spawner population
- Estimate salmon growth rates
- Record seasonal and annual trends

# Screw trapping

- Document size, abundance, and migration timing of juvenile salmon and other fishes near mouth of river
- Analyze relative to flow, temperature, and other factors
- Estimate salmon production during sample period
- Record seasonal and annual trends

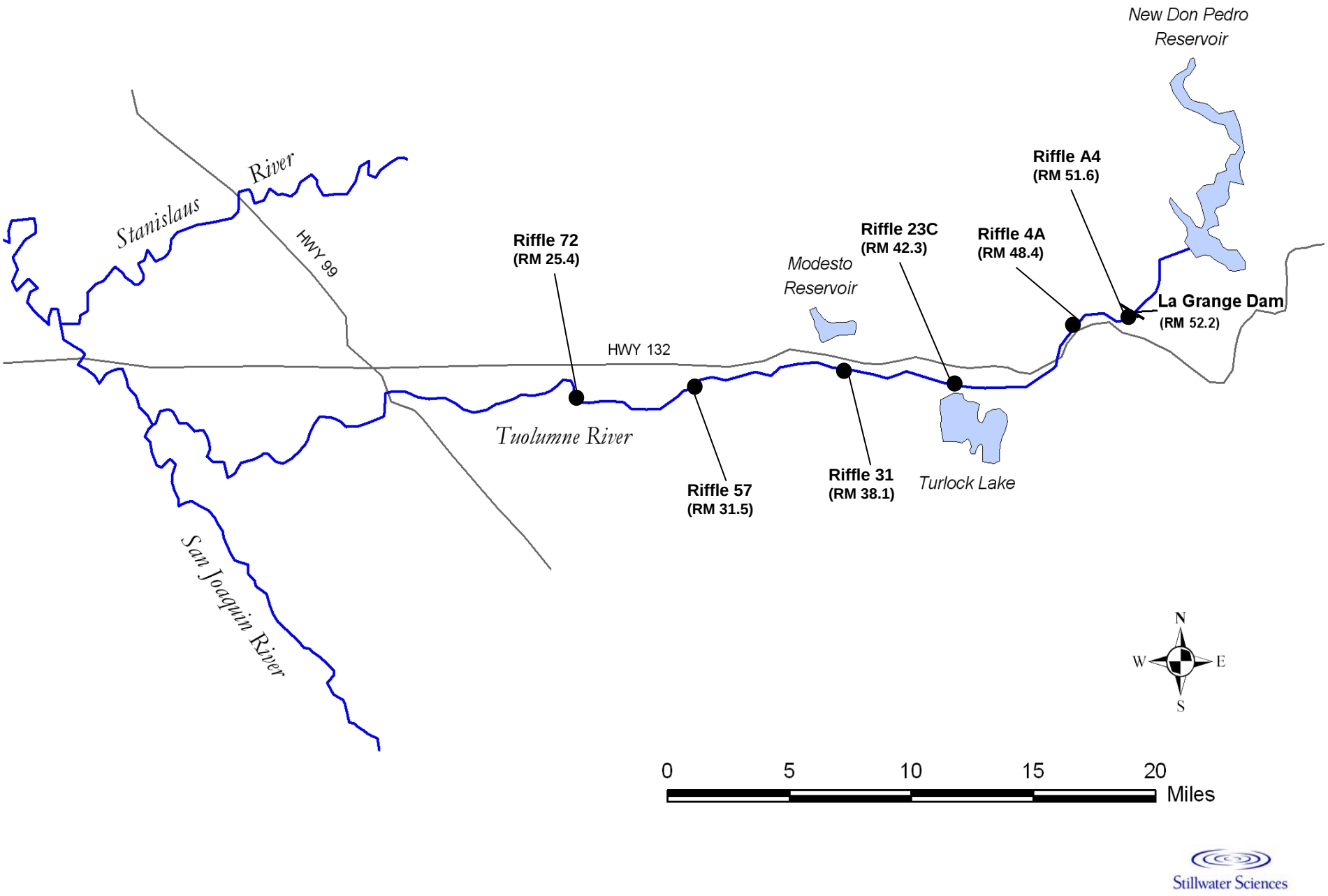
2004 Jun & Sep Snorkel Locations
(2005 10-yr. Report pg. 3-94)



# Snorkel surveys

- Document size, abundance, and distribution of salmon, trout, and other fishes
- Record habitat associated with fish observations
- Analyze relative to flow and temperature
- Record summer season and annual trends

# 2003-2004 invertebrate sampling sites
# (Rpt. 2004-9 Fig. 1)




Stillwater Sciences

# Invertebrate sampling

- Document summer composition, abundance, and distribution of invertebrates in riffle habitats using two methods
- Analyze relative to flow, temperature, sampling method, and location
- Provide indices of stream biological condition and salmonid food source
- Record annual trends

# Angling Survey

- Document size, location, and distribution of larger trout and other fishes
- Record habitat associated with fish observations
- Potential for scale/tissue samples and mark(photo)/recapture methods
- Analyze relative to flow and temperature
- Record seasonal and annual trends

## 2.C.1. (contd.) Riverwide monitoring in 2005 and beyond: Other agencies – DFG, FWS, NMFS

AD Consultants (CALFED grant to Tri-Dam?):

- Temperature monitoring (by DFG?)
- Temperature model

Large CWT smolt survival releases in 2005

Others ??

Restoration project monitoring in 2005 and beyond
(Districts, agencies, NGOs) – TRTAC Gravel Additions (draft)

| **Topic** | **Metric** |
|---|---|
| Channel morphology | As-built survey |
| | Cross section surveys and long profile |
| | Aerial photography |
| Bed composition | Bulk samples |
| Bed mobility | Tracer Rocks |
| Bed texture | Pebble Counts |
| Salmonid Habitat | Habitat mapping |
| | Spawner Surveys |
| Gravel quality | Permeability samples |

2.C.2. Restoration project monitoring in 2005 and beyond (Districts, agencies, NGOs) – River Mile 43 (Bobcat Flat)

| **Topic** | **Metric** |
|---|---|
| Channel morphology | Digital terrain mapping |
| | Cross section surveys and long profile |
| | Aerial photography |
| Bed composition | Bulk samples |
| Bed mobility | Tracer Rocks |
| Bed texture | Pebble Counts |
| Salmonid Habitat | Habitat mapping and modeling |
| | Spawner Surveys |
| Gravel quality | Permeability samples |

Restoration project monitoring in 2005 and beyond (Districts, agencies, NGOs) – Other projects

- Gasburg Creek
- Gravel cleaning
- Big Bend
- Others??

## 2.C.3. Other monitoring or assessments in 2005 and beyond: Suggested elements from Apr 2004 NMFS letter for period prior to Apr 2005

- Coordinate angling with trout otolith study
- Conduct Jan to mid-Apr redd surveys by snorkeling
- Conduct DO/contaminant monitoring down to RM 40 during low flow
- Provide summer flow >150 cfs and maintain <65°F at RM 40 for study conditions

## 2.C.3. Other monitoring or assessments in 2005 and beyond: Suggested elements from TRTAC subgroup process through Jun 2004

- Mid-summer and winter snorkeling
- Trout blood chemistry and lipid content analysis
- Trout outmigration mortality
- Trout radiotag study
- Trout population estimates via angling and photos
- Pebble counts of trout spawning sites
- Review adult trout habitat suitability criteria for CV streams
- Review temperature criteria

## 2.C.3. Other monitoring or assessments in 2005 and beyond: Suggested trout-related elements in TRTAC subgroup process through Oct 2004

- Review snorkel protocols/program
- Develop population estimate
- Presence: snorkel, angling, float survey, video on redd, seine, RST, trammel net, electrofish
- Abundance: angling with head photos (mark/recapture), snorkel index, weir count, RST, redd count
- Habitat utilization by life stage, incl. timing and distribution: angling, snorkel, redd pebble counts, DO/water quality/temperature, depth/velocity/substrate
- Anadromy/life history: otoliths, age at smolting, emigration timing, smolt physiology, Mossdale trawl
- Other factors: Stockton water quality; genetics (stock)

## 2.C.3. Other monitoring or assessments in 2005 and beyond: Suggested trout-related elements from Jul 2005 letters to FERC

- Develop and implement a study flow schedule and monitoring program to evaluate the flow needs
- Monitor the adult life stage - document presence, abundance, timing, and habitat utilization for establishing flow schedules
- Study to establish accurate characteristics of life history
- Annually determine the riverwide abundance and distribution of adults relative to flow releases and restoration
- Determine the percentage of anadromous and resident adult fish using otolith microchemical analyses
- Monitoring of juveniles and outmigrants is needed
- Identify the genetic strains to understand the risks and issues associated with Project effects and benefits of Project-related mitigation

## 2.C.3. Other monitoring or assessments in 2005 and beyond: More suggested elements from Jul 2005 letters to FERC

- implement 10-yr test flow schedule to provide better salmon attraction, dispersed spawning, floodplain inundation, high smolt survival
- monitor salmon response in adult production and recruitment, juvenile production with RM 5&36 RST, and spawn/rear habitat use
- Investigate WQ, esp. DO, in summer and fall
- Health monitoring of juvenile salmonids
- Effects of sedimentation/storm runoff on salmonid egg/juv. Survival
- Assess spawner use of restored and unrestored sites
- Evaluate egg to emergence survival at restored sites
- Determine relative predation rates of naturally produced salmon in restored gravel pits
- Study riparian vegetation re-establishment at restoration sites

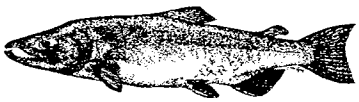
## 2.C.3. Other monitoring or assessments in 2005 and beyond: More suggested elements from Jul 2005 letters to FERC

- Directly assess spawning response to restoration sites
- Study effects of FSA flows on (1) spawning, rearing, and migration WT, (2) winter/spring floodplain inundation, (3) smolt survival, (4) adult attraction
- Monitor trends of effects of FSA on salmon and native fishes through 2016

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

04 November 2005
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

*DRAFT AGENDA*

1. Introduction
   A. Comments on draft agenda
2. Continue review of monitoring and other evaluations:
   A. CALFED Monitoring Grant:
      1. Riverwide
      2. Restoration projects
   B. Other monitoring or evaluations
3. TRTAC process and communication
4. Flow schedule process
5. Website
6. 08 Dec meeting and topics

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

04 November 2005
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

**Draft Meeting Summary**

1. Introduction

   A. Comments on draft agenda - none

2. Continue review of monitoring and other evaluations:

   A. CALFED Monitoring Grant:

Ford: Handout of Monitoring Summary Table prepared by McBain & Trush

A main objective of the meeting was to discuss the CALFED monitoring grant award. The grant was awarded in response to a proposal submitted in November 2004. John Battistoni, CDFG, will manage the grant for CALFED. Funds earmarked for CDFG (Tasks 6A and 6D) in the proposal will be transferred to a separate account and managed separately from TID's portion of the grant. The CDFG funding mechanism is a grant, rather than a contract. Using the grant process, CDFG can process grants in about 30 days, once required documents are submitted.

A portion of the work included in Task 7 (approximately $150,000 in proposed funding) has been completed using funds from other projects. If CALFED approves, those funds could be applied to extend proposed post-project monitoring tasks to FOT sites not included in the November 2004 proposal. Such modification would require review and approval from CALFED – that would need to be carefully considered. Additional funds may become available from Task 5 (Coarse Sediment Management Monitoring) depending on CALFED's decision of the proposed Sediment Transfusion Project grant amendment.

Comments on Proposed Monitoring:

- Electrofishing surveys have been used to monitor predator abundance at SRPs 9 and 10 and reference sites. Because the Central Valley Fall Chinook Salmon ESU was proposed for listing under the Endangered Species Act when this monitoring began, annual surveys were conducted in the fall rather than during salmon spring outmigration. This is a limitation of the study, but spring electrofishing is not generally feasible due to regulatory constraints.
- Electrofishing surveys may not adequately sample pikeminnow and other fish species. Angling using lures that resemble juvenile salmon is a better method for sampling predator that prey on juvenile Chinook salmon. Stomach samples should be taken during spring surveys to document

prey items.

- A comprehensive year-round predator study needs to be developed and implemented. Stillwater Sciences had planned to develop such a study proposal for submission to the 2004 CALFED Science Program PSP - that proposal was not completed.
- Vick recommended that, while continuation of this monitoring would provide important post-project data for SRP 9, electrofishing is a low priority for any funds shifted from Task 7 because: (1) each year of electrofishing costs approximately $85,000; (2) a pilot predation study is planned at these sites in spring 2006 and the results of this study may lead to changes in predation monitoring priorities (report deadline is 30 Jun 2006); (3) other funding sources may be available for predator monitoring; and (4) monitoring at FOT restoration sites is a higher priority. McLain agreed that: (1) electrofishing surveys provide important data for pre- and post-project conditions, (2) future monitoring should continue these surveys, and (3) if new predator monitoring methods are implemented, they should be implemented in addition to, not instead of, the fall electrofishing surveys.
- Density and condition of juvenile salmonids using floodplain rearing areas should be included in project and river-wide monitoring.
- Bioassays to assess fish conditions should be conducted on juvenile salmonids captured in rotary screw traps. Scott Foote has been using bioassays for this purpose and should be contacted to get information on cost, laboratory facilities, and other basic sampling issues.
- Stillwater Sciences is preparing a proposal to submit to CALFED for the December 2005 PSP deadline. Hume will provide the draft proposal to the TRTAC for review.
- Rotary screw trapping (Monitoring PSP Task 6A) should be expanded to include two locations. USFWS AFRP may have funds to support an additional location for 2006. CAMP may be able fund a portion of the screw trap operation for 2007.
- The Districts are funding 2005 RST, seine, snorkel, invertebrate, temperature, and part of 2005 spawning survey monitoring. The Districts will consider further funding beyond spawning survey and water temperature once study plans, priorities, and status of other funding sources are identified.

**Decision:** The TRTAC needs to identify study needs, especially with regard to population dynamics and predation, and prepare study plans that can be submitted as proposals when RFPs and PSPs are released from various funding sources. Having these pre-prepared study plans will reduce improve ability to meet tight deadlines and improve communication among TRTAC members on study funding proposals.

**Decision:** Modifications to the Monitoring PSP will be limited to expansions in scope to include FOT restoration sites. The TRTAC will request that Task 7 funds be shifted to accommodate changes in scope. No changes to Task 5 funding will be considered until CALFED makes a decision on the Sediment Transfusion Project grant amendment. More comprehensive revisions or additions to fish population monitoring (as discussed at the September 2005 TRTAC meeting and in USFWS and NOAA comments to FERC) will not be incorporated into the Monitoring PSP. The TRTAC Subgroup will review additional monitoring needs, make recommendations to the TRTAC, and prepare study plans appropriate for seeking funding from other sources. Study plan development is a high priority and should be completed in early 2006.

**Decision:** A working group will convene to [in order of priority]: (1) develop a detailed study plan, budget, and list of deliverables for the work included in Tasks 1 through 7 of the November 2004

proposal; (2) prepare or review a study plan for the 2006 predation pilot study; (3) identify and prioritize additional study needs; and (4) prepare detailed plans for additional studies.

Requests for changes in scope and funding allocation among tasks will be submitted in a separate amendment request to CDFG. The study plan will acknowledge the foreseen amendment request. The study plan must also address public and technical review comments received by CALFED (to be provided by Battistoni).

The working group will meet in up to three workshop meetings to work on the study. Meeting dates are December 7, 14, and 21(if needed). Meetings will convene at 9:30 a.m. at Modesto ID room 3A. Vick and Hume will prepare a working draft plan, which will be distributed to the working group on November 30. Vick and Hume will also prepare agendas and materials for the workshop meetings. The final study plan, budget, and other required forms will be submitted to Battistoni on January 6, 2006. Battistoni will be available to review drafts to ensure that the submittal satisfies CDFG requirements and concerns.

**Action:** (Battistoni) Provide CDFG grant forms and public and technical comments to Ford for distribution to the working group.

**Action:** (Vick, Hume) Prepare workshop agendas and list of materials that each participant should bring to the meetings. Ford will distribute these materials to the working group.

**Action:** (Vick, Hume) Prepare working draft study plan for PSP and predation pilot study and submit to Tim Ford by November 30. Ford will distribute the draft to the working group.

**Action:** (Mesick) Provide draft written summary of study needs to Ford.

3. TRTAC process and communication

- Meeting summaries need to be provided for all meetings. Notes for the October 2005 TRTAC meeting should be provided.
- Some participants feel that there is an unfair balance of power between the Districts and other participants in the TRTAC process.
- NOAA and USFWS comments to the 10-year FERC report have not been adequately recognized.
- NOAA needs a vote in the process
- Meeting minutes should have been included in the 2004 annual report.
- Meeting notes should do a better job at documenting TRTAC consensus decisions. Examples were DFG releasing more than authorized number of CWT fish and 2004 winter float surveys.
- Notes and comments could be posted on the TRTAC website.

**Action:** (Ford) Compile available 2004 TRTAC meeting notes and materials for next annual report.

4. Flow schedule process

Handout: Don Pedro Project Fish Flow Procedure diagram (page A-1 from 10-year FERC report).

- FOT suggested that the TRTAC establish guidelines on timing and magnitude of fall pulse flows. Stillwater Sciences is currently reviewing data on the effectiveness of fall pulses in attracting adult salmonids; the data are very difficult to interpret.
- The TRTAC needs to identify priorities for winter and spring pulse flows. Discussion included: (1) using pulse flows or 'power peaking' to test effects of floodplain inundation (e.g., nutrient

exchange between the floodplain and river); (2) the flow magnitude needed to stimulate fry and juvenile emigration; (3) the role of fry outmigrants in population recruitment.

- There may be an opportunity to reduce fall flows and use the saved water to augment spring pulse flows. The flow allocation and water carry over process (as specified in the 1996 FERC Order) are complex, and CDFG management may not support reducing fall flows to less than 300 cfs).

**Action:** (Masuda/TID) Prepare a brief written summary for the TRTAC of the process for making decisions on "carry over water."

**Action:** No decision was reached on reducing current minimum flows for later use in winter pulse(s), but further review of past flow and salmon information should be done.

5. Website

Several ideas for the website were presented, including: (1) adding a TRTAC page to the TID website; (2) relying on links at other websites to provide access to Tuolumne River reports and information; and (3) creating a separate website similar to the Stanislaus River site.

**Action:** (TID) Evaluate website options and costs. Present findings to TRTAC by March 2006 quarterly meeting.

6. Meetings:

08 Dec TRTAC meeting and topics

- Report back from the Monitoring PSP working group.
- Review comments submitted to FERC (deadline is November 22, 2005)
- Questions/answers on restoration program and coarse sediment management (current project and funding status)
- Flow schedule adjustments

Workgroup meetings on December 7, 14, and 21(if needed) at 9:30 a.m., Modesto ID Room 3A.

7. Other Items:

- (Mesick) Dr. Russell Belmer, USFWS AFRP and Mesick's supervisor, will retire in January 2006. Mesick did not know who will be the replacement. Dr. Belmer has authorized Mesick to discuss monitoring issues submitted in comments to FERC. CDFG, NOAA, and USFWS have planned a conference call to coordinate on monitoring and other items.
- (McLain) NOAA policy regarding O. mykiss will be released soon. The policy is expected to list under DPS (Distinct Population Segment) rather than the ESU (Evolutionarily Significant Unit) policy, giving separate recognition to anadromous and resident life history forms. It is difficult/impossible to distinguish between juveniles of these life history forms.

**4 November 2005**

| Name | Organization |
|---|---|
| Tim Ford | TID/MID |
| Robert Nees | TID |
| Debbie Liebersbach | TID |
| Roger Masuda | TID |
| Allison Boucher | FOT |
| Ron Yoshiyama | CCSF |
| Noah Hume | Stillwater Sciences |
| Jennifer Vick | McBain & Trush |
| Dennis Blakeman | DFG |
| John Battistoni | DFG |
| Carl Mesick | FWS-AFRP |
| Jeff McLain (by phone) | NMFS |
| Steve Walser | CRRF |

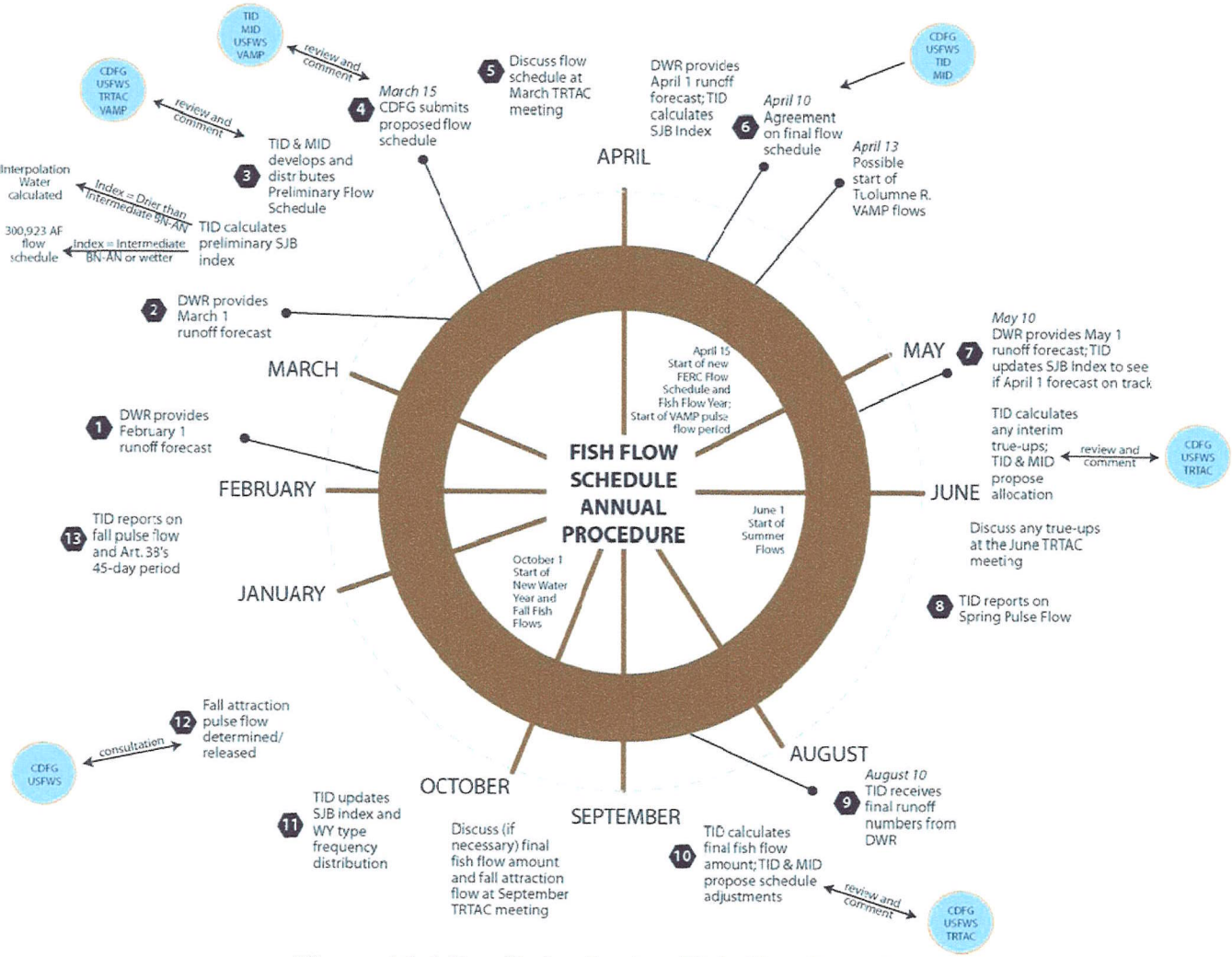



**Figure A1-1 Don Pedro Project Fish Flow Procedure**

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

**Monitoring PSP Workgroup Meeting**

December 7 and 14, 2005
9:30 AM
Modesto Irrigation District, Room 3A

*DRAFT AGENDA*

**December 7, 2005**

Objectives:

- Review completed and planned project locations and implementation timing
- Review past project-specific monitoring activities and locations
- Review monitoring included in the PSP [Tasks 3 through 5]
- Discuss and finalize details for project-specific monitoring for TRTAC and FOT projects

Materials to be provided by Stillwater Sciences and McBain & Trush:

- Map of Tuolumne River projects and monitoring, including locations and dates
- Relevant monitoring reports

Materials that other participants should bring and/or be prepared to discuss:

- Information on completed projects and monitoring
- Specific input on river-wide and project-related monitoring needs
- Complete copies of PSP

*Agenda:*

| | |
|---|---|
| 9:30-11:30 | Review TRTAC projects and completed monitoring (Vick, Hume)<br>Review FOT projects and completed monitoring (Boucher, Vick)<br>Review PSP project monitoring tasks and timeline [PSP tasks 3 through 5] (Vick, Hume) |
| 11:30-12:30 | Lunch |
| 12:30-3:30 | Brainstorm on TRTAC and FOT project-specific monitoring tasks and timelines |
| 3:30-4:30 | Summary, consensus, follow-up actions |

**December 14, 2005**

Objectives:

- Review past river-wide monitoring activities and locations
- Review monitoring included in the PSP [Task 6]
- Discuss and finalize details for river-wide monitoring

Materials to be provided by Stillwater Sciences and McBain & Trush:

- Map of Tuolumne River projects and monitoring, including locations and dates
- Relevant monitoring reports

Materials that other participants should bring and/or be prepared to discuss:

- Information on completed projects and monitoring
- Specific input on project-related monitoring needs

*Agenda:*

| | |
|---|---|
| 9:30-10:30 | Review completed river-wide monitoring (Hume, Vick)<br>Review PSP project monitoring tasks and timeline [PSP task 6] (Vick, Hume) |
| 10:30-11:30 | Discuss/review concerns and suggestions for river-wide monitoring |
| 11:30-12:30 | Lunch |
| 12:30-4:00 | Brainstorm on river-wide monitoring tasks and timelines |
| 4:00-4:30 | Summary of consensus, issues, follow-up actions, need for December 21 meeting |

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

December 7, 2005
9:30 AM
Modesto Irrigation District, Room 3A

**Draft Meeting Summary**

Meeting Objectives:

- Review completed and planned project locations and implementation timing
- Review past project-specific monitoring activities and locations
- Review monitoring included in the PSP [Tasks 3 through 5]
- Discuss and finalize details for project-specific monitoring for TRTAC and FOT projects

### Current Tasks

Task 1:Project Management

Task 2:Public Outreach

Task 3:Project Monitoring (7/11, MJR, SRP 9)

Task 4:Fine Sediment Monitoring

Task 5:Coarse Sediment Monitoring

Task 6:River-wide Salmonid Monitoring

Task 7:Aerial Photography and Bathymetry Surveys (Most items already completed under Coarse Sediment Transfusion Project. Items to remain in scope of work are [a] one aerial photo flight following 8,000 cfs threshold, [b] bathymetry from 7/11 bridge to SJR)

### Breadth of Scope of Work

1. It may be possible to shift unused Task 7 funds to include project monitoring at FOT sites (Bobcat/RM 43, Waterford, and Grayson).
2. Current funding and scope for pre- and post-project monitoring at Warner-Deardorff needs to be considered in the study plan. All monitoring must be integrates across projects.
3. CDFG/CALFED will likely require coarse sediment augmentation monitoring to be funded under the Coarse Sediment Transfusion Project (assuming the amendment is approved) and will eliminate that task from the PSP monitoring.
4. USFWS does not have funds to support a second RST location in winter/spring 2006. Mesick

requested that the Districts fund the additional location.

**Schedule**

1. CDFG requires that funds be expended by the end of the third fiscal year after the contract award. Since the fiscal year begins July 1, awarding the contract in February would limit the contract to five months in FY 2005. The TRTAC may want to consider delaying the contract until July so it can cover three full years.

**Task 3:**

1. Contingency re: targeting high flows.
2. Integrate riparian surveys at Grayson (and other sites as appropriate with John Stella's ongoing research).
3. Add distance from channel center line as parameter for riparian vegetation recruitment and survival.
4. Soils/substrate texture should be included as a monitoring parameter at riparian monitoring sites.
5. Accumulation of organic matter should be monitored on constructed floodplains. Organic matter on floodplains may be important for salmonid floodplain rearing. Drift of organic matter from floodplains to the channel should be monitored during the ascending limb of flood events.
6. Need adequate control sites for spawning/redd monitoring. All control and monitoring riffles should be identified in the study plan.
7. For redd mapping, the following information should be recorded for each redd: flow depth, flow velocity, habitat type (e.g., pool tail, riffle), distance to cover/shade and type of cover. Jen Vick will distribute redd mapping data sheets used at Bobcat/RM 43 to the group for review and comment.
8. Stillwater should coordinate with CDFG to determine when to begin redd surveys (i.e., when CDFG begins observing salmon spawning in the monitoring and control reaches).
9. Need to incorporate sufficient range of riffle designs to test spawning use by O. mykiss and Chinook vs. design (i.e., long pool tail with steep riffle vs. short pool tail with long riffle).
10. Redd mapping/spawning surveys should be extended to included O. mykiss spawning period (especially at Bobcat/RM 43). The group should consider conducting a pilot O. mykiss spawning survey at Bobcat/RM 43 to test survey methods. The pilot might include three surveys conducted over a three-month period.
11. Could the project affects groundwater? Is pre-project groundwater data needed?

**Task 4:**

1. Consider adding benthic macroinvertebrate monitoring sites in the primary spawning reach (Task 4d).
2. Carl feels that the proposed redd superimposition study does not sufficiently link superimposition to egg/alevin mortality. On the Stanislaus, Carl used artificial redds with baskets/concrete blocks (representing the egg pocket) to test whether superimposition destroyed the egg pocket. He also excavated redds to search for dead alevins. He feels that it is not appropriate to assume that superimposition necessarily destroys the prior redd; egg/alevin

mortality must be documented in the field as part of the monitoring. Dennis Hood has also excavated redds on the Stanislaus Rivers to investigate the effects of superimposition. Stillwater should consider excavating at least 2-3 redds at the end of the incubation season.

3. Land uses (housing construction and livestock practices) in Dominici and Peaselee creeks have increase sediment supply from these watersheds. This needs to be considered in the analysis of sediment data from these tributaries.

**Task 5:**

Bulk sampling should be added to the coarse sediment monitoring (in addition to permeability monitoring).

Can photos be used to document the volume of fines in the bed? Stillwater used photos to document fines in the bed several years ago./ Were these analyzed? Are they available to provide baseline data?

**Task 6:**

1. CDFG needs details on the study design and data analysis for proposed angling surveys. Reviewer comments indicated concern regarding the utility of these surveys. A biologist should be present during all angling surveys.
2. Noah should check old TRTACMS notes re: proposed O. mykiss surveys for developing the angling study plan.
3. Carl Mesick wants to add lipid bioassays/disease evaluations (as done by Scott Foote) for salmonids captured in RST and seine surveys.

**Task 7:**

How will Task 7 products (and similar products from the Coarse Sediment Transfusion Project) be distributed. Will the TRTAC get CDs/GIS product when products are ready?

**Wider PSP Issues:**

1. Include hypotheses/objectives for each action in study plan.
2. Describe how data/results will be used to update/revised conceptual models.
3. Need to confirm what amount of budget can be reallocated between tasks without triggering an amendment.
4. Consider using river miles to name riffles, coordinate riffle naming between project monitoring surveys and CDFG river-wide surveys.
5. Need to identify how TID, Stillwater, and McBain & Trush will handle project management and allocate budget accordingly.
6. Budget in Task 2c (Peer reviewed publications) need to be distributed among monitoring contractors.
7. The Bobcat Flat Project should be referred to as "Bobcat/RM 43."
8. Is the Tuolumne River Coalition requesting funds through grant programs? (Allison thinks that funds are being sought for a watershed coordinator but not other projects.)

9. The current status of the Gasburg Creek amendment and budget need to be confirmed. Relationships between funding in the construction contract and the monitoring PSP need to be clarified.
10. The PSP is limited to projects funded by CALFED. Bobcat/RM 43 was funded by CALFED and CDWR. There appears to be sufficient funding from CALFED to include in this site in the scope of the PSP. Allison gave the CALFED contract number to John Batistoni. John will review the contract re: including this site in the PSP.

**Contracting Details:**

1. Finalize project management responsibilities and funding allocation.
2. Provide update to John Batistoni re: relationship between Coarse Sediment Transfusion scope and funding and Task 5 of PSP.
3. Contact Tim Heyne re: need for 1603 permits for tracer rocks and invertebrate sampling.
4. Eliminate Task 3I, incorporate into Task 6.
5. Create one separate report task that includes: draft and final monitoring reports, closeout report, and quarterly/annual updates.
6. For actions that rely on reaching a flow threshold, identify actions/costs for specific to whether the threshold is met or not.
7. A deliverable list and correct budget format must be provided. The budget detail should be provided as soon as possible.

Additional Ideas/Study Questions "Parking Lot":

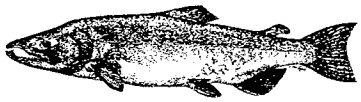
How does flood release timing, magnitude, and duration affect riparian vegetation recruitment?

How do (1) flood timing, magnitude, and duration and (2) floodplain inundation affect salmonid fry and juvenile condition and survival?

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

08 December 2005
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

*DRAFT AGENDA*

1. Introduction
    A. Comments on draft agenda and meeting summary
    B. Items since 04 Nov meeting
2. Items identified at last meeting
    A. Report on 07 Dec Monitoring PSP working group meeting
    B. Additional comments on 10-year report
    C. Discussion and review on TRTAC restoration projects and coarse sediment management
    D. Flow schedule adjustments
3. General Update
    A. Data and report status; items for next annual report
    B. Agency and NGO updates
    C. Monitoring update; basin salmon run information
    D. River operations and forecasts
4. Additional items
5. Next meeting and topics

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

08 December 2005
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

**Draft Meeting Summary**

1. Introduction
   A. Comments on draft agenda and meeting summary - none
   B. Items since 04Nov meeting – list of materials was reviewed
2. Items identified at last meeting
   A. Report on 07Dec Monitoring PSP working group meeting – Review of discussion at 07Dec meeting, mostly by Mesick (see separate notes sent out 15Dec); agencies will further confer on monitoring prior to next meeting in 2006; start of work under CALFED PSP is to be determined as either early in 2006 or in Jul2006; Mesick favors using two RST sites (Waterford and Grayson) in 2006 from Jan-Jun; FWS may have some funding available in 2007 for RST monitoring; gravel addition monitoring may be moved to that project from the 2004 PSP; some concern about Warner/Deardorff project monitoring details – will be addressed in 20Dec CALFED Science Panel meeting along with other pending amendments; next workgroup meeting is still set for 14Dec.
   B. Additional comments on 10-year report – flows are a specific concern of DFG with more needed in some year types.
   C. Discussion and review on TRTAC restoration projects and coarse sediment management - Handout from Fryer on project status; Reed project is on list, but no funding/work so far; RM 43 has potential for more gravel additions downstream using onsite material; RM 44 is potential site for project work; Ruddy funding of $4M is at risk due to appraisal issues; CDFG plans more gravel additions near La Grange; Gasburg Creek

project needs CDFG (landowner) approval; SRP 10 has no construction funding.

D. Flow schedule adjustments – Masuda provided a handout on the FSA Section 11 5K acre-feet carryover; Mesick said studies should be decided, then potential flow needs to accomplish those studies; no plan at present to use carryover provision.

3. General Update

A. Data and report status; items for next annual report – plan to include project monitoring report and possible update on trout data since 2003 filing, CDFG age determination report and genetics report?; otherwise similar to prior reports.

B. Agency and NGO updates – McLain reported that (1) Jeff Stuart was in auto accident and will be off until January, (2) Dominici Creek development near La Grange has potential sedimentation issues – NMFS & CDFG involved in settlement, (3) listing of Central Valley steelhead would be based on DPS policy and cover only anadromous fish; DFG will monitor Peaslee Creek feedlot operation for potential river impacts; CDFG reported that silt discharge from 7/11 Gravel, as a result of RWQCB involvement will require mitigation riffles – **Action**: CDFG to coordinate with TRTAC gravel additions.

C. Monitoring update; basin salmon run information - seining will start in mid-Jan; decision pending on RST sampling; marked rocks may be placed; preliminary run estimates are 3,500 Stanislaus, 600 Tuolumne, 2,500 Merced (older stock-recruit model estimated 8,700 for basin); concern about Delta/exports as Sacramento numbers are good; Franz nursery mitigation riffle near Waterford and possibly some new Bobcat Flat riffles had spawning.

D. River operations and forecasts – potential temporary operation changes with move to Control Area status; continued average rainfall will lead to flood releases in January

4. Additional items – TID drinking water project proceeding with Ceres, Turlock, and Hughson approving studies; still may be 5-6 years away.

5. Next meeting and topics

The meeting will be from 9-1 at TID on 09Feb2006. Topics selected were (1) monitoring – review items identified at 07Dec meeting and issues beyond PSP following 14Dec meeting and (2) gravel placement sites and coordination pursuant to TRTAC and/or CDFG projects. The March meeting could have discussion of potential flow experiments and modeling.

**FERC 2299 TRTAC Meeting**

**08 December 2005**

| Name | Organization |
|---|---|
| Tim Ford | TID/MID |
| Robert Nees | TID |
| Debbie Liebersbach | TID |
| Wilton Fryer | TID |
| Roger Masuda | TID |
| Patrick Koepele | TRT |
| Tim Heyne | DFG |
| Dennis Blakeman | DFG |
| Carl Mesick | FWS-AFRP |
| Jeff McLain | NMFS |
| Noah Hume | Stillwater Sciences |
| Jen Vick (phone) | McBain & Trush |

# TURLOCK IRRIGATION DISTRICT

## CIVIL ENGINEERING DEPARTMENT
## MEMORANDUM

TO: TRTAC
FROM: Wilton Fryer
DATE: 6 December 2005
RE: Restoration Projects - Status Update

| Project | Funding | Status |
|---|---|---|
| Active Projects: | | |
| MJ Ruddy | Full | There will be a 4th iteration of the appraisals for the project. The District challenged the basis for rejection of the third appraisals for the project by Interior Dept. The 1999 funds have already been defunded. There is now the potential to loose the 2000 funds if the appraisal issues cannot be resolved. The goal is to get the land acquisition completed in early 2006 and not loose any more allocation of Federal funds. |
| Warner-Deardorff | Full | This project is split into 2 phases for funding. The Phase I design continues to be on hold at 90% stage with the remaining permitting and ROW appraisal tasks delayed pending the outcome of the appraisal process for the MJ Ruddy project because the permits are linked. The remaining Phase I AFRP funding is now at risk due to this long period of inactivity in completing phase I. The Phase II directed action submittal from November 2003 was sent to the Adaptive Management Forum in September and by mid November the forum report was due back. That report has not been submitted to CBDA for inclusion in the contract with GCAP Services, but there is a meeting between CBDA and the Science Panel set for 20 December. |
| La Grange Gravel | Full | In September 2005 the submittal to CBDA from November 2004 was finally forwarded to the UC Science Panel in Davis for review, along with the Course Sediment Management Plan. We obtained CBDA verbal approval to do monitoring and aerial photo work associated with design and monitoring pending completion of the Science Panel review. However, there has been no reimbursement by CBDA to TID for these expenditures because the amendment has not been completed. |

| | | |
|---|---|---|
| | | The Science Panel review was due back to CBDA in mid November. There is a meeting between CBDA and the Science Panel set for 20 December.<br><br>Note; there appears to be plans for expanded DFG gravel infusion work in some of the areas identified in this Project's footprint. There will need to be coordination to insure the two projects are compatible and not overlapping. |
| Fine Sediment | Full | Design work on the upslope erosion control measures is complete. The District has an access agreement with the landowner Reeves to construct the project, but not DFG for the work on their portion of the project land. The August request to move funding from the riffle cleaning task over to the Gasburg Creek portion of the construction was given a verbal OK in August by the CBDA amendments committee, but has since been put on hold by ERP due to apparent comments from DFG. DFG Region 4 staff does not know what the issue is with the ERP staff and DFG is ready to have the project move forward. |
| SRP 10 | Partial | This project has been split into two phases. There is no Phase II funding for acquisition and construction identified. It might be possible to apply for a Prop 50 Grant by 18 October, but there are watershed group agreements that need to be in place before that time. AFRP may still be considering placing $4.5M in their 2006 budget to be used on this project. The landowner is concerned that Phase II is too far out for his needs. |

Completed Projects:

| | | |
|---|---|---|
| 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. HART NOC filed May 2004. A separate limited irrigation & maintenance agreement is in place for 2004, funded by MWD. |
| Design Manual | Full | Completed with Final Report submitted 26 February 2004. |

| | | |
|---|---|---|
| Course Sediment | Full | Report was completed with modifications on methods and techniques to protect existing salmonid habitats during implementation. *CBDA has submitted the CSMP to the Science Panel for review along with the amendment to the La Grange Infusion Project.* |
| RM 43 | Full | The Project was completed in September 2005 and post project monitoring was started in time for this year's salmon run. |

# GRIFFITH & MASUDA

A PROFESSIONAL LAW CORPORATION
517 East Olive Street
Turlock, California 95380
(209) 667-5501

www.calwaterlaw.com

Roger K. Masuda
Sara J. Lima
James Koontz

W. Coburn Cook, 1892-1953
Lin H. Griffith, retired

Please reply to
P.O. Box 510
Turlock, CA 95381-0510

Fax (209) 667-8176

rmasuda@calwaterlaw.com


December 8, 2005

TO: Tuolumne River Technical Advisory Committee

FROM: Roger K. Masuda
Roger K. Masuda, General Counsel
Turlock Irrigation District

SUBJECT: 5,000 AF Carry-over under Section 11, 1995 FERC Settlement Agreement

1. The TRTAC has requested an explanation regarding the meaning and operation of the seventh and last bullet and the immediately following concluding paragraph under Section 11 of the 1995 FERC Settlement Agreement, at page 6, which state:

- The participants will work cooperatively through the TAC to achieve any efficiencies available through real-time management in an effort to conserve water deliveries in one year to increase incremental flows in the following year. To the extent that real-time management, in the judgment of the TAC, *reduces the required minimum flow in one year*, that water may be carried over for use in the following year and attributed to the efforts to achieve incremental flows; however, only 5,000 acre-feet may be carried over beyond October 1 of each year for use until the following October 1. (Emphasis added.)

The water made available through the above measures will be provided as an increment above the minimum flows described above and will be scheduled as may be agreed to by the Districts, CDFG, and FWS except that flows to be diverted for the Tuolumne River Drinking Water Project will not be subject to such scheduling approvals. No water obtained and released pursuant to these measures shall be credited toward the calculation of minimum flow releases.

2. The water to be carried-over must result from a reduction in the required minimum flow for one year in order to be carried over to the next water year. The carry-over water could come from:

(a) water resulting from a positive true-up calculation as described in Section 3 of the draft Don Pedro Project Fish Flow Procedures (Appendix A to 2005 Ten Year Summary Report), or

(b) water resulting from a reduction in the minimum flow schedule. For example, as discussed by Tim Ford at the last TRTAC meeting, to reduce a 300 cfs minimum flow during the October 16 to May 31 period. A 25 cfs reduction to 275 cfs for 100 days (e.g., December 1 through March 10) yields 4,958 AF (25 x 1.983 x 100).

3. It is my recollection that the October 1 date was selected based upon the Don Pedro Project's flood control requirements and the start of a new water year as opposed to using April 15, the start of a new fish flow year.

4. The allocation of any positive true-up water for carry-over water and the reduction in the minimum flow schedule requires the approval of CDFG, USFWS, and the Districts. See the first paragraph of Section 11 of the 1995 Settlement Agreement and Article 37 of the FERC license. The decision to carry-over any water would need the concurrence of the TRTAC.

The scheduling and allocation of carry-over water to augment the fish flow schedule is subject to the approval of CDFG, USFWS, and the Districts as stated in the concluding paragraph of Section 11 quoted above. The Districts would seek the TRTAC's input on that scheduling and allocation decision.

Please don't hesitate to contact me if any TRTAC participant has any other questions regarding the above.

[end of memorandum]

# 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
Phone: (209) 883-8275
Fax: (209) 656-2180
Email: tjford@tid.org

## TECHNICAL ADVISORY COMMITTEE MEETING

December 14, 2005
9:30 AM
Modesto Irrigation District, Room 3A

**Draft Meeting Summary**

Meeting Objectives:

- Continue discussions from December 7 meeting
- Review monitoring included in the PSP [Task 6]

### Current PSP Tasks

Task 1:Project Management

Task 2:Public Outreach

Task 3:Project Monitoring (7/11, MJR, SRP 9)

Task 4:Fine Sediment Monitoring

Task 5:Coarse Sediment Monitoring

Task 6:River-wide Salmonid Monitoring

Task 7:Aerial Photography and Bathymetry Surveys (Most items already completed under Coarse Sediment Transfusion Project. Items to remain in scope of work are [a] one aerial photo flight following 8,000 cfs threshold, [b] bathymetry from 7/11 bridge to SJR)

### Task 6A. Juvenile Chinook salmon production and outmigration timing

- USFWS continues to request that rotary screw traps be operated at multiple locations on the river.
- With current contract status, screw trapping likely would be limited to May and June for 2006.

### Task 6B. Juvenile Chinook salmon and *O. mykiss* distribution, relative abundance, and size (winter and spring)

- Seining locations for low- and high-flow conditions were discussed. Seining locations for finalized as shown in the table below:
- Need to consider the seining efficiency in different habitat types.
- Can snorkeling be used to calibrate seining? A one-time calibration may be sufficient but must

include fry and juveniles at multiple locations. This task could be linked with the SRP 9 predation study that is already funded.

- Can seining be used effectively on the floodplain (vegetation hampers sampling)? It may not be appropriate to sample open areas of the floodplain (i.e., where seining can be used).
- Are there methods in used for the Cosumnes River studies that could be used for this task?
- Can snorkeling be added to floodplain sampling?
- For each seining (or snorkeling) location, the following data should recorded: (1) location mapped onto aerial photograph and/or recorded using GPS; (2) site photo for each flow samples, (3) mesohabitat type, (4) cover/vegetation, and (5) temperature.
- Trevor Kennedy's work on the Stanislaus should be reviewed to identify potential measures that could also be used on the Tuolumne.
- Other Questions, Comments, Issues:
- How can the volume of fill needed to reduce predator habitat and improved salmon habitat at the SRPs be minimized?

**Task 6B Seining sites.** Seine sites corresponding to channel and floodplain restoration projects monitored under Task 3I.

| Site | RM | Site Name | Project | Meso-habitat | Flow (cfs) |
|---|---|---|---|---|---|
| 1 (N) | 51.4 | RA5/A6 | CSMP II | Pool | >150 |
| 2 (E) | 50.5 | R1A | OLGB | Pool | >150 |
| 3 (N) | 49.5 | R3A/3B | CSMP II | Pool, Floodplain | >150 |
| 4 (E) | 48.0 | R5A | | Riffle | >150 |
| 5 (N) | 47.4 | New Basso Bridge below boa tramp | | Pool, Floodplain | >150 |
| 6 (N) | 42.8 | R21/R22 (Patch 5/6) | | Pool | >150 |
| 7 (E) | 41.7 | R24B/R25 (Tuolumne River Resort) | | Run | >150 |
| 8 (N) | 40.4 | R29/30 | GMR - 7/11 | Pool | >150 |
| 9 (C) | 37.7 | R33 below Howl Rd. Bridge | GMR - 7/11 | Run | >150 |
| 10 (N) | 36.9 | R35A/R35B (GMR - MJ Ruddy) | GMR - MJ Ruddy | Pool | >150 |
| 11 (E) | 31.5 | R57 (Hickman Br) | | Riffle | >150 |
| 12 (N) | 25.6 | R69/R70 | SRP 9 | Run, Floodplain | >150 |
| 13 (E) | 24.9 | R74 (Charles Rd) | | Run | >150 |
| 14 (E) | 17.2 | Legion Park | | Run, Floodplain | >150 |
| 15 (E) | 7.4 | Venn Ranch | | Run | >150 |
| 16 (E) | 3.4 | Shiloh Rd above bridge | | Run, Floodplain | >150 |
| 17 (E) | SJR 90.2 | Laird Park | | Pool | >150 |
| 18 (E) | SJR 77.8 | Gardener Cove | | Pool | >150 |

## Task 6C. Juvenile Chinook salmon and *O. mykiss* distribution (summer)

- Snorkel locations were finalized and are presented in the table below:

**Task 6C Snorkel sites.** Snorkel sites corresponding to channel and floodplain restoration projects denoted as "N."

| Site | Riffle ID | | CDFG | Project | Mesohabitat |
|---|---|---|---|---|---|
| | RM | TID | | | |
| **Section A** | | | | | |
| 1 (N) | 51.1 | RA6 | A6 | | |
| 2 (E) | 50.7 | RA7 | B1 | CSMP I (CDFG 2002) | 1 riffle, 1 run |
| **Section 1A** | | | | | |
| 3 (E) | 49.8 | R2 | C1 | | 1 riffle, 1 pool, 1 run |
| 4 (E/N) | 49.1 | R3B | C3 | CSMP III (2007?) | 1 riffle, 1 run |
| 5 (E) | 47.9 | R5B | E1 | | 1 riffle, 1 run, 1 pool |
| **Section 1B** | | | | | |
| 6 (E) | 46.9 | R7 | F1 | | 1 riffle, 1 run |
| 7A (N) | 45.9 | R12,A | G1N | CSMP III (2007?) | |
| 8 (E) | 45.5 | R13B | G3 | | 1 riffle, 1 run |
| 9 (N) | 43.2 | R20 (Patch 1/2) | I2B | CSMP III (RM 43 2007?) | |
| 10 (E/N) | 42.9 | R21 | I3 | CSMP III (RM 43 2007?) | 1 riffle, 1 pool |
| 11 (E) | 42.4 | R23B | J3 | | 1 run |
| 12 (E) | 42.3 | R23C | J4 | | 1 riffle |
| **Section 2** | | | | | |
| 13 (N) | 39.2 | R29 | M2 | GMR-I (7-11 2002) | |
| 14 (E) | 38.1 | R31 above 7/11 | | | 1 riffle, 1 run |
| 15 (N/E) | 37.1 | R35A | O5 | GMR II (MJR 2006) | 1 riffle, 1 run |
| 16 (E/N) | 35.3 | R41 | Q2 | GMR III (Deardorff 2006) | 1 riffle, 1 run, 1 pool |
| **Section 3** | | | | | |
| 17 (E) | 31.5 | R57 | | | 1 riffle, 1 run |

**Task 6D. Chinook salmon adult escapement**

- No comments or discussion on this task.

**Task 6E. *O. mykiss* adult distribution**

- This task could focus on fewer but more intensive sampling events. One schedule could be to assess distribution in February–March 2007, and February and May 2008 and 2009.
- River should be stratified by reach as follows: La Grange, sediment model reach (approximately New La Grange Bridge to River 5B), Bobcat Flat, and Gravel Mining reach. Within each reach, consistent mesohabitat units should be sampled. Sample effort must be the same at each sample site.
- To assess *O. mykiss* distribution, angling sites must include both low- and high-density locations (i.e., can't limit sample to hot spots)..
- Angling may not provide sufficient recaptures to estimate abundance.
- A biologist *must* be present during angling. (A maximum of three people can work in the boat at one time.)
- CDFG may be able to assist in sampling, if needed to satisfy permit requirements for collecting scales. CDFG may also be able to cover the 4D permit, if CDFG staff is present during sampling. This may require shifting additional funds to CDFG. Noah will check into the process for obtaining a permit to collect *O. mykiss* scales during angling.

**Task 6F. Benthic macroinvertebrate composition, abundance, and diversity indices**

- CDFG is switching from the Rapid Bioassessment to EMAP. Hume and Ford prefer to continue to use existing methods to assess macroinvertebrates.
- Snorkel locations were finalized and are presented in the table below:

**Task 6F Benthic macro-invertebrate sampling sites.**

Existing river-wide monitoring sites under Task 6F are denoted as "E."

| Site | RM | Riffle ID | | Project | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|
| | | TID | CDFG | | | | |
| 1 | 51.6 | RA4 | A4 | Existing site | Kick | Kick | Kick |
| 2 | 48.8 | R4A | D2 | Existing Site | Hess/Kick | Hess/Kick | Hess/Kick |
| 3 | 42.3 | R23C | J4 | Existing Site | Hess/Kick | Hess/Kick | Hess/Kick |
| | 38.6 | R30B | N2 | GMR-I (7-11 2002) | Kick | Kick | Kick |
| 4 | 38.1 | R31A | N3 | Existing Site | Kick | Kick | Kick |
| | 37.5 | R34A | O4 | GMR II (MJR) | Kick | Kick | Kick |
| | 37.1 | R35A | O5 | GMR II (MJR) | Kick | Kick | Kick |
| | 37.1 | 35B | P1 | GMR II (MJR) | Kick | Kick | Kick |
| | 36.6 | R36A | P2 | GMR II (MJR) | Kick | Kick | Kick |
| 5 | 31.5 | R57 | | Existing Site | Kick | Kick | Kick |
| 6 | 25.4 | R72 | | Existing Site | Kick | Kick | Kick |

**Notes on Broader Issues:**

- How is floodplain habitat used? How does juvenile use of floodplain habitats differ for sites such as Bobcat Flat (i.e., a floodway channel) versus floodplain that are connected to the channel for their entire length.
- Data for years during which rotary screw traps were operated at multiple locations on the Tuolumne River (i.e., 1998–2000) should be analyzed to test for a relationship between the spawner and juvenile abundance in the upper reach (i.e., at the upper trap) and flow and juvenile production at the lower trap.
- Fry survival during wet years (when large numbers of salmon leave the river as fry) is not known. Contribution of these outmigrant fry to population recruitment also is not known. The cohort analysis for the Tuolumne River should be updated and reviewed to provide insight into this question.