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March 27, 2007

Honorable Philis J. Posey
Secretary, Federal Energy Regulatory Commission
888 First Street, N. E.
Washington, D. C 20426

Re: Turlock and Modesto Irrigation Districts -
Project No. 2299 -- Article 58 Annual Report

Dear Secretary Posey:

Enclosed pursuant to Article 58 of the license for Project No. 2299 and Section 15 of the 1995 Don Pedro Project Settlement Agreement is the 2006 Lower Tuolumne River annual report. If you have any questions, please contact Tim Ford at 209-883-8275.

Respectfully submitted,

MODESTO IRRIGATION DISTRICT

Allen Short
General Manager

TURLOCK IRRIGATION DISTRICT

Larry Weis
General Manager

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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Turlock Irrigation District	)	
and	)	Project No. 2299
Modesto Irrigation District	)	

2006 LOWER TUOLUMNE RIVER ANNUAL REPORT

2006 Annual Summary Report

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Report 2006-2: Spawning Survey Summary Update
Report 2006-3: 2006 Seine/Snorkel Report and Summary Update
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Report 2006-5: Rotary Screw Trap Summary Update
Report 2006-6: Coded-wire Tag Summary Update
Report 2006-7: Survival to Emergence Study Report
Report 2006-8: Special Run Pool 9 and 7/11 Reach: Post-Project Monitoring Synthesis Report
Report 2006-9: Lower Tuolumne River Predation Assessment Final Report
Report 2006-10: Tuolumne River La Grange Gravel Addition, Phase II Annual Report
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- FERC PROJECT NO. 2299 –

2006 ANNUAL SUMMARY REPORT

Turlock and Modesto Irrigation Districts

By
Tim Ford
Aquatic Biologist

Exhibits:

1. Spawning run estimates
2. Ocean catch and harvest rate data
3. 2006 Basin flow and salmon rearing/outmigration data
4. Delta export and salmon salvage data
5. Delta CWT smolt survival results

Attachment A: Water, Flows, Temperature, and Flow Schedule Correspondence

Attachment B: 2006 Technical Advisory Committee Materials

General List of Acronym and Abbreviations

AF	acre-feet, a measure of water volume
AFRP	Anadromous Fish Restoration Program (part of USFWS)
AMF	Adaptive Management Forum
AT	air temperature
BAWSCA	Bay Area Water Supply and Conservation Agency
CALFED	now known as California Bay-Delta Authority
CBDA	California Bay-Delta Authority
CCSF	City and County of San Francisco
CDEC	California Data Exchange Center
CDRR	combined differential recovery rate
cfs	cubic feet per second, a measure of flow rate
CRRF	California Rivers Restoration Fund
CSPA	California Sportfishing Protection Alliance
CWT	coded wire tag
CVP	Central Valley Project
CY	cubic yard
CDFG	California Department of Fish and Game
DPS	distinct population segment
DWR	Department of Water Resources
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FERC	Federal Energy Regulatory Commission
FL	fork length
FOT or FOTT	Friends of the Tuolumne
FSA	Don Pedro Project 1995 FERC Settlement Agreement
FWS	see USFWS
HORB	Head of Old River Barrier
HRI	harvest rate index
IEP	Interagency Ecological Program
IFIM	Instream flow incremental methodology
mm	millimeter
M&T	McBain and Trush (consultants)
MID	Modesto Irrigation District
NHI	Natural Heritage Institute
NMFS	National Marine Fisheries Service
NOAA Fisheries	also National Marine Fisheries Service

NRCS	Natural Resources Conservation Service
NWS	National Weather Service
ORNL	Oak Ridge National Laboratory
PFMC	Pacific Fishery Management Council
R(letter and/or #)	specific riffle (location identifier, e.g. RA7 is Riffle A7)
RM	river mile
RST	rotary screw trap
SJRA	San Joaquin River Agreement
SJRMP	San Joaquin River Management Program
SPCA	S. P. Cramer and Associates (consultants)
SRP	Special Run/Pool (mined area of river, usually with #, e.g. SRP 9)
SWP	State Water Project
SWS	Stillwater Sciences (consultants)
TID	Turlock Irrigation District
TRE	Tuolumne River Expeditions
TRPT or TRT	Tuolumne River Preservation Trust (also as Tuolumne River Trust)
TRTAC	Tuolumne River Technical Advisory Committee
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VAMP	Vernalis Adaptive Management Plan
WT	water temperature
WY	Water Year

1 – Introduction

This is the 11th annual report to the Federal Energy Regulatory Commission (FERC) pursuant to Article 58 of the 31Jul1996 Order on FERC Project License 2299 and the 1995 Don Pedro Project FERC Settlement Agreement (FSA).

This report covers the 2006 calendar year and contains:

(1) A summary of 2006 TRTAC/FSA/FERC Order activities
(2) A review of fishery and habitat conditions and related information
(3) Technical reports on monitoring and restoration, including several reports with long-term updates.

An eight volume report pursuant to Article 39 of the License issued in 1964, covering the first 20 years (20-Year Report) of Project operation (which began in 1971), was filed with FERC in 1992 and included 28 technical reports. The first in this current series of Article 58 Annual Reports, the 1996 Annual Report, was in seven volumes with 14 technical reports that included information for the 1992-96 period as well as earlier material not contained in the 20-Year Report. A listing of Article 39 and Article 58 technical reports filed from 1992 to present is at the end of this annual report (see #11 below).

The Article 58 reporting requirement also called for a summary report to be filed by 01Apr2005 and that report (2005 Ten-Year Summary Report) was filed in March 2005. Several filings with FERC were made by various parties in 2006 as part of ongoing follow-up to the Ten-Year Summary Report and in response to the related FERC process initiated in a July 2006 Public Meeting in Sacramento, CA. FERC staff requested in a December 20, 2006 letter to the Districts that another monitoring study plan and schedule be developed and submitted within 90 days - that monitoring study plan was filed by the Districts with FERC on 20Mar2007.

2 - Tuolumne River Technical Advisory Committee (TRTAC)

The TRTAC is a key element in implementing the 1996 FERC Order and the FSA. The TRTAC assists in coordinating monitoring activities and non-flow measures and helps develop adaptive management strategies. The TRTAC also provides input into flow schedule decisions by the Districts, CDFG, and USFWS. Five TRTAC meetings were held in 2006 - 09Feb, 09Mar, 08Jun, 14Sep, and 14Dec.

A website was developed by the Districts in 2006 and used for posting various TRTAC and related information: http://tuolumnerivertac.com/

3 - Program Goals and Comparative Population Goals

FSA Section 8, the Strategy for Salmon Recovery, set forth the Tuolumne River Chinook Salmon Program goals as (1) increase naturally occurring salmon populations; (2) protect any remaining genetic distinction; and (3) increase salmon habitat in the Tuolumne River. The

program is to employ flow and non-flow measures and an adaptive management strategy.

Relating to FSA Section 8 Program Goal 1, FSA Section 9 recognized that many factors affecting the Tuolumne salmon population were beyond the control of the FSA participants. Thus the FSA established narrative comparative population goals: "(1) Improvements in smolt survival and successful escapement in the Tuolumne River; (2) increase in naturally reproducing chinook salmon in this subbasin; (3) barring events outside the control of the 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, on an experimental basis."

Detailed background in this annual report is provided in summary updates in Reports 2006-2, 3, 5, and 6, and in other sections to further gauge progress of implementing the FSA strategy and meeting the FSA goals.

3.1 - Salmon Population

The preliminary 2006 Tuolumne fall-run chinook population estimate by CDFG, using the modified Schaefer method, was 625 salmon, a small decrease from the 719 estimated for the 2005 run (Exhibit 1). The carcass recovery rate was low at 23%, with peak weekly live and redd counts of less than 120 each. Returns of CWT salmon to the Tuolumne were very low, at only 1% of the 2006 run. Initial run estimates for the Stanislaus River (about 3,020 weir count) and Merced River (about 2,000 river and 150 hatchery). The resulting combined 3-river estimate of about 5,800 was down from about 7,100 in 2005, and the lowest total since 1995.

Central Valley fall-run salmon numbers as a whole were down in 2006, especially in the Mokelumne, American, and Yuba Rivers (Exhibit 1). The preliminary estimate was 293,405 as compared to 430,424 in 2005, despite that ocean harvest was also down (see below).

3.2 - Outside Factors

The FSA (Section 10) recognized there are factors outside the control of the Districts and beyond the Tuolumne River that affect the Chinook salmon population, including juvenile survival issues in the Delta related to water export operations and other factors, and ocean salmon harvest. Other outside influences, such as overall ocean conditions and San Joaquin River/Delta water quality, including periods of low dissolved oxygen levels near Stockton during fall adult migration, can also affect the salmon populations.

3.2.1 - Ocean harvest

Preliminary 2006 ocean harvest and Central Valley escapement (spawning run) data are available from the Pacific Fishery Management Council (PFMC 2007). The PFMC reported a much lower 2006 ocean catch (combined commercial troll and sport) of 118,300 Chinook salmon landed south of Pt. Arena as compared to 391,500 in 2005. The estimated 2006 Central Valley total "adult" escapement (for all Chinook runs and hatchery returns) of 317,100 salmon was also lower than the 463,000 salmon estimated for 2005.

The total 2006 Central Valley Abundance Index, comprising the sum of catch and "adult" (estimated age 3+ salmon) escapement, of 435,400 was much lower than in 2004 (869,600) and 2005 (854,400). The 2006 catch and escapement values resulted in an estimated Central Valley "Harvest Rate Index" (HRI) of 27% in 2006, much lower than the 46% of 2005. Graphs of PFMC data are in Exhibit 2.

3.2.2 – Ocean conditions

Central Valley Chinook salmon spend the majority of their lives in the eastern Pacific Ocean and the influence of ocean conditions on growth and survival is widely recognized (Williams, 2006). Temperature, upwelling, and general productivity of the California Current can vary considerably and in recent years (2003-2005) the conditions have been considered poor for salmon (Peterson et al. 2006).

3.2.3 – Delta issues

3.2.3.1 - Salmon salvage and losses at Delta water export facilities

Exhibit 4 contains State (SWP) and Federal (CVP) delta water export facility salmon salvage and loss information. Natural/unmarked salmon salvage and losses for Jan-Jun at the facilities were higher than 2005 with combined facility estimates for Jan-Jun2006 of about 40,000 salmon salvaged and about 58,000 in losses. The reported numbers do not include associated indirect losses within the Delta, plus the salvage loss estimates for fry (mostly in Jan-Mar) may be inherently low due to reduced screening efficiency. It is not certain how many of these salmon were from the San Joaquin basin as there is presently no method to ascertain specific origins. However, comparison of salmon size and timing with tributary and mainstem seine, screw trap, and trawl catch data clearly indicate the potential interception of many San Joaquin basin salmon at the facilities (Exhibit 3). In addition, nearly all exported water during those months in 2006 was likely from the San Joaquin River due to high flows.

Salmon <50mm (fry) were mainly evident at the facilities from January to mid-March. There was a dominant salvage of larger juveniles/smolts (75-110 mm) from late March through June. Monthly average density (combined salvage and loss/1000 AF) was highest in June at both the CVP and SWP. Salvage and loss data on weekly intervals from Jan-Jun are in Exhibit 4.

3.2.3.2 - Spring smolt survival conditions

The San Joaquin River Agreement (SJRA) and the Vernalis Adaptive Management Plan (VAMP) are elements for meeting the objectives of the 1995 State Water Resources Control Board (SWRCB) Bay-Delta Water Quality Control Plan over a 12 year period. 2006 was the seventh year of formal compliance with SWRCB Decision 1641. The program includes a 31-day period, usually from mid-Apr to mid-May, with an experimental combination of salmon protective measures: specified San Joaquin River flows at Vernalis, Head of Old River Barrier (HORB), and reduced State and Federal delta exports. The Tuolumne River outmigration pulse volume has been mostly scheduled to coincide with the VAMP period, accounting for a 2-day

lead time for flows from La Grange to be at Vernalis, and to provide transition days to and from base flows. An additional Tuolumne River spring pulse flow volume of up to 22,000 acre-feet (AF) from TID/MID, supplemental to FERC pulse allocation, can be required under the SJRA to help meet target flows at Vernalis, with more pulse flow potentially added to the Tuolumne River through a water sharing arrangement with other parties to the SJRA.

As reported in SJRGA 2007, the 2006 VAMP implementation had no HORB due to high flood release flows and the designated VAMP period occurred during the month of May. Average combined state and federal water export rates varied from 1,559 cfs in the first half of May to 5,748 cfs in the second half of May – corresponding Vernalis flows were 26,220 and 24,262 cfs. The "combined differential recovery rate" (CDRR) indices for Dos Reis and Mossdale releases to Jersey Point (recovered at Antioch and Chipps Island) were from 11-12% during the low export rate and the CDRR index for the second Mossdale-only release with higher export was only 2%. These are very low indices, especially for high flow conditions, and continue the overall low survival results obtained since 2003 (Exhibit 5). The measured smolt survival for the south delta (San Joaquin) reach has been consistently lower than for the north delta (Sacramento) reach, but especially so since 2003.

A pilot study using 100 hatchery salmon in two releases with implanted acoustic transmitters was conducted in 2006 (SJRGA 2007). These salmon were tracked at five stationary receivers (with one of these later used as a mobile receiver). The study results indicate both a high rate of predation and a higher than expected rate of movement into Old River. An expanded acoustic tag study using about 1000 tagged smolts and 15 receivers is planned for 2007.

3.2.3.3 – Other Delta issues

There are several other major recognized issues of concern for salmon in the Delta region. Water quality issues, from toxicants in general to low dissolved oxygen in the Stockton Deep Water Ship Channel, are being reviewed or addressed by various agencies. In addition, the recent years of low VAMP study smolt survival corresponds to a general decline reported in several other delta species, referred to as the Pelagic Organism Decline or POD, which is currently under investigation by CALFED agencies (IEP 2007).

3.3 - ESA Actions

National Marine Fisheries Service (NMFS) first determined "threatened" status for anadromous forms of rainbow trout (steelhead), *Oncorhynchus mykiss*, in the California Central Valley ESU in 1998 (63 FR 13347). Several parties, including the Districts, in Dec2002, filed a lawsuit against the listing of California Central Valley *Oncorhynchus mykiss*. The court ruling issued on 12May2004 found the listing to be flawed and determined that NMFS had to reinstate a proper listing. NMFS proposed use of a "Distinct Population Segment" policy (not the formerly used ESU policy) for steelhead listing in Nov2005. Their final rule with a new "threatened" determination using the DPS policy was published on 05Jan2006 (http://www.nwr.noaa.gov/Publications/FR-Notices/2006/upload/71fr834.pdf). A new legal complaint was filed in court in April 2006 with respect to the NMFS relisting. A copy of the lawsuit was submitted by the Districts to FERC in July 2006 and that case is pending.

4 - Flow Schedules and Operations

Calendar year 2006 included minimum flow and pulse flow requirements of Article 37 spanning the 2005-2006 and 2006-2007 "fish flow years", which are usually from 15Apr-14Apr, although some spring pulse flow can begin as early as 12Apr to coincide with timing of basin-wide pulse flow coordination at Vernalis on the San Joaquin River. Attachment A contains the FERC flow schedule correspondence. The 2006-2007 "fish flow year" was the second consecutive year in five years with the highest annual Article 37 flow requirement of 300,923 AF.

The 2006 calendar year included part of the 2006 and 2007 "water years (WY)" which run from Oct-Sep. WY2006 (Oct2005-Sep2006) Tuolumne River preliminary computed natural runoff volume of 3,312,900 AF was 170% of the long-term average, up from 157% in WY2005. The April 1 San Joaquin Basin 60-20-20 Water Supply Index 50% Exceedence Forecast was 4.5, May 1 forecast was 5.6, and the actual index ended up at 5.9. The daily average computed natural flow, actual La Grange flows, and FERC minimum flow schedules for WY2006/2007 are graphed in Attachment A. Actual flows at other basin locations, Don Pedro Reservoir storage, and snow and precipitation data are included as well.

Flood management flows were required much of the year, with flows at La Grange exceeding 1000 cfs from mid-December to early July. The 2006 fall pulse flow using 5,950 AF was scheduled as 400-600 cfs (including 300 cfs base flow) during 14-28Oct.

5 - Monitoring Information

License 2299 Article 58 and FSA Section 13 listed several monitoring elements as follows:

5.1 – Salmon Spawning Escapement

The California Department of Fish and Game (CDFG) conducts the spawning surveys each fall. Report 2006-1 contains the CDFG 2005 and 2006 reports and Report 2006-2 updates the long-term summary and trends – the recent estimates are in Section 3.1 above.

5.2 - Quality and Condition of Spawning Habitat

A positive relationship was found with gravel permeability and survival to emergence in a 2001-2002 study described in Report 2006-7.

5.3 - Relative Salmon Fry Density/Female Spawners

Tuolumne River peak salmon fry density from seining in 2006 was similar in timing (Feb) to 2001-2005, but was relatively low (Report 2006-3). Both the peak and average fry density for the mid-Jan to mid- Mar period was typical for the number of female spawners.

5.4 – Salmon Fry Distribution and Survival

Flood management flows were present before the seining surveys began, resulting in movement of salmon fry (≤50 mm) throughout the entire river from the beginning of the 2006 seining study (Report 2006-3).

Screw trap sampling at Waterford (RM 30 or 34) documented a relative large number of fry (190,000 estimated) moving past that site, or 75% of the seasonal estimate – peak passage was on 01Mar. Fewer fry (29,000) were estimated at the Grayson traps (RM 5), in part due to extended rearing to larger size in the 25-29 miles between the screw trap sampling sites (Report 2006-4).

Exhibits 3 and 4 have information on the size and numbers of salmon in the tributaries to the Delta from seine, screw trap, trawl and salvage sampling programs for the entire Jan-Jun season that spans from fry to smolts.

5.5 - Juvenile Salmon Distribution and Temperature Relationships

Seine sampling monitored the winter/spring distribution of juvenile salmon (>50 mm) and other fishes in the Tuolumne River (Report 2006-3). Peak juvenile density was in late March and at the highest level for the 2001-2006 period. The lower river section had the highest relative abundance since 2001.

Screw trap sampling at Waterford had an estimated 63,000 salmon >50 mm move past that site, including 49,000 > 80 mm. The Grayson trap estimate was 149,000 salmon >50 mm, including 132,000 >80 mm (74% of the seasonal estimate) – peak passage was on 19May (Report 2006-4). Report 2006-5 updates the long-term screw trap summary and trends.

The Sep snorkel survey recorded 40 Chinook salmon and 543 rainbow trout (Report 2006-3) – no June snorkel survey was conducted due to high flows. The number of rainbow trout observed was the highest since the survey began in 2001.

The thermograph data for the Tuolumne and San Joaquin Rivers, along with other monitoring data, are posted at http://tuolumnerivertac.com/data.htm. Figures for 2006 daily average thermograph data are in Attachment A.

5.6 – Salmon Smolt Survival

TRTAC smolt survival studies using CWT salmon ended in 2002 and ocean catch and adult returns from that year are essentially complete. CDFG conducted an additional CWT survival evaluation in Apr2005 at about 4,000 cfs and ocean and inland adult recoveries could extend to 2009.

The updated analyses of juvenile and adult recovery data for Stanislaus, Tuolumne, and Merced River CWT releases are in Report 2006-6. Recoveries at the CVP and SWP delta salvage facilities were combined and recoveries at the Antioch and Chipps trawls were combined for calculation of those indices. CWT paired releases from the Merced River Hatchery were examined for several reaches of the San Joaquin River from the Merced River downstream to

Mossdale (Report 2006-6 Appendix).

An initial study of habitat use and predation of smolts and piscivores, including radio-telemetry of predators, was done in May during flood flow conditions (Report 2006-9).

5.7 – Project-related Monitoring

The report on monitoring for the completed 7-11 Reach and SRP 9 projects is Report 2006-8. Reports 2006-10 and Report 2006-11 are agency reports on CDFG gravel additions near La Grange.

5.8 - Other Monitoring Information

Aquatic invertebrate sampling was not done is 2006 due to the high flow conditions.

6 - Non-Flow Measure Activities In 2006

High flows would have precluded work on river projects in 2006 if they had been ready to proceed. Primary work on non-flow measures in 2006 was related to pre-construction activities such as permitting, environmental review, design, and appraisal.

7 - Anticipated Non-Flow Measure Activities In 2007

Of the ten identified TRTAC priority projects, three have been completed and there are four others that can be considered active, although the funding status of Ruddy and Warner-Deardorff projects (Gravel Mining Reach Phases II-III) is uncertain as the original funding for Ruddy construction was withdrawn by the funding agencies. Projects that are not active are: SRP 10 (no funding for construction, although design work is complete), gravel cleaning (funds were transferred to gravel addition based on revised scoping), and Reed Project (Gravel Mining Reach Phase IV – no initial work has been done or funding acquired due to the difficulties encountered on the other phases). Projects that have been developed such that field activities may proceed in 2007 are the Gasburg Creek sedimentation basin and the first part of gravel augmentation, contingent on contracts/agreements and permitting. CDFG plans to do some gravel addition in 2007 near La Grange with DWR 4-Pumps mitigation funding.

8 - Other FERC Settlement Agreement Activities

8.1 - Section 11 - Flood Management

Flood management releases were made in 2006 to maintain flood reservation space in Don Pedro Reservoir from January into July (see flow graphs and Don Pedro Reservoir storage graph in Attachment A).

8.2 - Section 19 – Riparian Habitat and Recreation

The East Stanislaus Resource Conservation District (ESRCD) continued as the public agency initially funded with the $500,000 from CCSF pursuant to FSA Section 19. The ESRCD receives assistance from the Natural Resources Conservation Service (NRCS). The amount has been entirely allocated, with expenses through 2006 of $268,006 and the remainder pledged to several land acquisitions.

9 - Program Expenses Through 2006

Overall funding obligations of FSA costs shared by the Districts and City and County of San Francisco (CCSF) were up to $1,000,000 for non-flow options (Section 12) and $1,355,000 for monitoring (Section 13). The Section 13 allocation was reached in 2004, but the Districts and CCSF have continued an extensive monitoring program through 2006. CALFED notified the Districts in Sep2005 that their application on behalf of the TRTAC for a 3-year project and river-wide monitoring effort had been approved for funding. However CDFG, which administers the grant, has not yet approved the scope of work, so no funding was provided in 2006.

The available Section 12 amount remained at about $19,300 as there were no expenses in 2006.

10 - References

Interagency Ecological Program for the San Francisco Estuary (IEP). 2006. Interagency Ecological Program 2006-2007 Work Plan to Evaluate the Decline of Pelagic Species in the Upper San Francisco Estuary. Available at: http://science.calwater.ca.gov/pdf/workshops/POD/IEP_POD_2006-7_Workplan_010906.pdf

Pacific Fishery Management Council. 2007. Review of 2006 Ocean Salmon Fisheries and Preseason Report 1: stock abundance analysis for 2007 ocean salmon fisheries. Portland, OR. Available at http://www.pcouncil.org/salmon/salpreI07/salpreI07.html

Peterson, William T., et al. 2006. Ocean conditions and salmon survival in the Northern California Current. Fish Ecology Division, Northwest Fisheries Science Center, Natioanl Marine Fisheries Service, Newport OR, 44 pg. http://www.nwfsc.noaa.gov/research/divisions/fed/ecosysrep.pdf

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Williams, John G. 2006. Central Valley Salmon: A Perspective on Chinook and Steelhead in the Central Valley of California. San Francisco Estuary and Watershed Science. Vol. 4, Issue 3 (December 2006), Article 2. http://repositories.cdlib.org/jmie/sfews/vol4/iss3/art2

11 - List of 1992-2006 Technical Reports by Topic

Salmon Population Models

1992 Appdx. 1: Population Model Documentation
1992 Appdx. 26: Export Mortality Fraction Submodel
1992 Appdx. 2: Stock Recruitment Analysis of the Population Dynamics of San Joaquin River System Chinook salmon
Report 1996-5: Stock-Recruitment Analysis Report

Salmon Spawning Surveys

1992 Appdx. 3: Tuolumne River Salmon Spawning Surveys 1971-88
Report 1996-1: Spawning Survey Summary Report
- 96-1.1 1986 Spawning Survey Report
- 96-1.2 1987 Spawning Survey Report
- 96-1.3 1988 Spawning Survey Report
- 96-1.4 1989 Spawning Survey Report
- 96-1.5 1990 Spawning Survey Report
- 96-1.6 1991 Spawning Survey Report
- 96-1.7 1992 Spawning Survey Report
- 96-1.8 1993 Spawning Survey Report
- 96-1.9 1994 Spawning Survey Report
- 96-1.10 1995 Spawning Survey Report
- 96-1.11 1996 Spawning Survey Report
- 96-1.12 Population Estimation Methods

1997-1: 1997 Spawning Survey Report and Summary Update
1998-1: Spawning Survey Summary Update
1999-1: 1998 Spawning Survey Report
2000-1: 1999 and 2000 Spawning Survey Reports
2000-2: Spawning Survey Summary Update
2001-1: 2001 Spawning Survey Report
2001-2: Spawning Survey Summary Update
2002-1: 2002 Spawning Survey Report
2002-2: Spawning Survey Summary Update
2003-1: Spawning Survey Summary Update
2004-1: 2003 and 2004 Spawning Survey Reports
2004-2: Spawning Survey Summary Update
2006-1: 2005 and 2006 Spawning Survey Reports
2006-2: Spawning Survey Summary Update

Seine, Snorkel, Fyke Reports and Various Juvenile Salmon Studies

1992 Appdx. 10: 1987 Juvenile Chinook salmon Mark-Recapture Study
1992 Appdx. 12: Data Reports: Seining of Juvenile Chinook salmon in the Tuolumne, San Joaquin, and Stanislaus Rivers, 1986-89
1992 Appdx. 13: Report on Sampling of Chinook Salmon Fry and Smolts by Fyke Net and Seine in the Lower Tuolumne River, 1973-86
1992 Appdx. 20: Juvenile Salmon Pilot Temperature Observation Experiments
Report 1996-2: Juvenile Salmon Summary Report
- 96-2.1 1986 Snorkel Survey Report

96-2.2 1988-89 Pulse Flow Reports
96-2.3 1990 Juvenile Salmon Report
96-2.4 1991 Juvenile Salmon Report
96-2.5 1992 Juvenile Salmon Report
96-2.6 1993 Juvenile Salmon Report
96-2.7 1994 Juvenile Salmon Report
96-2.8 1995 Juvenile Salmon Report
96-2.9 1996 Juvenile Salmon Report
1997-2: 1997 Juvenile Salmon Report and Summary Update
1998-2: 1998 Juvenile Salmon Report and Summary Update
1999-4: 1999 Juvenile Salmon Report and Summary Update
2000-3: 2000 Seine/Snorkel Report and Summary Update
2001-3: 2001 Seine/Snorkel Report and Summary Update
2002-3: 2002 Seine/Snorkel Report and Summary Update
2003-2: 2003 Seine/Snorkel Report and Summary Update
2004-3: 2004 Seine/Snorkel Report and Summary Update
2005-3: 2005 Seine/Snorkel Report and Summary Update
2006-3: 2006 Seine/Snorkel Report and Summary Update

Fluctuation Assessments

1992 Appdx. 14: Fluctuation Flow Study Report
1992 Appdx. 15: Fluctuation Flow Study Plan: Draft
Report 2000-6: Tuolumne River Chinook Salmon Fry and Juvenile Stranding Report
2005 Ten-Year Summary Report Appdx. E: Stranding Survey Data (1996-2002)

Predation Evaluations

1992 Appdx. 22: Lower Tuolumne River Predation Study Report
1992 Appdx. 23: Effects of Turbidity on Bass Predation Efficiency
2006-9: Lower Tuolumne River Predation Assessment Final Report

Screw Trap Reports and Smolt Monitoring and Survival Evaluations

1992 Appdx. 21: Possible Effects of High Water Temperature on Migrating Salmon Smolts in the San Joaquin River
1996-12: Screw Trap Monitoring Report: 1995-96
1996-13: Coded-wire Tag Summary Report
1997-3: 1997 Screw Trap and Smolt Monitoring Report
1998-3: 1998 Tuolumne River Outmigrant Trapping Report
1998-4: 1998 Smolt Survival Peer Review Report
1998-5: CWT Summary Update
1999-5: 1999 Tuolumne River Upper Rotary Screw Trap Report
1999-7: Coded-wire Tag Summary Update
2000-4: 2000 Tuolumne River Smolt Survival and Upper Screw Traps Report
2000-5: 1999-2000 Grayson Screw Trap Report
2000-8: Coded-wire Tag Summary Update
2001-4: 2001 Grayson Screw Trap Report
2001-5: Large CWT Smolt Survival Analysis

2001-6: Coded-wire Tag Summary Update
2002-4: Large CWT Smolt Survival Analysis
2002-5: Coded-wire Tag Summary Update
2003-3: Coded-wire Tag Summary Update
2004-4: 1998, 2002, and 2003 Grayson Screw Trap Reports
2004-5: 2004 Grayson Screw Trap Report
2004-6: Screw Trap Summary Update
2004-7: Large CWT Smolt Survival Analysis Update
2004-8: Coded-wire Tag Summary Update
2005-4: 2005 Grayson Screw Trap Report
2005-5: Rotary Screw Trap Summary Update
2005-6: Coded-wire Tag Summary Update
2006-4: 2006 Rotary Screw Trap Report
2006-5: Rotary Screw Trap Summary Update
2006-6: Coded-wire Tag Summary Update

Fish Community Assessments

1992 Appdx. 24: Effects of Introduced Species of Fish in the San Joaquin River System
1992 Appdx. 27: Summer Flow Study Report 1988-90
Report 1996-3: Summer Flow Fish Study Annual Reports: 1991-94
- 96-3.1 1991 Report
- 96-3.2 1992 Report
- 96-3.3 1993 Report
- 96-3.4 1994 Report

2001-8: Distribution and Abundance of Fishes Publication
2002-9: Publication on the Effects of Flow on Fish Communities
2004-11: Rainbow Trout Summary Report

Invertebrate Reports

1992 Appdx. 16: Aquatic Invertebrate Studies Report
1992 Appdx. 28: Summer Flow Invertebrate Study
Report 1996-4: Summer Flow Aquatic Invertebrate Annual Reports: 1989-93
- 96-4.1 1989 Report
- 96-4.2 1990 Report
- 96-4.3 1991 Report
- 96-4.4 1992 Report
- 96-4.5 1993 Report

1996-9: Aquatic Invertebrate Report
2002-8: Aquatic Invertebrate Report
2004-9: Aquatic Invertebrate Monitoring Report (2003-2004)

Delta Salmon Salvage

1999-6: 1993-99 Delta Salmon Salvage Report

Gravel, Incubation, and Redd Distribution Studies

1992 Appdx. 6: Spawning Gravel Availability and Superimposition Report (incl. map)

1992 Appdx. 7: Salmon Redd Excavation Report
1992 Appdx. 8: Spawning Gravel Studies Report
1992 Appdx. 9: Spawning Gravel Cleaning Methodologies
1992 Appdx. 11: An Evaluation of the Effect of Gravel Ripping on Redd Distribution
1996-6: Redd Superimposition Report
1996-7: Redd Excavation Report
1996-8: Gravel Studies Report: 1987-89
1996-10: Gravel Cleaning Report: 1991-93
2000-7: Tuolumne River Substrate Permeability Assessment and Monitoring Program Report
2006-7: Survival to Emergence Study Report

Water Temperature and Water Quality

1992 Appdx. 17: Preliminary Tuolumne River Water Temperature Report
1992 Appdx. 18: Instream Temperature Model Documentation: Description and Calibration
1992 Appdx. 19: Modeled Effects of La Grange Releases on Instream Temperatures in the Lower Tuolumne River
1996-11: Intragravel Temperature Report: 1991
1997-5: 1987-97 Water Temperature Monitoring Data Report
2002-7: 1998-2002 Temperature and Conductivity Data Report
2004-10: 2004 Water Quality Report

IFIM Assessment

1992 Appdx. 4: Instream Flow Data Processing, Tuolumne River
1992 Appdx. 5: Analysis of 1981 Lower Tuolumne River IFIM Data
1995 USFWS Report on the Relationship between Instream Flow and Physical Habitat Availability – submitted by Districts to FERC in May 2004

Flow and Delta Exports

1997-4: Streamflow and Delta Water Export Data Report
2002-6: 1998-2002 Streamflow and Delta Water Export Data Report
2003-4: Review of 2003 Summer Flow Operation

Restoration, Project Monitoring, and Mapping

1996-14: Tuolumne River GIS Database Report and Map
1999-8: A Summary of the Habitat Restoration Plan for the Lower Tuolumne River Corridor
1999-9: Habitat Restoration Plan for the Lower Tuolumne River Corridor
1999-10: 1998 Restoration Project Monitoring Report
1999-11: 1999 Restoration Project Monitoring Report
2001-7: Adaptive Management Forum Report
2004-12: Coarse Sediment Management Plan
2004-13: Tuolumne River Floodway Restoration (Design Manual)
2005 Ten-Year Summary Report Appdx. D: Salmonid Habitat Maps
2005 Ten-Year Summary Report Appdx. F: GIS Mapping Products
2005-7: Bobcat Flat/River Mile 43: Phase 1 Project Completion Report
2006-8: Special Run Pool 9 and 7/11 Reach: Post-Project Monitoring Synthesis Report
2006-10: Tuolumne River La Grange Gravel Addition, Phase II Annual Report

2006-11: Tuolumne River La Grange Gravel Addition, Phase II Geomorphic Monitoring Report

General Monitoring Information

1992 Fisheries Studies Report
2002-10: 2001-2002 Annual CDFG Sportfish Restoration Report
2005 Ten-Year Summary Report

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Exhibits

1. Spawning run estimates
2. Ocean catch and harvest rate data
3. 2006 Basin flow and salmon rearing/outmigration data
4. Delta export and salmon salvage data
5. Delta CWT smolt survival results

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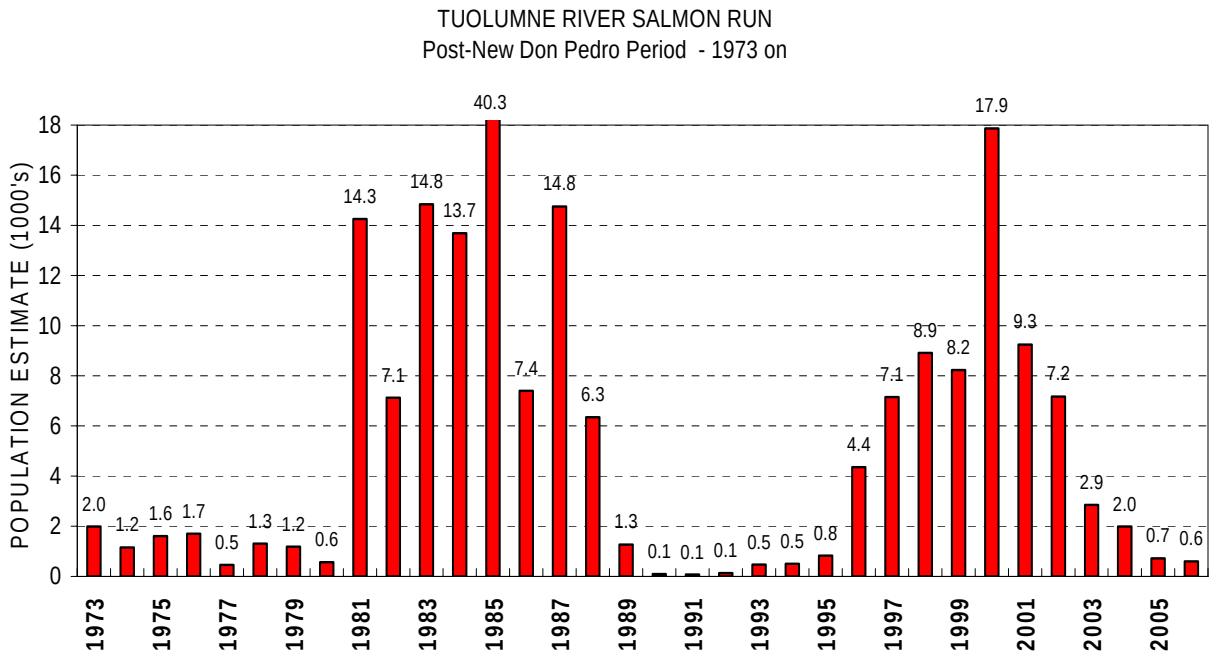
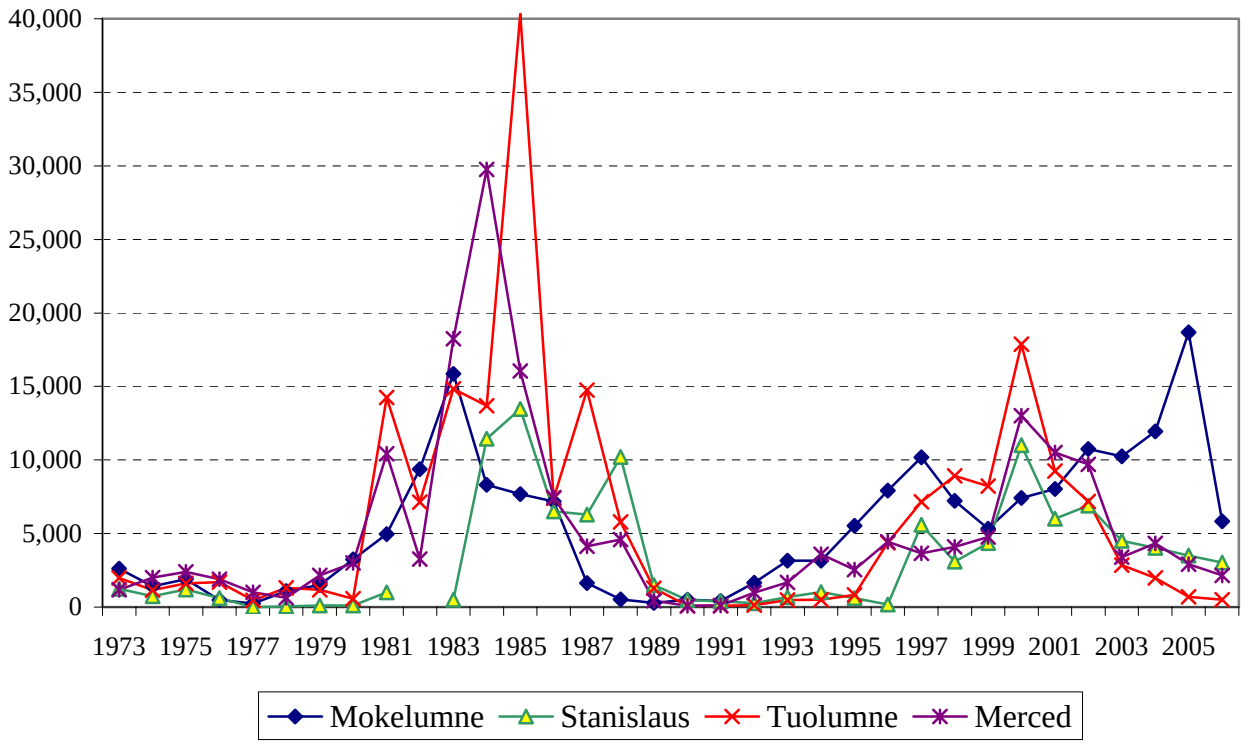
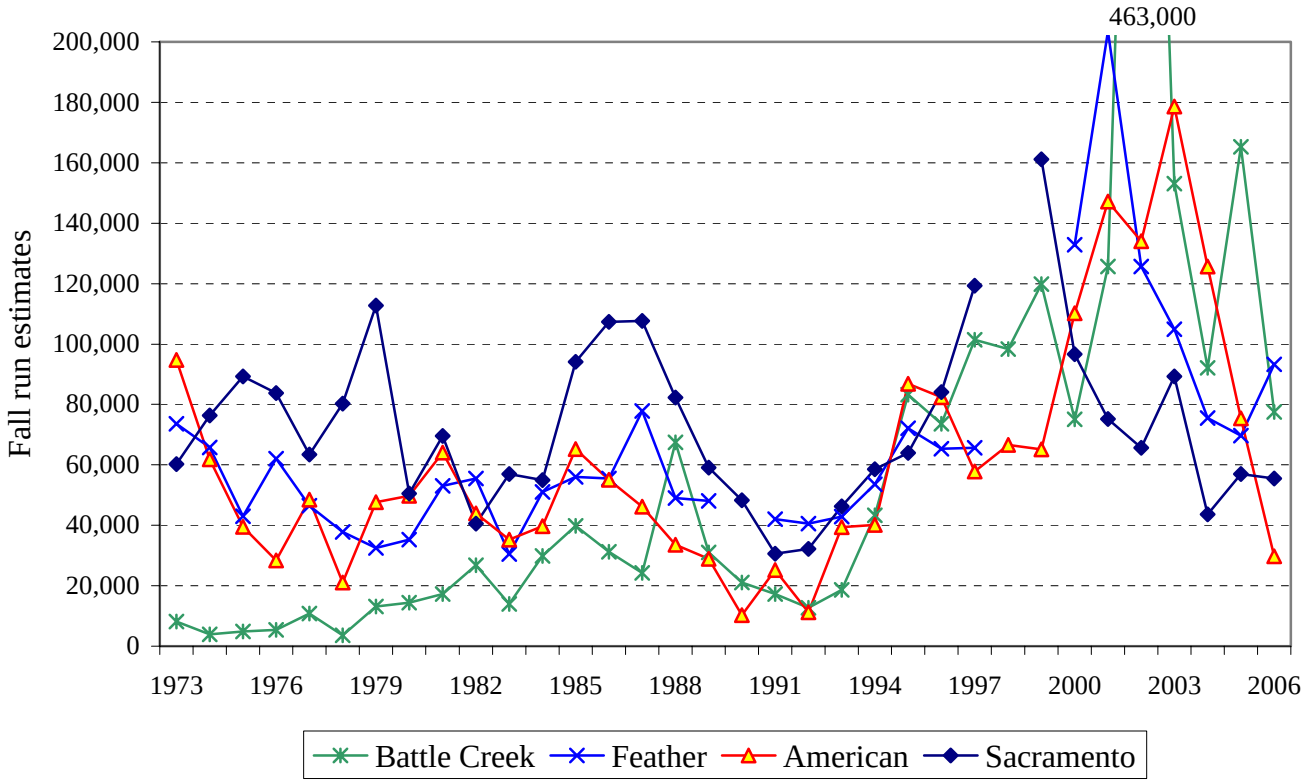
Exhibit 1 – Spawning run estimates



San Joaquin River Tributaries Fall-run Salmon Estimates - Hatcheries are on Merced and Mokelumne
(Mokelumne is an Eastside Delta tributary)



Large Fall-run Salmon Rivers in Sacramento Basin
Major Hatcheries are on Battle Creek, Feather River, and American River



Primary Fall-run Tributaries in Sacramento Basin without Hatchery

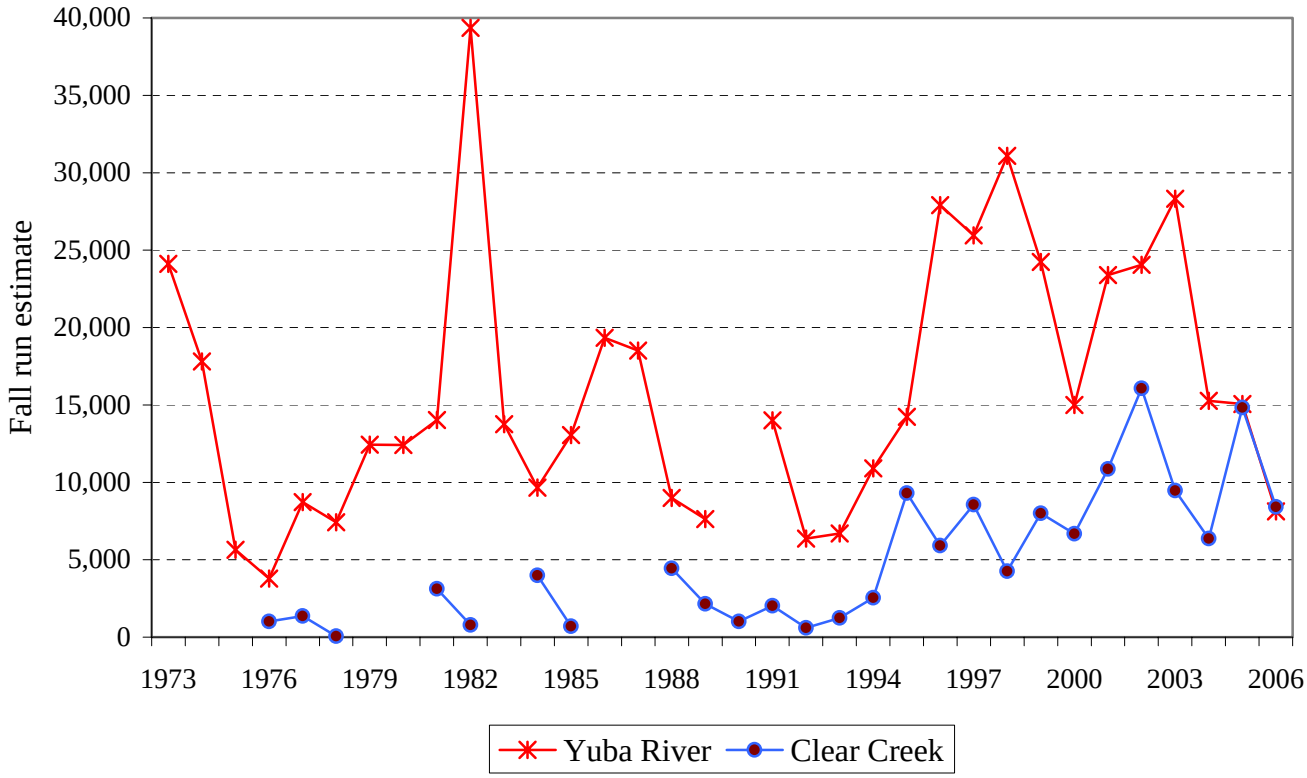
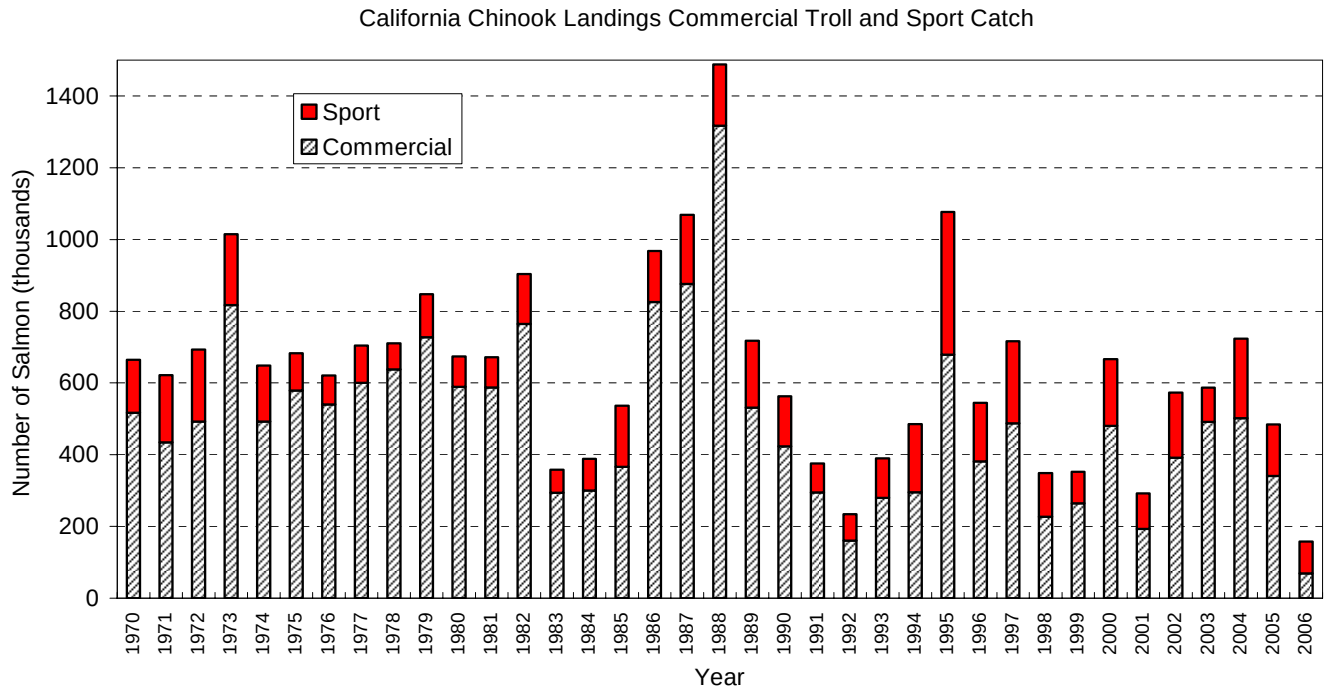
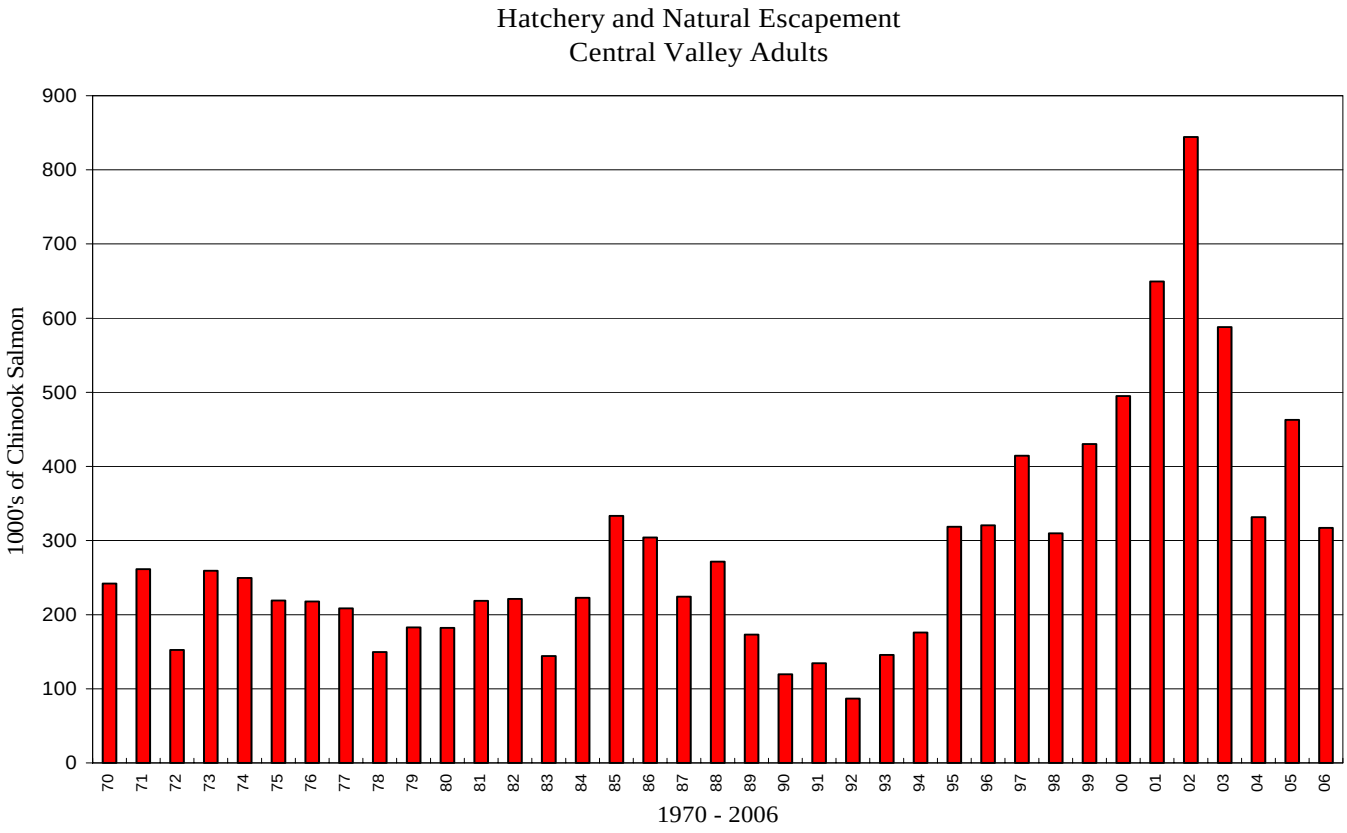
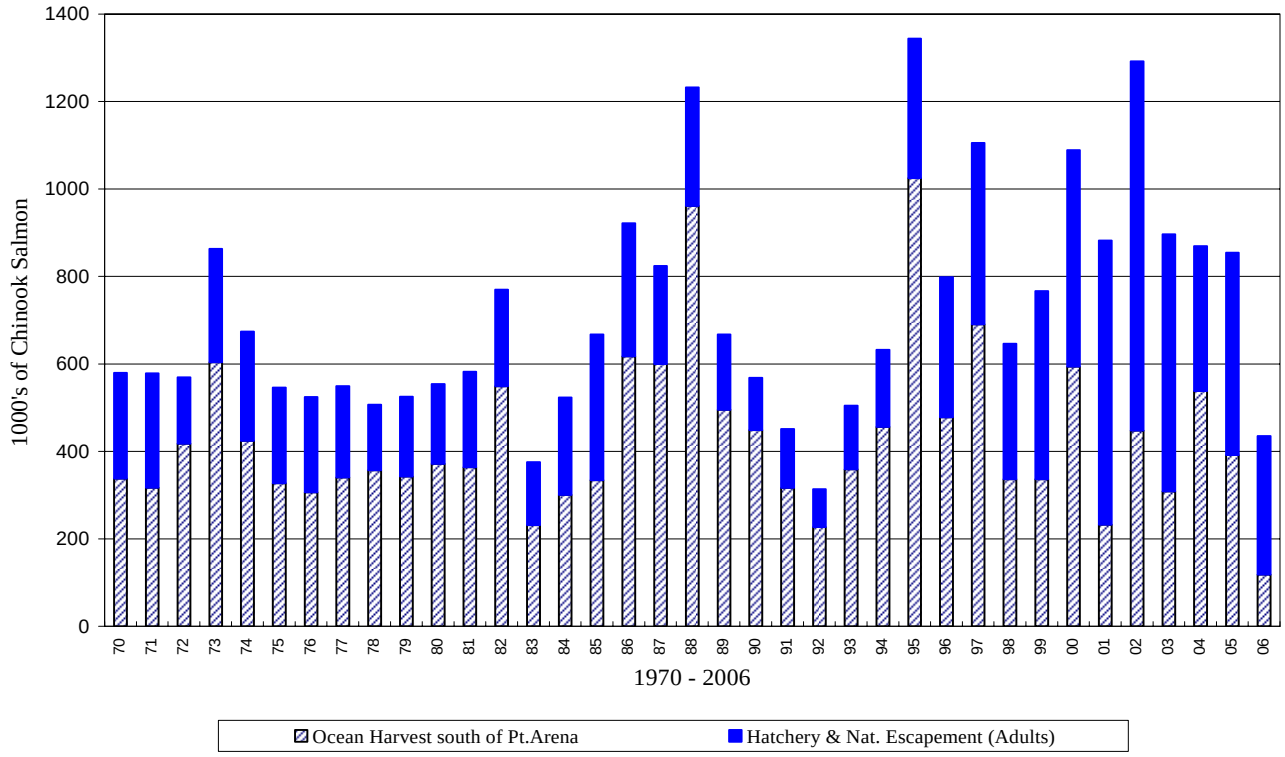


Exhibit 2 – Ocean catch and harvest rate data

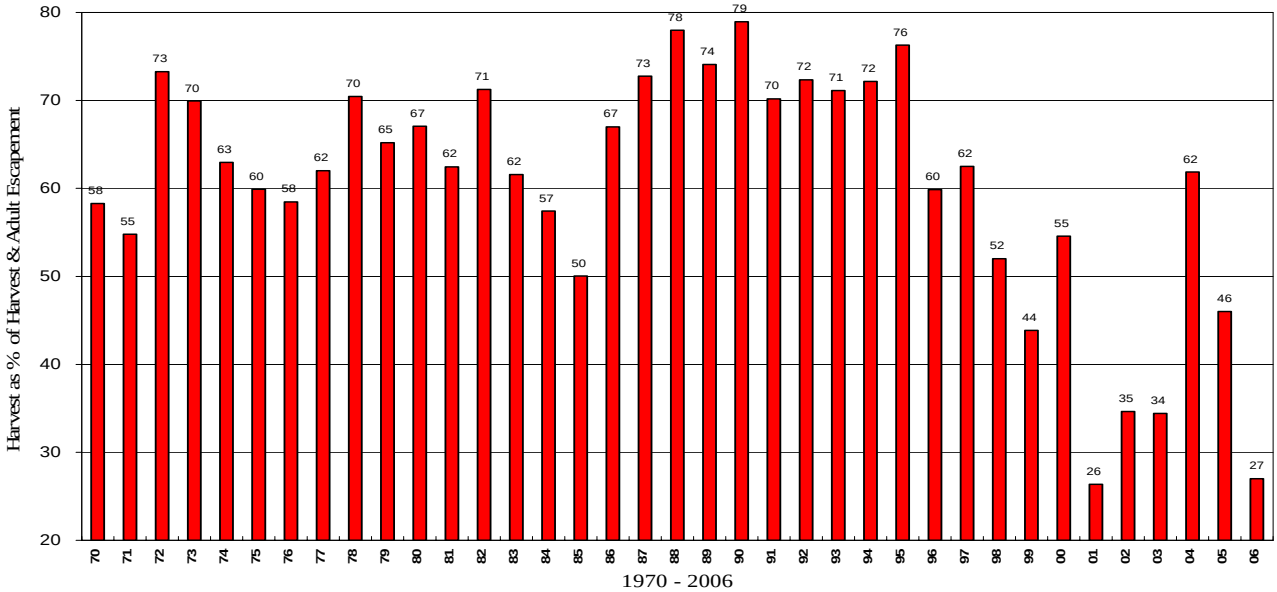




Central Valley Chinook Abundance Index
River and Ocean Totals



Central Valley Ocean Harvest Rate
Index (south of Pt. Arena)



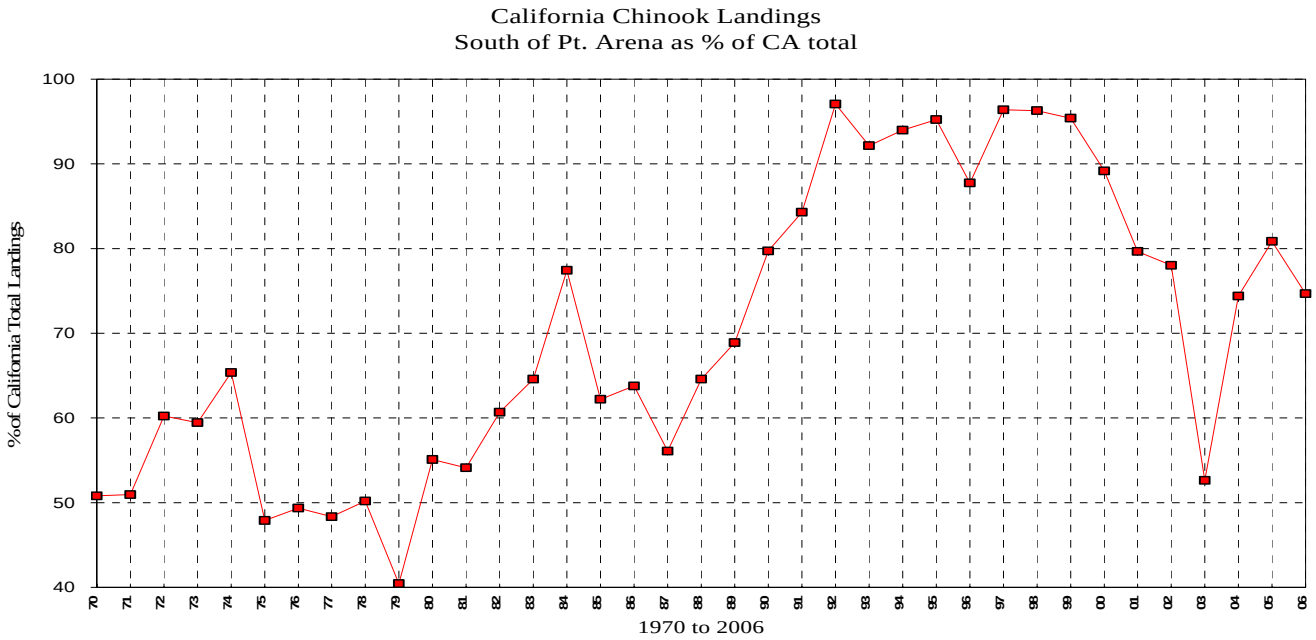
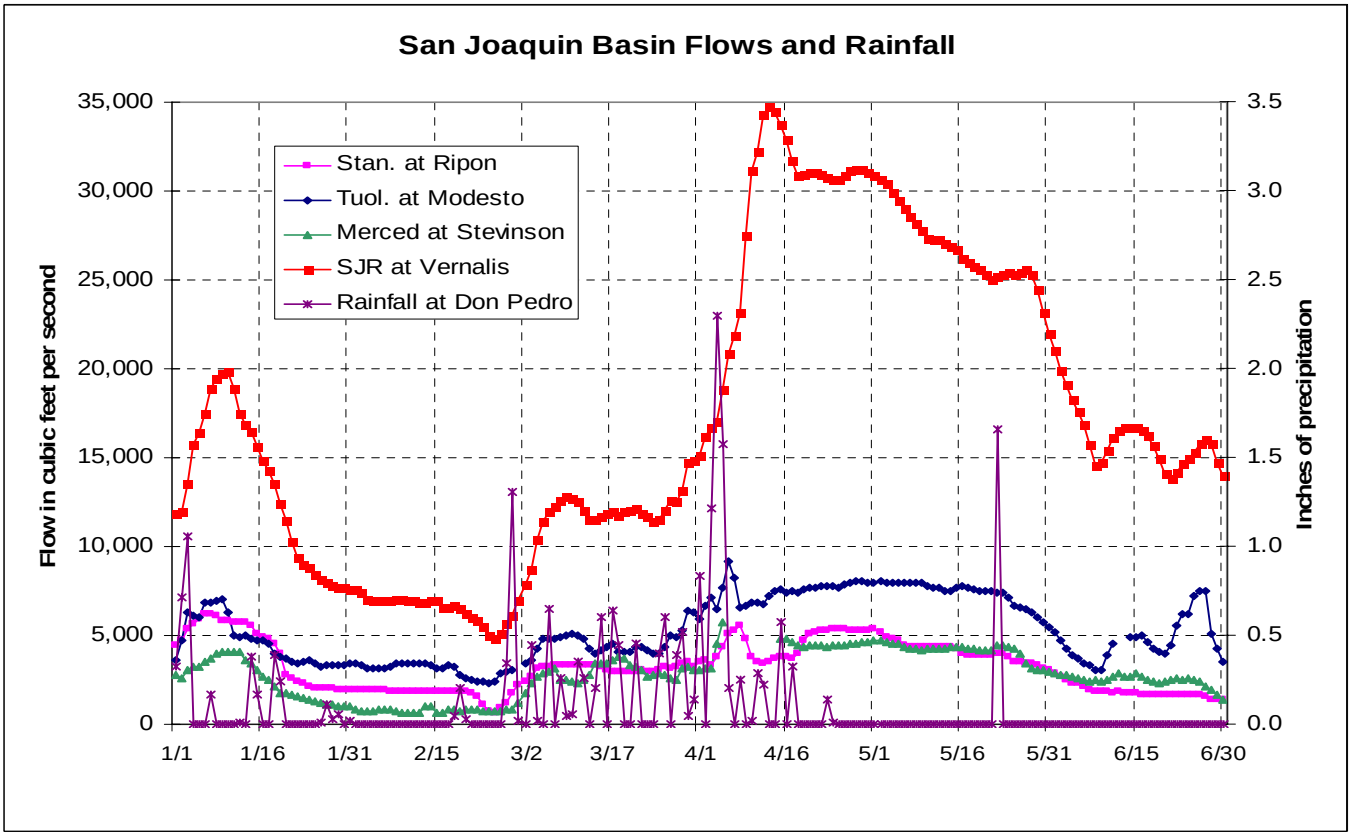
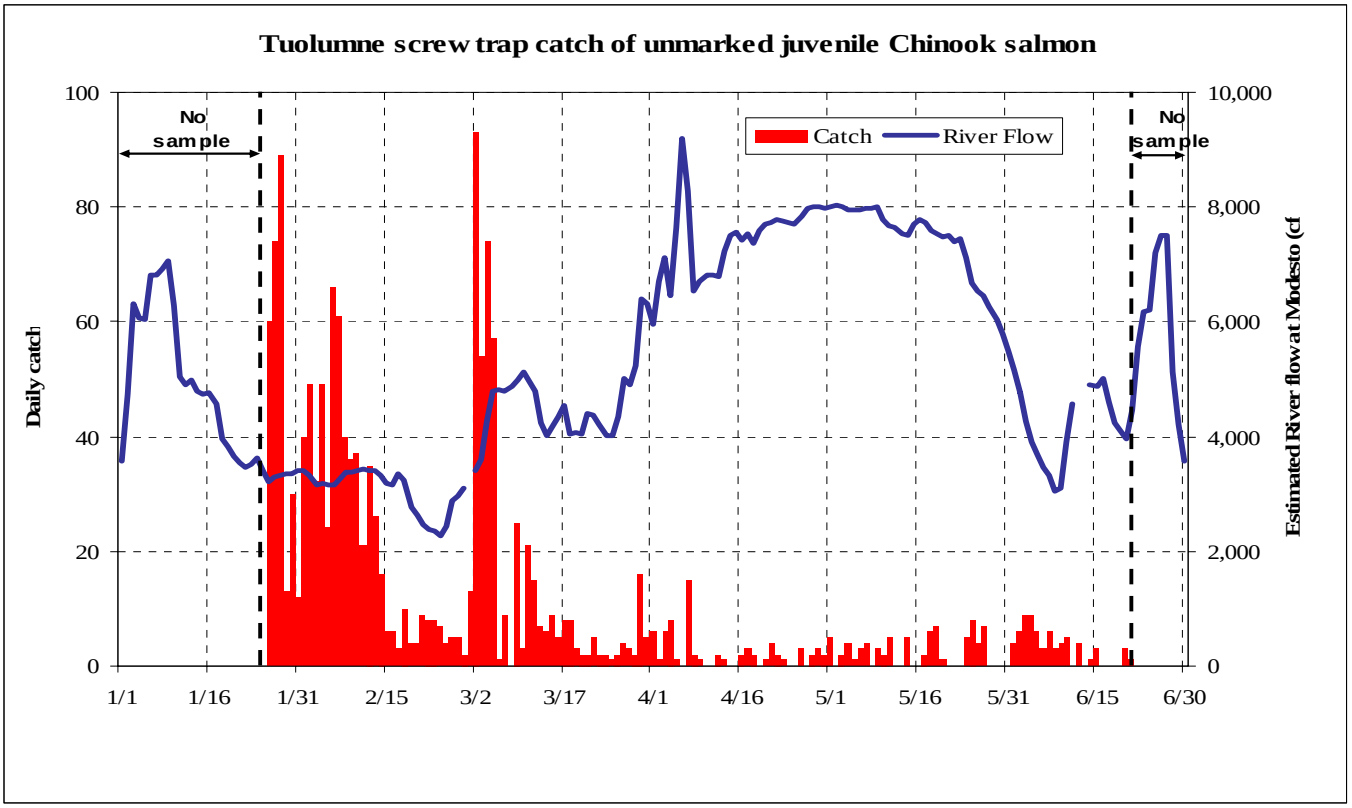
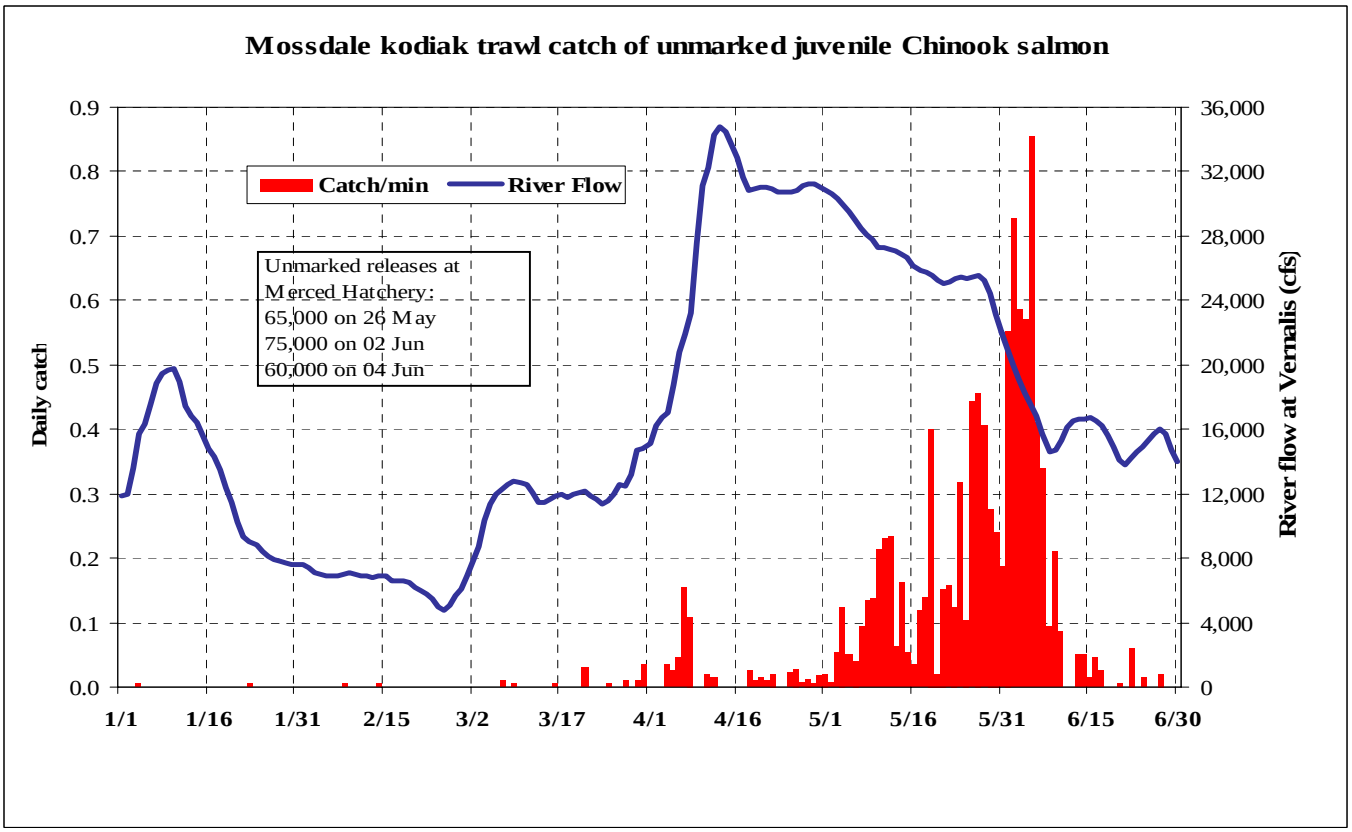
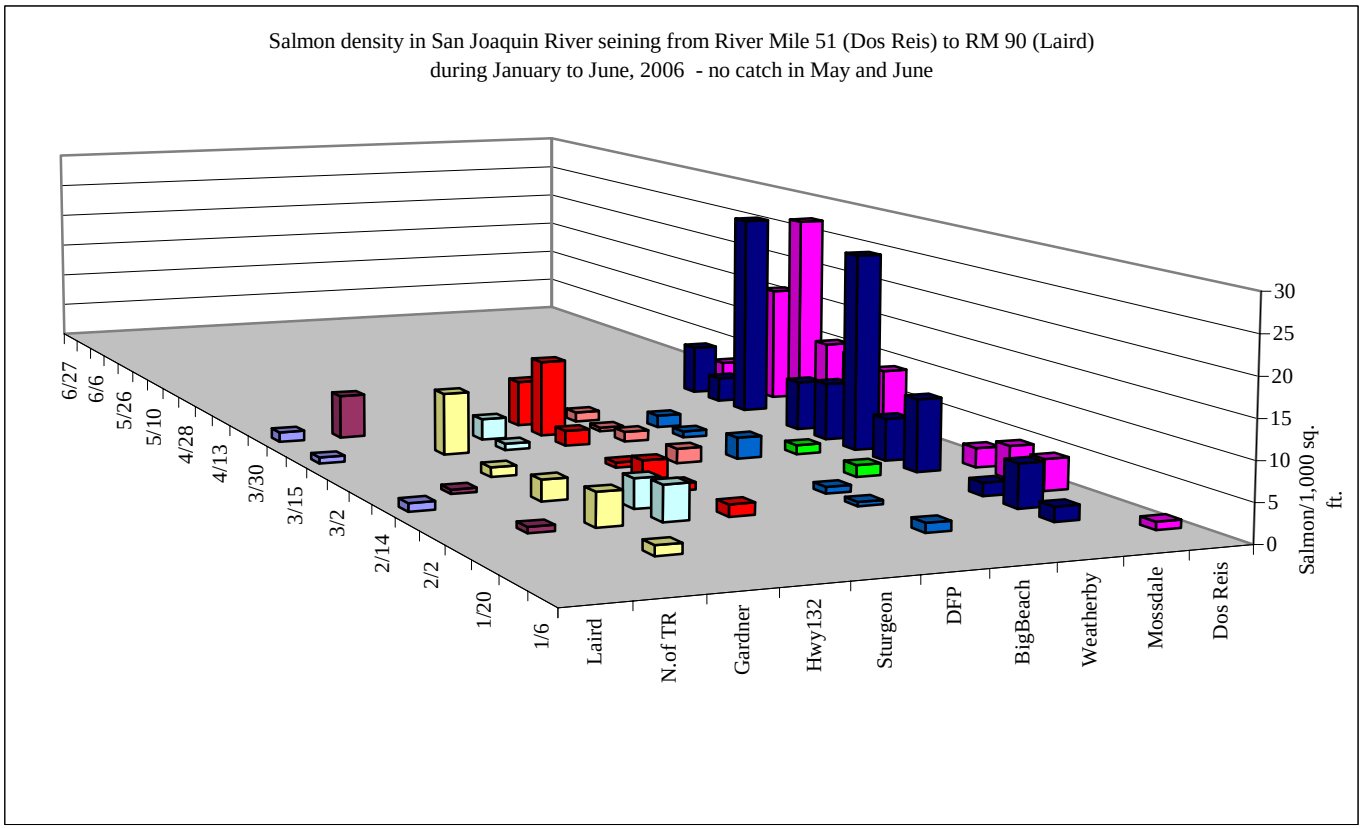


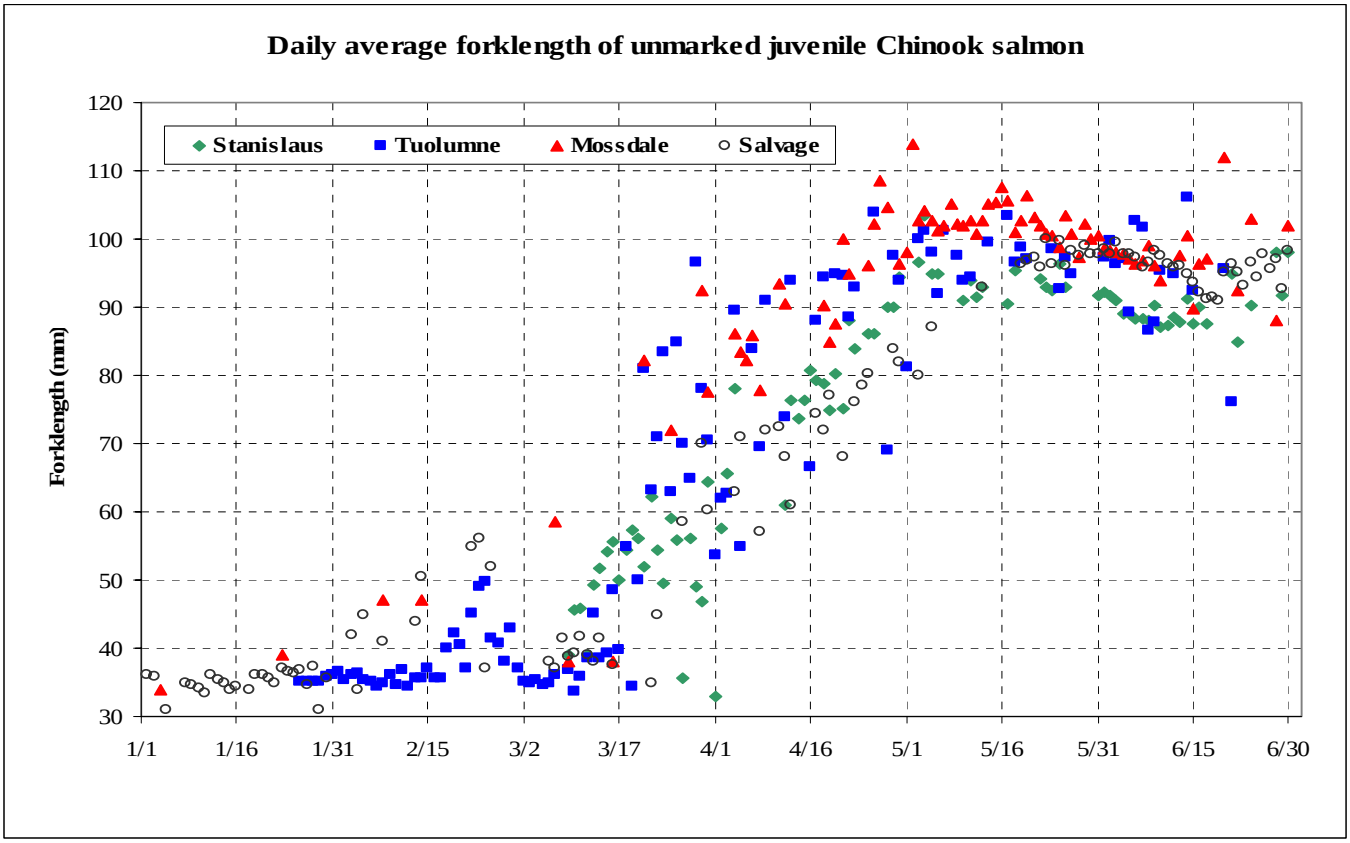
Exhibit 3 – Basin flow and salmon rearing/outmigration data

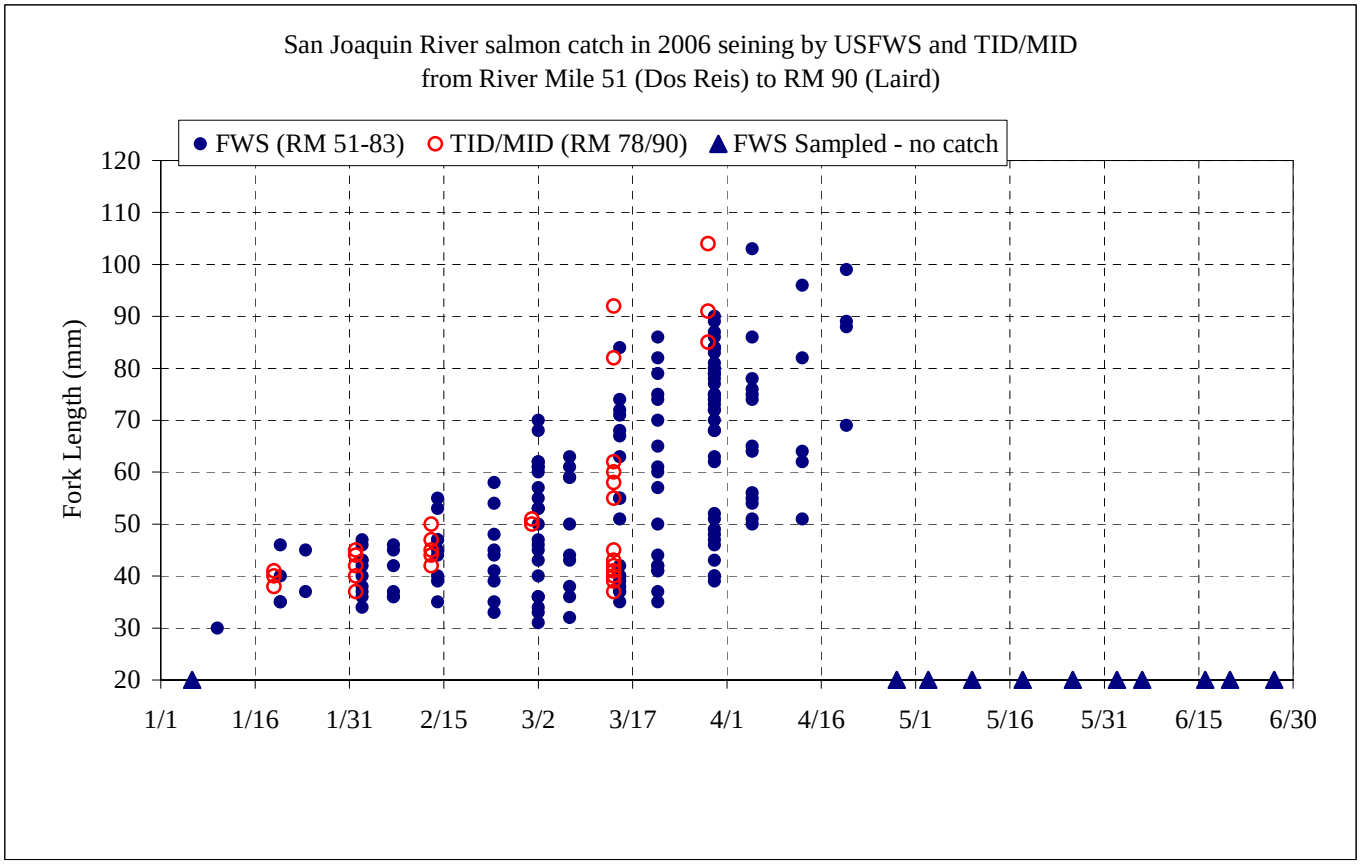



Tuolumne screw trap catch of unmarked juvenile Chinook salmon
No sample
No sample
Catch
River Flow
Daily catch
Estimated River flow at Modesto (cf
100
80
60
40
20
0
10,000
8,000
6,000
4,000
2,000
0
1/1
1/16
1/31
2/15
3/2
3/17
4/1
4/16
5/1
5/16
5/31
6/15
6/30

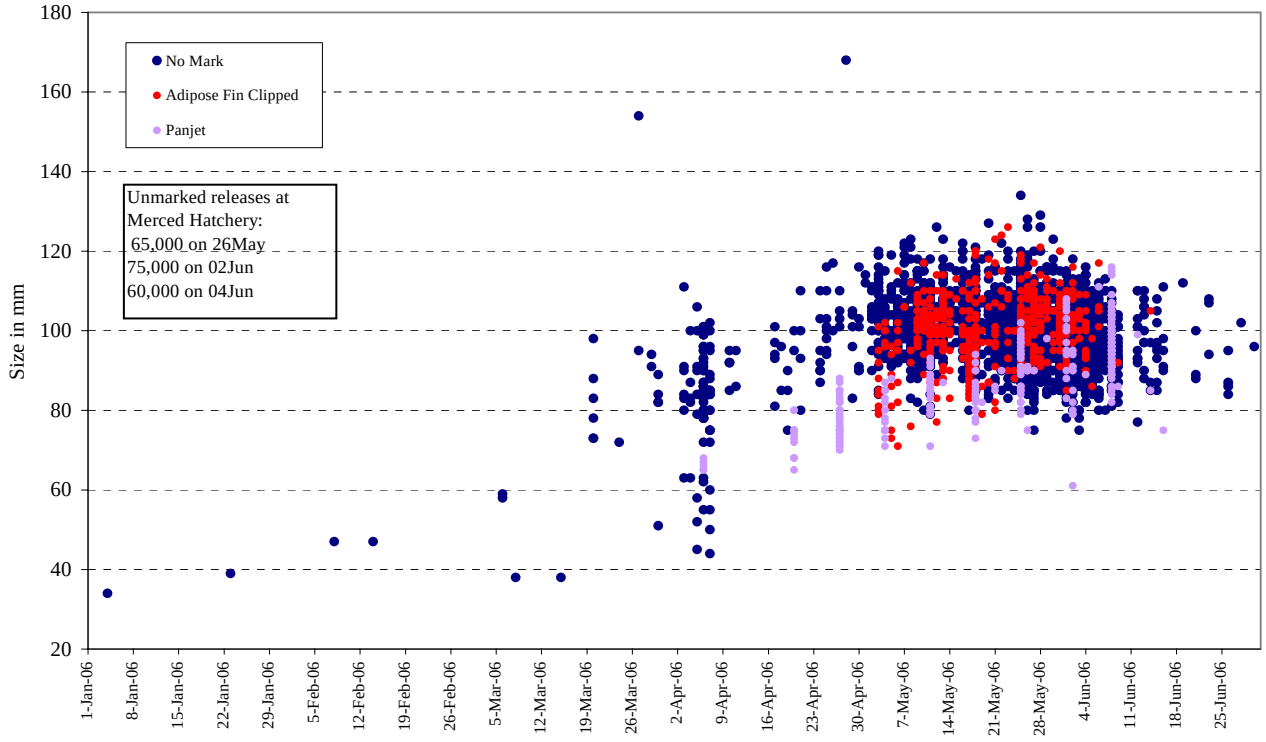

Mossdale kodiak trawl catch of unmarked juvenile Chinook salmon
Catch/min
River Flow
Unmarked releases at
Merced Hatchery:
65,000 on 26 May
75,000 on 02 Jun
60,000 on 04 Jun
Daily catch
River flow at Vernalis (cfs)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
36,000
32,000
28,000
24,000
20,000
16,000
12,000
8,000
4,000
0
1/1
1/16
1/31
2/15
3/2
3/17
4/1
4/16
5/1
5/16
5/31
6/15
6/30

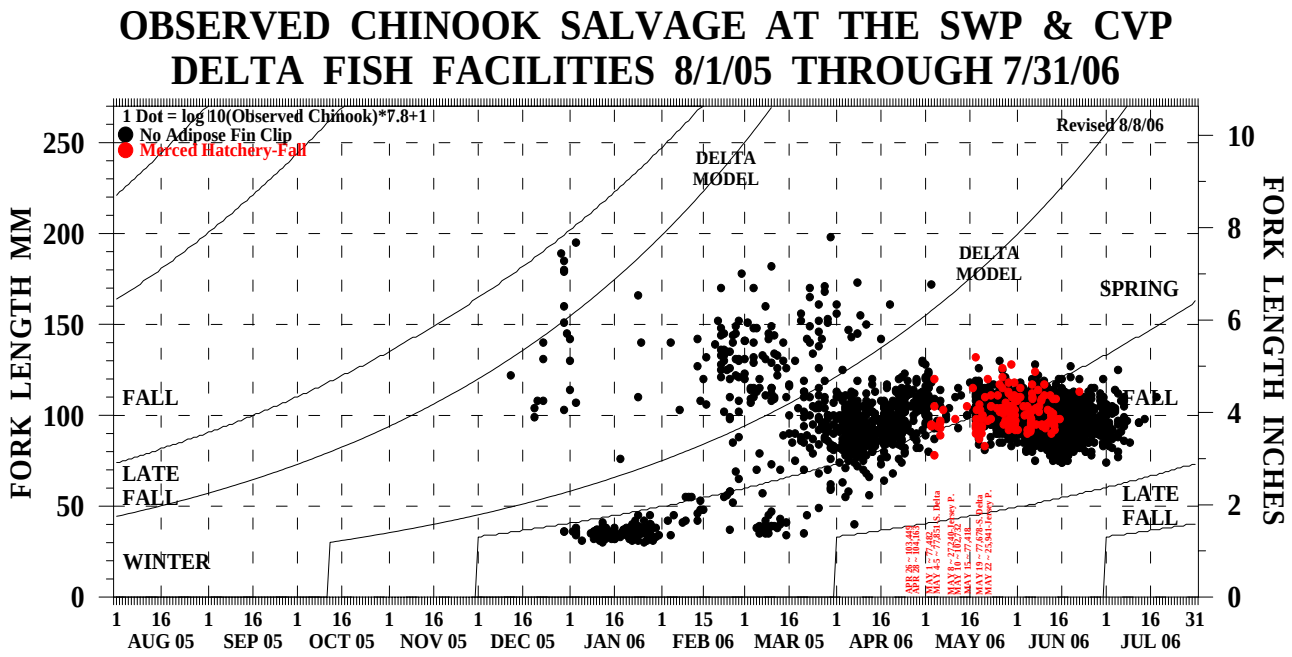

Salmon density in San Joaquin River seining from River Mile 51 (Dos Reis) to RM 90 (Laird)
during January to June, 2006 - no catch in May and June
6/27
6/6
5/26
5/10
4/28
4/13
3/30
3/15
3/2
2/14
2/2
1/20
1/6
Laird
N.of TR
Gardner
Hwy132
Sturgeon
DFP
BigBeach
Weatherby
Mossdale
Dos Reis
30
25
20
15
10
5
0
Salmon/1,000 sq. ft.


Daily average forklength of unmarked juvenile Chinook salmon
Stanislaus
Tuolumne
Mossdale
Salvage
Forklength (mm)
120
110
100
90
80
70
60
50
40
30
1/1
1/16
1/31
2/15
3/2
3/17
4/1
4/16
5/1
5/16
5/31
6/15
6/30


San Joaquin River salmon catch in 2006 seining by USFWS and TID/MID
from River Mile 51 (Dos Reis) to RM 90 (Laird)
FWS (RM 51-83)
TID/MID (RM 78/90)
FWS Sampled - no catch
Fork Length (mm)
120
110
100
90
80
70
60
50
40
30
20
1/1
1/16
1/31
2/15
3/2
3/17
4/1
4/16
5/1
5/16
5/31
6/15
6/30

Mossdale Kodiak trawl individual daily forklengths of juvenile Chinook salmon, January through June 2006





Note: “Delta Model” size/date categories are not necessarily representative of San Joaquin salmon

Exhibit 4 – Delta export and salmon salvage data

Monthly salvage and export data

STATE WATER PROJECT

2006	Total chinook salvage (no clip)			Combined	Ave. cfs	Acre ft.	Expanded salmon /	Combined salvage & loss
	Observed	Expanded	Est. Loss	salvage & loss	Export	Export	1000 ac.ft.	per 1000 ac.ft.
JANUARY	43	202	860	1,062	3,204	196,959	1.0	5.4
FEBRUARY	31	165	716	881	4,803	266,682	0.6	3.3
MARCH	110	514	2,240	2,754	2,727	167,637	3.1	16.4
APRIL	388	2,029	8,746	10,775	2,722	161,932	12.5	66.5
MAY	71	402	1,850	2,252	1,904	117,045	3.4	19.2
JUNE	595	4,844	21,784	26,628	3,638	223,639	21.7	119.1
TOT & AVG	1,238	8,156	36,196	44,352	3,166	1,133,893	7.2	39.1

CENTRAL VALLEY PROJECT

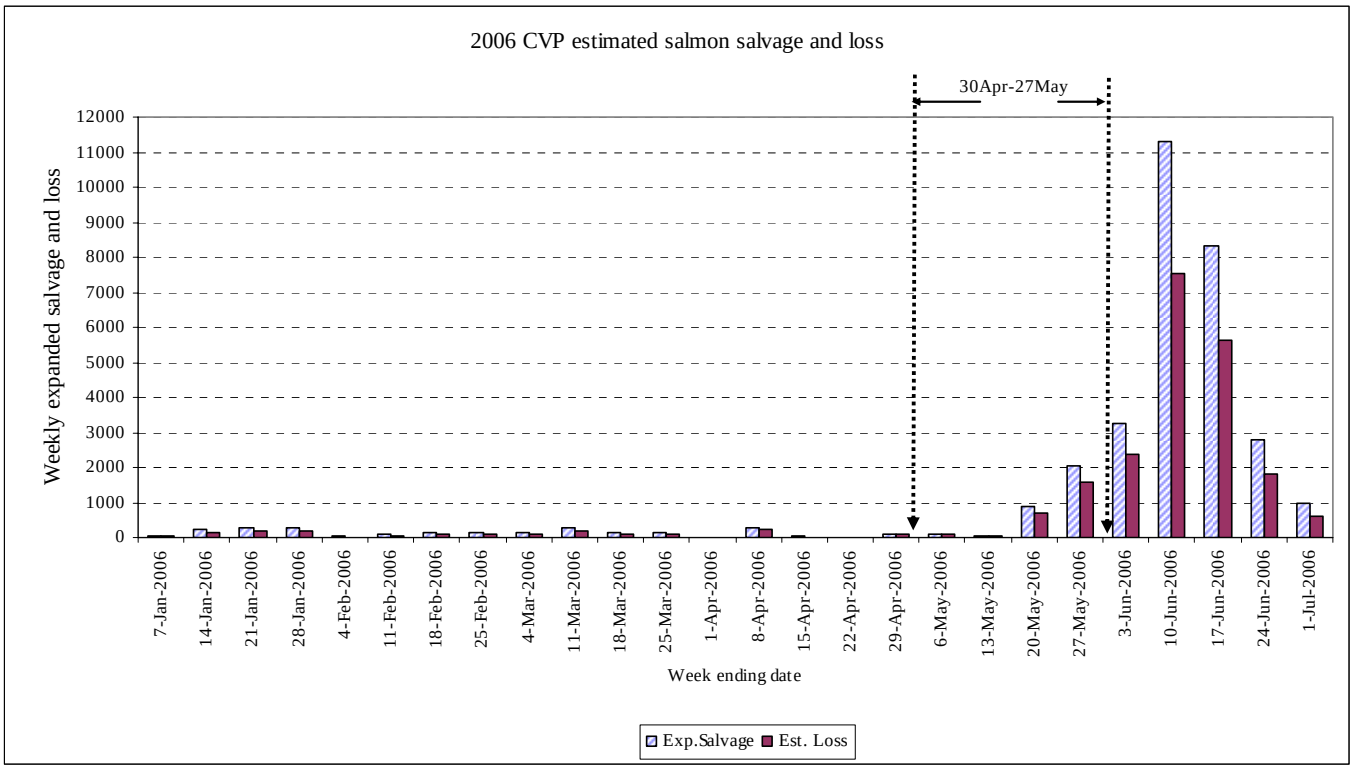
2006	Total chinook salvage (no clip)			Combined	Ave. cfs	Acre ft.	Expanded salmon /	Combined salvage & loss
	Observed	Expanded	Est. Loss	salvage & loss	Export	Export	1000 ac.ft.	per 1000 ac.ft.
JANUARY	87	811	507	1,318	3,911	240,421	3.4	5.5
FEBRUARY	36	384	240	624	4,314	239,531	1.6	2.6
MARCH	59	697	433	1,130	3,256	200,156	3.5	5.6
APRIL	56	437	378	815	816	48,544	9.0	16.8
MAY	502	5,455	4,141	9,596	1,800	110,651	49.3	86.7
JUNE	1,150	24,288	15,777	40,065	3,357	206,365	117.7	194.1
TOT & AVG	1,890	32,072	21,476	53,548	2,909	1,045,668	30.7	51.2

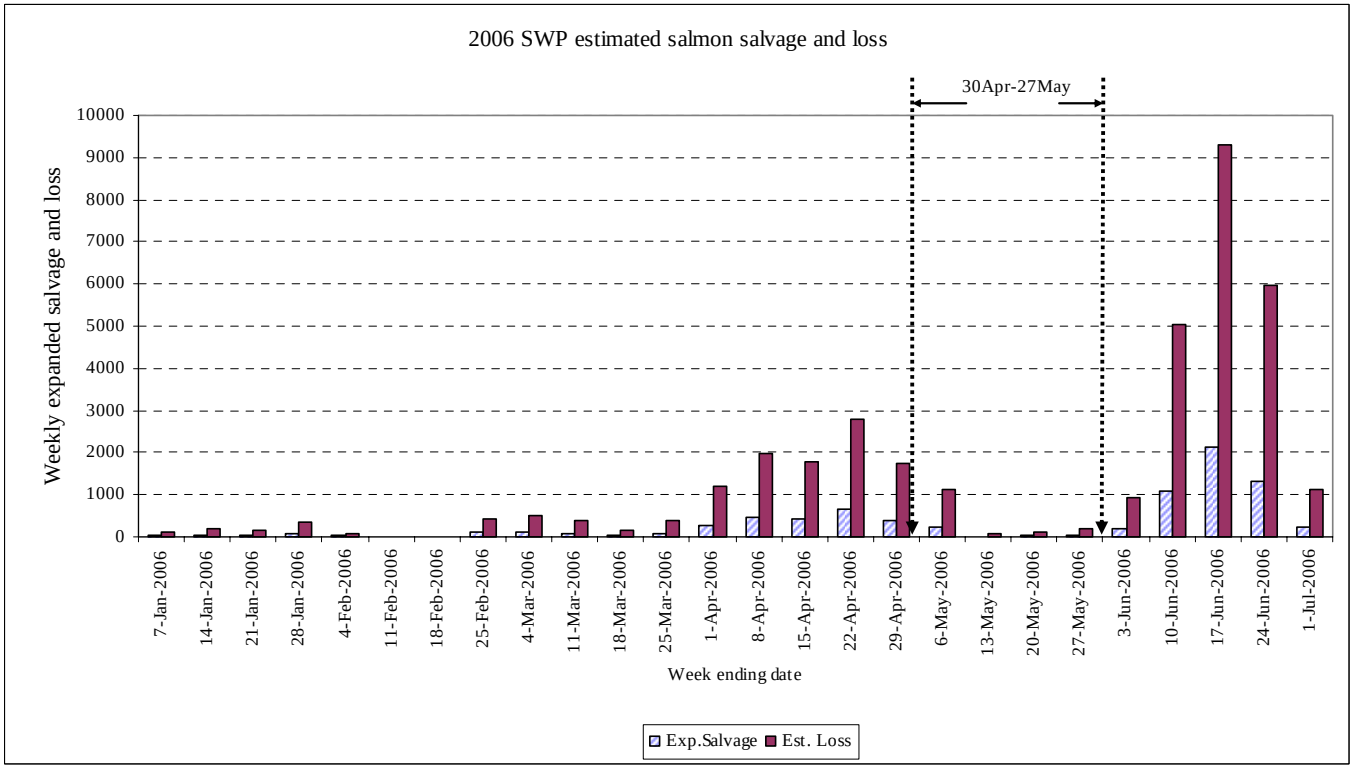
SWP + CVP								
TOT & AVG	3,128	40,228	57,672	97,900	6,075	2,179,561	18.5	44.9

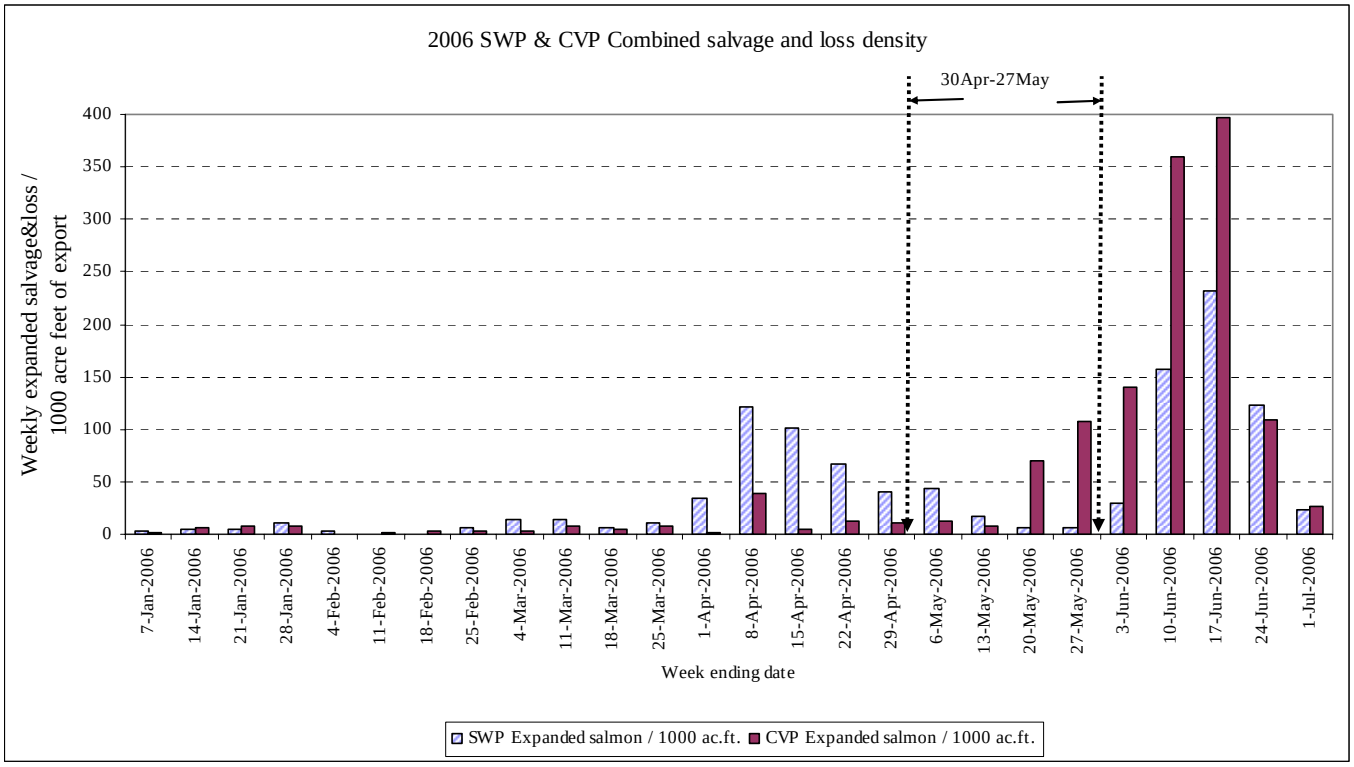
Weekly salvage and export data for Jan-Jun 2006

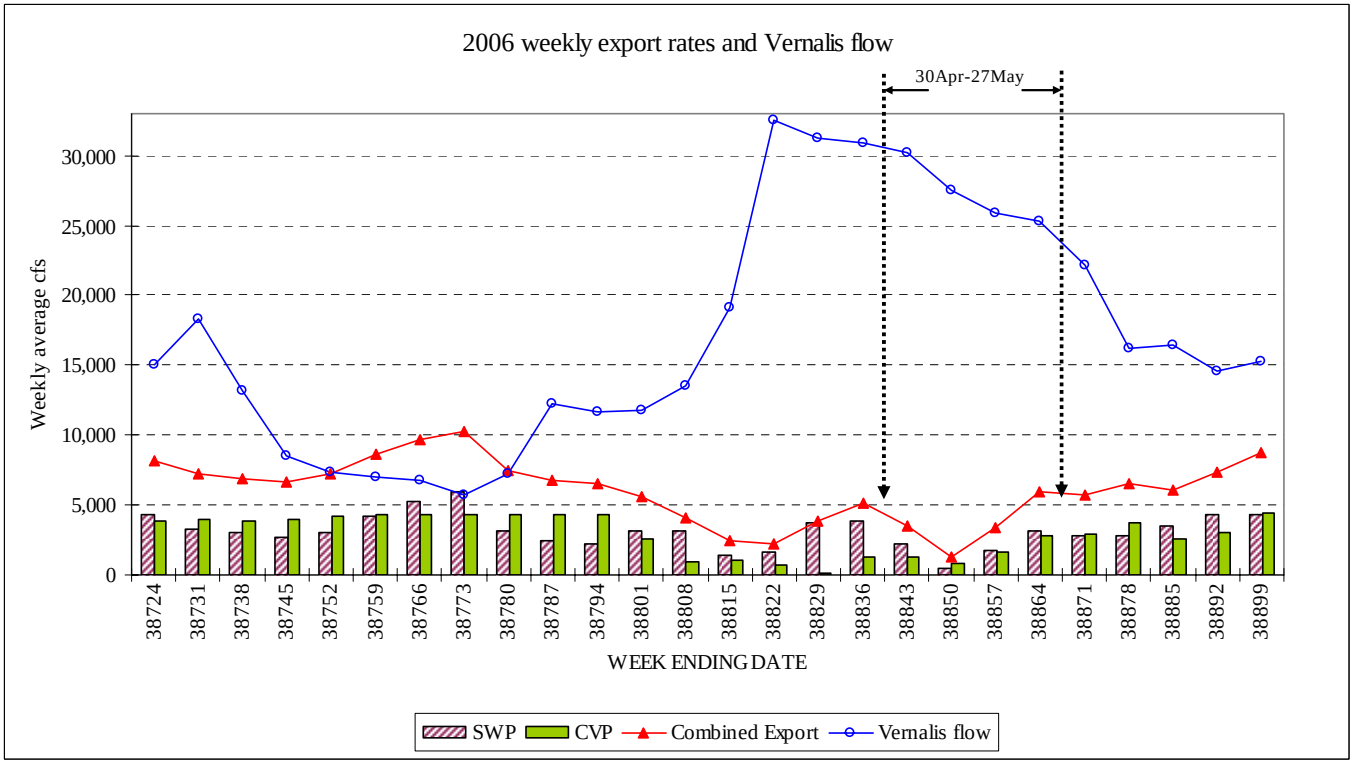
2006									
STATE WATER PROJECT							SWP	SWP	CVP&SWP
week ending							Expanded	Combined	average
date	Total chinook salvage			Combined	Ave. cfs	Acre ft.	salvage /	salvage & loss	export rate
	Observed	Exp.Salvage	Est. Loss	salvage & loss	Export	Export	1000 ac.ft.	per 1000 ac.ft.	(cfs)
7-Jan-2006	5	25	116	141	4,289	59,536	0.4	2.4	8,105
14-Jan-2006	11	42	178	220	3,265	45,321	0.9	4.9	7,236
21-Jan-2006	7	36	153	189	3,053	42,379	0.8	4.5	6,914
28-Jan-2006	17	84	351	435	2,718	37,729	2.2	11.5	6,630
4-Feb-2006	4	21	89	110	2,985	41,435	0.5	2.7	7,196
11-Feb-2006	0	0	0	0	4,253	59,036	0.0	0.0	8,572
18-Feb-2006	0	0	0	0	5,279	73,278	0.0	0.0	9,646
25-Feb-2006	20	102	442	544	5,994	83,203	1.2	6.5	10,311
4-Mar-2006	20	117	517	634	3,179	44,128	2.7	14.4	7,473
11-Mar-2006	19	93	397	490	2,429	33,717	2.8	14.5	6,738
18-Mar-2006	9	39	170	209	2,198	30,510	1.3	6.9	6,501
25-Mar-2006	18	90	397	487	3,125	43,378	2.1	11.2	5,635
1-Apr-2006	61	274	1,191	1,465	3,124	43,364	6.3	33.8	4,075
8-Apr-2006	89	459	1,995	2,454	1,449	20,114	22.8	122.0	2,464
15-Apr-2006	81	419	1,785	2,204	1,577	21,890	19.1	100.7	2,252
22-Apr-2006	127	651	2,777	3,428	3,729	51,762	12.6	66.2	3,864
29-Apr-2006	75	404	1,758	2,162	3,866	53,664	7.5	40.3	5,150
6-May-2006	42	246	1,105	1,351	2,267	31,468	7.8	42.9	3,520
13-May-2006	3	18	79	97	420	5,830	3.1	16.6	1,268
20-May-2006	4	24	113	137	1,735	20,643	1.2	6.6	3,360
27-May-2006	7	36	175	211	3,114	37,050	1.0	5.7	5,969
3-Jun-2006	38	198	935	1,133	2,773	38,492	5.1	29.4	5,677
10-Jun-2006	159	1,084	5,038	6,122	2,816	39,089	27.7	156.6	6,579
17-Jun-2006	239	2,133	9,313	11,446	3,546	49,222	43.3	232.5	6,078
24-Jun-2006	173	1,321	5,982	7,303	4,286	59,494	22.2	122.8	7,322
1-Jul-2006	10	240	1,139	1,379	4,312	59,855	4.0	23.0	8,727
Tot&avg	**1,238**	**8,156**	**36,195**	**44,351**	**3,145**	**1,125,586**	**7.6**	**41.5**	**6,049**
VAMP	56	324	1,472	1,796	1,884	94,992	3.3	18.0	3,529

							CVP	CVP	
CENTRAL VALLEY PROJECT							Expanded	Combined	Vernalis
week ending	Total chinook salvage			Combined	Ave. cfs	Acre ft.	salvage/	salvage & loss	flow
date	Observed	Expanded	Est. Loss	salvage & loss	Export	Export	1000 ac.ft.	per 1000 ac.ft.	(cfs)
7-Jan-2006	6	67	42	109	3,816	52,970	1.3	2.1	15,057
14-Jan-2006	31	216	135	351	3,971	55,121	3.9	6.4	18,357
21-Jan-2006	22	264	167	431	3,861	53,595	4.9	8.0	13,157
28-Jan-2006	27	259	163	422	3,912	54,302	4.8	7.8	8,469
4-Feb-2006	3	24	14	38	4,211	58,453	0.4	0.7	7,393
11-Feb-2006	7	72	43	115	4,319	59,952	1.2	1.9	6,940
18-Feb-2006	11	120	76	196	4,367	60,618	2.0	3.2	6,747
25-Feb-2006	12	120	76	196	4,317	59,924	2.0	3.3	5,671
4-Mar-2006	11	132	87	219	4,294	59,605	2.2	3.7	7,191
11-Mar-2006	25	289	172	461	4,309	59,813	4.8	7.7	12,271
18-Mar-2006	13	156	95	251	4,303	59,730	2.6	4.2	11,686
25-Mar-2006	13	156	100	256	2,510	34,841	4.5	7.3	11,757
1-Apr-2006	1	12	10	22	951	13,201	0.9	1.7	13,500
8-Apr-2006	43	293	250	543	1,015	14,089	20.8	38.5	19,157
15-Apr-2006	2	24	22	46	675	9,370	2.6	4.9	32,486
22-Apr-2006	2	12	10	22	135	1,874	6.4	11.7	31,271
29-Apr-2006	8	96	85	181	1,284	17,823	5.4	10.2	30,929
6-May-2006	11	108	98	206	1,253	17,393	6.2	11.8	30,186
13-May-2006	4	48	45	93	848	11,771	4.1	7.9	27,486
20-May-2006	115	890	687	1,577	1,625	22,557	39.5	69.9	25,929
27-May-2006	172	2,064	1,563	3,627	2,855	33,969	60.8	106.8	25,300
3-Jun-2006	270	3,240	2,395	5,635	2,904	40,310	80.4	139.8	22,137
10-Jun-2006	517	11,304	7,513	18,817	3,763	52,234	216.4	360.2	16,177
17-Jun-2006	369	8,328	5,609	13,937	2,532	35,147	236.9	396.5	16,480
24-Jun-2006	115	2,796	1,798	4,594	3,036	42,143	66.3	109.0	14,583
1-Jul-2006	70	984	591	1,575	4,415	61,285	16.1	25.7	15,246
Tot&avg	**1,880**	**32,074**	**21,846**	**53,920**	**2,903**	**1,042,090**	**30.7**	**52.0**	**17,137**
VAMP	302	3,110	2,393	5,503	1,645	85,689	27.6	49.1	27,225


2006 CVP estimated salmon salvage and loss
30Apr-27May
Weekly expanded salvage and loss
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
7-Jan-2006
14-Jan-2006
21-Jan-2006
28-Jan-2006
4-Feb-2006
11-Feb-2006
18-Feb-2006
25-Feb-2006
4-Mar-2006
11-Mar-2006
18-Mar-2006
25-Mar-2006
1-Apr-2006
8-Apr-2006
15-Apr-2006
22-Apr-2006
29-Apr-2006
6-May-2006
13-May-2006
20-May-2006
27-May-2006
3-Jun-2006
10-Jun-2006
17-Jun-2006
24-Jun-2006
1-Jul-2006
Week ending date
Exp.Salvage
Est. Loss


2006 SWP estimated salmon salvage and loss
30Apr-27May
Weekly expanded salvage and loss
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
7-Jan-2006
14-Jan-2006
21-Jan-2006
28-Jan-2006
4-Feb-2006
11-Feb-2006
18-Feb-2006
25-Feb-2006
4-Mar-2006
11-Mar-2006
18-Mar-2006
25-Mar-2006
1-Apr-2006
8-Apr-2006
15-Apr-2006
22-Apr-2006
29-Apr-2006
6-May-2006
13-May-2006
20-May-2006
27-May-2006
3-Jun-2006
10-Jun-2006
17-Jun-2006
24-Jun-2006
1-Jul-2006
Week ending date
Exp.Salvage
Est. Loss


2006 SWP & CVP Combined salvage and loss density
30Apr-27May
Weekly expanded salvage&loss / 1000 acre feet of export
400
350
300
250
200
150
100
50
0
7-Jan-2006
14-Jan-2006
21-Jan-2006
28-Jan-2006
4-Feb-2006
11-Feb-2006
18-Feb-2006
25-Feb-2006
4-Mar-2006
11-Mar-2006
18-Mar-2006
25-Mar-2006
1-Apr-2006
8-Apr-2006
15-Apr-2006
22-Apr-2006
29-Apr-2006
6-May-2006
13-May-2006
20-May-2006
27-May-2006
3-Jun-2006
10-Jun-2006
17-Jun-2006
24-Jun-2006
1-Jul-2006
Week ending date
SWP Expanded salmon / 1000 ac.ft.
CVP Expanded salmon / 1000 ac.ft.


2006 weekly export rates and Vernalis flow
30Apr-27May
Weekly average cfs
30,000
25,000
20,000
15,000
10,000
5,000
0
38724
38731
38738
38745
38752
38759
38766
38773
38780
38787
38794
38801
38808
38815
38822
38829
38836
38843
38850
38857
38864
38871
38878
38885
38892
38899
WEEK ENDING DATE
SWP
CVP
Combined Export
Vernalis flow

OBSERVED CHINOOK SALVAGE AT THE SWP & CVP
DELTA FISH FACILITIES 8/1/05 THROUGH 7/31/06

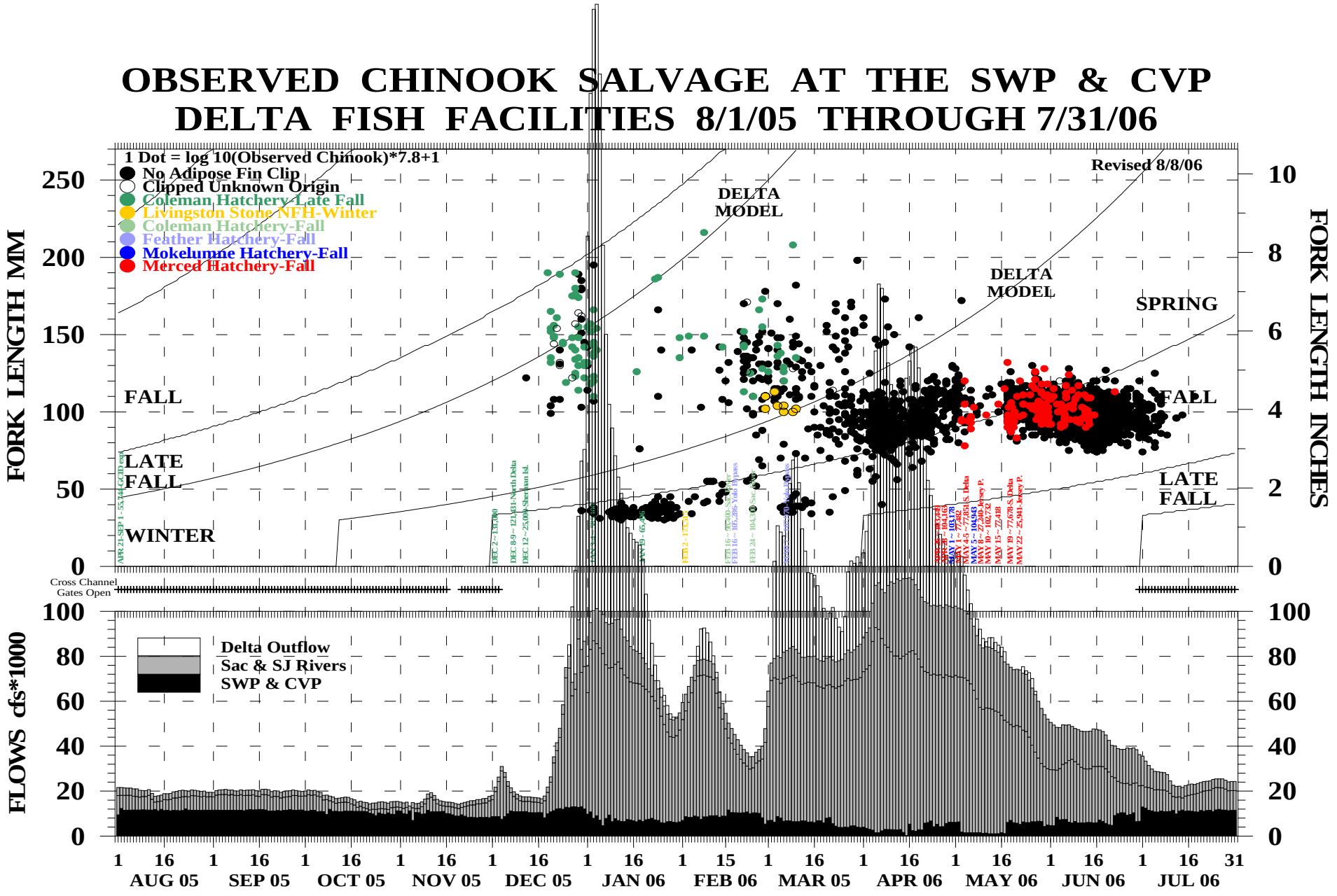
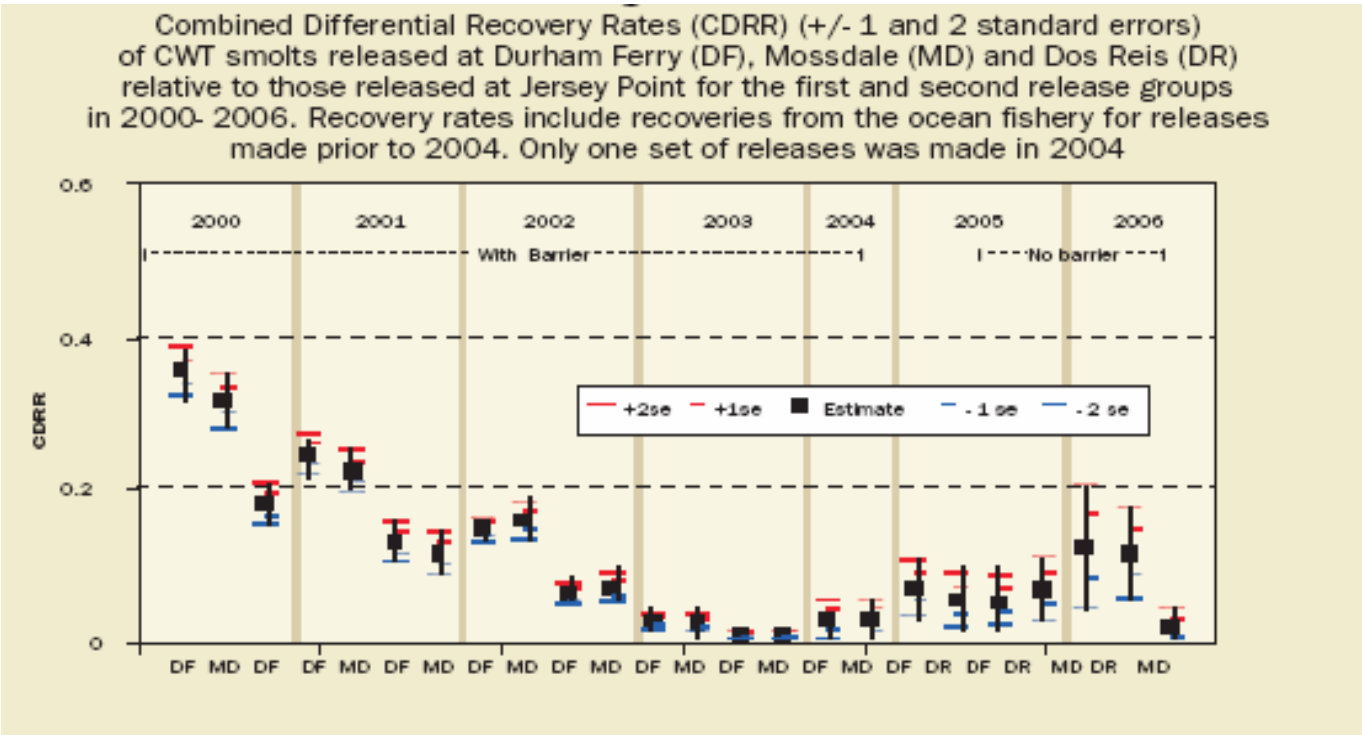
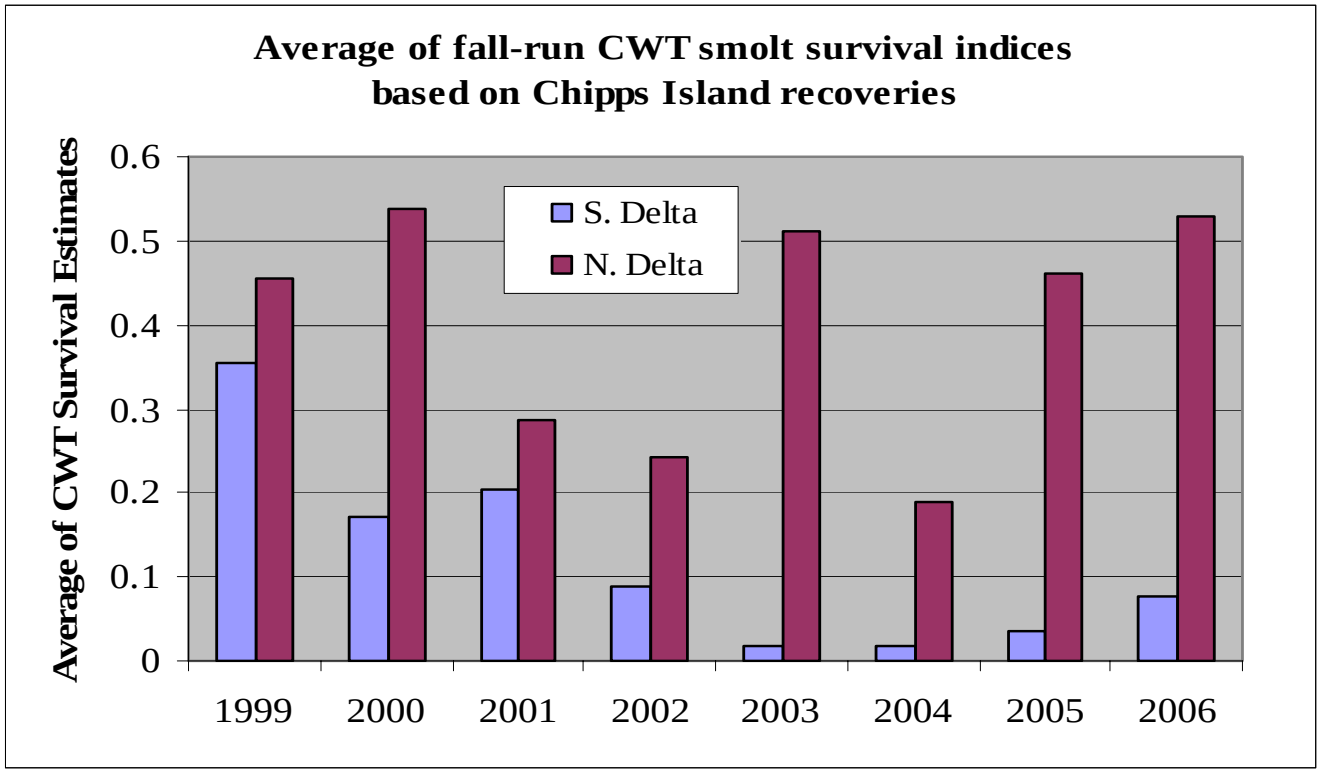


Exhibit 5 – Delta CWT smolt survival results

VAMP CWT survival study results to date; 2005 & 2006 were flood flow years and the Head of Old River Barrier could not be installed; CDRR is the relative survival rate from south delta release locations to Jersey Point (from SJRGA 2007, pg. 54)



Comparison of South Delta (including VAMP) and North Delta survival studies

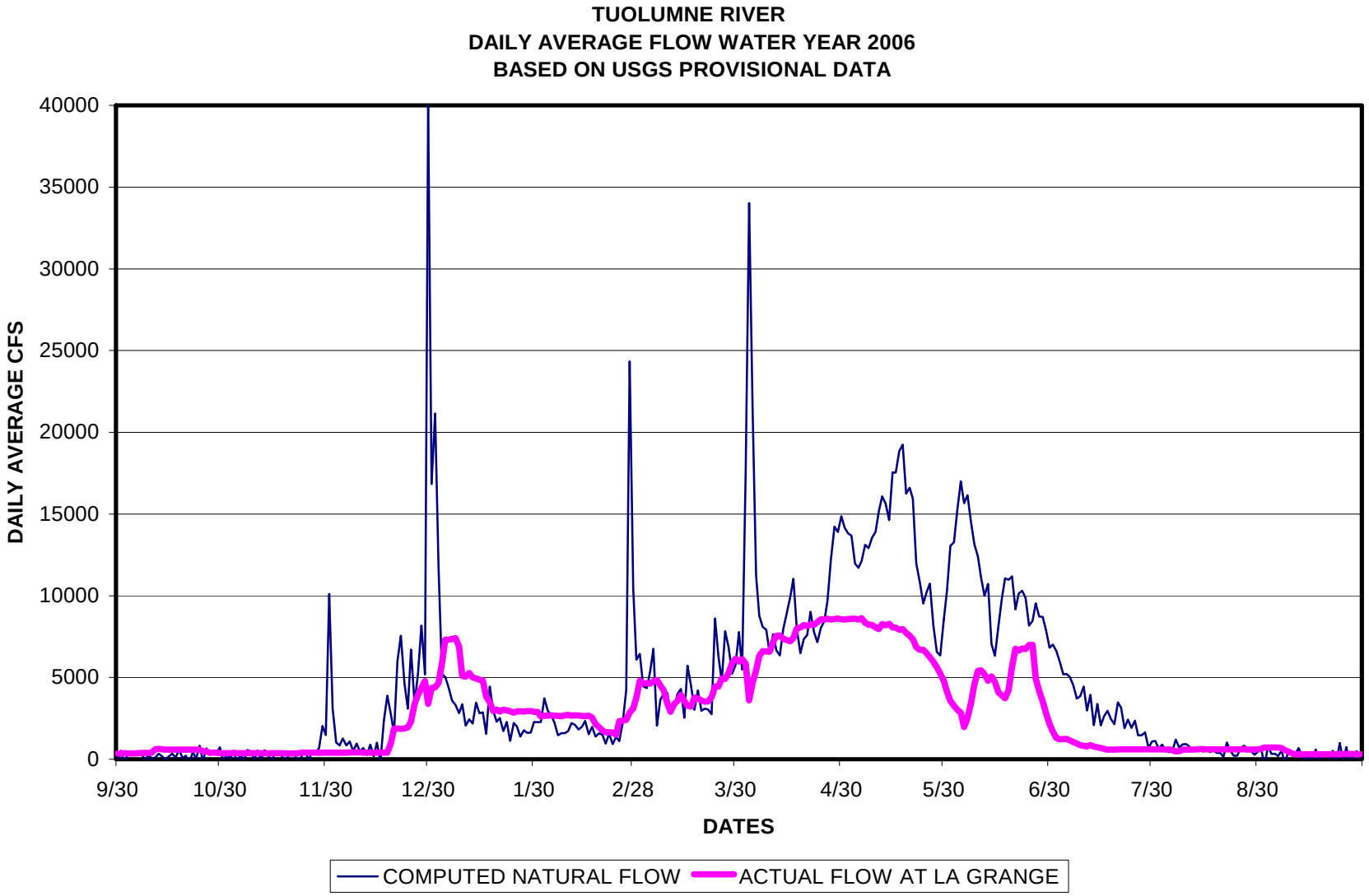


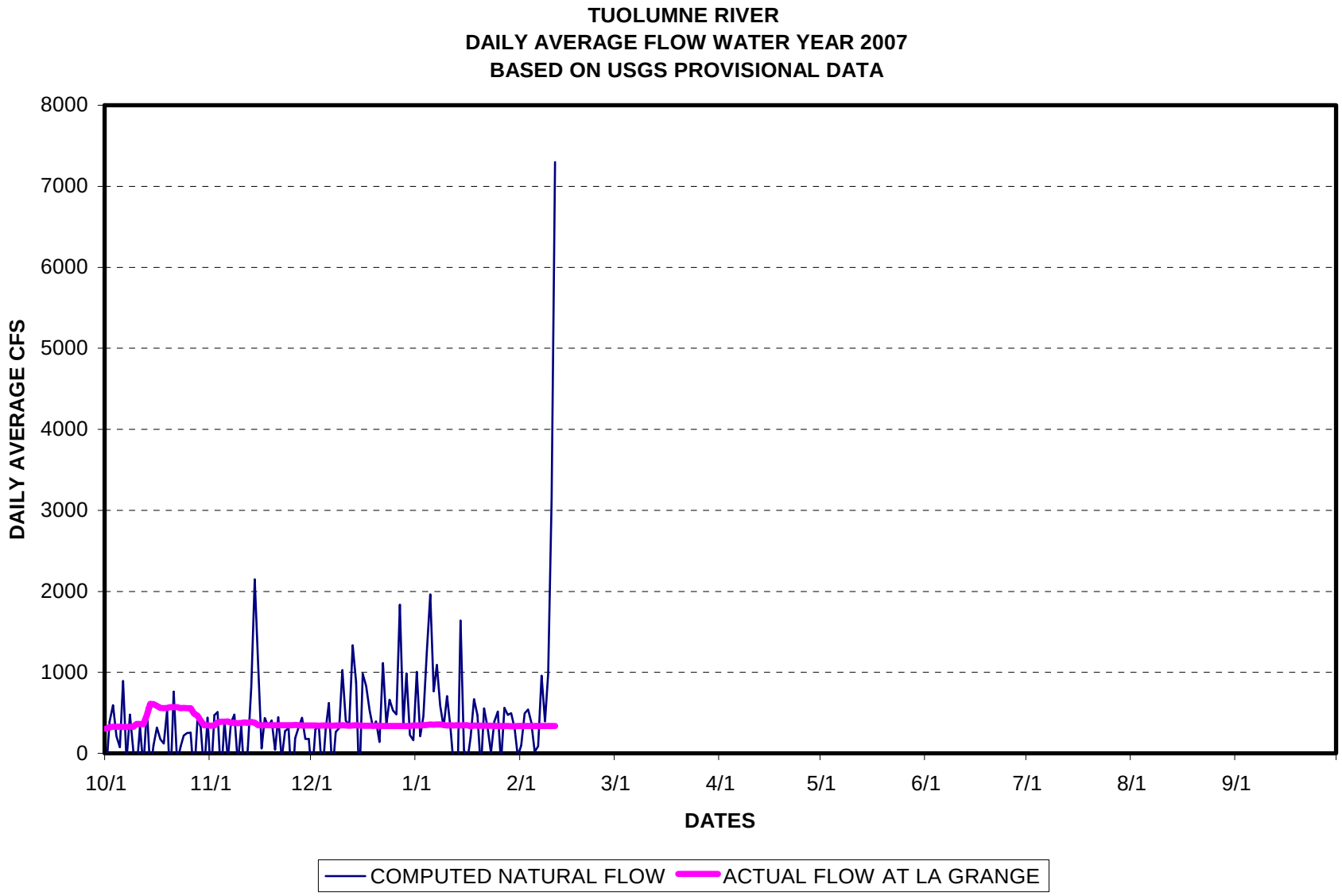
Attachment -A-

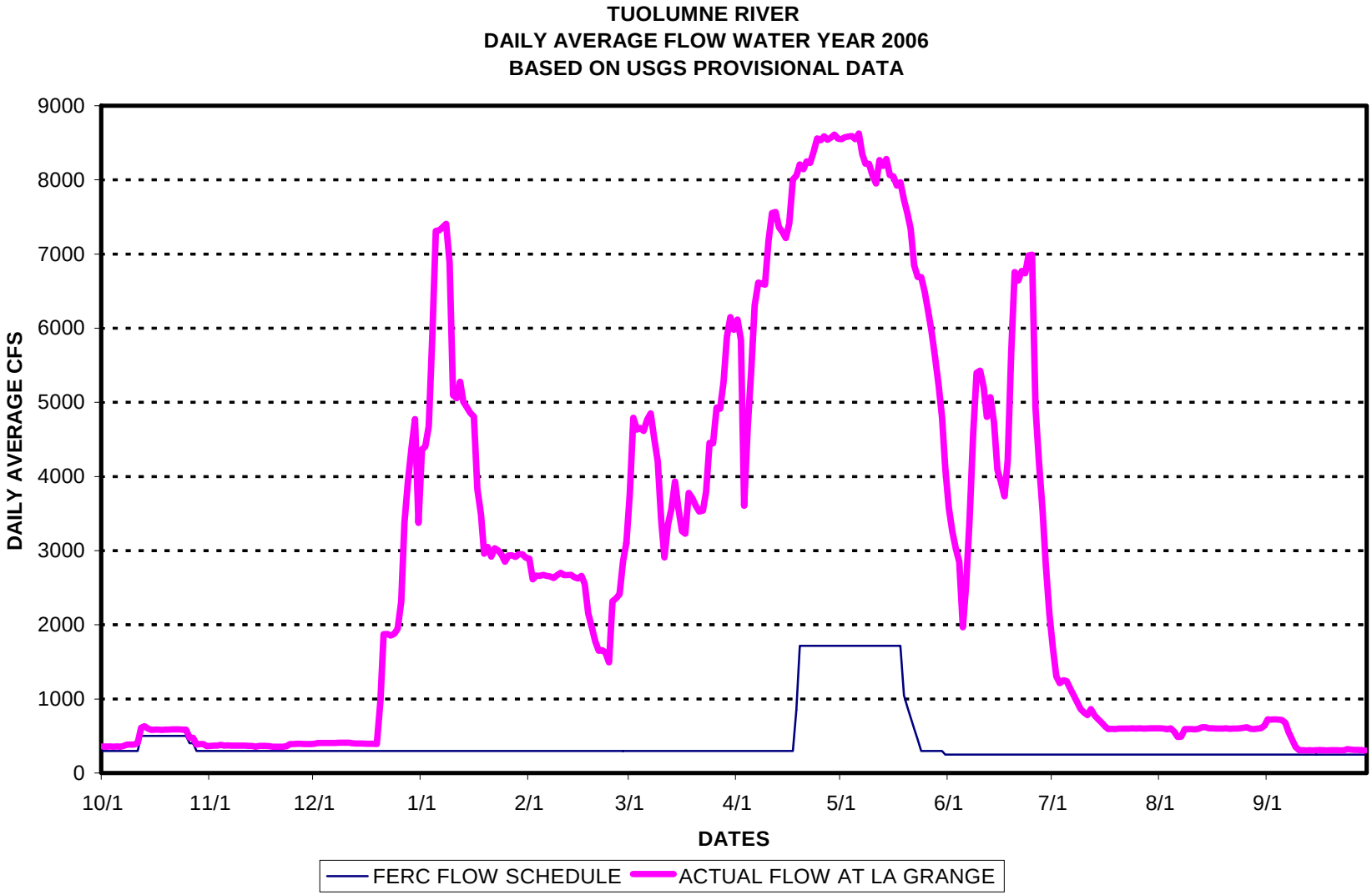
Water, Flows, Temperature, and Flow Schedule Correspondence

1. Graphs of flows, FERC flow schedule, reservoir status, and precipitation data
    - 2006/2007 Water Years (Oct-Sep) daily average computed natural flow, actual flow, and FERC flow schedule at La Grange
    - 2006/2007 Water Years actual flow: Tuolumne at Modesto, Stanislaus at Ripon, Merced at Cressey, San Joaquin at Stevinson and at Vernalis
    - 2006/2007 Water Years Don Pedro Reservoir storage
    - 2006/2007 Precipitation Years (Sep-Aug) watershed precipitation index and snow sensor water content index as percent of average
2. Graphs of water temperature, conductivity, and air temperature
    - 2006/2007 Water Years daily average water temperature for Tuolumne and San Joaquin Rivers
    - 2006/2007 Water Years daily average conductivity for Tuolumne and San Joaquin Rivers
    - Modesto air temperature graphs for Water Years 2006/2007
3. Flow schedule correspondence for 2006
    - 20Mar – Review of Fall 2005 pulse flow and 45-day period
    - 13Apr – Initial 2006-2007 fish flow year schedule and basin index update
    - 11Oct – Final flow schedule
    - 11Jan2007 – Review of 2006 fall pulse flow, 45-day period, and update of water year classification

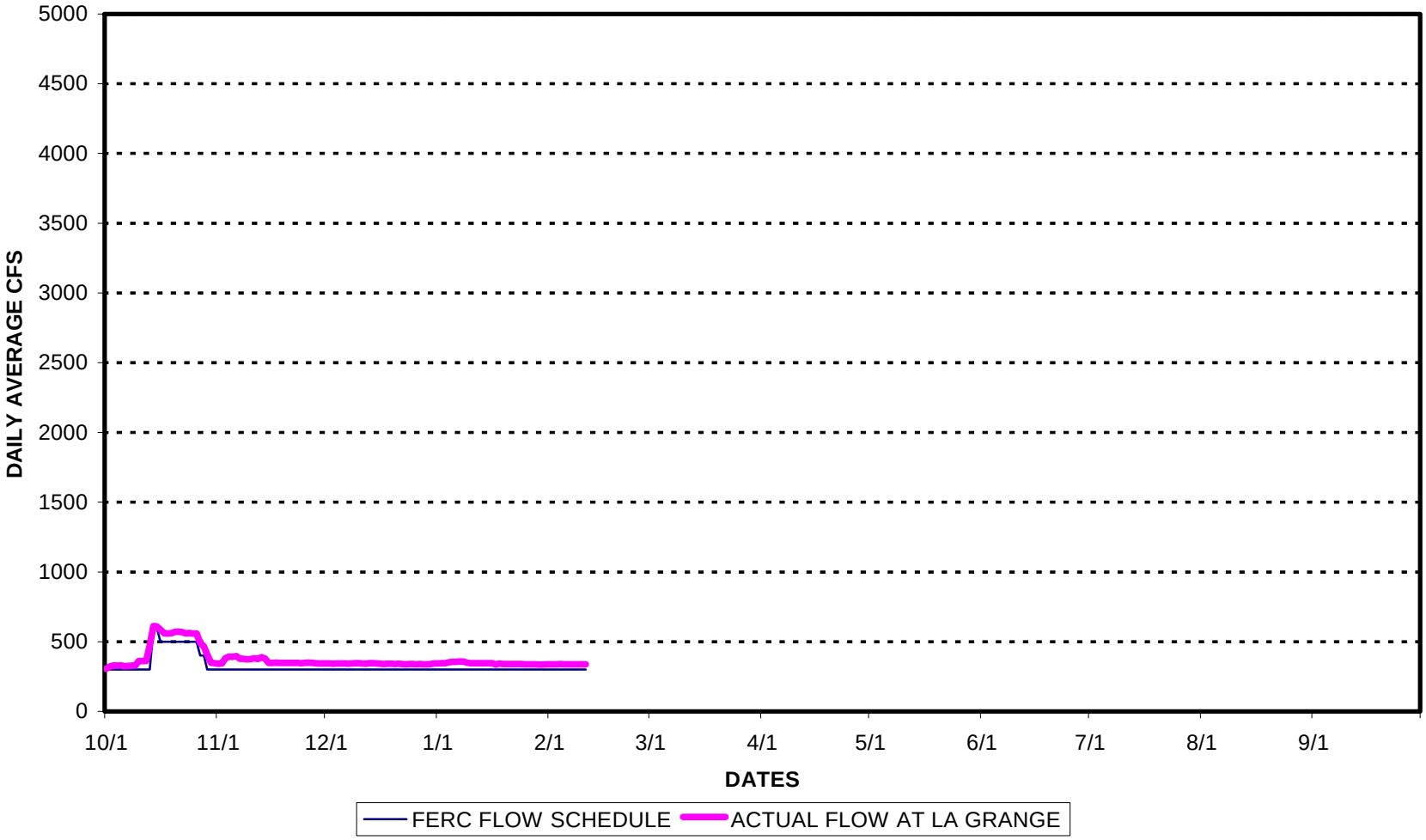
1. Graphs of flows, FERC flow schedule, reservoir status, and precipitation data

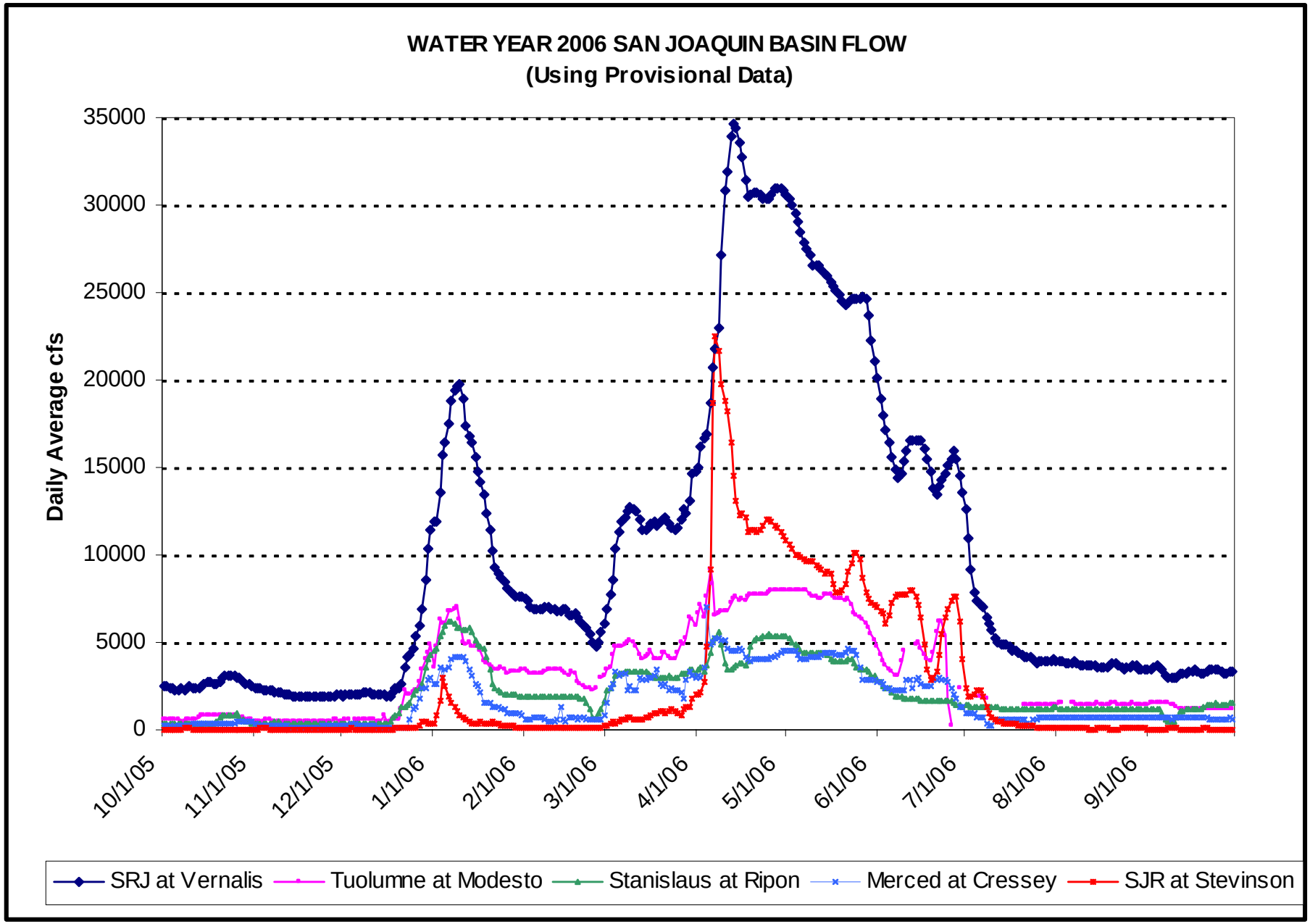

TUOLUMNE RIVER
DAILY AVERAGE FLOW WATER YEAR 2006
BASED ON USGS PROVISIONAL DATA
DAILY AVERAGE CFS
40000
35000
30000
25000
20000
15000
10000
5000
0
9/30
10/30
11/30
12/30
1/30
2/28
3/30
4/30
5/30
6/30
7/30
8/30
DATES
COMPUTED NATURAL FLOW
ACTUAL FLOW AT LA GRANGE

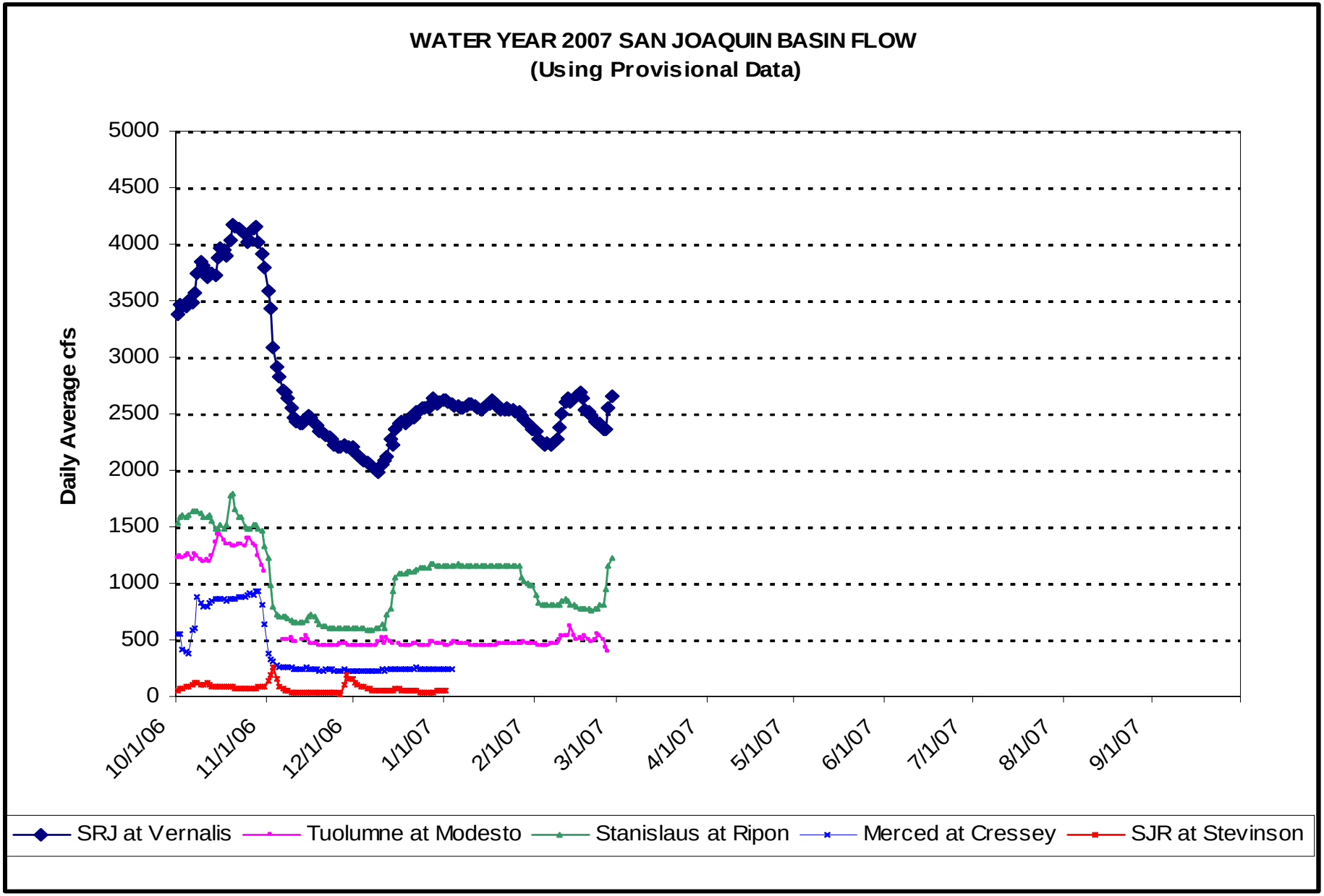

TUOLUMNE RIVER
DAILY AVERAGE FLOW WATER YEAR 2007
BASED ON USGS PROVISIONAL DATA
DAILY AVERAGE CFS
8000
7000
6000
5000
4000
3000
2000
1000
0
10/1
11/1
12/1
1/1
2/1
3/1
4/1
5/1
6/1
7/1
8/1
9/1
DATES
COMPUTED NATURAL FLOW
ACTUAL FLOW AT LA GRANGE

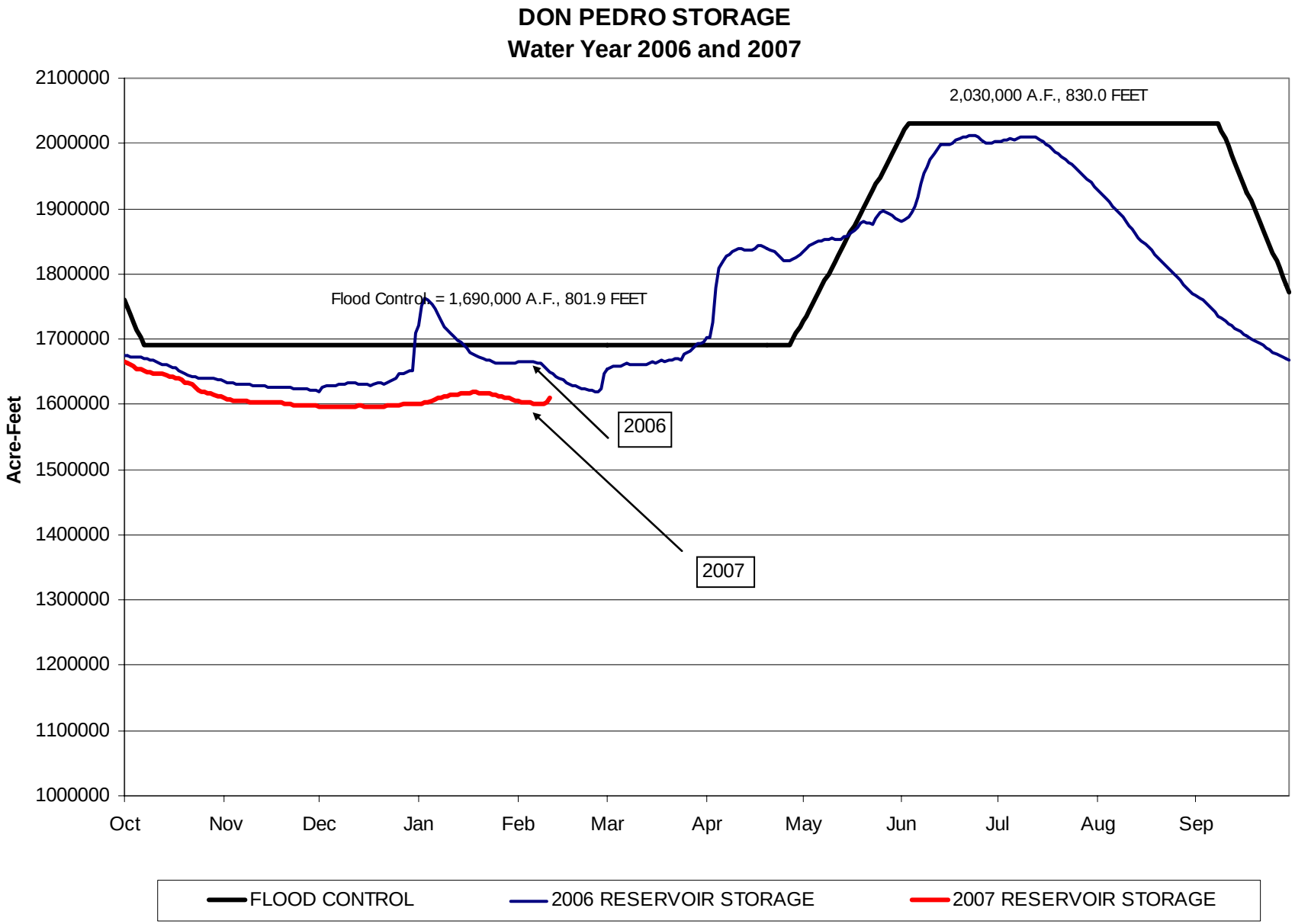

TUOLUMNE RIVER
DAILY AVERAGE FLOW WATER YEAR 2006
BASED ON USGS PROVISIONAL DATA
DAILY AVERAGE CFS
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
10/1
11/1
12/1
1/1
2/1
3/1
4/1
5/1
6/1
7/1
8/1
9/1
DATES
FERC FLOW SCHEDULE
ACTUAL FLOW AT LA GRANGE

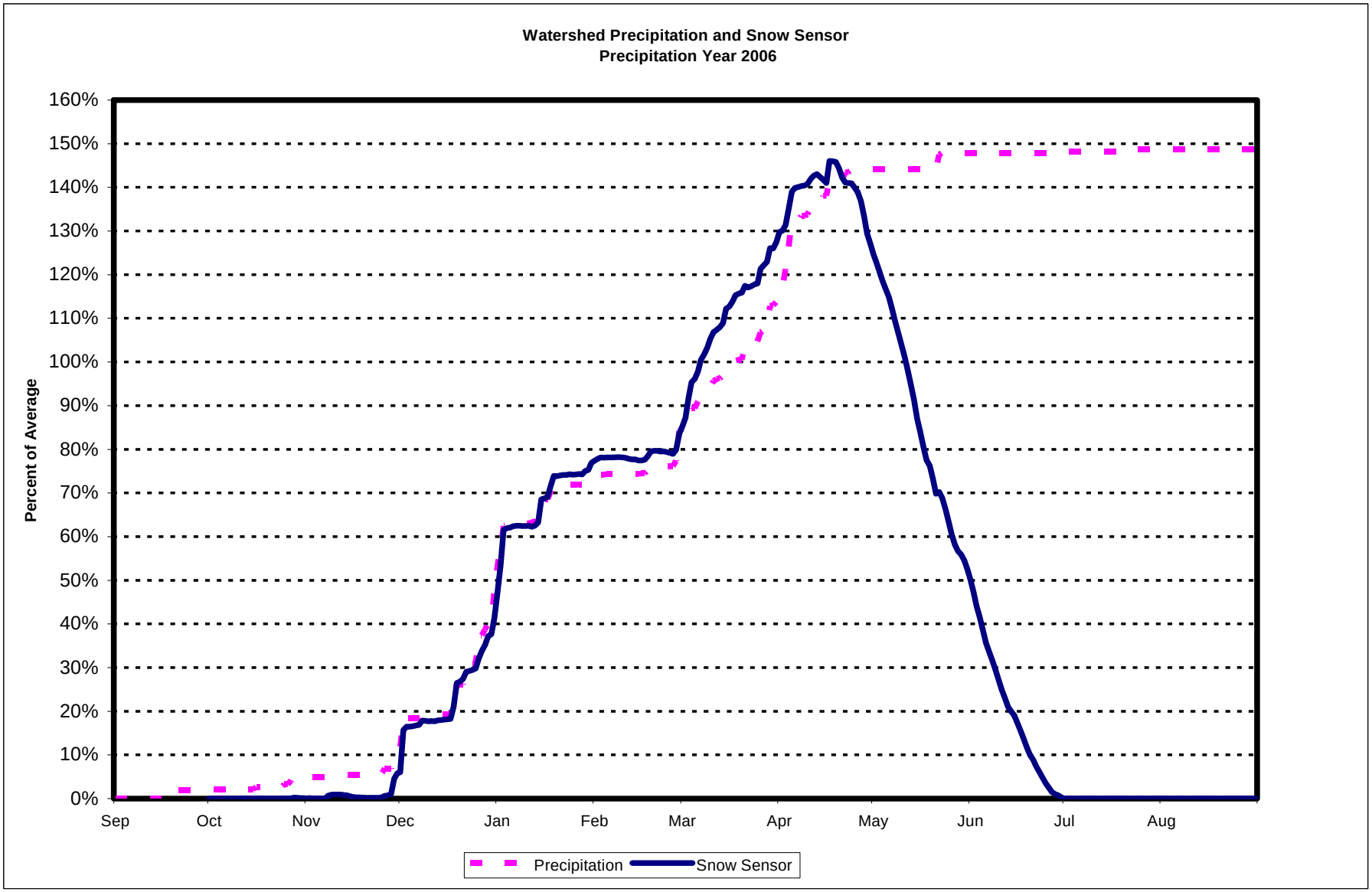
TUOLUMNE RIVER
DAILY AVERAGE FLOW WATER YEAR 2007
BASED ON USGS PROVISIONAL DATA

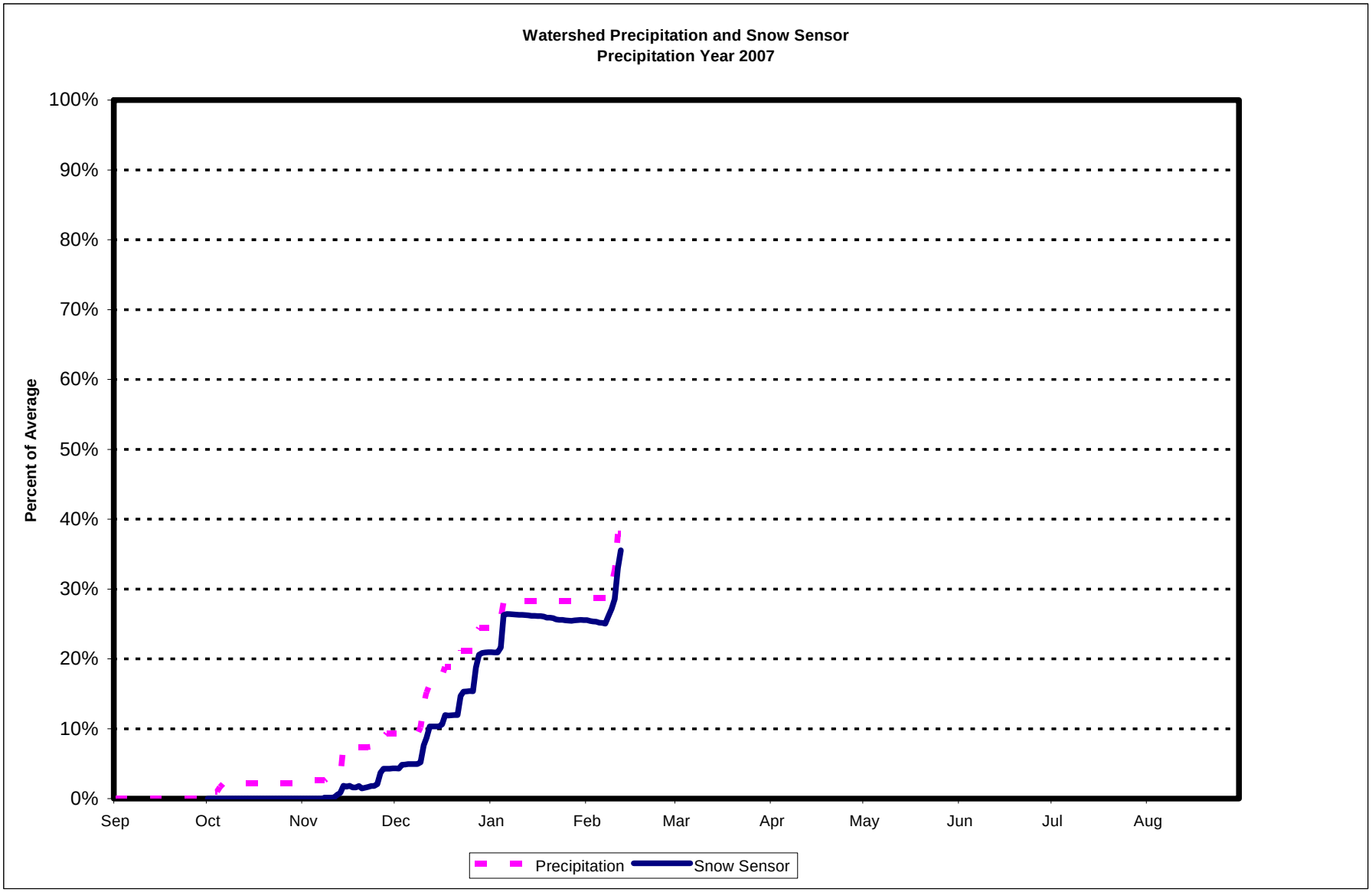



WATER YEAR 2006 SAN JOAQUIN BASIN FLOW
(Using Provisional Data)
Daily Average cfs
35000
30000
25000
20000
15000
10000
5000
0
10/1/05
11/1/05
12/1/05
1/1/06
2/1/06
3/1/06
4/1/06
5/1/06
6/1/06
7/1/06
8/1/06
9/1/06
SRJ at Vernalis
Tuolumne at Modesto
Stanislaus at Ripon
Merced at Cressey
SJR at Stevinson

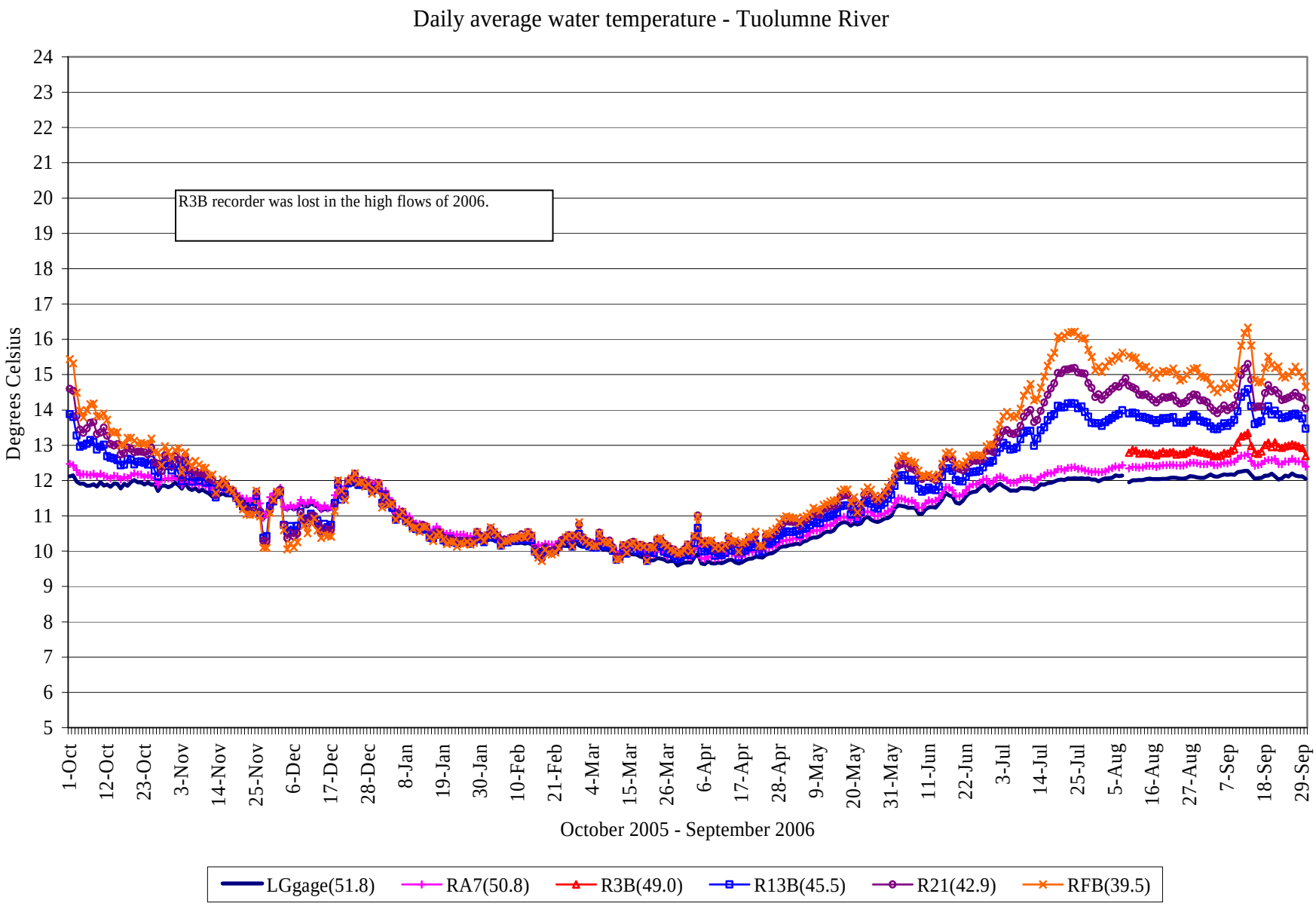

WATER YEAR 2007 SAN JOAQUIN BASIN FLOW
(Using Provisional Data)
Daily Average cfs
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
10/1/06
11/1/06
12/1/06
1/1/07
2/1/07
3/1/07
4/1/07
5/1/07
6/1/07
7/1/07
8/1/07
9/1/07
SRJ at Vernalis
Tuolumne at Modesto
Stanislaus at Ripon
Merced at Cressey
SJR at Stevinson

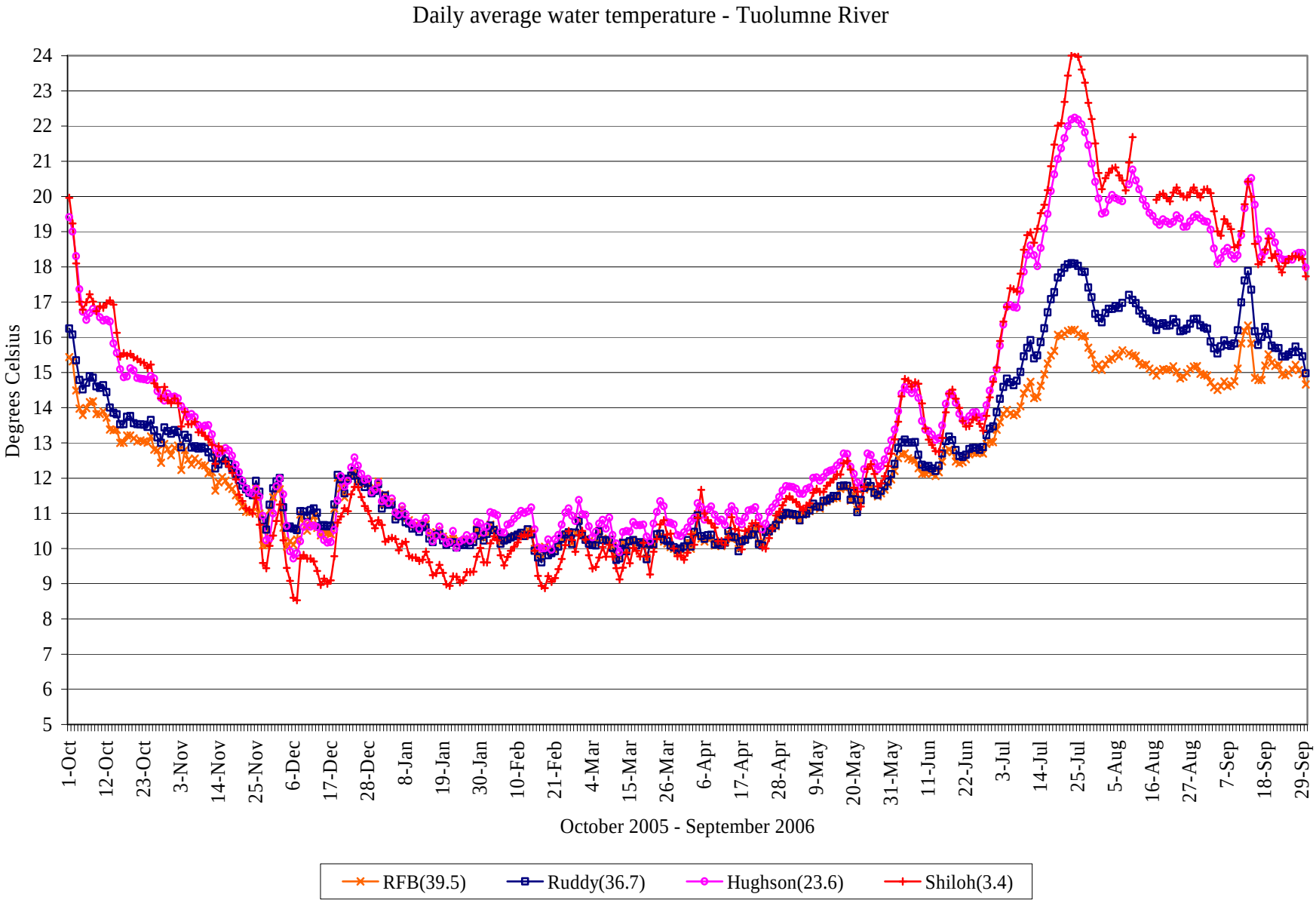

DON PEDRO STORAGE
Water Year 2006 and 2007
2,030,000 A.F., 830.0 FEET
Flood Control = 1,690,000 A.F., 801.9 FEET
2006
2007
Acre-Feet
2100000
2000000
1900000
1800000
1700000
1600000
1500000
1400000
1300000
1200000
1100000
1000000
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
FLOOD CONTROL
2006 RESERVOIR STORAGE
2007 RESERVOIR STORAGE


Watershed Precipitation and Snow Sensor
Precipitation Year 2006
Percent of Average
160%
150%
140%
130%
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Precipitation
Snow Sensor

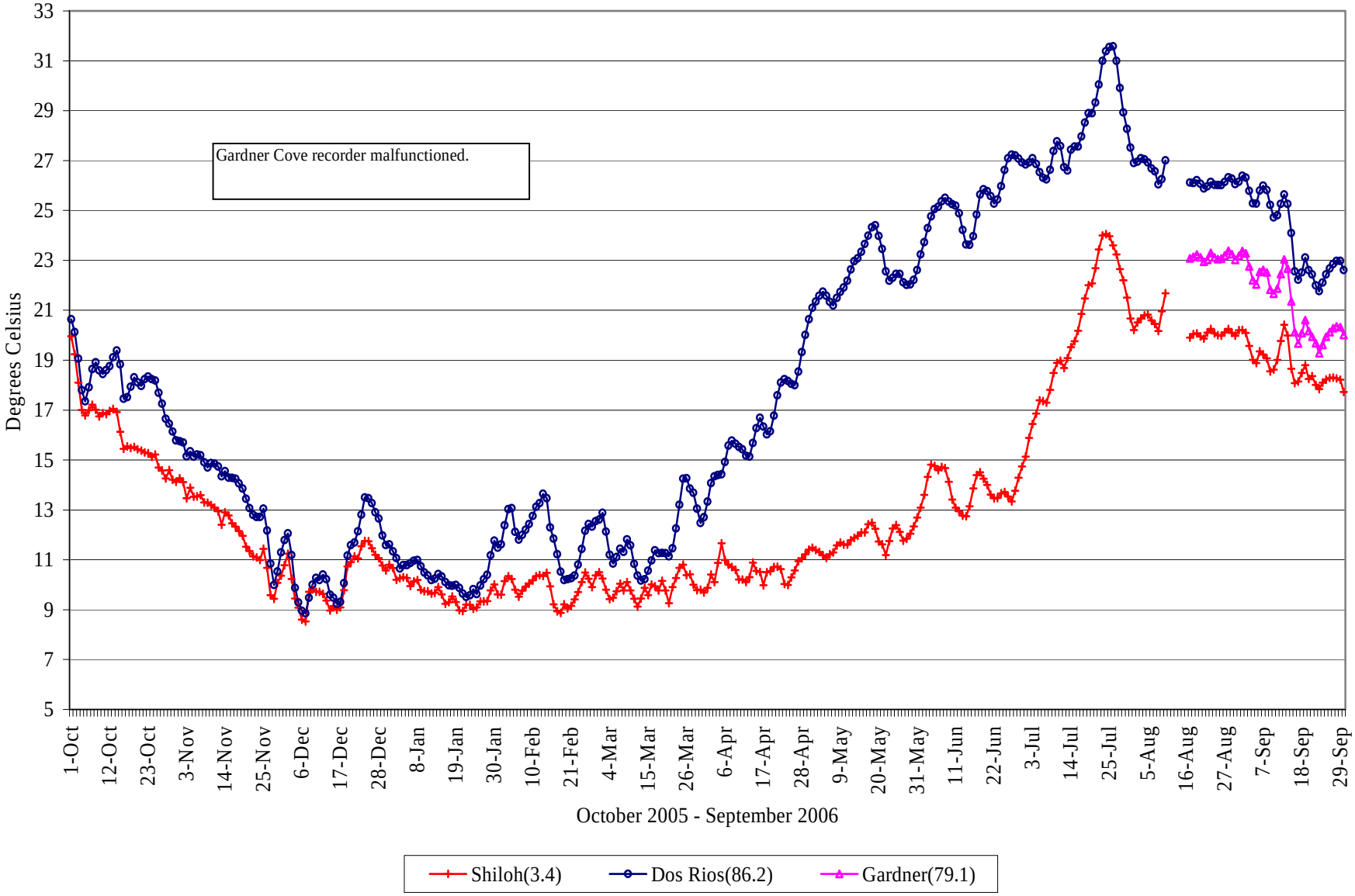

Watershed Precipitation and Snow Sensor
Precipitation Year 2007
Percent of Average
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Precipitation
Snow Sensor

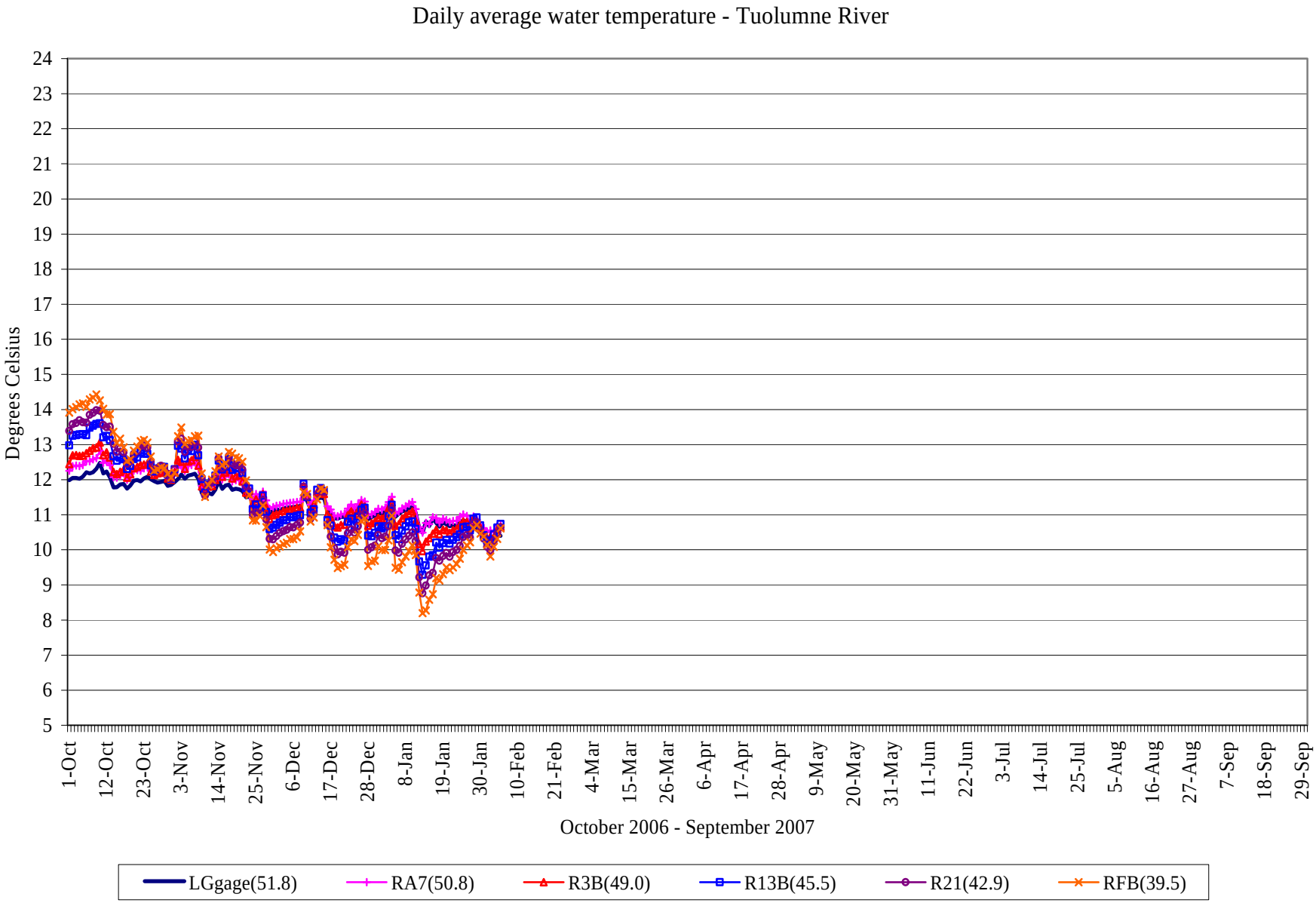
2. Graphs of water temperature, conductivity, and air temperature


Daily average water temperature - Tuolumne River
R3B recorder was lost in the high flows of 2006.
Degrees Celsius
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
1-Oct
12-Oct
23-Oct
3-Nov
14-Nov
25-Nov
6-Dec
17-Dec
28-Dec
8-Jan
19-Jan
30-Jan
10-Feb
21-Feb
4-Mar
15-Mar
26-Mar
6-Apr
17-Apr
28-Apr
9-May
20-May
31-May
11-Jun
22-Jun
3-Jul
14-Jul
25-Jul
5-Aug
16-Aug
27-Aug
7-Sep
18-Sep
29-Sep
October 2005 - September 2006
LGgage(51.8)
RA7(50.8)
R3B(49.0)
R13B(45.5)
R21(42.9)
RFB(39.5)

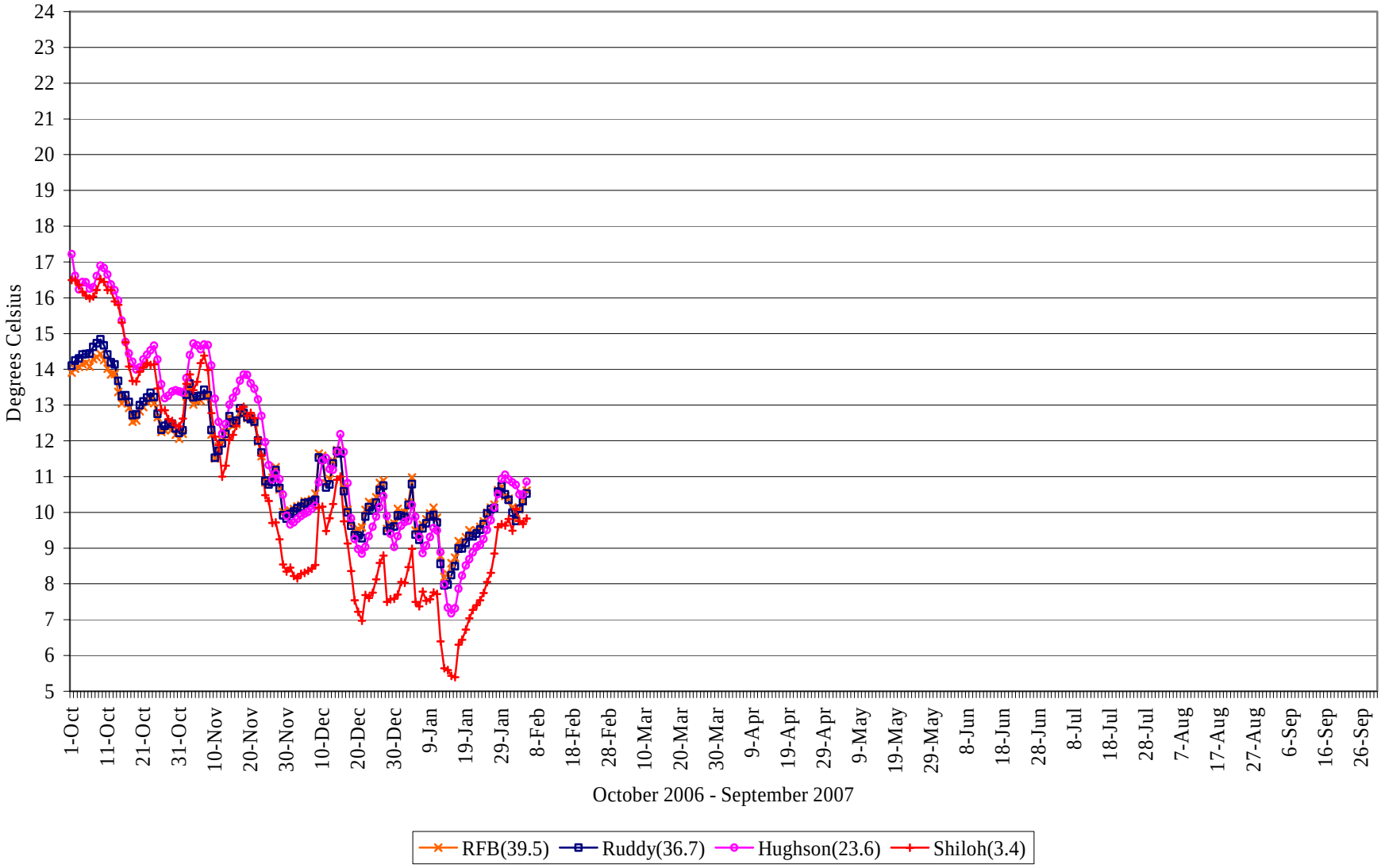

Daily average water temperature - Tuolumne River
Degrees Celsius
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
1-Oct
12-Oct
23-Oct
3-Nov
14-Nov
25-Nov
6-Dec
17-Dec
28-Dec
8-Jan
19-Jan
30-Jan
10-Feb
21-Feb
4-Mar
15-Mar
26-Mar
6-Apr
17-Apr
28-Apr
9-May
20-May
31-May
11-Jun
22-Jun
3-Jul
14-Jul
25-Jul
5-Aug
16-Aug
27-Aug
7-Sep
18-Sep
29-Sep
October 2005 - September 2006
RFB(39.5)
Ruddy(36.7)
Hughson(23.6)
Shiloh(3.4)

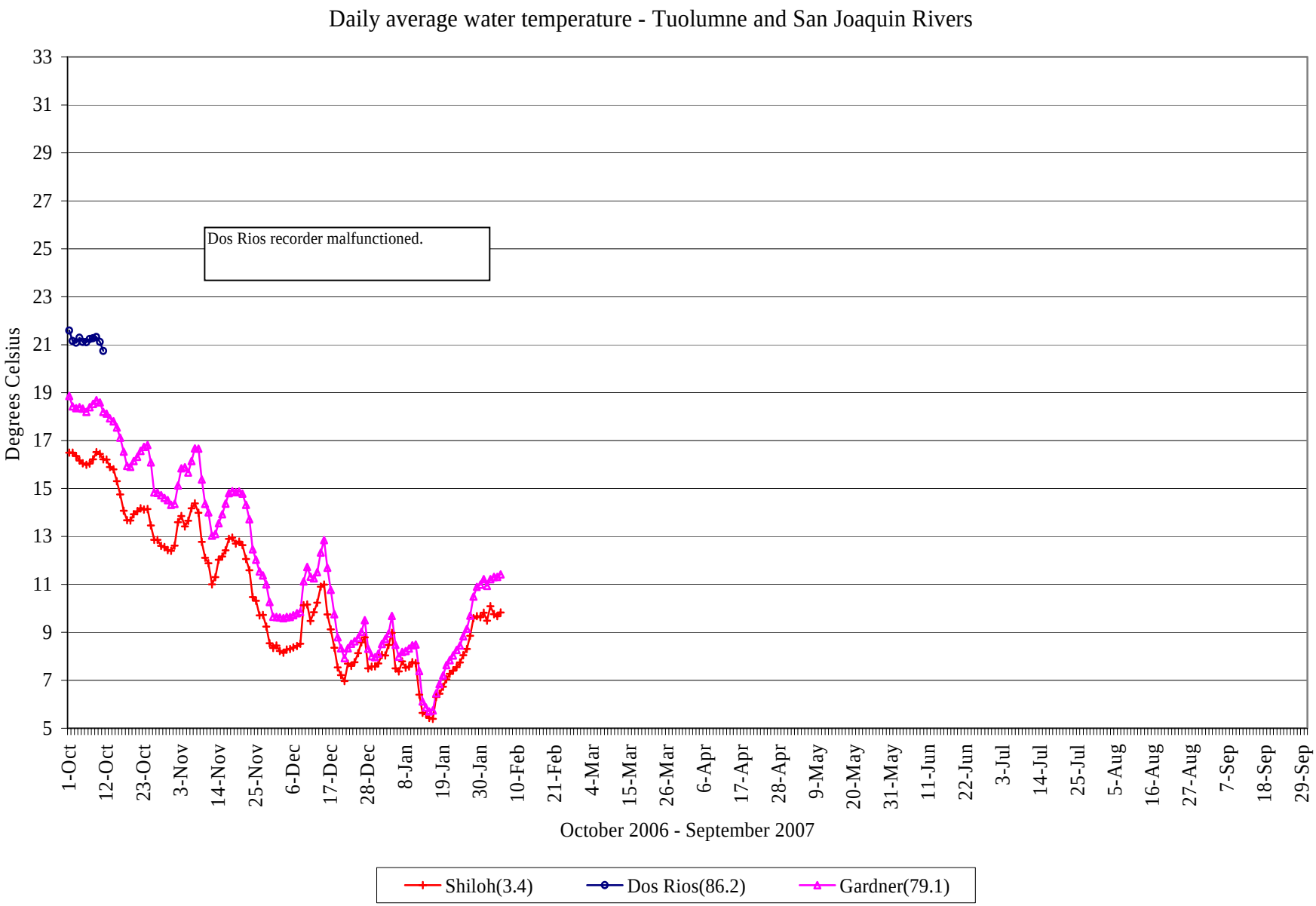
Daily average water temperature - Tuolumne and San Joaquin Rivers

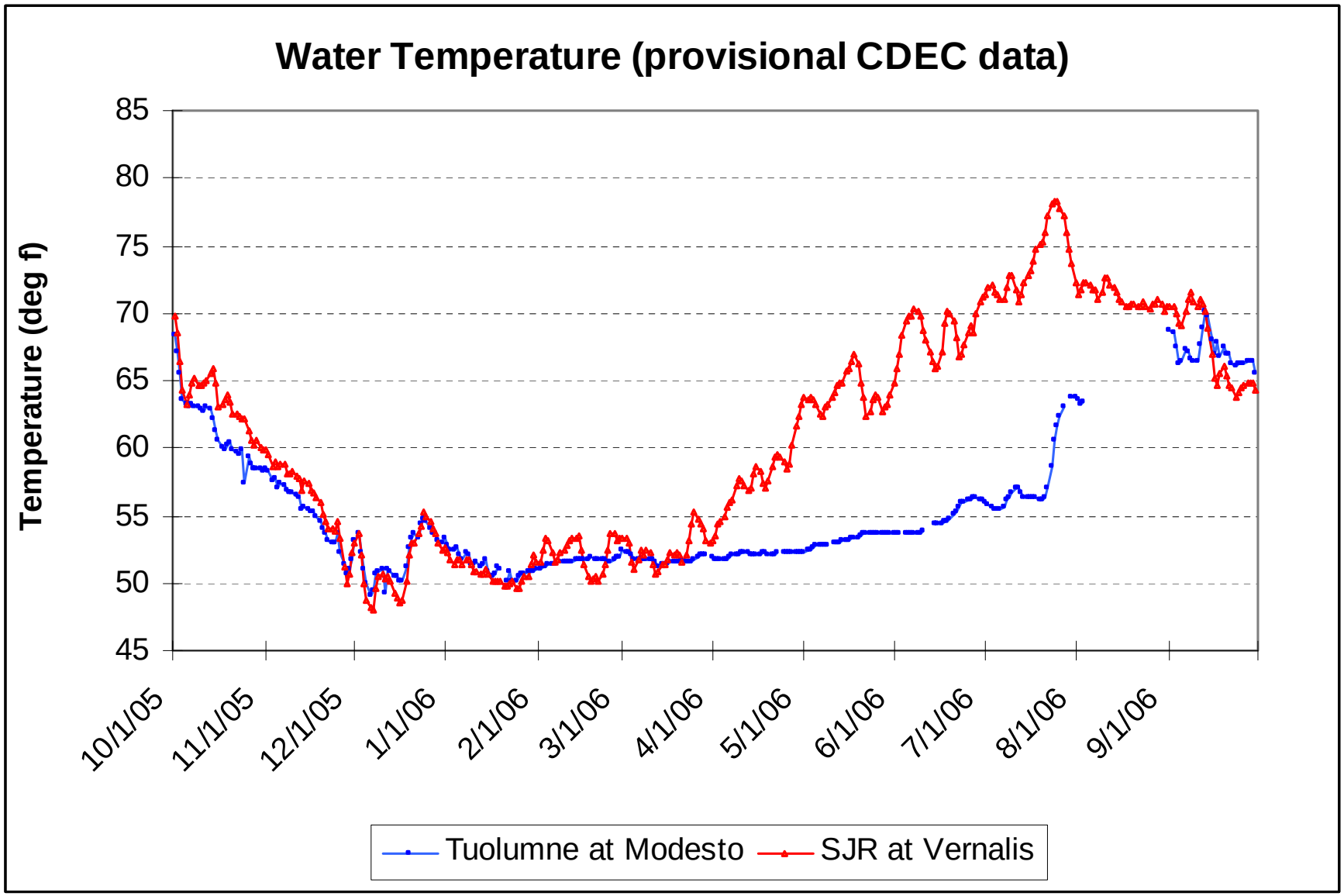


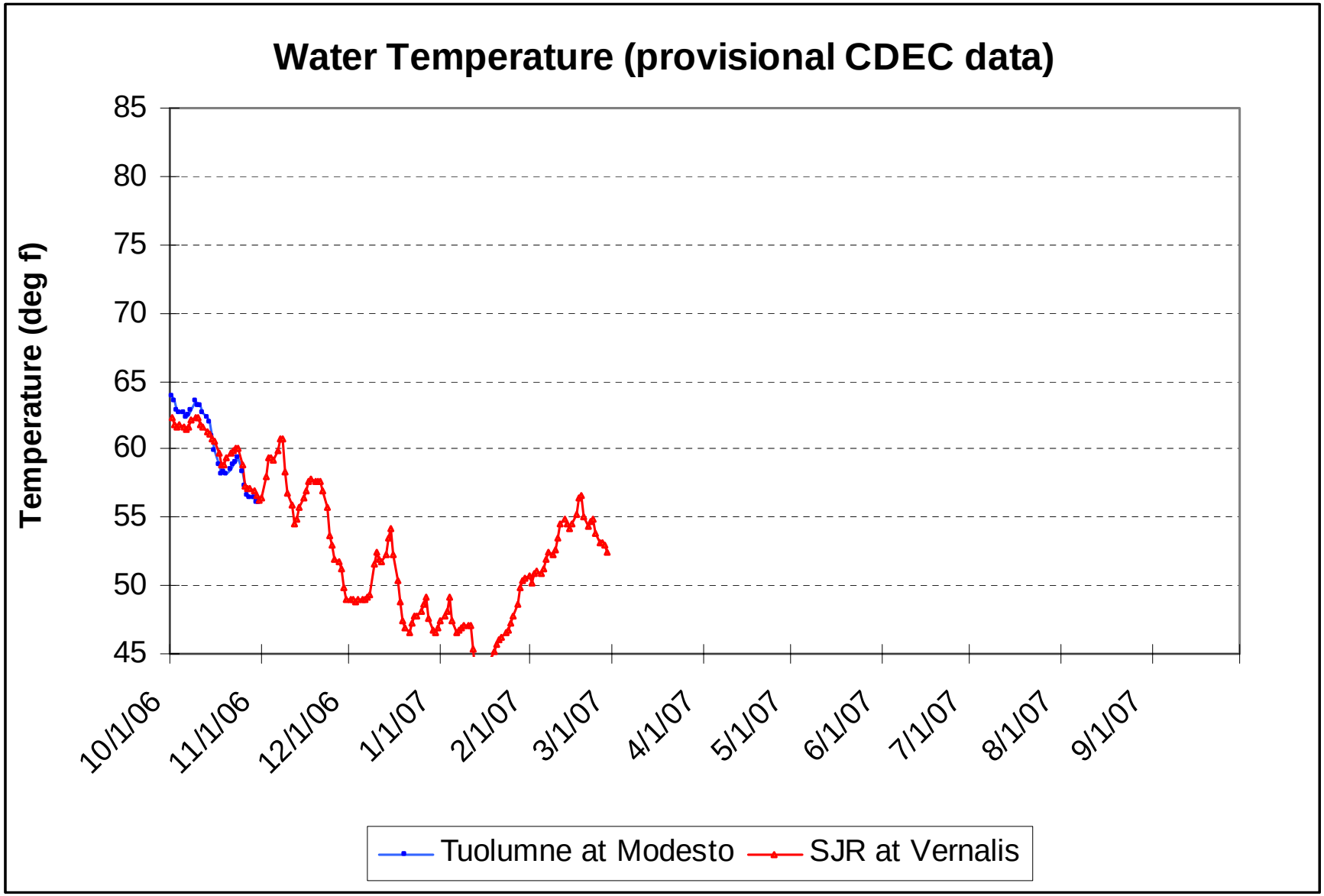

Daily average water temperature - Tuolumne River
Degrees Celsius
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
1-Oct
12-Oct
23-Oct
3-Nov
14-Nov
25-Nov
6-Dec
17-Dec
28-Dec
8-Jan
19-Jan
30-Jan
10-Feb
21-Feb
4-Mar
15-Mar
26-Mar
6-Apr
17-Apr
28-Apr
9-May
20-May
31-May
11-Jun
22-Jun
3-Jul
14-Jul
25-Jul
5-Aug
16-Aug
27-Aug
7-Sep
18-Sep
29-Sep
October 2006 - September 2007
LGgage(51.8)
RA7(50.8)
R3B(49.0)
R13B(45.5)
R21(42.9)
RFB(39.5)

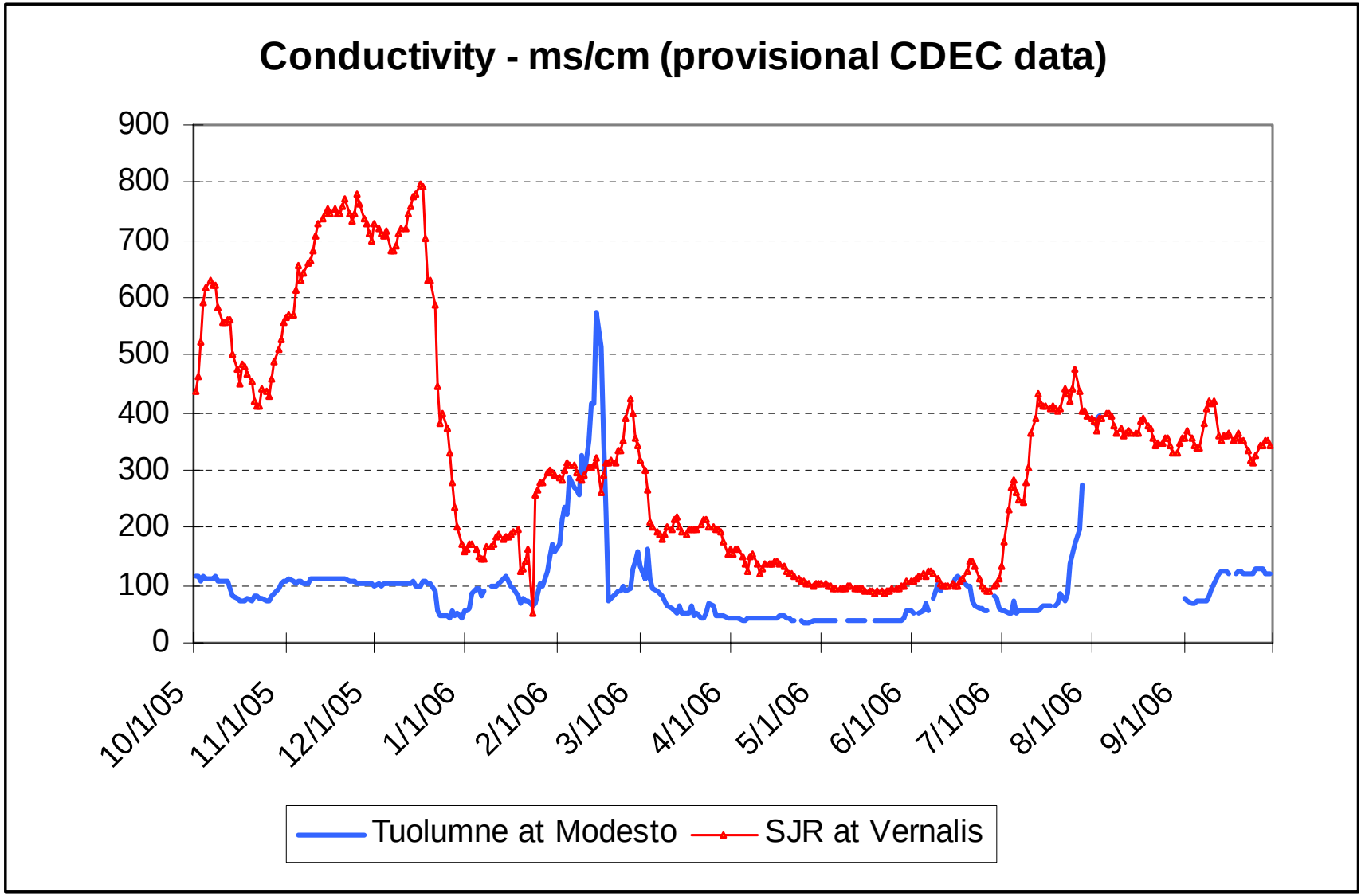
Daily average water temperature - Tuolumne River

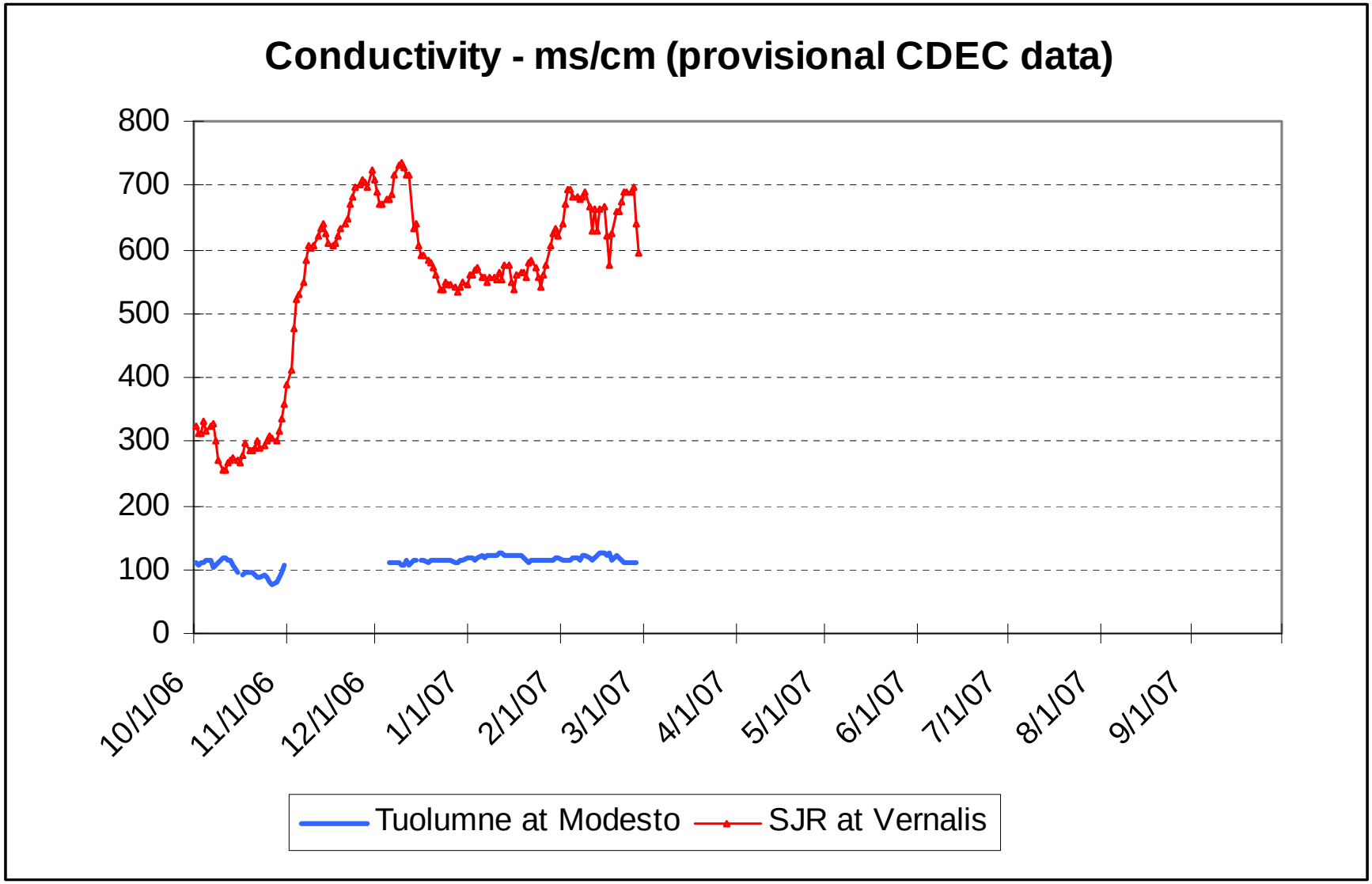


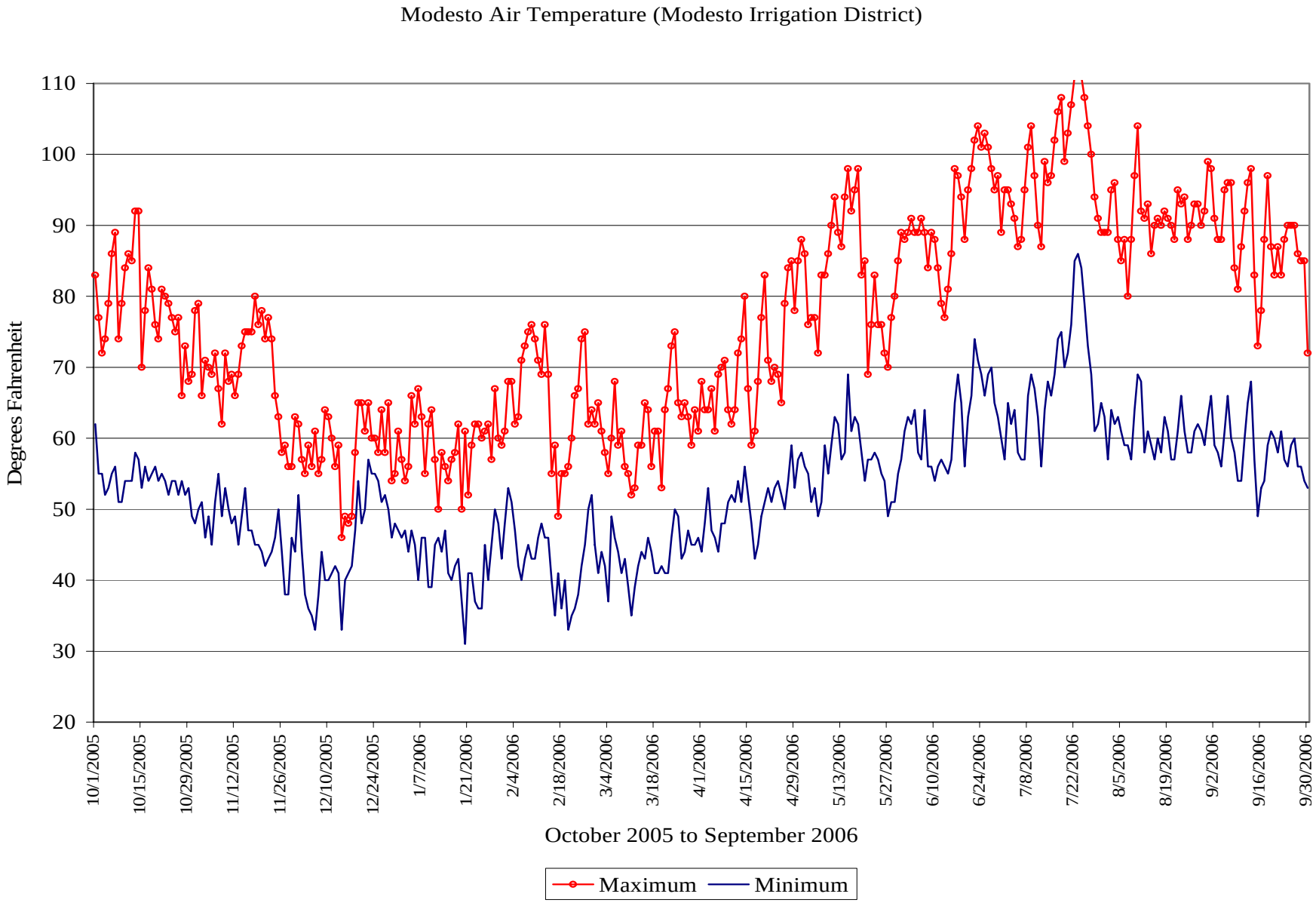

Daily average water temperature - Tuolumne and San Joaquin Rivers
Degrees Celsius
33
31
29
27
25
23
21
19
17
15
13
11
9
7
5
Dos Rios recorder malfunctioned.
1-Oct
12-Oct
23-Oct
3-Nov
14-Nov
25-Nov
6-Dec
17-Dec
28-Dec
8-Jan
19-Jan
30-Jan
10-Feb
21-Feb
4-Mar
15-Mar
26-Mar
6-Apr
17-Apr
28-Apr
9-May
20-May
31-May
11-Jun
22-Jun
3-Jul
14-Jul
25-Jul
5-Aug
16-Aug
27-Aug
7-Sep
18-Sep
29-Sep
October 2006 - September 2007
Shiloh(3.4)
Dos Rios(86.2)
Gardner(79.1)

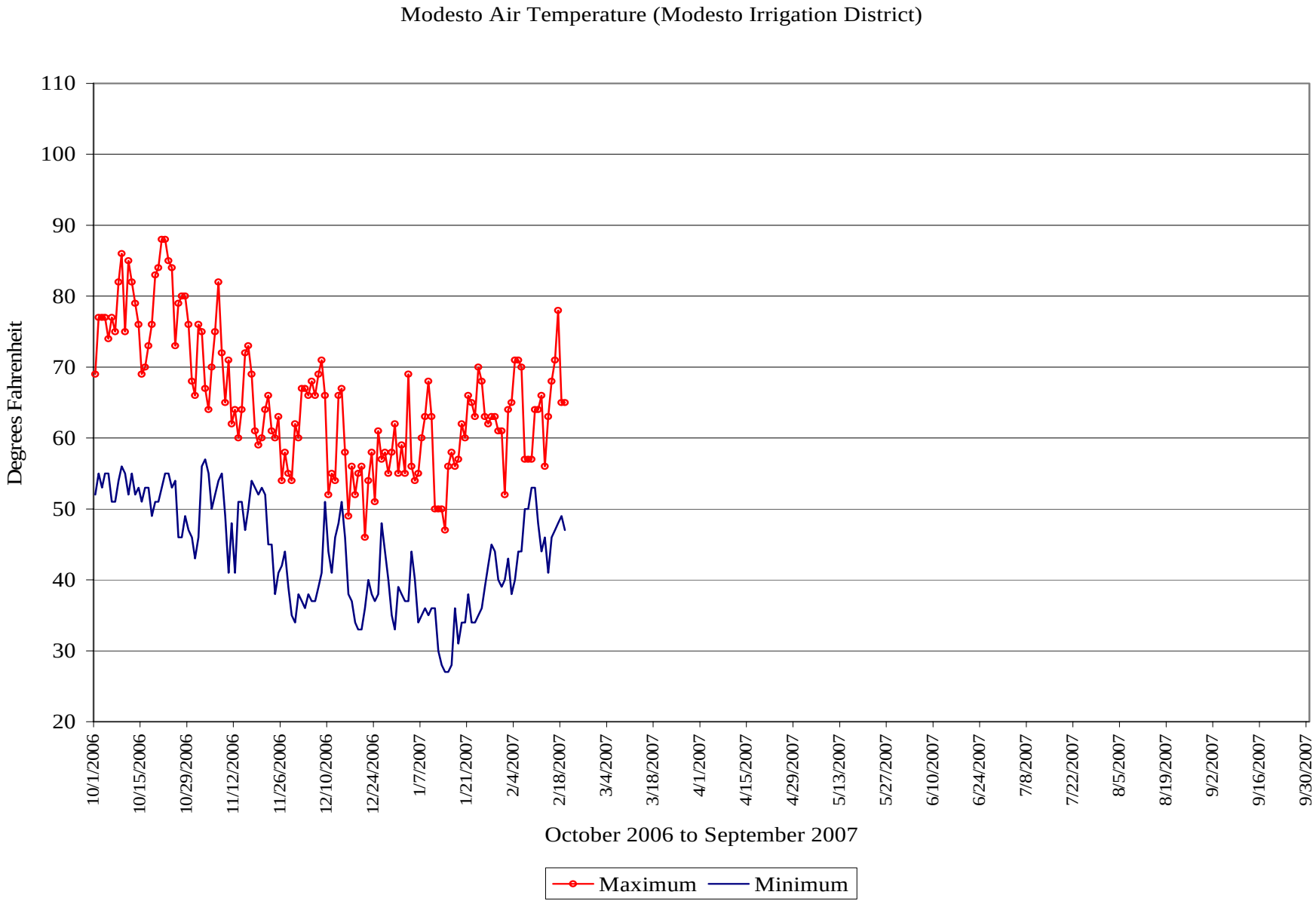

Water Temperature (provisional CDEC data)
Temperature (deg f)
85
80
75
70
65
60
55
50
45
10/1/05
11/1/05
12/1/05
1/1/06
2/1/06
3/1/06
4/1/06
5/1/06
6/1/06
7/1/06
8/1/06
9/1/06
Tuolumne at Modesto
SJR at Vernalis

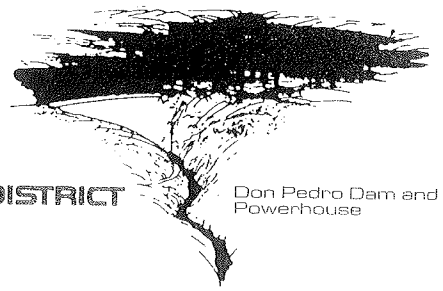

Water Temperature (provisional CDEC data)
Temperature (deg f)
85
80
75
70
65
60
55
50
45
10/1/06
11/1/06
12/1/06
1/1/07
2/1/07
3/1/07
4/1/07
5/1/07
6/1/07
7/1/07
8/1/07
9/1/07
Tuolumne at Modesto
SJR at Vernalis


Conductivity - ms/cm (provisional CDEC data)
900
800
700
600
500
400
300
200
100
0
10/1/05
11/1/05
12/1/05
1/1/06
2/1/06
3/1/06
4/1/06
5/1/06
6/1/06
7/1/06
8/1/06
9/1/06
Tuolumne at Modesto
SJR at Vernalis


Conductivity - ms/cm (provisional CDEC data)
800
700
600
500
400
300
200
100
0
10/1/06
11/1/06
12/1/06
1/1/07
2/1/07
3/1/07
4/1/07
5/1/07
6/1/07
7/1/07
8/1/07
9/1/07
Tuolumne at Modesto
SJR at Vernalis


Modesto Air Temperature (Modesto Irrigation District)
Degrees Fahrenheit
110
100
90
80
70
60
50
40
30
20
10/1/2005
10/15/2005
10/29/2005
11/12/2005
11/26/2005
12/10/2005
12/24/2005
1/7/2006
1/21/2006
2/4/2006
2/18/2006
3/4/2006
3/18/2006
4/1/2006
4/15/2006
4/29/2006
5/13/2006
5/27/2006
6/10/2006
6/24/2006
7/8/2006
7/22/2006
8/5/2006
8/19/2006
9/2/2006
9/16/2006
9/30/2006
October 2005 to September 2006
Maximum
Minimum


Modesto Air Temperature (Modesto Irrigation District)
Degrees Fahrenheit
110
100
90
80
70
60
50
40
30
20
10/1/2006
10/15/2006
10/29/2006
11/12/2006
11/26/2006
12/10/2006
12/24/2006
1/7/2007
1/21/2007
2/4/2007
2/18/2007
3/4/2007
3/18/2007
4/1/2007
4/15/2007
4/29/2007
5/13/2007
5/27/2007
6/10/2007
6/24/2007
7/8/2007
7/22/2007
8/5/2007
8/19/2007
9/2/2007
9/16/2007
9/30/2007
October 2006 to September 2007
Maximum
Minimum



TURLOCK IRRIGATION DISTRICT
333 EAST CANAL DRIVE
POST OFFICE BOX 949
TURLOCK, CALIFORNIA 95381
(209) 883-8300

March 20, 2006

Mr. William Loudermilk
Regional Manager, SJVSS Region
California Dept. of Fish and Game
1234 E. Shaw Ave.
Fresno, CA 93710

Mr. Dale Pierce
Assistant Field Supervisor
United States Fish and Wildlife Service
2800 Cottage Way, W-2605
Sacramento, CA 95825

Subject: Project 2299 - Tuolumne River Fall 2005 Pulse Flow and Article 38 45-Day Period

Dear Sirs:

The Article 38 '45-Day Period' in fall 2005 began October 17 and ended November 30, as has been our standard practice in recent years. The fall pulse flow was from October 12-27 with a scheduled volume of 5,950 AF above the minimum flow requirement of 300 cfs. An average of 578 cfs during this period was actually released or 8,822 acre-feet above the minimum flow requirement.

In accordance with Article 38, reduction in river height between the end of the 45-day period and March 31 shall not exceed four inches (0.33 feet) below the average height established during the 45-day period. Using provisional daily flow data from the USGS gage at La Grange, we have calculated the average flow was 420 cfs for the 45-day period, which corresponds to a river height of 170.28 feet at the Old La Grange Bridge based on the USGS 1996 rating table. The current minimum flow requirement of 300 cfs through March 31 exceeds the 284 cfs as shown on the table represented by a gage elevation of 169.38 feet.

A table of daily USGS recorded flows for the Article 38 45-Day Period is attached (ATTACHMENT 1).

Sincerely,

Robert M. Nees
Assistant General Manager
Water Resources and Regulatory Affairs

cc: Larry Weis -- TID
Wes Monier -- TID
TRTAC e-mail list
Allen Short, MID
Magalie Salas – FERC Secretary

TURLOCK IRRIGATION DISTRICT

October 17 - November 30, 2005 Average Flow

In Tuolumne River at La Grange

ACTUAL FLOWS (Preliminary USGS Numbers)

DATE	FLOW CFS	DATE	FLOW CFS
17-Oct	586	08-Nov	369
18-Oct	583	09-Nov	369
19-Oct	585	10-Nov	369
20-Oct	588	11-Nov	369
21-Oct	591	12-Nov	366
22-Oct	590	13-Nov	367
23-Oct	589	14-Nov	355
24-Oct	588	15-Nov	366
25-Oct	588	16-Nov	367
26-Oct	477	17-Nov	365
27-Oct	476	18-Nov	361
28-Oct	385	19-Nov	355
29-Oct	391	20-Nov	355
30-Oct	392	21-Nov	356
31-Oct	362	22-Nov	357
01-Nov	365	23-Nov	362
02-Nov	370	24-Nov	391
03-Nov	369	25-Nov	391
04-Nov	379	26-Nov	396
05-Nov	371	27-Nov	396
06-Nov	372	28-Nov	392
07-Nov	369	29-Nov	390
		30-Nov	392
		TOTAL RELEASE=	18,922

45 day average = 420.5 cfs = 170.28 ft elevation *

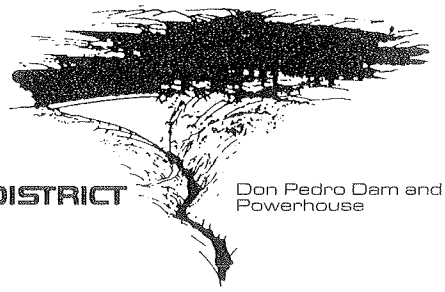
Less 4 inches -0.33

Minimum Flow = 284.0 CFS = 169.95 ft elevation *

*

From U.S.G.S. table 22

TURLOCK IRRIGATION DISTRICT
333 EAST CANAL DRIVE
POST OFFICE BOX 949
TURLOCK, CALIFORNIA 95381
(209) 883-8300



April 13, 2006

Mr. Dean Marston
California Dept. of Fish and Game
1234 E. Shaw Ave.
Fresno, CA 93710

Ms. Deborah Giglio
U.S. Fish and Wildlife Service
2800 Cottage Way, W-2605
Sacramento, CA 95825

RE: Tuolumne River 2005-2006 FERC Article 37 Flow Schedule for P-2299

Dear Fishery Agency representatives:

The 1996 FERC Order, Amended Article 37, contained a Water Year Classification Index for determining the volume of scheduled stream flows for each fish flow year. The classifications were based on the San Joaquin Basin 60-20-20 Indices for water years 1906-1995. The order stated, "60-20-20 index numbers used each year shall be updated to incorporate subsequent water years pursuant to standard Water Resources Department procedures so as to maintain approximately the same frequency distribution of water year types." The index is updated to incorporate water years 1996 through 2005 (Table 1). While the frequency distribution remains the same, some index numbers may change slightly with each annual update to maintain the frequency distribution. The DWR April 1, 2006 60-20-20 San Joaquin Basin Index 50% exceedence forecast of 4.5 corresponds to the maximum amount of 300,923 acre-feet (AF) of volume for the fish flow year (Table 1). The 90% exceedence forecast index was 4.2, also corresponding to 300,923 AF.

Attached is the initial Tuolumne River flow schedule for the 2006-2007 FERC fish flow year (Table 2). This schedule reflects timing of a spring pulse flow period associated with the April 22 start of the 2006 Vernalis Adaptive Management Plan (VAMP) in the San Joaquin basin; the fall pulse timing and pattern is similar to 2005 and may be adjusted later.

If you have any questions, please contact Wes Monier at 209-883-8321.

Sincerely,

Robert Nees
Assistant General Manager
Water Resources and Regulatory Affairs Administration

C: Larry Weis - TID
Allen Short - MID
Magalie Salas – FERC Secretary

TABLE 1
DETERMINATION OF WATER YEAR CLASSIFICATION THRESHOLDS
Water Year Classification

Water Year Classification	Cumulative Occurrence				602020 INDEX (x 1000)										
					Settlement Agreement	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Critical Water Year and Below	0.0%	-	6.4%	<	1500	1,441	1,441	1,441	1,476	1,476	1,476	1,476	1,476	1,476	1,476
Median Critical Water Year	6.4%	-<	14.4%	>=	1500	1,441	1,441	1,441	1,476	1,476	1,476	1,476	1,476	1,476	1,476
Intermediate Critical Dry Water Year	14.4%	-<	20.5%	>=	2000	1,964	1,964	1,964	1,964	1,964	1,964	1,964	2,002	2,002	2,002
Median Dry	20.5%	-<	31.3%	>=	2200	2,159	2,159	2,183	2,183	2,183	2,183	2,183	2,187	2,187	2,187
Intermediate Dry-Below Normal	31.3%	-<	40.4%	>=	2400	2,441	2,441	2,442	2,442	2,442	2,442	2,441	2,441	2,403	2,441
Median Below Normal	40.4%	-<	50.7%	>=	2700	2,698	2,720	2,720	2,720	2,763	2,720	2,720	2,720	2,698	2,720
* Intermediate Below Normal-Above Normal	50.7%	-<	66.2%	>=	3100	3,139	3,139	3,183	3,183	3,225	3,183	3,183	3,139	3,139	3,139
Median Above Normal	66.2%	-<	71.3%	>=	3100	3,689	3,689	3,740	3,740	3,689	3,689	3,689	3,669	3,669	3,689
Intermediate Above Normal-Wet	71.3%	-<	86.7%	>=	3100	3,898	3,903	4,028	4,028	3,903	3,903	3,903	3,898	3,898	3,903
Median Wet/Maximum	86.7%	-<	100.0%	>=	3100	4,593	4,593	4,653	4,653	4,653	4,653	4,653	4,593	4,593	4,653

* Maximum index value for fish flow year is not to go above value shown in this row.
** The index in the Settlement Agreement was based on Water Years 1906-1995

TABLE 2

Tuolumne River Flow Schedule

SCHEDULE FOR 2006 - 2007 Fish Flow Year

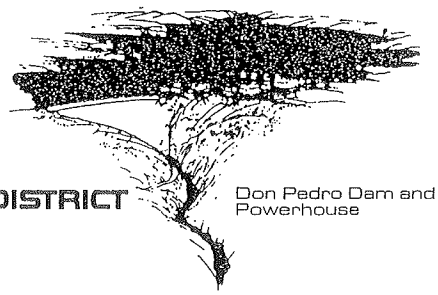
DATE		Number of	BASE FLOW			PULSE FLOW			ADDITIONAL FLOW			TOTAL FERC FLOW	
From:	To:	DAYS	CFS	AF	ACCUM. A.F.	CFS	AF	ACCUM. A.F.	CFS	AF	ACCUM. A.F.	CFS	ACCUM A.F.
15-Apr-2006	15-Apr-2006	1	300	595	595		0	0	0	0	0	300	595
16-Apr-2006	16-Apr-2006	1	300	595	1,190	0	0	0	0	0	0	300	1,190
17-Apr-2006	17-Apr-2006	1	300	595	1,785	0	0	0	0	0	0	300	1,785
18-Apr-2006	18-Apr-2006	1	300	595	2,380	0	0	0	0	0	0	300	2,380
19-Apr-2006	19-Apr-2006	1	300	595	2,975	550	1,091	1,091	0	0	0	850	4,066
20-Apr-2006	20-Apr-2006	1	300	595	3,570	1,417	2,811	3,902	0	0	0	1,717	7,472
21-Apr-2006	21-Apr-2006	1	300	595	4,165	1,417	2,811	6,713	0	0	0	1,717	10,878
22-Apr-2006	22-Apr-2006	1	300	595	4,760	1,417	2,811	9,524	0	0	0	1,717	14,284
23-Apr-2006	23-Apr-2006	1	300	595	5,355	1,417	2,811	12,335	0	0	0	1,717	17,690
24-Apr-2006	24-Apr-2006	1	300	595	5,950	1,417	2,811	15,146	0	0	0	1,717	21,096
25-Apr-2006	25-Apr-2006	1	300	595	6,545	1,417	2,811	17,957	0	0	0	1,717	24,502
26-Apr-2006	26-Apr-2006	1	300	595	7,140	1,417	2,811	20,767	0	0	0	1,717	27,908
27-Apr-2006	27-Apr-2006	1	300	595	7,736	1,417	2,811	23,578	0	0	0	1,717	31,314
28-Apr-2006	28-Apr-2006	1	300	595	8,331	1,417	2,811	26,389	0	0	0	1,717	34,720
29-Apr-2006	29-Apr-2006	1	300	595	8,926	1,417	2,811	29,200	0	0	0	1,717	38,126
30-Apr-2006	30-Apr-2006	1	300	595	9,521	1,417	2,811	32,011	0	0	0	1,717	41,532
01-May-2006	01-May-2006	1	300	595	10,116	1,417	2,811	34,822	0	0	0	1,717	44,938
02-May-2006	02-May-2006	1	300	595	10,711	1,417	2,811	37,633	0	0	0	1,717	48,344
03-May-2006	03-May-2006	1	300	595	11,306	1,417	2,811	40,444	0	0	0	1,717	51,750
04-May-2006	04-May-2006	1	300	595	11,901	1,417	2,811	43,255	0	0	0	1,717	55,156
05-May-2006	05-May-2006	1	300	595	12,496	1,417	2,811	46,066	0	0	0	1,717	58,562
06-May-2006	06-May-2006	1	300	595	13,091	1,417	2,811	48,877	0	0	0	1,717	61,968
07-May-2006	07-May-2006	1	300	595	13,686	1,417	2,811	51,688	0	0	0	1,717	65,374
08-May-2006	08-May-2006	1	300	595	14,281	1,417	2,811	54,499	0	0	0	1,717	68,780
09-May-2006	09-May-2006	1	300	595	14,876	1,417	2,811	57,310	0	0	0	1,717	72,186
10-May-2006	10-May-2006	1	300	595	15,471	1,417	2,811	60,121	0	0	0	1,717	75,592
11-May-2006	11-May-2006	1	300	595	16,066	1,417	2,811	62,931	0	0	0	1,717	78,998
12-May-2006	12-May-2006	1	300	595	16,661	1,417	2,811	65,742	0	0	0	1,717	82,404
13-May-2006	13-May-2006	1	300	595	17,256	1,417	2,811	68,553	0	0	0	1,717	85,810
14-May-2006	14-May-2006	1	300	595	17,851	1,417	2,811	71,364	0	0	0	1,717	89,215
15-May-2006	15-May-2006	1	300	595	18,446	1,417	2,811	74,175	0	0	0	1,717	92,621
16-May-2006	16-May-2006	1	300	595	19,041	1,417	2,811	76,986	0	0	0	1,717	96,027
17-May-2006	17-May-2006	1	300	595	19,636	1,417	2,811	79,797	0	0	0	1,717	99,433
18-May-2006	18-May-2006	1	300	595	20,231	1,417	2,811	82,608	0	0	0	1,717	102,839
19-May-2006	19-May-2006	1	300	595	20,826	1,417	2,811	85,419	0	0	0	1,717	106,245
20-May-2006	20-May-2006	1	300	595	21,421	750	1,488	86,907	0	0	0	1,050	108,328
21-May-2006	21-May-2006	1	300	595	22,017	600	1,190	88,097	0	0	0	900	110,113
22-May-2006	22-May-2006	1	300	595	22,612	450	893	88,989	0	0	0	750	111,601
23-May-2006	23-May-2006	1	300	595	23,207	300	595	89,584	0	0	0	600	112,791
24-May-2006	24-May-2006	1	300	595	23,802	150	298	89,882	0	0	0	450	113,683
25-May-2006	25-May-2006	1	300	595	24,397	0	0	89,882	0	0	0	300	114,278
26-May-2006	26-May-2006	1	300	595	24,992	0	0	89,882	0	0	0	300	114,873
27-May-2006	27-May-2006	1	300	595	25,587	0	0	89,882	0	0	0	300	115,468
28-May-2006	28-May-2006	1	300	595	26,182	0	0	89,882	0	0	0	300	116,064
29-May-2006	29-May-2006	1	300	595	26,777	0	0	89,882	0	0	0	300	116,659
30-May-2006	30-May-2006	1	300	595	27,372	0	0	89,882	0	0	0	300	117,254
31-May-2006	31-May-2006	1	300	595	27,967	0	0	89,882	0	0	0	300	117,849
01-Jun-2006	01-Jun-2006	1	250	496	28,463	0	0	89,882	0	0	0	250	118,345
02-Jun-2006	02-Jun-2006	1	250	496	28,959	0	0	89,882	0	0	0	250	118,840
03-Jun-2006	03-Jun-2006	1	250	496	29,455	0	0	89,882	0	0	0	250	119,336
04-Jun-2006	04-Jun-2006	1	250	496	29,950	0	0	89,882	0	0	0	250	119,832
05-Jun-2006	30-Jun-2006	26	250	12,893	42,843	0	0	89,882	0	0	0	250	132,725
01-Jul-2006	31-Jul-2006	31	250	15,372	58,215	0	0	89,882	0	0	0	250	148,097
01-Aug-2006	31-Aug-2006	31	250	15,372	73,587	0	0	89,882	0	0	0	250	163,468
01-Sep-2006	30-Sep-2006	30	250	14,876	88,463	0	0	89,882	0	0	0	250	178,345
01-Oct-2006	01-Oct-2006	1	300	595	89,058	0	0	89,882	0	0	0	300	178,940
02-Oct-2006	11-Oct-2006	10	300	5,950	95,008	0	0	89,882	0	0	0	300	184,890
12-Oct-2006	25-Oct-2006	14	300	8,331	103,339	200	5,554	95,435	0	0	0	500	198,774
26-Oct-2006	26-Oct-2006	1	300	595	103,934	100	198	95,634	0	0	0	400	199,568
27-Oct-2006	27-Oct-2006	1	300	595	104,529	100	198	95,832	0	0	0	400	200,361
28-Oct-2006	31-Oct-2006	4	300	2,380	106,909	0	0	95,832	0	0	0	300	202,741
01-Nov-2006	30-Nov-2006	30	300	17,851	124,760	0	0	95,832	0	0	0	300	220,592
01-Dec-2006	31-Dec-2006	31	300	18,446	143,207	0	0	95,832	0	0	0	300	239,039
01-Jan-2007	31-Jan-2007	31	300	18,446	161,653	0	0	95,832	0	0	0	300	257,485
01-Feb-2007	28-Feb-2007	28	300	16,661	178,314	0	0	95,832	0	0	0	300	274,146
01-Mar-2007	31-Mar-2007	31	300	18,446	196,760	0	0	95,832	0	0	0	300	292,592
01-Apr-2007	14-Apr-2007	14	300	8,331	205,091	0	0	95,832	0	0	0	300	300,923
No. of days		365	(April 15 through April 14)										

1 cfs day = 1.983471 acre-feet (af)

Notes: 1. Based on 60-20-20 Index is 4,540,649 July 31, 1996 FERC Order Flow Interpolated as 300,923 AF fish flow year requirement.

2. The pulse flows are a target that represents a daily average.

TURLOCK IRRIGATION DISTRICT
333 EAST CANAL DRIVE
POST OFFICE BOX 949
TURLOCK, CALIFORNIA 95381
(209) 883-8300



October 11, 2006

Mr. Dean Marston
California Dept. of Fish and Game
1234 E. Shaw Ave.
Fresno, CA 93710

Ms. Deborah Giglio
U.S. Fish and Wildlife Service
2800 Cottage Way, W-2605
Sacramento, CA 95825

RE: Don Pedro Project No. 2299 -- Tuolumne River 2006-2007 FERC Article 37 Flow Schedule

Dear Fishery Agency representatives:

Attached is the revised Tuolumne River flow schedule for the 2006-2007 FERC fish flow year (Table 1) that has a fall pulse flow allocation per Mr. Monier's recent e-mail exchange with Mr. Marston. Please inform us if this schedule is not satisfactory – otherwise this will be the effective schedule that is followed by our operators.

If you have any questions please feel free to contact Wes Monier at 209-883-8321.

Sincerely,

Robert M. Nees
Assistant General Manager
Water Resources and Regulatory Affairs

C: Larry Weis – TID
Allen Short – MID
TRTAC (via e-mail)
Wes Monier- TID
Magalie Salas – FERC Secretary

TABLE 1

Tuolumne River Flow Schedule

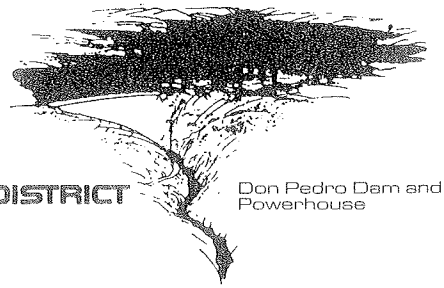
SCHEDULE FOR 2006 - 2007 Fish Flow Year

DATE		Number of	BASE FLOW			PULSE FLOW			ADDITIONAL FLOW			TOTAL FERC FLOW	
From:	To:	DAYS	CFS	AF	ACCUM. A.F.	CFS	AF	ACCUM. A.F.	CFS	AF	ACCUM. A.F.	CFS	ACCUM. A.F.
15-Apr-2006	15-Apr-2006	1	300	595	595		0	0	0	0	0	300	595
16-Apr-2006	16-Apr-2006	1	300	595	1,190	0	0	0	0	0	0	300	1,190
17-Apr-2006	17-Apr-2006	1	300	595	1,785	0	0	0	0	0	0	300	1,785
18-Apr-2006	18-Apr-2006	1	300	595	2,380	0	0	0	0	0	0	300	2,380
19-Apr-2006	19-Apr-2006	1	300	595	2,975	550	1,091	1,091	0	0	0	850	4,066
20-Apr-2006	20-Apr-2006	1	300	595	3,570	1,417	2,811	3,902	0	0	0	1,717	7,472
21-Apr-2006	21-Apr-2006	1	300	595	4,165	1,417	2,811	6,713	0	0	0	1,717	10,878
22-Apr-2006	22-Apr-2006	1	300	595	4,760	1,417	2,811	9,524	0	0	0	1,717	14,284
23-Apr-2006	23-Apr-2006	1	300	595	5,355	1,417	2,811	12,335	0	0	0	1,717	17,690
24-Apr-2006	24-Apr-2006	1	300	595	5,950	1,417	2,811	15,146	0	0	0	1,717	21,096
25-Apr-2006	25-Apr-2006	1	300	595	6,545	1,417	2,811	17,957	0	0	0	1,717	24,502
26-Apr-2006	26-Apr-2006	1	300	595	7,140	1,417	2,811	20,767	0	0	0	1,717	27,908
27-Apr-2006	27-Apr-2006	1	300	595	7,736	1,417	2,811	23,578	0	0	0	1,717	31,314
28-Apr-2006	28-Apr-2006	1	300	595	8,331	1,417	2,811	26,389	0	0	0	1,717	34,720
29-Apr-2006	29-Apr-2006	1	300	595	8,926	1,417	2,811	29,200	0	0	0	1,717	38,126
30-Apr-2006	30-Apr-2006	1	300	595	9,521	1,417	2,811	32,011	0	0	0	1,717	41,532
01-May-2006	01-May-2006	1	300	595	10,116	1,417	2,811	34,822	0	0	0	1,717	44,938
02-May-2006	02-May-2006	1	300	595	10,711	1,417	2,811	37,633	0	0	0	1,717	48,344
03-May-2006	03-May-2006	1	300	595	11,306	1,417	2,811	40,444	0	0	0	1,717	51,750
04-May-2006	04-May-2006	1	300	595	11,901	1,417	2,811	43,255	0	0	0	1,717	55,156
05-May-2006	05-May-2006	1	300	595	12,496	1,417	2,811	46,066	0	0	0	1,717	58,562
06-May-2006	06-May-2006	1	300	595	13,091	1,417	2,811	48,877	0	0	0	1,717	61,968
07-May-2006	07-May-2006	1	300	595	13,686	1,417	2,811	51,688	0	0	0	1,717	65,374
08-May-2006	08-May-2006	1	300	595	14,281	1,417	2,811	54,499	0	0	0	1,717	68,780
09-May-2006	09-May-2006	1	300	595	14,876	1,417	2,811	57,310	0	0	0	1,717	72,186
10-May-2006	10-May-2006	1	300	595	15,471	1,417	2,811	60,121	0	0	0	1,717	75,592
11-May-2006	11-May-2006	1	300	595	16,066	1,417	2,811	62,931	0	0	0	1,717	78,998
12-May-2006	12-May-2006	1	300	595	16,661	1,417	2,811	65,742	0	0	0	1,717	82,404
13-May-2006	13-May-2006	1	300	595	17,256	1,417	2,811	68,553	0	0	0	1,717	85,810
14-May-2006	14-May-2006	1	300	595	17,851	1,417	2,811	71,364	0	0	0	1,717	89,215
15-May-2006	15-May-2006	1	300	595	18,446	1,417	2,811	74,175	0	0	0	1,717	92,621
16-May-2006	16-May-2006	1	300	595	19,041	1,417	2,811	76,986	0	0	0	1,717	96,027
17-May-2006	17-May-2006	1	300	595	19,636	1,417	2,811	79,797	0	0	0	1,717	99,433
18-May-2006	18-May-2006	1	300	595	20,231	1,417	2,811	82,608	0	0	0	1,717	102,839
19-May-2006	19-May-2006	1	300	595	20,826	1,417	2,811	85,419	0	0	0	1,717	106,245
20-May-2006	20-May-2006	1	300	595	21,421	750	1,488	86,907	0	0	0	1,050	108,328
21-May-2006	21-May-2006	1	300	595	22,017	600	1,190	88,097	0	0	0	900	110,113
22-May-2006	22-May-2006	1	300	595	22,612	450	893	88,989	0	0	0	750	111,601
23-May-2006	23-May-2006	1	300	595	23,207	300	595	89,584	0	0	0	600	112,791
24-May-2006	24-May-2006	1	300	595	23,802	150	298	89,882	0	0	0	450	113,683
25-May-2006	25-May-2006	1	300	595	24,397	0	0	89,882	0	0	0	300	114,278
26-May-2006	26-May-2006	1	300	595	24,992	0	0	89,882	0	0	0	300	114,873
27-May-2006	27-May-2006	1	300	595	25,587	0	0	89,882	0	0	0	300	115,468
28-May-2006	28-May-2006	1	300	595	26,182	0	0	89,882	0	0	0	300	116,064
29-May-2006	29-May-2006	1	300	595	26,777	0	0	89,882	0	0	0	300	116,659
30-May-2006	30-May-2006	1	300	595	27,372	0	0	89,882	0	0	0	300	117,254
31-May-2006	31-May-2006	1	300	595	27,967	0	0	89,882	0	0	0	300	117,849
01-Jun-2006	01-Jun-2006	1	250	496	28,463	0	0	89,882	0	0	0	250	118,345
02-Jun-2006	02-Jun-2006	1	250	496	28,959	0	0	89,882	0	0	0	250	118,840
03-Jun-2006	03-Jun-2006	1	250	496	29,455	0	0	89,882	0	0	0	250	119,336
04-Jun-2006	04-Jun-2006	1	250	496	29,950	0	0	89,882	0	0	0	250	119,832
05-Jun-2006	30-Jun-2006	26	250	12,893	42,843	0	0	89,882	0	0	0	250	132,725
01-Jul-2006	31-Jul-2006	31	250	15,372	58,215	0	0	89,882	0	0	0	250	148,097
01-Aug-2006	31-Aug-2006	31	250	15,372	73,587	0	0	89,882	0	0	0	250	163,468
01-Sep-2006	30-Sep-2006	30	250	14,876	88,463	0	0	89,882	0	0	0	250	178,345
01-Oct-2006	13-Oct-2006	13	300	7,736	96,198	0	0	89,882	0	0	0	300	186,080
14-Oct-2006	15-Oct-2006	2	300	1,190	97,388	300	1,190	91,072	0	0	0	600	188,460
16-Oct-2006	26-Oct-2006	11	300	6,545	103,934	200	4,364	95,435	0	0	0	500	199,369
27-Oct-2006	28-Oct-2006	2	300	1,190	105,124	100	397	95,832	0	0	0	400	200,956
29-Oct-2006	29-Oct-2006	1	300	595	105,719	0	0	95,832	0	0	0	300	201,551
30-Oct-2006	30-Oct-2006	1	300	595	106,314	0	0	95,832	0	0	0	300	202,146
31-Oct-2006	31-Oct-2006	1	300	595	106,909	0	0	95,832	0	0	0	300	202,741
01-Nov-2006	16-Nov-2006	16	300	9,521	116,430	0	0	95,832	0	0	0	300	212,262
17-Nov-2006	30-Nov-2006	14	300	8,331	124,760	0	0	95,832	0	0	0	300	220,592
01-Dec-2006	31-Dec-2006	31	300	18,446	143,207	0	0	95,832	0	0	0	300	239,039
01-Jan-2007	31-Jan-2007	31	300	18,446	161,653	0	0	95,832	0	0	0	300	257,485
01-Feb-2007	28-Feb-2007	28	300	16,661	178,314	0	0	95,832	0	0	0	300	274,146
01-Mar-2007	31-Mar-2007	31	300	18,446	196,760	0	0	95,832	0	0	0	300	292,592
01-Apr-2007	14-Apr-2007	14	300	8,331	205,091	0	0	95,832	0	0	0	300	300,923
No. of days		[redacted]	(April 15 through April 14)										

1 cfs day = 1.983471 acre-feet (af)

Notes: 1. Based on 60-20-20 Index is 5,899,081 July 31, 1996 FERC Order Flow Interpolated as 300,923 AF fish flow year requirement.

2. The pulse flows are a target that represents a daily average.



TURLOCK IRRIGATION DISTRICT
333 EAST CANAL DRIVE
POST OFFICE BOX 949
TURLOCK, CALIFORNIA 95381
(209) 883-8300

Don Pedro Dam and Powerhouse

January 11, 2007

Mr. Dean Marston
California Dept. of Fish and Game
1234 E. Shaw Ave.
Fresno, CA 93710

Ms. Deborah Giglio
U.S. Fish and Wildlife Service
2800 Cottage Way, W-2605
Sacramento, CA 95825

RE: Project 2299 - Tuolumne River Fall 2006 Pulse Flow, Article 38 45-Day Period, and Water Year Classification Index
Dear Fishery Agency representatives:

The 1996 FERC Order, Amended Article 37, contained a Water Year Classification Index for determining the volume of scheduled stream flows for each fish flow year. The classifications were based on the San Joaquin Basin 60-20-20 Indices for water years 1906-1995. The order stated, "60-20-20 index numbers used each year shall be updated to incorporate subsequent water years pursuant to standard Water Resources Department procedures so as to maintain approximately the same frequency distribution of water year types." The index is updated to incorporate water years 1996 through 2006 (Table 1). While the frequency distribution remains the same, some index numbers may change slightly with each annual update to maintain the frequency distribution.

The 2006 fall pulse flow was from October 14-28 with a scheduled volume of 5,950 AF above the minimum flow requirement of 300 cfs. An average of 552 cfs during this period was actually released or 7,492 acre-feet above the minimum flow requirement (Table 2).

The Article 38 '45-Day Period' in fall 2005 began October 15 and ended November 30, as has been our standard practice in recent years. In accordance with Article 38, reduction in river height between the end of the 45-day period and March 31 shall not exceed four inches (0.33 feet) below the average height established during the 45-day period (measured at Old La Grange Bridge). Using provisional daily flow data from the USGS gage at La Grange, we have calculated the average flow was 409 cfs for the 45-day period, which corresponds to a river height of 170.26 feet at the Old La Grange Bridge based on the USGS 1996 rating table. The current minimum flow requirement of 300 cfs through March 31 exceeds the 273 cfs as shown on Table 3 represented by a gage elevation of 169.93 feet.

If you have any questions, please contact Wes Monier at 209-883-8321.

Sincerely,

Robert Nees
Assistant General Manager
Water Resources and Regulatory Affairs Administration

C: Larry Weis - TID
Allen Short - MID
Magalie Salas – FERC Secretary

TABLE 1
DETERMINATION OF WATER YEAR CLASSIFICATION THRESHOLDS
Water Year Classification

Water Year Classification	Cumulative Occurrence				602020 INDEX (x 1000)											
					Settlement Agreement	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Critical Water Year and Below	0.0%	-	6.4%	<	1500	1,441	1,441	1,441	1,476	1,476	1,476	1,476	1,476	1,476	1,476	1,476
Median Critical Water Year	6.4%	-<	14.4%	>=	1500	1,441	1,441	1,441	1,476	1,476	1,476	1,476	1,476	1,476	1,476	1,476
Intermediate Critical Dry Water Year	14.4%	-<	20.5%	>=	2000	1,964	1,964	1,964	1,964	1,964	1,964	1,964	2,002	2,002	2,002	2,002
Median Dry	20.5%	-<	31.3%	>=	2200	2,159	2,159	2,183	2,183	2,183	2,183	2,183	2,187	2,187	2,187	2,187
Intermediate Dry-Below Normal	31.3%	-<	40.4%	>=	2400	2,441	2,441	2,442	2,442	2,442	2,442	2,441	2,441	2,403	2,441	2,441
Median Below Normal	40.4%	-<	50.7%	>=	2700	2,698	2,720	2,720	2,720	2,763	2,720	2,720	2,720	2,698	2,720	2,720
* Intermediate Below Normal-Above Normal	50.7%	-<	66.2%	>=	3100	3,139	3,139	3,183	3,183	3,225	3,183	3,183	3,139	3,139	3,139	3,183
Median Above Normal	66.2%	-<	71.3%	>=	3100	3,689	3,689	3,740	3,740	3,689	3,689	3,689	3,669	3,669	3,689	3,689
Intermediate Above Normal-Wet	71.3%	-<	86.7%	>=	3100	3,898	3,903	4,028	4,028	3,903	3,903	3,903	3,898	3,898	3,903	4,028
Median Wet/Maximum	86.7%	-<	100.0%	>=	3100	4,593	4,593	4,653	4,653	4,653	4,653	4,653	4,593	4,593	4,653	4,730

* Maximum index value for fish flow year is not to go above value shown in this row.
** The index in the Settlement Agreement was based on Water Years 1906-1995

Table 2
Tuolumne River Flow Schedule

SCHEDULE FOR 2006 - 2007 Fish Flow Year

DATE		Number of	Minimum Flow
From:	To:	DAYS	CFS
14-Oct-Sat	14-Oct-Sat	1	300
15-Oct-Sun	15-Oct-Sun	1	300
16-Oct-Mon	16-Oct-Mon	1	300
17-Oct-Tue	17-Oct-Tue	1	300
18-Oct-Wed	18-Oct-Wed	1	300
19-Oct-Thu	19-Oct-Thu	1	300
20-Oct-Fri	20-Oct-Fri	1	300
21-Oct-Sat	21-Oct-Sat	1	300
22-Oct-Sun	22-Oct-Sun	1	300
23-Oct-Mon	23-Oct-Mon	1	300
24-Oct-Tue	24-Oct-Tue	1	300
25-Oct-Wed	25-Oct-Wed	1	300
26-Oct-Thu	26-Oct-Thu	1	300
27-Oct-Fri	27-Oct-Fri	1	300
28-Oct-Sat	28-Oct-Sat	1	300

USGS Daily (2006 Fall Pulse Flow)			
Actual	Difference from Minimum Flow		
flow	cfs	a.f.	accum af
597	297	589	589
597	297	589	1,178
577	277	549	1,728
554	254	504	2,231
551	251	498	2,729
552	252	500	3,229
563	263	522	3,751
564	264	524	4,274
560	260	516	4,790
551	251	498	5,288
556	256	508	5,796
551	251	498	6,294
552	252	500	6,793
489	189	375	7,168
463	163	323	7,492
552	3,777	7,492	

TURLOCK IRRIGATION DISTRICT

October 17 - November 30, 2006 Average Flow

In Tuolumne River at La Grange

ACTUAL FLOWS (Preliminary USGS Numbers)

DATE	FLOW CFS	DATE	FLOW CFS
17-Oct	554	08-Nov	373
18-Oct	551	09-Nov	371
19-Oct	552	10-Nov	373
20-Oct	563	11-Nov	379
21-Oct	564	12-Nov	372
22-Oct	560	13-Nov	386
23-Oct	551	14-Nov	377
24-Oct	556	15-Nov	348
25-Oct	551	16-Nov	349
26-Oct	552	17-Nov	349
27-Oct	489	18-Nov	348
28-Oct	463	19-Nov	348
29-Oct	407	20-Nov	348
30-Oct	350	21-Nov	348
31-Oct	348	22-Nov	348
01-Nov	343	23-Nov	349
02-Nov	345	24-Nov	348
03-Nov	379	25-Nov	349
04-Nov	389	26-Nov	351
05-Nov	388	27-Nov	348
06-Nov	393	28-Nov	346
07-Nov	374	29-Nov	346
		30-Nov	347
		TOTAL RELEASE=	18,423

45 day average = 409.4 cfs = 170.26 ft elevation *

Less 4 inches -0.33

Minimum Flow = 273.0 CFS = 169.93 ft elevation *

*

From U.S.G.S. table 22

Attachment -B-

2006 Tuolumne River
Technical Advisory Committee Materials:

- List of 2006 TRTAC Activities/Materials
- February Meeting
- March Meeting
- June Meeting
- September Meeting
- December Meeting

2006 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 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.

++

Activities/Materials 09Feb-09Mar2006

* 15Feb, 02Mar: Seine summaries to subgroup (Kirihara)
* 17Feb: Draft meeting summary for the 09Feb meeting, summary of 14Dec meeting, and 2005 material list (Ford)
* 27Feb: Screw trap summary to subgroup list (Fuller)
* 28Feb, 02Mar: La Grange flow changes (Ford)
* 07Mar: Draft agenda and material list (Ford)
* 08Mar: Draft SRP spring predation study (Keith/Hume)

++

Activities/Materials 09Mar-08Jun2006

* 09&23Mar, 07&20Apr, 02&19May, 02Jun: Screw trap monitoring update to subgroup (Sonke)
* 10Mar: CALFED Monitoring grant documents for review/comment (Vick)
* 15&30Mar, 13&27Apr, 11May, 01Jun: Seine summaries to subgroup (Kirihara)
* 18Mar: Draft meeting summary for the 09Mar meeting and revised distribution list (Ford)
* 20Mar: Draft 2005 screw trap report (Fuller)
* 28Mar: Final CWT and RST summary update reports (Ford and Fuller)
* 03Apr: Notice of annual report filing and 2005 spawning survey report (Blakeman)
* 03Apr: Notice of subgroup meeting postponement and stoppage of DFG work on CALFED grant (Ford)
* 03Apr: Comments on CALFED grant (Marston)

* 10Apr: Revised predator assessment study plan (Keith)
* 10Apr: Letter reviewing 2005 fall pulse and 45-day period (Ford)
* 24Apr: Letter of 13Apr on 2006-07 flow schedule (Ford)
* 24Apr: Letter of 13Apr on CALFED monitoring grant (Ford)
* 08May: Inquiry on estimated salmon numbers from screw traps (Mesick)
* 09May: Response to Mesick inquiry (Ford)
* 10May: Reply and request for data (Mesick)
* 26May: 19May transmittal to Mesick of requested screw trap data (Fuller)
* 01Jun: Draft agenda, material list (Ford)

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

* 30Mar: Turlock and Modesto Irrigation Districts 2005 Annual Report pursuant to Article 58 under P-2299.
* 13Jun: Technical review comments of California Dept. of Fish and Game (CDFG) model description entitled 11-22-05 San Joaquin River Fall-run Chinook Salmon Population Model submitted as an attachment to CDFG comments on Districts etc., P-2299.

++

Activities/Materials 08Jun-14Sep2006

* 14&27Jun: Screw trap monitoring update to subgroup (Sonke)
* 22Jun: Final seine summary to subgroup (Kirihara)
* 05Sep: Request for funding M&T project-related work from FSA Sec. 12 and notice of website updates (Ford)
* 06-08Sep: Responses to request for funding (various)
* 08Sep: Draft agenda (Ford)

==========

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

* 13Jun: Technical review comments of California Dept. of Fish and Game (CDFG) model description entitled 11-22-05 San Joaquin River Fall-run Chinook Salmon Population Model submitted as an attachment to CDFG comments on Districts etc., P-2299
* 23Jun: Notice to hold a Public Meeting on 7/25/06 to discuss the 10-year Fisheries Summary Report for Modesto Irrigation District and Turlock Irrigation District Project pursuant to Article 58 under P-2299.
* 14Jul: Turlock and Modesto Irrigation Districts Submission of Copy of Complaint filed in Modesto Irrigation District et al v. Gutierrez, filed April 14, 2006 under P-2299.
* 24Jul: National Marine Fisheries Service Central Valley steelhead comments under P-2299.

++

Activities/Materials 14Sep-31Dec2006

* 22Sep: Snorkel summary to subgroup (Kirihara)
* 24Oct: Letter of 11Oct on 2006-07 flow schedule (Ford)
* 24Oct: Draft reports on CWT studies and spawning surveys (Ford)
* 15Nov: Notice of potential tour of Bobcat Flat Project site (D. Boucher)

* 17Nov: Notice of several recent updates on TRTAC website (Ford)
* 07Dec: Draft agenda, material list (Ford)

==========

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

* 21Sep: Request for Delay of Action/Extension of 60-day comment period by TID/MID, CCSF, CDFG, NMFS, and USFWS under P-2299 following the 7/25 FERC hearing on the 10-Yr Report. Request FERC staff participation in collaborative process for fishery m
* 22Sep: California Department of Fish & Game requests the 9/25/06 recommended comment deadline be extended as needed to allow collaborative science development process, FERC Staff participation etc re the New Don Pedro Proj-2299.
* 25Sep: CALIFORNIA RIVERS RESTORATION FUND, TUOLUMNE RIVER PRESERVATION TRUST, CALIFORNIA TROUT, INC., AND FRIENDS OF THE RIVER'S COMMENTS ON THE COMMISSION STAFF'S PRELIMINARY ASSESSMENT OF THE 10-YEAR FISHERIES SUMMARY REPORT (P-2299).
* 20Dec: Letter requesting Turlock Irrigation District, CA et al to submit within 90 days a study plan and schedule for the additional monitoring of the Don Pedro Project 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

09 February 2006
9:00 AM
Turlock Irrigation District, Lunch Room (2nd floor)

DRAFT AGENDA

1. Introduction
    A. Comments on draft agenda and meeting summary
2. Items since 08Dec meeting
    A. Review material list
    B. Report on 14 Dec Monitoring PSP working group meeting
    C. Current status of CALFED PSP and gravel addition monitoring plans
3. Discussion of monitoring; gravel placement sites
4. General Update
    A. Data and report status
    B. Agency and NGO updates
    C. Monitoring update
    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

09 February 2006
9:00 AM
Turlock Irrigation District, Lunch Room (2nd floor)

Draft Meeting Summary

1. Introduction
   A. Comments on draft agenda and meeting summary – no comments; 09:30 AM was set for start of all TRTAC meetings at TID or MID.

2. Items since 08Dec meeting
   A. Review material list – Ford provided handout of list for all of 2005
   B. Report on 14 Dec Monitoring PSP working group meeting – 07Dec (previously e-mailed) and 14Dec meeting summaries by Vick were handouts
   C. Current status of CALFED PSP and gravel addition monitoring plans –
      - Vick provided a review of the status of the PSP (see also Dec meeting notes); Task 5 monitoring has been moved to the gravel addition project; Angling survey to include natural tagging approach using photos
      - **Action:** draft workplans will be provided by Vick/Hume by the Mar meeting; final to DFG in April with plan for 01Jul start of contract
      - Long-awaited comments from CALFED on Coarse Sediment and Warner/Deardorf projects are being reviewed by Fryer
      - Marked rocks could only be placed at Bobcat Flat before flows came up in Dec.

3. Discussion of monitoring; gravel placement sites –
      - Handout of 29Mar2005 memo from Mierau (previously e-mailed) on gravel addition sites was reviewed.
      - CDFG plans to add some gravel (2000 yards) this year above New La Grange Bridge (R1A-R1C reach). It was concluded that permitting issues would likely preclude any TRTAC gravel additions until 2007.
      - **Action:** Ford will review previous gravel addition recommendations to compare with current list.
      - Snorkel monitoring may begin in July under PSP program.

4. General Update
    A. Data and report status –
        - Handout on items for annual report was reviewed and draft deadlines were chosen for all elements – revised table reflecting the discussion is at end of this summary; final submittal date remains at 01 April. Plan is to include 2004 and 2005 TRTAC materials and Ford will try to distribute a draft of summary section (and component reports) for review.
        - **Action:** (1) assigned parties will work to meet specified timelines; Ford to check with Blakeman on data needs
    B. Agency and NGO updates –
        - AFRP will have more short-term moves in Lodi offices; Mesick reported he is still working on conceptual models
        - Hume reported that Peter Baker of SWS would not be available this spring
        - Boucher reported planting at Bobcat flat is planned for March; flow enters high flow channel at ~3000 cfs.
        - Koepele reported that TRPT has a new exec. Director; planting is continuing at Big Bend
    C. Monitoring update –
        - Handout on initial RST results at 2 trap locations from Fuller (e-mail of 08Feb)
        - Handout of long-term basin run estimate graph from Ford using early estimates of 3,500 Stan, 800 Tuol, and 2,900 Merced for 2005
        - Seining has found salmon throughout Tuolumne and into SJR.
        - A predation study at SRP 9 is scheduled to occur this spring
    D. River operations and forecasts –
        - Maintaining current operations is expected in near-term. Those are flows of 2500-3000 at La Grange, with 400 cfs to Hickman Spill. Flow is varying somewhat, partly as a result of testing phase of new TID power plant, but use of TID canal is limiting changes; intermittent MID spill to Dry Creek.
        - Projected flow range in Apr-May period is 1000 (dry) to 5000 (wet) at this early stage.
        - Monier is preparing the annual letter reviewing the fall pulse flow and 45-day period.

4. Additional items –
    - Ford reviewed discussion topics selected at Sep2005 meeting and which meetings they had been discussed
    - Districts are pursuing website for TRTAC
    - No news regarding FERC process
    - VAMP barrier is undecided due to delta smelt issues even if flows would allow installation

5. Next meetings and topics:
    - 09Mar at TID, 9:30 AM – website, flow experiments, conceptual models, monitoring
    - Subgroup on 06Apr at MID, 9:30 AM – conceptual models

FERC 2299 TRTAC Meeting

09 February 2006

Name	Organization
Tim Ford	TID/MID
Robert Nees	TID
Bill Johnston	MID
Ron Yoshiyama	CCSF
Patrick Koepele	TRT
Allison Boucher	FOT
Tim Heyne	DFG
Dennis Blakeman	DFG
Carl Mesick	FWS-AFRP
Jeff McLain (phone)	NMFS
Noah Hume	Stillwater Sciences
Jen Vick	McBain & Trush

Revised table resulting from meeting discussion

DRAFT #2: 2005 Lower Tuolumne River Annual Report (Project No. 2299)				
Proposed Reports	**Report Title**	**Primary Responsible Party(s)**	**Status**	**Proposed Draft Date**
	2005 Summary Report & 2004/05 TRTAC materials	Districts		22-Mar-2006
Report 2005-1	2005 Spawning Survey Report	CDFG		24-Feb-2006
Report 2005-2	Spawning Survey Summary Update	SWS/Districts		10-Mar-2006
Report 2005-3	2005 Seine/Snorkel Report and Summary Update	SWS/Districts	**Draft 06Feb**	
Report 2005-4	2005 Grayson RST Report	Cramer		1-Mar-2006
	(and Summary Update?)			
Report 2005-5	CWT Summary Update	SWS/Districts		15-Mar-2006
Report 2005-6	Restoration Project Monitoring Report	M&T/SWS		15-Mar-2006
Report 2005-7	River Mile 43 Project Completion Report	M&T/FOT		15-Mar-2006

Tuolumne River Technical Advisory Committee Materials since 08Dec2005 TRTAC meeting – through 06Feb

* 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)

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[Go to http://ferris.ferc.gov/idmws/search/fercgensearch.asp ; indicate date range of interest, enter P-2299 as Docket Number, and submit]

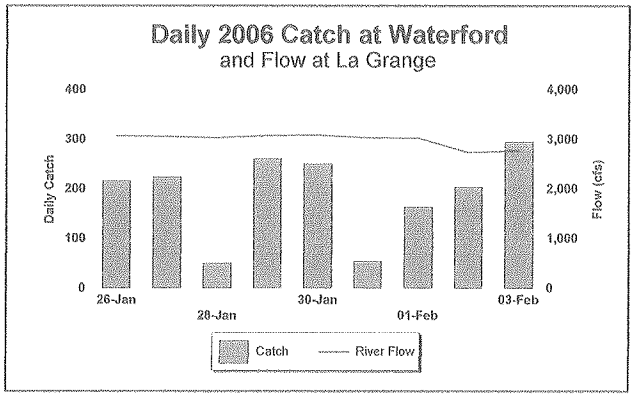
* 22Dec2005: TID/MID Responses to Comments submitted by CDFG and FOT.

* 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 RST Update
January 25-February 3, 2006

Waterford:

Sampling was initiated at a new site near Waterford (RM 29.8) on January 25. A total of 1,717 juvenile Chinook salmon were captured between January 26th and February 3rd. Daily catch ranged from 50 to 295 Chinook. Individual forklengths ranged from 31 mm to 55 mm, and daily mean lengths ranged from 34.2 mm to 35.8 mm.

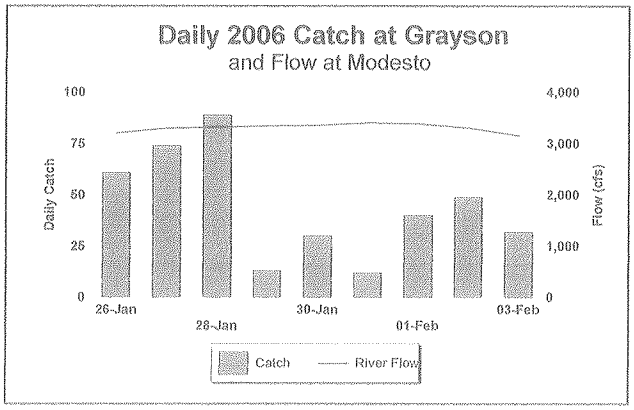


Zero *O. mykiss* were captured in the rotary screw trap during this sample period.

One trap efficiency test was conducted at Waterford on January 31. Of 240 fish marked caudal fin green, 5.4% were recovered at a river flow of 3,029 cfs at La Grange. The next tests are scheduled for February 8 and 10, and green marks will be used for all trap efficiency tests at Waterford this year.

Grayson:

The Grayson traps were installed on January 25 and sampling began immediately. A total of 400 juvenile Chinook salmon were captured between January 26th and February 3rd (Figure 2). Daily catch ranged from 12 to 89 Chinook. Individual forklengths ranged from 31 mm to 52 mm, and daily mean lengths ranged from 35.1 mm to 36.7 mm.

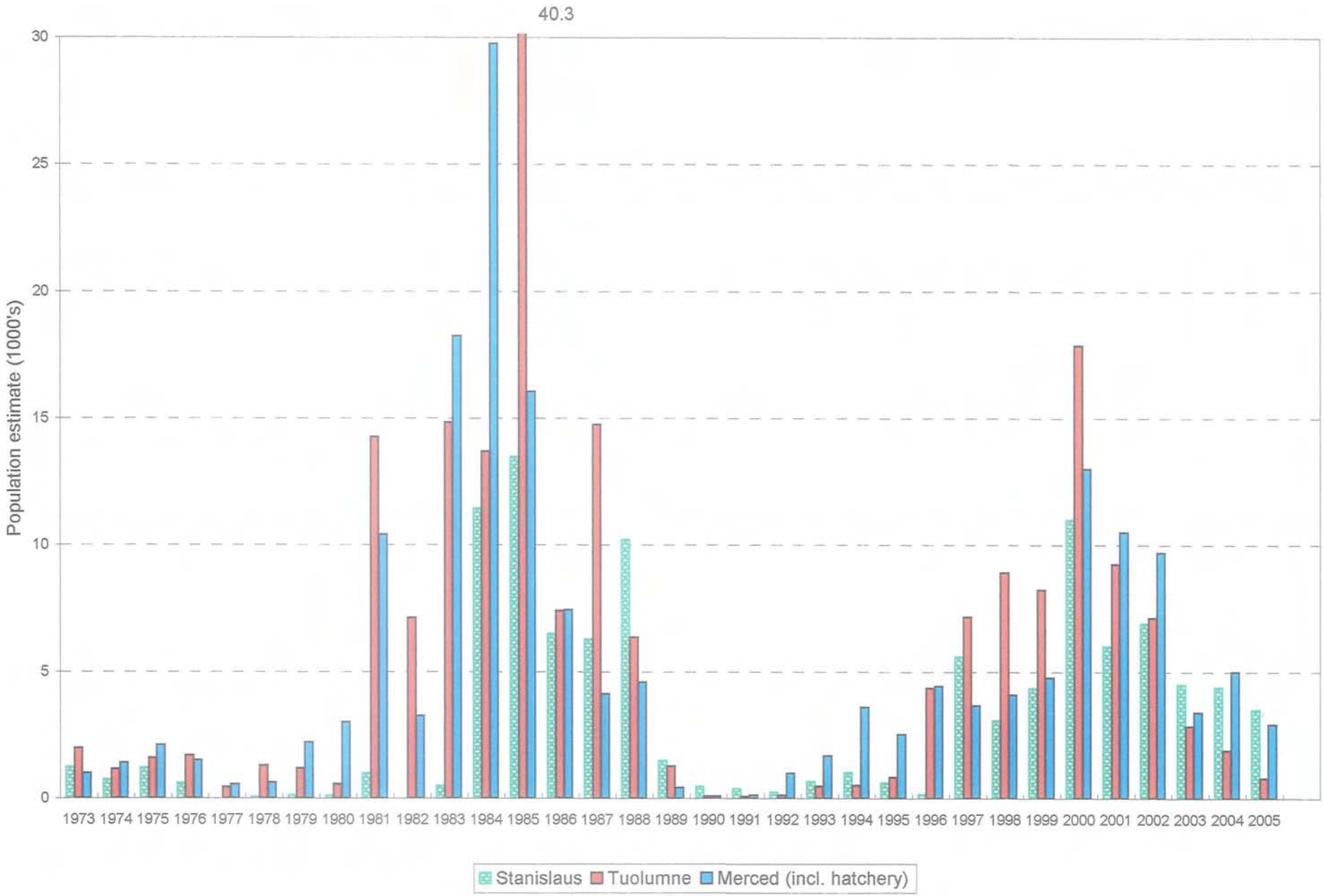


Zero *O. mykiss* were captured in the rotary screw trap during this sample period.

Trap efficiency tests were not conducted between January 26th and February 3rd, but are scheduled for February 9, 11, and 12. Pink marks will be used for all trap efficiency tests at Grayson this year.

Environmental Data:

Instantaneous water temperature taken at the Waterford trap ranged between 49.6°F and 51.0°F, while temperature at Grayson ranged between 50.0°F and 52.2°F. Turbidity ranged from 2.5 NTU to 3.4 NTU at Waterford and from 3.3 NTU to 4.4 NTU at Grayson. During the sampling period flows at La Grange ranged between 2,735 cfs and 3,080 cfs and flows at Modesto ranged from 3,158 cfs to 3,408 cfs.


40.3
Population estimate (1000's)
0
5
10
15
20
25
30
1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005
Stanislaus
Tuolumne
Merced (incl. hatchery)

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
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TECHNICAL ADVISORY COMMITTEE MEETING

09 March 2006
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

DRAFT AGENDA

1. Introduction
    A. Comments on draft agenda and meeting summary
2. Items since 09Feb meeting
    A. Review material list
    B. Update on CALFED-funded monitoring draft workplans
3. Discussion of monitoring, website, flow experiments, conceptual models
4. General Update
    A. Data and report status, including Annual Report
    B. Agency and NGO updates
    C. Monitoring update
    D. River operations and forecasts
5. Additional items
6. Next meetings and topics:
    - 06Apr Subgroup at MID: conceptual models
    - 08Jun at TID:
    - Others?

TUOLUMNE RIVER TECHNICAL ADVISORY COMMITTEE

DON PEDRO PROJECT - FERC LICENSE 2299

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TECHNICAL ADVISORY COMMITTEE MEETING

09 March 2006
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

Draft Meeting Summary

1. Introduction
    A. Comments on draft agenda and meeting summary - none
2. Items since 09Feb meeting
    A. Review material list – no comments
    B. Update on CALFED-funded monitoring draft workplans: Hume provided 3 handouts on that were reviewed – budget section was not available yet; discussion of reporting timelines, grant/project manager(s) and administration funding; Task 4-10 (avian surveys) has new material from PRBO; there was extended discussion of the angling survey and what types of samples might be taken; **Action** – Vick will provide the files for comments that are due back to her by 24Mar.

3. Discussion of monitoring, website, flow experiments, conceptual models – Koepele asked about the status of topics in Nov2005 meeting (including monitoring elements, flow schedule process, study plans for new funding, TRTAC process); **Action** – Ford will provide a status listing of discussion items since Sep2005 meeting by the Apr2006 meeting; **Action** - spring predation proposal (handout) comments due to SWS by 17Mar; Ford provided a handout of pages from the initial website developed by SP Cramer (only some pages have information yet); plan is to include all TRTAC materials http://www.tuolumnerivertac.com/; **Action** - Ford will resume work on the website in April – send any comments/material to him

4. General Update
    A. Data and report status, including Annual Report: 2005 Spawning survey and 2005 screw

trap reports should be out next week; Ford asked DFG to provide spreadsheet files at earliest opportunity so work on Summary Update reports can proceed. Plan is for e-filing by end of month with hardcopies to be produced in April

B. Agency and NGO updates: FOT – Bobcat Flat tour on 19Mar, Grayson Ranch work mostly complete (contract expires in Sep); new Ceres Park plans to leave bank riprap (input can still be made to Ceres); Bobcat Flat planting will be made this spring (or summer), ideally with lower flows; TPT – more planting days at Big Bend; DFG-Rhiana Lee is new employee with 4-pumps funding to work on restoration projects.

C. Monitoring update – nothing to add to already distributed material on seine and screw trap sampling.

D. River operations and forecasts – current flows are near 5000 cfs with more rain in forecast; Hickman spill is in use and Faith Home spill will start; Don Pedro is about 2 feet below flood control level so inflows will be passed through near end of April when allowable storage increases; so far not as wet as last year and snowpack increases at higher elevations; VAMP briefly discussed – Old River barrier not likely due to delta smelt concerns and current prospect for higher flows

5. Additional items: no new update on restoration projects since Feb meeting; discussion of ownership status of parcels upstream of Basso Bridge – Vaughn parcels have been acquired by State; questions about status of Ingalls parcels – may need to check with Assessors office; no further DFG action on 7-11 turbid spill since analysis of water samples indicated sediment levels were not too high – owner also plans revised disposal of outflow; discussion of need to address trespass grazing above Basso Bridge

6. Next meetings and topics:

- 06Apr Subgroup at MID: conceptual models/overall topic review – results go back to full TRTAC
- 08Jun at TID
- Others? – none selected at this time, need for May meeting will be considered in April.

FERC 2299 TRTAC Meeting

09 March 2006

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

Tuolumne River Technical Advisory Committee
Materials from 08Dec2005 to 09Feb2006
(underlined items are designated for inclusion in the FERC Report)

* 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)

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Select FERC filings available from FERC online e-library (listed by doc. date):
[Go to http://ferris.ferc.gov/idmws/search/fercgensearch.asp ; indicate date range of interest, enter P-2299 as Docket Number, and submit]
* 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.

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Tuolumne River Technical Advisory Committee
Materials from 09Feb to 09Mar2006

* 15Feb, 02Mar: Seine summaries (Kirihara)
* 17Feb: Draft meeting summary for the 09Feb meeting, summary of 14Dec meeting, and 2005 material list (Ford)
* 27Feb: Screw trap summary to subgroup list (Fuller)
* 28Feb, 02Mar: La Grange flow changes (Ford)
* 07Mar: Draft agenda and material list (Ford)

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TRTAC Meetings, Agendas, Notes and Handouts

Date	Agenda	Notes	Handouts
March 2006	agenda	notes	
December 7, 2005	agenda	notes	
November 4, 2005	agenda	notes	Tuolumne River Restoration Projects [Excel 208 kb]
October 13, 2005	agenda	notes	Review of Tuolumne Monitoring Programs [Power Point 1241 kb] Tuolumne 2004 PSP Monitoring Summary (budget info) [Excel 144 kb] HEC Cross Sections [Adobe 162 kb]
September ?, 2005	agenda	notes	PSP Task 6 Excerpt [Word 23 kb];
July 2005	agenda	notes	
March 2005	agenda	notes	Material List [Word 29 kb]

Workgroup Meetings, Agendas, Notes and Handouts

Date	Workgroup	Agenda	Notes	Handouts
December 7 & 14, 2005	Monitoring PSP	agenda	notes	

DON PEDRO PROJECT - FERC LICENSE 2299

TRTAC Participants

Name	Organization	Address	Phone Number	E-mail
Tim Ford	Turlock/Modesto Irrigation Districts	P.O. Box 949 Turlock, CA 95381	(209) 883-8275	tjford@tid.org
Debbie Liebersbach Wilton Fryer Robert Nees	Turlock Irrigation District	333 E. Canal Drive Turlock, CA 95380 P.O. Box 949 Turlock, CA 95381	(209) 883-8428 (209) 883-8316 (209) 883-8214	 wbfryer@tid.org rmnees@tid.org
Roger Masuda Jim Koontz	Turlock Irrigation District	P.O. Box 510 Turlock, CA 95381	(209) 667-5501	rmasuda@calwaterlaw.com jkoontz@calwaterlaw.com
Walter Ward William Johnston	Modesto Irrigation District	1231 11th Street Modesto, CA 95354	(209) 526-7459 (209) 526-7384	walterw@mid.org billj@mid.org
Donn Furman	CCSF Office of the City Attorney	City Hall, 1 Carlton B. Goodlette Place, San Francisco, CA 94102	(415) 554-3959	donn.w.furman@sfgov.org
Ron Yoshiyama	CCSF	Dept. of WFCB, U. C. DavisDavis, CA 95616	(530) 752-1270	rmyoshiyama@ucdavis.edu
Nicole Sandkulla Art Jensen	BAWSCA	155 Bovet Road, Suite 302 San Mateo, CA 94402	(650) 349-3000	nsandkulla@bawsca.org AJensen@bawsca.org
Bill Loudermilk Dean Marston	CDFG	 1234 E. Shaw Ave.	 (559) 243-4005x141	wloudermilk@dfg.ca.gov dmarston@dfg.ca.gov

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Tuolumne River Projects

Lower Tuolumne River restoration plan scoping summary and proposed work plan

Restore the 7/11 Segment of the Mining Reach

Acquire a riparian easement and restore Grayson River Ranch (GRR) on the Tuolumne River

Assist with peer review process for Tuolumne River Technical Advisory Committee (TRTAC) supported monitoring efforts

Assist the Tuolumne River Technical Advisory Committee with Peer Review and Technical Outreach

Restore the Ruddy Mining Reach on the Tuolumne River

Support programs to provide educational outreach and local involvement in restoration for teachers and students in the Lodi, Modesto and Merced unified school districts

Update and Validate the Spawning Riffle Atlas for the San Joaquin Tributaries

Analyze Archived San Joaquin Basin Chinook Salmon Scale Samples and Develop a Comprehensive Database Accessible to Interested Parties (multi-year)

Develop a sediment management plan for the Tuolumne River

Develop an adaptive management forum for large-scale restoration projects

DON PEDRO PROJECT - FERC LICENSE 2299

Tuolumne River Documents

1976-1999 Scale Inventory by Size [Adobe 40 kb]

1976-1999 Scale Inventory by Watershed [Adobe 42 kb]

1998 Juvenile Chinook Salmon Capture and Production Indices Using Rotary-Screw Traps on the Lower Tuolumne River [Adobe 160 kb]

2001 Juvenile Chinook Salmon Capture and Production Indices Using Rotary-Screw Traps on the Lower Tuolumne River [Adobe 804 kb]

2002 Juvenile Chinook Salmon Capture and Production Indices Using Rotary-Screw Traps on the Lower Tuolumne River [Adobe 209 kb]

2003 Juvenile Chinook Salmon Capture and Production Indices Using Rotary-Screw Traps on the Lower Tuolumne River [Adobe 138 kb]

2003 Tuolumne River Fall Chinook Salmon Escapement Survey [Adobe 368 kb]

2004 Tuolumne River Fall Chinook Salmon Escapement Survey [Adobe 368 kb]

2004 Tuolumne River Escapement Survey Summary [Adobe 16 kb]

2005 Tuolumne River Escapement Survey Summary (Preliminary Data) [Adobe 17 kb]

2005 Ten Year Summary Report [Power Point 2181 kb]

A Summary of the Habitat Restoration Plan for the Lower Tuolumne River Corridor [Adobe 1966 kb]

Tuolumne River Technical Advisory Committee

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Tuolumne River Data

Tuolumne River Juvenile Outmigration Monitoring at Grayson (RM 5) - 2004 and 2005

Tuolumne River Snorkel Surveys

Tuolumne River Seining Surveys

Tuolumne River Thermographs

DON PEDRO PROJECT - FERC LICENSE 2299

Tuolumne River Correspondences

Annual Report Submitted under Article 58 dated June 6, 2005

Request to the Commission to establish procedures for a hearing on the 2005 Ten Year Summary Report dated June 27, 2005

Tuolumne River 2005-2006 FERC Article 37 flow schedule for P-2299 dated April 8, 2005

Tuolumne River 2005-2006 FERC Article 37 flow schedule for P-2299 dated April 20, 2005

Tuolumne River 2005-2006 FERC Article 37 flow schedule for P-2299 dated May 20, 2005

Tuolumne River 2005-2006 FERC Article 37 flow schedule for P-2299 dated September 30, 2005

Tuolumne River Fall 2004 Pulse Flow and Article 38 45-Day Period dated January 27, 2005

DON PEDRO PROJECT - FERC LICENSE 2299

Tuolumne River Links

American Fisheries Society

Bay Area Water Supply and Conservation Agency

Calaveras River Fish Group

CALFED Bay-Delta Program

CDEC - California Data Exchange Center

California Department of Fish & Game (CDFG)

CDFG - Central Valley Bay-Delta Branch

CDFG - Native Anadromous Fish and Watershed Branch

California Environmental Resources Evaluation System (CERES)

California Rivers Restoration Fund

California Sportfishing Protection Alliance

City and County of San Fransisco

Stillwater Sciences

2855 Telegraph Avenue, Suite 400, Berkeley, CA 94705 Phone (510) 848-8098 Fax (510) 848-8398

MEMORANDUM

DATE: 8 March 2006

TO: Tim Ford
Wilton Fryer

FROM: AJ Keith and Noah Hume

SUBJECT: Study Plan for 2006 Tuolumne River Predation Assessment

Background

The monitoring plan for SRPs 9 and 10 is an integral part of the Tuolumne River restoration projects and was designed to evaluate project effectiveness in meeting geomorphic and biological objectives. Monitoring provides data needed for adaptive management of the completed projects and design of future projects. The SRP 9 project was completed in 2001 and monitoring occurred for two years following construction. One of the key monitoring hypotheses for the SRP 9 project is that elimination of the in-channel mining pit will reduce largemouth bass abundance at the project site and increase Chinook salmon outmigrant survival through the site. The majority of post-project monitoring thus far has focused on bass abundance and bass habitat at SRP 9 and control sites. Additional geomorphic and vegetation monitoring is planned for summer 2006. Several project hypotheses, however, have not yet been tested. No assessment has been conducted to document the effects of project construction on bass predation rates, flow-related habitat partitioning of bass and salmon, or Chinook salmon survival at the site.

Additional hypotheses were developed subsequent to analysis of post-project bass monitoring data and 2-D habitat modeling. These hypotheses, which were included in the 2005 Special Run Pool and 7/11 Reach Post-project Monitoring Report as recommendations for further monitoring, include the following[1]:

H13 In SRP 9, habitat segregation between outmigrating Chinook salmon and foraging largemouth and smallmouth bass occurs at flows exceeding 300 cfs. Bass predation rates at flows ≥ 1,500 cfs are significantly less at SRP 9 than at SRP control sites. Predation rates by smallmouth bass are significantly higher than predation rates by largemouth bass.

H14 At flows exceeding 300 cfs, juvenile Chinook salmon migration rates are significantly faster at SRP 9 than at SRP control sites. During these flows, juvenile Chinook salmon remain oriented facing upstream as they migrate through SRP 9 but orient facing downstream and must actively swim through SRP control sites.

[1] Note that hypothesis numbers are from the draft SRP 9 and 7/11 Reach: Post-project Monitoring Synthesis Report (February 2005).

Quantifying Chinook salmon survival and bass predation through the project reach is fundamental to evaluating the SRP 9 project's effectiveness in achieving its primary goal (i.e., increasing juvenile salmon outmigrant survival) and testing the validity of the conceptual models upon which the project is based (i.e., whether converting the mining pits to riverine channels reduces largemouth bass abundance and/or predation efficiency and whether reducing largemouth bass abundance increases Chinook salmon survival).

The CBDA has provided funds to conduct a pilot predation study (the Predation Assessment) at the SRP 9 project site. The Predation Assessment was originally planned for spring 2005, but high flows forced postponement of the study until spring 2006. With current and projected 2006 Tuolumne River spring flows again greater than those for which the original study plan was designed, we have revised the study objectives and study plan into high flow and low flow components, each to be conducted separately as conditions permit. Only the high flow study component planned for spring 2006 is detailed here. Low flow studies will be completed as additional funding becomes available and spring flow conditions permit.

Study Objectives

The high flow objectives of the Predation Assessment are to:

1) Document the predation rate of bass in SRP 9 and compare with predation rates at SRP and riffle control sites (H13, above);
2) Document velocity-driven or temperature-driven spatial distribution of bass and salmon at SRP 9 and an SRP control site, and determine whether the two species are spatially segregated (H13).

Study Plan

All components of the Predation Assessment will take place during the later portion of the Chinook salmon outmigration period (April–June). The time period currently targeted for the high flow study component is early-mid April 2006, recognizing that the exact timing may need to be adjusted in response to river flow conditions (including potential VAMP releases).

Task 1. Document Bass Predation Rates at Flows > 1,500 cfs

Hook and line sampling will be used to capture bass at SRP 9, one SRP control site (e.g., SRP 10), and one riffle control site (e.g., Charles Road). Sampling will occur at flows > 1,500 cfs to document high flow predation rates at SRP 9 and the control sites. (Sampling to document predation rates at low flows (< 300 cfs) will be conducted during the low flow component of this study, the timing of which is contingent on funding and low spring flow conditions.)

Sampling will be conducted by a crew of two anglers. The crew will consist of a local fishing guide (Mr. Steve Walser) and one Stillwater Sciences biologist. The three sites will be sampled consecutively to ensure environmental conditions during sampling are as consistent as possible. The fishing guide will be consulted to determine the most effective tackle and methods for catching bass in the Tuolumne River. If feasible, a lure that mimics a juvenile Chinook salmon will be used for hook and line sampling.

Sampling will continue for a period of up to three days, with a goal of catching at least 20 piscivore-sized bass (> 180 mm FL) at each site. Sampling each day will include crepuscular (low light) periods around dawn and dusk, when feeding activity is generally at its peak (Moyle 2002). Anglers will mark the location of each bass caught on 2005 orthorectified color aerial photographs and record the

position of each catch using a handheld GPS unit to help determine spatial distribution and habitat use (i.e., thalweg, channel margin, floodplain). All bass > 150 mm FL will be fitted with a uniquely-numbered floy tag. Recapture of tagged bass with salmon in their stomachs will improve the precision of predation rate estimates. Additionally, recapture of sufficient numbers of tagged bass may permit abundance estimates to be made.

Stomach lavage or, if necessary, removal of the stomach, will be used to recover stomach contents from all bass > 150 mm TL. Although 180 mm was previously identified as the lower size limit for likely salmon predators from the 1990 predation study data, using a lower size limit of 150 mm will serve as a validation of these results. Stomach contents will be preserved in 70% ethanol, marked with species, length, capture location, and date/time, and transported to the laboratory for examination. All identifiable prey items found in bass stomachs will be classified (i.e., fish, insect, crustacean, etc.) and enumerated. Fish will be identified to species when possible, and intact fish will be measured. The number of Chinook salmon consumed will be used together with water temperature data and published information on gastric evacuation rate to calculate a predation rate for each predator. The data will be used to identify differences in predation rates at each site and at each flow sampled. Predation rates will also be compared for largemouth and smallmouth bass.

Salmon catch data from CDFG's and TID's rotary screw traps will be used to provide an index of the size of the potential prey population (i.e., outmigrant salmon) during the predation study period. The prey availability index will serve as a standard of comparison for bass predation rates during the 2006 high flow study and the subsequent low flow study planned for 2007. Juvenile salmon captured or observed at the study and control sites (see Task 2, below) will also provide data to develop the prey availability index.

Water temperature during sampling will be recorded with continuous recording thermographs installed at each site. Tidbits (Onset Corp.) will be secured to the river bed or bank at each site one day prior to sampling to provide ambient temperature data necessary for determination of gastric evacuation rate. If feasible, temperature Tidbits will be installed at near-shore (i.e., floodplain) and mid-channel locations at each site to record potential differences in water temperature between these habitat types. Tidbits will be removed when sampling is completed and returned to the laboratory for download and data analysis.

Task 2. Document Velocity-driven or Temperature-driven Spatial Distribution of Bass and Salmon

Seine or snorkel surveys will be conducted during a 1–2 day period at SRP 9, one SRP control site (SRP 10) and one riffle control site (Charles Road) to document the spatial distribution and hypothesized segregation of bass and juvenile Chinook salmon. Surveys at these sites during the high flow study component will be limited to lower velocity areas on inundated floodplains and near channel margins, as feasible based on safety and survey effectiveness considerations.

Bass and salmon captured during seining and snorkeling will be enumerated and length will be either measured (seining) or visually estimated (snorkeling). The location of bass and salmon captured or observed will be documented and water depth, velocity, and cover at these locations will be measured to document the conditions used by each species. This will also allow comparison of each species' habitat use with the 2-D modeling results of habitat distribution for each species during flows of this magnitude. These data will also be used to develop the prey availability index for the study period (see Task 1, above) for comparison with observed rates of predation by bass.

Ten piscivore-sized bass captured at each of the three sample sites will be retained and fitted with radio transmitters for subsequent assessment of velocity-driven and temperature-driven spatial

distribution and habitat use. Radio-tagged bass will be released back into the site where they were captured and initially tracked for a period of up to two days by an experienced Stillwater Sciences biologist. A combination of fixed and mobile antennae will be used to document bass movement patterns. Follow-up monitoring will be conducted one day per week for a period of up to four weeks to document movement and temporal shifts in habitat use by bass in response to changing river flow and temperature conditions.

TUOLUMNE RIVER TECHNICAL ADVISORY COMMITTEE

DON PEDRO PROJECT - FERC LICENSE 2299

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TECHNICAL ADVISORY COMMITTEE MEETING

08 June 2006
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

DRAFT AGENDA

1. Introduction
    A. Comments on draft agenda and meeting summary
2. Items since 09Mar meeting
    A. Review material list
3. Discussion of monitoring and conceptual models?
4. General Update
    A. Distribution of annual report; status of other data/reports
    B. Agency and NGO updates
    C. Monitoring update
    D. River operations and forecasts
5. Additional items
6. Next meetings and topics:
    - TRTAC on 14Sep
    - Others?

TUOLUMNE RIVER TECHNICAL ADVISORY COMMITTEE

DON PEDRO PROJECT - FERC LICENSE 2299

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TECHNICAL ADVISORY COMMITTEE MEETING

08 June 2006
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

Draft Summary

1. Introduction
    A. Comments on draft agenda and meeting summary - none
2. Items since 09Mar meeting
    A. Review material list – no comments

3. Discussion of monitoring and conceptual models – Mesick still not able to present model, but stated it would attempt to summarize what is known and not known and recommend what to investigate; DFG presently is reviewing his conceptual model.

4. General Update
    A. Hardcopies and CD's of 2005 annual report to FERC were handed out at meeting
    B. Agency and NGO updates: FOT – Bouchers could not attend due to ongoing restoration work at Bobcat Flat; TRT – Patrick is working part-time at Columbia College; Elizabeth Holtz was introduced and she will work out of Modesto office (new location at 829 13th St.); FWS – Mesick reviewing critique of DFG salmon model, working on review of fall flows, and screw trap trend analysis.
    C. Monitoring update – Hume reported that ID of 2005 invertebrate samples was in progress; Ford indicated that further monitoring (except thermographs) was on hold pending resolution of CALFED grant; Blakeman had no information on grant status, but agreed to check on availability and parameters of Don Pedro profiles gathered for Dotan's basin temperature model; Nees reported that a letter regarding the grant was to have been provided by the DFG regional office.

D. River operations and forecasts – Ford briefly discussed a recent e-mail exchange with A. Boucher on flow operations; flows were in the process of coming down.

5. Additional items – Restoration: Handout of project status from Fryer; Ruddy Mining Reach Project may not proceed and could affect the Warner-Deardorff Project; SRP 9 predation study was done in May with a report expected by the end of June; SRP 10 does not have funding for construction; Blakeman reported that the next DFG gravel addition would now be in 2007.

6. Next meetings and topics:

- Next TRTAC meeting is scheduled for 14Sep.

FERC 2299 TRTAC Meeting
08 June 2006

Name	Organization
Tim Ford	TID/MID
Robert Nees	TID
Roger Masuda (phone)	TID
Bill Johnston	MID
Ron Yoshiyama	CCSF
Patrick Koepele	TRT
Elizabeth Holtz	TRT
Dennis Blakeman	DFG
Carl Mesick	FWS-AFRP
Noah Hume	Stillwater Sciences

TURLOCK IRRIGATION DISTRICT

CIVIL ENGINEERING DEPARTMENT
M E M O R A N D U M

TO: TRTAC
FROM: Wilton Fryer
DATE: 2 June 2006
RE: Restoration Projects - Status Update

Project	Funding	Status
Active Projects:		
MJ Ruddy	Partial	A separate minerals appraiser was brought in to assist with the developing the 4th iteration of the appraisals for the project. The package was delivered to the Federal reviewers on 2 June 2006. It has taken several months with the federal reviewers to reach the June 2006 submittal point. The 1999 funds have already been defunded and it looks like the 2000 funds will also be defunded at the end of June regardless of the appraisal status. The remaining funds might be available to purchase the land, but without funds to construct the Districts would be reluctant to proceed.
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 mining permits are linked. On 31 May 2006 the CBDA asked that the District and GCAP Services proceed with development of a SOW for the Phase II directed action submittal from November 2003, incorporating the ERP comments received in late January 2006. Given the appraisal review difficulties with using the Federal reviewers and the purchases will be with State funds, we will look to see if a State agency can provide the appraisal review.
La Grange Gravel	Full	Comments from the UC Science Panel in Davis were received in late January 2006. The SOW has been revised, and along with the monitoring plan, is currently under review with DFG Region 4. Reimbursements from July 2004 are now being processed. The goal is to complete CEQA and permits in 2006 for a summer 2007 start of implementation. Biological

		surveys were conducted this spring as part of the permit process.
Fine Sediment	Full	Design work for the project is complete. The DFG access agreement is awaiting signature at DFG. Only the ESA portion of the ACOE permit is left to be completed. At issue are the two surveys for red legged frog and tiger salamander found no habitat, but the exact USFWS ESA protocol was not followed. If the USFWS does not accept the reports, there is a 1-year delay because the sampling period has passed for 2006. The August 2005 request to move funding from the riffle cleaning task over to the Gasburg Creek portion of the construction was finally approved at the May 2006 CBDA meeting. Depending on the ACOE permit, there is still time to construct this summer.
SRP 10	Partial	This project was split into two phases by CBDA and only design and modeling funded under Phase I. No Phase II funding for acquisition and construction has ever been identified. The Phase I work will be completed by 31 June 2006 and the project funding closed for Phase I. The landowner has been informed there is no foreseeable Phase II funding.

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. The CBDA Science Panel has accepted the CSMP as part of their acceptance of the LG Sediment 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.

TUOLUMNE RIVER TECHNICAL ADVISORY COMMITTEE

DON PEDRO PROJECT - FERC LICENSE 2299

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

333 East Canal Drive
Turlock, CA 95381-0949
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Fax: (209) 656-2180
Email: tjford@tid.org

TECHNICAL ADVISORY COMMITTEE MEETING

14 September 2006
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

DRAFT AGENDA

1. Introduction
    A. Comments on draft agenda and meeting summary
2. Items since 08Jun meeting
    A. Review material list
3. Updates
    A. Status of data/reports
    B. Agency and NGO updates
    C. Monitoring update
    D. Restoration update
4. River operations, flow schedule, and forecasts
5. General discussion and additional items
6. Next meetings and topics:
    - TRTAC on 11Dec
    - Others?

TUOLUMNE RIVER TECHNICAL ADVISORY COMMITTEE

DON PEDRO PROJECT - FERC LICENSE 2299

MODESTO IRRIGATION DISTRICT
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TECHNICAL ADVISORY COMMITTEE MEETING

14 September 2006
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

Draft Summary

1. Introduction
    A. Comments on draft agenda and meeting summary – none; Bouchers could not attend due to work at Bobcat Flat

2. Items since 08Jun meeting
    A. Review material list and meeting summary – no comments

3. Updates
    A. Status of data/reports
        - Ford reviewed some recent updates to the website http://tuolumnerivertac.com/
        - handouts were provided from website listing the TRTAC meetings and posted documents for 2004-2005

    B. Agency and NGO updates (DFG updates in monitoring and restoration below)
        - TRT (Koepele) reported (1) tree planting and canoe trips are scheduled, (2) about 80 people attended recent Day on the River event, and (3) receiving CALFED grant with Great Valley Museum for environmental education

    C. Monitoring update
        - DFG is recording GPS data for riffle location (started annually in 2000) and changes due to high flows in preparation for spawning surveys;
        - discussion of riffle ID, tracking changes over time, how to make data available, still needs further discussion;
        - Blakeman reported there was good fishing for rainbow trout;
        - Jen Vick is doing some Bobcat Flat monitoring, including collection of marked rocks;
        - DFG may have SJR temperature data that could substitute for missing TID/MID Gardner Cove data from last download (available on TRTAC website)

D. Restoration update
   - handout of TRTAC project status from Fryer;
   - John Stella (UC Berkeley/SWS) reviewing valley-wide age distribution of riparian vegetation and relation of flow to recruitment;
   - Battistoni had a 01Jul tech. coordination meeting that included fine sediment and Warner-Deardorff projects;
   - channel repairs at Ruddy site are starting; DFG may do gravel additions in 2007 with 4-pumps funding

4. River operations, flow schedule, and forecasts
   - Discussed draft flows for Sep-Oct including those sent by TID to Marston who is working on basinwide flows contributing to flow in SJR at Vernalis below the Stanislaus River;
   - La Grange flows will be provided from MID side during 09-14Oct dam inspection and Tuolumne pulse flow will follow, with anticipation of higher flows being on Stanislaus and Merced Rivers in Oct;
   - 45-day fluctuation limitation period will still be 17Oct-30Nov.

5. General discussion and additional items
   - Mitchell discussed the post-10 year report process with FERC's Taylor;
   - letter will be drafted by Mitchell to FERC prior to 25Sep about extending the process and several meeting dates will be set

6. Next meetings and topics:
   - TRTAC on 14Dec
   - CALFED Science Conference in Sacramento during week of 23Oct

FERC 2299 TRTAC Meeting

14 September 2006

Name	**Organization**
Tim Ford	TID/MID
Debbie Liebersbach	TID
Walt Ward	MID
Ron Yoshiyama	CCSF
Patrick Koepele	TRT
John Battistoni	DFG
Tim Heyne	DFG
Dean Marston	DFG
Dale Mitchell	DFG
Dennis Blakeman	DFG
Noah Hume	Stillwater Sciences
Jennifer Vick	McBain & Trush

TRTAC Meetings, Agendas, Notes and Handouts

Date	Agenda	Notes	Handouts
September 14, 2006	agenda	notes	Material List [Word 33 kb]
June 8, 2006	agenda	notes	Restoration Project Update [Word 35 kb]
March 9, 2006	agenda	notes	ERP-04-S04 Scope of Work [Word 200 kb] ERP-04-S04 Deliverables & Schedule [Word 63.5 kb] ERP-04-S04 Study Plan (no tracking) [Word 552 kb] ERP-04-S04 Study Plan [Word 567 kb] Draft Predation Assessment Study Plan [Word 109 kb]
February 9, 2006	agenda	notes	
December 8, 2005	agenda	notes	
November 4, 2005	agenda	notes	Tuolumne River Restoration Projects [Excel 208 kb]
October 13, 2005	agenda	notes	Review of Tuolumne Monitoring Programs [Power Point 1241 kb] Tuolumne 2004 PSP Monitoring Summary (budget info) [Excel 144 kb] HEC Cross Sections [Adobe 162 kb]
September 2005	agenda	notes	PSP Task 6 Excerpt [Word 23 kb];
July 2005	agenda	notes	Overview of 2005 Ten Year Summary Report [Power Point 1281 kb]
March 2005	agenda	notes	Material List [Word 29 kb]

Workgroup Meetings, Agendas, Notes and Handouts

Date	Workgroup	Agenda	Notes	Handouts
December 7, 2005	Monitoring PSP	agenda	notes	
December 14, 2005	Monitoring PSP	agenda	notes	

Tuolumne River Documents by Year

2005 2004 2003 2002 2001 2000 1999 1998

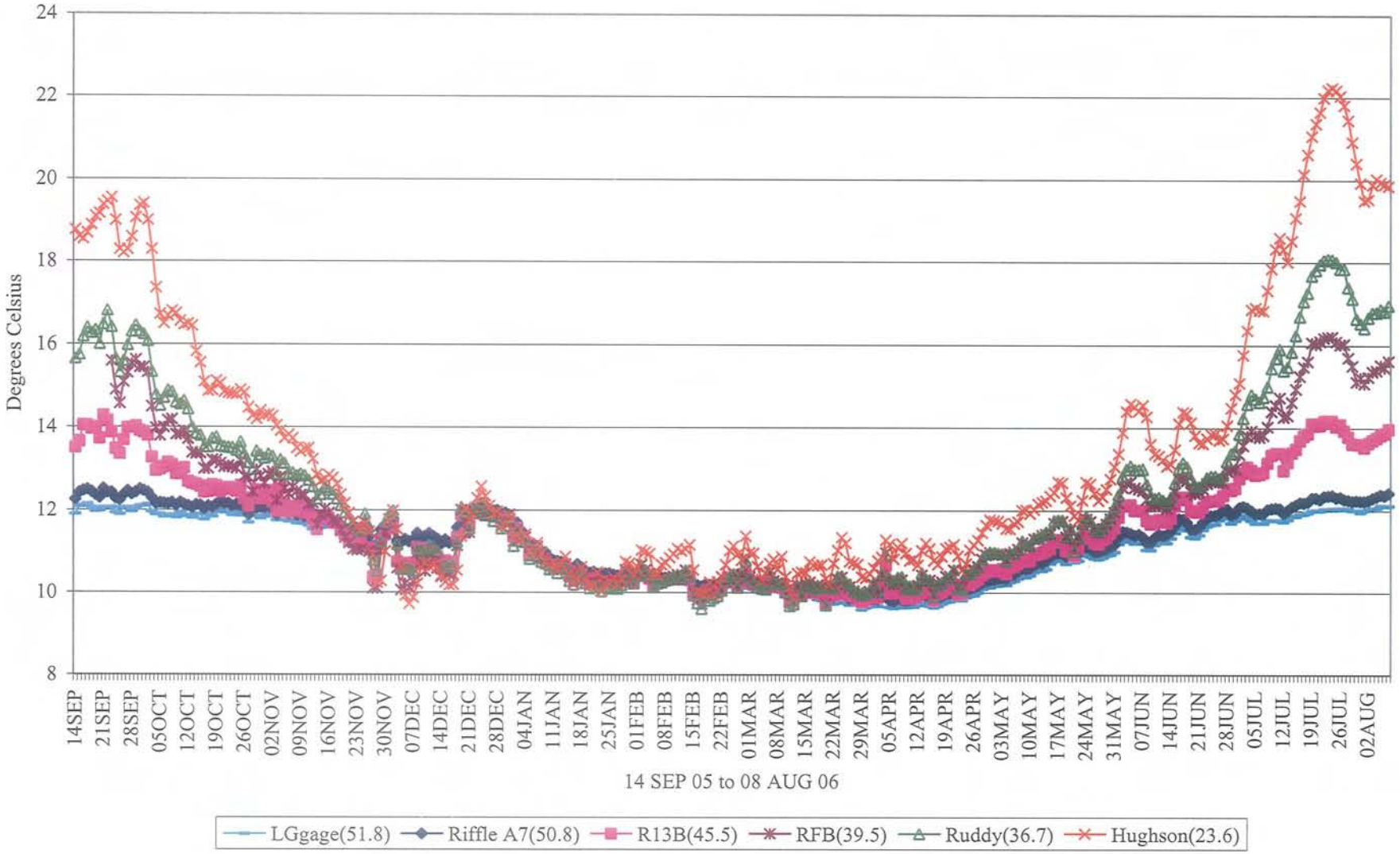
2005

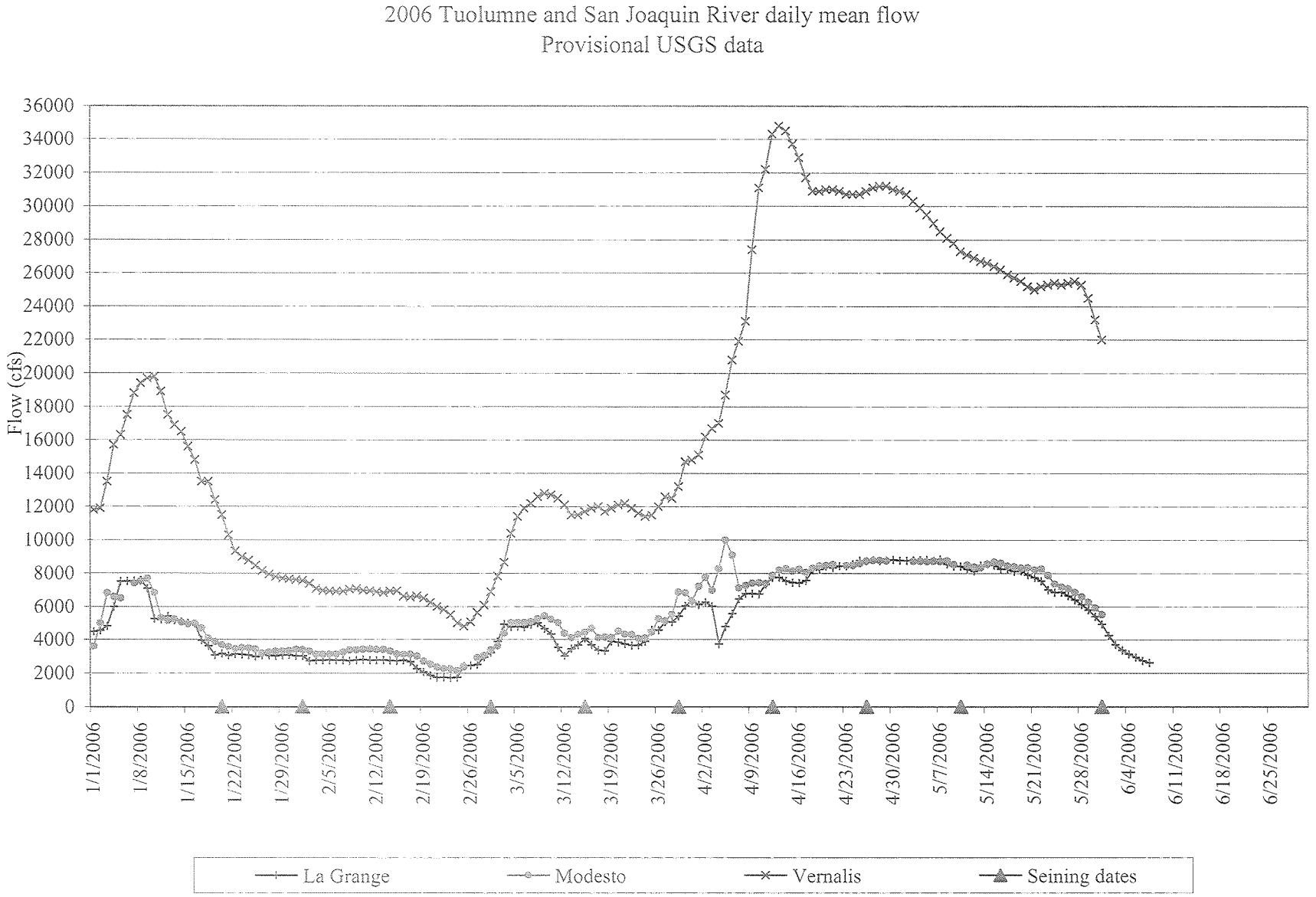
2005 FERC Annual Report (Part 1) [Adobe 9182 kb]
2005 FERC Annual Report (Part 2) [Adobe 5187 kb]
2005 FERC Annual Report (Part 3) [Adobe 7667 kb]
2005 FERC Annual Report (Part 4) [Adobe 6982 kb]
2005 FERC Annual Report (Part 5) [Adobe 8818 kb]
2005 FERC Annual Report (Part 6) [Adobe 4648 kb]
2005 Tuolumne River Escapement Survey [Adobe 368 kb]
2005 Tuolumne River Escapement Survey Summary (Preliminary Data) [Adobe 17 kb]
2005 VAMP Technical Report [Adobe 7127 kb]
How do riparian trees time the flood? Synchrony of seed dispersal, hydrology and local climate in a semi-arid river basin [Adobe 530 kb]
Response to Comments on 2005 Ten Year Summary Report [Adobe 174 kb]
Notice of filing of fisheries studies report and study proposals, and soliciting comments, motions to intervene, and protests [Word 36 kb]
Overview of the 2005 Ten Year Summary Report [Power Point 2181 kb]
Motion to establish procedures and schedule for hearing (dated May 3, 2005) [Adobe 125 kb]
2005 Ten Year Summary Report [Adobe 11635 kb]
Appendices to 2005 Ten Year Summary Report [Adobe 4401 kb]

2004

2004 FERC Annual Report (Part 1) [Adobe 8240 kb]
2004 FERC Annual Report (Part 2) [Adobe 7115 kb]
2004 FERC Annual Report (Part 3) [Adobe 7783 kb]
2004 FERC Annual Report (Part 4) [Adobe 9501 kb]
2004 VAMP Technical Report [Adobe 4641 kb]
Tuolumne River, La Grange Gravel Addition Phase II Monitoring Report_12-20-2004 [Adobe 3556 kb]
Outmigrant Trapping of Juvenile Salmonids in the Lower Tuolumne River at Grayson 2004 [Adobe 251 kb]
Mining Reach - 7/11 Segment Final Report [Adobe 62 kb]
Lower Tuolumne River water quality monitoring results May/June 2004 [Adobe 441 kb]
2004 Tuolumne River Fall Chinook Salmon Escapement Survey [Adobe 368 kb]
2004 Tuolumne River Escapement Survey Summary [Adobe 16 kb]
Coarse Sediment Management Plan Revised July 2004 [Adobe 17011 kb]
Adaptive Management Forum for Large-scale Channel and Riverine Habitat Restoration Projects Final Report [Adobe 290 kb]
Tuolumne River Floodway Restoration, Feb 2004 [Adobe 36263 kb]
Tuolumne River La Grange Gravel Addition Photo-journal and Report [Adobe 5340 kb]

Tuolumne River daily ave. water temps




2006 Tuolumne and San Joaquin River daily mean flow
Provisional USGS data
Flow (cfs)
36000
34000
32000
30000
28000
26000
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1/1/2006
1/8/2006
1/15/2006
1/22/2006
1/29/2006
2/5/2006
2/12/2006
2/19/2006
2/26/2006
3/5/2006
3/12/2006
3/19/2006
3/26/2006
4/2/2006
4/9/2006
4/16/2006
4/23/2006
4/30/2006
5/7/2006
5/14/2006
5/21/2006
5/28/2006
6/4/2006
6/11/2006
6/18/2006
6/25/2006
La Grange
Modesto
Vernalis
Seining dates

TURLOCK IRRIGATION DISTRICT

CIVIL ENGINEERING DEPARTMENT
M E M O R A N D U M

TO: TRTAC
FROM: Wilton Fryer
DATE: 14 September 2006
RE: Restoration Projects - Status Update

Project	Funding	Status
Active Projects:		
MJ Ruddy	none	A separate minerals appraiser was brought in to assist with the developing the 4th iteration of the appraisals for the project with the package delivered to the Federal reviewers on 2 June 2006. Additional comments were received by the reviewers in July and August, with those requested adjustments delivered to the reviewers on 28 August. However, all the project funds were withdrawn by AFRP and CBDA effective 30 June and 31 March respectively. The landowner was informed the project had been defunded. The dikes separating the old mining ponds from the river were breached this winter with the river now flowing through the old mining pits. The landowner is working on repairs. Permit restrictions will not allow repairs to put the river channel into the alignment proposed under the restoration plans for the project area, thus eliminating the deposit from the 1997 floods that is the root cause for the dike breach.
Warner-Deardorff	Uncertain	There has been no change in the status of this project. This project was split into 2 phases for funding with only the Phase I design work completed to the 90% stage. Given the continued problems with Federal review of any appraisal and the AFRP funds ending in December, it has been suggested that appraisals become a part of Phase II, with a state reviewer, since the purchases would be with state funds. In late June 2006 the DFG, as the new funds administrator asked that all work on developing a Scope of Work cease until directed otherwise.
La Grange Gravel	Full	Comments from the UC Science Panel in Davis were received in late January 2006. The SOW was revised per the panel

		comments, along with the monitoring plan, and is continuing to be under review by DFG Region 4, the new funds administrator. The District has agreed to incorporate the changes in the monitoring program requested by DFG, but final acceptance is still linked resolution to the DFG issues regarding the separate SOW for ERP 04-S04. The goal is still to complete CEQA and permits in 2006 for a summer 2007 start of implementation. Biological surveys were conducted this spring as part of the permit process.
Fine Sediment	Full	The Gasburg Creek restoration construction went out for bid in August 2006 with bids received on 1 September. The bids exceeded available funding. A design & project element review is underway to see if adjustments can be made to reduce the costs. The goal is to re-bid the project in December with the construction to start in May or June 2007.
SRP 10	Partial	This project was split into two phases by CBDA and only design and modeling funded under Phase I. No Phase II funding for acquisition and construction has ever been identified. The Phase I work was completed in June 2006 and the project funding closed for Phase I. The landowner has been informed there is no foreseeable Phase II funding.
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. The CBDA Science Panel has accepted the CSMP as part of their acceptance of the LG Sediment 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.

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

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Phone: (209) 883-8275
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Email: tjford@tid.org

TECHNICAL ADVISORY COMMITTEE MEETING

14 December 2006
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

DRAFT AGENDA

1. Introduction
    A. Comments on draft agenda and prior meeting summary
2. Items since 14Sep meeting
    A. Comments on material list
3. Updates
    A. Status of data/reports, incl. annual report
    B. Agency and NGO updates
    C. Monitoring update – Spawning run; 2007 activities
    D. Restoration update
4. River operations, flow schedule, and forecasts
5. Additional items
6. Next meetings and topics:
    - TRTAC on 08Mar2007?
    - Other 2007 dates

TUOLUMNE RIVER TECHNICAL ADVISORY COMMITTEE

DON PEDRO PROJECT - FERC LICENSE 2299

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TECHNICAL ADVISORY COMMITTEE MEETING

14 December 2006
9:30 AM
Turlock Irrigation District, Lunch Room (2nd floor)

Draft Summary

1. Introduction
    A. Comments on draft agenda and prior meeting summary – none

2. Items since 14Sep meeting
    A. Comments on material list – the listed items were reviewed and a request was made to indicate which items were on TRTAC website

3. Updates
    A. Status of data/reports, including annual report
        - Ford will later send out draft annual report listing; initial date for pending drafts of component reports was 31Jan; Hume stated there might be an invertebrate update report on 2004-2005 samples; there may also be Grayson River Ranch and Big Bend monitoring reports

    B. Agency and NGO updates
        - FOT reported both restoration projects have ended for now
        - TID's EIR for gallery operation is planned for approval next week
        - Ridgeway is retiring from the DFG restoration center at La Grange – vacancy to be filled in Feb.

    C. Monitoring update – Spawning run; 2007 activities
        - DFG reported only 4 tagged carcasses and 2 recoveries in recent river survey; Merced hatchery had only about 380K eggs; DFG scoping of activities under their CALFED grant may be available in Jan; Ford provided handout of weekly live and redd counts on the three rivers.
        - Discussion on run estimate methods and weir counts on Stanislaus River – Blakeman noted that the upper part of the Stanislaus cannot be float surveyed; Heyne may provide a review of estimation methods; Ford provided handout on weir counts; constant fractional marking (25%) of hatchery production in Central

Valley is planned to start in 2007
- Ford stated that upper screw trap operation will start in January but the specific site near Waterford among both used in 2006 needs to be determined

D. Restoration update
- handout of TRTAC project status from Fryer

4. River operations, flow schedule, and forecasts
- Ford provided handout on basin flows starting 01Sep that showed the much higher Stanislaus River flows

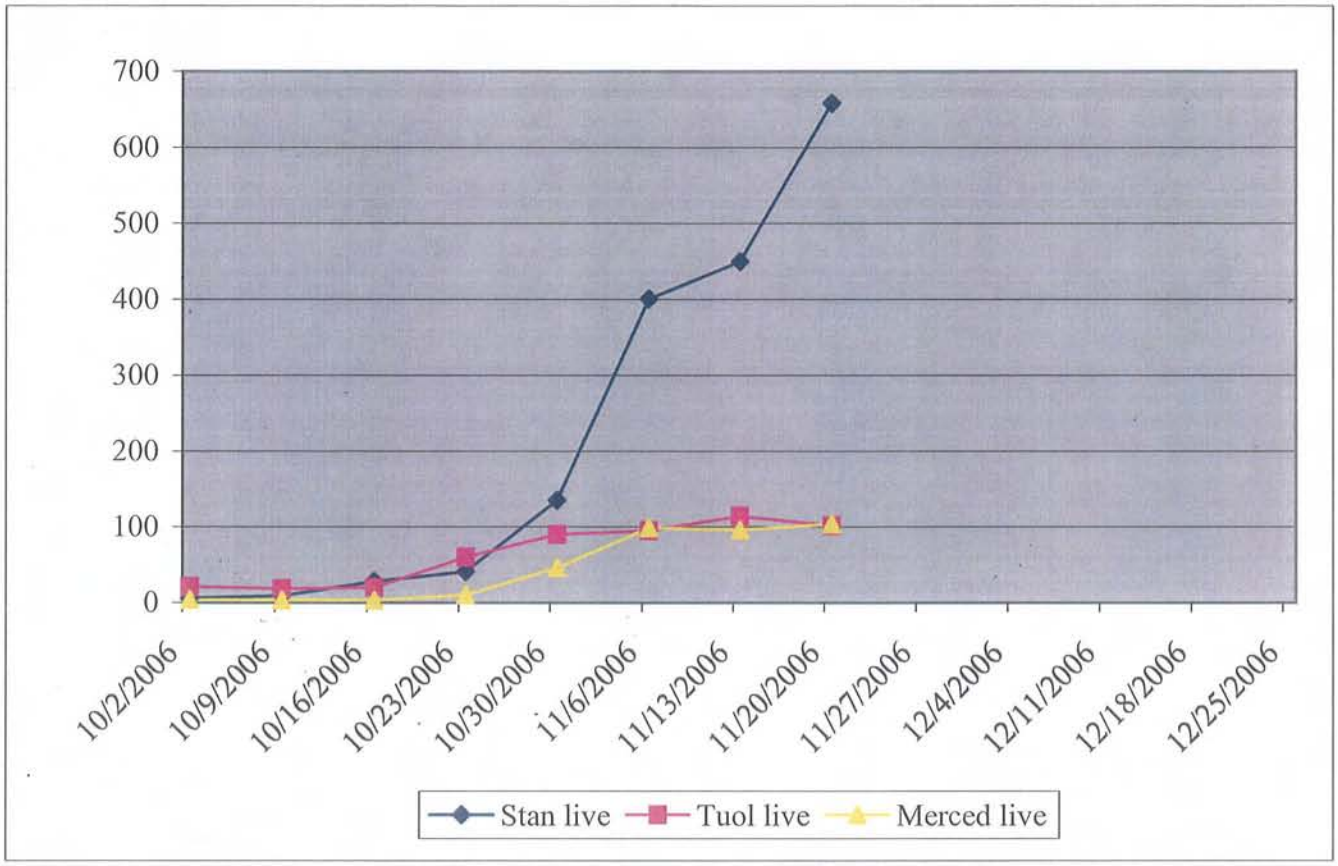
5. Additional items
- Ford will look into getting 2005 aerial photos onto website
- DFG may have scoping info in January on their CALFED grant for the tributaries

6. Next meetings and topics:
- TRTAC in 2007 on 08Mar, 14Jun, 13Sep, 13Dec; all start at 9:30 AM at TID

FERC 2299 TRTAC Meeting

14 December 2006

Name	**Organization**
Tim Ford	TID/MID
Robert Nees	TID
Roger Masuda	TID
Walt Ward	MID
Ron Yoshiyama	CCSF
Dennis Blakeman	DFG
Rick Burmester	USFWS
Noah Hume	Stillwater Sciences
Allison Boucher	FOT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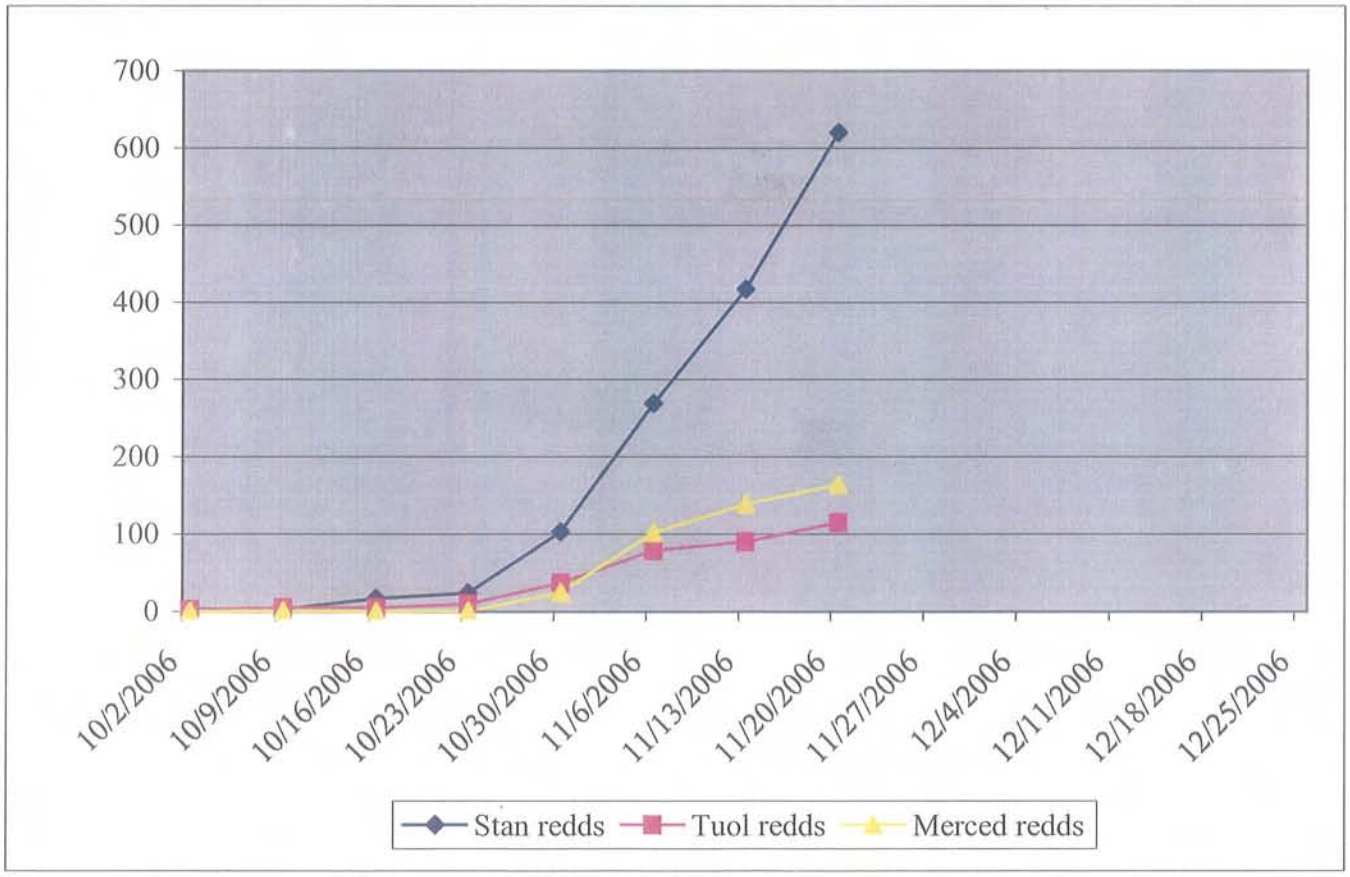
Merced live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11/20/2006
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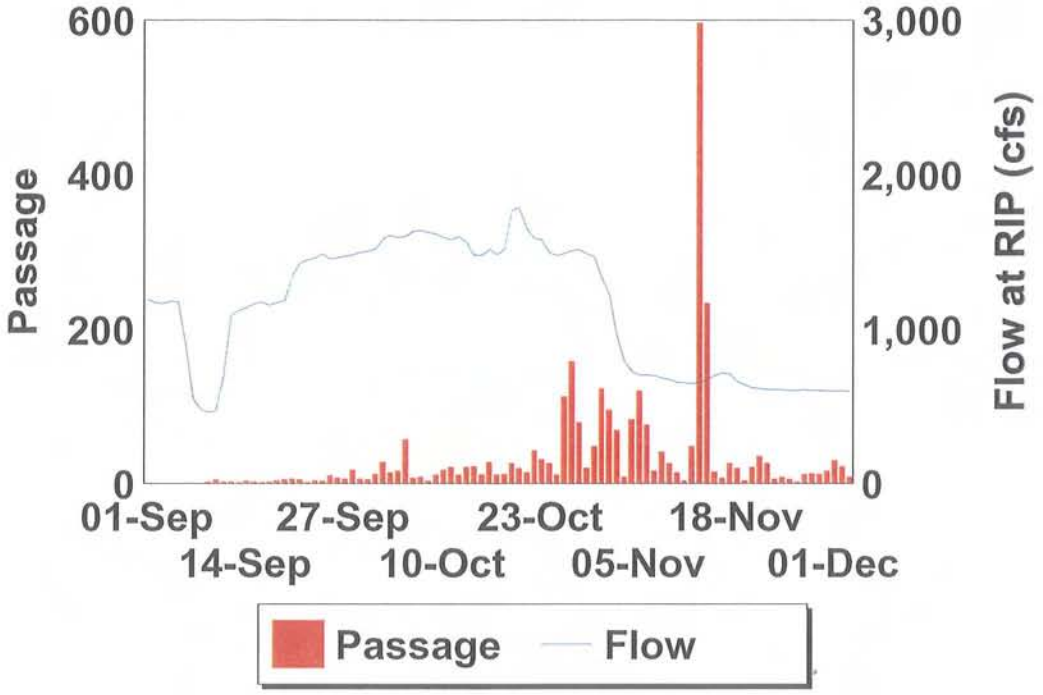
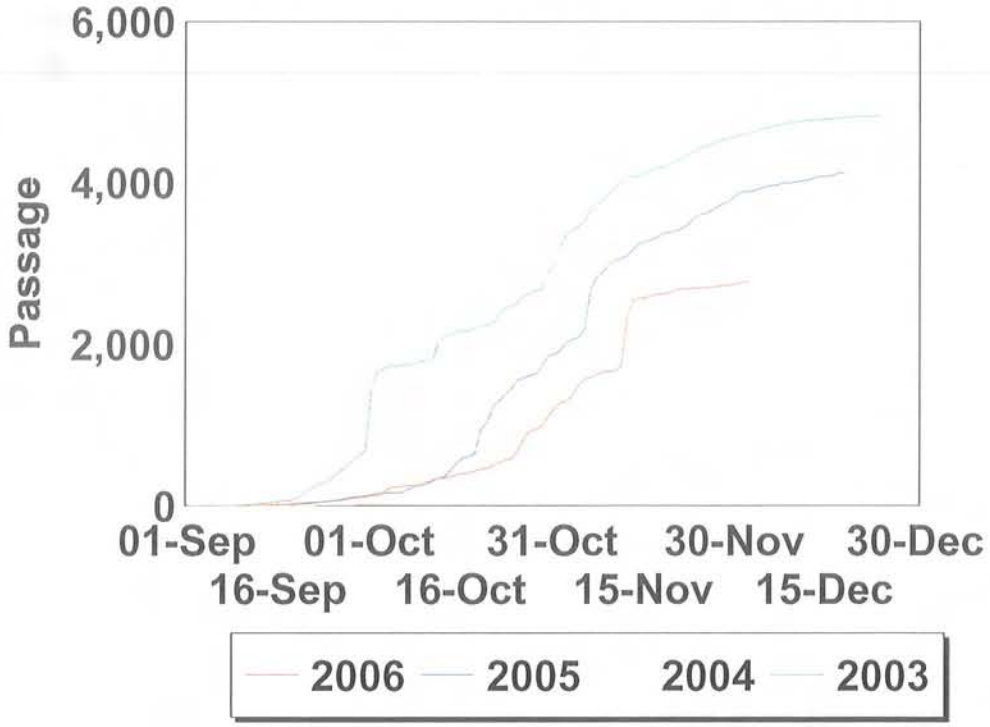
12/25/2006
Stan redds
Tuol redds
Merced redds

2006 Adult Chinook Passage
and Flow at the Stanislaus River Weir



Adult Chinook Passage
at the Stanislaus River Weir 2003-2006



TURLOCK IRRIGATION DISTRICT

CIVIL ENGINEERING DEPARTMENT
MEMORANDUM

TO: TRTAC
FROM: Wilton Fryer
DATE: 12 December 2006
RE: Restoration Projects - Status Update

Project	Funding	Status
Active Projects:		
MJ Ruddy	none	All the project funds were withdrawn by AFRP and CBDA effective 30 June and 31 March respectively. The landowner was informed the project had been defunded. The dikes separating the old mining ponds from the river were breached last winter and the river flowed through the old mining pits all summer. The landowner completed repairs this fall, placing the river back in the original channel with the help of AFRP funds from Phase I of the Warner-Deardorff Project.
Warner-Deardorff	Uncertain	The status of the CBDA funds, originally for Phase II work, for the project are uncertain, but may still be available for work on the Mining Reach, if a proposal and contract can be in place by May 2007. The Phase I design work had been completed to the 90% stage. AFRP has modified the Phase I agreement to allow a revision of the designs that would allow a modification of both the MJ Ruddy Segment and Warner-Deardorff Segments to fit the available Phase II funds, if they do become available in early 2007.
La Grange Gravel	Full	Comments from the UC Science Panel in Davis were received in late January 2006. The SOW was revised per the panel comments, along with the monitoring plan, and is continuing to be under review by DFG Region 4 as the new funds administrator and the ERP Management group. The schedule for completion of CEQA and permits is on hold until approval is received. Starting work in the summer 2007 could be delayed, if the CEQA and permits are not in place in time to bid the project this spring. Biological surveys done last spring in anticipation of the permits may need to be redone due to the delays.

Fine Sediment	Full	The Gasburg Creek restoration construction went out for bid in August 2006 with bids received on 1 September. The bids exceeded available funding. A design & project element review is underway to see if adjustments can be made to reduce the costs. The schedule is to re-bid the project in February 2007 with the construction to start in or June 2007.
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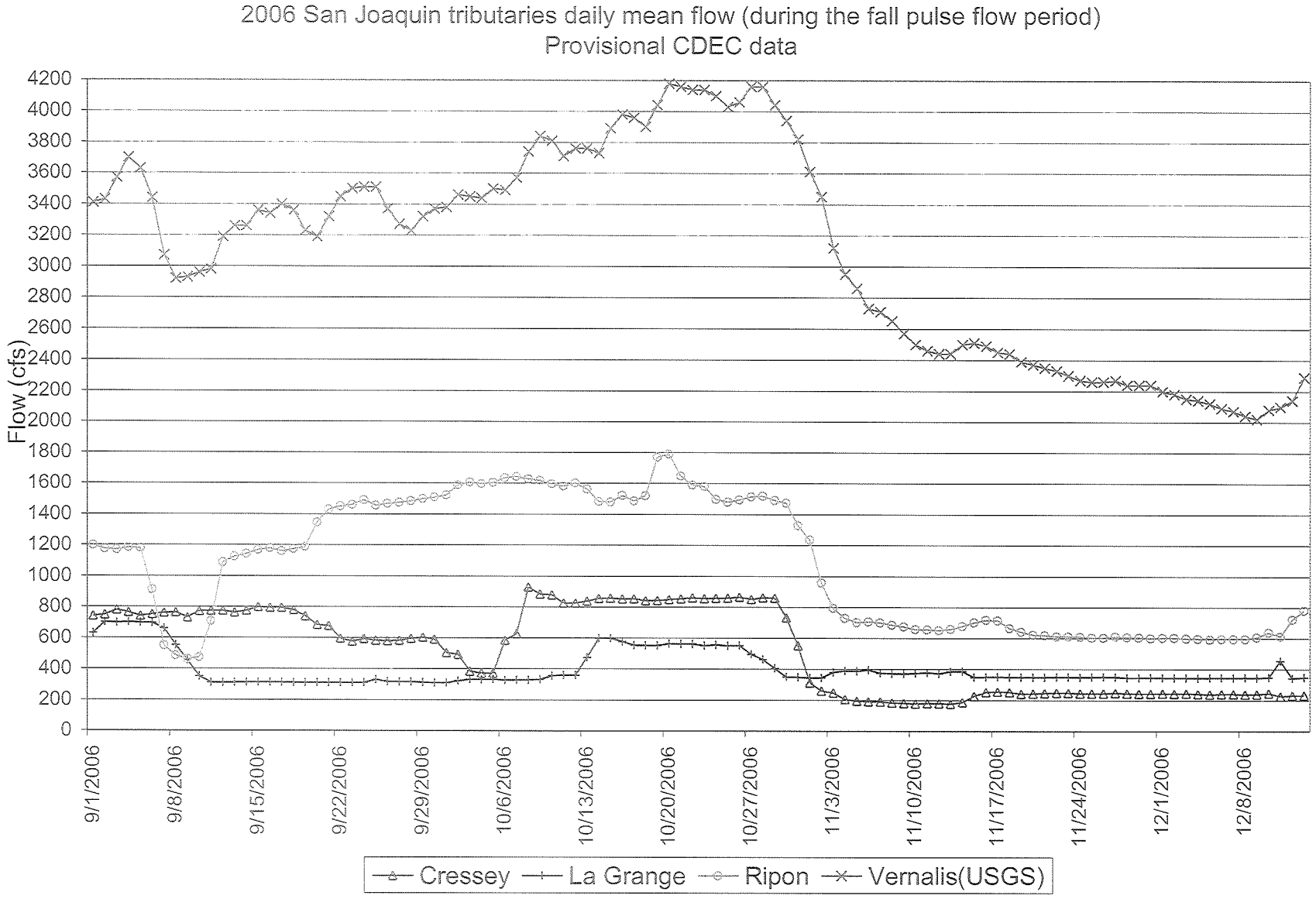
2006 San Joaquin tributaries daily mean flow (during the fall pulse flow period)
Provisional CDEC data
Flow (cfs)
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
9/1/2006
9/8/2006
9/15/2006
9/22/2006
9/29/2006
10/6/2006
10/13/2006
10/20/2006
10/27/2006
11/3/2006
11/10/2006
11/17/2006
11/24/2006
12/1/2006
12/8/2006
Cressey
La Grange
Ripon
Vernalis(USGS)