

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 & WILDLIFE
U. S. FISH & WILDLIFE SERVICE



333 East Canal Drive
Turlock, CA 95381-0949
Phone: (209) 883-8278
Fax: (209) 656-2191
Email: pemaloney@tid.org

TECHNICAL ADVISORY COMMITTEE MEETING

September 08, 2016 at 10:00 AM
Turlock Irrigation District, Room 152

DRAFT AGENDA

1. INTRODUCTION AND ANNOUNCEMENTS
2. ADMINISTRATIVE ITEMS:
 - Review/revise agenda
 - Approve notes from June 2016 meeting
 - Items since last meeting
3. MONITORING/REPORTS:
 - Routine snorkel and temperature
 - In-progress FERC relicensing studies
 - Fall monitoring 2016
 - Planned Annual FERC Report progress
4. FLOW OPERATIONS:
 - Review status of final basin index; annual fish flow volume
 - Fall flow schedule
5. AGENCY/NGO UPDATES
6. ADDITIONAL ITEMS
7. NEXT MEETING DATE – DECEMBER 8, 2016.

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TECHNICAL ADVISORY COMMITTEE MEETING

09 June 2016 at 9:30 AM

Turlock Irrigation District, Room 152

Summary

1. INTRODUCTION AND ANNOUNCEMENTS

- Participants made self introductions.

2. ADMINISTRATIVE ITEMS:

- Review/Revise agenda – No changes.
- Approve notes from March meeting – No changes were identified. Notes for the last meeting are posted to the TRTAC website: <http://tuolumnerivertac.com/>

3. MONITORING/REPORTS: (*Handouts were reviewed*)

- Seining efforts were completed June 7, 2016. No Chinook were captured by seining after the spring pulse flow.
- A total of 389 chinook were captured at the Waterford RST this season, yet only 18 Chinook were captured at the Grayson RST.
- Annual snorkeling surveys will be conducted July 11-14, 2016.
- Thermographs will be downloaded June 15-16, 2016.
- Tail Race and Main Channel weir monitoring concluded in mid-April. Remaining equipment will be removed Friday June 22, 2016.

4. FLOW OPERATIONS:

- Current watershed conditions as of March 8, 2015: This water year is considered an Intermediate dry / below normal water year type. Base flows will be based on predicted air temperature in Modesto. When air temperature is predicted to be less than 100°F base flows will be 90-100cfs, when temperatures are predicted to be greater than 100°F base flows will be 110-120cfs.

5. AGENCY/NGO UPDATES

- None

6. ADDITIONAL ITEMS

- Recent movement on the infiltration gallery at Geer Road stimulated a discussion regarding the presence of Asian clams (*Corbicula fluminea*) and (*Pisidium*) in the Lower Tuolumne River; our 2009 BMI report identified both species in the river. Per an e-mail conversation with Kelley Aubushon of CDFW, "They burrow in the sediment. Their ability to impact water conveniences is limited."

7. **NEXT MEETING DATES – SEPTEMBER 8, & DECEMBER 8, 2016.**

TRTAC Meeting Attendees

	<u>Name</u>	<u>Organization</u>
1.	Patrick Maloney	TID
2.	Noah Hume	Stillwater Sciences
3.	Wayne Swaney	Stillwater Sciences
4.	Jason Guignard	Fishbio

2016 TRTAC Materials/Postings to Website

2016 June 09 – 2016 September 07, Postings to TRTAC website <http://tuolumnerivertac.com/>

- Meetings
 - March 2016 TRTAC meeting agenda, handouts, materials list and notes
 - June 2016 TRTAC meeting agenda, handouts, materials list and notes
 - September 2016 TRTAC meeting agenda
- Correspondence
 - June 28, 2016. Turlock Irrigation District and Modesto Irrigation District - letter under P-2299-075 in regards to the Don Pedro Project Predation Study.
http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14473655
 - August 16, 2016. NOAA Fisheries West Coast Region - files NOAA Technical Memorandum with the Federal Energy Regulatory Commission for all Energy Projects Located wholly or partially in California under P-2997, et al.
http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14485824
- Documents - No postings
- Data/Monitoring - No postings

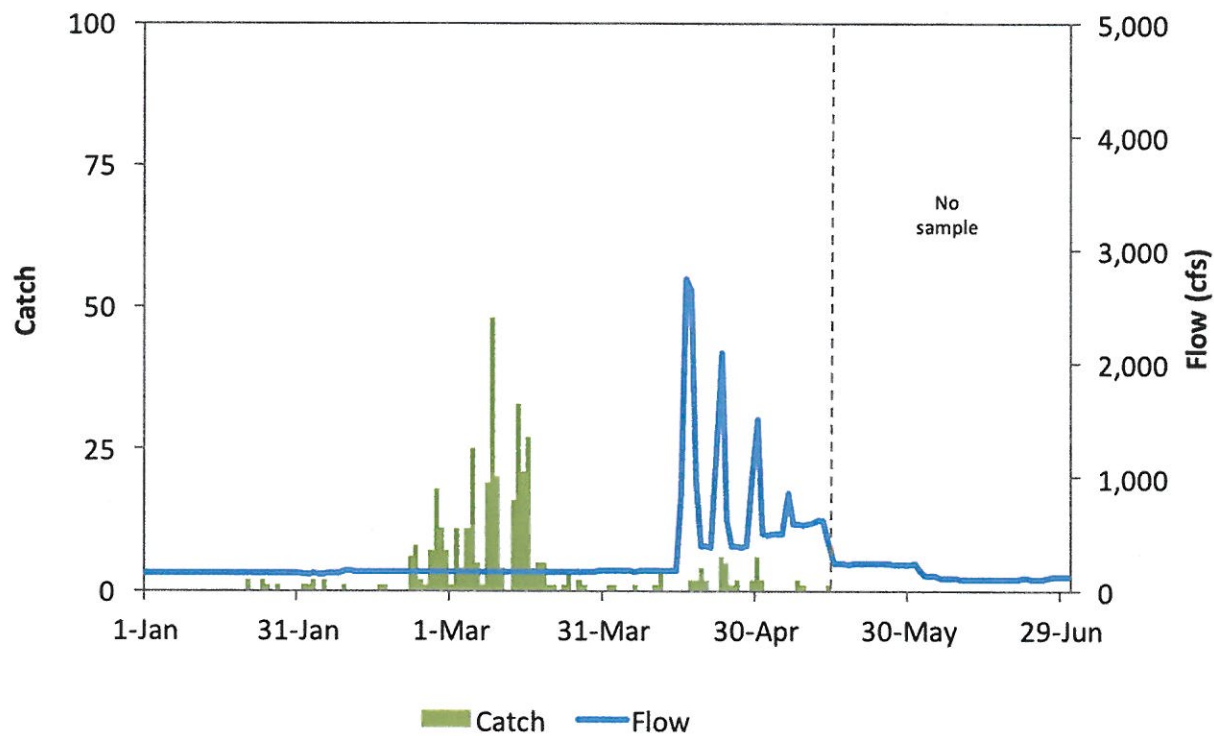


Figure 1. Waterford Chinook catch and Tuolumne River flow at La Grange, 2016.

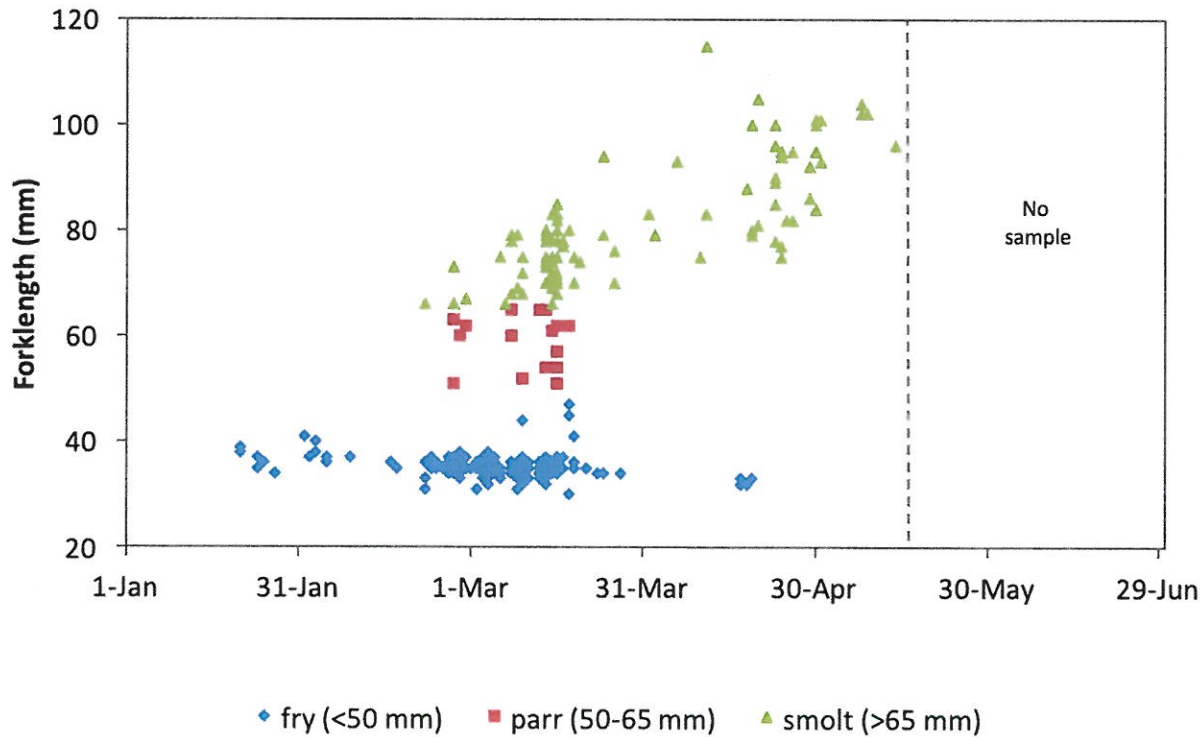


Figure 2. Chinook forklength by lifestage at Waterford, 2016.

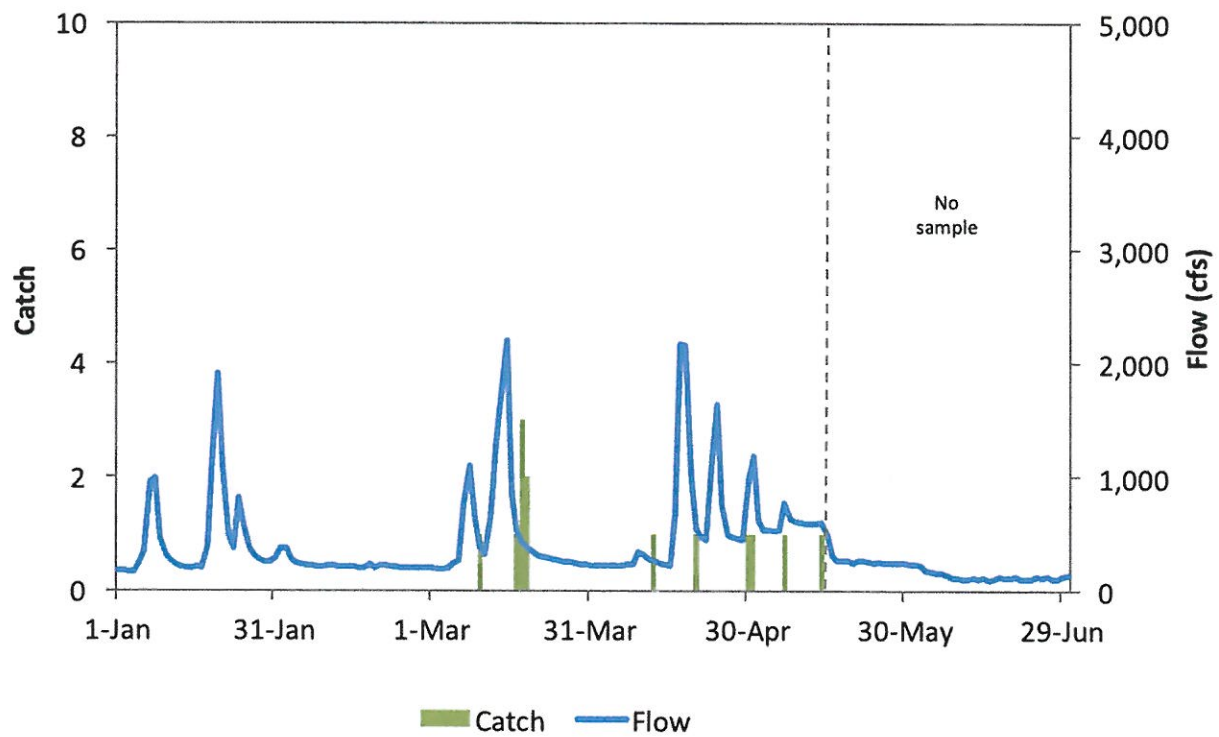


Figure 3. Grayson Chinook catch and Tuolumne River flow at Modesto, 2016.

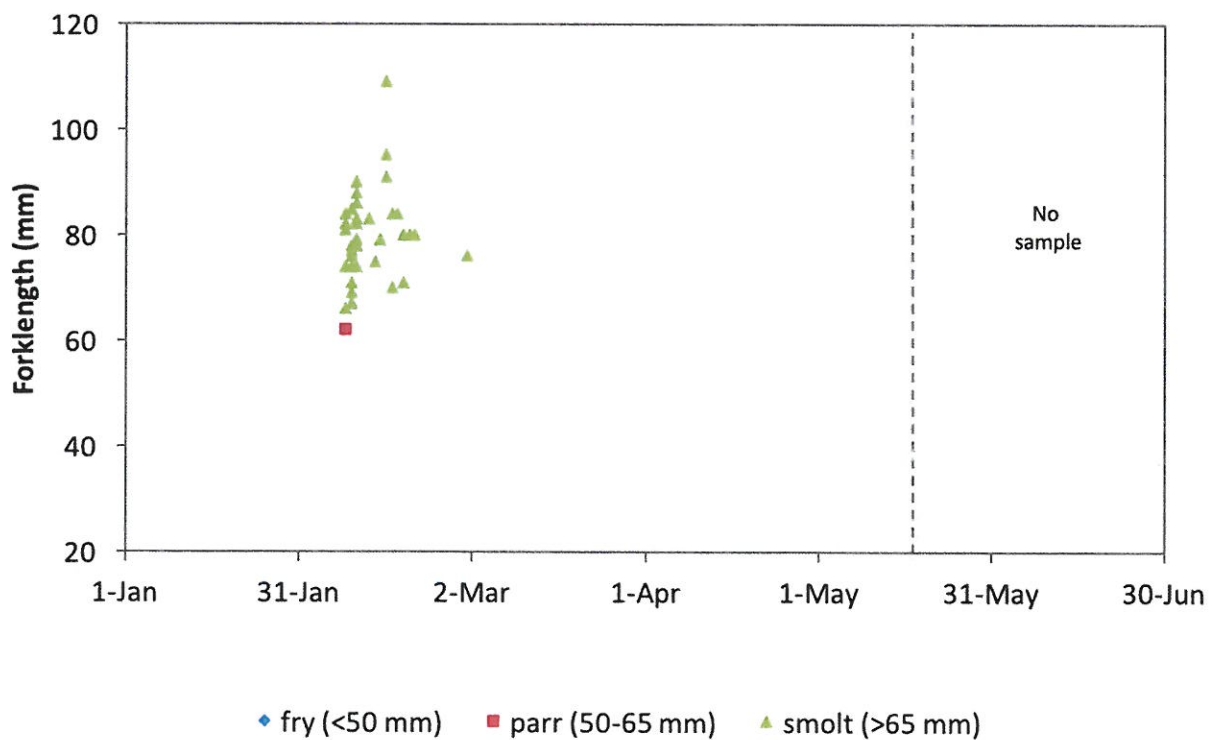


Figure 4. Chinook forklength by lifestage at Grayson, 2016.

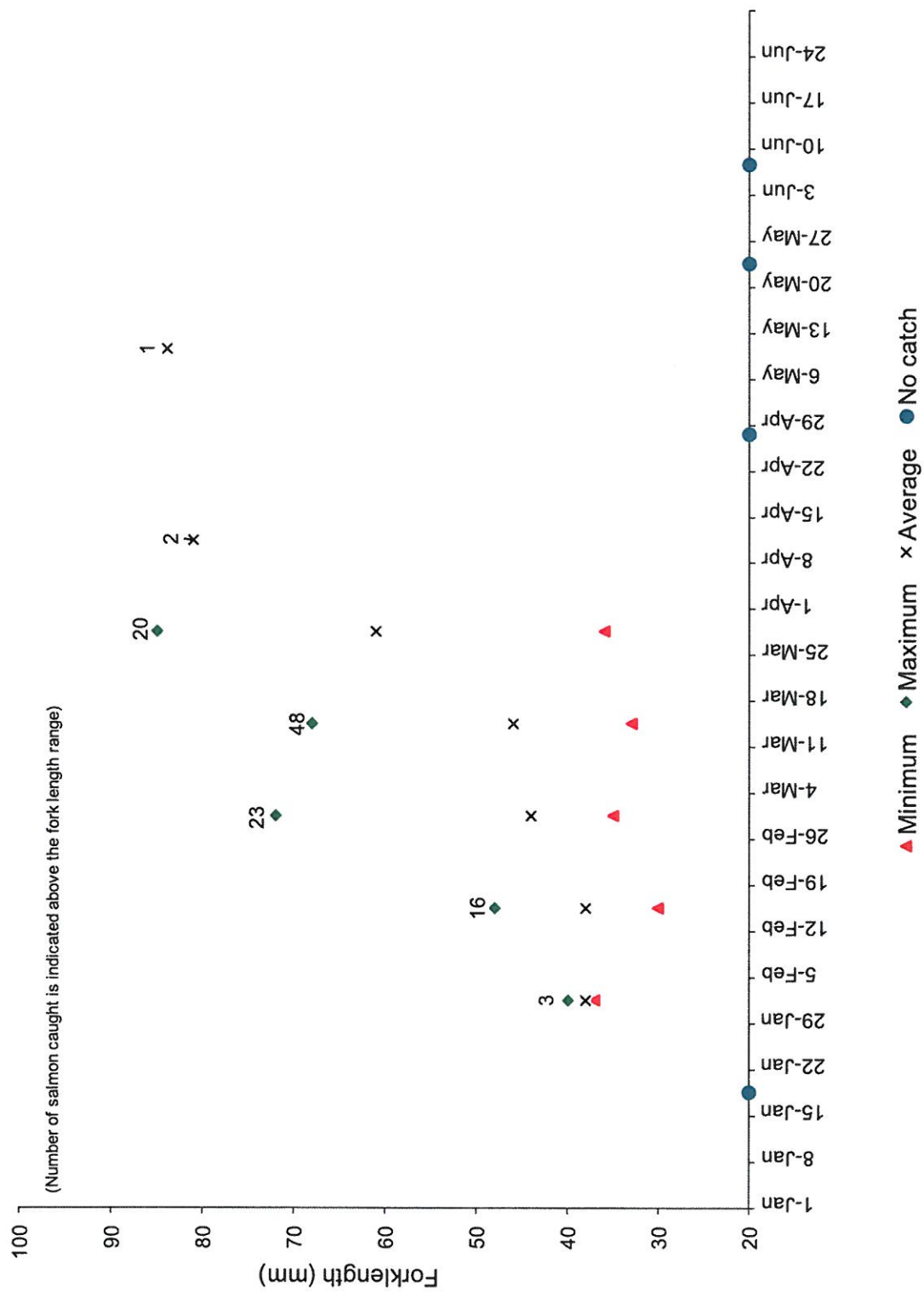


Figure 5. Number and minimum, maximum, and average forklength of Chinook captured during 2016 Tuolumne River seine surveys.

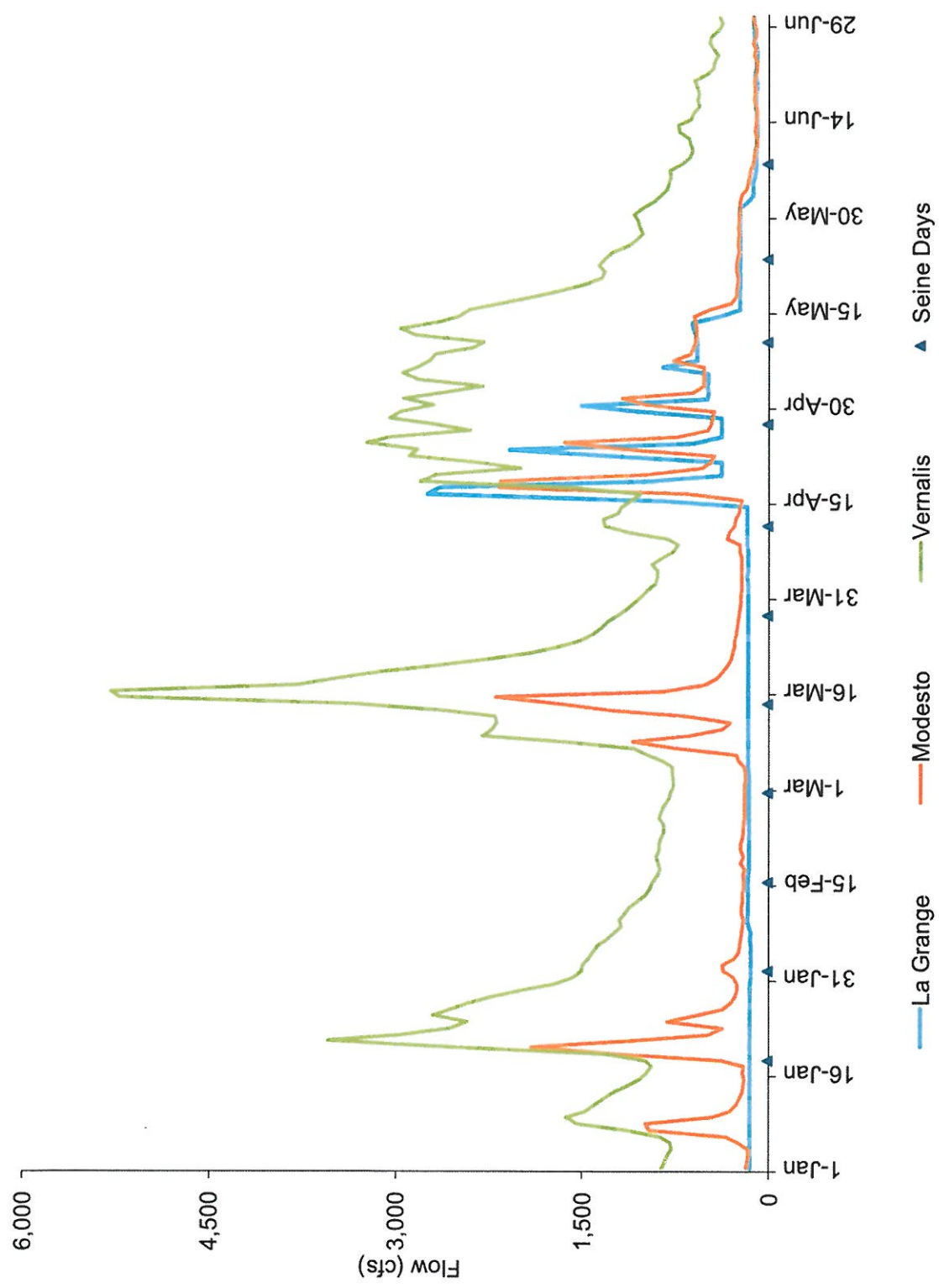


Figure 6. Tuolumne River flow at La Grange and Modesto and San Joaquin River flow at Vernalis during 2016 Tuolumne River seine surveys.

Table 1

SAN JOAQUIN VALLEY WATER YEAR HYDROLOGIC CLASSIFICATION
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Table 1

SAN JOAQUIN VALLEY WATER YEAR HYDROLOGIC CLASSIFICATION

602020 INDEX

YEAR	APRIL-JULY RUNOFF (AF)				OCTOBER-MARCH RUNOFF (AF)				TOTAL	602020 INDEX	TUOLUMNE RIVER		San Joaquin Index (not the FERC Index)
	STANISLAUS	TUOLUMNE	MERCED	PRIMT	STANISLAUS	TUOLUMNE	MERCED	PRIMT			MINIMUM FLOW REQUIREMENT		
Wet	820,000	1,370,000	680,000	1,160,000	499,000	784,000	349,000	391,000	2,023,000	2,984,239	266,962	Below Normal	
May 1 Forecast													
Dry	580,000	1,040,000	470,000	790,000	499,000	784,000	349,000	391,000	2,023,000	2,294,239	136,051	Dry	
Average	670,000	1,140,000	530,000	940,000	499,000	784,000	349,000	391,000	2,023,000	2,534,239	152,778	Below Normal	
Wet	770,000	1,310,000	640,000	1,110,000	499,000	784,000	349,000	391,000	2,023,000	2,864,239	224,188	Below Normal	
May 10 Update													
Dry	590,000	1,050,000	470,000	810,000	499,000	784,000	349,000	391,000	2,023,000	2,318,239	137,567	Dry	
Average	670,000	1,140,000	520,000	940,000	499,000	784,000	349,000	391,000	2,023,000	2,528,239	152,331	Below Normal	
Wet	750,000	1,290,000	610,000	1,080,000	499,000	784,000	349,000	391,000	2,023,000	2,804,239	202,800	Below Normal	
May 17 Update													
Dry	600,000	1,050,000	470,000	820,000	499,000	784,000	349,000	391,000	2,023,000	2,330,239	138,324	Dry	
Average	660,000	1,130,000	510,000	930,000	499,000	784,000	349,000	391,000	2,023,000	2,504,239	150,542	Below Normal	
Wet	730,000	1,260,000	580,000	1,040,000	499,000	784,000	349,000	391,000	2,023,000	2,732,239	177,135	Below Normal	
May 24 Update													
Dry	560,000	930,000	450,000	760,000	499,000	784,000	349,000	391,000	2,023,000	2,186,239	129,232	Dry	
Average	610,000	1,000,000	490,000	850,000	499,000	784,000	349,000	391,000	2,023,000	2,336,239	138,703	Dry	
Wet	670,000	1,120,000	550,000	940,000	499,000	784,000	349,000	391,000	2,023,000	2,534,239	152,778	Below Normal	
May 31 Update													
Dry	540,000	930,000	460,000	770,000	499,000	784,000	349,000	391,000	2,023,000	2,186,239	129,232	Dry	
Average	580,000	990,000	490,000	840,000	499,000	784,000	349,000	391,000	2,023,000	2,306,239	136,809	Dry	
Wet	630,000	1,090,000	530,000	900,000	499,000	784,000	349,000	391,000	2,023,000	2,456,239	146,963	Dry	

Table 2
Tuolumne River Flow Schedule
 Based on DWR Final Values, 60-20-20 Index for 2016, Hydrologic Conditions
 Schedule For 2016-2017 Fish Flow Year

DATE		Number of DAYS	BASE FLOW ¹			PULSE FLOW ¹			INTERPOLATION FLOW			Other Adjusted Flow			TOTAL FERC FLOW	
From:	To:		CFS	AF	ACCUM. A.F.	CFS	AF	ACCUM. A.F.	CFS	AF	ACCUM. A.F.	CFS	AF	ACCUM. A.F.	CFS	ACCUM. ¹ A.F.
15-Apr-2016	15-Apr-2016	1	180	357	357	792	1,572	1,572	0	0	0	0	0	0	972	1,929
16-Apr-2016	16-Apr-2016	1	180	357	714	2,438	4,836	6,408	0	0	0	0	0	0	2,618	7,122
17-Apr-2016	17-Apr-2016	1	180	357	1,071	2,371	4,703	11,111	0	0	0	0	0	0	2,551	12,182
18-Apr-2016	18-Apr-2016	1	180	357	1,428	771	1,530	12,640	0	0	0	0	0	0	951	14,068
19-Apr-2016	19-Apr-2016	1	180	357	1,785	201	398	13,039	0	0	0	0	0	0	381	14,824
20-Apr-2016	20-Apr-2016	1	180	357	2,142	201	398	13,437	0	0	0	0	0	0	381	15,579
21-Apr-2016	21-Apr-2016	1	180	357	2,499	201	398	13,836	0	0	0	0	0	0	381	16,335
22-Apr-2016	22-Apr-2016	1	180	357	2,856	1,151	2,283	16,118	0	0	0	0	0	0	1,331	18,975
23-Apr-2016	23-Apr-2016	1	180	357	3,213	1,832	3,633	19,751	0	0	0	0	0	0	2,012	22,965
24-Apr-2016	24-Apr-2016	1	180	357	3,570	413	818	20,570	0	0	0	0	0	0	593	24,140
25-Apr-2016	25-Apr-2016	1	180	357	3,927	201	398	20,968	0	0	0	0	0	0	381	24,895
26-Apr-2016	26-Apr-2016	1	180	357	4,284	201	398	21,366	0	0	0	0	0	0	381	25,651
27-Apr-2016	27-Apr-2016	1	180	357	4,641	201	398	21,765	0	0	0	0	0	0	381	26,406
28-Apr-2016	28-Apr-2016	1	180	357	4,998	201	398	22,163	0	0	0	0	0	0	381	27,162
29-Apr-2016	29-Apr-2016	1	180	357	5,355	1,103	2,188	24,352	0	0	0	0	0	0	1,283	29,707
30-Apr-2016	30-Apr-2016	1	180	357	5,712	705	1,398	25,750	0	0	0	0	0	0	885	31,463
01-May-2016	01-May-2016	1	180	357	6,069	301	597	26,347	0	0	0	0	0	0	481	32,416
02-May-2016	02-May-2016	1	180	357	6,426	301	597	26,944	0	0	0	0	0	0	481	33,370
03-May-2016	03-May-2016	1	180	357	6,783	301	597	27,540	0	0	0	0	0	0	481	34,324
04-May-2016	04-May-2016	1	180	357	7,140	301	597	28,137	0	0	0	0	0	0	481	35,278
05-May-2016	05-May-2016	1	180	357	7,498	301	597	28,734	0	0	0	0	0	0	481	36,232
06-May-2016	06-May-2016	1	180	357	7,855	658	1,304	30,038	0	0	0	0	0	0	838	37,893
07-May-2016	07-May-2016	1	180	357	8,212	401	795	30,833	0	0	0	0	0	0	581	39,045
08-May-2016	08-May-2016	1	180	357	8,569	401	795	31,628	0	0	0	0	0	0	581	40,197
09-May-2016	09-May-2016	1	180	357	8,926	401	795	32,423	0	0	0	0	0	0	581	41,349
10-May-2016	10-May-2016	1	180	357	9,283	401	795	33,219	0	0	0	0	0	0	581	42,501
11-May-2016	11-May-2016	1	180	357	9,640	401	795	34,014	0	0	0	0	0	0	581	43,653
12-May-2016	12-May-2016	1	180	357	9,997	401	795	34,809	0	0	0	0	0	0	581	44,805
13-May-2016	13-May-2016	1	180	357	10,354	401	795	35,604	0	0	0	0	0	0	581	45,958
14-May-2016	14-May-2016	1	180	357	10,711	159	316	35,920	0	0	0	0	0	0	339	46,631
15-May-2016	15-May-2016	1	180	357	11,068	0	0	35,920	0	0	0	0	0	0	180	46,998
16-May-2016	16-May-2016	1	180	357	11,425	0	0	35,920	0	0	0	0	0	0	180	47,345
17-May-2016	17-May-2016	1	180	357	11,782	0	0	35,920	0	0	0	0	0	0	180	47,702
18-May-2016	18-May-2016	1	180	357	12,139	0	0	35,920	0	0	0	0	0	0	180	48,059
19-May-2016	19-May-2016	1	180	357	12,496	0	0	35,920	0	0	0	0	0	0	180	48,416
20-May-2016	20-May-2016	1	180	357	12,853	0	0	35,920	0	0	0	0	0	0	180	48,773
21-May-2016	21-May-2016	1	180	357	13,210	0	0	35,920	0	0	0	0	0	0	180	49,130
22-May-2016	22-May-2016	1	180	357	13,567	0	0	35,920	0	0	0	0	0	0	180	49,487
23-May-2016	23-May-2016	1	180	357	13,924	0	0	35,920	0	0	0	0	0	0	180	49,844
24-May-2016	24-May-2016	1	180	357	14,281	0	0	35,920	0	0	0	0	0	0	180	50,201
25-May-2016	25-May-2016	1	180	357	14,638	0	0	35,920	0	0	0	0	0	0	180	50,558
26-May-2016	26-May-2016	1	180	357	14,995	0	0	35,920	0	0	0	0	0	0	180	50,915
27-May-2016	27-May-2016	1	180	357	15,352	0	0	35,920	0	0	0	0	0	0	180	51,272
28-May-2016	28-May-2016	1	180	357	15,709	0	0	35,920	0	0	0	0	0	0	180	51,629
29-May-2016	29-May-2016	1	180	357	16,066	0	0	35,920	0	0	0	0	0	0	180	51,986
30-May-2016	30-May-2016	1	180	357	16,423	0	0	35,920	0	0	0	0	0	0	180	52,343
31-May-2016	31-May-2016	1	180	357	16,780	0	0	35,920	0	0	0	0	0	0	180	52,700
01-Jun-2016	01-Jun-2016	1	75	149	16,929	0	0	35,920	0	0	0	0	0	0	75	52,849
02-Jun-2016	02-Jun-2016	1	75	149	17,078	0	0	35,920	0	0	0	0	0	0	75	52,998
03-Jun-2016	03-Jun-2016	1	75	149	17,226	0	0	35,920	0	0	0	0	0	0	75	53,146
04-Jun-2016	04-Jun-2016	1	75	149	17,375	0	0	35,920	0	0	0	0	0	0	75	53,295
05-Jun-2016	05-Jun-2016	1	75	149	17,524	0	0	35,920	0	0	0	0	0	0	75	53,444
06-Jun-2016	06-Jun-2016	1	75	149	17,673	0	0	35,920	0	0	0	0	0	0	75	53,593
07-Jun-2016	07-Jun-2016	1	75	149	17,821	0	0	35,920	0	0	0	0	0	0	75	53,741
08-Jun-2016	08-Jun-2016	1	75	149	17,970	0	0	35,920	0	0	0	0	0	0	75	53,890
09-Jun-2016	30-Jun-2016	22	75	3,273	21,243	0	0	35,920	0	0	0	0	0	0	75	57,163
01-Jul-2016	31-Jul-2016	31	75	4,612	25,855	0	0	35,920	0	0	0	0	0	0	75	61,775
01-Aug-2016	31-Aug-2016	31	75	4,612	30,466	0	0	35,920	0	0	0	0	0	0	75	66,386
01-Sep-2016	30-Sep-2016	30	75	4,463	34,929	0	0	35,920	0	0	0	0	0	0	75	70,849
01-Oct-2016	09-Oct-2016	9	150	2,678	37,607	0	0	35,920	0	0	0	0	0	0	150	73,527
10-Oct-2016	10-Oct-2016	1	150	298	37,904	0	0	35,920	850	1,686	1,686	0	0	0	1,000	75,510
11-Oct-2016	11-Oct-2016	1	150	298	38,202	0	0	35,920	750	1,488	3,174	0	0	0	900	77,295
12-Oct-2016	12-Oct-2016	1	150	298	38,499	0	0	35,920	694	1,376	4,550	0	0	0	844	78,969
13-Oct-2016	13-Oct-2016	1	150	298	38,797	0	0	35,920	638	1,265	5,815	-50	(99)	-99	738	80,432
14-Oct-2016	14-Oct-2016	1	150	298	39,094	0	0	35,920	582	1,154	6,968	-50	(99)	-198	682	81,784
15-Oct-2016	15-Oct-2016	1	150	298	39,392	0	0	35,920	525	1,042	8,011	-50	(99)	-298	625	83,025
16-Oct-2016	16-Oct-2016	1	150	298	39,689	0	0	35,920	469	931	8,942	-50	(99)	-397	569	84,154
17-Oct-2016	17-Oct-2016	1	150	298	39,987	0	0	35,920	413	820	9,761	-50	(99)	-496	513	85,172
18-Oct-2016	18-Oct-2016	1	150	298	40,284	0	0	35,920	357	708	10,470	-50	(99)	-595	457	86,079
19-Oct-2016	19-Oct-2016	1	150	298	40,582	0	0	35,920	301	597	11,067	-75	(149)	-744	376	86,825
20-Oct-2016	20-Oct-2016	1	150	298	40,879	0	0	35,920	276	547	11,614	-100	(199)	-943	326	87,471
21-Oct-2016	21-Oct-2016	1	150	298	41,177	0	0	35,920	251	498	12,112	-150	(298)	-1,240	251	87,969
22-Oct-2016	22-Oct-2016	1	150	298	41,474	0	0	35,920	241	478	12,590	-210	(417)	-1,657		