

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**

**Conference call: 6/11/13 at 9:00 a.m.**

**Objective:** Provide advice to the Water Operations Management Team (WOMT) and National Marine Fisheries Service (NMFS) on measures to reduce adverse effects from Delta operations of the Central Valley Project and the State Water Project on salmonids and green sturgeon.

DOSS will work with other technical teams. DOSS notes and advice can be found at:

<http://www.swr.noaa.gov/ocap/doss.htm>.

**DWR:** Mike Ford, Edmund Yu, Kevin Reece, Andy Chu, Dan Yamanaka, James Gleim

**FWS:** Craig Anderson, Roger Guinee, Leigh Bartoo

**NMFS:** Barbara Rocco, Jeff Stuart, Barb Byrne

**Reclamation:** Russ Yaworsky, Josh Israel

**DFW:** Bob Fujimura, Jason Roberts, Joe Johnson

**SWRCB:** Scott Ligare

**EPA, USGS:** not present

**Agenda**

1. Fish monitoring
2. Current operations
3. RPA implementation update (note on data used for IV.2.3. temperature offramp)
4. DOSS annual report schedule
5. SWG update
6. DOSS advice

**Fish Monitoring:** The following table presents fish monitoring data. Unless otherwise noted, reported sizes are fork length. See also:

<http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.

Location	Chippis Is. Midwater Trawl	Sacramento Trawls	Mossdale Kodiak Trawl	Glenn-Colusa ID RST	Tisdale RST	Beach Seines
<b>Sample Date</b>	6/3, 5, 7	6/4, 6	6/4–6/8	6/1–6/10	6/4–6/7, 11	6/3–6/7
<b>Total Catch</b>	<b>61</b>	<b>8</b>	<b>211</b>	<b>237</b>	<b>1</b>	<b>40</b>
<b>FR</b>	41	8	166	233	1	1
<b>WR</b>						
<b>SR</b>						
<b>LFR</b>						
<b>Ad-Clipped Chinook</b>	9		45	1		
<b>DS</b>	2 (37 & 82 mm)					2 (35 & 44 mm)
<b>Splittail</b>	1 (282 mm)					37
<b>Longfin</b>	8 (29–40 mm)					
<b>SH (ad-clip)</b>						
<b>SH (wild)</b>				3		
<b>W. Temp. (avg. °F)</b>	65.7	71.4		61.1	64.0	71.6

<b>Flows (avg. cfs)</b>					8,078	
<b>Turbidity (avg. NTU)</b>	74.4	11.7		2.3	8.1	31.1
<b>WR/LFR Avg. CPUE</b>				1.43		
<b>FR/SR Avg. CPUE</b>						0.004

CPUE = catch per unit of effort; ACT = acoustic tag

**Mossdale:** The season total for Chinook caught (since 4/1) in the Mossdale trawl sampling is 5,340, which comprises only unmarked Chinook. Yu (DWR) per his communication with Steve Tsao (DFW) reported that the ad-clipped Chinook salmon caught at Mossdale on 6/4 were of Merced River Hatchery origin based on preliminary CWT readings. The Merced River Hatchery release most likely resulted in the spike in Chinook salmon catch on 6/4. DFW was not yet able to share the preliminary hatchery release information from Merced because the data have not yet been QA/QC'd.

**Fish Salvage:** Geir Aasen (DFW) provided the fish salvage report covering 6/3 through 6/9 and emailed it to DOSS participants. This report is posted at <ftp://ftp.delta.dfg.ca.gov/salvage> and you can locate the table under folder “DOSS salvage tables” (also try <http://www.dfg.ca.gov/delta/apps/salvage/Default.aspx> and click on “salvage FTP site”).

*DFW (Fujimura) report for 6/3–6/9*

The number of salvaged steelhead decreased to very low levels last week. Four non-ad-clipped steelhead were salvaged last week compared to 28 the previous week. Steelhead losses were also lower this week. The estimated daily loss density of non-ad-clipped steelhead was 3.81 fish/TAF when they were observed on 6/3. The season total of salvaged non-ad-clipped steelhead is 789.

No ad-clipped or non-ad-clipped older juvenile Chinook salmon were salvaged last week.

No sturgeon were salvaged during the reporting period.

*Report on preliminary salvage estimates for 6/10/13*

No salmonids or sturgeon were salvaged at the facilities yesterday.

Compiled by Bob Fujimura on June 10, 2013

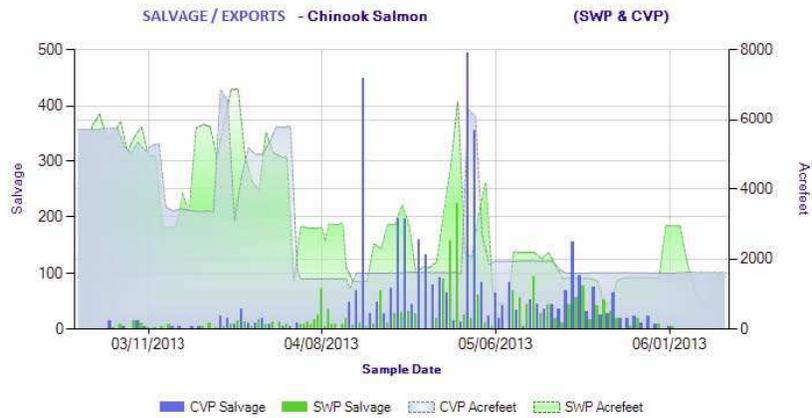


Figure 1. Daily salvage of Chinook salmon (all races) and water exports from the state and federal fish salvage facilities during March 1 through June 9, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

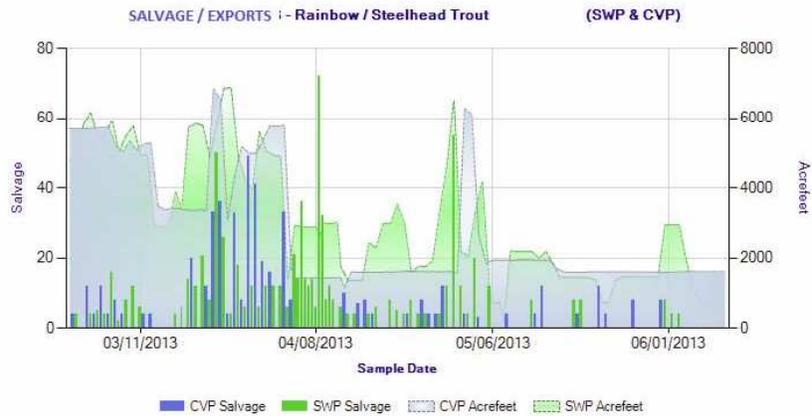


Figure 2. Daily salvage of steelhead and water exports from the state and federal fish salvage facilities during March 1 through June 9, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>

**DOSS Weekly Salvage Update**  
**Reporting Period: June 3-9, 2013**  
*Prepared by Bob Fujimura on June 10, 2013 2130*  
**Preliminary Results -Subject to Revision**

Criteria	3-Jun	4-Jun	5-Jun	6-Jun	7-Jun	8-Jun	9-Jun	Trend	
<b>Loss Densities</b>									
Wild older juvenile CS	0	0	0	0	0	0	0	→	0.0
Wild steelhead	3.81	0	0	0	0	0	0	↘	0.5
<b>Exports</b>									
SWP daily export	2,937	1,927	1,199	744	744	1,287	1,485	→	1,475
CVP daily export	1,612	1,618	1,616	1,613	1,613	1,615	1,615	→	1,615

*Loss Density = fish lost/TAF; water export = AF; Trend = compared to previous week; wild = adipose fin present  
Loss = estimated number of fish lost at the CVP and SWP Delta export facilities based on estimated salvage (see below)*

**Chinook Salmon Weekly\*/Season Salvage and Loss**  
*Combined salvage and loss for both CVP and SWP fish facilities*  
**Race determined by size at date of capture; hatchery = adipose fin missing;**

Category	Weekly Total			Season Total	
	Salvage	Loss	Trend	Salvage	Loss
<b>Wild</b>					
Winter Run	0	0	→	271	731
Spring Run	0	0	→	909	2,496
Late Fall Run	0	0	→	85	277
Fall Run	0	0	↘	4,553	8,701
Unclassified	0	0	→	8	5
<b>Total</b>	<b>0</b>	<b>0</b>		<b>5,826</b>	<b>12,210</b>
<b>Hatchery</b>					
Winter Run	0	0	→	187	595
Spring Run	0	0	→	7	15
Late Fall Run	0	0	→	781	2,898
Fall Run	0	0	→	415	1,522
Unclassified	0	0	→	0	0
<b>Total</b>	<b>0</b>	<b>0</b>		<b>1,390</b>	<b>5,030</b>

*Trend = weekly loss per race; Salvage = estimated number of fish collected by the CVP and SWP fish protective facilities per unit of time*

**Steelhead Weekly/Season Salvage and Loss**  
*Combined salvage and loss for both CVP and SWP fish facilities*

Category	Weekly Total			Season Total	
	Salvage	Loss	Trend	Salvage	Loss
Wild	4	17	↘	789	2,228
Hatchery	0	0	→	701	1,882
<b>Total</b>	<b>4</b>	<b>17</b>		<b>1,490</b>	<b>4,110</b>

*State Water Project loss = salvage x 4.33; Central Valley Project loss = salvage x 0.68*

**Hatchery Coded-Wire-Tag (CWT) Results (as of 6/9/13, see table below):** No CWT Chinook have been collected at the fish facilities since 5/4/13.

CONFIRMED HATCHERY (ADIPOSE FIN CLIPPED) CHINOOK SALMON LOSS AT THE SWP & CVP DELTA FISH FACILITIES, 2012/2013

Release Date	CWT Race	Hatchery	Release Site	Release Type	Confirmed Loss	Number Released <sup>1</sup>	Total Entering Delta	% Loss of Number Released <sup>2</sup>	% Loss of Total Entering Delta <sup>3</sup>	First Concern Level	Second Concern Level	Date of First Loss <sup>4</sup>	Date of Last Loss <sup>5</sup>
11/5/2012	F	Mokelumne River Hatchery	Mokelumne River	**	599.45	100,633	n/a	0.596	n/a	n/a	n/a	12/5/2012	4/8/2013
11/29/2012	LF	Coleman NFH	Battle Creek	Production	4100.48	805,842	n/a	0.509	n/a	n/a	n/a	12/9/2012	4/21/2013
12/18/2012	LF	Coleman NFH	Battle Creek	Spring Surrogate	74.95	72,974	n/a	0.103	n/a	0.5%	1.0%	12/31/2012	3/23/2013
1/8/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	138.70	79,000	n/a	0.176	n/a	0.5%	1.0%	1/20/2013	3/27/2013
1/23/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	24.40	85,600	n/a	0.029	n/a	0.5%	1.0%	2/3/2013	3/11/2013
2/7/2013	W	Livingston Stone NFH	Caldwell Park	Production	8.59	182,562	96,525	0.005	0.009	0.5%	1.0%	3/25/2013	3/25/2013
4/9 to 4/18/2013	S	Feather River Hatchery	Boyd's Pump	**	4.33	1,034,101	n/a	0.0004	n/a	n/a	n/a	4/30/2013	5/3/2013
4/10 to 4/11/2013	F	Coleman NFH	Battle Creek	Production	2.33	1,693,900	n/a	0.0001	n/a	n/a	n/a	6/2/2013	6/4/2013
4/17 to 4/18/2013	F	Mokelumne River Hatchery	Sherman Island Rd	**	0.00	112,447	n/a	0.000	n/a	n/a	n/a	5/4/2013	5/4/2013

UNCONFIRMED HATCHERY (ADIPOSE FIN CLIPPED) CHINOOK SALMON LOSS AT THE SWP & CVP DELTA FISH FACILITIES, 2012/2013

Facility	Unknown CWT Loss <sup>6</sup>	Unread CWT Loss <sup>6</sup>	Unknown Hatchery Loss <sup>7</sup>	Acoustic Tag Loss <sup>8</sup>	Number of Unassigned CWTs <sup>9</sup>
SWP	53.58	0.00	0.00	17.93	1
CVP	5.20	0.00	0.00	0.00	0
<b>TOTAL</b>	<b>58.78</b>	<b>0.00</b>	<b>0.00</b>	<b>17.93</b>	<b>1</b>

SWP and CVP adipose fin clipped Chinook lost from 10/1/2012 through 6/9/2013.

<sup>1</sup>Number released with the adipose fin clipped and a coded-wire tag (CWT).

<sup>2</sup>% Loss of Number Released = (Confirmed Loss/Number Released)\*100.

<sup>3</sup>% Loss of Total Entering Delta = (Confirmed Loss/Total Entering Delta)\*100.

<sup>4</sup>Date of first and last loss accounts for all CWT loss even those from special studies where salvage and loss=0.

<sup>5</sup>Adipose fin clipped Chinook was observed during fish count, but tag code could not be determined (e.g., damaged tag, lost tag, no tag, or Chinook accidentally released).

<sup>6</sup>Adipose fin clipped Chinook was collected during fish count and has not been processed yet.

<sup>7</sup>CWT has been read, but hatchery release information not yet available.

<sup>8</sup>Adipose fin clipped Chinook released due to presence of sutures.

<sup>9</sup>CWT cannot currently be assigned to a salvage record with certainty since the CWT was lost and then found. CWT may be assigned to a salvage record if new information is available.

\*\* Information not yet available.

DWR-DES Revised 6/10/2013

Preliminary data from DFW, DWR, FWS, and Reclamation; subject to revision.

## Operations (6/11/13)

SWP		CVP	
<b>Exports (cfs)</b>			
Clifton Court Forebay	2,500 (might decrease to 2,000 in next few days)	Jones Pumping Plant	800
<b>Reservoir Releases (cfs)</b>			
Feather - Oroville	2,500	American - Nimbus	2,500 (might decrease to 2,250 on 6/14 but will reassess 6/12)
		Sacramento - Keswick	13,500
		Stanislaus - Goodwin	350 (will decrease to 300 on 6/12; Ripon DO currently controlling)
<b>Reservoir Storage (in TAF, % of capacity)</b>			
San Luis (SWP)	265	San Luis (CVP)	386 (40)
Oroville	2,753	Shasta	3,231
New Melones		Folsom	720
<b>Delta Operations</b>			
DCC	Closed (will reopen on 6/14 and remain open until further notice)	Sacramento River at Freeport (cfs)	12,563
Outflow Index (cfs)	7,300	San Joaquin River (cfs) at Vernalis	851
Total Delta Inflow (cfs)	14,511	OMR (daily) (cfs)	
Water Temperature (°F)		OMR 5-day avg (cfs)	-2,100
X2 (km)	81	OMR 14-day avg (cfs)	-2,100
E/I (%)	16.5 (3-d avg)		

**Water Temperatures:** Clifton Court Forebay (CCF) had 2 consecutive days of 25°C and then decreased yesterday with the cooling trend to approximately 24°C. CCF temperatures will not likely increase for the next 1–1.5 weeks.

**Weather Forecast:** Ambient air temperatures in the region over the next 1–2 weeks are forecast to be in the mid-80s to low 90s.

**Water Quality:** X2 (Delta outflow) is controlling. There was a spike in EC at Emmatton on 6/10, most likely from DCC gates being open last weekend and closed again on Monday.

**RPA Implementation:** The e-mail from NMFS to WOMT on 6/7 ended Action IV.2.3, effective 6/7, based on 7 consecutive days (5/31–6/6) of water temperatures at Mossdale >72°F. There was some discussion about whether the 7 days counted toward the offramp must be in June or could be from any month. The decision tree on page 77 of the 2009 BiOp RPAs with 2011 amendments did not specify whether the “temperature exceedance” days must only be counted on or after 6/1; however, per Figure 11-4 on p. 59 of the 2011 RPA Amendments, it was confirmed that “temperature exceedance” days counted toward the offramp must occur 6/1 or later.

NMFS expects to send an e-mail to WOMT clarifying the intended implementation of the temperature offramp. Because OMR was not controlling at the time of the NMFS notification, the inclusion of the 5/31 "temperature exceedance" day did not affect operations or salmonid protection.

**Data Used For Offramp Temperature:** To assess the temperature offramp, NMFS will review the Fahrenheit data at Mossdale provided on CDEC.

**Smelt Working Group (SWG):** Current operations are sufficiently protective for delta smelt. Delta smelt salvage is down. As of Sunday, 6/9 (1,524), the season total of delta smelt salvage was ~65% of the incidental take limit (2,350). June 8 and 9 temperatures at Clifton Court Forebay were >25°C, but was 24.6°C on 6/10. The RPA ends on 6/30 or when Forebay temperature is  $\geq 25^{\circ}\text{C}$  for 3 consecutive days, whichever occurs first. Operators indicated a cooling trend for the next week, so the temperature offramp is not expected to be met this week.

There is no evidence of many longfin smelt still in the Delta; a few appear to be in the central Delta. Current operations are also considered sufficiently protective for longfin smelt.

SWG meeting notes are available at: [http://www.fws.gov/sfbaydelta/cvp-swp/smelt\\_working\\_group.cfm](http://www.fws.gov/sfbaydelta/cvp-swp/smelt_working_group.cfm).

**2013 Annual Review:** Byrne sent to DOSS a draft schedule for the annual report sections. There is no set date yet for the annual review but it will most likely be in early November. Based on past years' schedules, it is expected that all materials will be provided to the panel by mid- to late September, hence the schedule to finish the 2013 DOSS annual report by the end of September. Anyone assigned a section should provide your drafts by 7/16 to Byrne and Rocco (NMFS), who will review and return the drafts to the authors by 7/30. Please look at the schedule emailed to DOSS and if there are any comments or concerns for getting sections done, contact Byrne.

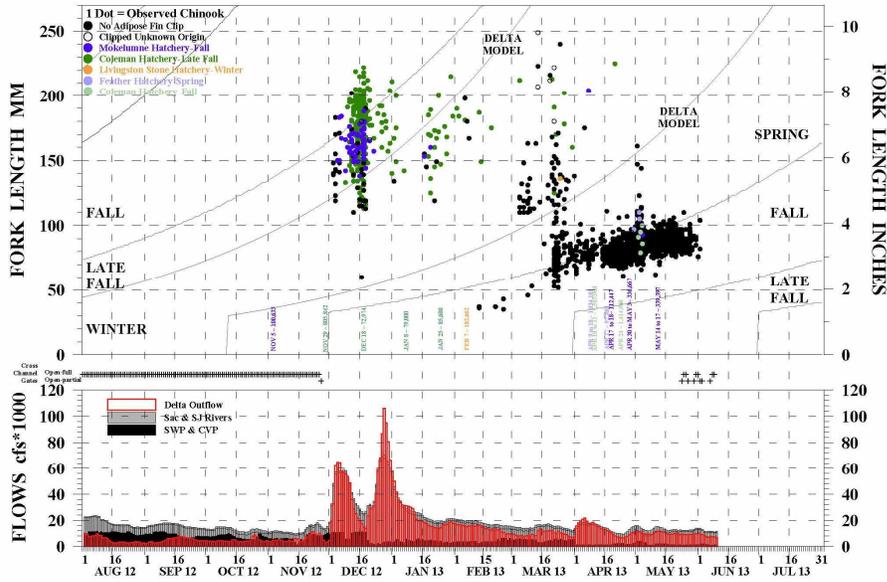
**Loss Equation Meeting:** Israel (Reclamation) reported that, based on the availability of those who responded to the Doodle poll sent to DOSS, the meetings to discuss the reports related to the potential adjustment of the loss equations used at the export facilities will be held on 7/2 in the morning and 7/8 in the afternoon. More information will be provided as these dates get closer.

**DOSS Advice to WOMT and NMFS:** None.

**Next Meeting:** Weekly DOSS meetings will most likely resume in October. Byrne will notify DOSS about any interim meetings to discuss the annual report.

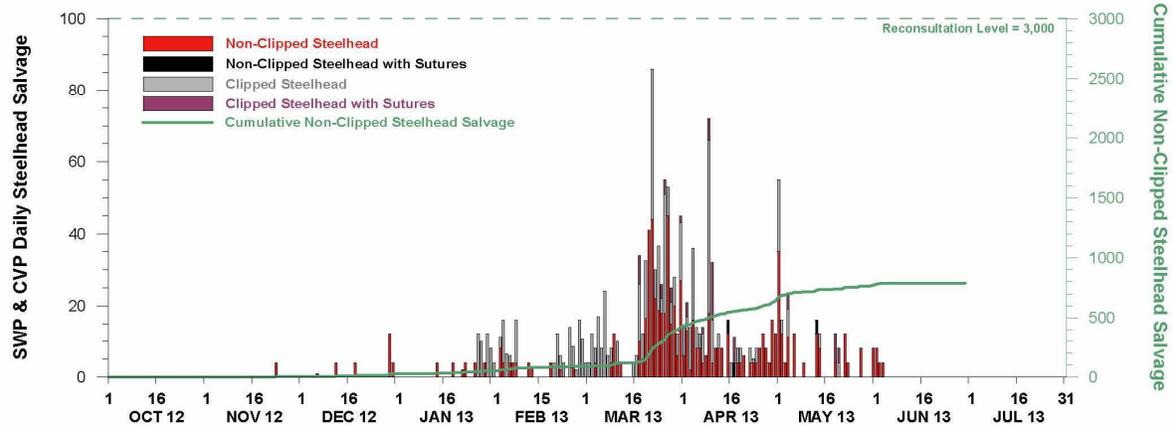
Below are graphs provided by DWR for Chinook salmon and steelhead salvaged or lost at the Delta fish facilities and observed in the Sacramento and San Joaquin rivers. For additional graphs, please visit the DWR website at: <http://www.water.ca.gov/swp/operationscontrol/calFed/calFedMonitoring.cfm>.

### OBSERVED CHINOOK SALVAGE AT THE SWP & CVP DELTA FISH FACILITIES 08/01/2012 THROUGH 06/09/2013



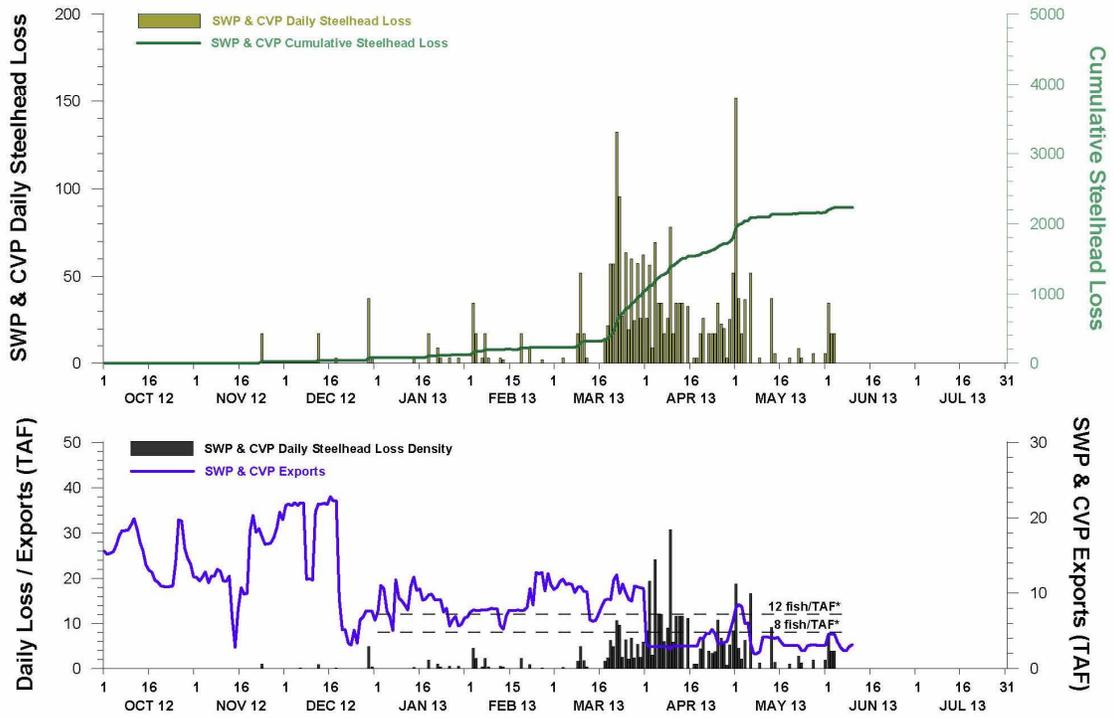
DWR-DES 10 JUN 2013  
 Preliminary data from DFW, DWR, FWS, Reclamation, and CDEC, subject to revision.  
 \*Chinook outside of the length-at-date criteria (Delta model) are not reported.

### STEELHEAD SALVAGE AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 09 JUN 2013



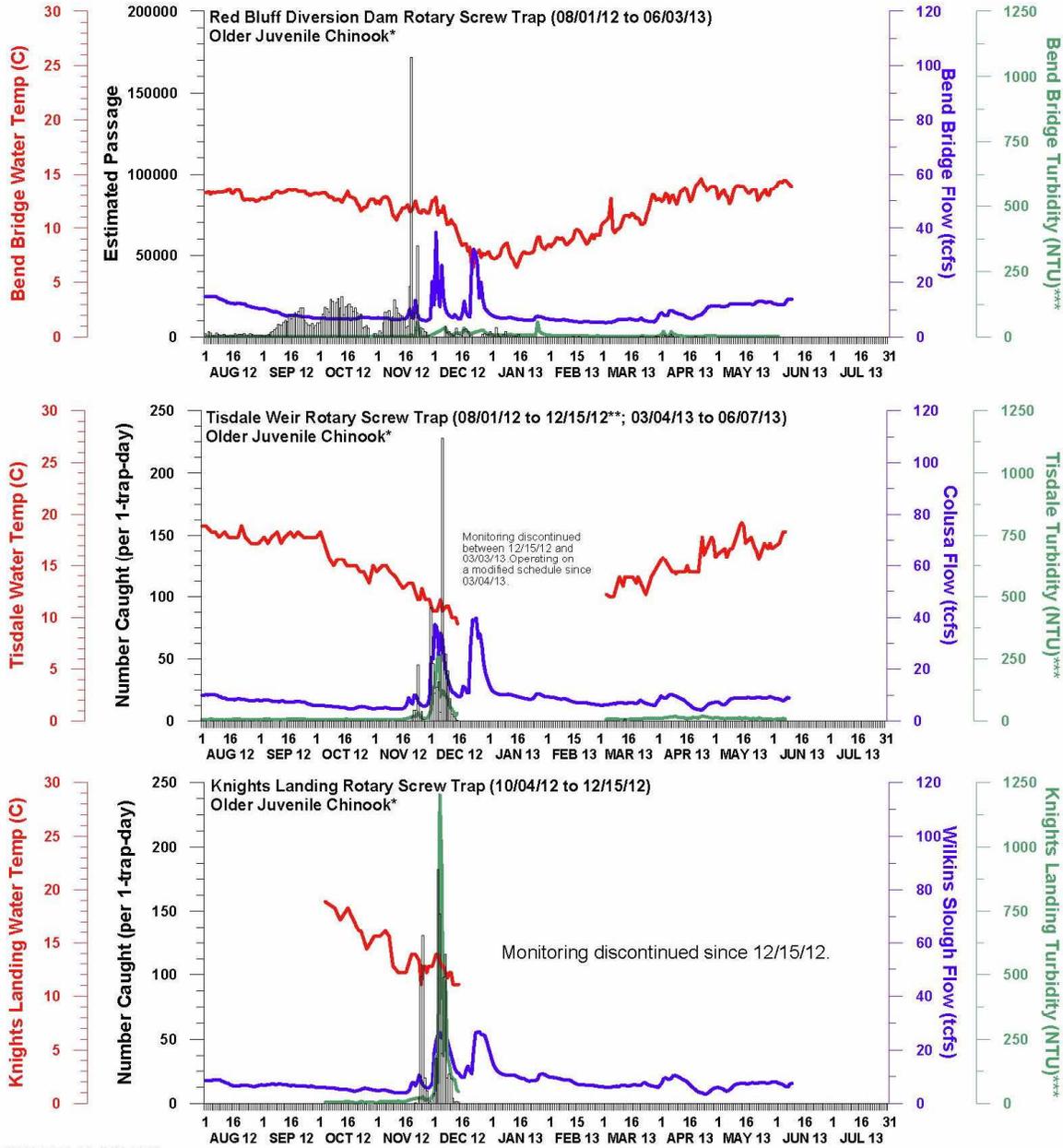
DWR-DES 10 JUN 2013  
 Preliminary data from DFW; subject to revision.

## NON-CLIPPED STEELHEAD LOSS AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 09 JUN 2013



DWR-DES 10 JUN 2013  
 Preliminary data from DFW; subject to revision.  
 \*Used to roughly estimate whether the daily loss is greater than 8 fish/TAF multiplied by the volume exported in TAF or 12 fish/TAF multiplied by the volume exported in TAF.

# NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 10 JUN 2013

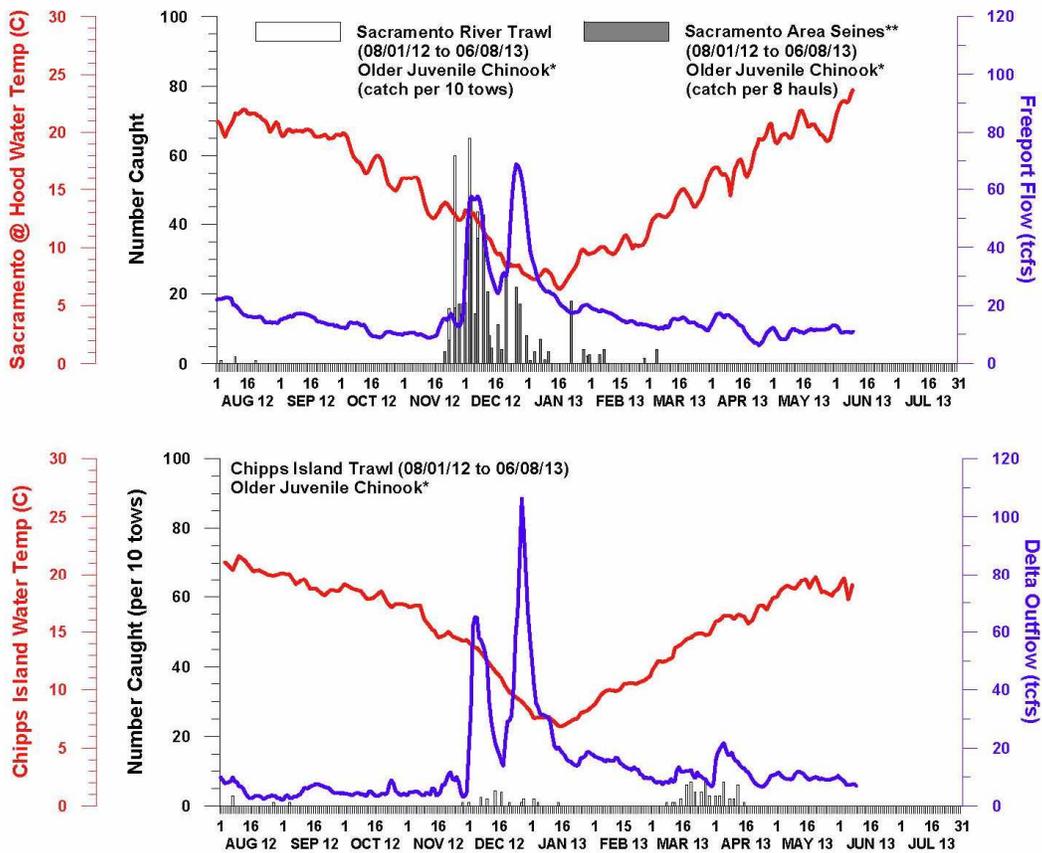
Preliminary data from DFW, FWS, and CDEC; subject to revision.

\*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for which a race is assigned on a given sampling date.

\*\* Tisdale Weir: One older juvenile caught on 9/14 and 43 older juveniles caught on 11/25. However, CPUE was not calculated due to problems with the cone dickers. As a result, data are not presented on the graph.

\*\*\*Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured.

## NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE LOWER SACRAMENTO RIVER & CHIPPS ISLAND



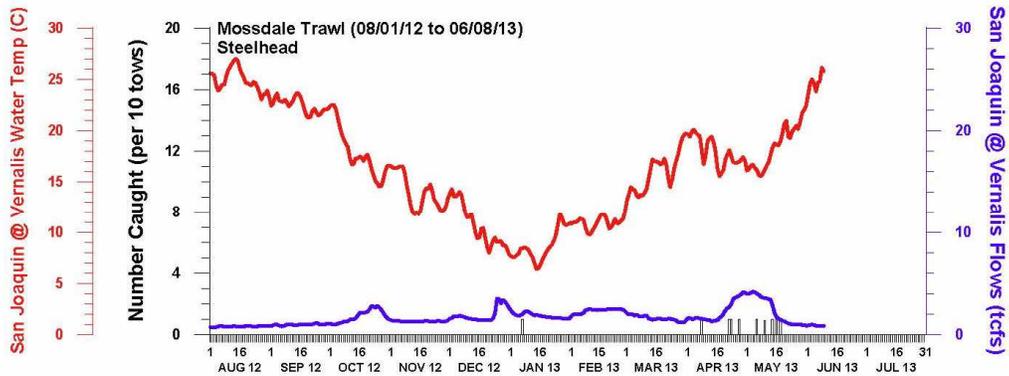
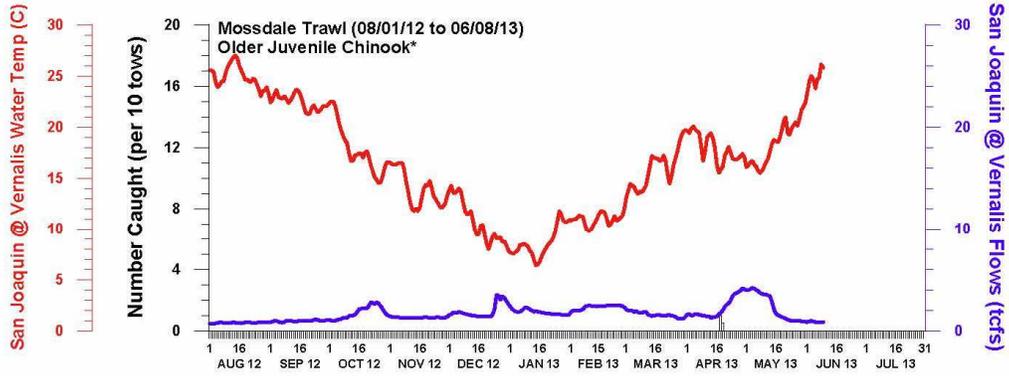
DWR-DES 10 JUN 2013

Preliminary data from FWS and CDEC; subject to revision.

\*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for which a race is assigned on a given sampling date.

\*\*Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the same day.

## NUMBER OF UNMARKED OLDER JUVENILE CHINOOK AND UNMARKED STEELHEAD MEASURED IN THE SAN JOAQUIN RIVER



DWR-DES 10 JUN 2013

Preliminary data from DFW, FWS, and CDEC; subject to revision.

\*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for which a race is assigned on a given sampling date.