

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

Conference call: 3/26/13 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:** Kevin Reece, Andy Chu, Edmund Yu, Mike Ford, Norman Lee

**FWS:** Roger Guinee, Leigh Bartoo

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

**Reclamation:** Russ Yaworsky, Josh Israel

**DFW:** Bob Fujimura, Joe Johnson, Robert Vincik, Krystal Acierto

**SWRCB:** Christine Rico, Scott Ligare

**EPA, USGS:** not present

### Agenda

1. Fish monitoring
2. Current operations
3. Action IV.2.3 steelhead-loss density action response
4. Action IV.3 language clarification

**Action:** DOSS will wait until the Tisdale report comes out to make a decision on whether to continue to use Tisdale as a monitoring site.

Update: The Tisdale annual monitoring report was provided to DOSS before the call. DOSS will review the report and be prepared to discuss it on the next DOSS call on 4/3/13 to decide whether to continue with that sampling location to meet the BiOp requirement for monitoring on the Sacramento River.

**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	Tisdale RST	Beach Seines
Sample Date	3/18, 20, 22	3/18, 20, 22	3/18, 20, 22	3/17–3/24	3/19–3/21
Total Catch	34	4	10	14	208
FR		3	7	9	191
WR	17				
SR			3	4	13
LFR					
Ad-Clipped Chinook	3				
DS	6 (1 w/eggs; 5 w/no expression)				

<b>Splittail</b>					4
<b>Longfin</b>	8				
<b>SH (ad-clip)</b>		1		1	
<b>SH (wild)</b>					
<b>W. Temp. (avg. °F)</b>	58.5	57.4	62.2	56.0	57.9
<b>Flows (avg. cfs)</b>				7,010	
<b>Turbidity (avg. NTU)</b>	27.5	8.8	16.4	8.2	14.8
<b>WR/LFR Avg. CPUE</b>					
<b>FR/SR Avg. CPUE</b>				0.213	

**Key:** FR = Fall run; LFR = Late-fall run; SR = Spring run; WR = Winter run; SH = Steelhead; DS = Delta smelt; LFS = Longfin smelt; CPUE = catch per unit of effort; ACT = acoustic tag; N/A = not available

**Fish Salvage:** Geir Aasen (DFW) provided the fish salvage report covering 3/18–3/24/13 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”).

### **Report from Fujimura (DFW) for March 18–24, 2013**

The weekly total of non-ad-clipped older juvenile Chinook salvaged markedly increased compared to the previous week. One hundred twenty-six non-ad-clipped juvenile Chinook salmon were salvaged during the reporting period. Forty-four were in the winter-run size range; 50 were in the spring-run size range, and 32 were in the fall-run size range. The daily loss densities of older juvenile salmon ranged from 0.51 to 1.84 fish/TAF for 3/19–3/24/13.

The number of ad-clipped Chinook increased slightly last week. Twelve ad-clipped juvenile Chinook were salvaged; they were in the winter-run size range.

The numbers of salvaged steelhead also markedly increased. One hundred fifty-eight non-ad-clipped steelhead were salvaged during the reporting period. The estimated daily loss densities ranged from 1.56 to 10.64 fish/TAF and exceeded the first-stage loss criterion (8 fish/TAF) on Friday, 3/22/13, and Saturday, 3/23/13. The season total of salvaged non-ad-clipped steelhead is 276 since 10/1/2012. One hundred fifteen hatchery steelhead were also salvaged during the reporting period.

One sutured steelhead (acoustic tag) was observed up at the CVP; 480 acoustically tagged steelhead were released on 3/1/13 from Durham Ferry as part of the 6-Year-Study. No green or white sturgeon were observed last week.

Preliminary data from Monday, 3/25/13: At the CVP, 8 non-ad-clipped winter-run size Chinook, 4 non-ad-clipped fall-run Chinook, 4 non-ad-clipped steelhead, and 4 ad-clipped steelhead were salvaged. At the SWP, 8 non-ad-clipped winter-run-size Chinook, 4 non-ad-clipped spring-run-size Chinook, 2 ad-clipped winter-run size Chinook, 14 non-ad-clipped steelhead, and 4 ad-clipped steelhead were salvaged. Preliminary rough estimates of loss density are 3.97 fish/TAF for older juvenile Chinook, and 6.27 fish/TAF for non-clipped steelhead.

Compiled by Bob Fujimura on March 25, 2013



Figure 1. Daily salvage of Chinook salmon (all races) and water exports from the state and federal fish salvage facilities during December 1, 2012 through March 24, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

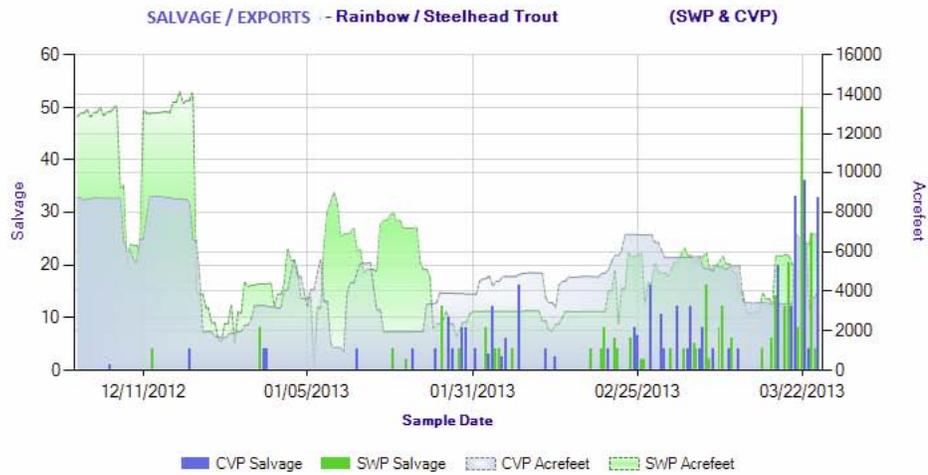


Figure 2. Daily salvage of steelhead and water exports from the state and federal fish salvage facilities during December 1, 2012 through March 24, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>

**DOSS Weekly Salvage Update**  
 Reporting Period: March 18-24, 2013  
 Prepared by Bob Fujimura on March 26, 2013 CORRECTED  
 Preliminary Results -Subject to Revision

Criteria	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	Trend	
<b>Loss Densities</b>									
Wild older juvenile CS	0	1.82	1.84	1.67	0.51	0.85	0.57	↗	1.0
Wild steelhead	1.56	2.35	6.22	4.87	10.64	9.57	2.44	↗	5.4
<b>Exports</b>									
SWP daily export	5,708	5,849	5,772	4,884	5,878	6,862	6,863	↗	5,974
CVP daily export	3,358	3,368	3,369	6,835	6,543	3,094	4,325	↗	4,413

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	44	73	↗	231	614
Spring Run	50	54	↗	54	57
Late Fall Run	0	0	→	85	277
Fall Run	32	90	↗	73	199
Unclassified	0	0	→	8	5
<b>Total</b>	<b>126</b>	<b>217</b>		<b>451</b>	<b>1,152</b>
<b>Hatchery</b>					
Winter Run	12	38	↗	169	541
Spring Run	0	0	→	0	0
Late Fall Run	0	0	→	781	2,898
Fall Run	0	0	→	415	1,522
Unclassified	0	0	→	0	0
<b>Total</b>	<b>12</b>	<b>38</b>		<b>1,365</b>	<b>4,961</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	158	405	↗	276	718
Hatchery	115	272	↗	368	812
<b>Total</b>	<b>273</b>	<b>677</b>		<b>644</b>	<b>1,530</b>

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

**Hatchery CWT Results (see table below):** From 3/18 to 3/24/13, the cumulative loss increased for the first release group of spring-run surrogates to 0.103%, and to 0.172% for the second release group of spring-run surrogates. Cumulative loss for each group is still below the 0.5% concern level. There is one CWT that has not yet been assigned (the tag was lost and then found). No hatchery winter-run Chinook were lost during this period; however, 1 hatchery winter run was observed based on preliminary CWT data at the SWP on 3/25/13.

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 <sup>2</sup>	First Concern Level	Second Concern Level	Date of First Loss	Date of Last Loss
11/5/2012	F	Mokelumne River Hatchery	Mokelumne River	**	590.68	100,633	n/a	0.587	n/a	n/a	12/5/2012	1/20/2013
11/29/2012	LF	Coleman NFH	Battle Creek	Production	4080.76	805,842	n/a	0.506	n/a	n/a	12/9/2012	1/20/2013
12/18/2012	LF	Coleman NFH	Battle Creek	Spring Surrogate	74.95	72,974	n/a	0.103	0.5%	1.0%	12/31/2012	3/23/2013
1/8/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	135.51	79,000	n/a	0.172	0.5%	1.0%	1/20/2013	3/21/2013
1/25/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	12.14	85,600	n/a	0.014	0.5%	1.0%	2/3/2013	2/14/2013
2/7/2013	W	Livingston Stone NFH	Caldwell Park	Production	0.00	182,662	96,525	0.000	0.5%	1.0%	-	-

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

Facility	Unknown CWT Loss <sup>3</sup>	Unread CWT Loss <sup>4</sup>	Unknown Hatchery Loss <sup>5</sup>	Acoustic Tag Loss <sup>6</sup>	Number of Unassigned CWTs <sup>7</sup>
SWP	45.16	0.00	0.00	17.93	1
CVP	5.20	0.00	0.00	0.00	0
<b>TOTAL</b>	<b>50.36</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 3/24/2013.

These tables do not account for adipose fin clipped Chinook observed from a special study since salvage and loss for Chinook observed in a special study= 0.

<sup>1</sup>Number released with the adipose fin clipped and a CWT.

<sup>2</sup>LF & F % Loss = (Confirmed Loss/Number Released)\* 100; W % Loss = (Confirmed Loss/Total Entering Delta)\* 100.

<sup>3</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>4</sup>Adipose fin clipped Chinook was collected during fish count and has not been processed yet.

<sup>5</sup>CWT has been read, but hatchery release information not yet available.

<sup>6</sup>Adipose fin clipped Chinook released due to presence of sutures.

<sup>7</sup>The 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 3/25/2013

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

**Steelhead Loss-Density Exceedance:** On Sunday, 3/24/2013, DWR informed NMFS that on Friday, 3/22/13, the wild steelhead loss density at the CVP/SWP was estimated at 10.64 fish/TAF, which exceeded the first-stage trigger of 8 fish/TAF in Action IV.2.3 (OMR flow management) of NMFS’ RPA for long-term operations of the CVP and SWP.

The action response for Action IV.2.3 requires Reclamation and DWR to “Reduce exports to achieve an average net (Old and Middle River) flow of -3,500 cfs for a minimum of 5 consecutive days. The 5-day running average OMR flows shall be no more than 25 percent more negative than the targeted flow level at any time during the 5-day running average period (e.g., -4,375 cfs average over five days).” Based on recent daily OMR flows (DWR emails and <http://cdec.water.ca.gov/cgi-progs/queryDaily?OMR>), the CVP and SWP were already operating within the first-stage action response of Action IV.2.3; therefore, Sunday, March 24, 2013, the day NMFS was informed that the first-stage trigger was exceeded, was considered day 1 of the action response.

DWR asked NMFS to consider changing the start date to Saturday, 3/23/13. NMFS is still reviewing this request and will try to have an answer by the WOMT call today.

If the start date remains Sunday, 3/24/13, Thursday, 3/28/13, would be day 5 of the action response and steelhead loss density would need to remain below 8 fish/TAF from 3/26 through 3/28/13 for the action response to be satisfied.

Because next Monday, 4/1/13, is a state holiday, NMFS will check with DWR about receiving salvage information over the weekend and holiday.

**Operations (3/26/13)**

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	2,000	Jones Pumping Plant	2,500 (beginning 4/1, 0 exports for up to 2 weeks for maintenance at Tracy Fish Facility)

<b>Reservoir Releases (cfs)</b>			
Feather - Oroville	2,200	American - Nimbus	1,250
		Sacramento - Keswick	4,000
		Stanislaus - Goodwin	200
<b>Reservoir Storage (in TAF, % of capacity)</b>			
San Luis (SWP)	513	San Luis (CVP)	775 (81)
Oroville	2,939	Shasta	3,743
New Melones		Folsom	584
<b>Delta Operations</b>			
DCC	Closed	Sacramento River at Freeport (cfs)	12,996
Outflow Index (cfs)	9,400	San Joaquin River (cfs) at Vernalis	1,425
Total Delta Inflow (cfs)	15,670	OMR (daily) (cfs)	
Water Temperature (°F)		OMR 5-day avg (cfs)	-4,100
X2 (km)	78	OMR 14-day avg (cfs)	-3,600
E/I (%)	28.9 (14-d)		

The fish facility efficiency study at Tracy Fish Facility ended on Sunday, 3/24/13, at 7:00 a.m. Reclamation increased exports from ~1,000 cfs to 2,500 cfs on Monday, 3/25/13. Jones Pumping Plant had already reduced pumping for the efficiency study beginning on Thursday, which most likely caused the OMR flows to be more positive.

**Water Quality:** As of Monday, 3/18/13, the projects had satisfied the 18-day D-1641 water quality requirement for March. They must meet >12 days in April at Chippis Island. DWR will look at the data today. DWR reported that there could be some carryover days from March (4 so far).

It was noted that some additional releases (up to 80 TAF), above the RPA flows, might be released from New Melones during April and May, but the details and timing are still uncertain.

**Weather:** There is a potential for 4 days of rain beginning tomorrow; however, it is a weak system. There could be another system coming in after 4/3/13 that might be stronger, which might result in juvenile salmonids moving with the flows at that time.

**Action IV.3 Clarification of Language:** DOSS reviewed the clarification language on RPA Action IV.3 last week and NMFS received several comments. None were substantial. The final language was sent to DOSS yesterday and included as an attachment to the DOSS notes from 3/19/13. NMFS will present both a clean copy and a track changes version to WOMT today.

**Smelt Working Group (SWG):** SWG met on Monday, 3/25/13, and recommends continuing with -5,000 cfs OMR for both adult and juvenile delta smelt. The recommendation for adults might be coming to an end soon, but will know more next Monday after reviewing the data.

**6-Year Acoustic Tag Study:** Israel (Reclamation) mentioned that the 6-year study group will be tagging 480 steelhead on Tuesday, 4/2/13 at Mokelumne Fish Hatchery, and will release them on Wednesday, Thursday, and Friday south of Manteca at Durham Ferry on the San Joaquin River. If anyone is interested in observing these processes, please contact Israel for more information.

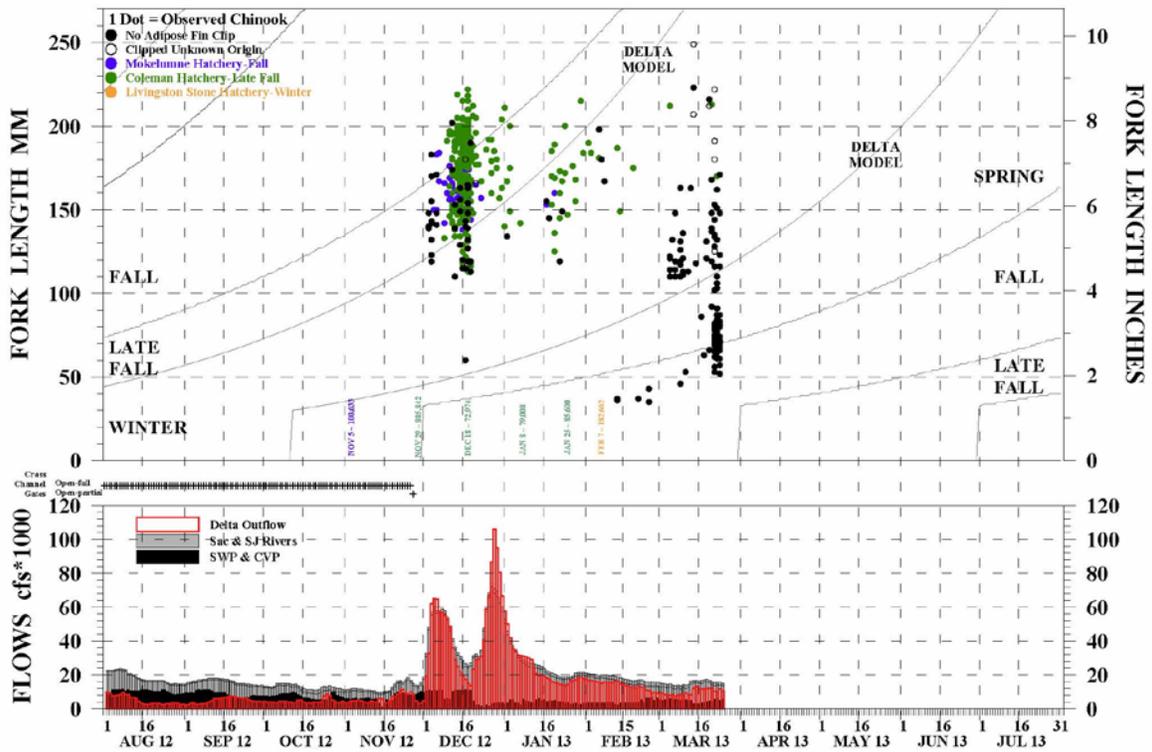
There is also a third group scheduled for tagging and releasing on 5/8–5/9/13, so if this week doesn't work for anyone, please consider joining the group in May.

**DOSS Advice to WOMT and NMFS:** None; however, DOSS will provide an update on the implementation of Action IV.2.3 (operations targeting an OMR no more negative than -3,500 cfs because of the steelhead trigger exceedance), including a mention of the potential change in the recognized start date. DOSS will also mention the onset of RPA action IV.2.1 (San Joaquin River Inflow-to-Export Ratio) on 4/1/13.

**Next Meeting:** Given the state holiday on Monday, 4/1/13, the next DOSS meeting will be Wednesday, 4/3/13, at 9:00 a.m.

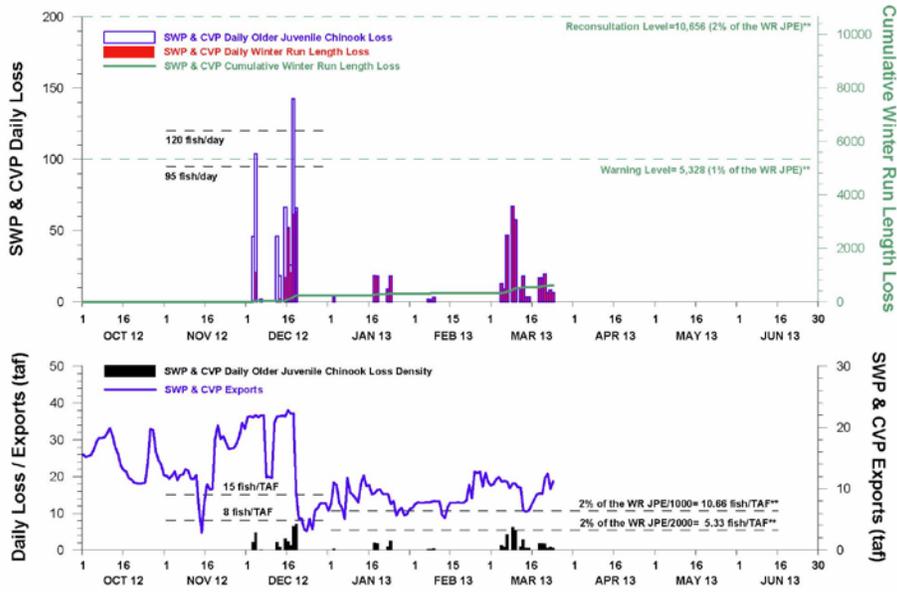
Below are graphs provided by DWR for Chinook salmon and steelhead salvaged or lost at the Delta fish facilities and observed in the Sacramento and San Joaquin rivers. For additional graphs, please visit the DWR website at: <http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.

### OBSERVED CHINOOK SALVAGE AT THE SWP & CVP DELTA FISH FACILITIES 08/01/2012 THROUGH 03/24/2013



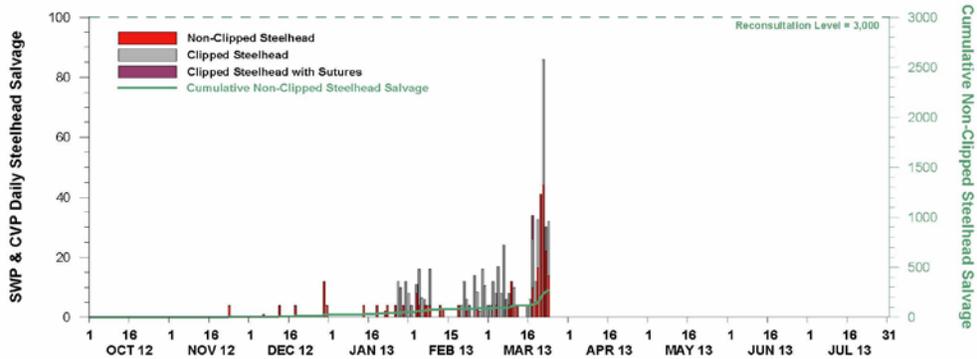
DWR-DES 25 MAR 2013  
 Preliminary data from DFW, DWR, FWS, Reclamation, and CDEC; subject to revision.  
 \*Chinook outside of the length-at-date criteria (Delta model) are not reported.

## NON-CLIPPED WINTER RUN & OLDER JUVENILE CHINOOK LOSS AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 24 MAR 2013



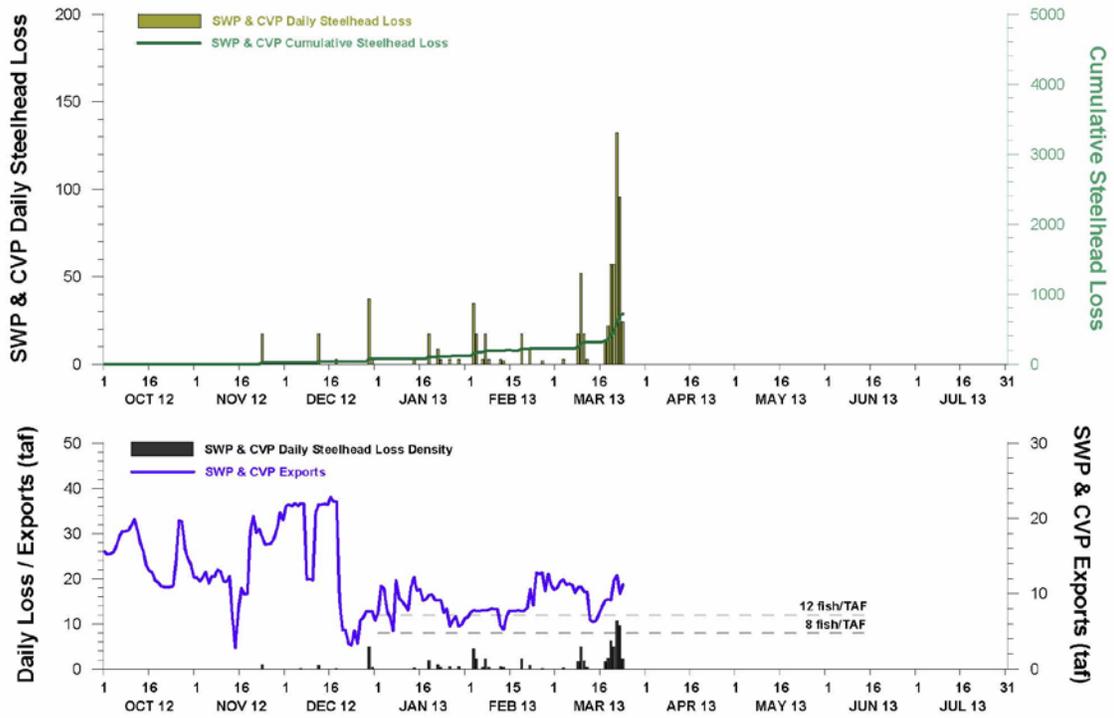
DWR-DES 25 MAR 2013  
Preliminary data from DFW, subject to revision.  
\*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Delta model).  
\*\*Based on the final juvenile production estimate (JPE) which comes out to be about 532,809 non-clipped winter run (WR) Chinook entering the Delta during water year 2013.

## STEELHEAD SALVAGE AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 24 MAR 2013



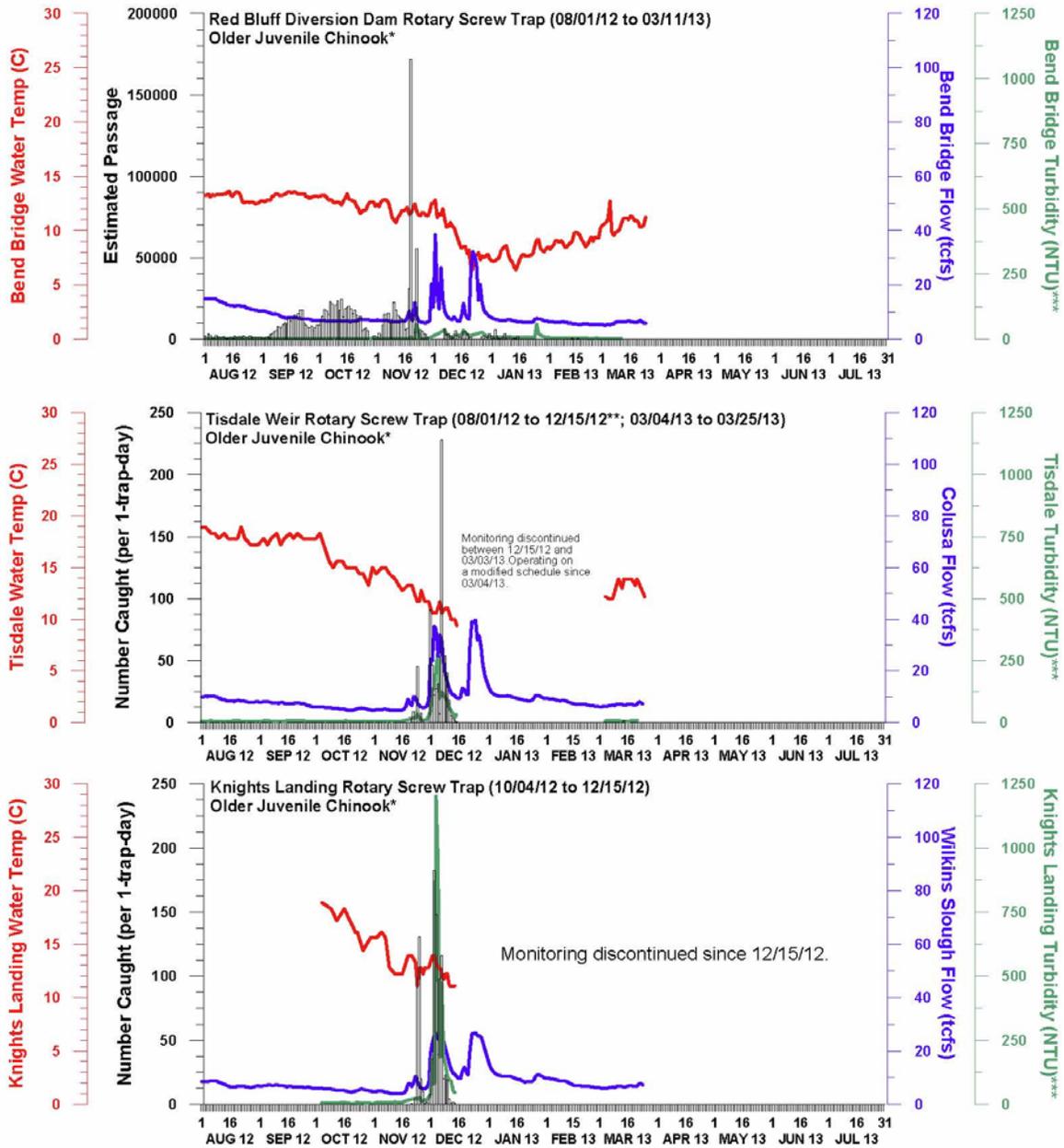
DWR-DES 25 MAR 2013  
Preliminary data from DFW, subject to revision.

## NON-CLIPPED STEELHEAD LOSS AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 24 MAR 2013



DWR-DES 25 MAR 2013  
 Preliminary data from DFW, subject to revision.

# NUMBER OF OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 25 MAR 2013

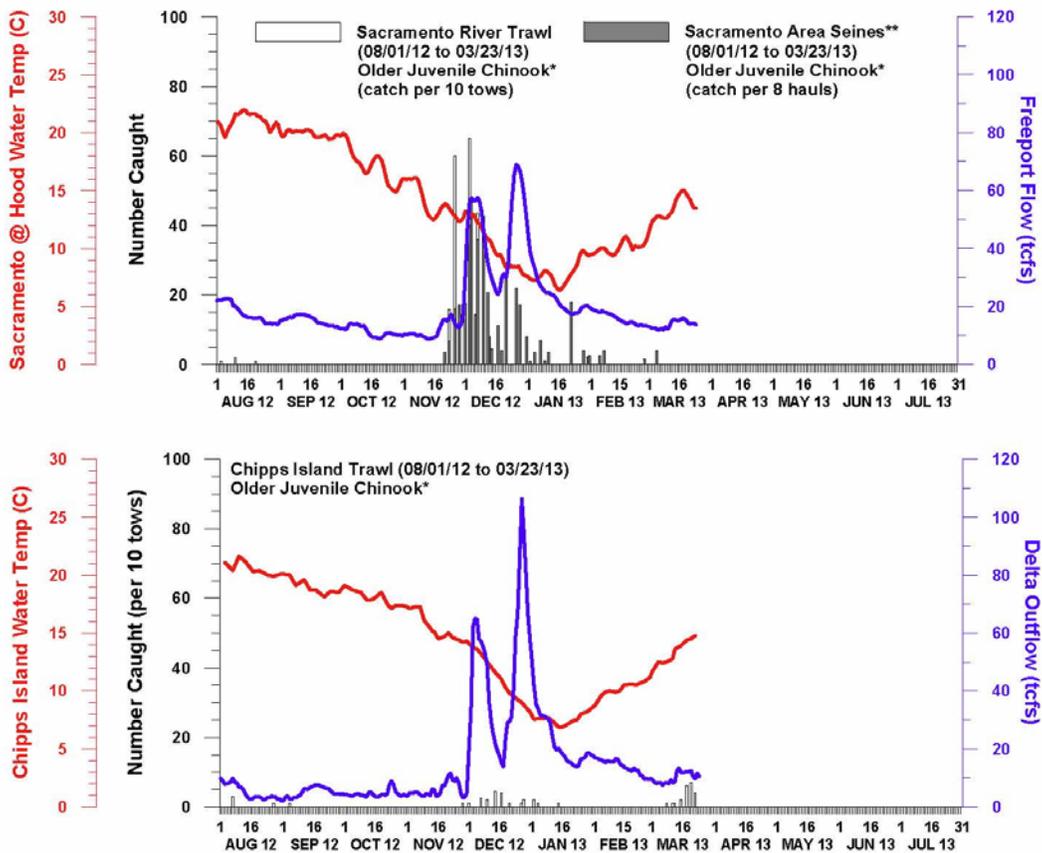
Preliminary data from DFW, FWS, and CDEC; subject to revision.

\*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).

\*\* 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 OLDER JUVENILE CHINOOK MEASURED IN THE LOWER SACRAMENTO RIVER & CHIPPS ISLAND



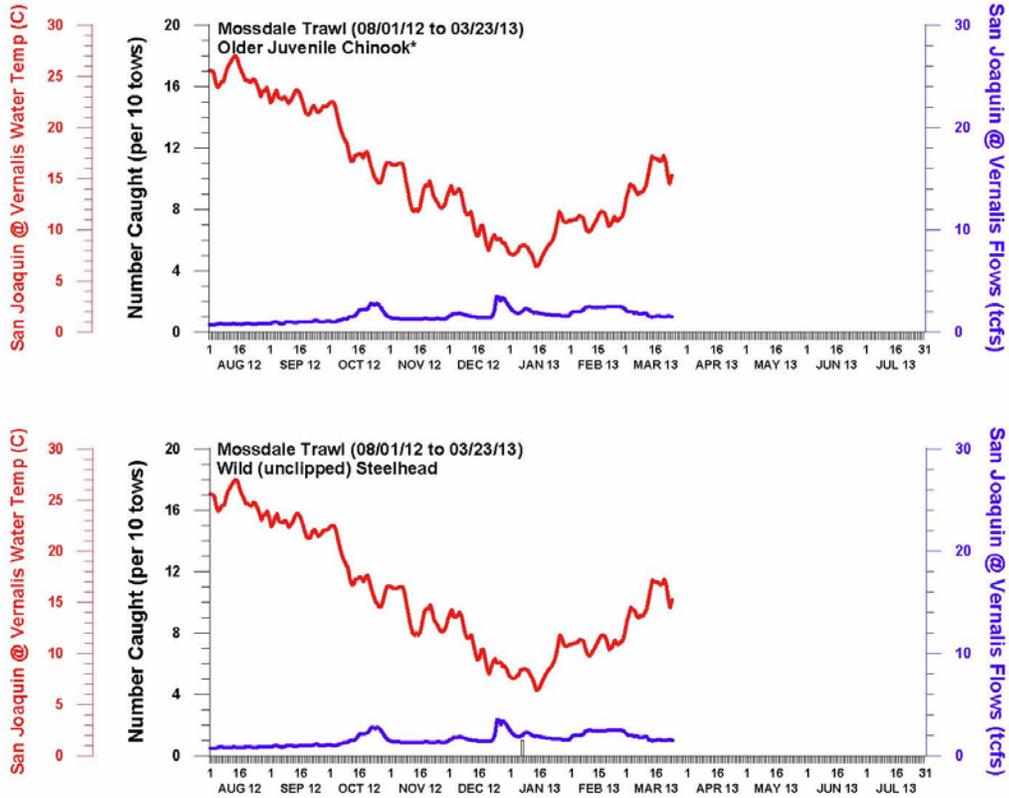
DWR-DES 25 MAR 2013

Preliminary data from FWS and CDEC; subject to revision.

\*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).

\*\*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 OLDER JUVENILE CHINOOK AND STEELHEAD MEASURED IN THE SAN JOAQUIN RIVER



DWR-DES 25 MAR 2013

Preliminary data from FWS and CDEC; subject to revision.

\*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).