

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**  
**Conference call: 3/12/13 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  
**FWS:** Leigh Bartoo, Roger Guinee  
**NMFS:** Barbara Rocco, Jeff Stuart, Bruce Oppenheim, Garwin Yip  
**Reclamation:** Russ Yaworsky  
**DFW:** Bob Fujimura, Joe Johnson  
**SWRCB:** Scott Ligare, Christine Rico  
**EPA, USGS:** not present

**Agenda**

1. Fish monitoring
2. Current operations
3. Tisdale monitoring
4. Action IV.3 language clarification

**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	3/4, 6, 8	3/4, 6, 8	3/4, 6, 8	3/4, 6, 8	3/5, 3/7
Total Catch	24	0	1	1	283
FR			1	1	251
WR	1				3
SR					23
LFR					
Ad-Clipped Chinook	1				6
DS	9 (68–76 mm; no expression of eggs)				
Splittail	1				
Longfin	10 (3 w/eggs)				
SH (ad-clip)	1				

<b>SH (wild)</b>	1				
<b>W. Temp. (avg. °F)</b>	54.5	54.3	57.6	N/A	55.4
<b>Flows (avg. cfs)</b>					
<b>Turbidity (avg. NTU)</b>	39.3	7.2	10.2	N/A	10.87
<b>WR/LFR Avg. CPUE</b>					
<b>FR/SR Avg. CPUE</b>					

**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

**Tisdale (Johnson [DFW]):** Rotary screw trap (RST) sampling is being conducted 3 days/week, 8 hr/day. Flows increased slightly but there was no increase in fish; one fall-run Chinook juvenile was caught on 3/8/13. There might be more fish caught after DFW changes to night sampling; if so, DFW will sample more in the evenings.

Last year, DOSS said it would wait a year before making a decision as to whether Tisdale would be the new and permanent sampling location pursuant to the NMFS BiOp requirement; however, the Tisdale RST was started on July 7, 2011 (nearly 2 years ago). Therefore, Yu (DWR) suggested that it would be helpful instead to review the annual report to make a determination. Johnson will have a report out by the end of the month. Tisdale provides a better comparison than the Moulton weir location of what's in the river and what's going past Knights Landing.

**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.

**Fish Salvage:** Geir Aasen (DFW) provided the fish salvage report covering 3/4–3/10/13 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 4–10, 2013**

Eighty non-ad-clipped juvenile Chinook salmon were salvaged during the reporting period. Seventy-six were in the winter-run size range and 4 were in the fall-run size range. Daily loss densities of older juvenile salmon ranged from 0.79 to 6.21 fish/TAF. Only 1 ad-clipped juvenile Chinook was observed. It was in the winter-run size range but the coded wire tag (CWT) indicated that it was actually late fall-run. Twenty non-ad-clipped steelhead were also salvaged during the reporting period. The estimated daily loss densities ranged from 0.2 to 4.8 fish/TAF. Sixty-three ad-clipped steelhead were salvaged during the reporting period. No sturgeon were observed during the reporting period.

Preliminary data from yesterday indicate that 2 additional non-ad-clipped fall run were salvaged at the SWP; none at the CVP. Two ad-clipped steelhead and 4 wild steelhead were salvaged at the SWP; 4 ad-clipped were salvaged at the CVP. The daily loss density for steelhead from yesterday is 1.69 fish/TAF. The daily loss density for unclipped older juvenile Chinook salmon

is 0.0 fish/TAF. The RPA Action IV.2.3 first-stage trigger was exceeded on 3/9/13; however, the loss density has been below the trigger since then.

Stanislaus Weir: There have been 74 total *O. mykiss* seen at the weir since September 11, 2012; 16% of them were ad-clipped, or hatchery, steelhead. There have been 19 since 2/1/13 and all were non-ad-clipped. Eight salmon of unknown race have been counted passing upstream since March 1. It is difficult to determine whether the fish are holding over below Goodwin Dam right now.

**DOSS Weekly Salvage Update**  
 Reporting Period: March 4-10, 2013  
 Prepared by Bob Fujimura on March 11, 2013  
 Preliminary Results - Subject to Revision

Criteria	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar	9-Mar	10-Mar	Trend	
<b>Loss Densities</b>									
Wild older juvenile CS	0	1.14	0.79	5.29	0	6.21	5.30	↗	2.7
Wild steelhead	0.2	0	0	0	0	1.6	4.8	↗	0.9
<b>Exports</b>									
SWP daily export	5,165	5,429	5,521	5,923	5,059	5,489	5,764	↖	5,621
CVP daily export	5,707	5,717	5,750	2,937	5,016	5,374	5,081	↘	5,083

Loss Density = fish lost/TAF; water export = AF; Trend = compared to previous week; w/d = 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	76	161	↗	172	504
Spring Run	0	0	→	0	0
Late Fall Run	0	0	→	85	277
Fall Run	4	17	↘	39	100
Unclassified	0	0	→	8	5
<b>Total</b>	<b>80</b>	<b>178</b>		<b>304</b>	<b>886</b>
<b>Hatchery</b>					
Winter Run	1	4	↗	149	469
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>1</b>	<b>4</b>		<b>1,345</b>	<b>4,889</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	20	72	↗	110	294
Hatchery	63	185	↗	237	501
<b>Total</b>	<b>83</b>	<b>257</b>		<b>347</b>	<b>794</b>

State Water Project loss = salvage x 4.53; Central Valley Project loss = salvage x 0.68

Compiled by Bob Fujimura on March 11, 2013

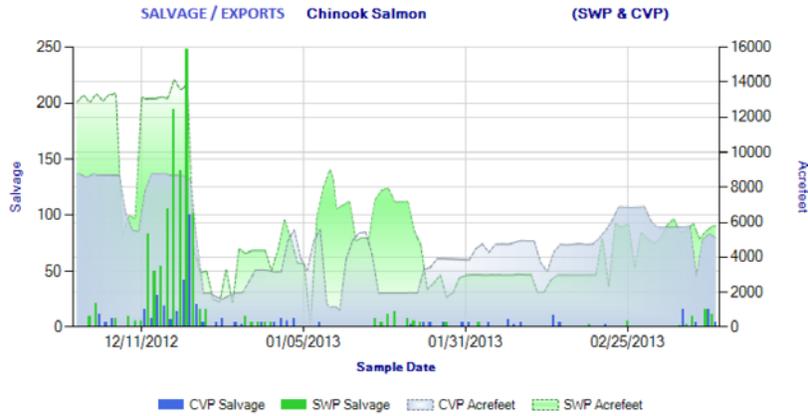


Figure 1. Daily salvage of Chinook salmon (all races) and water exports from the state and federal fish salvage facilities during December 1, 2012 through March 10, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

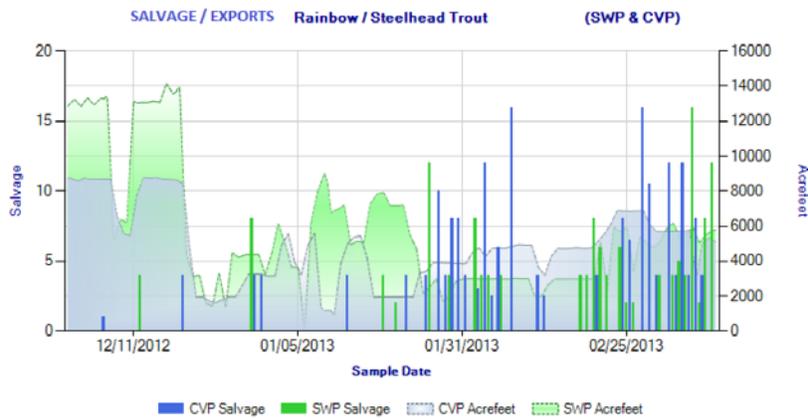


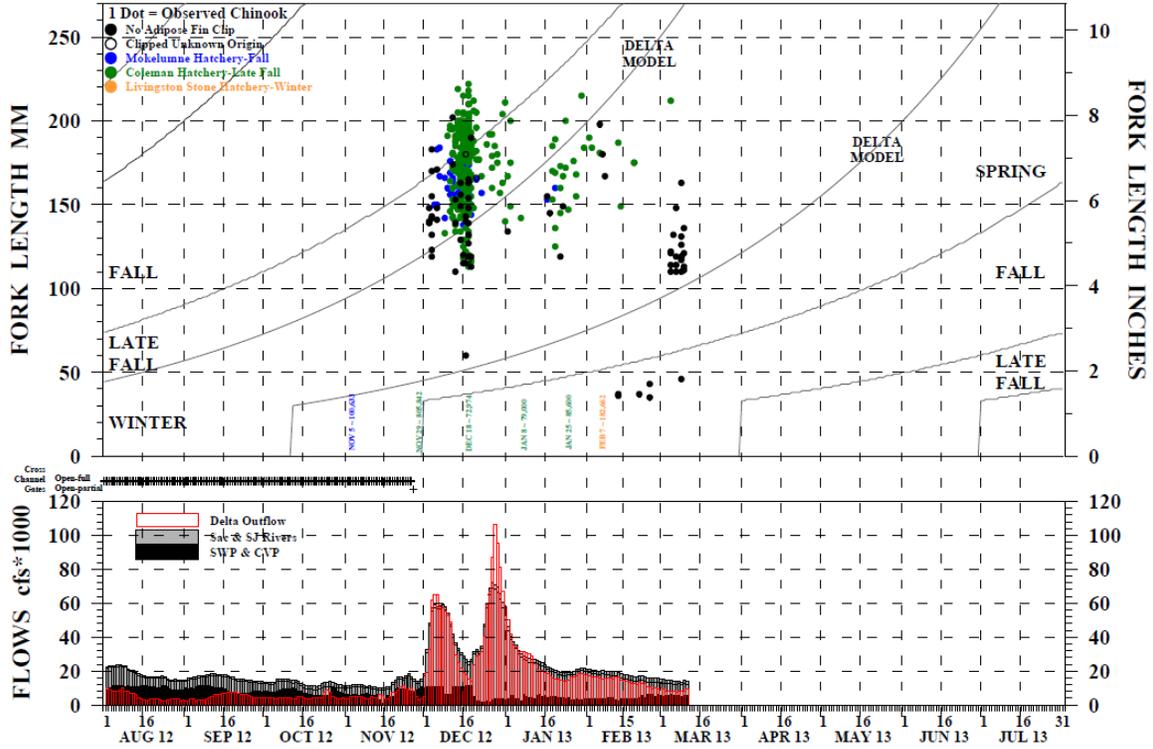
Figure 2. Daily salvage of steelhead and water exports from the state and federal fish salvage facilities during December 1, 2012 through March 10, 2013. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>

Below are graphs provided by DWR for Chinook salmon salvaged at the Delta fish facilities and for older juvenile Chinook salmon and steelhead 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>.

Yu provided an explanation of the graphs that are included here. For Tisdale, he began to include the new monitoring data to the graph with text to explain the gap in sampling since

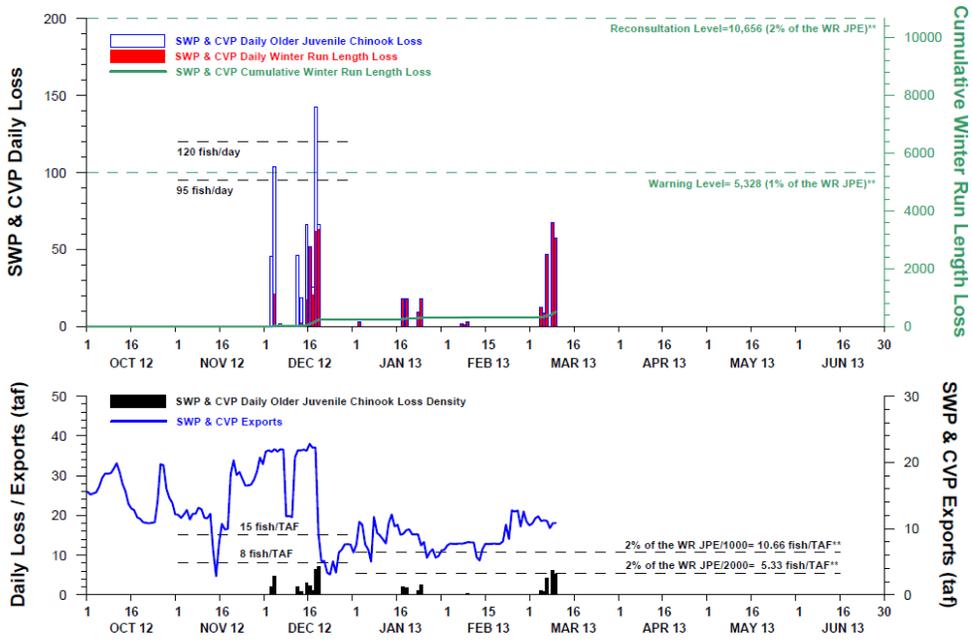
December. The cumulative year-to-date loss of winter-run Chinook is 504 or 4.7% of the incidental take limit.

### OBSERVED CHINOOK SALVAGE AT THE SWP & CVP DELTA FISH FACILITIES 08/01/2012 THROUGH 03/10/2013



DWR-DES 11 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 10 MAR 2013



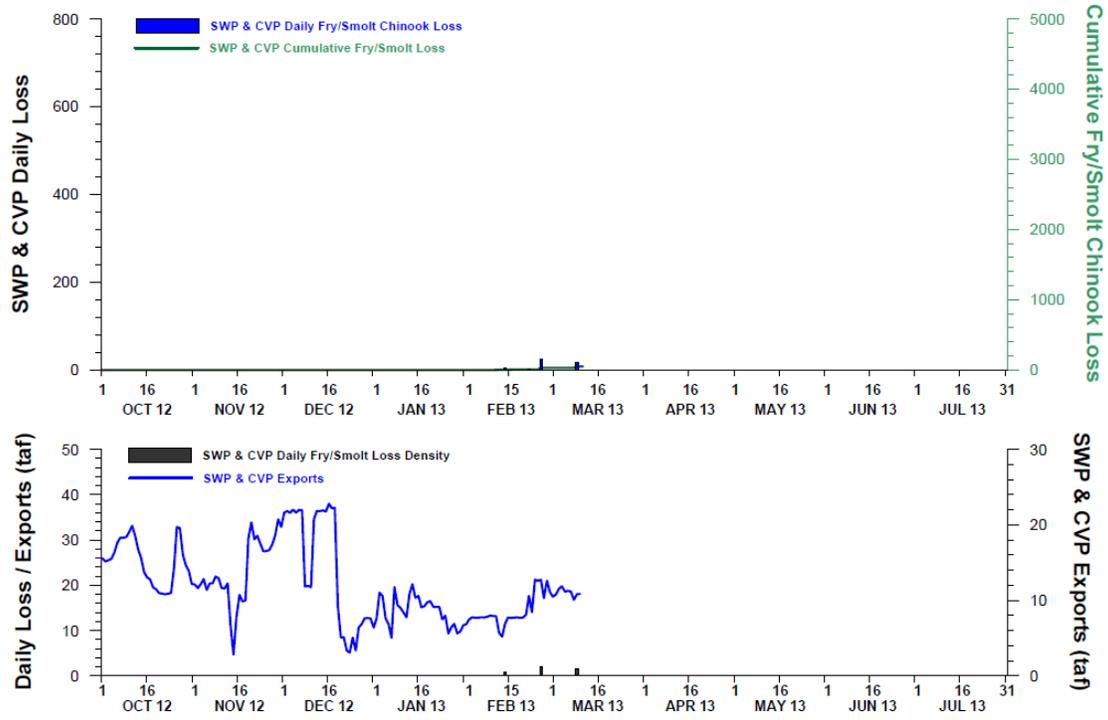
DWR-DES 11 MAR 2013

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).

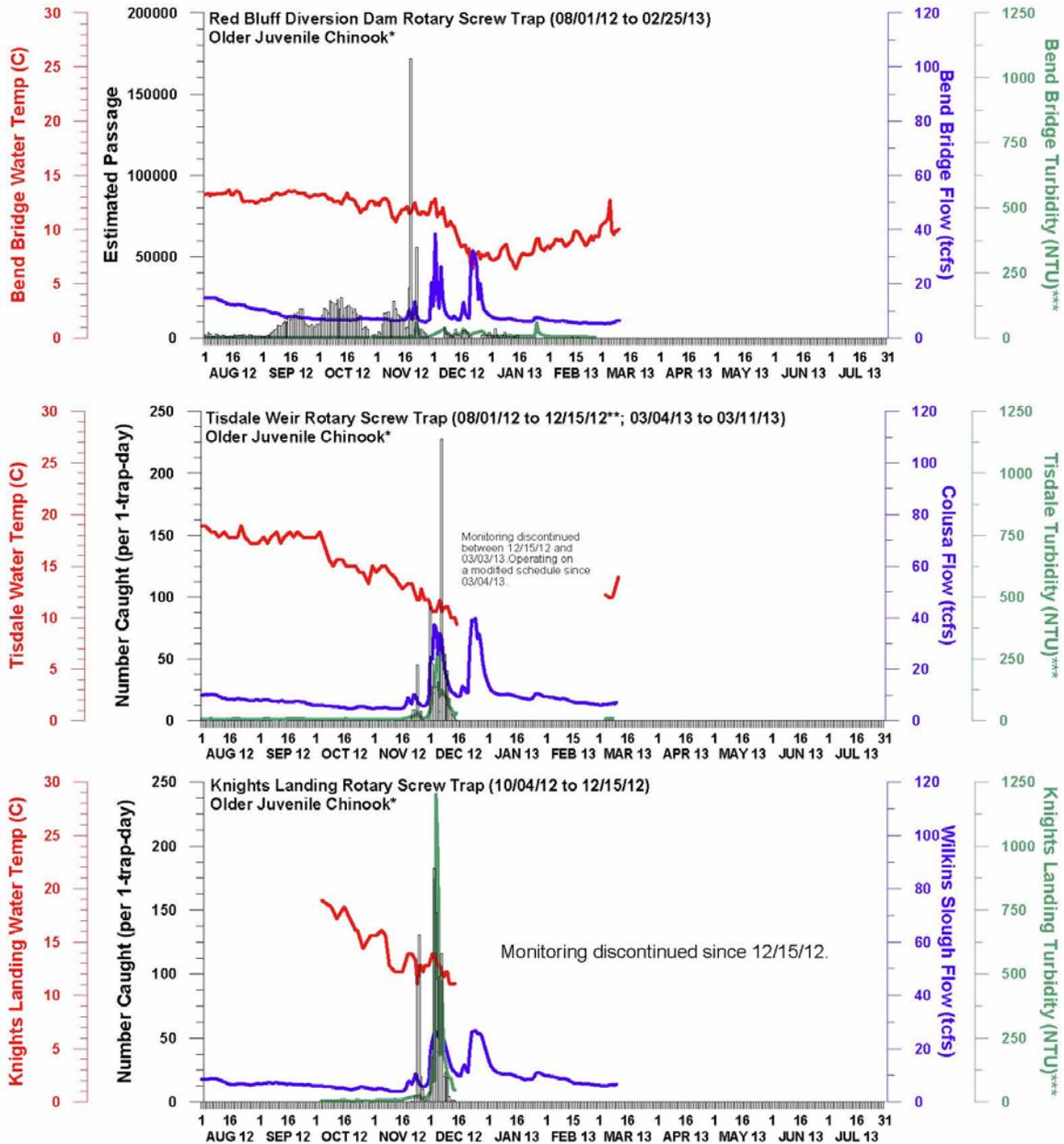
\*\*Based on the final juvenile production estimate (JPE), which comes out to be about 532,809 non-clipped winter run (WR) Chinook entering the Delta during water year 2013.

## NON-CLIPPED FRY/SMOLT CHINOOK AT THE DELTA FISH FACILITIES 01 OCT 2012 THROUGH 10 MAR 2013



DWR-DES 11 MAR 2013  
 Preliminary data from DFW; subject to revision.  
 \* Fry/smolt Chinook defined as all Chinook below the minimum winter run length-at-date criteria (Delta model).

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



DWR-DES 11 MAR 2013 (CORRECTED)

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

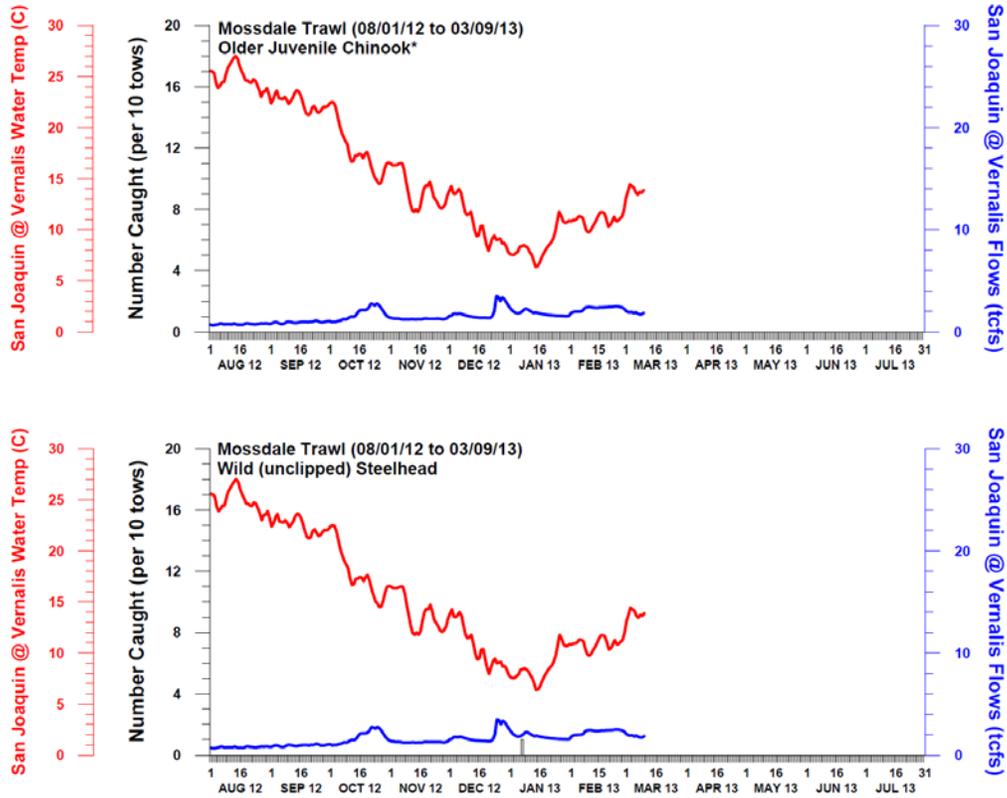
\*Older juvenile Chinook defined as all Chinook above the minimum winter run length-at-date criteria and below the maximum size included in the length-at-date criteria (Frank Fisher model).

\*\* 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 AND STEELHEAD MEASURED IN THE SAN JOAQUIN RIVER



DWR-DES 11 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).

**Hatchery CWT Results (see table below):** The percent loss for the second spring-run surrogate release as of 3/5/13 is 0.168 at the Delta fish facilities and still below the trigger. No ad-clipped

winter-run have been seen yet. Ad-clipped Chinook from the FWS beach seines this week were caught at Elkhorn Slough and were from the Feather River Hatchery fall-run Chinook releases at the Yolo Bypass and Elkhorn Slough.

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	58.20	72,974	n/a	0.080	0.5%	1.0%	12/31/2012	1/28/2013
1/8/2013	LF	Coleman NFH	Battle Creek	Spring Surrogate	132.91	79,000	n/a	0.168	0.5%	1.0%	1/20/2013	3/5/2013
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%	-	-

Facility	Unknown CWT Loss <sup>3</sup>	Unread CWT Loss <sup>4</sup>	Unknown Hatchery Loss <sup>5</sup>
SWP	9.03	0.00	0.00
CVP	5.20	0.00	0.00
<b>TOTAL</b>	<b>14.23</b>	<b>0.00</b>	<b>0.00</b>

SWP and CVP adipse fin clipped Chinook lost from 10/1/2012 through 3/10/2013.

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

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

<sup>3</sup>Adipse 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 released).

<sup>4</sup>Adipse 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.

\*\* Information not yet available.

DWR-DES Revised 3/11/2013

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

## Operations (3/12/13)

SWP		CVP	
<b>Exports (cfs)</b>			
Clifton Court Forebay	2,500 (reduce to 1,500 tomorrow)	Jones Pumping Plant	2,700 (reduce to 1,700 tomorrow)
<b>Reservoir Releases (cfs)</b>			
Feather - Oroville	5,000	American - Nimbus	1,750 (will reduce to conserve storage)
		Sacramento - Keswick	5,000
		Stanislaus - Goodwin	Reduced from 800 to 400 on Sunday, 3/10/13
<b>Reservoir Storage (in TAF, % of capacity)</b>			
San Luis (SWP)	484	San Luis (CVP)	767 (79)
Oroville	2,888	Shasta	3,671
New Melones		Folsom	552
<b>Delta Operations</b>			
DCC	Closed	Sacramento River at Freeport (cfs)	12,700
Outflow Index (cfs)	8,500	San Joaquin River (cfs) at Vernalis	1,800 (dropping rapidly and down to about 1,600 today)
Total Delta Inflow (cfs)		OMR (daily) (cfs)	-3,600
Water Temperature (°F)		OMR 5-day avg (cfs)	-3,638
X2 (km)	74 (slightly upstream of east of Chipps Is.)	OMR 14-day avg (cfs)	-4,460

E/I (%)	33.8		
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**Water Quality:** The projects need to meet 18 days of X2 compliance (per D-1641) at Chipps Island for March; they have met 11 days so far. Reservoir releases were increased at Shasta and Oroville; exports are being reduced to meet the outflow requirement (11,400 cfs). After the projects meet the 18 days required, Oroville will be reduced slightly over several days from 5,000 cfs to 2,500 or 1,750 cfs. X2 is controlling operations right now. The new controlling factor will be the 35% E/I ratio. The projects expect to be in balanced conditions starting tomorrow. The projects are waiting for upstream releases to reach the Delta.

**Weather:** It will continue to be dry with above-normal air temperatures. Based on the 8-station precipitation index in the Sierra, the combined January–February precipitation resulted in the driest on record. The San Joaquin Valley reservoirs are low. The forecast for March is just as dry; probably drier than the 90% exceedance level for the major reservoirs.

**Smelt Working Group (SWG):** Because salvage has been fairly low and steady (*i.e.*, 14 delta smelt salvaged recently), SWG recommended that a -5,000 cfs OMR flow on a 14-day average remains protective of delta smelt. There is no information on larval delta smelt yet, but SWG might get some information on larvae soon from recent surveys. SWG is looking to Action 3 of the FWS BiOp, which is protection of juveniles, as well as protecting adults that are continuing to spawn. Delta smelt salvage is now at approximately 69–70% of the incidental take limit.

**Action IV.2.3 Trigger Exceeded:** On Saturday 3/9/13, the preliminary older juvenile Chinook salmon loss density at the CVP/SWP was 5.81 fish/TAF (DFW confirmed the loss density as 6.21 fish/TAF on Monday), which exceeded the first-stage trigger of 5.33 fish/TAF in RPA Action IV.2.3 of the NMFS 2009 BiOp. The projects were already operating within the first-stage action response of OMR flows no more negative than -3,500 cfs; therefore, there was no change in operations. As a result, Sunday, 3/10/13, when NMFS was informed of the exceedance, is considered day 1 of the action response. The earliest that OMR flows could be relaxed to -5,000 cfs would be Friday, 3/15/13, provided that the trigger is not exceeded in the last 3 consecutive days of the action response, and that the 5-day running average OMR is no more than 25 percent more negative than -3,500 cfs at any time during the 5-day running average period (*e.g.*, -4,375 cfs average over 5 days). NMFS will notify WOMT when the action response has been met.

It should be noted that preliminary calculations of loss density are used when NMFS is first notified (*e.g.*, on weekends) and then confirmed by DFW later. In this case, the final loss density for 3/9/13 was calculated as 6.21 fish/TAF by DFW on Monday. The preliminary calculation is a rough estimate based on assumed expansion factors, so that loss density can be calculated quickly; therefore, there will be a difference between preliminary and the official DFW calculation. DWR has started estimating loss using the same calculation that DFW uses in their official calculation and could report out loss density using the DFW calculation rather than the rough estimation if that is something that DOSS wants to do.

**Action IV.3 Language:** The DOSS subgroup met with Reclamation and DWR 2 weeks ago to discuss the language clarifications for RPA Action IV.3. The group came to an agreement on the language clarifications necessary. NMFS will send to DOSS the Action IV.3 clarifications to

review and discuss. Upon DOSS agreement, the clarified Action IV.3 language will be appended to the DOSS notes, with DOSS advice to WOMT and NMFS to accept those clarifications.

**Action item:** NMFS will provide the updated table on RPA Action IV.3 to DOSS.

**DOSS Update to WOMT and NMFS:** DOSS will update WOMT and NMFS on the current OMR status per RPA Action IV.2.3 and the process for relaxing the OMR criteria.

**Next Meeting:** The next DOSS meeting will be Tuesday, 3/19/13, at 9:00 a.m.