

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**  
**Conference call: 12/6/2016 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.westcoast.fisheries.noaa.gov/central\\_valley/water\\_operations/doss.html](http://www.westcoast.fisheries.noaa.gov/central_valley/water_operations/doss.html).

**CDFW:** Ken Kundargi, Bob Fujimura, Duane Linander  
**DWR:** Bryant Giorgi, Dan Yamanaka, Farida Islam, Tracy Pettit  
**NMFS:** Barb Byrne, Kristin McCleery  
**Reclamation:** Tom Patton, Towns Burgess  
**SWRCB:** Chris Kwan  
**USFWS:** Craig Anderson, Leigh Bartoo

**Agenda Items**

1. Agenda review and introductions
2. RPA Implementation review (For the DOSS Dashboard, click on the "Triggers & Indices" tab at: [www.baydeltalive.com/djfmfp](http://www.baydeltalive.com/djfmfp))
3. Current Operations
4. Fish Monitoring: Salvage
5. Fish Monitoring: RSTs/trawls/seines
6. DOSS Estimates of Fish Distribution
7. DOSS Advice
8. Next DOSS Meeting

**Agenda Item 2.**

**RPA Implementation Review**

**Delta RPA Actions affecting operations during November:**

**Action IV.1.1 (Alerts that indicate the Delta Cross Channel (DCC) gate operations may be triggered soon)<sup>1</sup>:**

- First Alert
  - Recent conditions for Mill Creek and Deer Creek flows [highlighted cells exceed the first component (>95 cfs flow threshold) or second component (>50% flow change)]:

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<sup>1</sup> For details, see pages 60-61 in Enclosure 2 of the 2011 Amendments to the 2009 RPA document at: [http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711\\_ocap\\_opinion\\_2011\\_amendments.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711_ocap_opinion_2011_amendments.pdf). Note that in October 2014, NMFS approved a modification of the first component of the first alert to a 95 cfs mean daily flow threshold in either Mill Creek or Deer Creek in lieu of operating the Mill and Deer Creek rotary screw traps.

- The first alert was triggered based on Mill Creek and Deer Creek flows >95 cfs or a change in mean daily flow of over 50% (either or both creeks; see table for details) on 11/29-12/5.

Date	Mill Creek (MLM)		Deer Creek (DCV)	
	mean daily flow (cfs)	change in mean daily flow	mean daily flow (cfs)	change in mean daily flow
11/29/2016	296	-16%	273	-9%
11/30/2016	252	-15%	232	-15%
12/1/2016	227	-10%	208	-10%
12/2/2016	205	-10%	186	-11%
12/3/2016	189	-8%	170	-9%
12/4/2016	182	-4%	163	-5%
12/5/2016	176	-3%	157	-3%

- **Second Alert**

- Recent conditions for 11/29-12/5/16, unless otherwise noted:
  - Wilkins Slough flow: 7,100-12,133 cfs (range of mean daily flow)
  - Knights Landing water temperature: 51-54°F (range of temperatures reported at the rotary screw traps during trap checks during the 11/27-12/2 period)
- The second alert is triggered only if both components are met (Knights Landing temperatures <56.3°F and Wilkins Slough flows >7,500 cfs). The second alert was triggered on 11/29-12/3.

**Action IV.1.2<sup>2</sup> (DCC gate operations):**

- The Seine SCI of 3.4 on 11/30/16 triggered a DCC closure per the October 1-November 30 guidelines. Because the DCC gates were already scheduled for closure on December 1 per the December 1-14 guidelines, no further DCC action was required.
- From December 1 to January 31, the gates will remain closed, with limited exceptions.
- Indices for 11/29-12/5:

Date	KLCI	Seine SCI	Trawl SCI
11/29/16	0.7	No sampling	No sampling
11/30/16	2.2	3.4	0
12/1/16	2.5	No sampling	No sampling
12/2/16	2.0	5.7	0
12/3/16	0.5	No sampling	No sampling
12/4/16	0	No sampling	No sampling
12/5/16	0	0	0

<sup>2</sup> For details, see pages 62-66 in Enclosure 2 of the 2011 Amendments to the 2009 RPA document at: [http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711\\_ocap\\_opinion\\_2011\\_amendments.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711_ocap_opinion_2011_amendments.pdf)

**Action IV.3<sup>3</sup> (Reduce likelihood of entrainment or salvage at the export facilities, including alert that indicates that export operations may need to be altered)**

- The third alert (November 1-February 23: Knights Landing Catch Index (KLCI) or Sacramento Catch Index (SCI) >10) was not triggered over the past week.
- Since the action went into effect on 11/1/16, no salvage-based triggers that would require export reduction have been exceeded.

**Agenda Item 3.**

**Current Operations (12/6/16)**

SWP		CVP	
<b>Exports (cfs)</b>			
Clifton Court Forebay	6,680*	Jones Pumping Plant	2,300
<b>Reservoir Releases (cfs)</b>			
Feather - Oroville	2,450	American - Nimbus	1,250
		Sacramento - Keswick	5,000
		Stanislaus - Goodwin	200
		Trinity - Lewiston	300
<b>Reservoir Storage (in TAF)</b>			
San Luis (SWP)	653	San Luis (CVP)	298
Oroville	1,469	Shasta	2,923
New Melones	535	Folsom	462
<b>Delta Operations</b>			
DCC	Closed (as of 12/1/16)	Sacramento River at Freeport (cfs)	~14,000
Outflow Index (cfs)	~3,700	San Joaquin River at Vernalis (cfs)	~930
E:I	54% (14-day avg.)	X2	>81 km

\*Exports will drop to 5,500 on 12/7/16

Factors controlling Delta exports:

**11/29/16-12/5/16:** no regulatory factors controlling exports; exports at limit of operational capacity.

**12/6/16:** seasonal salinity management and D-1641 Delta outflow.

**Agenda Item 4.**

**Fish Monitoring: Salvage**

No green sturgeon or listed juvenile salmonids were salvaged over the past week. Adult Chinook salmon were salvaged last week, however, these fish were not assigned to race and don't count towards any RPA loss-density trigger.

Byrne (NMFS) reported that two sea lions have been observed in Clifton Court Forebay.

<sup>3</sup> For details, see pages 79-80 in Enclosure 2 of the 2011 Amendments to the 2009 RPA document at: [http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711\\_ocap\\_opinion\\_2011\\_amendments.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711_ocap_opinion_2011_amendments.pdf)

### DOSS Weekly Salvage Update

Reporting Period: November 28-December 4, 2016  
 Prepared by Bob Fujimura on December 5, 2016 16:36  
 Preliminary Results -Subject to Revision

Criteria	28-Nov	29-Nov	30-Nov	1-Dec	2-Dec	3-Dec	4-Dec	Trend	
<b>Loss Densities</b>									
Wild older juvenile CS	0	0	0	0	0	0	0	→	0
Wild steelhead	0	0	0	0	0	0	0	↘	0
<b>Exports</b>									
SWP daily export	13,056	13,865	13,304	13,400	13,327	13,327	12,760	↗	13,291
CVP daily export	7,241	7,256	7,271	8,061	8,085	8,097	8,083	↗	7,728
SWP reduced counts	0%	0%	0%	0%	75%	0%	0%	↗	11%
CVP reduced counts	0%	0%	0%	0%	0%	0%	0%	→	0%

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)  
 Reduced counts = percentage of time that routine salvage sample time were less than 30 min per 2 hours of salvage and export operations  
 Yellow highlighted dates indicate brief fish salvage facility outage occurred

### 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	→	0	0
Spring Run	0	0	→	0	0
Late Fall Run	0	0	→	0	0
Fall Run	0	0	→	0	0
Unclassified	43	NC	↗	45	NC
<b>Total</b>	<b>43</b>	<b>0</b>		<b>45</b>	<b>0</b>
<b>Hatchery</b>					
Winter Run	0	0	→	0	0
Spring Run	0	0	→	0	0
Late Fall Run	0	0	→	0	0
Fall Run	0	0	→	0	0
Unclassified	0	0	→	6	NC
<b>Total</b>	<b>0</b>	<b>0</b>		<b>6</b>	<b>0</b>

Trend = weekly loss per race; Salvage = estimated number of fish collected by the CVP and SWP fish protective facilities per unit of time  
 NC = can not be calculated

### 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	0	0	↘	4	17
Hatchery	0	0	→	0	0
<b>Total</b>	<b>0</b>	<b>0</b>		<b>4</b>	<b>17</b>

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

Generated by Bob Fujimura on December 5, 2016

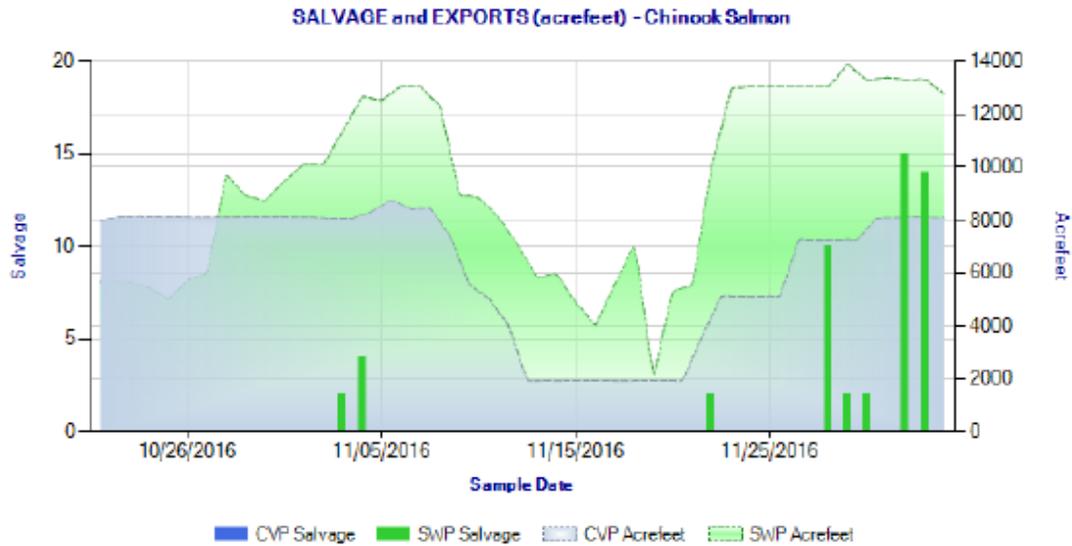


Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during Oct 22 through Dec 4, 2016. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

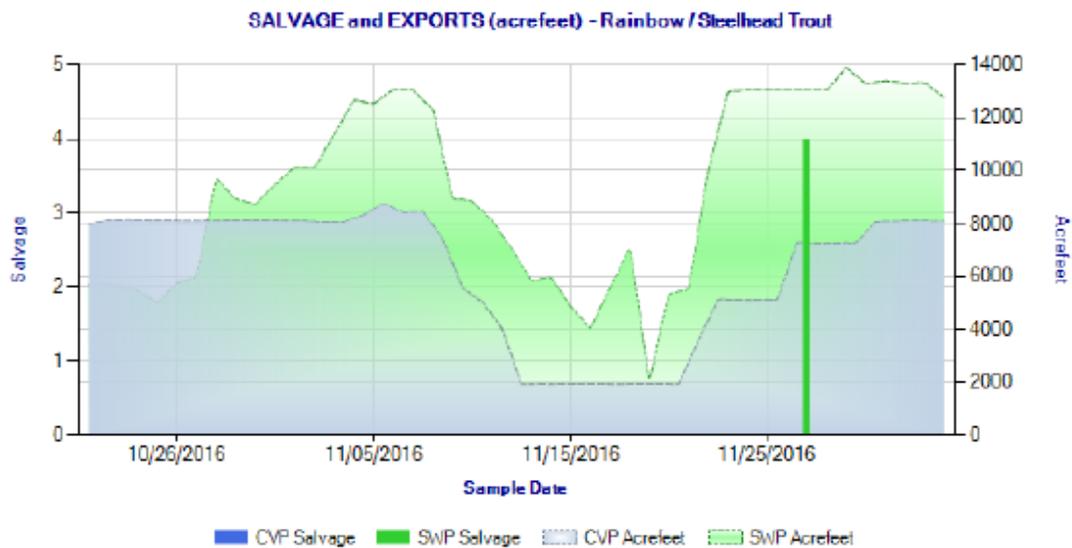


Figure 2. Daily salvage of Steelhead and water exports from the state and federal fish salvage facilities during Oct 22 through Dec 4, 2016. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

**Agenda Item 5.**

**Fish Monitoring:** The following table presents fish monitoring data summarized over the identified sampling dates. Unless otherwise noted, any reported sizes are fork length.

Location	Chippis Is. Midwater Trawl <sup>A</sup>	Sacramento Trawl <sup>A</sup>	Beach Seines <sup>A</sup>	Knights Landing RST <sup>B</sup>	Tisdale RST <sup>C</sup>	GCID RST <sup>D</sup>	Mossdale Kodiak Trawl <sup>A</sup>
Sample Date	11/28, 11/30	11/28, 11/30, 12/2	11/28-12/2	11/27-12/5		12/1-12/5	11/28, 11/30, 12/2
Total Catch							
FR Chinook						2 juveniles	
SR Chinook			4	5		1 juvenile	
WR Chinook			12	13		3 juveniles	
LFR Chinook				1		1 juvenile 1 smolt	
Ad-Clipped Chinook							
Delta Smelt							
Splittail							
Longfin Smelt							
Steelhead (ad-clip)							
Steelhead (wild)							
Green Sturgeon							
Flows (avg. cfs)				9,486		1038	
W. Temp. (avg. °F)				52.4		52.2	
Turbidity (avg. NTU)				18.0		6.8	

<sup>A</sup>Data reported in the 11/27 to 12/3 DJFMP sampling summary.

<sup>B</sup>Knights Landing RST Sampling period was from 11/27 at 9:15 am to 12/5 at 9:15 am.

<sup>C</sup>Tisdale RST sampling data not yet available.

<sup>D</sup>GCID sampling period occurred on 12/1 at 8:00 am to 12/5 at 8:00 am.

**Red Bluff Diversion Dam (RBDD)**

USFWS biweekly report (11/18/16-12/1/16) for preliminary estimates of passage by brood-year and run for unmarked juvenile Chinook salmon captured by rotary screw traps at RBDD included:

Run and Species	Biweekly Total	Brood Year Total (90% CI)
Winter-run Chinook (BY2016)	14,761	499,602 (382,112-617,092)
Spring-run Chinook (BY2016)	13,134	44,478 (27,733-61,233)

**Agenda Item 6.**

**DOSS Estimates of Fish Distribution**

DOSS estimates of the current distribution of listed Chinook, as a percentage of the population, are based on recent monitoring data and historical migration timing patterns.

Location	Yet to Enter Delta (Upstream of Knights Landing)	In the Delta	Exited the Delta (Past Chipps Island)
Wild young-of-year (YOY) winter-run Chinook salmon	60% - 70% (Last week: 60% - 75%)	30% - 40% (Last week: 25% - 40%)	0% (Last week: same)
Wild young-of-year (YOY) spring-run Chinook salmon	95% (Last week: same)	5% (Last week: same)	0% (Last week: same)

**Rationale for changes in distribution**

Wild winter-run Chinook: Over the past week, low numbers of juvenile winter-run were observed at the monitoring sites and no significant rain events have occurred causing high flows or turbidities that are cues for migration. Therefore, distribution ranges were simply narrowed a bit for upstream and in the Delta. Young-of-year winter-run-sized fish have not yet been observed exiting the Delta at Chipps Island, so the DOSS estimates that 0% have exited the Delta.

Wild spring-run Chinook: Low numbers of juvenile spring-run continue to be reported at monitoring locations upstream and in the Delta. DOSS estimates that most wild spring-run Chinook are still upstream of the Delta. No spring-run are expected to have exited the Delta this early in the season.

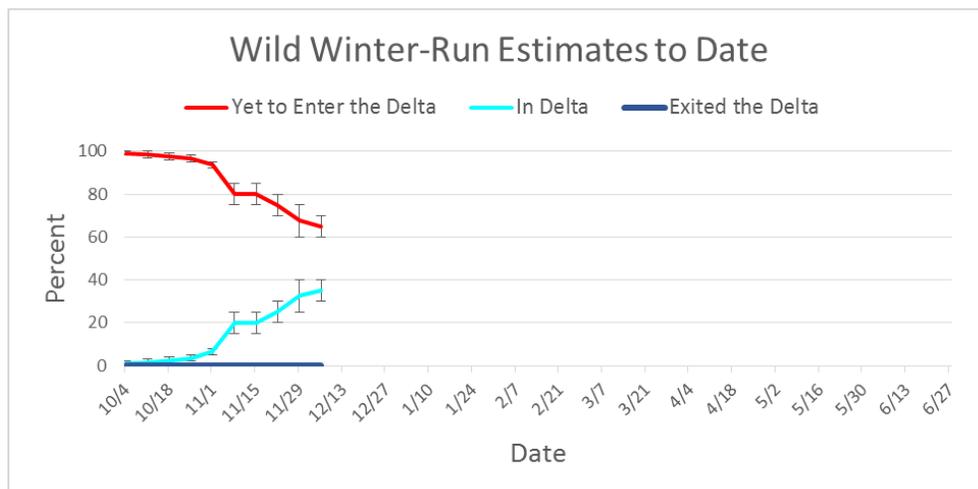


Figure 3. WY 2017 wild winter-run distribution estimates to date.

**Agenda Item 7.**

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

**Agenda Item 8.**

**Next Meeting:** The next DOSS conference call will be on **12/13/16 at 9am.**