

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 12/5/2017 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.

CDFW: Bob Fujimura, Jason Julienne, Ken Kundargi

DWR: Kevin Reece, Farida Islam, Jessie Cheng

NMFS: Jeff Stuart, Kristin McCleery

Reclamation: Tom Patton, Towns Burgess, Elissa Buttermore

USFWS: Craig Anderson, Felipe Carrillo

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/djfmj)
3. Current Operations
4. Smelt working group update
5. Fish Monitoring: Salvage
6. Fish Monitoring: RSTs/trawls/seines
7. Winter-run JPE/ Fish Density trigger update
8. DOSS Estimates of Fish Distribution
9. DOSS advice
10. Next DOSS meeting

Agenda Item 2.

RPA Implementation Review

Delta RPA Actions affecting operations during December:

Action IV.1.1 [Alerts that indicate the Delta Cross Channel (DCC) gate operations may be triggered soon]¹:

- The First Alert [triggered if either the first component (>95 cfs flow threshold) or second component (>50% change in mean daily flow)] was triggered every day this past week based on Mill Creek and Deer Creek flows. See table below for details.

¹ 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. 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.

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
11/28/2017	338	-42%	348	-26%
11/29/2017	270	-20%	282	-19%
11/30/2017	234	-13%	246	-13%
12/1/2017	213	-9%	226	-8%
12/2/2017	199	-7%	211	-6%
12/3/2017	211	6%	217	3%
12/4/2017	193	-9%	210	-3%

- Second Alert (triggered only if both Knights Landing temperatures less than 56.3°F and Wilkins Slough flows >7,500 cfs).
 - The second alert was triggered on 11/29 based on temperatures below 56.3°F at Knights Landing and flows at Wilkins Slough greater than 7,500 cfs. See table below for details.

Date	Wilkins Slough (WLK)	Knights Landing (KL)
	Mean Daily Flow (cfs)	Daily water temperature °F
11/28/2017	7134	56
11/29/2017	7933	54
11/30/2017	7259	52
12/1/2017	6602	51
12/2/2017	6205	51
12/3/2017	6017	
12/4/2017	5877	

Action IV.1.2² (DCC gate operations):

- DCC gates remained closed through the end of November (per Reclamation’s determination), although the RPA IV.1.2 closure duration was satisfied on 11/27/17 and gates could have been opened on 11/28/17.
- Gates will remain closed per operations described in RPA IV.1.2 starting 12/1/17.

Action IV.3³ (Reduce likelihood of entrainment or salvage at the export facilities, including alert that indicates that export operations may need to be altered):

² 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

³ 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

- The third alert [November 1-February 28 Knights Landing Catch Index (KLCI) or Sacramento Catch Index (SCI) >10] was not triggered this past week.
- Since the action went into effect on 11/1/17, no salvage-based triggers that would require export reduction have been exceeded.

Agenda Item 3.

Current Operations (12/5/17)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	6,680	Jones Pumping Plant	4,200 (5 units)
Reservoir Releases (cfs)			
Feather - Oroville	2,400	American - Nimbus	3,500
		Sacramento - Keswick	5,000
		Stanislaus - Goodwin	2,500*
		Trinity - Lewiston	300
Reservoir Storage (in TAF)**			
San Luis (SWP)	740	San Luis (CVP)	809
Oroville	1,265	Shasta	3,229
New Melones	1,993	Folsom	614
Delta Operations			
DCC	Closed	Sacramento River at Freeport (cfs)	15,977
Outflow Index (cfs)	~6,200	San Joaquin River at Vernalis (cfs)	2,256
E:I	55.4% (14-day avg.)	X2	>81 km**

* Releases at Goodwin are currently at 2,500 cfs, ramping down to 1,300 cfs tomorrow (12/6), and pulsing up and down through 12/11 to meet flood control requirements. Releases are scheduled to be at 600 cfs on 12/11.

** Limit of X2 calculation.

Factors controlling Delta exports:

- 11/28-12/5: Available export capacity

The weather forecast for the next week indicates dry conditions with cool nights and mild days for the Sacramento area.

Agenda Item 4.

Smelt Working Group Update

The Smelt Working Group (SWG) met for the first WY2018 meeting on Monday, 12/4/17 at 10 am.

The SWG reviewed current Delta conditions, survey data, expected exports, and forecasted weather. The SWG indicated that a “first flush” event is highly unlikely to occur this week and that the risk for delta smelt entrainment is low.

The SWG does not believe that a recommendation under Action 1 (adult pre-spawning Delta Smelt) is necessary to protect Delta Smelt at this time. The SWG will continue to monitor Delta Smelt survey and salvage data and Delta conditions. The group will meet again on Monday, December 11, 2017 at 10 am.

Agenda Item 5.

Fish Monitoring: Salvage

Fujimura (CDFW) provided a salvage summary. No listed fish species have been observed in salvage since the start of the current water year on 10/1/17. Three sturgeon were observed at the Skinner Fish Facility; species to be determined. Due to strong winds late last night (12/4/17), heavy debris load at Clifton Court Forebay caused reduced count time and delayed datasheet recording. An outage at the Tracy Fish Collection Facility to inspect fish screens is anticipated to cause a temporary shutdown on salvage today (12/5).

DOSS Weekly Salvage Update

Reporting Period: November 27-December 3, 2017
Prepared by Bob Fujimura on December 4, 2017 19:42
Preliminary Results -Subject to Revision

Criteria	27-Nov	28-Nov	29-Nov	30-Nov	1-Dec	2-Dec	3-Dec	Trend	
Loss Densities									
Wild older juvenile CS	0	0	0	0	0	0	0	→	0
Wild steelhead	0	0	0	0	0	0	0	→	0
Exports									
SWP daily export	13,874	14,728	13,259	13,616	13,674	12,800	12,708	↗	13,523
CVP daily export	8,381	8,359	8,376	8,372	8,387	8,418	8,379	→	8,382
SWP reduced counts	0%	8%	0%	0%	0%	0%	0%	→	1%
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 salvage interruption 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
Wild					
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	→	0	0
Total	0	0		0	0
Hatchery					
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	→	1	NC
Total	0	0		1	0

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

NC = cannot be calculated; hatchery salmon salvage and loss estimates have been corrected using CWT readings when available

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	→	0	0
Hatchery	0	0	→	0	0
Total	0	0		0	0

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

Generated by Bob Fujimura on December 4, 2017

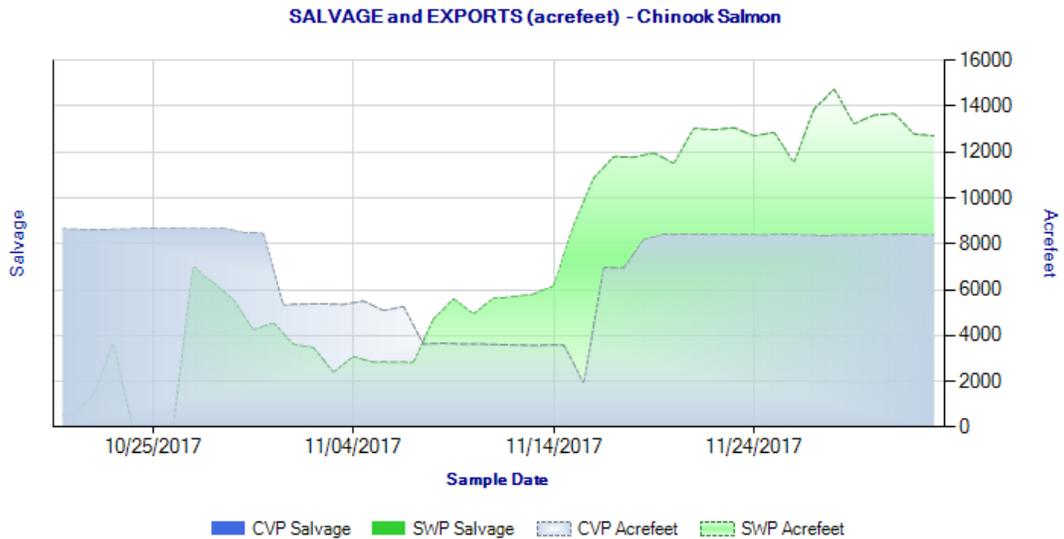


Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during October 21 through December 3, 2017. Graph obtained from the DFG salvage monitoring web page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

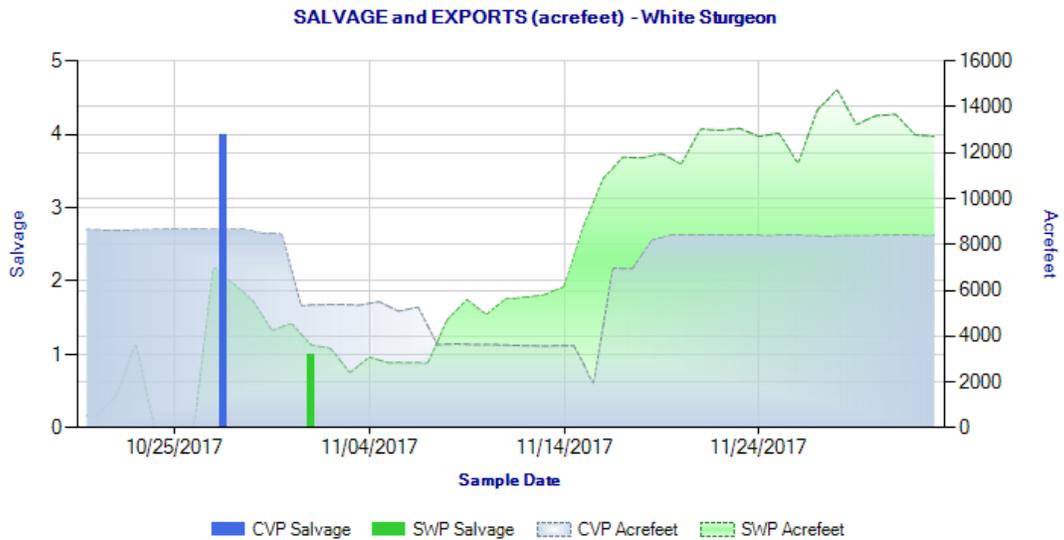


Figure 2. Daily salvage of White Sturgeon and water exports from the state and federal fish salvage facilities during October 21 through December 3, 2017. Graph obtained from the DFG salvage monitoring web page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

Agenda Item 6.

Fish Monitoring: The following table presents fish monitoring data summarized over the past week. Empty cells indicate zero catches at those locations with sample dates shown.

Location	Chippis Is. Midwater Trawl ^A	Sacramento Trawl ^A	Beach Seines ^A	Knights Landing RST ^B	Tisdale RST ^C	GCID RST	Mossdale Kodiak Trawl ^A
Sample Date	11/27, 11/29, 12/1	11/27-11/29, 12/1	11/27-12/1	11/27-12/4	11/26-12/1	11/29-12/4	11/27-11/30
Chinook							
FR Chinook							
SR Chinook					1		
WR Chinook			1	6	2	46 juveniles	
LFR Chinook			2			1 juvenile 4 smolts	
Ad-Clipped Chinook			1				
Steelhead (ad-clip)							
Steelhead (wild)							
Green Sturgeon							
Flows (avg. cfs)				6711	7047	908	
W. Temp. (avg. °F)				52.86	55	52.35	
Turbidity (avg. NTU)				12.05	16.6	7.48	

^A Data reported in the 11/26 to 12/2 DJFMP sampling summary.

^B Knights Landing RST sampling period was from 11/27 at 10:30 am to 12/4 at 10:15 am.

^C Tisdale RST sampling period was from 11/26 at 8:30 am to 12/1 at 9:30 am.

Red Bluff Diversion Dam (RBDD)

USFWS biweekly report (11/19-12/2/17) 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 (BY2017)	11,054*	418,464 (300,711-536,218)
Spring-run Chinook (BY2017)	6,465**	126,906 (93,271-160,540)

*Biweekly catch decreased by approximately 83,000 fish from previous biweekly total of 94,327.

**Biweekly catch dropped approximately 23,000 fish from previous biweekly total of 29,743.

Agenda Item 7.

Winter-run JPE/ Fish Density trigger update

NMFS reported out to the DOSS group that due to delays in the winter-run Project Work Team’s recommendations to NMFS regarding the calculations of the juvenile production estimate (JPE) for brood year 2017, it is unlikely that NMFS will be able to issue its JPE letter to the Bureau of Reclamation and the Department of Water Resources by January 1, 2018. For the interim period between January 1 and the issuance of NMFS’ JPE letter, DOSS discussed and agreed on implementing the minimum trigger value of 2.5 fish per TAF exported for Action IV.2.3 implementation, as specified in the RPA action. The expected trigger value based on the calculated JPE for WY2018 is not expected to exceed this minimum juvenile Chinook salmon loss density based on current discussions by the winter-run Project Work Team.

Agenda Item 8.

DOSS Estimates of Fish Distribution

DOSS estimates of the current distribution of listed Chinook and steelhead, 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)
<i>Wild young-of-year winter-run Chinook salmon</i>	65-70% (Last week: 70-75%)	30-35% (Last week: 25-30%)	0% (Last week: 0%)
<i>Wild young-of-year spring-run Chinook salmon</i>	88-93% (Last week: 93-95%)	7-12% (Last week: 5-7%)	0% (Last week: 0%)

Rationale for changes in distribution

Wild winter-run Chinook: 1 juvenile winter-run-sized fish was observed at the beach seines, 6 at Knights Landing, 2 at Tisdale, and 46 at GCID this past week. Since few fish were observed at monitoring locations, rivers flows have decreased, turbidity has decreased, and no fish have been observed at the salvage facilities or in the Sacramento Trawl, DOSS estimated that only an additional 5% of the winter-run population has moved into the Delta during the past week, and the remaining proportion of the winter-run population are holding upriver.

Wild spring-run Chinook: 1 spring-run-sized fish was observed at Tisdale and at no other monitoring locations over this past week. Since only 1 spring-run was observed, rivers flows have decreased, turbidity has decreased, and no fish have been observed at salvage facilities or other Delta monitoring locations, DOSS estimated that only an additional 2-5% of the spring-run population has moved into the Delta. The majority of spring-run are still considered to be rearing upriver. There is also the potential that some of the fish classified as spring-run by the length at date criteria may actually be late emerging and slow growing winter-run Chinook salmon. Cooler river water temperatures this year may have delayed spawning and slowed the emergence and growth of winter-run fry in the upper Sacramento River, and thus these fish would fall into the size criteria for spring-run at this time of year.

Agenda Item 9.

DOSS Advice to WOMT and NMFS:

For the week of 12/05 to 12/11/2017, NMFS and WOMT should continue to monitor the Delta water quality conditions during DCC gate closures. DCC gates may be opened if water quality conditions become degraded per D-1641 criteria and it is determined that opening gates will improve water quality conditions and such operations comply with the conditions described in RPA Action IV.1.2.

Agenda Item 10.

Next Meeting: The next DOSS conference call will be on **12/12/17 at 9am.**