

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 11/14/2017 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, Duane Linander, Ken Kundargi, Jason Julienne

DWR: Kevin Reece, Bryant Giorgi, Farida Islam, Siqing Liu

NMFS: Jeff Stuart, Kristin McCleery

Reclamation: Mike Hendrick, Tom Patton, Elissa Buttermore, Towns Burgess

SWRCB: Chris Carr, Chris Kwan

USFWS: Craig Anderson

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. Fish Monitoring: Salvage
5. Fish Monitoring: RSTs/trawls/seines
6. Spring-run surrogate release timing this year from CNFH
7. DOSS Annual Report draft – review and comments
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 November:

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 based on Mill Creek and Deer Creek flows. Summer baseline flows have been greater than the first component trigger of 95 cfs all summer long, thus making this trigger less relevant this water year. However, recent precipitation created conditions in which the mean daily flows in both

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.

Deer and Mill creeks more than doubled within a 24-hour period (11/9/17), thus meeting the second trigger component. This sharp increase in flows may have stimulated yearling spring-run Chinook salmon outmigration. See table below for details.

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
11/7/2017	130	-5%	146	-5%
11/8/2017	133	2%	144	-1%
11/9/2017	351	164%	385	167%
11/10/2017	218	-38%	263	-32%
11/11/2017	196	-10%	208	-21%
11/12/2017	162	-17%	176	-16%
11/13/2017	157	-3%	165	-6%

- Second Alert (triggered only if both Knights Landing temperatures less than 56.3°F and Wilkins Slough flows >7,500 cfs). Recent conditions for:
 - Wilkins Slough flow: 5,206-6,138 cfs (range of mean daily flows 11/7-11/13)
 - Knights Landing water temperature: 54-56°F (range of temperatures reported at the rotary screw traps 11/6-11/12)
 - The second alert has not been triggered this past week, although the water temperature component of the trigger has been met. Projected increases in Sacramento River flows from forecasted precipitation events on Wednesday and Thursday will exceed flow triggers at Wilkins Slough. Thus both triggers for the second alert are expected to be met this week due to the anticipated precipitation events this week.

Action IV.1.2² (DCC gate operations):

- Since 10/1/17, none of the criteria requiring DCC gate closure have been met.
- DCC gates are currently closed weekdays (from 10 am on Mondays through 10 am on Fridays) at the request of CDFW to minimize straying of Sacramento River fall-run Chinook salmon, and gates are opened on weekends for recreational boating (opening Friday and closing on Monday).
- These DCC Gate operations are expected to continue through 11/17, unless water quality issues occur, or CDFW withdraws its request for gate closures. The DCC gates are expected to be open from 11/18 through 11/30. Beginning on 12/1, gates will be closed.

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

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)

- 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 have been exceeded.

Agenda Item 3.

Current Operations (11/14/17)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	3,000*	Jones Pumping Plant	1,800**
Reservoir Releases (cfs)			
Feather - Oroville	1,750	American - Nimbus	2,000
		Sacramento - Keswick	5,350***
		Stanislaus - Goodwin	600
		Trinity - Lewiston	300
Reservoir Storage (in TAF)			
San Luis (SWP)	676	San Luis (CVP)	746
Oroville	1,176	Shasta	3,158
New Melones	1,975	Folsom	526
Delta Operations			
DCC	Closed	Sacramento River at Freeport (cfs)	12,100
Outflow Index (cfs)	~8,644	San Joaquin River at Vernalis (cfs)	1,970
E:I	~ 32% (3-day avg.)	X2	>81 km

* SWP exports will increase to 4,500 cfs tomorrow (11/15).

** CVP exports will decrease to 1,000 cfs on Thursday (11/16) for Predation Studies at the Tracy facility, and will increase on Friday (11/17).

***Keswick releases are dropping, targeting 5,000 cfs by Thursday (11/16).

Factors controlling Delta exports:

- 11/7 to 11/14: Fall X2

The weather forecast indicates a storm arriving in northern and central California this Wednesday and Thursday, with several inches of precipitation expected in the Sierras and coastal mountains, and snow in higher elevations.

Agenda Item 4.

Fish Monitoring: Salvage

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

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.

DOSS Weekly Salvage Update

Reporting Period: November 6-November 12, 2017
 Prepared by Bob Fujimura on November 13, 2017 16:34
 Preliminary Results -Subject to Revision

Criteria	6-Nov	7-Nov	8-Nov	9-Nov	10-Nov	11-Nov	12-Nov	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	2,847	2,850	4,712	5,578	4,965	5,621	5,691	↗	4,609
CVP daily export	5,095	5,263	3,636	3,665	3,629	3,629	3,601	↘	4,074
SWP reduced counts	0%	0%	0%	0%	0%	0%	0%	↘	0%
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

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 November 13, 2017

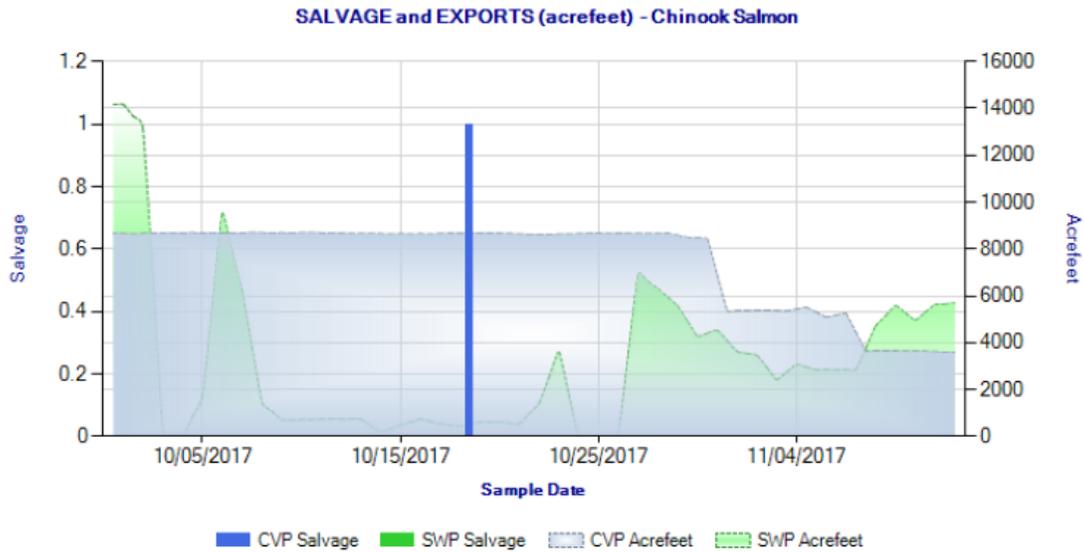


Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during October 1 through November 12, 2017. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

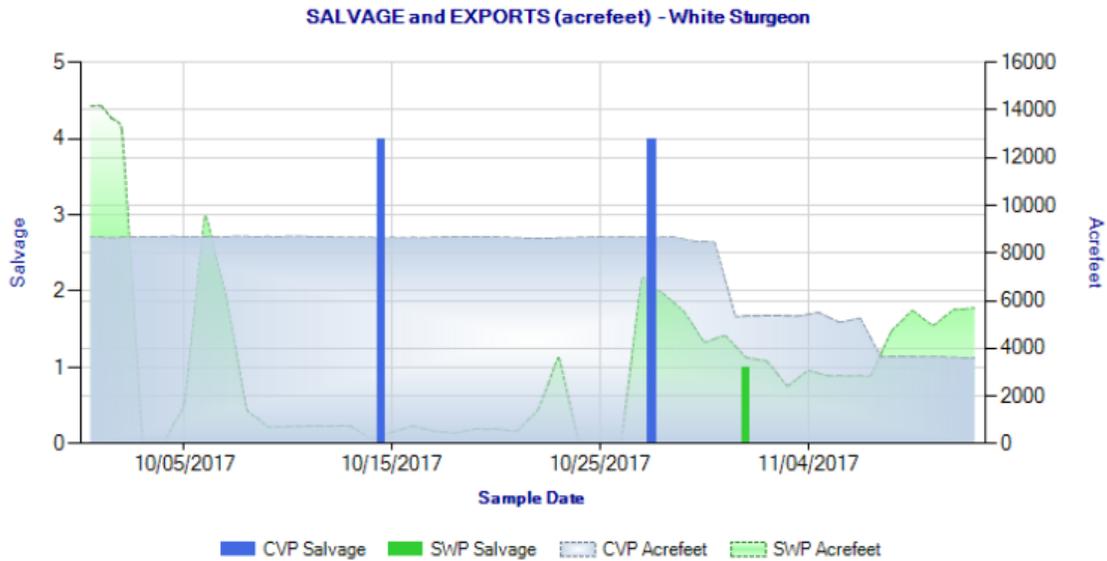


Figure 2. Daily salvage of White Sturgeon and water exports from the state and federal fish salvage facilities during October 1 through November 12, 2017. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

Agenda Item 5.

Fish Monitoring: The following table presents fish monitoring data summarized over the 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 ^D	Mossdale Kodiak Trawl ^A
Sample Date	11/6-11/8	11/6-11/8	11/6-11/9	11/6-11/7	11/6-11/12	11/11-11/14*	11/7-11/9
Chinook							
FR Chinook						11 smolts	
SR Chinook					2	5 juveniles	
WR Chinook						26 juveniles	
LFR Chinook						7 juveniles 24 smolts	
Ad-Clipped Chinook							
Steelhead (ad-clip)							
Steelhead (wild)							
Green Sturgeon							
Flows (avg. cfs)				6,155	6,114	903	
W. Temp. (avg. °F)				54	56	56.4	
Turbidity (avg. NTU)				7.38	12.7	15.4	

^A Data reported in the 11/5 to 11/11 DJFMP sampling summary.

^B Knights Landing RST sampling period was from 11/6 at 10:30 am to 11/7 at 12:30 pm.

^C Tisdale RST sampling period was from 11/6 at 8:30 am to 11/12 at 10:00 am.

^D GCID resumed operations on 11/10 at 9:00 am; 24-hour sampling will continue until further notice.

* GCID sampling data were updated after the DOSS call, and included data retrieved on 11/13 and 11/14.

Red Bluff Diversion Dam (RBDD)

USFWS biweekly report (10/22-11/4/17) 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)	29,409*	313,083 (238,085-388,081)
Spring-run Chinook (BY2017)	67,946	90,698 (69,819-111,577)

*Biweekly catch dropped approximately 45,000 fish from previous biweekly total of 67,946.

Agenda Item 6.

Spring-run surrogate release timing this year from Coleman National Fish Hatchery

DOSS discussed the timing of spring-run surrogate releases (hatchery produced late-fall run Chinook salmon). In recent years, the first surrogate group has been released in early December right after the release of the late-fall run Chinook salmon production group, the second surrogate group released in late December, and the third surrogate group released in mid-January. DOSS discussed the possibility that the release of the production group and the first surrogate group be moved up to late November instead of waiting until early December. Rain events during this period of time will likely trigger movement of yearling spring-run Chinook salmon out of the tributaries and into the main stem of the Sacramento River ahead of the typical time when production and first surrogate groups are released in early December. NMFS will discuss with the Coleman National Fish Hatchery whether this earlier release date is feasible.

Agenda Item 7.

DOSS Annual Report

The draft DOSS Annual Report was distributed to DOSS this morning. Please review and provide comments by close of business Tuesday, 11/28/2017 (reply to email sent to the DOSS group by Barb Byrne with track changes in document).

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>	94-95% (Last week: 95-96%)	5-6% (Last week: 4-5%)	0% (Last week: 0)
<i>Wild young-of-year spring-run Chinook salmon</i>	~100% (Last week: ~100%)	0% (Last week: 0)	0% (Last week: 0)

Rationale for changes in distribution

Wild winter-run Chinook: 26 juvenile winter-run were observed at GCID and at no other monitoring locations this past week. DOSS estimated that an additional 1% have moved into the Delta based on reduced temperatures, recent increased flows, and historical timing and outmigration.

Wild spring-run Chinook: Very few spring-run have been observed at monitoring locations in the lower Sacramento River to date for this brood year. Since the vast majority of spring-run are still considered to be rearing upriver, the percentage of the population still located in the upper river is essentially 100 percent; no spring-run are expected to have entered the Delta this early in the season. In addition, there is 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: None

Agenda Item 10.

Next Meeting: The next DOSS conference call will be on **11/21/17 at 9am.**