

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 11/21/2017 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, Jason Julienne

DWR: Kevin Reece, Bryant Giorgi, Farida Islam

NMFS: Jeff Stuart, Kristin McCleery

Reclamation: Mike Hendrick, Tom Patton, Towns Burgess

USFWS: 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. Fish Monitoring: Salvage
5. Fish Monitoring: RSTs/trawls/seines
6. DCC gate operations - update to current conditions and processes
7. DOSS Annual Report draft - review and comments reminder
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 Deer and Mill creeks increased by more the 200% within a 24-hour period on 11/16, thus

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.

meeting the second trigger component. This sharp spike 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
11/14/2017	228	45%	211	28%
11/15/2017	271	19%	238	13%
11/16/2017	843	211%	757	218%
11/17/2017	393	-53%	484	-36%
11/18/2017	258	-34%	303	-37%
11/19/2017	210	-19%	243	-20%
11/20/2017	288	37%	257	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: 5,610-9,904 cfs (range of mean daily flows 11/14-11/20)
 - Knights Landing water temperature: 54-55°F (range of temperatures reported at the rotary screw traps 11/13-11/19)
 - The second alert was triggered on 11/18-11/19 based on temperatures below 56.3°F at Knights Landing and flows at Wilkins Slough greater than 7,500 cfs (9,904 cfs on 11/18 and 8,862 on 11/19).

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 open. The gates opened on 11/17/17 and are expected to remain open through the end of November unless the Knights Landing or Sacramento catch indices are exceeded per the RPA criteria described in RPA Action IV.1.2.
- On December 1, 2017, gates will be operated to the conditions described in RPA Action IV.1.2. (default condition is closed gates)

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.

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

Agenda Item 3.

Current Operations (11/21/17)

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	2,000
		Sacramento - Keswick	5,000
		Stanislaus - Goodwin	600
		Trinity - Lewiston	300
Reservoir Storage (in TAF)			
San Luis (SWP)	689***	San Luis (CVP)	752***
Oroville	1,240	Shasta	3,192***
New Melones	1,988***	Folsom	574***
Delta Operations			
DCC	Open	Sacramento River at Freeport (cfs)	17,100
Outflow Index (cfs)	~11,800	San Joaquin River at Vernalis (cfs)	1,580
E:I	62.8% (14-day avg.)	X2	81 km

* SWP exports increased from 6,000 cfs over the weekend to 6,680 cfs today (11/21).

** Oroville releases increased from 1,750 cfs to 2,400 cfs on Sunday (11/19).

*** Storage amounts are increasing at San Luis, New Melones, Shasta, and Folsom reservoirs.

Factors controlling Delta exports:

- 11/14 to 11/20: Fall X2
- 11/21: Available export capacity

A storm front passed through yesterday, contributing a small amount of rain in the mountains. The weather forecast indicates a mild storm passing through on Sunday and Monday, with more precipitation likely in the northern Sacramento Valley than in the Sacramento area. Temperatures will be in the 70s over the next couple of days.

Agenda Item 4.

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.

DOSS Weekly Salvage Update

Reporting Period: November 13-November 19, 2017
Prepared by Bob Fujimura on November 20, 2017 15:40
Preliminary Results -Subject to Revision

Criteria	13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov	19-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	5,807	6,189	8,807	10,864	11,799	11,791	11,958	↗	9,602
CVP daily export	3,579	3,578	3,585	1,965	6,927	6,950	8,174	↗	4,965
SWP reduced counts	0%	0%	0%	25%	0%	17%	0%	↗	6%
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 outages 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 November 20, 2017

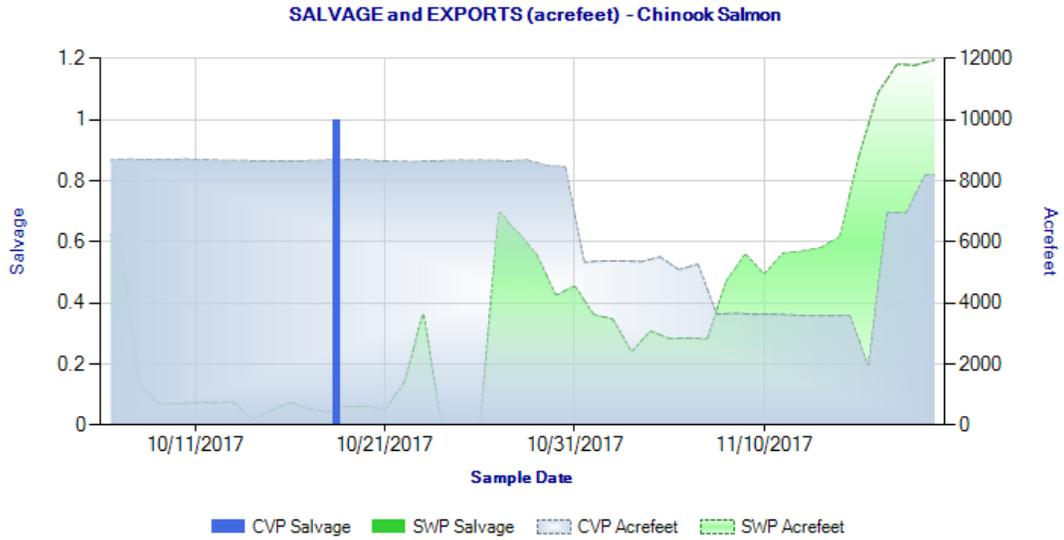


Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during October 7 through November 19, 2017. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

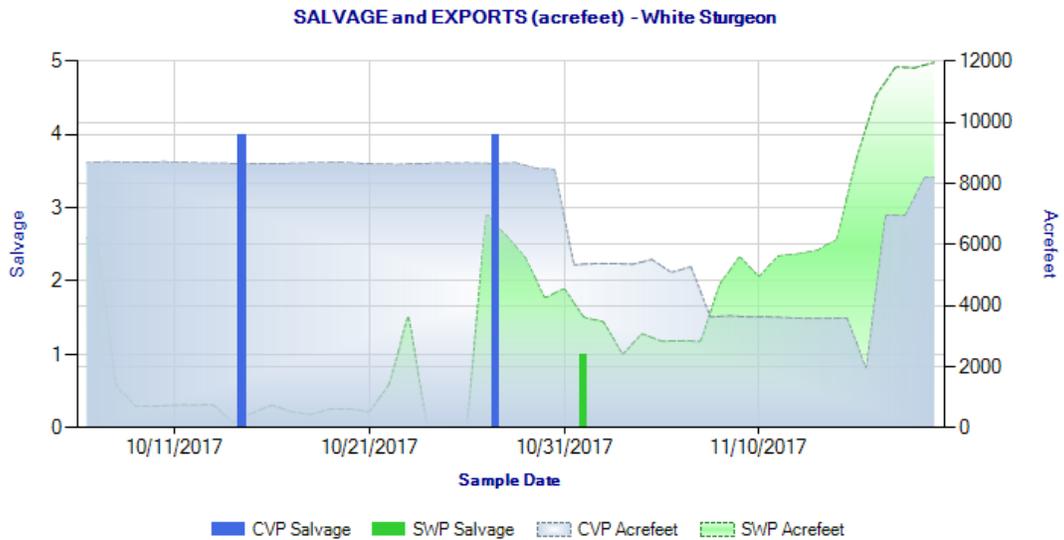


Figure 2. Daily salvage of White Sturgeon and water exports from the state and federal fish salvage facilities during October 7 through November 19, 2017. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

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	Mossdale Kodiak Trawl ^A
Sample Date	11/13, 11/15, 11/16, 11/17	11/13, 11/15, 11/17	11/13-11/17	11/7-11/20	11/12-11/17	11/15-11/20	11/14, 11/16, 11/17
Chinook				2 older juveniles			
FR Chinook						2 smolts	
SR Chinook				2	2	28 juveniles	
WR Chinook				2	3	236 juveniles	
LFR Chinook						48 juveniles 37 smolts	
Ad-Clipped Chinook							
Steelhead (ad-clip)							
Steelhead (wild)						2	
Green Sturgeon						3*	
Flows (avg. cfs)				6546	6529	1026	
W. Temp. (avg. °F)				54.3	55	53.8	
Turbidity (avg. NTU)				11.9	13	32.6	

^A Data reported in the 11/12 to 11/18 DJFMP sampling summary.

^B Knights Landing RST sampling period was from 11/7 at 12:30 pm to 11/20 at 11:45 am.

^C Tisdale RST sampling period was from 11/12 at 10:00 am to 11/17 at 11:30 am.

* 1 juvenile green sturgeon was caught on 11/17 (225mm) and 2 on 11/18 (175mm and 185mm) at GCID.

Red Bluff Diversion Dam (RBDD)

USFWS biweekly report (11/5-11/18/17) 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)	94,327*	407,410 (296,282-518,538)
Spring-run Chinook (BY2017)	29,743**	120,441 (90,843-150,039)

*Biweekly catch increased by approximately 65,000 fish from previous biweekly total of 29,409.

**Biweekly catch dropped approximately 38,000 fish from previous biweekly total of 67,946.

Agenda Item 6.

DCC gate operations - update to current conditions and processes

Due to an increase in catch and increased flows over the past week, Knights Landing and Sacramento Catch Indices (KLCI and SCI) are anticipated to be triggered in the next week. The group discussed KLCI calculations based on a 24-hour sampling day.

Contact F. Islam (DWR) if you would like to be added to the Catch Index early notification email alert (farida.islam@water.ca.gov).

Agenda Item 7.

DOSS Annual Report

Reminder to 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 Chippis Island)
<i>Wild young-of-year winter-run Chinook salmon</i>	89-93% (Last week: 94-95%)	7-11% (Last week: 5-6%)	0% (Last week: 0)
<i>Wild young-of-year spring-run Chinook salmon</i>	98-99% (Last week: ~100%)	1-2% (Last week: 0)	0% (Last week: 0)

Rationale for changes in distribution

Wild winter-run Chinook: 2 juvenile winter-run-sized fish were observed at Knights Landing, 3 at Tisdale, and 236 at GCID over this past week. DOSS estimated that an additional 2-5% have moved into the Delta based on observed catch, recent increased flows, reduced temperatures, and historical timing and outmigration.

Wild spring-run Chinook: 2 spring-run-sized fish were observed at Knights landing, 2 at Tisdale, and 28 at GCID over this past week. DOSS estimated that 1-2% have moved into the Delta based on observed catch and environmental conditions. 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: None

DCC gate closure potential for next week.

Agenda Item 10.

Next Meeting: The next DOSS conference call will be on **11/28/17 at 9am.**