

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**  
**Conference call: 11/28/2017 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](http://www.westcoast.fisheries.noaa.gov/central_valley/water_operations/doss.html).

**CDFW:** Bob Fujimura, Jason Julienne, Ken Kundargi, Duane Linander

**DWR:** Kevin Reece, Farida Islam, Dan Yamanaka, Norman Lee

**NMFS:** Jeff Stuart, Kristin McCleery

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

**SWRCB:** Chris Kwan

**USFWS:** Felipe Carrillo, 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](http://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
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]<sup>1</sup>:**

- 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.

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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.

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
11/21/2017	549	91%	479	86%
11/22/2017	329	-40%	312	-35%
11/23/2017	271	-18%	262	-16%
11/24/2017	270	0%	241	-8%
11/25/2017	231	-14%	220	-9%
11/26/2017	306	32%	255	16%
11/27/2017	586	92%	470	84%

- 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 11/23 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)
11/21/2017	6315	52
11/22/2017	7390	53
11/23/2017	8235	53
11/24/2017	7308	54
11/25/2017	6746	54
11/26/2017	6434	56
11/27/2017	6325	56

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

- Catch indices for the Knights Landing RST and Sacramento regional beach seines exceeded the trigger threshold of 3 (but equal to or less than 5) older juveniles per 24-hour period on 11/21/17, 11/22/17, and 11/25/17. DCC gates were closed on 11/24/17.
- The Seine SCI of 6.9 on 11/24/17 exceeded the catch index threshold of 5 and triggered a DCC closure of at least three days, and until all catch indices are less than 3 for two consecutive days.
- Gates will remain closed through the end of November (per Reclamation’s determination), although the RPA Action IV.1.2 closure duration was satisfied on 11/27/17 and gates could have been opened on 11/28/17.
- Catch Indices for 11/21-11/27:

<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)

Date	KLCI	Seine SCI	Trawl SCI	Day of Action Response (for all triggers through 11/24/17)	Day of Action Response (for 11/25 trigger)
11/21/17	4.1	5	0		
11/22/17	4.8	3.4	0		
11/23/17	2.1	No sampling	No sampling		
11/24/17	2.4	6.9	0	1 (DCC closed ~10 am)	
11/25/17	4.5	No sampling	No sampling	2	1
11/26/17	1.3	No sampling	No sampling	3	2
11/27/17	1.8	No sampling	0		3

**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 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 (11/28/17)**

SWP		CVP	
<b>Exports (cfs)</b>			
Clifton Court Forebay	6,680	Jones Pumping Plant	4,200 (5 units)
<b>Reservoir Releases (cfs)</b>			
Feather - Oroville	2,400	American - Nimbus	2,000
		Sacramento - Keswick	5,000
		Stanislaus - Goodwin	600*
		Trinity - Lewiston	300
<b>Reservoir Storage (in TAF)**</b>			
San Luis (SWP)	709	San Luis (CVP)	786
Oroville	1,263	Shasta	3,214
New Melones	1,997	Folsom	601
<b>Delta Operations</b>			
DCC	Closed (through remainder of the week)	Sacramento River at Freeport (cfs)	14,577
Outflow Index (cfs)	~8,300	San Joaquin River at Vernalis (cfs)	1,558
E:I	52.9% (3-day avg.) 55.3% (14-day avg.)	X2	>81 km

<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)

- \* Releases at Goodwin are currently at 600 cfs, with pulse flows starting on Friday to reduce New Melones reservoir volume below the required flood control curves for this date.
- \*\* Storage amounts are increasing at San Luis, Oroville, New Melones, Shasta, and Folsom reservoirs.

Factors controlling Delta exports:

- 11/21-11/28: Available export capacity

The weather conditions are currently clear and cool. Increasing chance of light precipitation later in the week in the northern Sacramento Valley. Lower chances of precipitation in the Sacramento and San Joaquin regions. Precipitation amounts are expected to be small.

**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 20-November 26, 2017  
 Prepared by Bob Fujimura on November 27, 2017 15:10  
 Preliminary Results -Subject to Revision

Criteria	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov	Trend	
<b>Loss Densities</b>									
Wild older juvenile CS	0	0	0	0	0	0	0	→	0.00
Wild steelhead	0	0	0	0	0	0	0	→	0.00
<b>Exports</b>									
SWP daily export	11,533	13,019	12,985	13,063	12,718	12,848	11,586	↗	12,536
CVP daily export	8,408	8,407	8,403	8,383	8,391	8,380	8,407	↗	8,397
SWP reduced counts	0%	0%	8%	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 facility 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
<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	0	0	→	0	0
<b>Total</b>	<b>0</b>	<b>0</b>		<b>0</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	→	1	NC
<b>Total</b>	<b>0</b>	<b>0</b>		<b>1</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 = 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
<b>Total</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>

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

Generated by Bob Fujimura on November 27, 2017

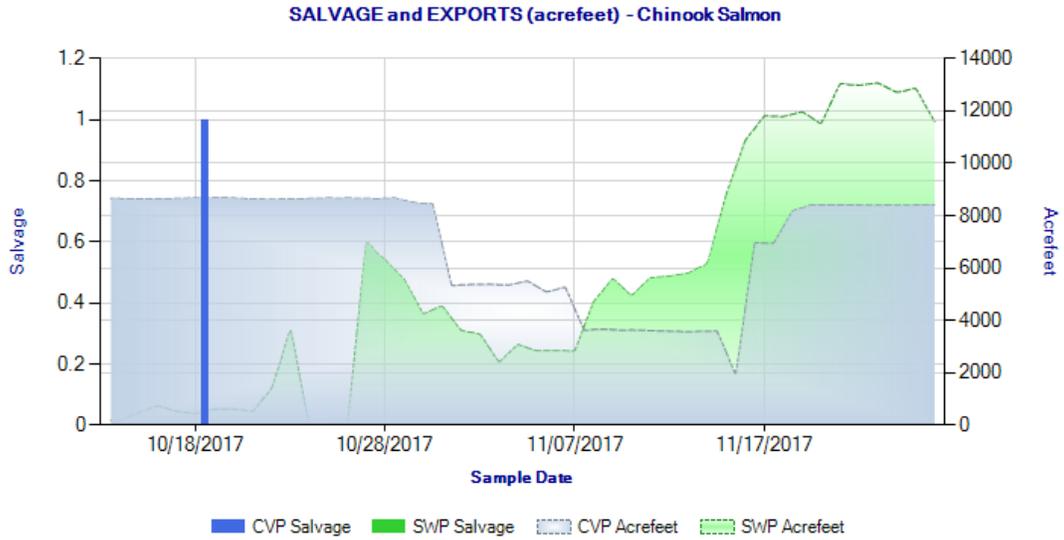


Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during October 14 through November 26, 2017. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

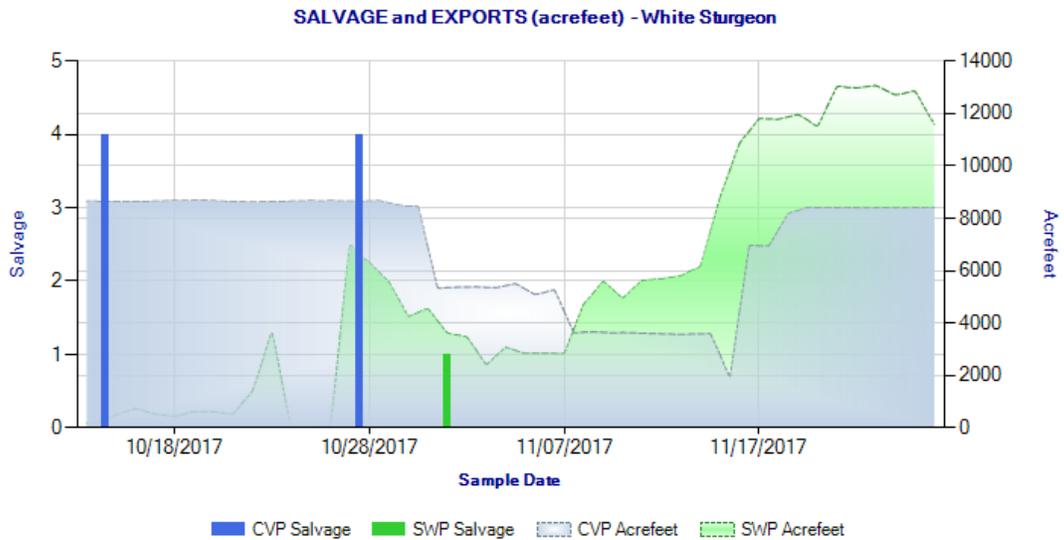


Figure 2. Daily salvage of White Sturgeon and water exports from the state and federal fish salvage facilities during October 14 through November 26, 2017. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

**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 <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	11/20-11/22	11/20-22/22, 11/24	11/20-22/22, 11/24	11/19-11/27	11/17-11/26	11/21-11/28	11/20, 11/22
Chinook				27 older juveniles	14 older juvenile		
FR Chinook							
SR Chinook				11	3	8 juveniles	
WR Chinook			16	25	12	14 juveniles	
LFR Chinook			2	2	2	1 juvenile	
Ad-Clipped Chinook			1				
Steelhead (ad-clip)							
Steelhead (wild)							
Green Sturgeon							
Flows (avg. cfs)				7002	7639	982	
W. Temp. (avg. °F)				53.4	55	56.05	
Turbidity (avg. NTU)				20.11	18.1	18.66	

<sup>A</sup> Data reported in the 11/19 to 11/25 DJFMP sampling summary.

<sup>B</sup> Knights Landing RST sampling period was from 11/19 at 11:30 am to 11/27 at 10:30 am.

<sup>C</sup> Tisdale RST sampling period was from 11/17 at 11:30 am to 11/26 at 8:30 am.

<sup>D</sup> GCID RST fished for 15 hours (instead of 24) on 11/22 due to a log jam. GCID data were updated during the DOSS call to include data for 11/27 and 11/28.

**Agenda Item 6.**

**DCC gate operations**

RPA Action IV.1.2 was triggered on 11/21, 11/22, 11/24, and 11/25, requiring DCC gates to be closed. The gates will remain closed, per Reclamation’s decision, through the end of November, although the gate closures under the RPA actions were satisfied on 11/27/17 and gates could have been opened on 11/28/17. Starting on December 1, 2017, DCC gates will remain closed unless degradation of water quality conditions in the Delta (per D-1641 criteria) occurs, or Chinook migration studies are conducted, at which time the DCC gates may be opened if it is deemed necessary.

**Agenda Item 7.**

**DOSS Annual Report**

Reminder to review and provide comments by close of business today, 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.

<b>Location</b>	<b>Yet to Enter Delta (Upstream of Knights Landing)</b>	<b>In the Delta</b>	<b>Exited the Delta (Past Chipps Island)</b>
<i>Wild young-of-year winter-run Chinook salmon</i>	70-75% (Last week: 89-93%)	25-30% (Last week: 7-11%)	0% (Last week: 0)
<i>Wild young-of-year spring-run Chinook salmon</i>	93-95% (Last week: 98-99%)	5-7% (Last week: 1-2)	0% (Last week: 0)

**Rationale for changes in distribution**

Wild winter-run Chinook: 16 juvenile winter-run-sized fish were observed at the beach seines, 25 at Knights Landing, 12 at Tisdale, and 14 at GCID over this past week. DOSS estimated that an additional 18-19% have moved into the Delta based on observed catch, recent increased flows, and historical timing and outmigration. Also, the Knights Landing trap fished for limited hours when flows were greatest (11/21/17), so catch numbers would likely have been higher than what was reported.

Wild spring-run Chinook: 11 spring-run-sized fish were observed at Knights landing, 3 at Tisdale, and 8 at GCID over this past week. DOSS estimated that 2-4% have moved into the Delta based on observed catch and environmental conditions. Also, the Knights Landing trap fished for limited hours when flows were greatest (11/21/17), so catch numbers would likely have been higher than what was reported. 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 11/28 to 12/4/2017, NMFS and WOMT should continue to monitor the catch indices from the Knights Landing, Sacramento regional beach seines, and the Sacramento Trawl for high numbers that could trigger a third alert under RPA Action IV.3. Current operations of the DCC gates will have the gates closed through the remainder of November, and closed from December 1 forward (default position) per RPA Action IV.1.2. In addition to monitoring the catch indices, NMFS and WOMT should also monitor Delta water quality conditions during

DCC gate closures. Gate operations may be required if water quality conditions become degraded per D-1641 criteria and it is determined that opening gates will improve water quality conditions.

**Agenda Item 10.**

**Next Meeting:** The next DOSS conference call will be on **12/5/17 at 9am.**