Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 11/22/2016 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.

CDFW: Duane Linander, Ken Kundargi, Bob Fujimura
DWR: Bryant Giorgi, Kevin Reece, Dan Yamanaka, Farida Islam
NMFS: Barb Byrne, Kristin McCleery
Reclamation: Tom Patton, Mike Hendrick
SWRCB: Chris Carr, Chris Kwan, Brittany Kammerer
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/djfmp)
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)[1]:

- 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)]:

[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.

- 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 11/15-11/21.

	Mill Creek (MLM)		Deer Creek (DCV)	
Date	mean daily flow (cfs)	change in mean daily flow	mean daily flow (cfs)	change in mean daily flow
11/15/2016	155	-2%	115	-1%
11/16/2016	165	6%	126	9%
11/17/2016	143	-13%	123	-2%
11/18/2016	139	-3%	118	-4%
11/19/2016	338	143%	321	172%
11/20/2016	487	44%	467	45%
11/21/2016	376	-23%	343	-27%

- Second Alert
  - Recent conditions for 11/15-11/21, unless otherwise noted:
    - Wilkins Slough flow: 4,904-10,172 cfs (range of mean daily flow)
    - Knights Landing water temperature: 56-61°F (range of temperatures reported at the rotary screw traps during trap checks during the 11/14-11/21 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 11/21/16.

Action IV.1.2[2] (DCC gate operations):

- Indices for 11/15-11/21:

Date	KLCI	Seine SCI	Trawl SCI	DCC position	Day of Action
11/15/16	0	No sampling	No sampling	Opened in morning	--
11/16/16	0	1.0	0	Open	--
11/17/16	0	No sampling	No sampling	Open	--
11/18/16	0	0	0	Open	--
11/19/16	0	No sampling	No sampling	Open	--
11/20/16	0	No sampling	No sampling	Open	--
11/21/16	0	3.0	0	Open	--

[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

- Since the DCC was opened the morning of 11/15/16, no new DCC closure action response has been triggered (by any catch index greater than 3).

Action IV.3[3] (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 (11/22/16)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	4,750*	Jones Pumping Plant	1,800**
Reservoir Releases (cfs)			
Feather - Oroville	2,450	American - Nimbus	1,250
		Sacramento - Keswick	5,000
		Stanislaus - Goodwin	200
		Trinity - Lewiston	300
Reservoir Storage (in TAF)			
San Luis (SWP)	517	San Luis (CVP)	220
Oroville	1,505	Shasta	2,845
New Melones	518	Folsom	405
Delta Operations			
DCC	Open	Sacramento River at Freeport (cfs)	14,180
Outflow Index (cfs)	10,600	San Joaquin River at Vernalis (cfs)	854
E:I	28% (14-day avg.)	X2	>81 km

*State exports are expected to increase tomorrow (11/23)

**Federal exports are expected to increase to 2,500 tomorrow (11/23)

Factors controlling Delta exports:

11/15/16-11/21/16: seasonal salinity management.

Agenda Item 4.

Fish Monitoring: Salvage

No listed species have yet been salvaged during WY 2017.

[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

DOSS Weekly Salvage Update

Reporting Period: November 14-November 20, 2016
Prepared by Bob Fujimura on November 21, 2016 15:48
Preliminary Results -Subject to Revision

Criteria	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-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	5,943	4,873	4,049	5,561	6,979	2,178	5,283	↘	4,981
CVP daily export	1,933	1,934	1,935	1,935	1,928	1,937	1,937	↘	1,934
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
Yellow highlighted dates indicate brief SWP salvage 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;

		Weekly Total			Season Total	
Category		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	→	6	NC
	Total	0	0		6	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 = can not be calculated

Steelhead Weekly/Season Salvage and Loss

Combined salvage and loss for both CVP and SWP fish facilities

	Weekly Total			Season Total	
Category	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

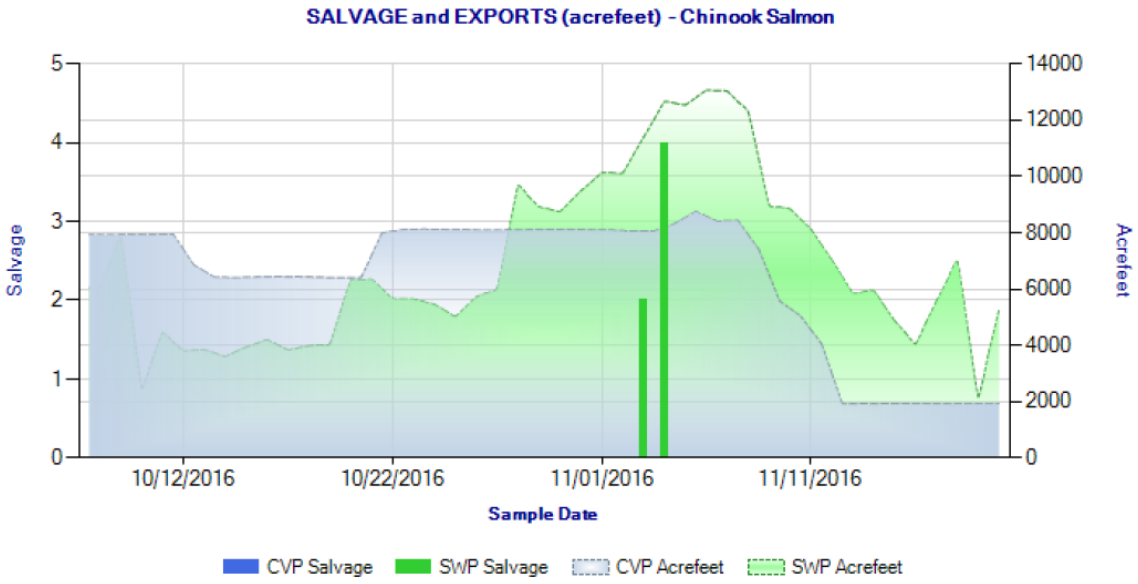

Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during Oct 8 through Nov 20, 2016. Graph obtained from the DFG salvage monitoring web-page: http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx.

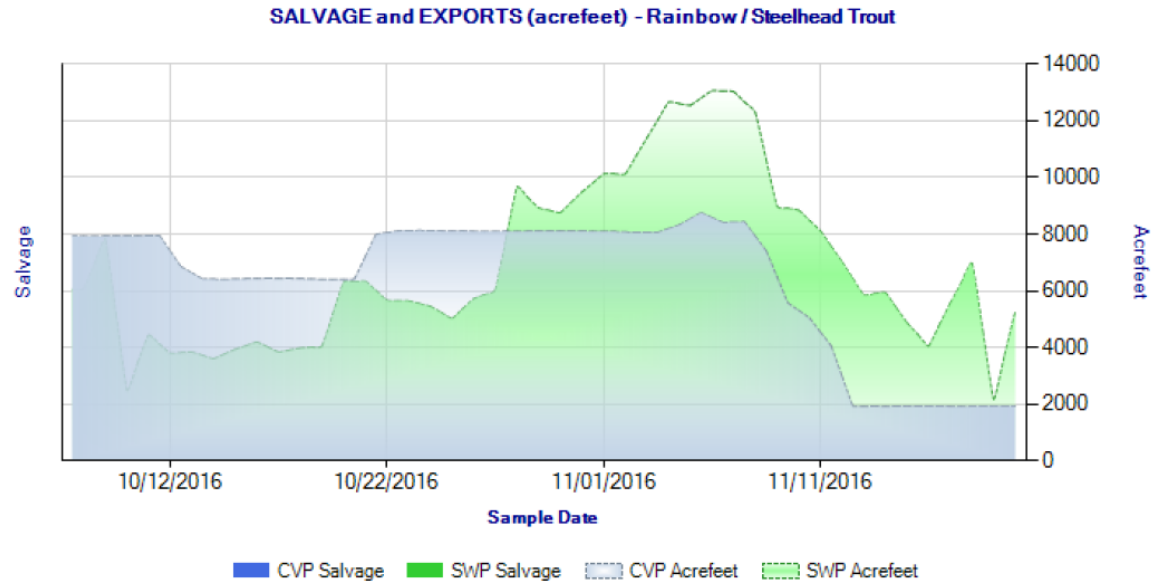

Figure 2. Daily salvage of Steelhead and water exports from the state and federal fish salvage facilities during Oct 8 through Nov 20, 2016. Graph obtained from the DFG salvage monitoring web-page: http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx.

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	Chipps 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	11/14, 11/16, 11/18	11/14, 11/16, 11/18	11/14-11/18	11/14-11/21	11/13-11/18	11/15-11/20	11/14, 11/16, 11/18
Total Catch							
FR Chinook							
WR Chinook			1			21 juveniles	
SR Chinook			1			2 juveniles	
LFR Chinook	1					6 juveniles and 9 smolts	
Chinook Spray-Dyed			1				
Ad-Clipped Chinook							
Delta Smelt							
Splittail							
Longfin Smelt							
Steelhead (ad-clip)							
Steelhead (wild)							
Green Sturgeon							
Flows (avg. cfs)				5,726	5,198	930	
W. Temp. (avg. °F)				58.3	53.8	55	
Turbidity (avg. NTU)				10.0	11.7	15.8	

[A]Data reported in the 11/13 to 11/19 DJFMP sampling summary.

[B]Knights Landing RST Sampling period was from 11/14 at 10:45 am to 11/21 at 10:30 am.

[C]Tisdale RST sampling period was from 11/13 at 10:00 am to 11/18 at 9:00 am.

[D]GCID sampling period was from 11/15 at 8:00 am to 11/20 at 8:00 am. On 11/20/16 the cone was jammed with large log at 9:00 pm debris cleaning. The pulley system was broken and the trap was pulled for repairs.

Red Bluff Diversion Dam (RBDD)
USFWS biweekly report (11/4/16-11/17/16) 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)	4,175	484,841 (373,808-595,875)

Agenda Item 6.
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)
Wild young-of-year (YOY) winter-run Chinook salmon	70% - 80% (Last week: 75% - 85%)	20% - 30% (Last week: 15% - 25%)	0% (Last week: same)

Rationale for changes in distribution
Wild winter-run Chinook: Over the past week, 1 winter-run was observed at the beach seine monitoring locations (indicating winter-run presence in the Delta) and 21 juvenile winter-run at the GCID (indicating continued winter-run migration downstream), so DOSS estimated an incremental shift (5%) of winter-run from upstream into the Delta. Young-of-year winter-run-sized fish have not yet been observed exiting the Delta at Chipps Island. A rain event is predicted this coming week which is expected to trigger more movement of winter-run into the Delta.

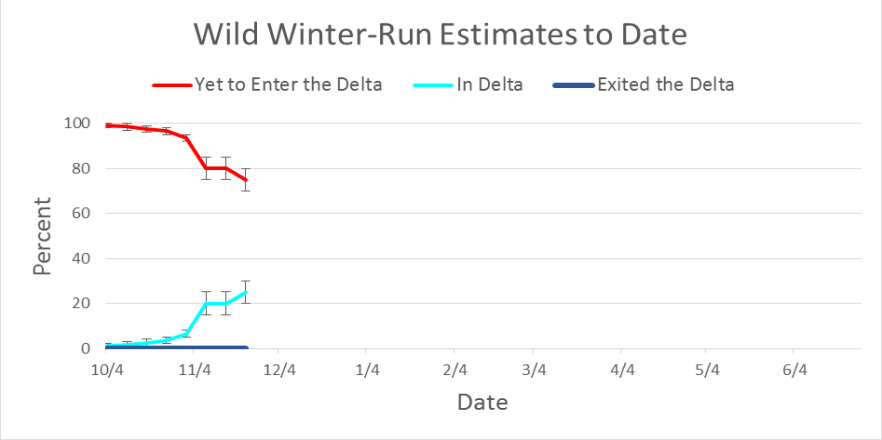

Figure 3. WY 2017 wild winter-run distribution estimates to date.

Agenda Item 7.
DOSS Advice to WOMT and NMFS: None

Agenda Item 8.
Next Meeting: The next DOSS conference call will be on **11/29/16 at 9am**.