

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 12/19/2017 at 9:00 am.

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, Duane Linander

DWR: Kevin Reece, Bryant Giorgi, Marianne Kirkland, Mike Ford, Dan Yamanaka, Farida Islam

NMFS: Jeff Stuart, Kristin McCleery

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

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/djfmfp)
3. Current Operations
4. Smelt working group update
5. Fish Monitoring: Salvage
6. Fish Monitoring: RSTs/trawls/seines
7. DOSS Estimates of Fish Distribution
8. DOSS advice
9. 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 is triggered if either the first component (river flows >95 cfs or the second component (>50% change in mean daily river flow) is met. The first alert 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
12/12/2017	150	-2%	156	-3%
12/13/2017	148	-1%	154	-1%
12/14/2017	149	1%	152	-1%
12/15/2017	158	6%	151	-1%
12/16/2017	157	-1%	151	0%
12/17/2017	153	-3%	148	-2%
12/18/2017	153	0%	146	-2%

- Second Alert is triggered only if both Knights Landing temperatures are less than 56.3°F and Wilkins Slough flows are greater than 7,500 cfs.
 - The second alert was not triggered this week. See table below for details.

Date	Wilkins Slough (WLK)	Knights Landing (KL)
	Mean Daily Flow (cfs)	Daily water temperature (°F)
12/12/2017	4974	48
12/13/2017	4928	47
12/14/2017	4897	47
12/15/2017	5145	48
12/16/2017	5275	47
12/17/2017	5212	47
12/18/2017	5156	46

Action IV.1.2² (DCC gate operations):

- Gates will remain closed per operations described in RPA Action 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):

- 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 of listed salmonids has occurred and thus no salvage-based triggers that would require export reduction 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 (12/19/17)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	3,000*	Jones Pumping Plant	4,200 (5 units)
Reservoir Releases (cfs)			
Feather - Oroville	2,400	American - Nimbus	3,500
		Sacramento - Keswick	5,000
		Stanislaus - Goodwin	600
		Trinity - Lewiston	300
Reservoir Storage (in TAF)			
San Luis (SWP)	742	San Luis (CVP)	863
Oroville	1,263	Shasta	3,216
New Melones	1,989	Folsom	587
Delta Operations			
DCC	Closed	Sacramento River at Freeport (cfs)	14,100
Outflow Index (cfs)	~6,800	San Joaquin River at Vernalis (cfs)	1,700
E:I	41% (14-day avg.)	X2	>81 km**

* SWP exports will decrease to 2,500 cfs on 12/22.

** Limit of X2 calculation.

Approximate OMR as of 12/16/17:

	USGS gauges (cfs)	Index (cfs)
Daily	-6,700	-6,200
14-day	-8,100	-8,100

Factors controlling Delta exports:

- 12/12-12/19: Fall X2

Weather Forecast

A fast moving storm is expected to bring less than a quarter inch of rain tonight and tomorrow in the Sacramento Valley and a small amount of snow in the mountains. The weather is otherwise expected to be dry throughout the region.

Agenda Item 4.

Smelt Working Group Update

The Smelt Working Group met on Monday, 12/18/17 at 10 am. E. Chen (USFWS) provided the following Smelt Working Group meeting summary:

The Group reviewed current Delta conditions, survey data, expected exports, and forecasted weather. As current and forecasted conditions are dry, a “first flush” event is highly unlikely to occur this week and the Group concluded that the risk for Delta smelt

and longfin smelt entrainment is low. Turbidity levels at Holland's Cut were high this past weekend, but members indicated that this is likely the result of high winds and not as a result of flow or precipitation factors.

The Group does not believe that a recommendation under Action 1 (adult pre-spawning Delta smelt) is necessary to protect Delta smelt at this time. The Group will continue to monitor Delta smelt survey and salvage data and Delta conditions. The Group will likely meet again on Tuesday, 12/26/2017 at 10 am.

Agenda Item 5.

Fish Monitoring: Salvage

B. 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.

- An electrical power outage occurred at Skinner Fish Facility for 2 hours and 45 minutes on 12/11.
- Several routine count times were reduced at Skinner Fish Facility due to an excessive number of fish and high debris loading on 12/16-12/17.
- At Tracy Fish Collection Facility, a sea lion was observed killing a green sturgeon in front of the trash racks (12/11/17). The body of the green sturgeon was retained for future tissue toxicology testing and examination of otolith samples to determine age.

DOSS Weekly Salvage Update

Reporting Period: December 11-December 17, 2017
Prepared by Bob Fujimura on December 18, 2017 16:19
Preliminary Results -Subject to Revision

Criteria	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-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	10,446	9,414	6,441	7,772	7,787	5,604	5,936	↘	7,629
CVP daily export	8,407	8,366	8,399	8,392	8,388	8,439	8,403	→	8,399
SWP reduced counts	17%	0%	0%	0%	0%	46%	21%	↗	12%
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
Tan highlighted date indicate major (> 2 hrs) salvage facility 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;

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 18, 2017



Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during November 4 through December 17, 2017. Graph obtained from the DFG salvage monitoring web page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

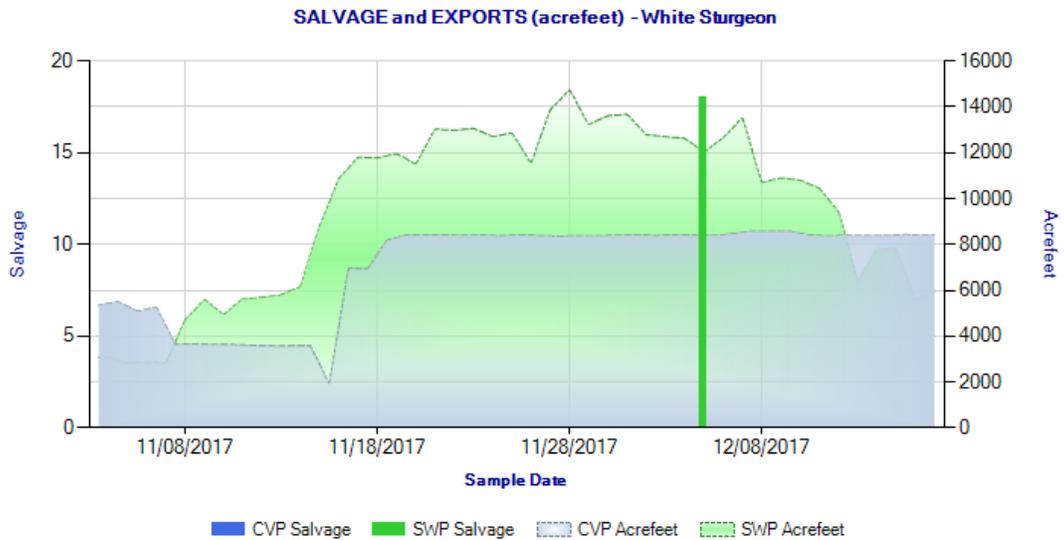


Figure 2. Daily salvage of White Sturgeon and water exports from the state and federal fish salvage facilities during November 4 through December 17, 2017. Graph obtained from the DFG salvage monitoring web page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

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	12/11, 12/13	12/10-12/16	12/11-12/15	12/11-12/18	12/11-12/18	12/12-12/18	12/13, 12/15
Chinook							
FR Chinook						2 juveniles	
SR Chinook			1		1	1 juvenile	
WR Chinook			2	1	1	11 juveniles	
LFR Chinook						3 smolts	
Ad-Clipped Chinook			1				
Steelhead (ad-clip)							
Steelhead (wild)							
Green Sturgeon							
Flows (avg. cfs)				5069	5140	796	
W. Temp. (avg. °F)				47.1	48.6	50.1	
Turbidity (avg. NTU)				10.1	13.8	6.8	

^A Data reported in the 12/10 to 12/16 DJFMP sampling summary.

^B Knights Landing RST sampling period was from 12/11 at 10:00 am to 12/18 at 10:30 am.

^C Tisdale RST sampling period was from 12/11 at 10:30 am to 12/18 at 10:00 am.

Planned release notification for brood year 2017 Coleman NFH late fall-run Chinook salmon:

The first release of production late fall-run Chinook salmon (LFRCS) will occur tomorrow (12/20/17) from the Coleman National Fish Hatchery into Battle Creek. Approximately 297,000 brood year 2017 late-fall-run Chinook will be released, and all fish will be ad-clipped and carry a coded wire tag. The rest of the LFRCS production fish (490,000) will be released during the end of December or in early January, preferably in conjunction with a rain event. The first surrogate spring-run Chinook release (hatchery LFRCS) will occur approximately 3 days following the large production release. The second and third spring-run surrogate releases (additional hatchery LFRCS) will be made at one to two week intervals after this, preferably in conjunction with rain events. All releases will be completed by the end of January 2018.

Agenda Item 7.

DOSS Estimates of Fish Distribution

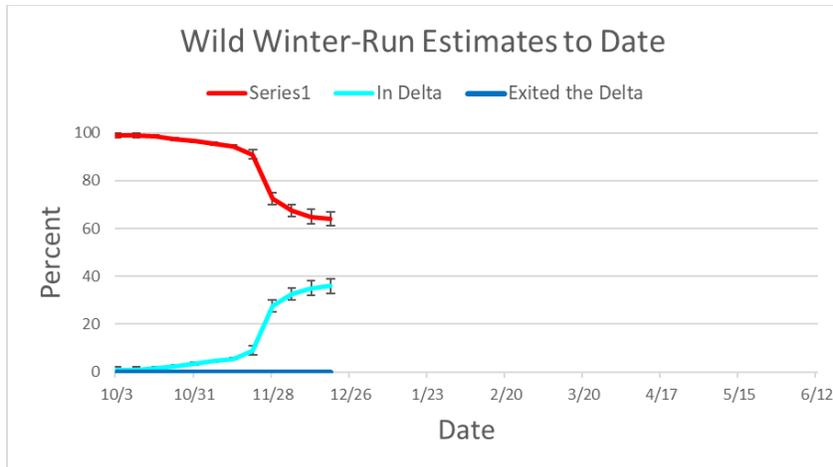
DOSS estimates of the current distribution of listed Chinook and steelhead, as a percentage of the population, are based on recent monitoring data and historical migration timing patterns.

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>	61-67% (Last week: 62-68%)	33-39% (Last week: 32-38%)	0% (Last week: 0%)
<i>Wild young-of-year spring-run Chinook salmon</i>	85-90% (Last week: 86-91%)	10-15% (Last week: 9-14%)	0% (Last week: 0%)

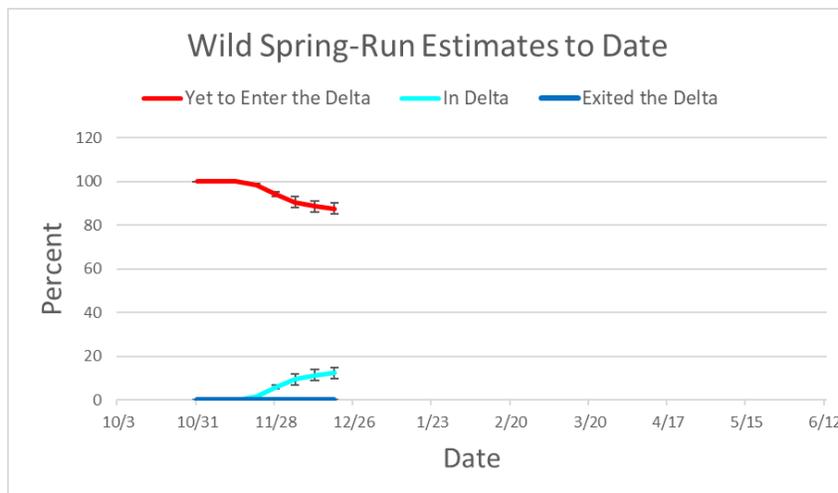
Rationale for changes in distribution

Wild winter-run Chinook: 1 juvenile winter-run-sized fish was observed in the Knights Landing RSTs, 1 at the Tisdale RST, 2 in the beach seines, and 11 at GCID this past week. Since few fish were observed at monitoring locations in the lower Sacramento River, the flows in regional rivers are decreasing, water clarity in regional rivers has increased, and no fish have been observed at the salvage facilities or in the Sacramento Trawl, DOSS estimated that an additional 1% of the winter-run population has moved into the Delta during the past week, and the remaining proportion of the winter-run population are still holding upriver.

Wild spring-run Chinook: During the past week, 1 spring-run-sized fish was observed at the Tisdale RST, 1 in the beach seines, and 1 at GCID, and no fish at any of the other monitoring locations. Since few spring-run were observed, rivers flows have decreased, water clarity has increased, and no fish have been observed at salvage facilities or other Delta monitoring locations, DOSS estimated that an additional 1% 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.



WY 2018 wild winter-run distribution estimates to date.



WY 2018 wild spring-run distribution estimates to date.

DOSS estimates of Entrainment Risks:

No entrainment risks were assessed this week. Although an estimated 33-39 percent of the BY17 winter-run population has entered the Delta, very few are anticipated to be vulnerable to exports as no catches have occurred in the Sacramento Trawl to date or have been observed elsewhere in the Delta.

Agenda Item 8.

DOSS Advice to WOMT and NMFS:

For the week of 12/19 to 12/25/2017, 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 9.

Next Meeting: The next DOSS conference call will be on **12/26/17 at 9 am.**