

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 10/15/2019 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 here: [CCV Water Operations DOSS page](#).

CDFW: Ken Kundargi, Duane Linander, Jason Julienne, Kyle Griffiths, Morgan Kilgour

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

NMFS: Jeff Stuart, Kristin Begun

Reclamation: Elissa Buttermore, Tom Patton, Towns Burgess

SWRCB: Craig Williams, Michael Macon

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: [Bay Delta Live](#))
3. Current Operations
4. Fish Monitoring: Salvage
5. Fish Monitoring: RSTs/trawls/seines
6. DOSS Estimates of Fish Distribution
7. Risk of Entrainment
8. Other topics
9. DOSS Advice
10. Next DOSS Meeting

Agenda Item 2.

RPA Implementation Review

Delta RPA Actions affecting operations during October:

Action IV.1.1 (Alerts that indicate the Delta Cross Channel (DCC) gate operations may be triggered soon)¹:

- The First Alert has two components. Capture of yearling-sized spring-run at the mouths of natal tributaries between October and April indicates that emigration from the tributaries has started or is occurring. As an environmental surrogate to the capture of the yearling-sized spring-run, which are difficult to capture in the rotary screw traps, tributary flow increases are used to signal conditions conducive to emigration. The First Alert is triggered if either the first component (>95 cfs flow threshold) or second

¹ For details, see pages 60-61 in Enclosure 2 of the [2011 Amendments to the 2009 RPA document](#). 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.

component (>50% change in mean daily flow) are exceeded. The First Alert was triggered this past week due to flows >95 cfs.

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
10/8/2019	129	0%	114	0%
10/9/2019	128	-1%	113	-1%
10/10/2019	127	-1%	110	-2%
10/11/2019	126	-1%	111	0%
10/12/2019	128	2%	113	2%
10/13/2019	128	0%	114	1%
10/14/2019	127	-1%	114	0%

- The Second Alert is triggered only if both Knights Landing temperature is less than 56.3°F and Wilkins Slough flows >7,500 cfs. The second alert is in effect beginning 10/1, and has not been triggered.

Wilkins Slough (WLK)		Knights Landing (KL)
Date	Mean Daily Flow (cfs)	Daily water temperature (°F)
10/8/2019	6,187	60.4
10/9/2019	6,189	60.7
10/10/2019	6,163	58.7
10/11/2019	6,168	57.4
10/12/2019	6,141	56.8
10/13/2019	5,968	57.1
10/14/2019	5,774	56.8

Action IV.1.2² (DCC gate operations):

- None of the criteria requiring DCC gate closure have been met since 10/1/19.

Agenda Item 3.

Current Operations (10/15/19)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	500	Jones Pumping Plant	900
Reservoir Releases (cfs)			
Feather - Oroville	2,450	American - Nimbus	2,700
		Sacramento - Keswick	8,500*
		Stanislaus - Goodwin	650**
		Trinity - Lewiston	350***

² For details, see pages 62-66 in Enclosure 2 of the [2011 Amendments to the 2009 RPA document](#).

Reservoir Storage (in TAF)			
San Luis (SWP)	735	San Luis (CVP)	406
Oroville	2,121	Shasta	3,390
New Melones	2,027	Folsom	662
Delta Operations			
DCC	Open	Sacramento River at Freeport (cfs)	12,400
Outflow Index (cfs)	12,600	San Joaquin River at Vernalis (cfs)	2,030
E:I	9% (3-day avg.)	X2	75 km

*Keswick releases will ramp up (to 8,500 cfs) and down (to 6,500 cfs) repeatedly for the rest of October.

**Goodwin releases will increase and decrease through the end of October as part of the Fall pulse flows under RPA Action III.1.3.

***Lewiston releases will decrease to 300 cfs tomorrow (10/16); normal winter base flow.

Factors controlling Delta exports:

- 10/2-10/8: Fall X2

Approximate OMRs as of 10/12/19:

	USGS gauges (cfs)	Index (cfs)
Daily	-1,740	-1,100
5-day	N/A*	-1,500
14-day	N/A*	-4,200

*Issues with USGS MDM gage.

Approximate OMRs as of 10/14/19:

	Index (cfs)
Daily	-1,000
5-day	-1,100
14-day	-3,400

Weather Forecast

The weather continues to be sunny with temperatures in the 70s this week. A small system on Wednesday evening may bring less than one tenth of an inch of rain over northern California.

Agenda Item 4.

Fish Monitoring: Salvage

Griffiths (CDFW) provided a salvage summary for the period of 10/7-10/14.

No unclipped (wild origin) or clipped (hatchery origin) Chinook salmon or steelhead were salvaged during this period.

No outages occurred at either the state or federal facility. A mitten crab was observed at the state salvage facility for the first time in years.

Agenda Item 5.

Fish Monitoring: The following table presents fish monitoring data summarized over the past week. Unless otherwise noted, reported sizes are fork length.

Location	GCID RST	Tisdale RST ^A	Knights Landing RST ^B	Beach Seines ^C	Sacramento Trawl ^C	Chippis Is. Midwater Trawl ^C	Mossdale Kodiak Trawl ^C
Sample Date	10/8-10/13	10/7-10/14	10/7-10/14	10/8-10/10	10/9	10/9	10/9-10/11
FR Chinook	3 smolts						
SR Chinook							
WR Chinook	256 juveniles	1	8	2			
LFR Chinook	31 juveniles 3 smolts						
Chinook (ad-clip)							
Steelhead (wild)							
Steelhead (ad-clip)							
Green Sturgeon							
Flows (avg. cfs)	1,038	6,150	6,087				
W. Temp. (avg. °F)	57.1	57.0	58.3				
Turbidity (avg. NTU)	6.60	4.2	5.49				

^A Tisdale RST sampling period was from 10/7 at 10:00 am to 10/14 at 10:45 am.

^B Knights Landing RST sampling period was from 10/7 at 11:00 am to 10/14 at 11:15 am.

^C DatCall data were not received prior to the DOSS call due to the Monday holiday. Catch data were taken from BayDeltaLive.com.

Red Bluff Diversion Dam (RBDD)

USFWS biweekly report (9/24/19-10/7/19) 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 (BY2019)	735,121	2,425,579 (1,568,593-3,282,565)

**Juvenile Green Sturgeon Monitoring Summary for DOSS; October 15, 2019
2019 Sampling Season Summary**

- Juvenile sturgeon tagging conducted in Sacramento River north/northwest of Sherman Lake (sampling site); main channel, 30-ft depth
- Sampling initiated 7/23/2019; to continue through late winter 2020
- One juvenile green sturgeon tagged 10/1/2019 detected 10/10/2019 at sampling site north/northwest of Sherman Lake
- Three juvenile green sturgeon tagged 10/3/2019 were not detected on 10/10/2019 at sampling site north/northwest of Sherman Lake
- One juvenile white sturgeon tagged 8/6/2019 detected 10/10/2019 at sampling site north/northwest of Sherman Lake
- No detections of juvenile green sturgeon or juvenile white sturgeon tagged in the 2018 sampling season at sampling site north/northwest of Sherman Lake*

*Please refer to the 10/8/19 DOSS notes for a summary of the 2018 sampling season summary

Agenda Item 6.

DOSS Estimates of Fish Distribution

DOSS estimates of the current distribution of listed Chinook salmon 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>Young-of-year (YOY) winter-run Chinook salmon</i>	98% (Last week: 99%)	2% (Last week: 1%)	0% (Last week: 0%)
<i>Young-of-year (YOY) 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 salmon:

Over 2.4 million Brood Year 2019 (BY19) winter-run have passed RBDD this year. Approximately 3,000 BY19 winter-run have been captured by the GCID RSTs since August 1, 2019. 35 BY19 winter-run have been captured by Knights Landing RSTs this season (first on 9/5/19). Two juvenile winter-run have been captured at Sacramento seine sites in the last week. No other juvenile salmonids have been captured at other locations in the Delta (Sacramento Trawl, Mossdale Trawl, and Chipps Island Trawl) since last season. A small number of winter-run continue to be observed weekly at monitoring locations indicating they are starting to migrate into the Delta.

Wild spring-run Chinook salmon:

Since no spring-run-sized fish have been observed at monitoring locations in or upstream of the Delta so far this water year, and no precipitation events have occurred that would trigger

outmigration, DOSS assumes that 100% of the spring-run population is upstream of Knights Landing.

Agenda Item 7.

Risk of Entrainment

Risk of entrainment of listed salmonids into Central and South Delta:

Overall risk of juvenile winter-run entrainment into the interior Delta is considered low as a percentage of population. However, some DOSS members expressed concern that with the high population number of juvenile winter-run this year, the open DCC gate may allow fish into the interior Delta as juveniles have already been detected in the upper Delta (Knights Landing and Sacramento Beach seines). These early fish may represent the progeny of earlier spawning adults, and a different life history strategy. Earlier RST monitoring are likely seeing the fish that were typically present in the system early in the season but not accounted for due to the lack of early monitoring in previous years, and higher population size allows for better detection probability. Delta outflow resulting from implementation of the USFWS' fall X2 RPA action is fairly high for this time of year without any precipitation. Sacramento inflow is about 12,400 cfs. Higher Sacramento River flows help to reduce the influence of tides at the DCC and Georgiana Slough junctions which may reduce the probability of diversion into the interior Delta.

Export Risk:

Low, based on fish distribution (percentage wise) but the absolute number of fish is high compared to previous recent years, and we are seeing fish earlier likely due to early spawning and early RST monitoring, thus will likely see fish in the Delta earlier than in recent years. These "early" fish are important as far as life history diversity for the winter-run ESU. OMR is becoming more positive with reduced exports as a result of USFWS' fall X2 implementation, and the percentage of flow diverted is low (9%). These conditions should reduce the risk of entrainment at the export facilities over the next week. San Joaquin River flows at Vernalis are approximately 2,000 cfs. Combined exports are approximately 1,400 cfs with a concurrent OMR flow of approximately -1,000 cfs. The QWEST flows are currently about 6,600 cfs, indicating that a positive outflow from the San Joaquin River past Jersey Point is occurring.

Agenda Item 8.

Other Topics:

The DOSS annual report is currently being reviewed for 508 compliance and the final report will be distributed to the DOSS group as soon as complete.

Agenda Item 9.

DOSS Advice to WOMT and NMFS:

None.

Agenda Item 10.

Next Meeting: The next DOSS conference call will be on **10/22/19 at 9am.**