

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**  
**Conference call: 10/8/2019 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, Geir Aasen, Kyle Griffiths

**DWR:** Bryant Giorgi, Kevin Reece, Farida Islam, Mike Ford

**NMFS:** Jeff Stuart

**Reclamation:** Elissa Buttermore, Liz Kiteck

**SWRCB:** Chris Carr, Craig Williams

**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: [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)<sup>1</sup>:**

- 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 [triggered if either the first component (>95 cfs flow threshold) or second

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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](#). 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)] in effect beginning 10/1, was triggered this past week due to flows >95 cfs.

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
10/1/2019	139	-2.80%	131	9.17%
10/2/2019	135	-2.88%	123	-6.11%
10/3/2019	134	-0.74%	120	-2.44%
10/4/2019	132	-1.49%	118	-1.67%
10/5/2019	131	-0.76%	116	-1.69%
10/6/2019	130	-0.76%	114	-1.72%
10/7/2019	129	-0.77%	113	-0.88%

- 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: range of 6,258 cfs to 7,500 cfs (10/1 – 10/7)
  - Knights Landing water temperature: range of 58.4 to 59.7°F from 10/1 to 10/7
  - The second alert is in effect beginning 10/1, and has not been triggered.

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

- None of the criteria requiring DCC gate closure have been met since 10/1/19. Note that 3 winter-run sized juveniles were observed in the Sacramento Beach Seines on 9/30/19 with a SCI of 4.8 fish. RPA IV.1.2 does not start until 10/1 of each water year.

**Agenda Item 3.**

**Current Operations (10/8/19)**

SWP		CVP	
<b>Exports (cfs)</b>			
Clifton Court Forebay	1,000*	Jones Pumping Plant	1,800**
<b>Reservoir Releases (cfs)</b>			
Feather - Oroville	5,650***	American - Nimbus	2,700
		Sacramento - Keswick	6,500
		Stanislaus - Goodwin	400****
		Trinity - Lewiston	450*****
<b>Reservoir Storage (in TAF)</b>			
San Luis (SWP)	784	San Luis (CVP)	448
Oroville	2,150	Shasta	3,393
New Melones	2,035	Folsom	688
<b>Delta Operations</b>			
DCC	Open	Sacramento River at Freeport (cfs)	17,200

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

Outflow Index (cfs)	16,100	San Joaquin River at Vernalis (cfs)	2,058
E:I	14.8% (3-day avg.)	X2	73 km

\*SWP inflow to CCF scheduled to decrease to 500 cfs later this week.

\*\*CVP exports scheduled to decrease to 900 cfs (1 unit) on 10/9.

\*\*\*Oroville releases will decrease to 2,400 cfs by 10/15/19.

\*\*\*\*Goodwin releases will increase as part of the Fall pulse flows under the schedule in RPA Appendix 2E, will increase to 1,000 cfs by 10/11, followed by multiple pulses.

\*\*\*\*\*Lewiston releases to river are currently 450 cfs will decrease to 300 cfs by mid-month.

Factors controlling Delta exports:

- 10/2-10/8: Fall X2

Approximate OMRs as of 10/5/19:

	USGS gauges (cfs)	Index (cfs)
Daily	-4,600	-4,600
5-day	ND*	-6,500
14-day	ND*	-7,800

\*Issues with USGS OBI gage 10/1 to 10/5

Approximate OMRs as of 10/7/19:

	Index (cfs)
Daily	-2,300
5-day	-4,400
14-day	-6,800

Weather Forecast

Windy and dry for the next week, slightly cooler air temperatures, upper 70s.

**Agenda Item 4.**

**Fish Monitoring: Salvage**

Griffiths (CDFW) provided a salvage summary for the period of 9/30-10/6.

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

Operations:

Skinner Delta Fish Protective Facility continued to reduce fish counts during this past week due to heavy vegetation loads/ debris.

## DOSS Weekly Salvage Update

Reporting Period: September 30-October 6, 2019

Prepared by Kyle Griffiths on October 7, 2019 15:43

Preliminary Results -Subject to Revision

Criteria	30-Sep	1-Oct	2-Oct	3-Oct	4-Oct	5-Oct	6-Oct	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	10,241	12,547	12,067	9,910	5,941	3,912	3,711	<b>Average</b>	8,333
CVP daily export	8,537	8,511	6,868		6,935	6,945	3,650	<b>Average</b>	6,908
SWP reduced counts	100%	100%	100%	100%	71%	0%	0%		
CVP reduced counts	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 TFCF 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;

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	→	0	0
<b>Total</b>	<b>0</b>	<b>0</b>		<b>0</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

**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 <sup>A</sup>	Knights Landing RST <sup>B</sup>	Beach Seines <sup>C</sup>	Sacramento Trawl <sup>C</sup>	Chippis Is. Midwater Trawl <sup>C</sup>	Mossdale Kodiak Trawl <sup>C</sup>
Sample Date	10/1-10/7	9/27-10/7	9/29 – 10/7	9/30 -10/4	9/30,10/2, 10/4/19	9/30, 10/2, 10/4	9/30, 10/2, 10/4
FR Chinook	5 smolts						
SR Chinook							
WR Chinook	541 juveniles	16 juveniles	9 juveniles	3 juveniles			
LFR Chinook	28 juveniles 2 smolts						
Chinook (ad-clip)							
Steelhead (wild)							
Steelhead (ad-clip)							
Green Sturgeon							
Flows (avg. cfs)	N/A						
W. Temp. (avg. °F)	58.1						
Turbidity (avg. NTU)	6.39						

<sup>A</sup> Tisdale RST sampling period was from 9/27 at 10:15 am to 10/7 at 10:00 am.

<sup>B</sup> Knights Landing RST sampling period was from 9/29 at 10:45 am to 10/7 at 11:00 am.

<sup>C</sup> Data reported in the 9/29 to 10/5 DJFMP sampling summary.

CDFW reported that they will provide daily web updates of the Knights Landing RST catch at 9am and 9pm. CDFW will directly contact NMFS if any Knights Landing Catch Indices have been exceeded, similar to how USFWS will inform NMFS of Sacramento Catch Indices exceedances.

CDFW provided an email with updates to the current status of the green sturgeon acoustic monitoring just prior to the DOSS phone call. This information was not discussed on the call. The update is include here for completeness of the record.

**Juvenile Green Sturgeon Monitoring Summary for DOSS; October 8, 2019  
2018 Sampling Season Summary**

- Juvenile sturgeon tagging conducted in Sacramento River north/northwest of Sherman Lake (sampling site); main channel, 30-ft depth
- Forty-one green sturgeon tagged during the 2018 sampling period (7/17/2018 through 2/07/2019)
- Two were from brood year 2018 (Age 0+); 32 were brood year 2017 (Age 1); six were brood year 2016 (Age 2), and one was brood year 2015 (Age 3)
- Thirty-eight green sturgeon detected at sampling site after release
- Residency at sampling site ranged from one to 135 days after tagging
- Twenty-five green sturgeon tagged at sampling site detected at Benicia Bridge receiver array through 9/03/2019
- Initial detection dates at Benicia Bridge receiver array ranged from three to 129 days after tagging
- Ten green sturgeon tagged at sampling site detected at Antioch Bridge receiver array through 9/03/2019
- Initial detection dates at Antioch Bridge receiver array ranged from nine to 120 days after tagging
- Four green sturgeon tagged at sampling site detected at Rio Vista Bridge receiver array through 9/03/2019
- Initial detection dates at Rio Vista Bridge receiver array ranged from five to 313 days after tagging

**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
- Four juvenile green sturgeon tagged to date; one on 10/01/2019, three on 10/03/2019
- All juvenile green sturgeon tagged to date are 2018 brood year fish

**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.

<b>Location</b>	<b>Yet to Enter Delta (Upstream of Knights Landing)</b>	<b>In the Delta</b>	<b>Exited the Delta (Past Chippis Island)</b>
<i>Young-of-year (YOY) winter-run Chinook salmon</i>	99% (Last week: 99%)	1% (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 1.7 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. 27 BY19 winter-run have been captured by Knights Landing RSTs this season (first on 9/5/19). Three winter-run juvenile salmonids have been captured at Sacramento seine sites in the last week. No other salmonids have been captured at other locations in the Delta (Sacramento Trawl, Mossdale Trawl, and Chipps Island) since last season.

### 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, DOSS assumes that 100% are upstream of Knights Landing.

## **Agenda Item 7.**

### **Risk of Entrainment**

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

Overall risk of winter-run juvenile entrainment into the interior Delta is considered low as a percentage of population. However, some DOSS members expressed concern that with the high population numbers of winter-run juveniles 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 operations 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 is fairly high for this time of year without any precipitation. Sacramento inflow is about 17,000 cfs. Higher Sacramento River flows help to reduce the influence of tides at the DCC and Georgianna 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 very high compared to previous recent years, 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 (14%). These conditions should reduce the risk of entrainment at the export facilities over the next week.

## **Agenda Item 8.**

### **Other Topics**

Mike Ford reminded the DOSS team that the implementation of new long term operations following the signing of the ROD may change how the DCC gates are operated. However this is unlikely to happen prior to January 2020.

The Incidental Take Report has been issued by DWR last week.

**Agenda Item 9.**

**DOSS Advice to WOMT and NMFS:**

None.

**Agenda Item 10.**

**Next Meeting:** The next DOSS conference call will be on **10/15/19 at 9am.**