

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**  
**Conference call: 1/2/2018 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](http://www.westcoast.fisheries.noaa.gov/central_valley/water_operations/doss.html).

**CDFW:** Bob Fujimura, Ken Kundargi

**DWR:** Kevin Reece, Bryant Giorgi, Farida Islam, Siqing Liu, Tracy Pettit, Marianne Kirkland

**NMFS:** Jeff Stuart, Melanie Okoro, Kristin McCleery

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

**SWRCB:** Chris Kwan

**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](http://www.baydeltalive.com/djfmfp))
3. Current Operations
4. Smelt working group update
5. Fish Monitoring: RSTs/trawls/seines
6. Fish Monitoring: Salvage
7. Hatchery Releases
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 December/January:**

**Action IV.1.1 [Alerts that indicate the Delta Cross Channel (DCC) gate operations may be triggered soon] <sup>1</sup>:**

- 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.

---

<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
12/26/2017	147	-1%	144	0%
12/27/2017	146	-1%	142	-1%
12/28/2017	144	-1%	140	-1%
12/29/2017	143	-1%	139	-1%
12/30/2017	143	0%	138	-1%
12/31/2017	143	0%	138	0%
1/1/2018	142	-1%	138	0%

- 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)
12/26/2017	5313	*
12/27/2017	5387	46
12/28/2017	5378	46
12/29/2017	5297	*
12/30/2017	5246	*
12/31/2017	5291	*
1/1/2018	5322	*

\* Water temperatures were below 56°F at Wilkins Slough for days in which data were not available at the Knights Landing location. At the time of the DOSS call on 1/2/18, the last Knights Landing RST data update was on 12/28/17.

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

- Gates will remain closed per operations described in RPA Action IV.1.2 starting 12/1/17.

#### Action IV.2.3<sup>3</sup> (OMR Management):

- Implementation of this action in WY 2018 began on 1/1/18, and requires that Old and Middle River (OMR) flow be no more negative than -5,000 cfs.
- Since the action went into effect on 1/1/18, no salvage-based triggers that would require more positive OMR levels have been exceeded.

<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)

<sup>3</sup> For details, see pages 74-79 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)

**Action IV.3<sup>4</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 of listed salmonids has occurred and thus no salvage-based triggers that would require export reduction have been exceeded.

**Agenda Item 3.**

**Current Operations (1/2/18)**

SWP		CVP	
<b>Exports (cfs)</b>			
Clifton Court Forebay	3,800	Jones Pumping Plant	2,700 (3 units)
<b>Reservoir Releases (cfs)</b>			
Feather - Oroville	1,750	American - Nimbus	3,000*
		Sacramento - Keswick	4,600**
		Stanislaus - Goodwin	1,500***
		Trinity - Lewiston	300
<b>Reservoir Storage (in TAF)</b>			
San Luis (SWP)	731	San Luis (CVP)	911
Oroville	1,230	Shasta	3,203
New Melones	1,979	Folsom	541
<b>Delta Operations</b>			
DCC	Closed	Sacramento River at Freeport (cfs)	13,000
Outflow Index (cfs)	~7,600	San Joaquin River at Vernalis (cfs)	2,850
E:I	44% (14-day avg.)	X2	>81 km****

\* Nimbus releases will decrease to 2,500 cfs later today (1/2) and to 2,000 cfs on 1/3.

\*\* Keswick releases will decrease to 4,000 cfs by 1/5.

\*\*\* Goodwin releases will decrease to 600 cfs on 1/3.

\*\*\*\* Limit of X2 calculation.

**Approximate OMR as of 12/30/17:**

	USGS gauges (cfs)	Index (cfs)
Daily	-6,800	-6,100
14-day	-5,600	-5,800

**Factors controlling Delta exports:**

- 12/25-12/31: X2

<sup>4</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)

- 1/1-1/2: -5,000 cfs OMR limit per NMFS BiOp RPA Action IV.2.3

Weather Forecast

The weather in the Central Valley is expected to be dry today, with a storm bringing a small amount of precipitation on Wednesday/Thursday. Potential for some additional light precipitation over the weekend. Another storm is expected later next week (~1/11/18).

**Agenda Item 4.**

**Smelt Working Group Update**

The Smelt Working Group will meet today after the DOSS call.

**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	12/26-12/28	12/24-12/30	12/25-12/29	12/21-12/24, 12/26-12/28	12/21-12/24, 12/26-1/1	12/27-1/1	12/27-12/29
Chinook							
FR Chinook		1	2	2		2 juveniles 2 smolts	
SR Chinook			2			1 juvenile	
WR Chinook						3 juveniles	
LFR Chinook						4 smolts	
Ad-Clipped Chinook						488 LFR smolts	
Steelhead (ad-clip)						11	
Steelhead (wild)						5	
Green Sturgeon							
Flows (avg. cfs)				5250	5149	804	
W. Temp. (avg. °F)				46	48.6	50.1	
Turbidity (avg. NTU)				12.5	13.3	10.2	

<sup>A</sup> DJFMP data were not received before the DOSS call due to the New Year's holiday. DJFMP data was received after the call and is included for completeness of the record.

- <sup>B</sup> Knights Landing RST sampling period was from 12/21 at 10:15 am to 12/28 at 11:00 am. Traps were not fishing over the Monday holiday. No updates to the Knights Landing data since 12/28/17 were available prior to the DOSS call.
- <sup>C</sup> Tisdale RST sampling period was from 12/21 at 10:00 am to 1/1/18 at 10:30 am. Traps were not fishing over the Monday holiday (12/25/17) and were updated during the DOSS call on 01/02/18.
- <sup>D</sup> The GCID trap cone was lowered on 12/27 at 9:00 am and will continue until further notice. 1/1/18 data were added after the DOSS call and included 1 juvenile spring-run, 2 wild steelhead, and 85 late-fall-run smolts.

**Agenda Item 6.**

**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.

## DOSS Weekly Salvage Update

Reporting Period: December 25-December 31, 2017

Prepared by Bob Fujimura on January 1, 2018 17:00

Preliminary Results -Subject to Revision

Criteria	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	Trend	
<b>Loss Densities</b>									
Wild older juvenile CS	0	0	0	0	0	0	0	→	0
Wild steelhead	0	0	0	0	0	0	0	→	0
<b>Exports</b>									
SWP daily export	4,805	4,854	5,609	4,908	7,519	7,971	8,154	↗	6,260
CVP daily export	6,960	6,953	6,967	6,973	6,979	7,006	7,032	↘	6,981
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 fish 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 December 31, 2017

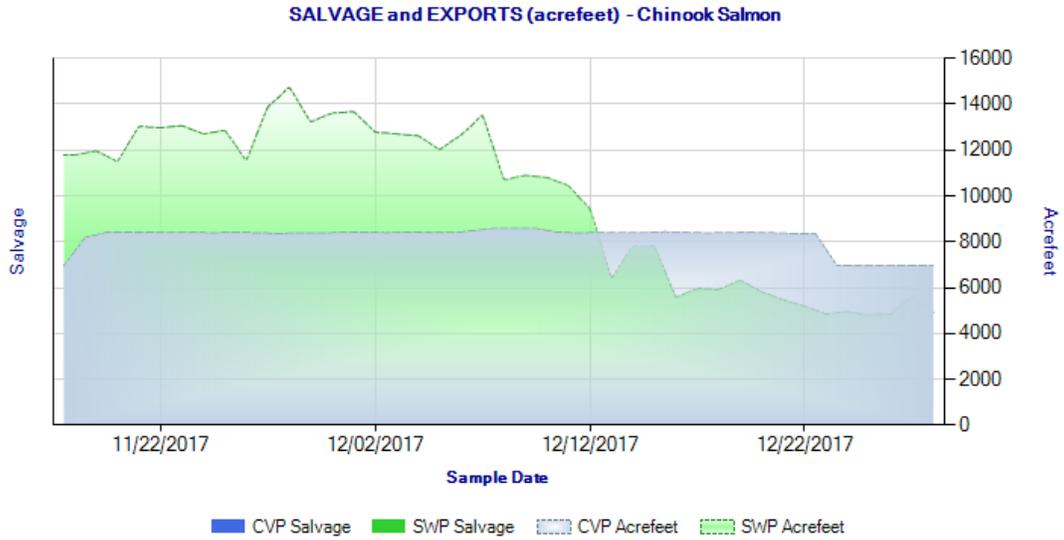


Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during November 18 through December 28, 2017. Graph obtained from the DFG salvage monitoring web page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

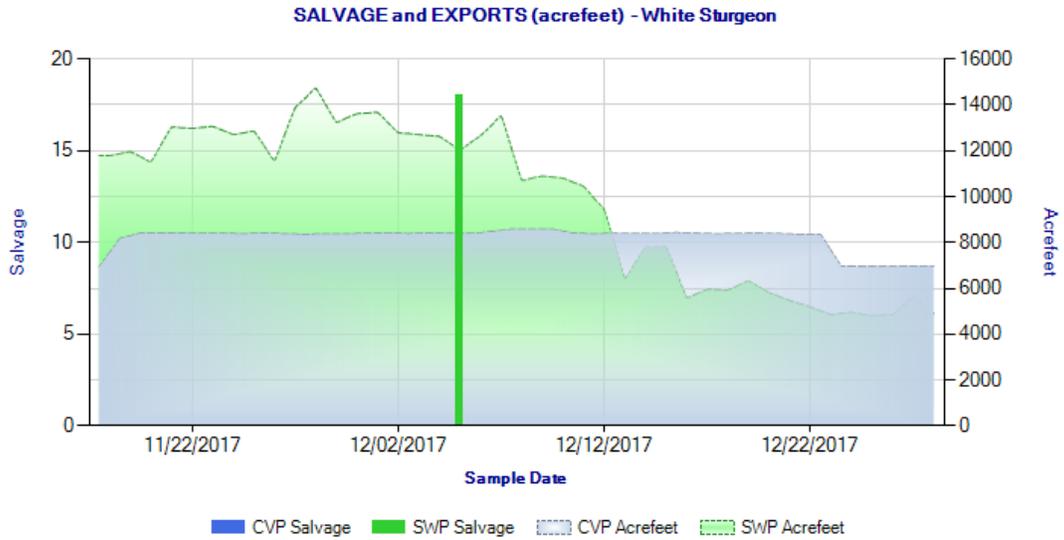


Figure 2. Daily salvage of White Sturgeon and water exports from the state and federal fish salvage facilities during November 18 through December 28, 2017. Graph obtained from the DFG salvage monitoring web page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

**Agenda Item 7.**

**Hatchery Releases**

The U.S. Fish and Wildlife Service provided the following hatchery release notifications:

On 12/15/17, a notification for the planned release of approximately 86,000 brood year 2017 steelhead from Coleman National Fish Hatchery (CNFH) on 12/20/17 at Bend Bridge on the Sacramento River. This group is 100% marked (with an adipose-fin clip only) and has an estimated average fork length of 195 mm. Bend Bridge is located at river mile 258 on the Sacramento River, or about 14 miles downstream of the confluence with Battle Creek.

On 12/28/17, a notification for the planned release of approximately 536,000 brood year 2017 steelhead from CNFH at Bend Bridge from 01/02-05/18. This group is 100% marked (with an adipose-fin clip only) and has an estimated average fork length of 195 mm.

**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.

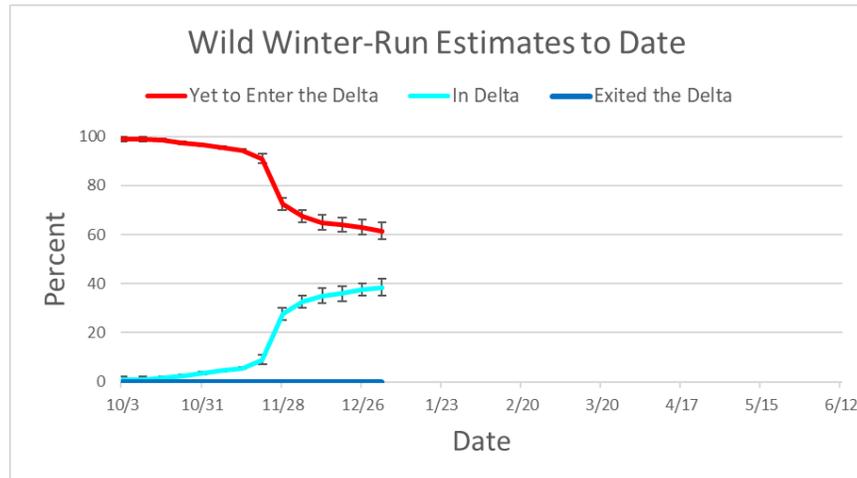
<b>Location</b>	<b>Yet to Enter Delta (Upstream of Knights Landing)</b>	<b>In the Delta</b>	<b>Exited the Delta (Past Chippis Island)</b>
<i>Wild young-of-year winter-run Chinook salmon</i>	57-65% (Last week: 59-66%)	35-43% (Last week: 34-41%)	0% (Last week: 0%)
<i>Wild young-of-year spring-run Chinook salmon</i>	81-88% (Last week: 83-89%)	12-19% (Last week: 11-17%)	0% (Last week: 0%)

**Rationale for changes in distribution**

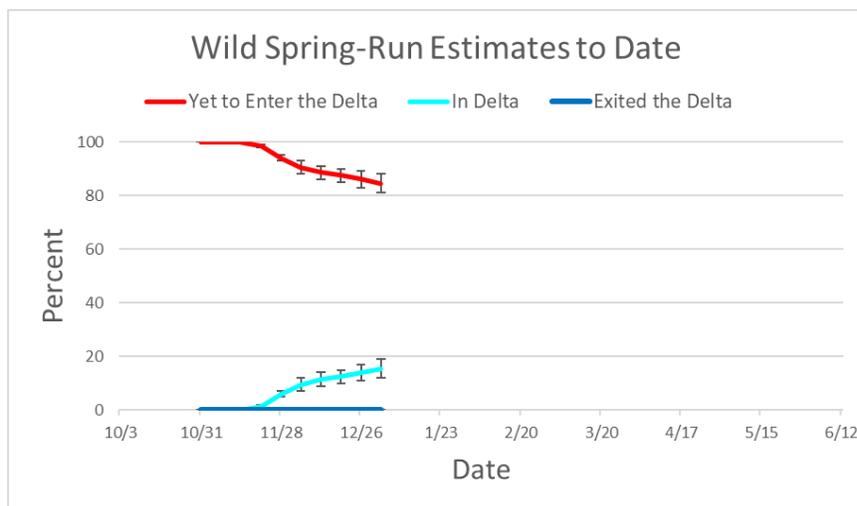
Wild winter-run Chinook: 3 juvenile winter-run-sized fish were observed at GCID this past week and at no other monitoring locations, however, DatCall data were not received at the time of the DOSS call. Since few fish were observed, the flows in regional rivers are low and slightly decreasing, water clarity in regional rivers has increased, and no fish have been observed at the salvage facilities, DOSS estimated that an additional 1-2% 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: 1 spring-run-sized fish was observed at GCID this past week and at no other monitoring locations, however, DatCall data were not received at the time of the DOSS call. Since few spring-run were observed, rivers flows are low or slightly decreasing, water clarity has increased, and no fish have been observed at salvage facilities, DOSS estimated that an additional 1-2% 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 35-43 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 and few have been observed at other monitoring locations in the Delta (Sacramento regional beach seines).

**Agenda Item 8.**

**DOSS Advice to WOMT and NMFS:**

For the week of 1/02/18 to 01/08/18, the Delta Operations for Salmonids and Sturgeon technical team (DOSS) advises the following:

- o NMFS and WOMT should continue to monitor the 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, per the conditions described in RPA Action IV.1.2.

- DOSS recommends that the minimum daily SWP/CVP older juvenile Chinook salmon loss density threshold triggers described in Action IV.2.3 of the Reasonable and Prudent Alternative (RPA) of the 2009 NMFS Biological Opinion on Long Term Operations of the Central Valley Project (CVP) and State Water Project (SWP) (NMFS BiOp) be used for the interim period between January 1, 2018, and the issuance of the NMFS Juvenile Production Estimate (JPE) letter to the Bureau of Reclamation (see last week's formal advice to WOMT and Reclamation).
- DOSS recommends that both NMFS and Reclamation monitor river flows and fish monitoring information in response to the forecasted weather systems that are moving into northern California this Wednesday and Thursday and again over the weekend in light of the slight potential for WIIN Act related changes to water operations.

**Agenda Item 9.**

**Next Meeting:** The next DOSS conference call will be on **1/9/2018 at 9 am.**