

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**  
**Conference call: 11/18/2014 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](http://www.westcoast.fisheries.noaa.gov/central_valley/water_operations/doss.html).

**DWR:** Aaron Miller, Farida Islam, Mike Ford, Rhiannon Mulligan

**Reclamation:** Josh Israel, Michele Palmer, Russ Yaworsky

**NMFS:** Barb Byrne, Jeff Stuart, Meiling Roddam

**USFWS:** Craig Anderson

**CDFW:** Duane Linander, Bob Fujimura, Colin Purdy

**SWRCB:** Matt Holland

**Agenda Items**

1. Agenda review and introductions
2. Fish Monitoring
3. Current Operations
4. Smelt Working Group
5. RPA Implementation review
6. Touch base re: "Fish Facility Sampling" assignment
7. DOSS Advice

**Agenda Item 2.**

**Fish Monitoring:** The following table presents fish monitoring data. Unless otherwise noted, reported sizes are fork length. See also:

<http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.

Location	Chippis Is. Midwater Trawl	Sacramento Trawls	Mossdale Kodiak Trawl	GCID RST	Knights Landing RST*	Tisdale RST*	Beach Seines
Sample Date	11/10-11/14	11/10- 11/14	11/10-11/14	11/11-11/17	11/10-11/16	11/11-11/16	11/10-11/14
Total Catch	1 (81mm)	0	0	62 (44mm-144mm)	3 (54mm-73mm)	3 (46mm-82mm)	2 (53mm-78mm)
FR Chinook				1			
WR Chinook				40	3	3	2
SR Chinook				1			
LFR Chinook				20			
Ad-Clipped Chinook							
Delta Smelt							
Splittail							

<b>Longfin Smelt</b>	1						
<b>Steelhead (ad-clip)</b>							
<b>Steelhead (wild)</b>							
<b>Green Sturgeon</b>							
<b>W. Temp. (avg. °F)</b>		59	61	57	59	58	
<b>Flows (avg. cfs)</b>				865	5,047		
<b>Turbidity (avg. NTU)</b>		7.2	10.7	5.7	8	10.3	

\* For both KL and Tisdale, for sample date 11/10-11/11, the “half cone” sampling method was used in which one of the two perforated walls of the RST cone was removed and entry into the live well from the back of the cone was partially blocked. Rotation speed was normal. On 11/12, modified sampling ended, and as of 1630 hours both traps were fishing at 100% catch. For sample dates 11/13-11/16 traps were fishing normally at 100% (no modification).

**Fish Salvage<sup>1</sup>:** On 11/16/14, 4 wild steelhead were salvaged at the SWP, for a loss density of 2.6 fish/TAF.

### DOSS Estimates of Fish Distribution

DOSS estimates of the current distribution of listed Chinook, as a percentage of the population, are based on recent monitoring data and historical migration timing patterns. No spikes in fish catch, flow, or turbidity were observed over the past week, so the estimated distribution of winter-run is the same as that estimated last week.

Of the 75% of winter-run Chinook estimated upstream of the Delta, DOSS further estimated that approximately 1/3 (25% overall) of winter run Chinook salmon are currently distributed above Red Bluff Diversion Dam (RBDD), and approximately 2/3 (50% overall) of winter-run Chinook salmon are between RBDD and Knights Landing. This estimated distribution is based in part on an assumption that the low RBDD passage is indicative of high mortality upstream of RBDD.

<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>	~75% (last week: same)	~25% (last week: same)	0% (last week: same)
<i>Yearling spring-run Chinook salmon</i>	Some fraction may have moved during the turbidity event in late October.* (last week: same)		

\* No yearling spring-run Chinook salmon have been observed in monitoring, but few are usually observed because of their relatively large size and strong swimming (and associated gear avoidance) abilities.

<sup>1</sup>Salvage data reported in this section represent the total estimated and expanded salvage based on the number of fish observed at the fish collection facility. For example, if one steelhead is observed in the typical ½-hour sampling period within a 2-hour operation period, the single steelhead is expanded to a salvage of four.

### Agenda Item 3.

#### **Current Operations (11/18/2014)**

SWP		CVP	
<b>Exports (cfs)</b>			
Clifton Court Forebay	2,000*	Jones Pumping Plant	800**
<b>Reservoir Releases (cfs)</b>			
Feather - Oroville	950	American - Nimbus	1,050
		Sacramento - Keswick	4,300***
		Stanislaus - Goodwin	200
<b>Reservoir Storage (in TAF)</b>			
San Luis (SWP)	233	San Luis (CVP)	191
Oroville	904	Shasta	1,054
New Melones	504	Folsom	283
<b>Delta Operations</b>			
DCC	Open	Sacramento River at Freeport (cfs)	~7,400
Outflow Index (cfs)	~5,000	San Joaquin River at Vernalis (cfs)	~730

\*May be increased to 2,500 cfs

\*\*Will be increased to ~1,200 cfs on 11/18 to make up for a shortage caused by an outage last Saturday, then back to 800 cfs.

\*\*\*Will be reduced by 200 cfs to 4,100 cfs on 11/19.

Reclamation reported that the modified D-1641 Vernalis pulse flow requiring a 31-day pulse flow of at least 800 cfs is expected to be met. The projected 31-day average for the expected official pulse window of 10/22/14-11/21/14 is ~990 cfs.

Water quality management, particularly salinity, is currently controlling export operations.

### Agenda Item 4.

#### ***Smelt Working Group***

The Smelt Working Group and Delta Conditions Team will have their first meetings of WY 2015 next Monday (11/24/14).

### Agenda Item 5.

#### ***Delta RPA Actions in effect during November:***

**Action IV.1.1 (Alerts that indicate the Delta Cross Channel (DCC) gate operations may be triggered soon):<sup>2</sup>**

- Recent (11/11/14-11/17/14) conditions for:
  - Wilkins Slough flow: 4,977-5,153 cfs (range of mean daily flow at WLK CDEC station)

<sup>2</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)

- Knights Landing temperature: 57-60°F (range of temperatures reported at the rotary screw traps during trap checks)
- Mill Creek and Deer Creek flows [highlighted cells exceed the first component (95 cfs flow threshold) or second component (>50% flow change) in first alert]:

Date	Mill Creek (MLM)		Deer Creek (DCV)	
	mean daily flow	% increase in mean daily flow	mean daily flow	% increase in mean daily flow
11/11/2014	93	0.0%	76	0.3%
11/12/2014	93	0.0%	77	0.9%
11/13/2014	102	9.7%	84	9.1%
11/14/2014	113	10.8%	92	9.5%
11/15/2014	101	-10.6%	83	-9.8%
11/16/2014	96	-5.0%	80	-3.6%
11/17/2014	95	-1.0%	77	-3.8%

- The first component of first alert has been triggered based on Mill Creek flows >95 cfs from 11/13/14-11/16/14.
- The second alert (based on Wilkins Slough flows and Knights Landing temperatures) was not triggered over the past week.

**Action IV.1.2<sup>3</sup> (DCC gate operations):**

- No catch triggers that would require DCC gate closure have been exceeded over the past week.
- DCC gates are open.

**Action IV.3<sup>4</sup> (Reduce likelihood of entrainment or salvage at the export facilities, including alert that indicates that export operations may be need be altered)**

- Third alert has not been triggered.
- No salvage-based triggers that would require export reduction have been exceeded over the past week.

**Agenda Item 6.**

***Touch base re: "Fish Facility Sampling" assignment***

- Details on this assignment are included in the DOSS notes from 11/12/14.

<sup>3</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>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)

- Byrne (NMFS) confirmed that the objective for the modification in fish facility sampling is to increase the confidence in daily loss estimate. This potential improvement to the measurement of loss is not expected to affect loss itself.
- It was noted that the confidence in daily loss estimate varies depending on the seasonal period and associated low, medium, or higher levels of salvage.
- Next steps:
  - Byrne (NMFS) will summarize some feedback received from Tracy Fish Collection Facility staff and share with DOSS later this week. Byrne will have a draft of feedback about the assignment for DOSS to review next week.

During the course of discussion about options for improving the estimate of loss density, some ideas for ways to reduce loss were also shared. Because those suggestions related to a much broader topic of discussion not specifically related to implementation of current RPA actions in the 2009 NMFS BiOp, a suggestion was made to convene a half- or full-day meeting to have a more in-depth discussion on the topic of managing fish facility operations to reduce loss of listed species. Such a meeting would not be a DOSS effort, per se, though DOSS members would be invited to participate.

### **Agenda Item 7.**

#### ***DOSS Advice***

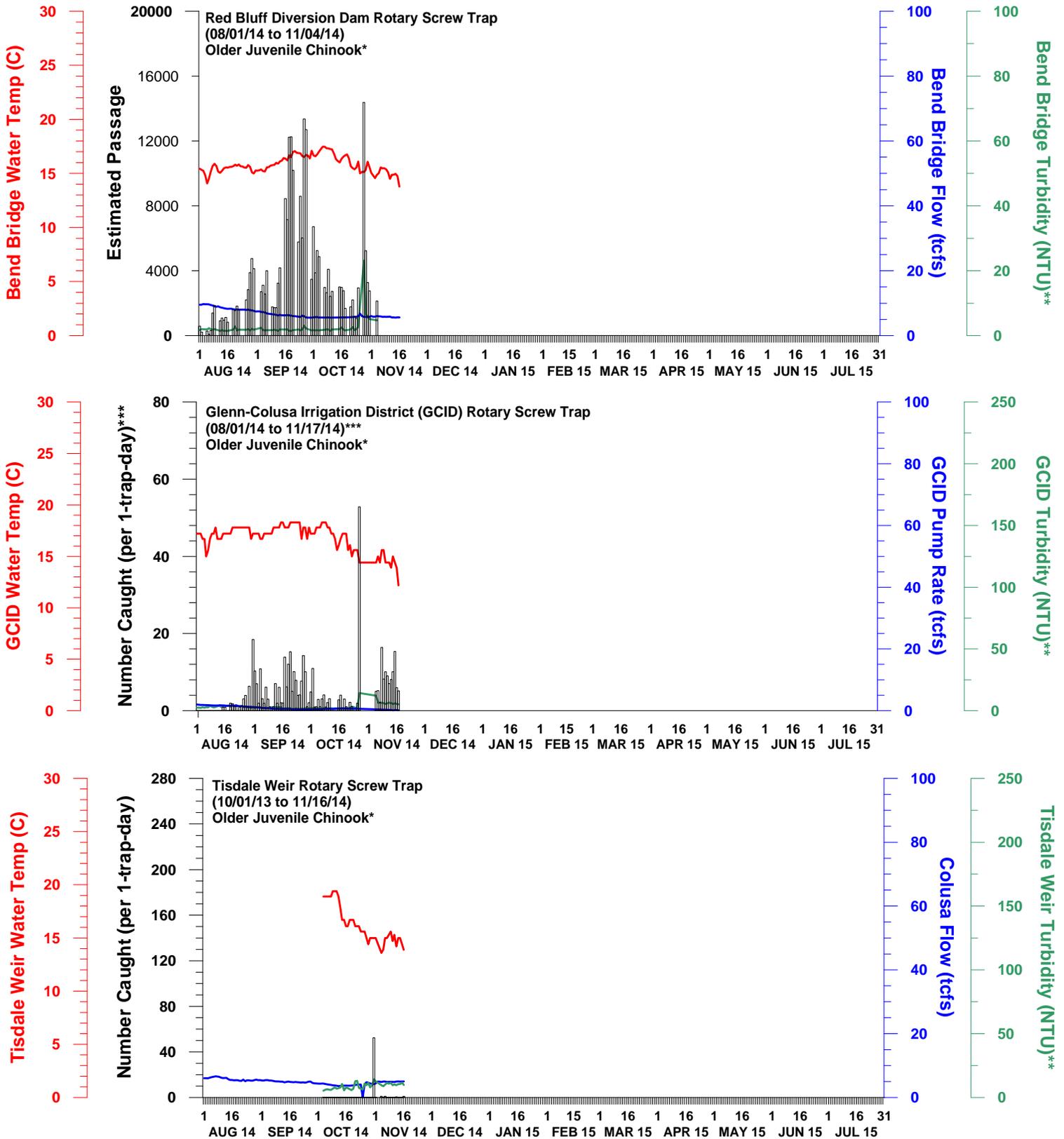
**DOSS Advice to WOMT and NMFS:** None.

**Next Meeting:** The next DOSS conference call will be on 11/25/14 at 9am.

The following graphs were provided by DWR for Chinook salmon and steelhead observed at monitoring locations in the Sacramento and San Joaquin rivers and Delta. For additional graphs, please visit the DWR website at:

<http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.

# NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 17 NOVEMBER 2014

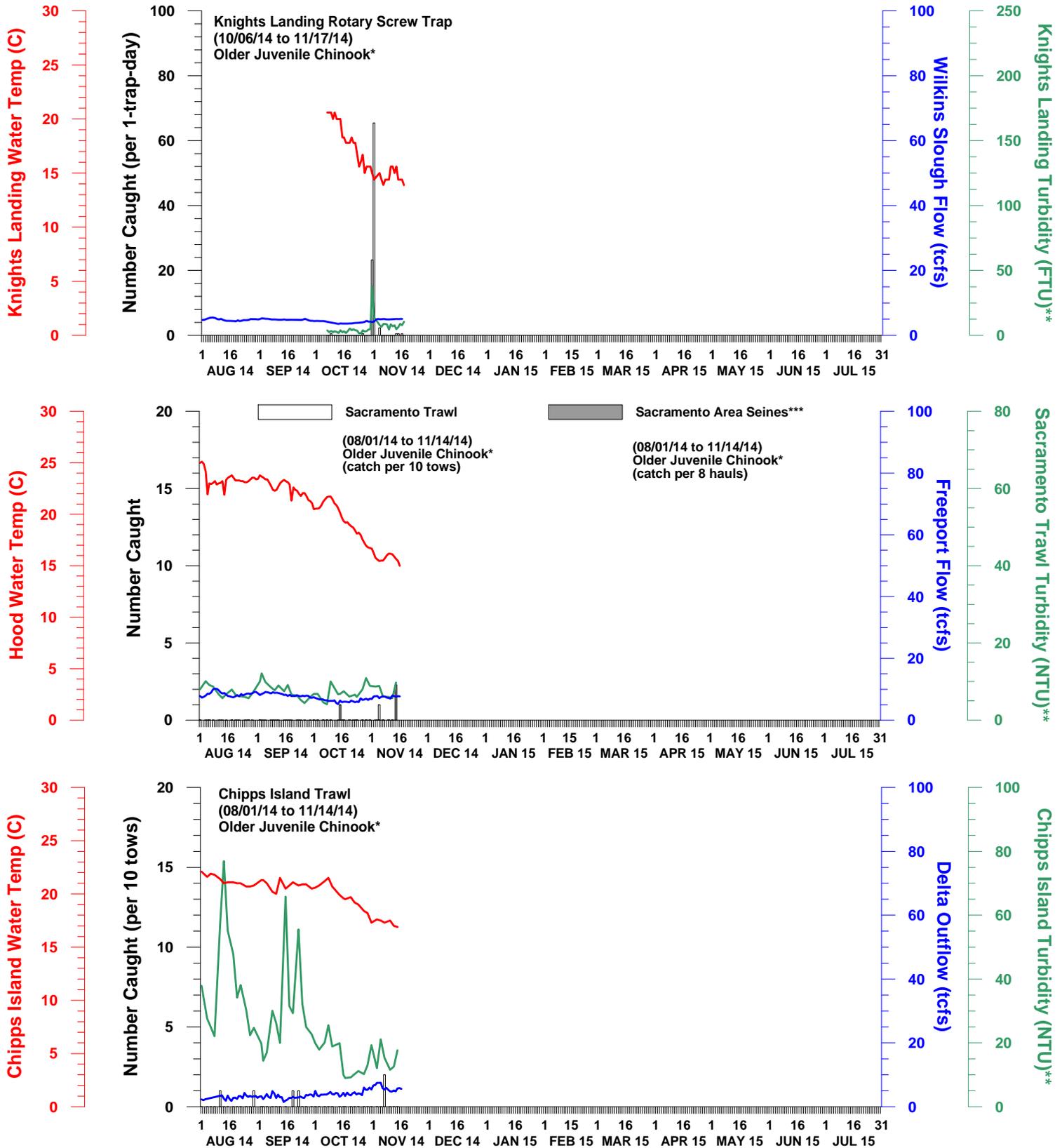
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.

\*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for which a race is assigned on a given sampling date.

\*\*Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured unless data are missing for more than five days.

\*\*\*Trap was pulled on 10/28/14 due to extremely turbid conditions, heavy debris, and high number of listed winter run Chinook and has resumed since 11/5/14.

# NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE LOWER SACRAMENTO RIVER AND CHIPPS ISLAND



DWR-DES 17 NOVEMBER 2014

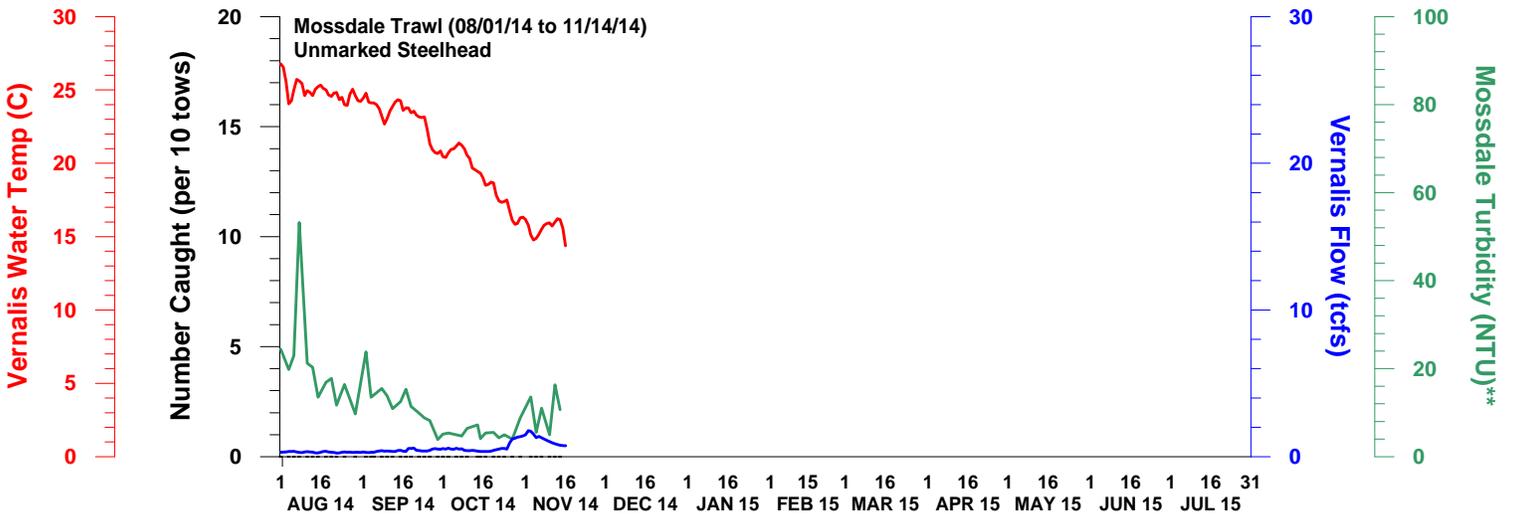
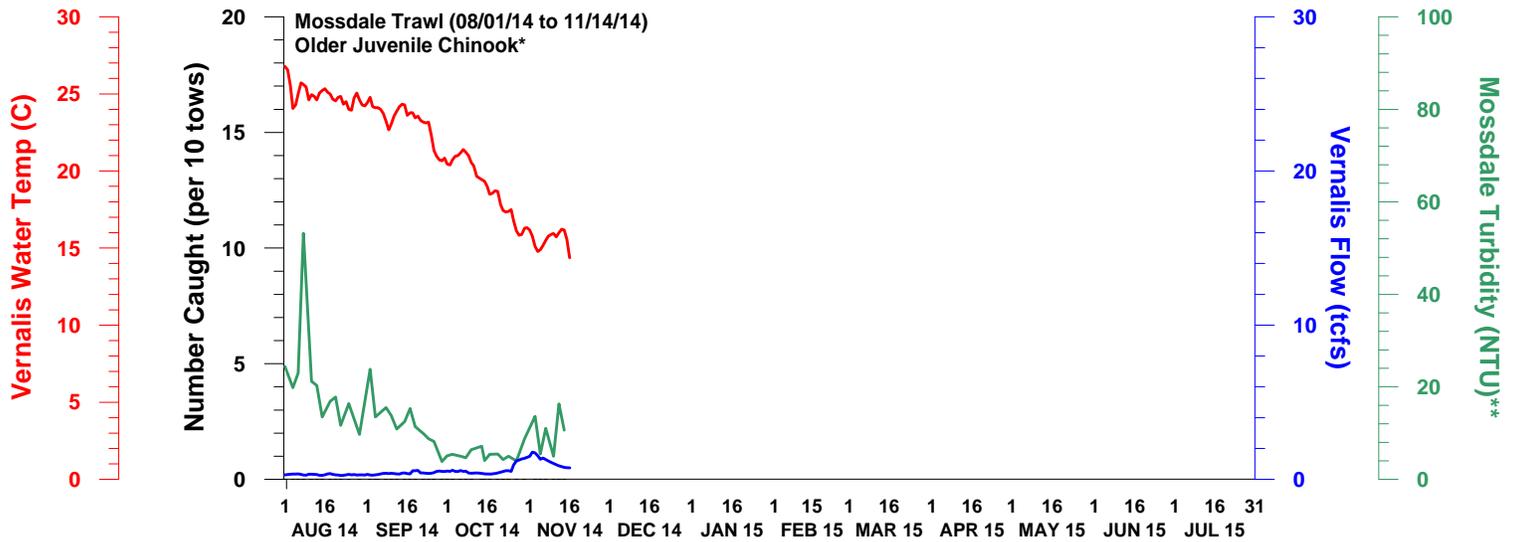
Preliminary data from DFW, FWS, and CDEC; subject to revision.

\*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher Model) for which a race is assigned on a given sampling date.

\*\*Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured unless data are missing for more than five days. Knights Landing turbidity measured in FTU, which should be roughly equivalent to NTU.

\*\*\*Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the same day.

# NUMBER OF UNMARKED OLDER JUVENILE CHINOOK AND STEELHEAD MEASURED IN THE SAN JOAQUIN RIVER

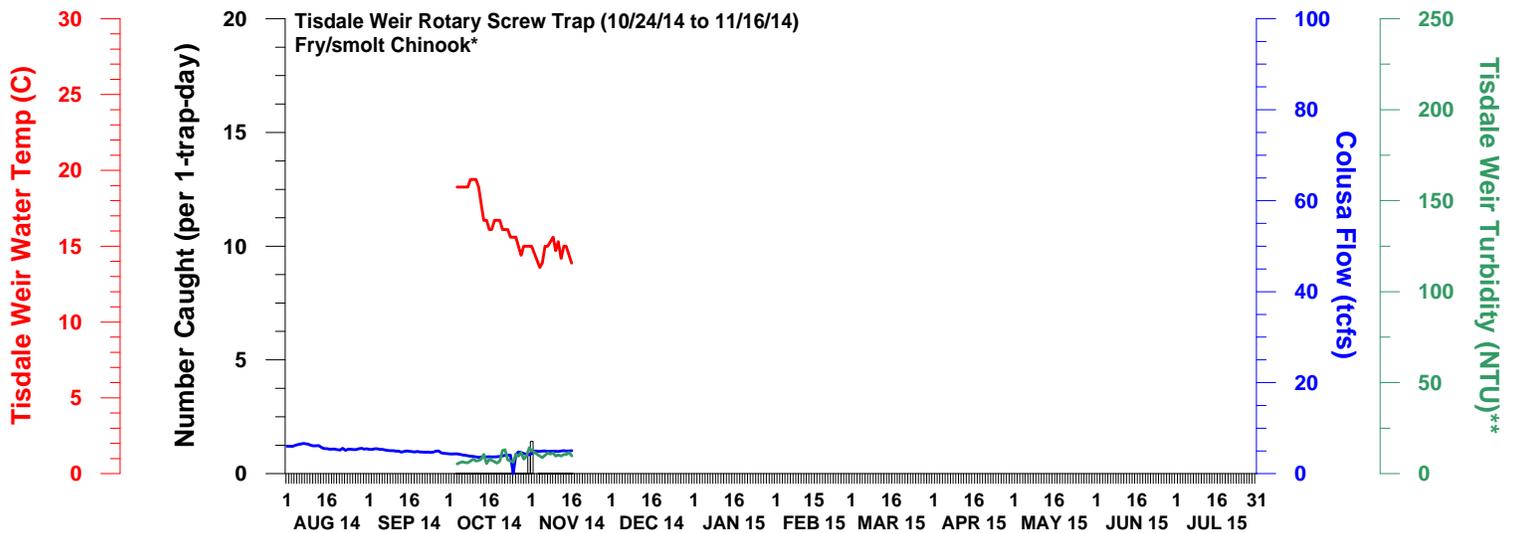
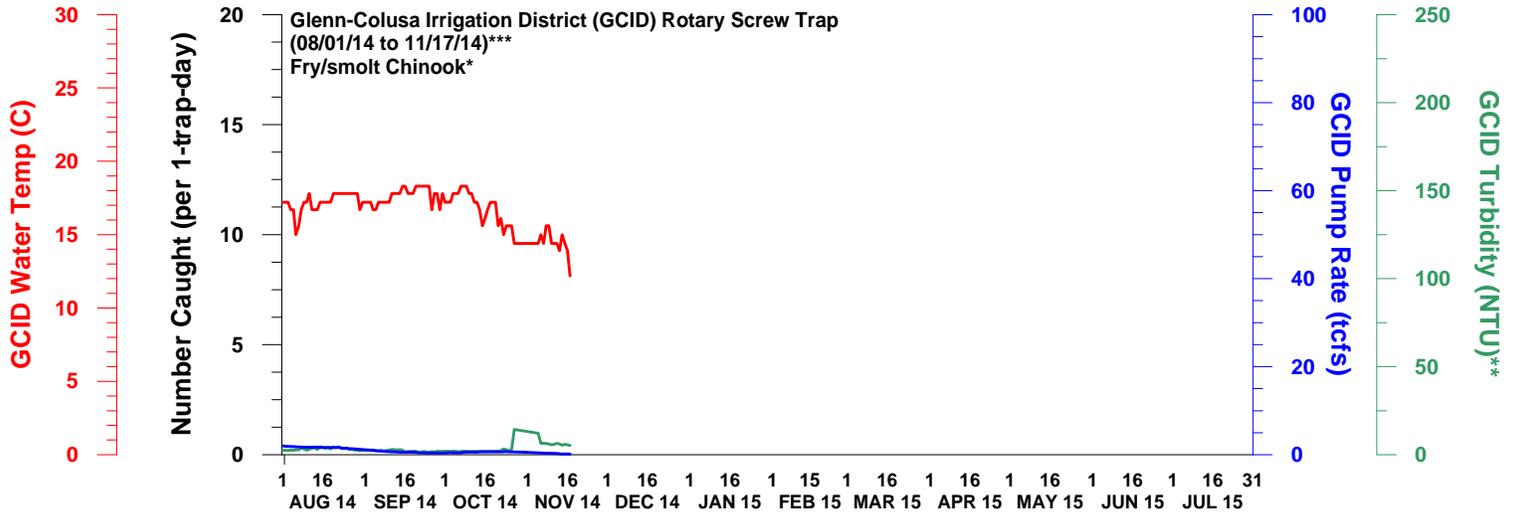
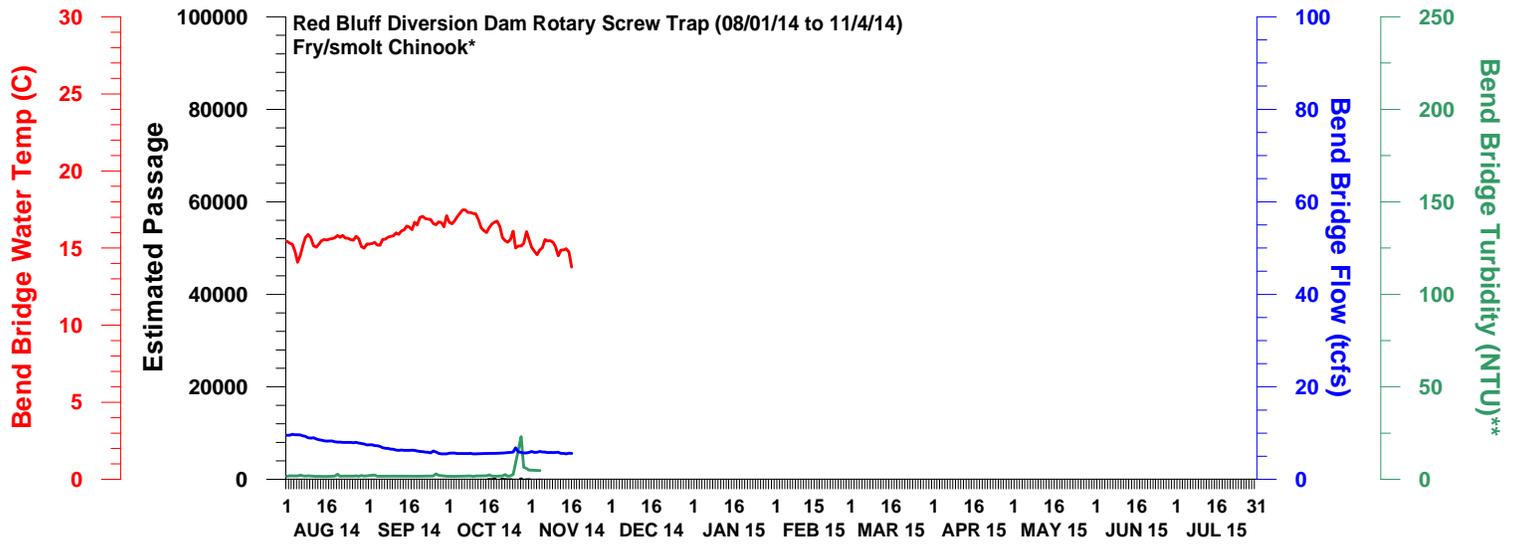


DWR-DES 17 NOVEMBER 2014  
Preliminary data from FWS and CDEC; subject to revision.

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# NUMBER OF UNMARKED FRY/SMOLT CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 17 NOVEMBER 2014

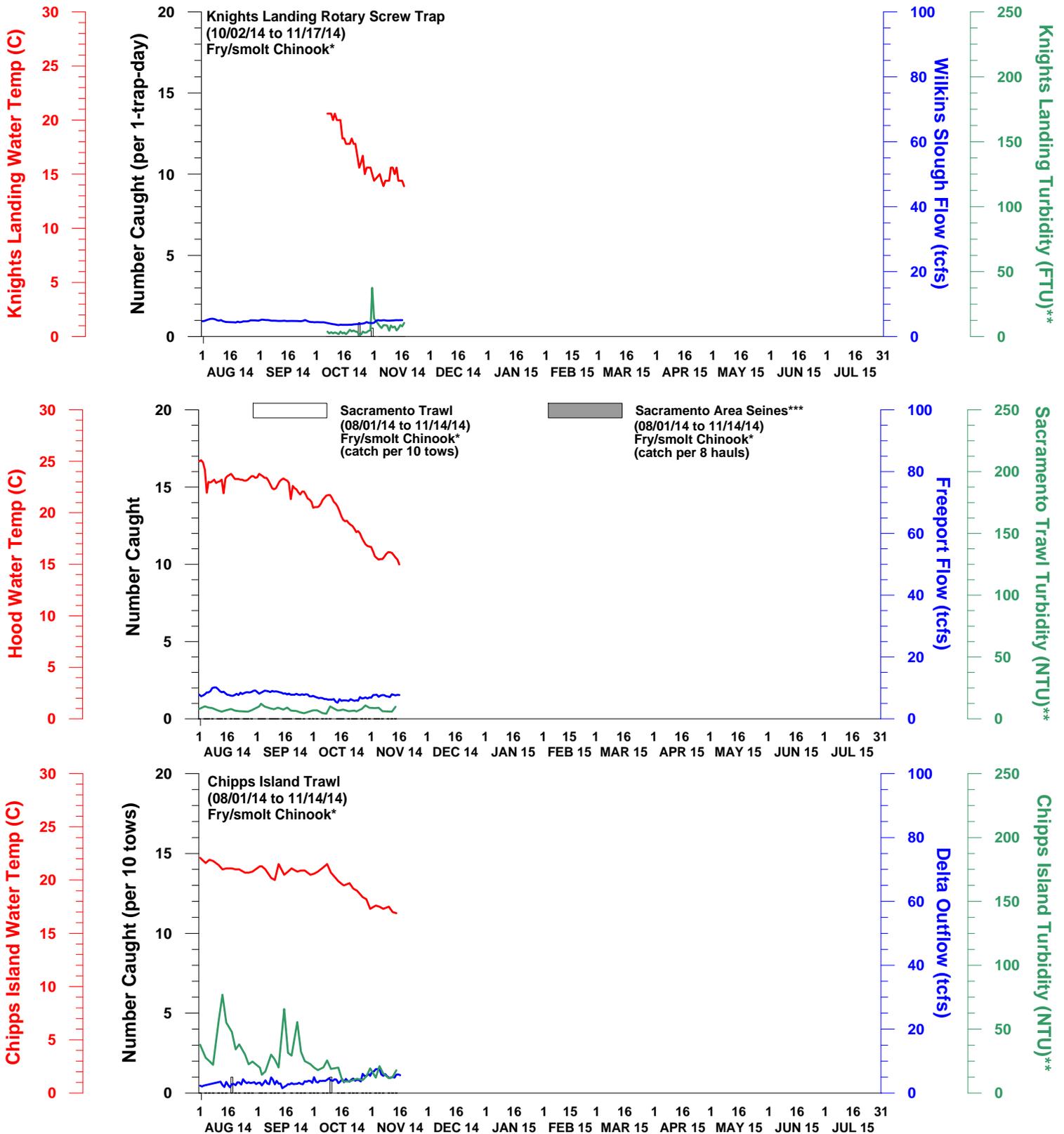
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.

\*Fry/smolt Chinook defined as all Chinook less than the minimum winter run length-at-date criteria (Frank Fisher model).

\*\*Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured unless data are missing for more than five days.

\*\*\*Trap was pulled on 10/28/14 due to extremely turbid conditions, heavy debris, and high number of listed winter run Chinook and has resumed since 11/5/14.

# NUMBER OF UNMARKED FRY/SMOLT CHINOOK MEASURED IN THE LOWER SACRAMENTO RIVER AND CHIPPS ISLAND



DWR-DES 17 NOVEMBER 2014

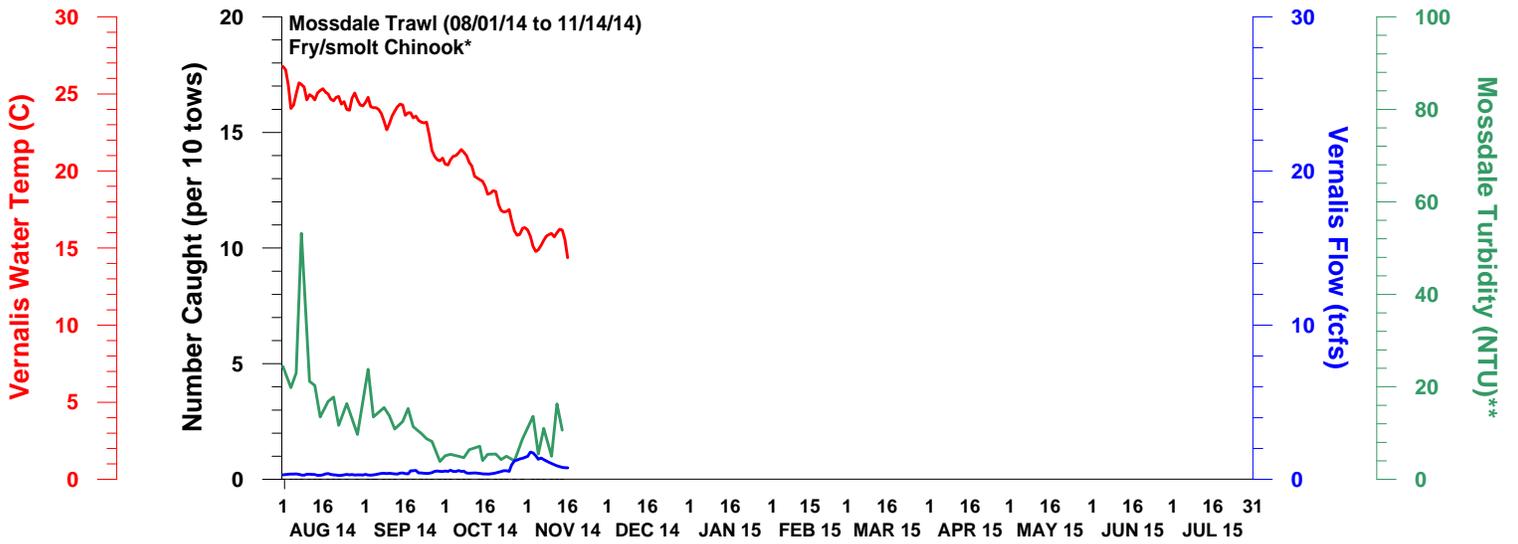
Preliminary data from DFW, FWS, and CDEC; subject to revision.

\*Fry/smolt Chinook defined as all Chinook less than the minimum winter run length-at-date criteria (Frank Fisher model).

\*\*Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured unless data are missing for more than five days. Knights Landing turbidity measured in FTU, which should be roughly equivalent to NTU.

\*\*\*Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the same day.

# NUMBER OF UNMARKED FRY/SMOLT CHINOOK MEASURED IN THE SAN JOAQUIN RIVER



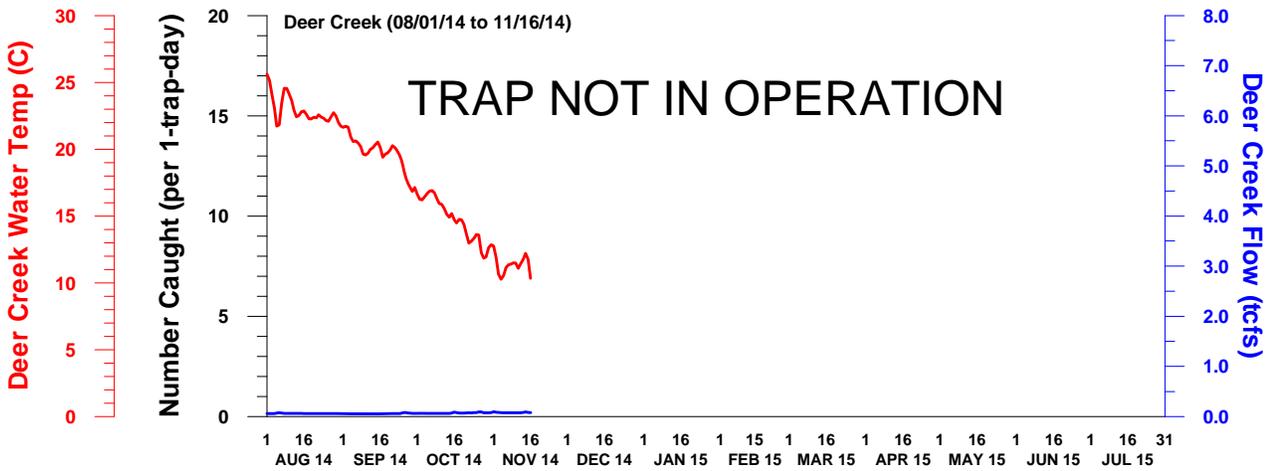
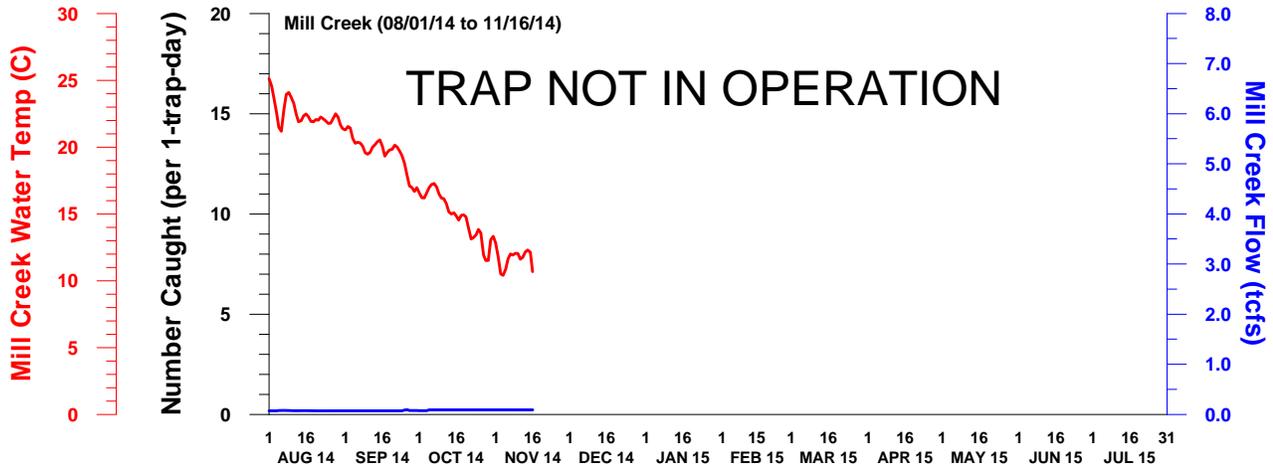
DWR-DES 17 NOVEMBER 2014

Preliminary data from FWS and CDEC; subject to revision.

\*Fry/smolt Chinook defined as all Chinook less than the minimum winter run length-at-date criteria (Frank Fisher model).

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# WATER TEMPERATURE AND FLOW MEASURED AT MILL AND DEER CREEK



**Data Acquisition:**

All data are preliminary and subject to revision.

The estimated passage data for the Red Bluff Diversion Dam were obtained directly from the US Fish and Wildlife Service (FWS), Red Bluff Fish and Wildlife Office ([http://www.fws.gov/redbluff/rbdd\\_biweekly.aspx](http://www.fws.gov/redbluff/rbdd_biweekly.aspx)).

The catch data for Glenn-Colusa Irrigation District (GCID) were obtained directly from GCID.

The catch data for Tisdale Weir and Knights Landing were obtained directly from the California Department of Fish and Wildlife (DFW)<sup>1</sup>, North Central Region.

Sacramento River Trawl, Sacramento Area Beach Seine, and Chipps Island Trawl data were obtained directly from FWS, Stockton Fish and Wildlife Office (<http://www.fws.gov/stockton/ifmp/>).

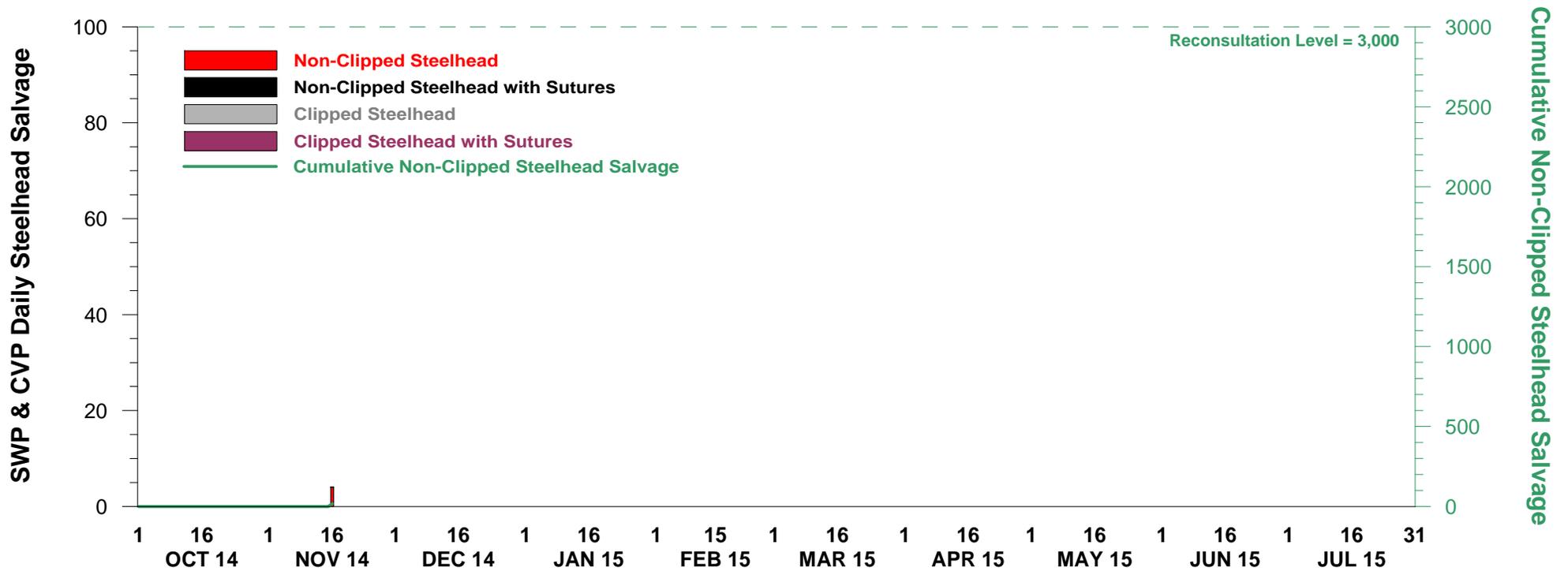
Mossdale Trawl data were either obtained directly from FWS, Stockton Fish and Wildlife Office or from DFW (Region 4).

The hydrology data were either downloaded from the California Data Exchange Center (CDEC) (<http://cdec.water.ca.gov>) or obtained directly from the California Department of Water Resources, Operations Control Office.

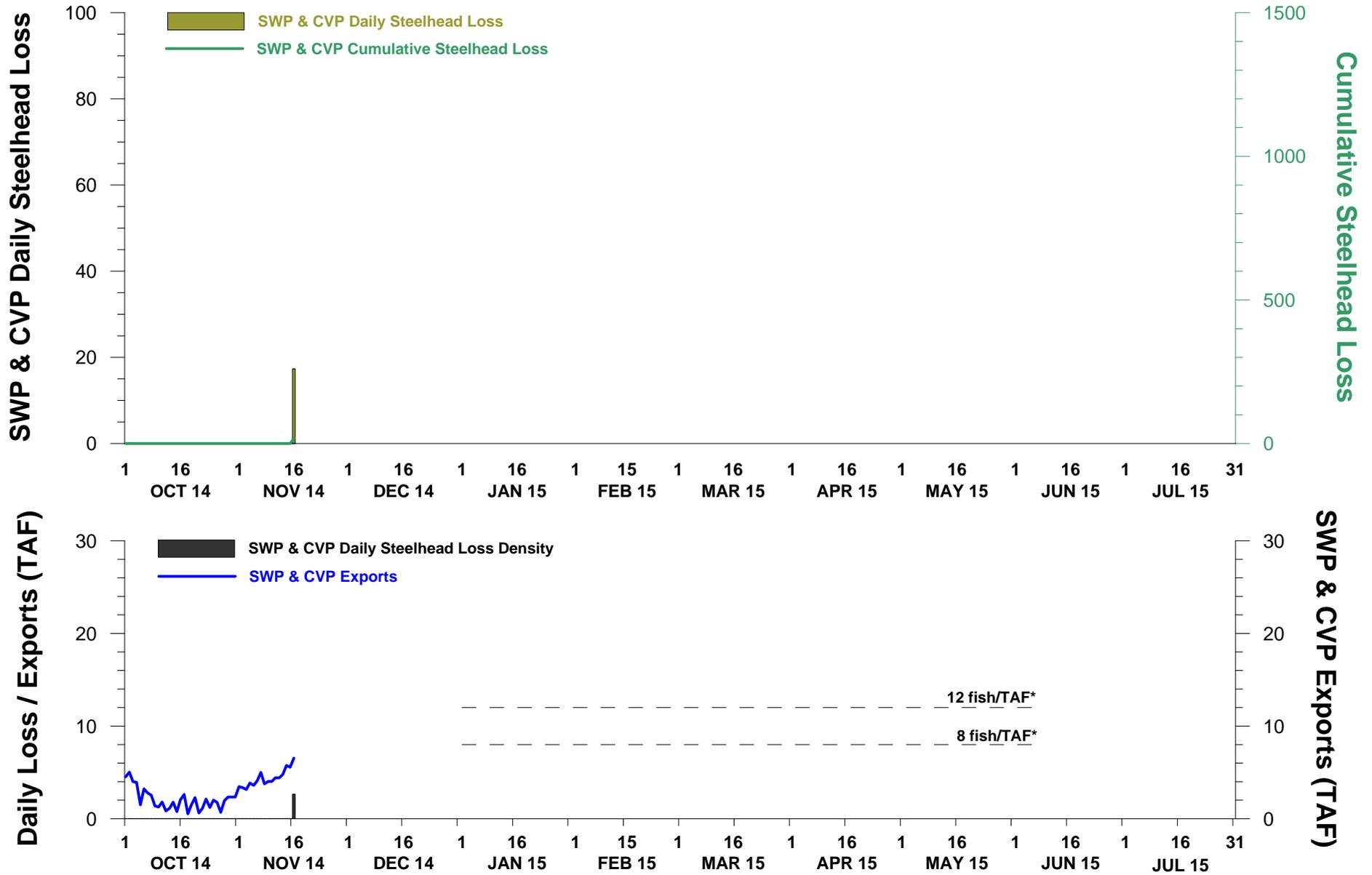
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<sup>1</sup> Formerly known as the California Department of Fish and Game (DFG).

# STEELHEAD SALVAGE AT THE DELTA FISH FACILITIES 01 OCT 2014 THROUGH 16 NOVEMBER 2014



# NON-CLIPPED STEELHEAD LOSS AT THE DELTA FISH FACILITIES 01 OCT 2014 THROUGH 16 NOVEMBER 2014



DWR-DES 17 NOVEMBER 2014

Preliminary data from DFW; subject to revision.

\*Used to roughly estimate whether the daily loss is greater than 8 fish/TAF multiplied by the volume exported in TAF or 12 fish/TAF multiplied by the volume exported in TAF.