

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**  
**Conference call: 12/09/2014 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:** Farida Islam, Mike Ford, Rhiannon Mulligan, Kevin Reece, Bryant Giorgi, Dan Yamanaka

**Reclamation:** Jason Hassrick, Michele Palmer, Russ Yaworsky, Josh Israel, Peggy Manza

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

**USFWS:** Craig Anderson

**CDFW:** Duane Linander, Bob Fujimura, Ken Kundargi, Jason Roberts

**SWRCB:** Matt Holland

**Agenda Items**

1. Agenda review and introductions
2. Fish Monitoring/Fish distributions
3. Current Operations
4. Smelt Working Group
5. RPA Implementation review
6. Draft DOSS feedback on salvage assignment
7. DOSS Advice

**Agenda Item 2.**

**Red Bluff Diversion Dam (RBDD)**

USFWS biweekly report (November 19, 2014- December 2, 2014) for preliminary estimates of passage by brood-year and run for unmarked juvenile Chinook salmon captured by rotary screw traps at RBDD included:

- Winter run Chinook salmon biweekly total: 26,144
- Winter run Chinook salmon brood year 2014 total: 381,019

**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	Prisoners Pt	JerseyPt.	Sacramento Trawls	Mossdale Kodiak Trawl	GCID RST <sup>A</sup>	Knights Landing RST <sup>B</sup>	Tisdale RST <sup>C</sup>	Beach Seines <sup>D</sup>
Sample Date	12/1- 12/5	12/2,12/3, 12/6	12/1, 12/3, 12/5	12/1-12/5	12/1- 12/5	12/2- 12/3	12/2- 12/8	12/2- 12/7	12/1- 12/8
Total Catch	2	0	4 (54mm-55mm)	6	0	374 (60mm - 198mm)	79 (31mm-134mm)	22 (33mm - 109mm)	85
FR Chinook							5	1	5
WR Chinook				2 (52mm-78mm)		13	32	10	19
SR Chinook				3 (36mm)			18	3	30
LFR Chinook				1 (124mm)		8	6	2	9
Ad-Clipped Chinook						335 (LFR)	18	6	16
Delta Smelt			4						5 (49mm-58mm)
Splittail									
Longfin Smelt	2 (71mm-105mm)								
Steelhead (ad-clip)									
Steelhead (wild)									1
Green Sturgeon									
W. Temp. (avg. °F)	57			55	55	55	56	54	
Flows (avg. cfs)						1,003	11,077	12,939	
Turbidity (avg. NTU)	19.2			29.2	8.7	7.2	23.5	67.5	

<sup>A</sup> Trap cones lifted the morning of 12/3e to forecasted increase in flow and subsequent elevation change, so no catch available since then.

<sup>B</sup> From 12/1 to the morning of 12/5, and since the afternoon of 12/6, both RSTs were sampling at half efficiency.

Outer cone walls were fully replaced on the afternoon of 12/5, and were deployed on the morning of 12/6 for half a day with both RSTs sampling at full efficiency.

<sup>C</sup> From 12/2-12/7 both RSTs were modified to 50% catch. On 12/2 there were some issues with debris. River Left trap only fished during the day on 12/3, and daytime-only sampling began at both traps on 12/4.

<sup>D</sup> Sampling data from 12/8 is provisional.

**Fish Salvage<sup>1</sup>:** From 12/1 – 12/8, no listed species have been salvaged at either the CVP or SWP fish collection facilities.

**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. A strong signal in fish catch, flow, and turbidity were observed over the past week, and DOSS estimated that up to 25% more of the winter-run Chinook salmon juveniles may have entered the Delta past Knights Landing. DOSS also expects the recent and upcoming rain events to further cue salmonid emigration over the next week.

Historical (2002-2012) RBDD passage-to-date indicates that as of 12/2, an average of 94% of winter-run Chinook salmon had passed RBDD. Also, Jason Roberts reports that stranding surveys after Keswick reductions have found almost *no* winter-run in the usual stranding pools. Based on this information, DOSS thinks most of the winter-run upstream of Knights Landing have passed RBDD.

A preliminary estimate of egg-to-fry survival for brood year 2014, based on escapement estimates from the carcass surveys and observed passage at RBDD, is ~8-10%, compared to previous estimates of 25-27%. This low survival was likely caused by the loss of temperature control (i.e. water temperatures exceeded the 56°F most suitable for egg/alevin development) in mid-August, before many winter-run Chinook salmon fry emerged from their redds. DOSS thinks that the current population of winter-run Chinook juveniles consists primarily of the offspring of early-spawning adults, which emerged as fry before temperatures got too warm.

Location	Yet to Enter Delta (Upstream of Knights Landing)	In the Delta	Exited the Delta (Past Chippis Island)
<i>Young-of-year (YOY) winter-run Chinook salmon</i>	~25% - 50% (last week: 70% -75%)	~50% -75% (last week: 25% - 30%)	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.

**Agenda Item 3.**

**Current Operations (12/09/2014)**

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	6,000*	Jones Pumping Plant	1,600**
Reservoir Releases (cfs)			

<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.

Feather - Oroville	950	American - Nimbus	900
		Sacramento - Keswick	3,400***
		Stanislaus - Goodwin	200
<b>Reservoir Storage (in TAF)</b>			
San Luis (SWP)	378	San Luis (CVP)	182
Oroville	1,020	Shasta	1,137
New Melones	522	Folsom	321
<b>Delta Operations</b>			
DCC	Closed	Sacramento River at Freeport (cfs)	~25,000
Outflow Index (cfs)	~17,400	San Joaquin River at Vernalis (cfs)	~825
E:I	41% (14-day inflow avg)		

\*Will be increased to 6,680 cfs tomorrow

\*\*Increased from 800 cfs last night. Will be increased to 2,600 cfs tomorrow

\*\*\*Reduction to 3,300 cfs scheduled for 12/10, and reduction to 3,250 cfs scheduled for 12/11.

Water quality is currently controlling exports. The wet storm expected Wednesday night through Saturday is expected to greatly increase runoff and river flows throughout the Central Valley, which is likely to improve water quality in the Delta.

OMR by the end of the week is projected to be approximately -8,500 cfs. Keswick and Nimbus may both spill due to high side-flows during the coming storm. Tisdale, Moulton and Colusa weirs on the Sacramento River will likely spill into Sutter Bypass; Fremont weir into Yolo Bypass is not expected to spill (Fremont weir spills when Sacramento River flows reach ~60,000 cfs; projected flows at Fremont weir are not expected to exceed ~50,000 cfs).

#### **Agenda Item 4.**

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

The Smelt Working Group met on 12/8/14 and discussed all survey data, hydrology, operations, etc. Although it decided not to make a recommendation immediately, the group was very concerned with the projected OMR levels later in the week, and will be meeting again on 12/10/14 to review this week's survey data and potentially recommend a change in OMR levels.

#### **Agenda Item 5.**

##### ***RPA Implementation Review***

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

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

- DCC gates are closed.

<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)

**Action IV.3<sup>3</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.**

***Re: "Fish Facility Sampling" assignment***

- Details on this assignment are included in the DOSS notes from 11/12/14.
- A draft of DOSS feedback was sent out to DOSS for review prior to this week's call.
- Comments on the draft feedback are due by COB Thursday, 12/11.

**Agenda Item 7.**

***DOSS Advice***

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

**Next Meeting:** The next DOSS conference call will be on 12/16/14 at 9am.

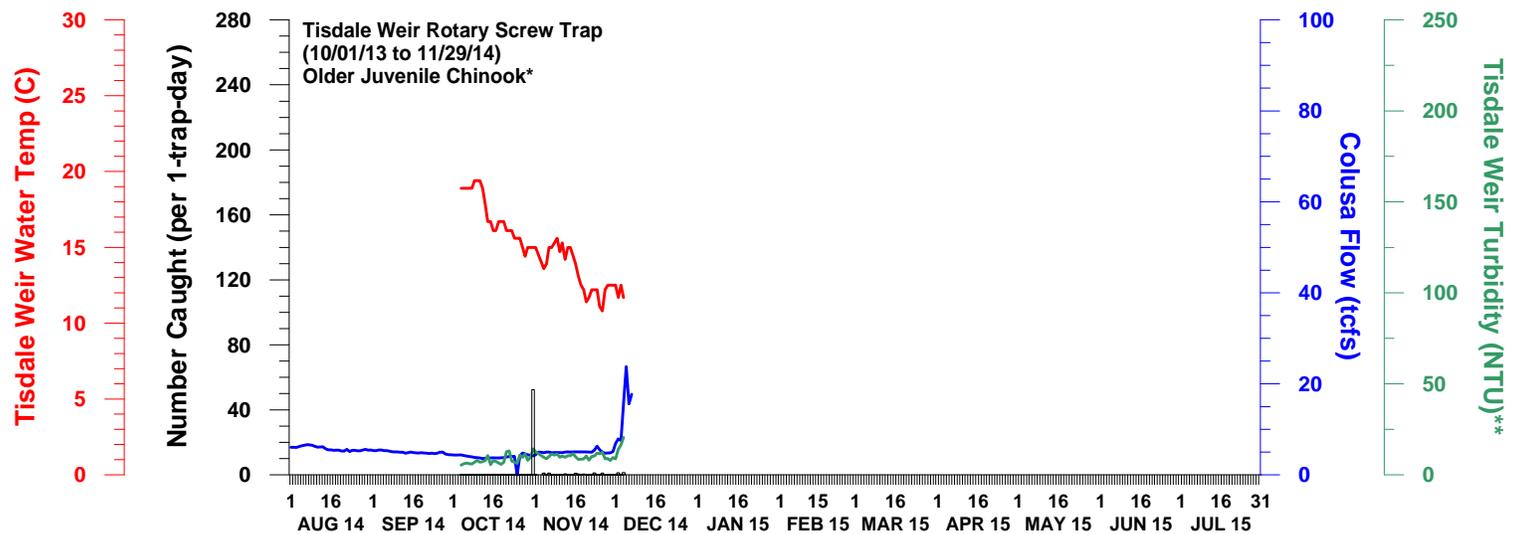
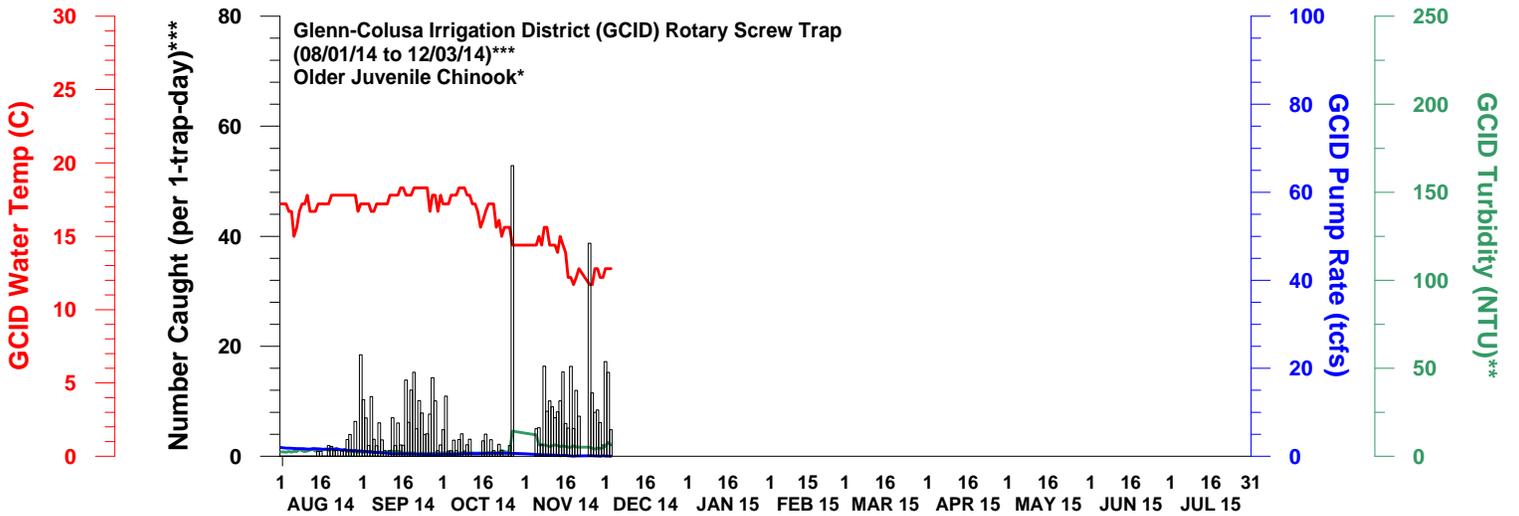
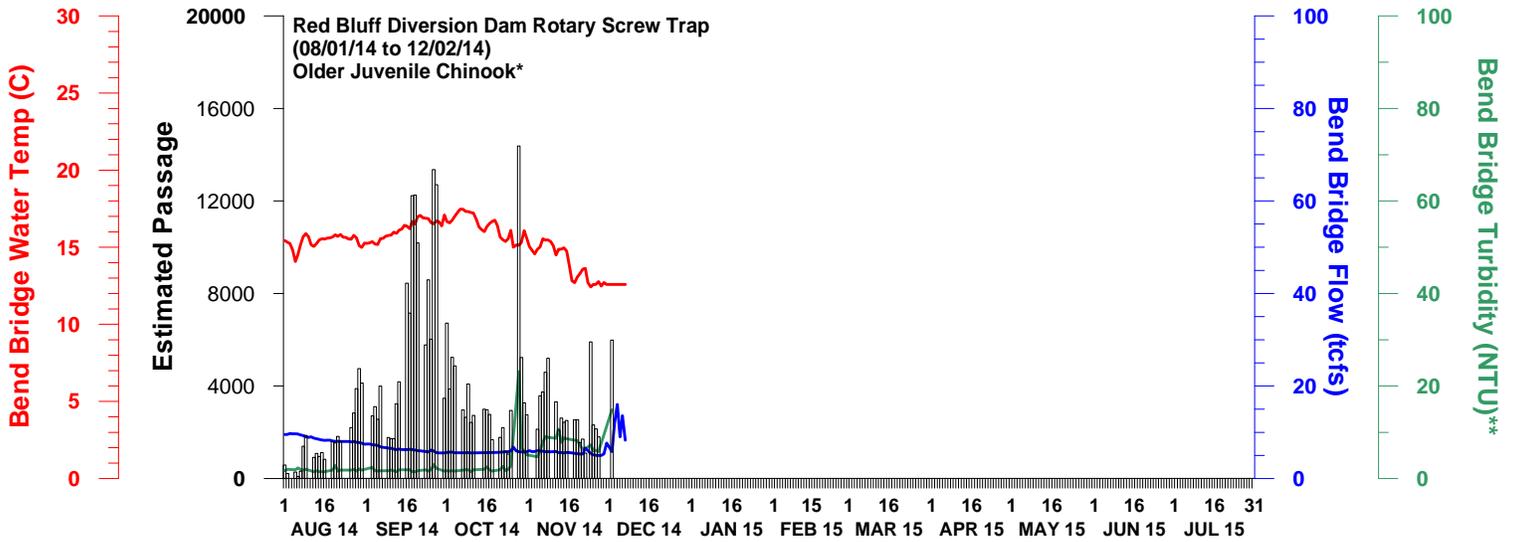
The following graphs were provided by DWR for Chinook salmon and steelhead observed at monitoring locations in the Sacramento and San Joaquin rivers and Delta. For additional graphs, please visit the DWR website at:

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

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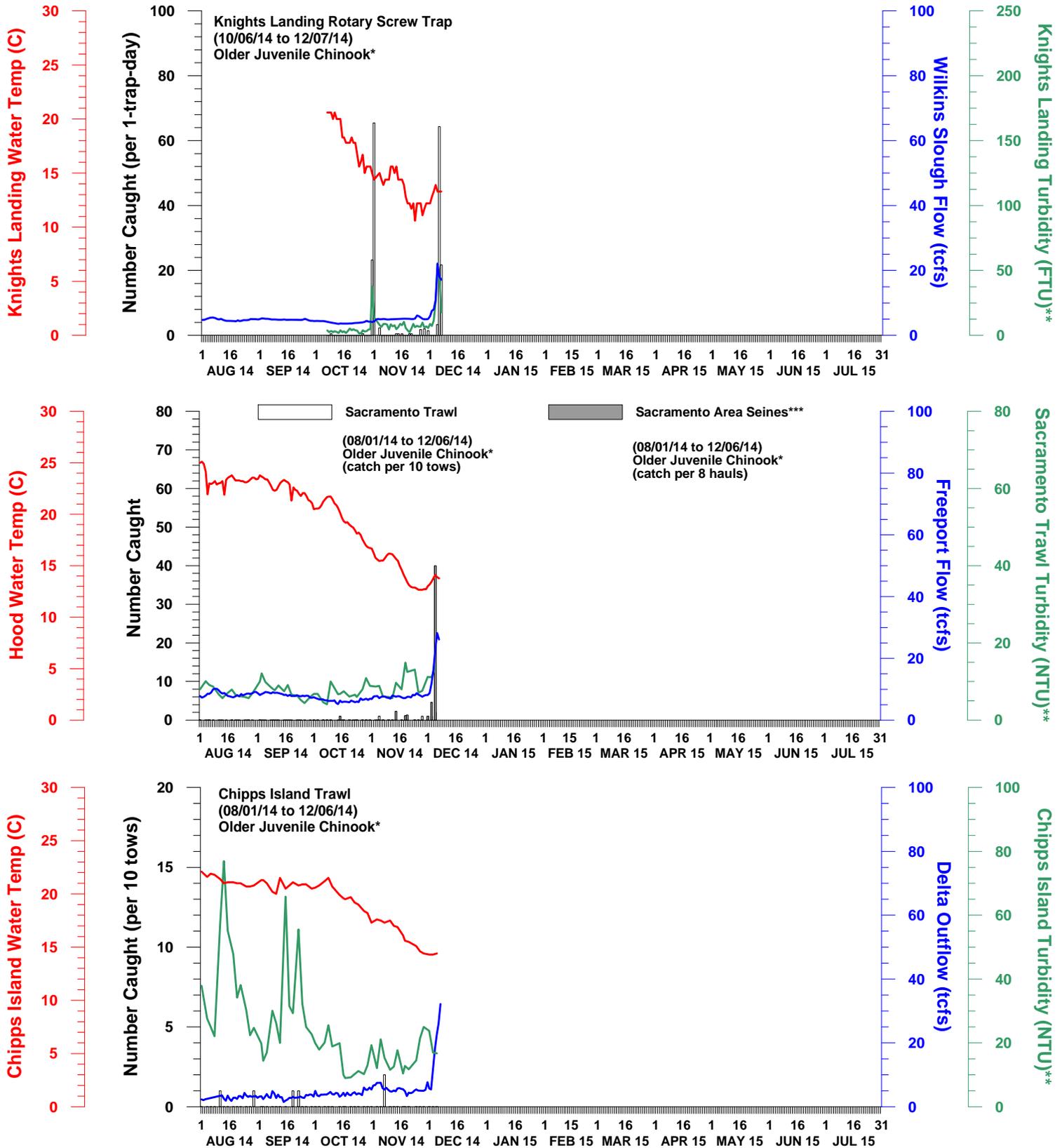
<sup>3</sup> For details, see pages 79-80 in Enclosure 2 of the 2011 Amendments to the 2009 RPA document at: [http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711\\_ocap\\_opinion\\_2011\\_amendments.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711_ocap_opinion_2011_amendments.pdf)

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



DWR-DES 08 DECEMBER 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.  
 Trap has been pulled since 10/28/14 due to forested increase in flow and subsequent elevation change.

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



DWR-DES 08 DECEMBER 2014

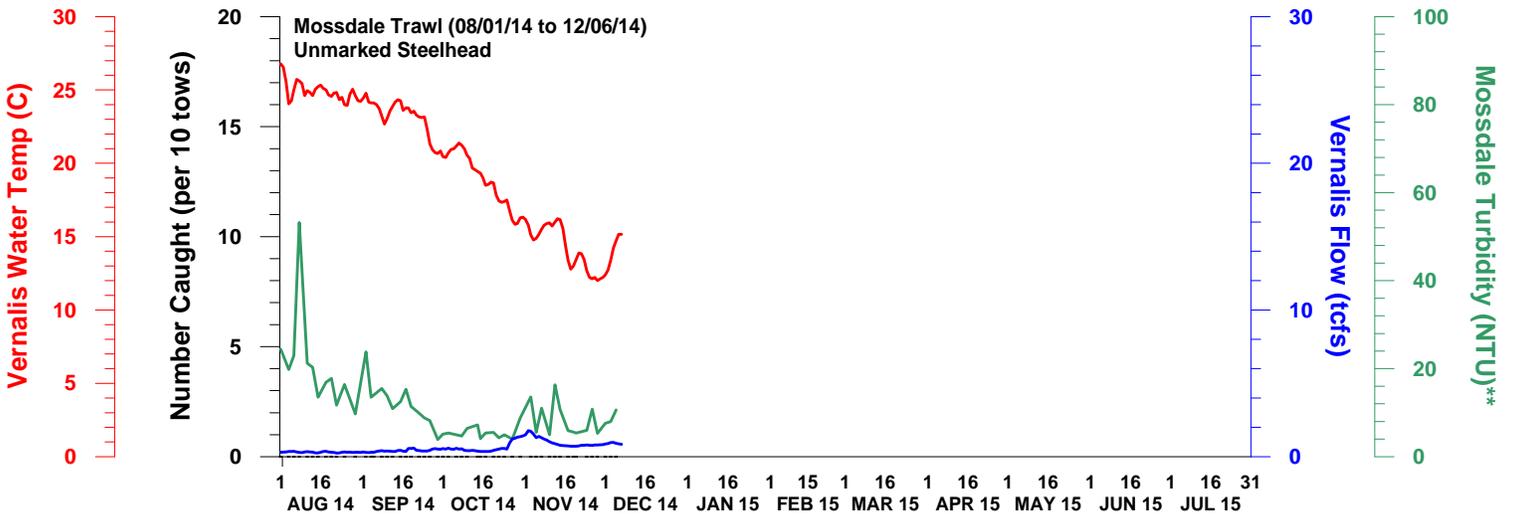
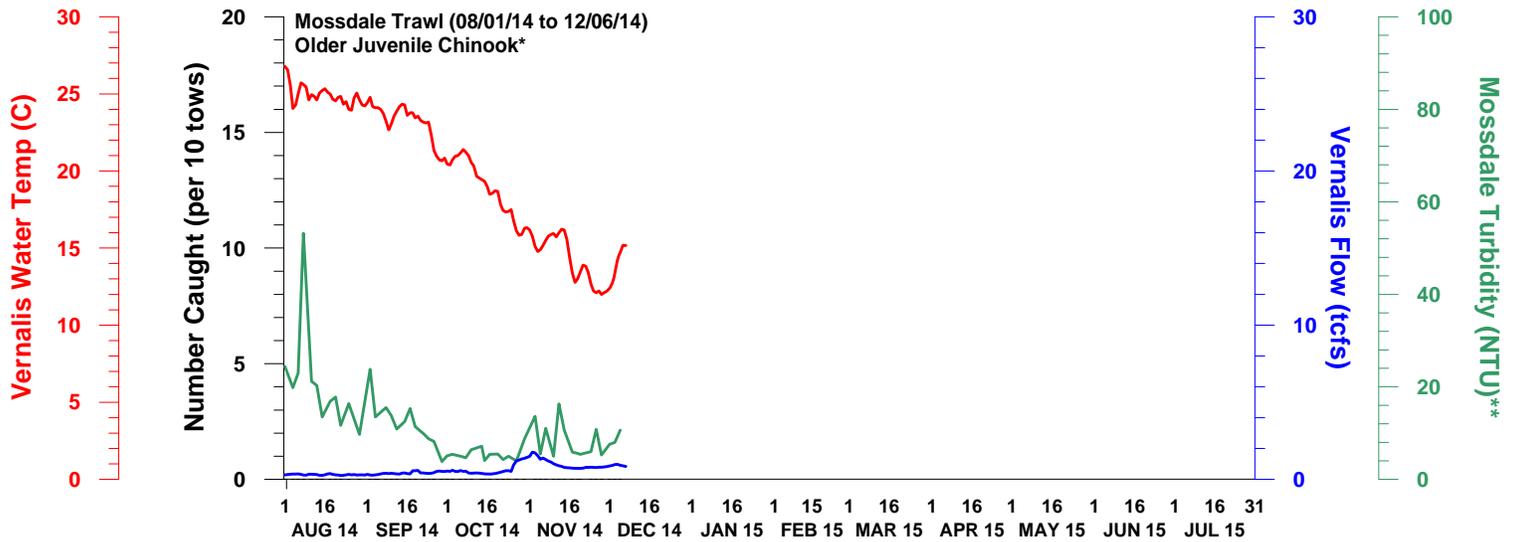
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\*\*\*Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from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

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

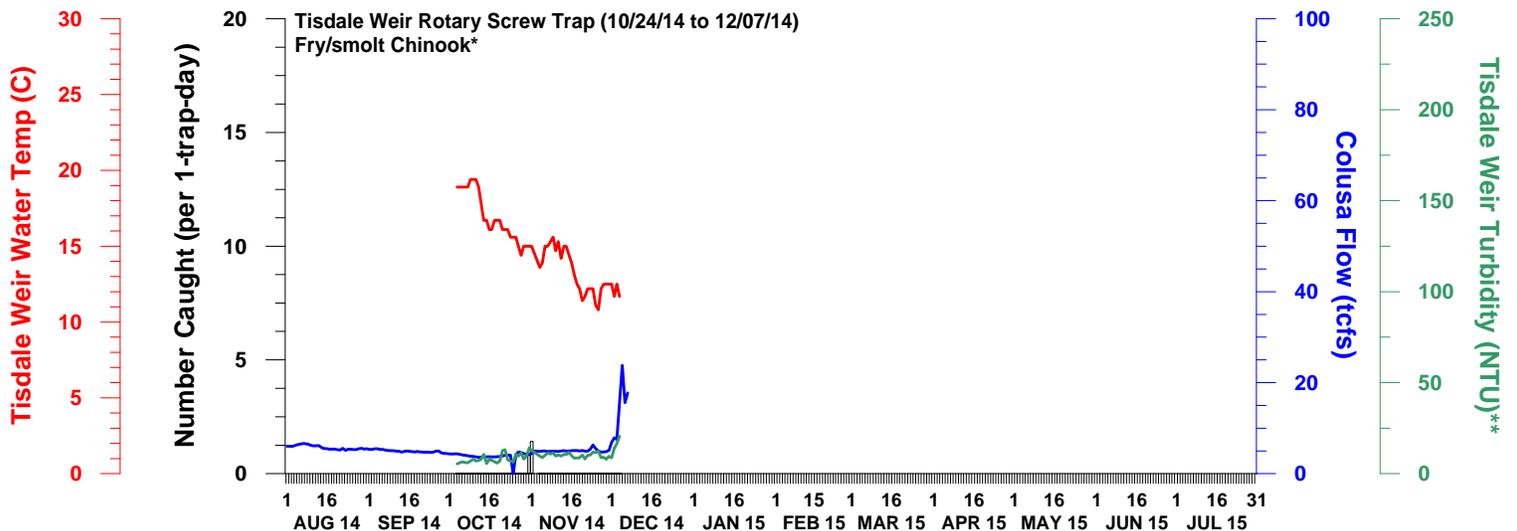
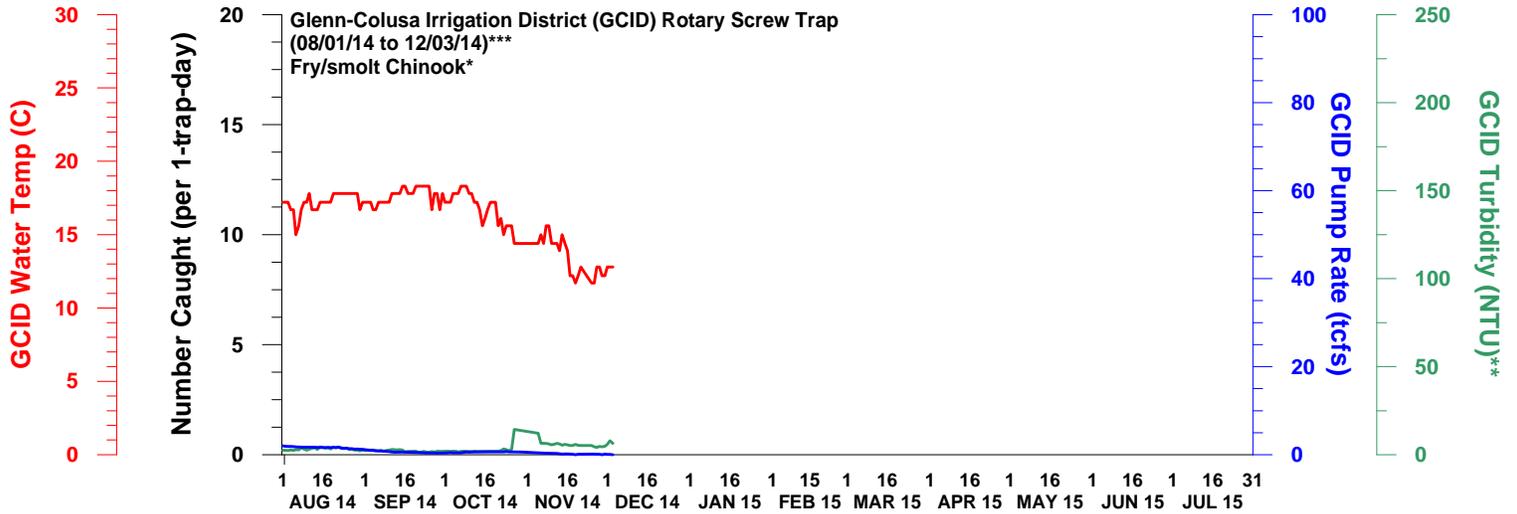
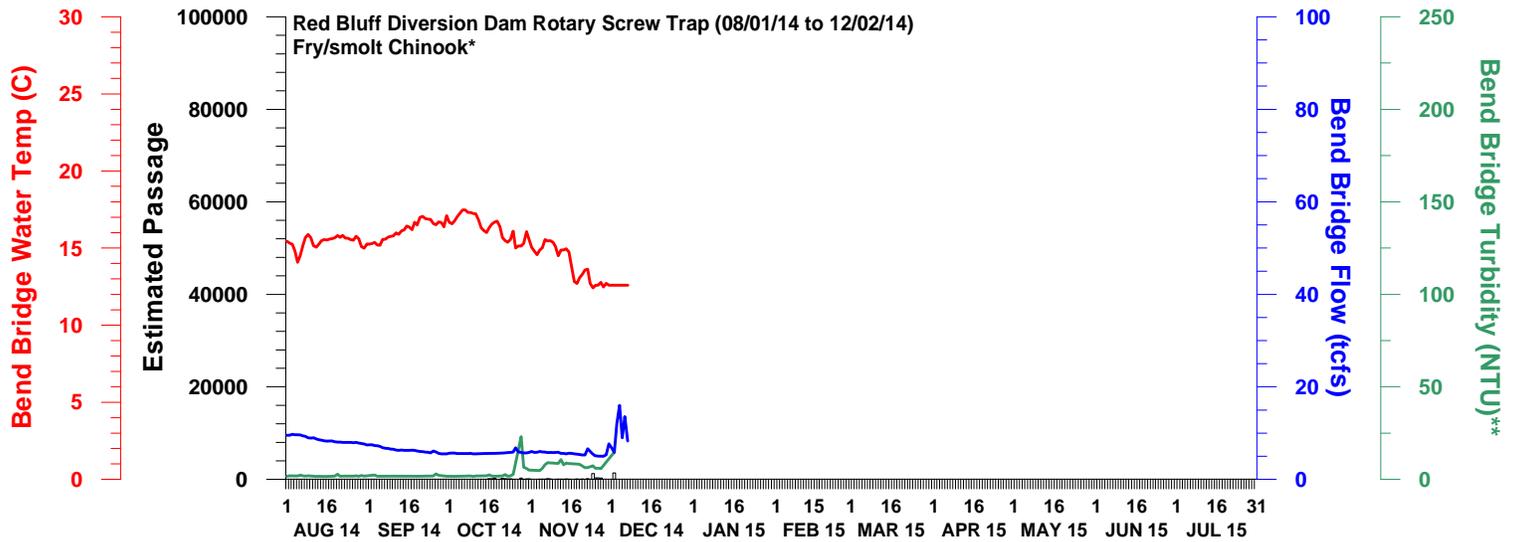


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# NUMBER OF UNMARKED FRY/SMOLT CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 08 DECEMBER 2014

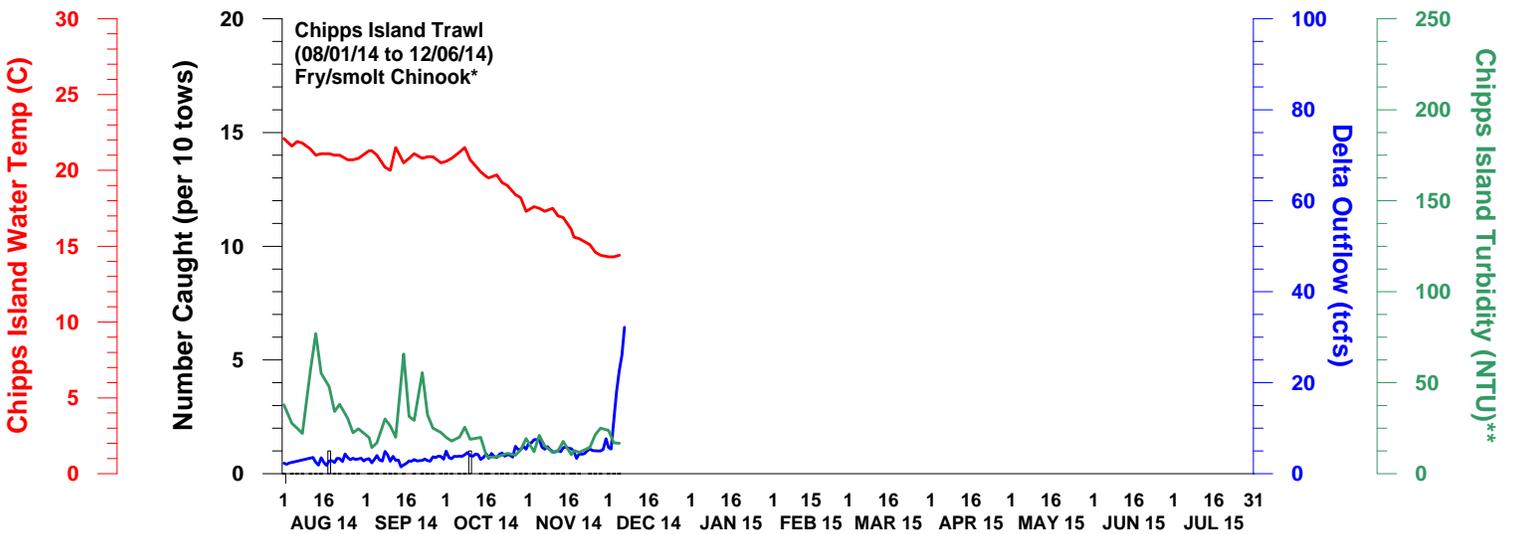
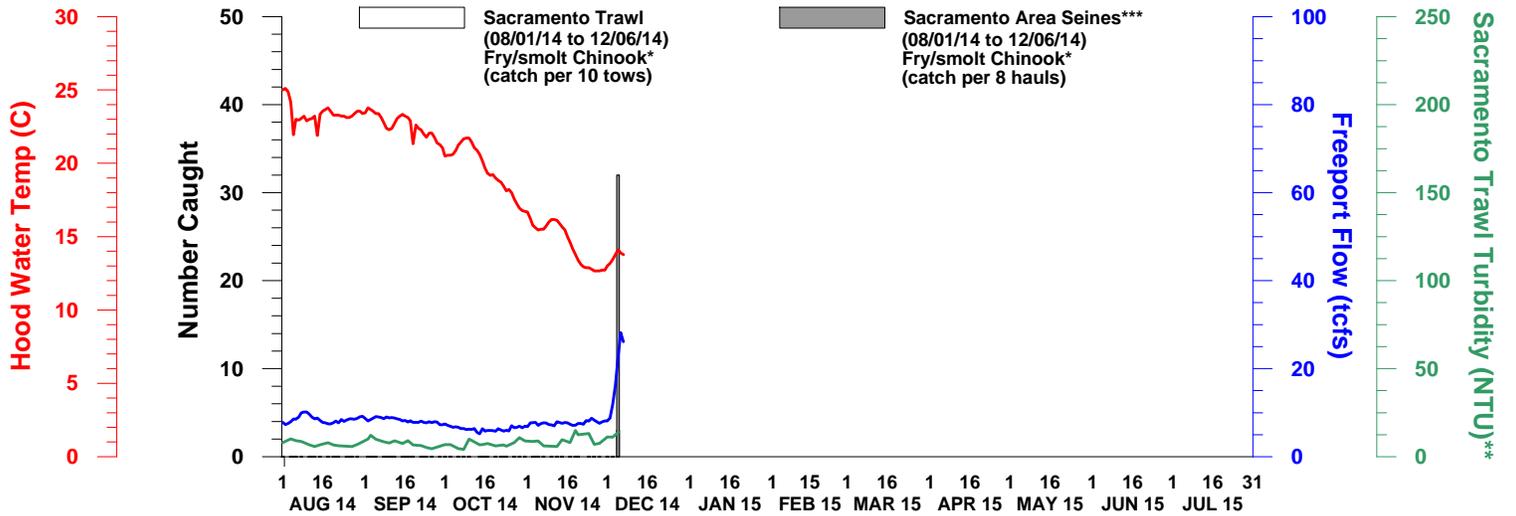
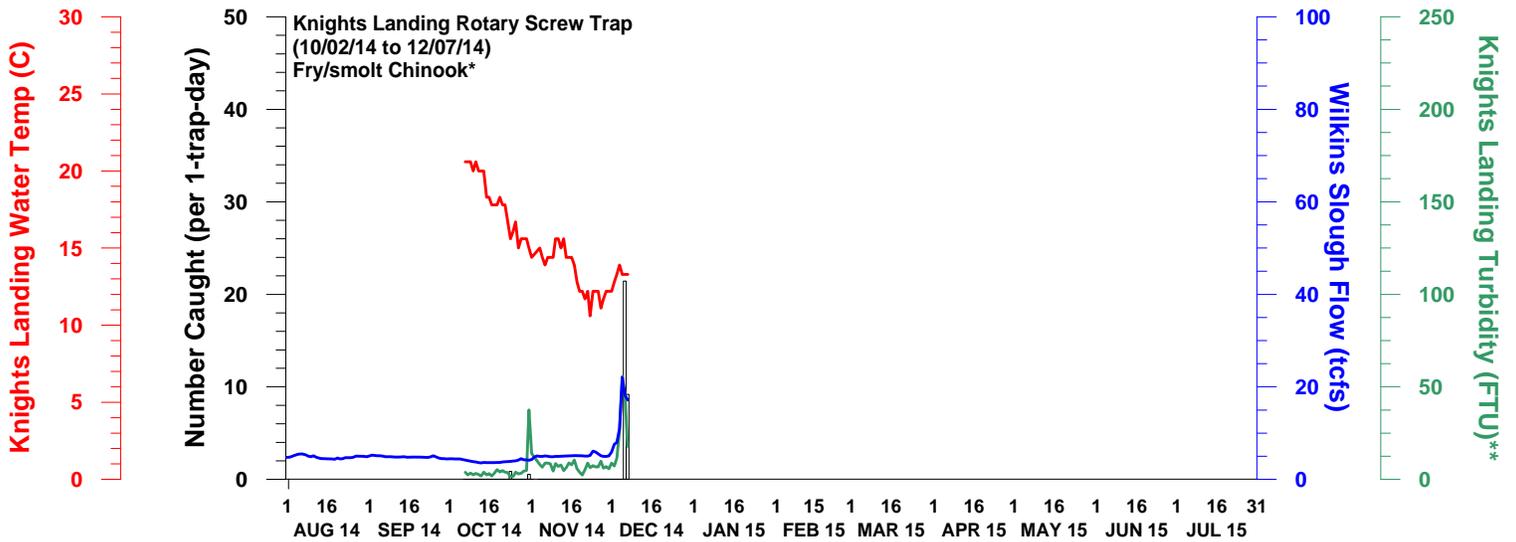
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.

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DWR-DES 08 DECEMBER 2014

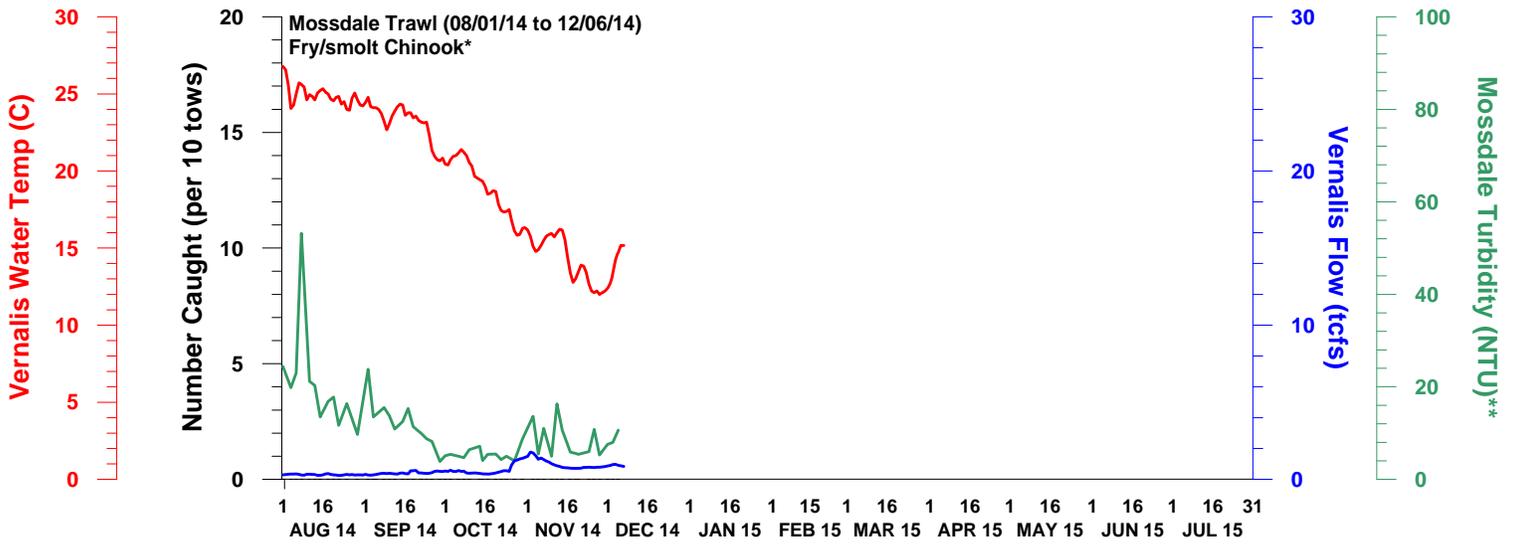
Preliminary data from DFW, FWS, and CDEC; subject to revision.

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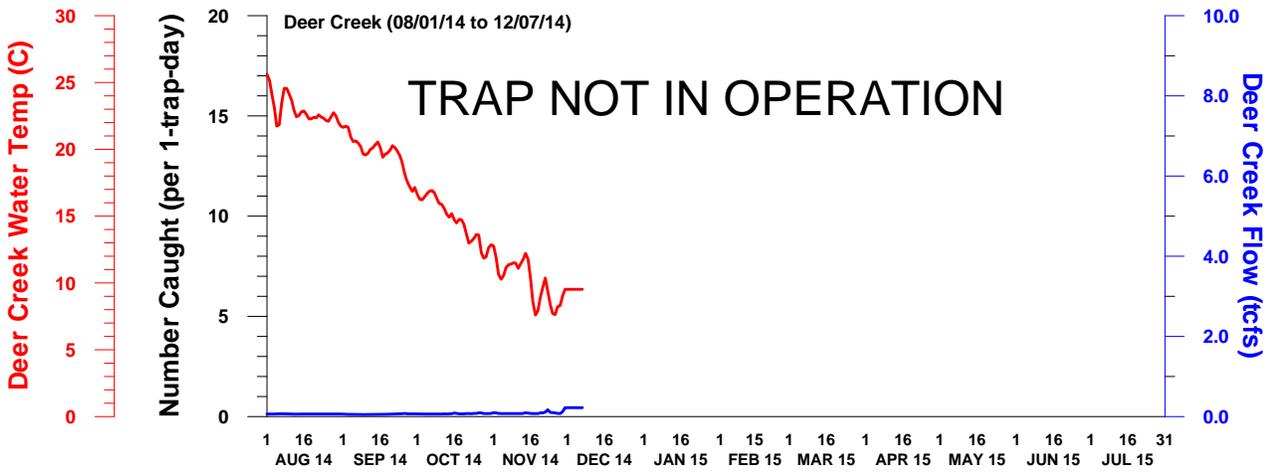
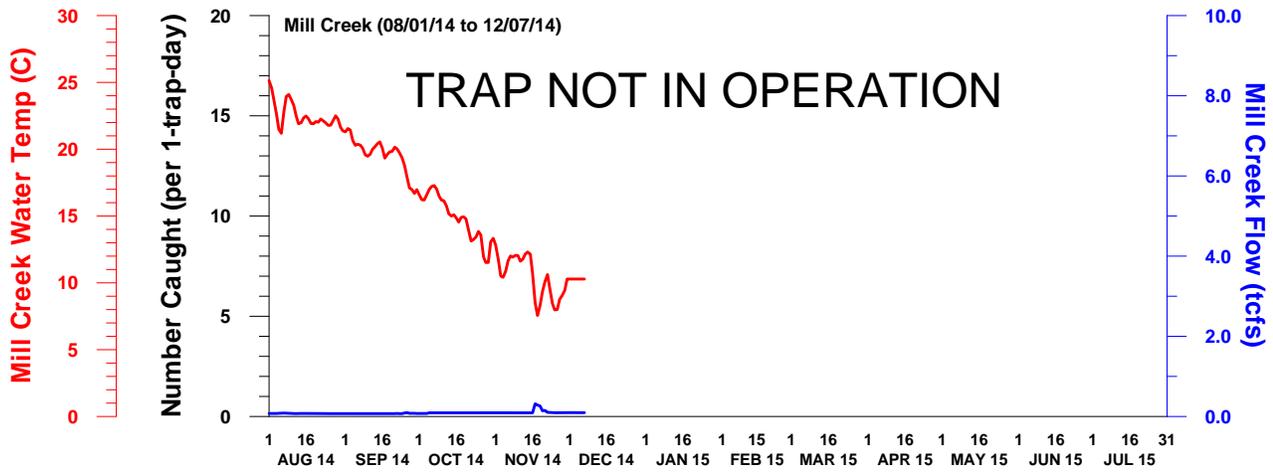
DWR-DES 08 DECEMBER 2014

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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/>).

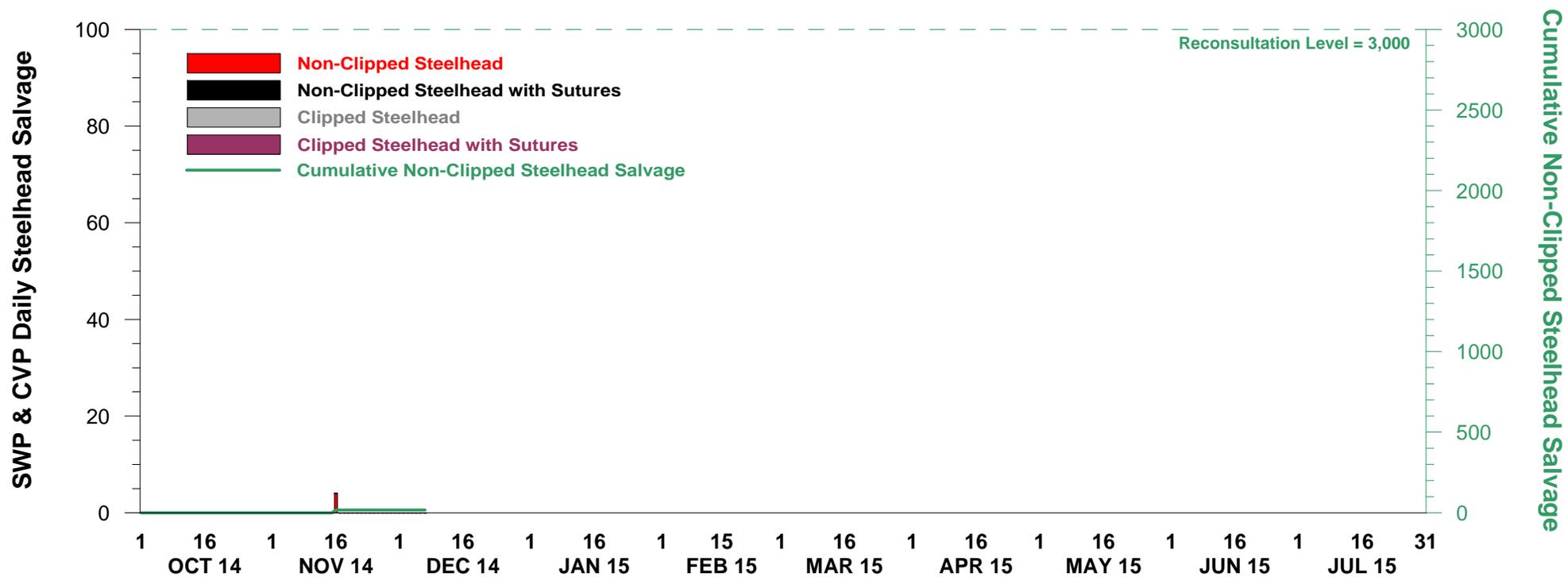
Mossdale Trawl data were either obtained directly from FWS, Stockton Fish and Wildlife Office or from DFW (Region 4).

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.

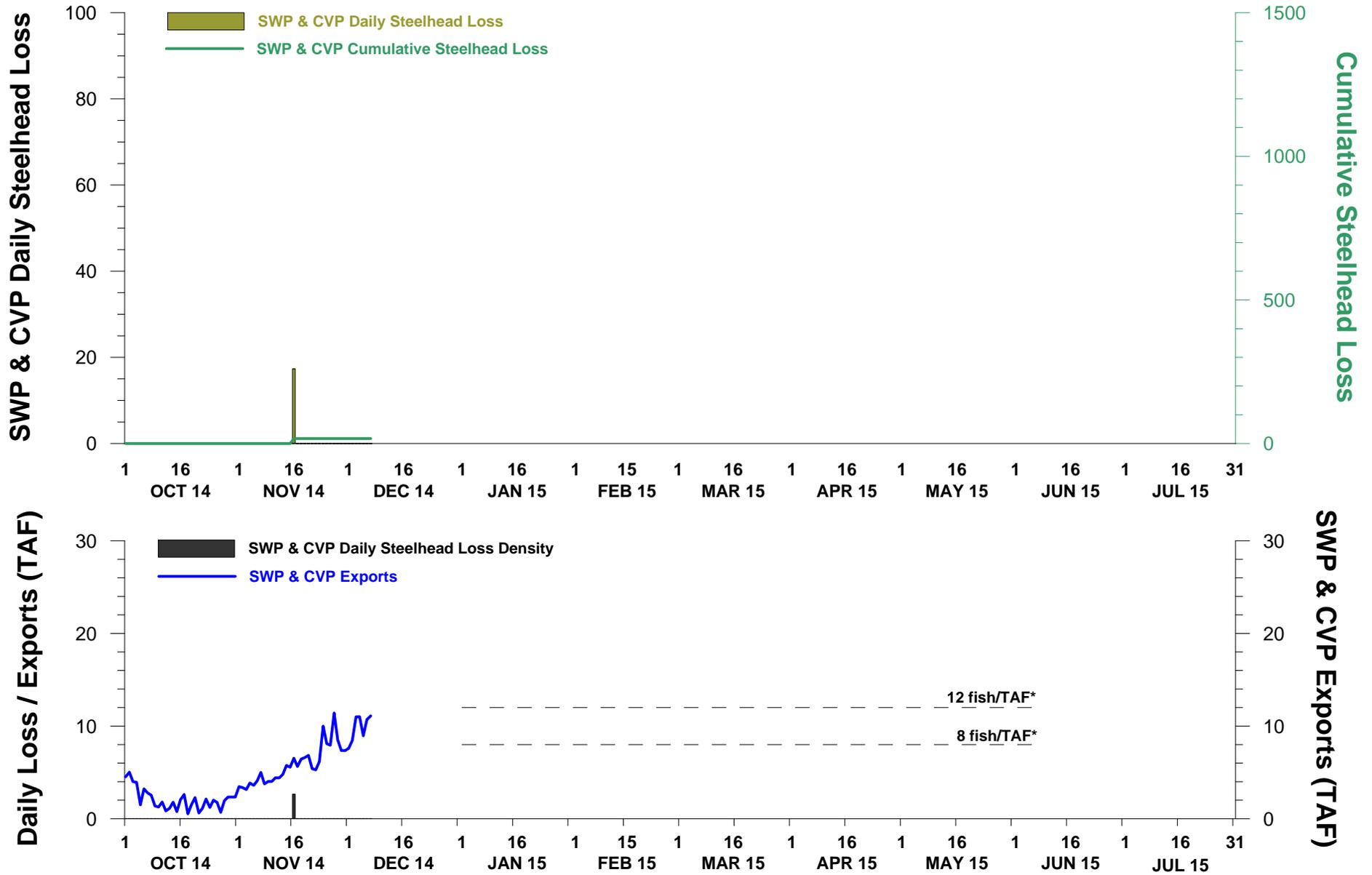
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<sup>1</sup> Formerly known as the California Department of Fish and Game (DFG).

# STEELHEAD SALVAGE AT THE DELTA FISH FACILITIES 01 OCT 2014 THROUGH 8 DECEMBER 2014



# NON-CLIPPED STEELHEAD LOSS AT THE DELTA FISH FACILITIES 01 OCT 2014 THROUGH 7 DECEMBER 2014



DWR-DES 08 DECEMBER 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.