

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 12/02/2014 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.

DWR: Aaron Miller, Farida Islam, Mike Ford, Rhiannon Mulligan, Kevin Reece, Dan Yamanaka, Reza Shahcheraghi, Tracy Pettit

Reclamation: David van Rijn, Jason Hassrick, Michele Palmer, Russ Yaworsky

NMFS: Barb Byrne, Jeff Stuart, Meiling Roddam

USFWS: Craig Anderson

CDFW: Duane Linander, Bob Fujimura, Ken Kundargi

EPA: Erin Foresman

Agenda Items

1. Agenda review and introductions
2. Fish Monitoring/Estimates of fish distribution
3. Current Operations
4. Smelt Working Group
5. Spring-run surrogate releases
6. RPA Implementation review
7. Set up subgroup meeting (all DOSS welcome) to review/draft DOSS feedback re: salvage sampling assignment
8. 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	11/24-11/28	11/24- 11/28	11/24-11/28	11/25-12/1	11/25-11/29	11/25-12/1	11/24-11/28
Total Catch	1	1	0	90 (51mm-135mm)	3 (54mm-88mm)	2 (45mm-64mm)	0
FR Chinook							
WR Chinook		1 (56mm)		55	3	2	
SR Chinook							
LFM Chinook				35			

Ad-Clipped Chinook							
Delta Smelt							
Splittail							
Longfin Smelt	1 (103mm)						
Steelhead (ad-clip)							
Steelhead (wild)							
Green Sturgeon							
W. Temp. (avg. °F)	58	54	54	54	53	54	
Flows (avg. cfs)				859	5,144	5,256	
Turbidity (avg. NTU)	20.33	9.32	7.4	4.78	7	10	

*For Knight’s Landing on 11/25-11/29, 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.

**Tisdale was modified for half cone sampling on 11/25, resumed to 100% efficiency 11/26 to the morning shift of 11/29, and modified for half cone sampling from the afternoon of 11/29 through 12/1.

Fish Salvage¹: From 11/24 – 11/30, 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. No strong signal in fish catch, flow, or turbidity were observed over the past week, but DOSS did estimate that up to 5% more of the winter-run Chinook salmon juveniles may have entered the delta past Knights Landing based on the low steady catch over the past three weeks. DOSS also expects the recent and upcoming rain events to cue salmonid outmigration over the next week.

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>	~70%- 75% (last week: 75%)	~25%-30% (last week: 25%)	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.

¹Salvage 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 (12/02/2014)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	3,500*	Jones Pumping Plant	800
Reservoir Releases (cfs)			
Feather - Oroville	900	American - Nimbus	900
		Sacramento - Keswick	3,600**
		Stanislaus - Goodwin	200
Reservoir Storage (in TAF)			
San Luis (SWP)	311	San Luis (CVP)	~177
Oroville	914	Shasta	1,049
New Melones	514	Folsom	1,139
Delta Operations			
DCC	Closed	Sacramento River at Freeport (cfs)	~8,100
Outflow Index (cfs)	~5,700	San Joaquin River at Vernalis (cfs)	~860
E:I	43% (3-day inflow avg)		

*Will increase to 4,000 cfs on 12/3/14 and to 4,500 cfs on 12/4/14

**Will be reduced by 100 cfs to 3,500 cfs on Thursday, and in increments of no more than 100 cfs per day to 3,250 cfs on 12/11/14

Water quality management is currently controlling export operations. The weather forecast indicates rain in the Central Valley and up to 5" of precipitation in the Sierras.

Agenda Item 4.

Smelt Working Group

The Smelt Working Group did not meet yesterday, 12/1/14.

Agenda Item 5.

Spring-run surrogate release schedule (surrogates are late-fall run Chinook from Coleman NFH)

Based on the DOSS discussion during the 11/25/14 DOSS call and information that the production release would occur during the first significant rainfall event in December, Byrne (NMFS) provided Coleman National Fish Hatchery (CNFH) staff the following guidance regarding the release schedule for the spring-run surrogate groups at CNFH:

- **Production release:** early December, with first significant precipitation event.

- **1st surrogate release:** ~3 days after the production release, regardless of precipitation events.
- **2nd surrogate release:** Late December, ideally preceding (by ~3-7 days) a precipitation event and at least a week after the previous surrogate release.
- **3rd surrogate release:** Mid-January, ideally preceding (by ~3-7 days) a precipitation event and at least a week after the previous surrogate release. DOSS will monitor the weather forecasts and CNFH releases and may refine this guidance as the season progresses.

DOSS confirmed that the guidance provided to CNFH last week (summarized below) captured the intent of DOSS. CNFH release updates include:

- Production group (~850,000 fish) was released on 12/01/14.
- 1st surrogate group (~77,000 fish) will be released on Thursday, 12/04/14.
- There will be an update later this week on the success of markings for the production release and 1st surrogate release groups.

Agenda Item 6.

Delta RPA Actions in effect during December:

Action IV.1.2² (DCC gate operations):

- DCC gates are closed.

Action IV.3³ (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 7.

Re: "Fish Facility Sampling" assignment

- Details on this assignment are included in the DOSS notes from 11/12/14.
- Fujimura (CDFW) presented an overview of the recent information he provided to DOSS regarding a study at the SWP which allowed a comparison of salvage estimates based on partial vs. total censuses. Highlights summarized below:
 - The study (Castillo *et al.* 2012⁴) examined the salvage estimates and total census of holding tanks (prior to haul-out loading) during experiments to recovered marked Delta Smelt conducted in 2008 and 2009 at the SWP Skinner Fish Facility

² 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

³ 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

- Both Chinook salmon and steelhead data show salvage estimates underestimating total census at low densities and apparent higher salvage values compared to their total census values at higher densities.
- The juvenile Delta Smelt data show similar results at low densities (e.g. positive y-intercept value) but show a regression trend (e.g. slope) closer to the hypothetical relationship of 1:1 (total census vs. total salvage).
- Next steps:
 - Byrne (NMFS) will send out a Doodle poll to DOSS to determine interest and availability for a sub-group meeting to discuss and summarize key recommendations and comments that have come up in the DOSS discussions.

Agenda Item 8.

DOSS Advice

DOSS Advice to WOMT and NMFS: None.

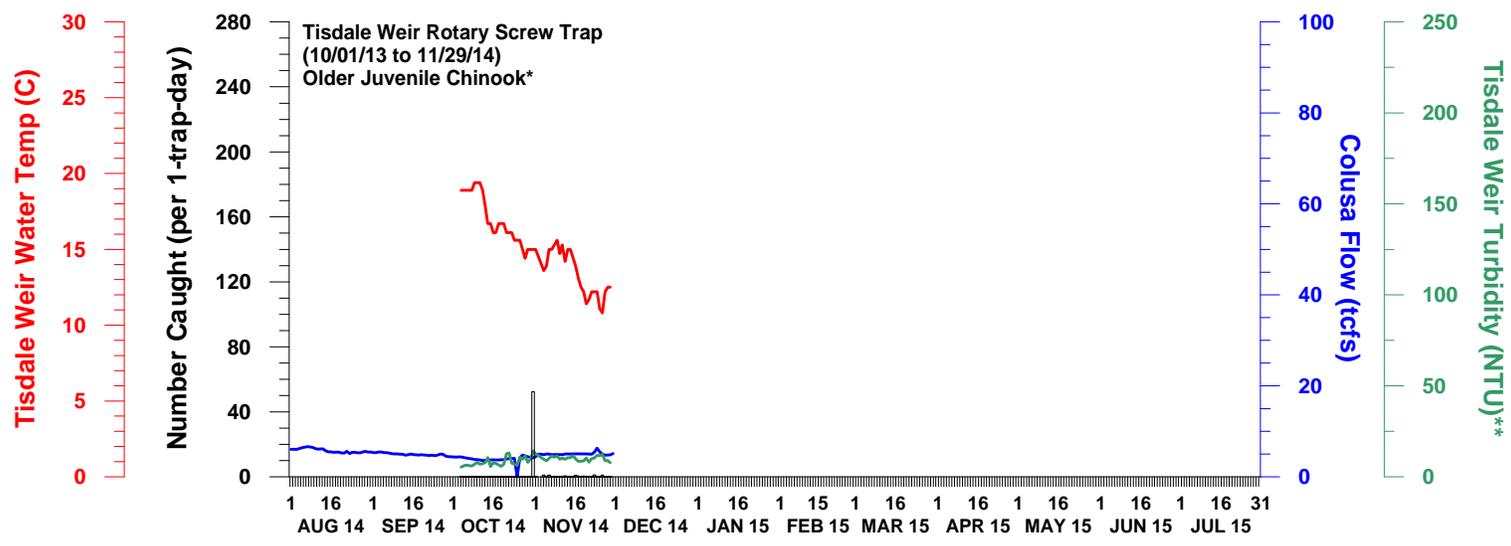
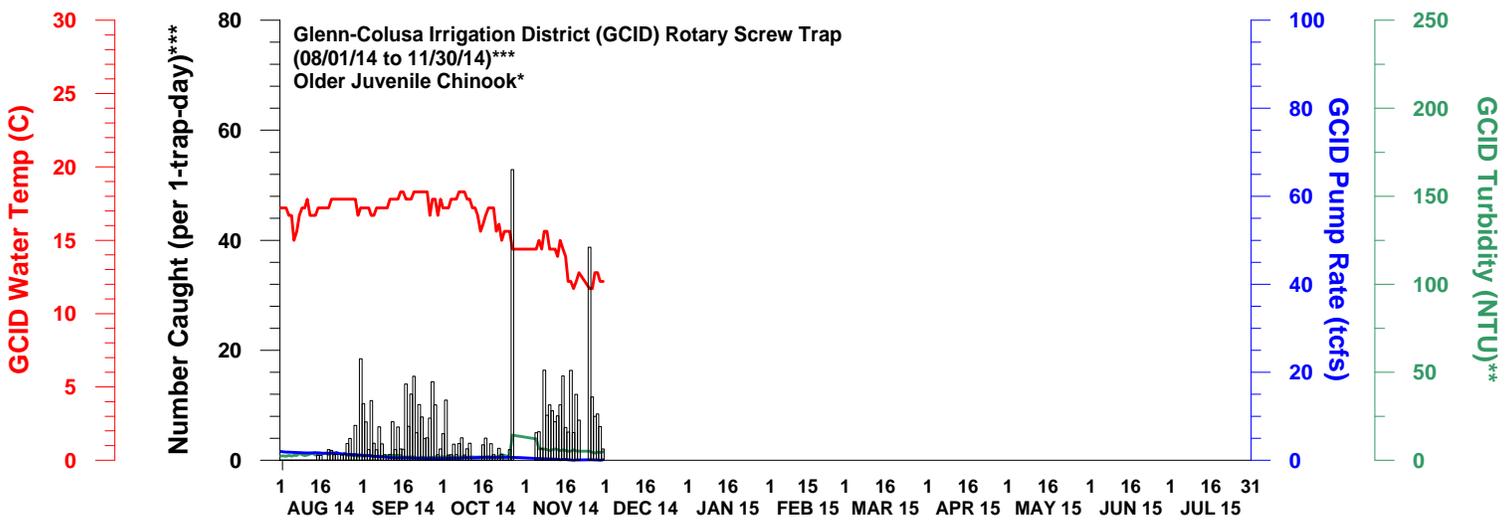
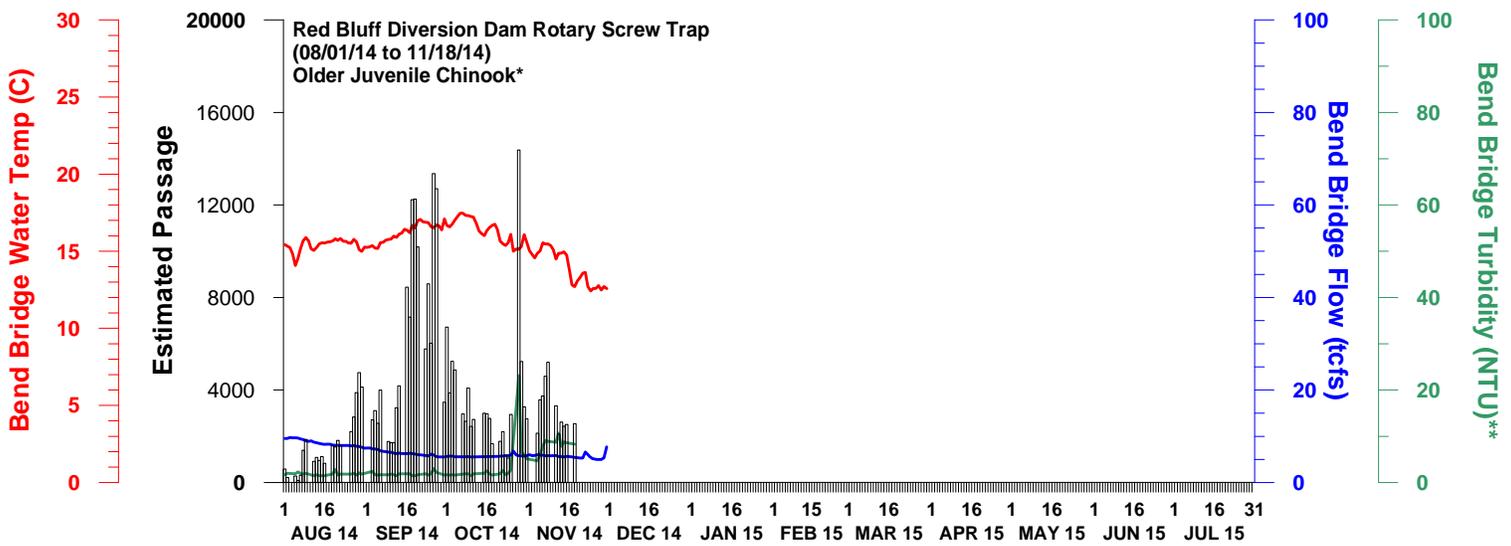
Next Meeting: The next DOSS conference call will be on 12/09/14 at 9am.

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>.

⁴ Castillo, G., J. Morinaka, J. Lindberg, J., R. Fujimura, B. Baskerville-Bridges, J. Hobbs, G. Tigan, and L. Ellison. 2012. Pre-Screen Loss and Fish Facility Efficiency for Delta Smelt at the South Delta's State Water Project, California. San Francisco Estuary and Watershed Science, 10 (4), 23 p. Available from: <https://escholarship.org/uc/item/28m595k4>

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 01 DECEMBER 2014

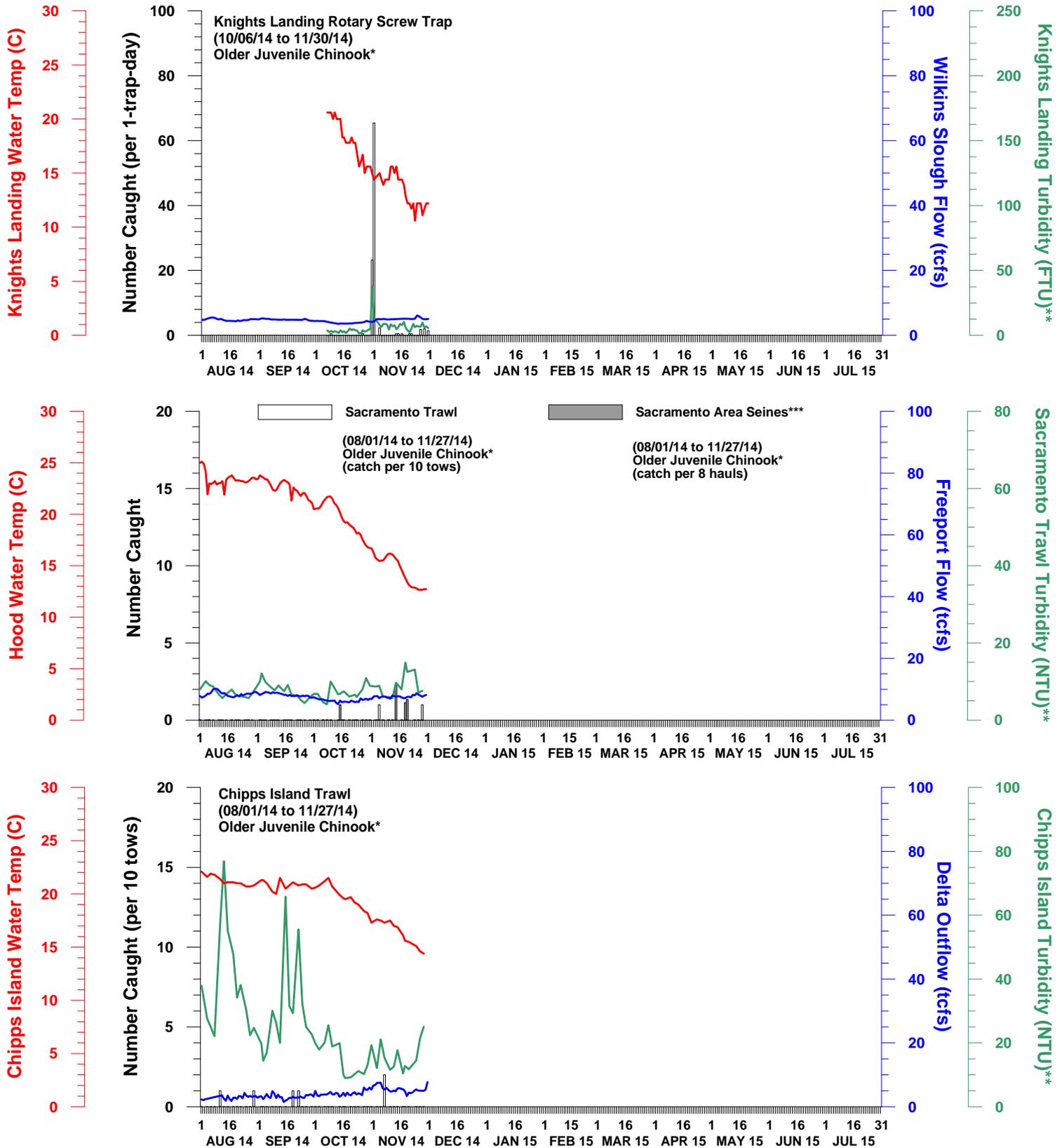
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.

*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.

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



DWR-DES 01 DECEMBER 2014

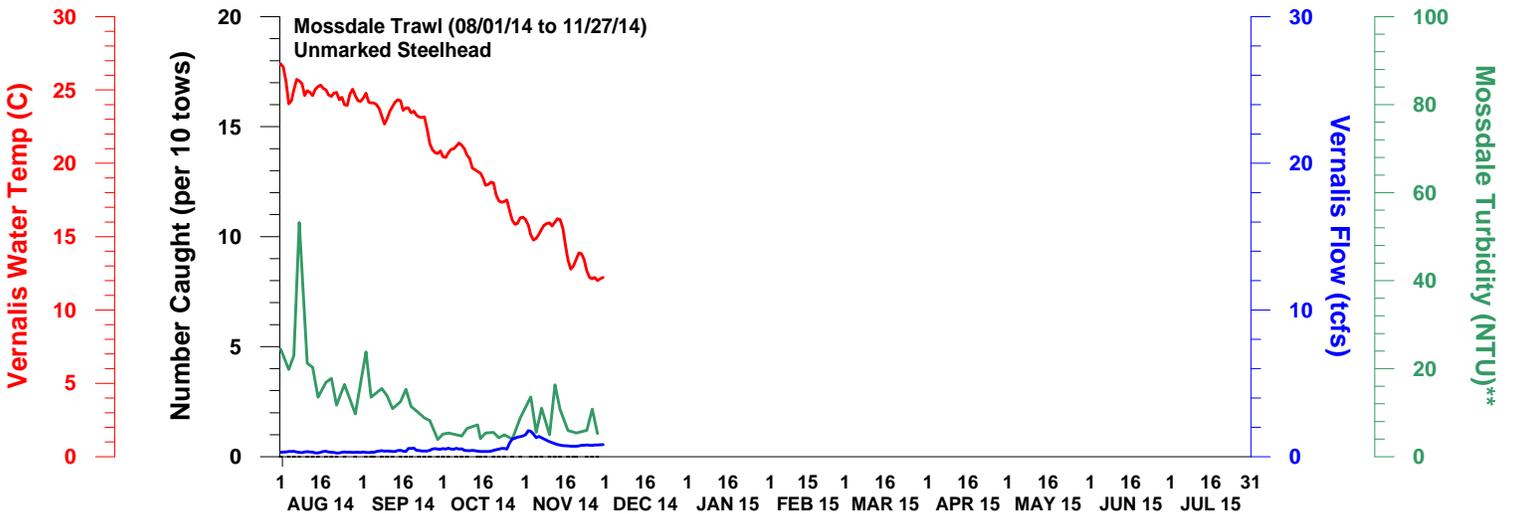
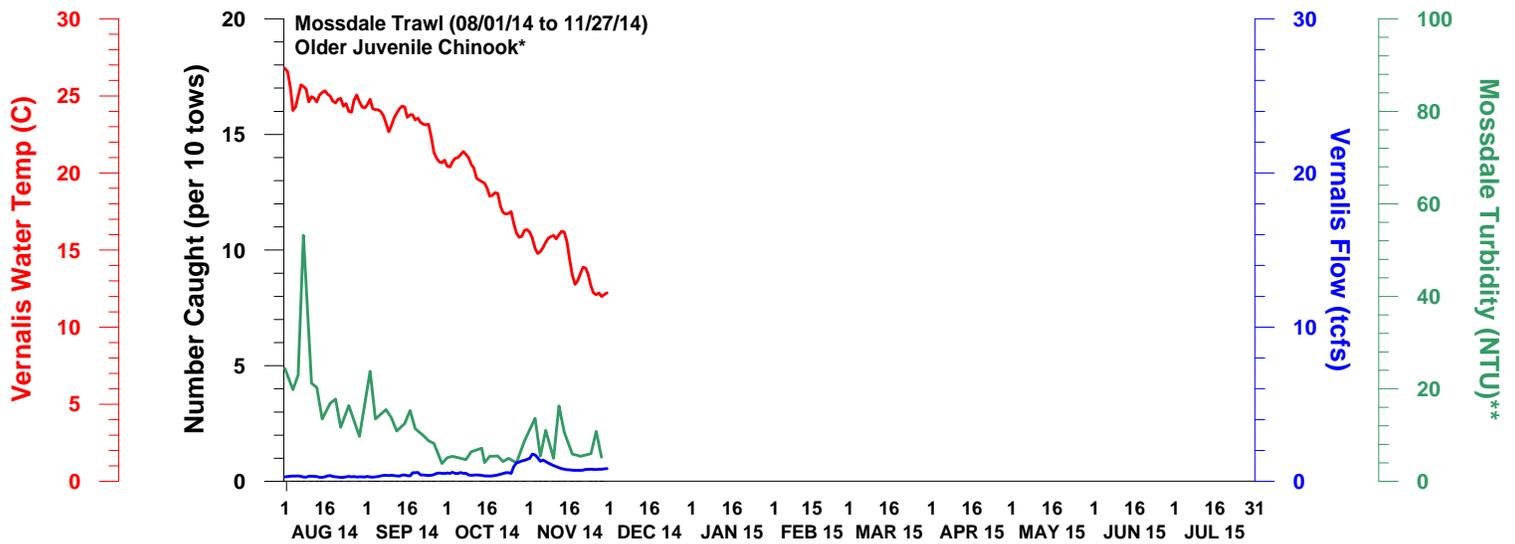
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***Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the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

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

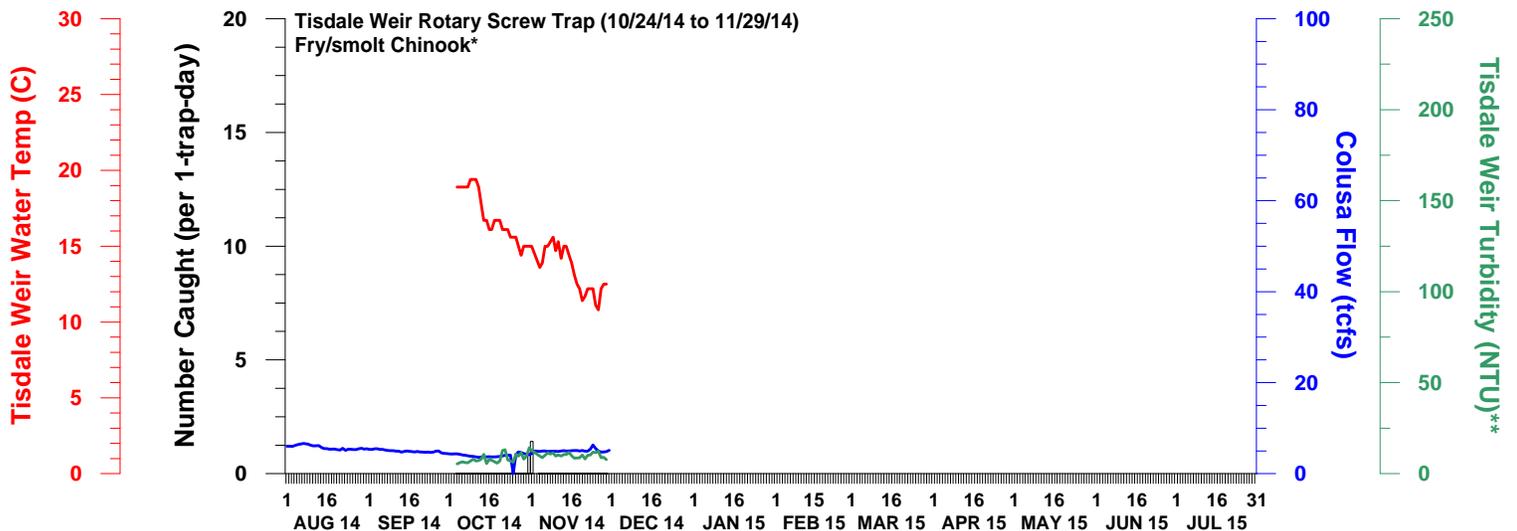
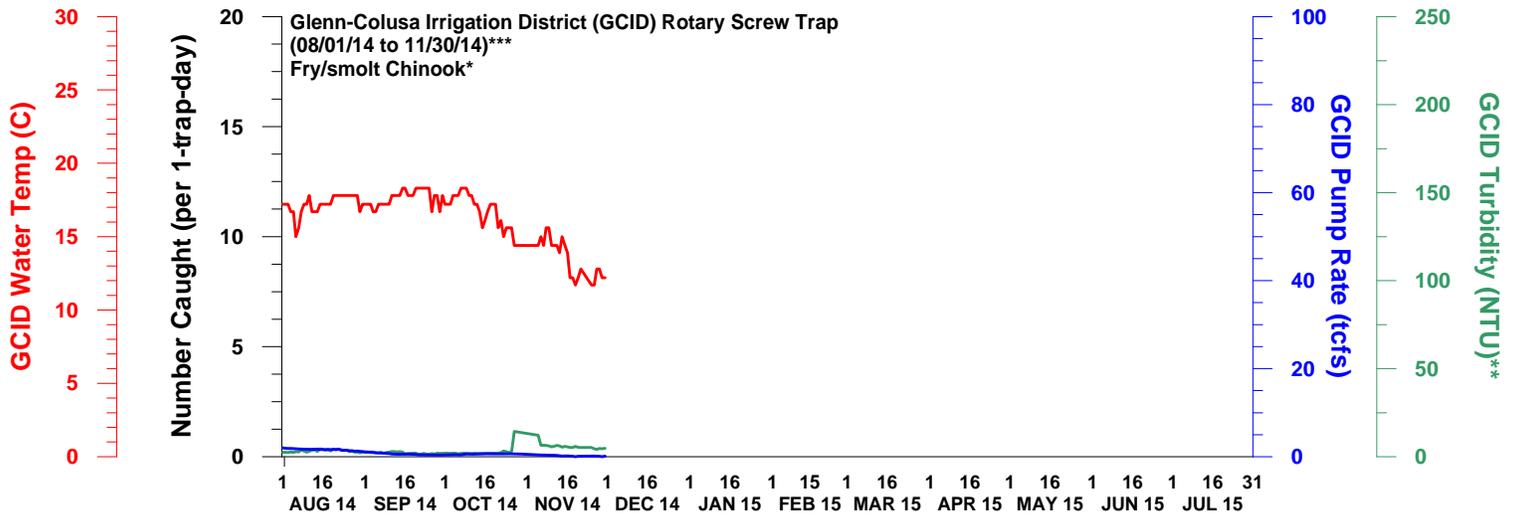
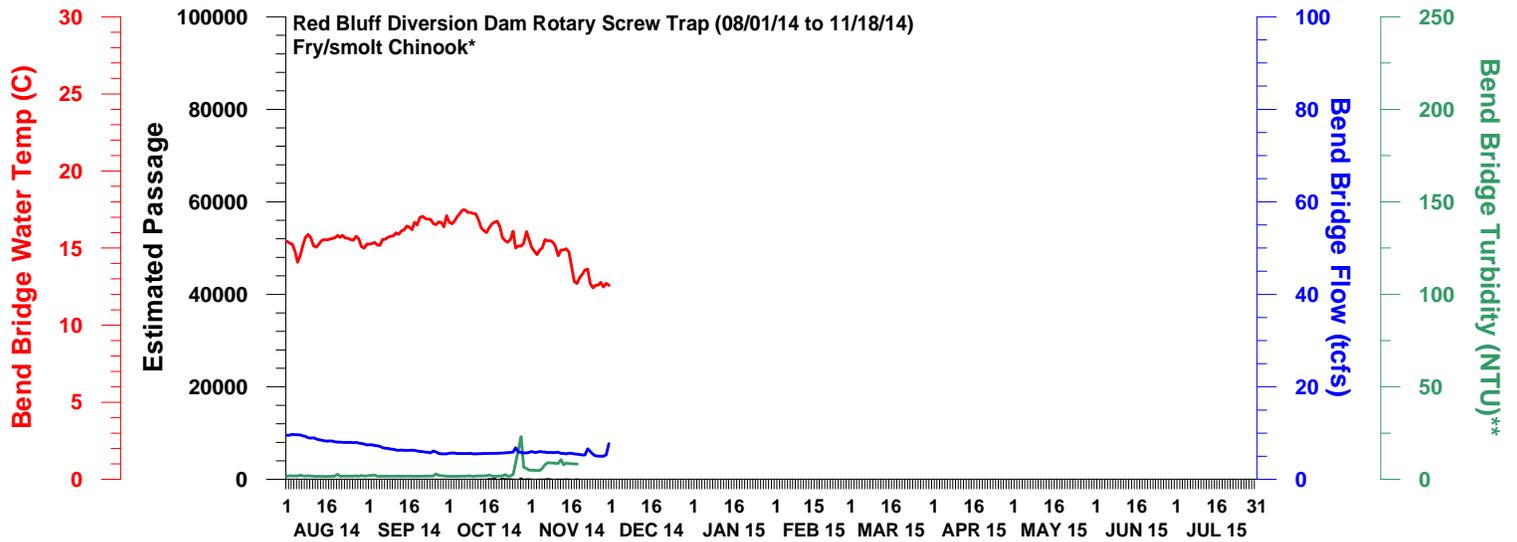


DWR-DES 01 DECEMBER 2014
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NUMBER OF UNMARKED FRY/SMOLT CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 01 DECEMBER 2014

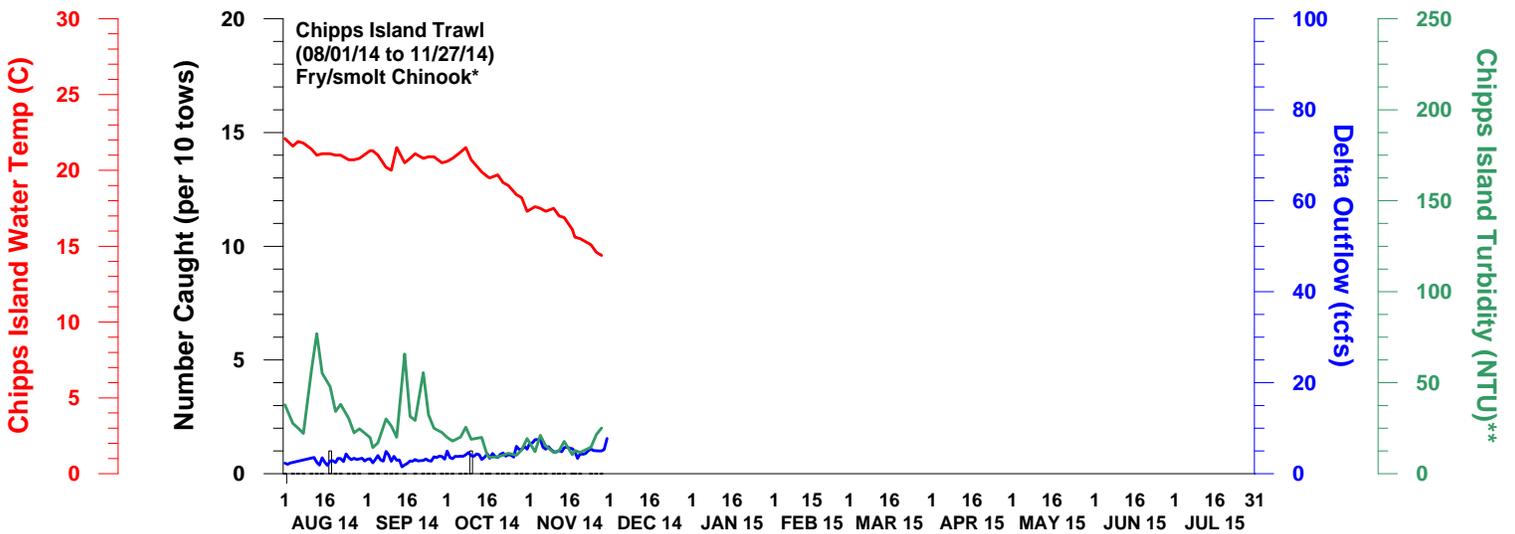
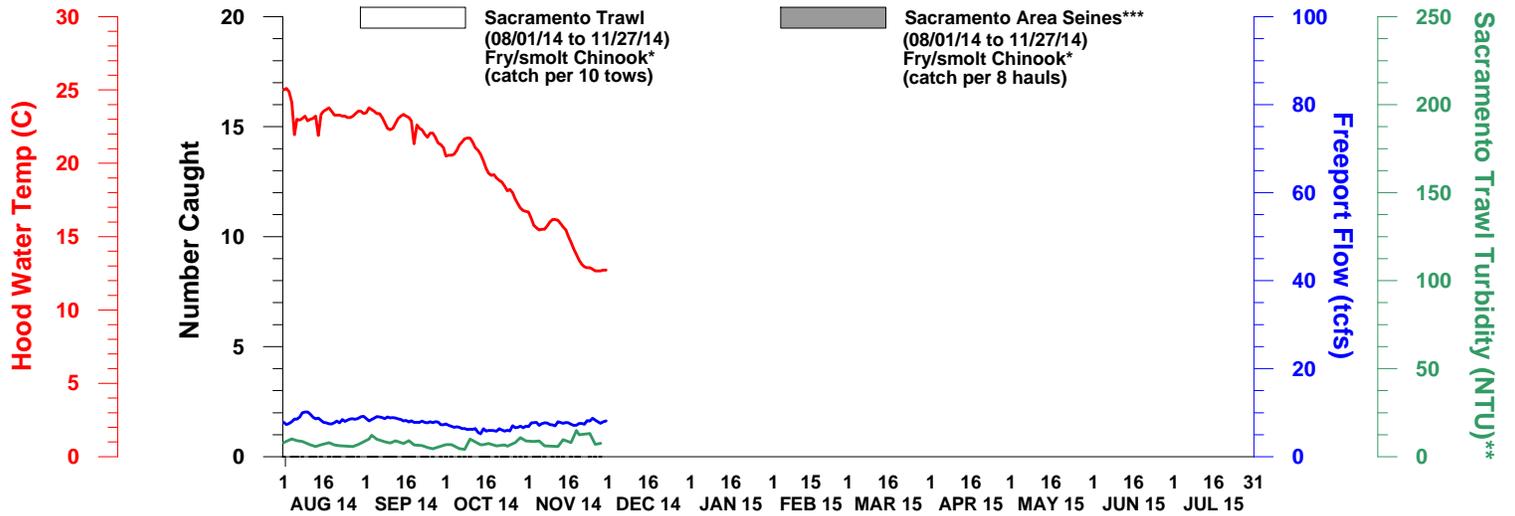
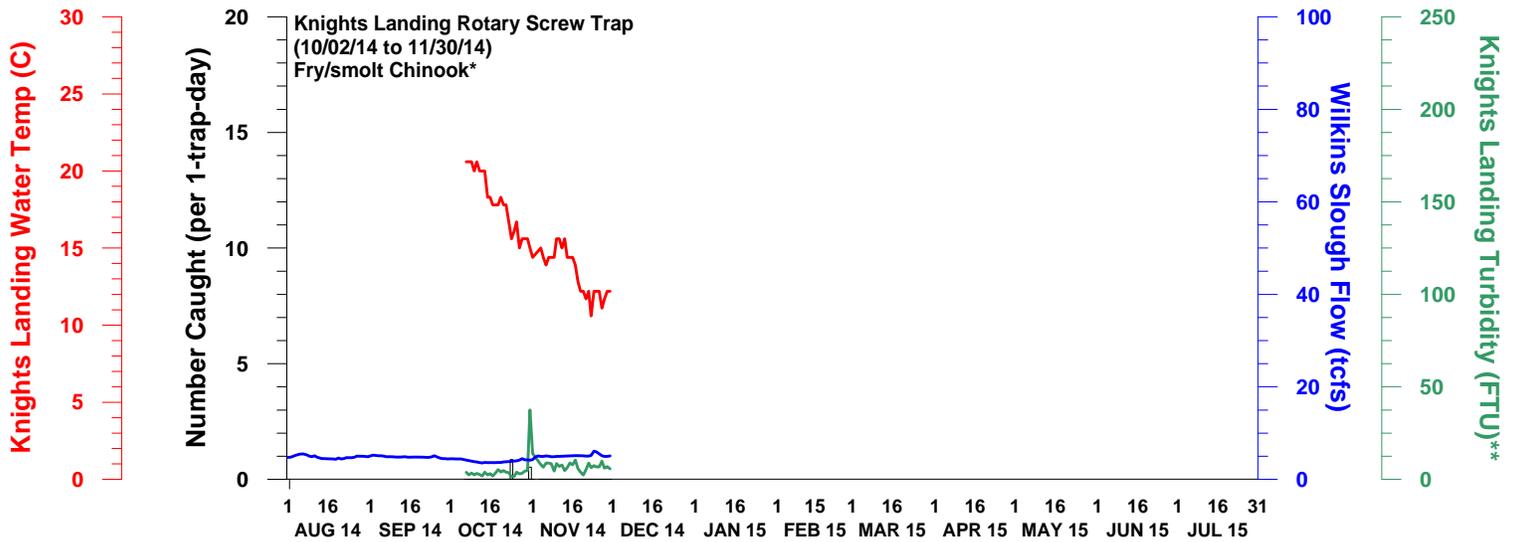
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.

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



DWR-DES 01 DECEMBER 2014

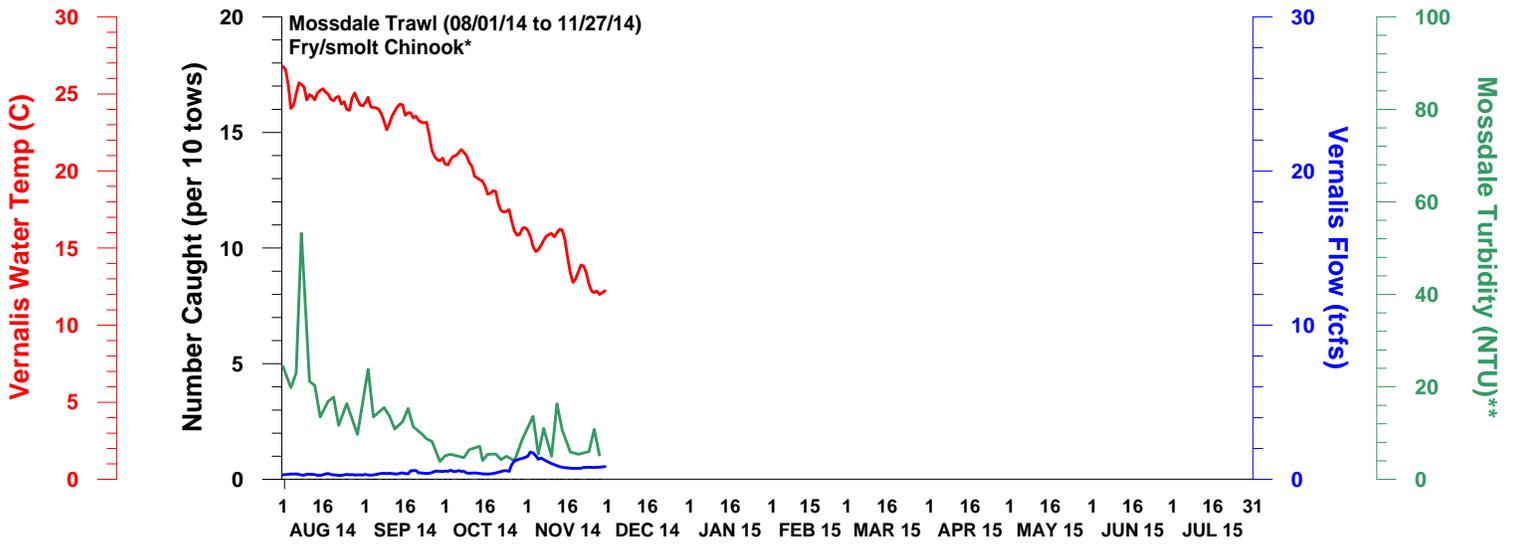
Preliminary data from DFW, FWS, and CDEC; subject to revision.

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



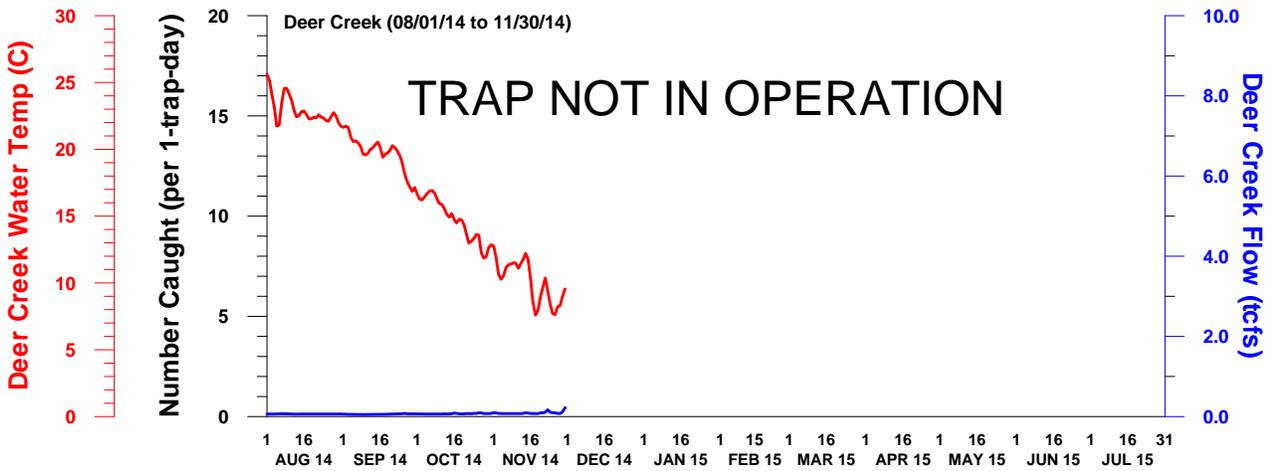
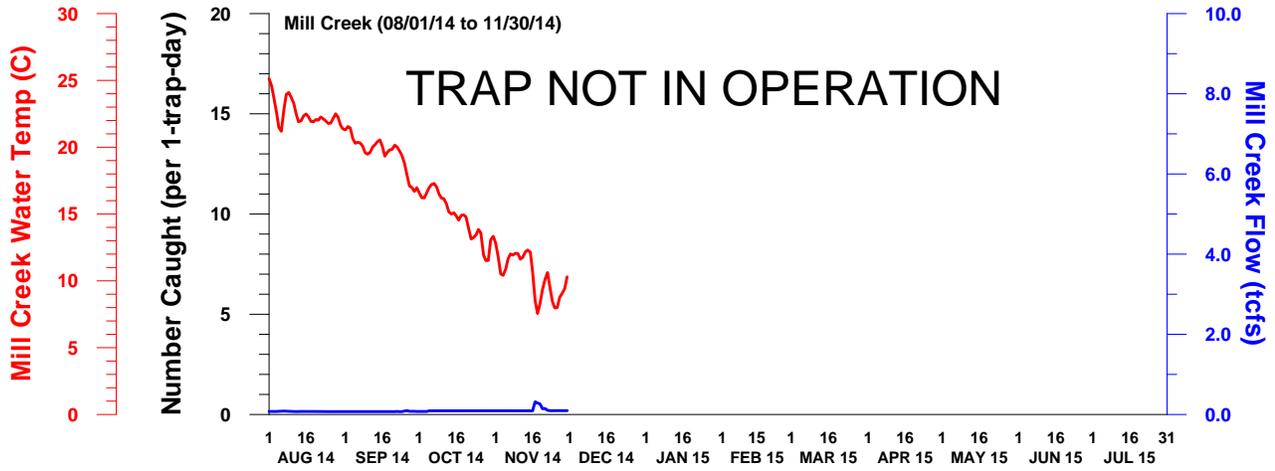
DWR-DES 01 DECEMBER 2014

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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).

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)¹, North Central Region.

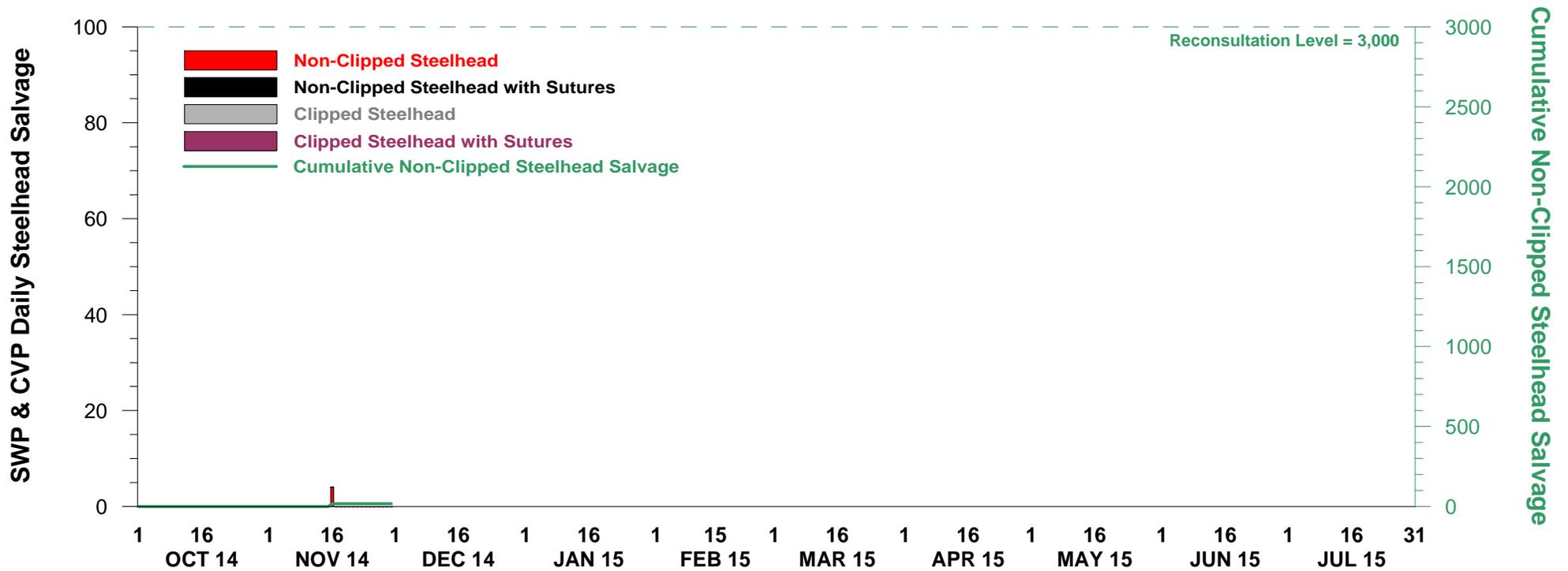
Sacramento River Trawl, Sacramento Area Beach Seine, and Chipps Island Trawl data were obtained directly from FWS, Stockton Fish and Wildlife Office (<http://www.fws.gov/stockton/ifmp/>).

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

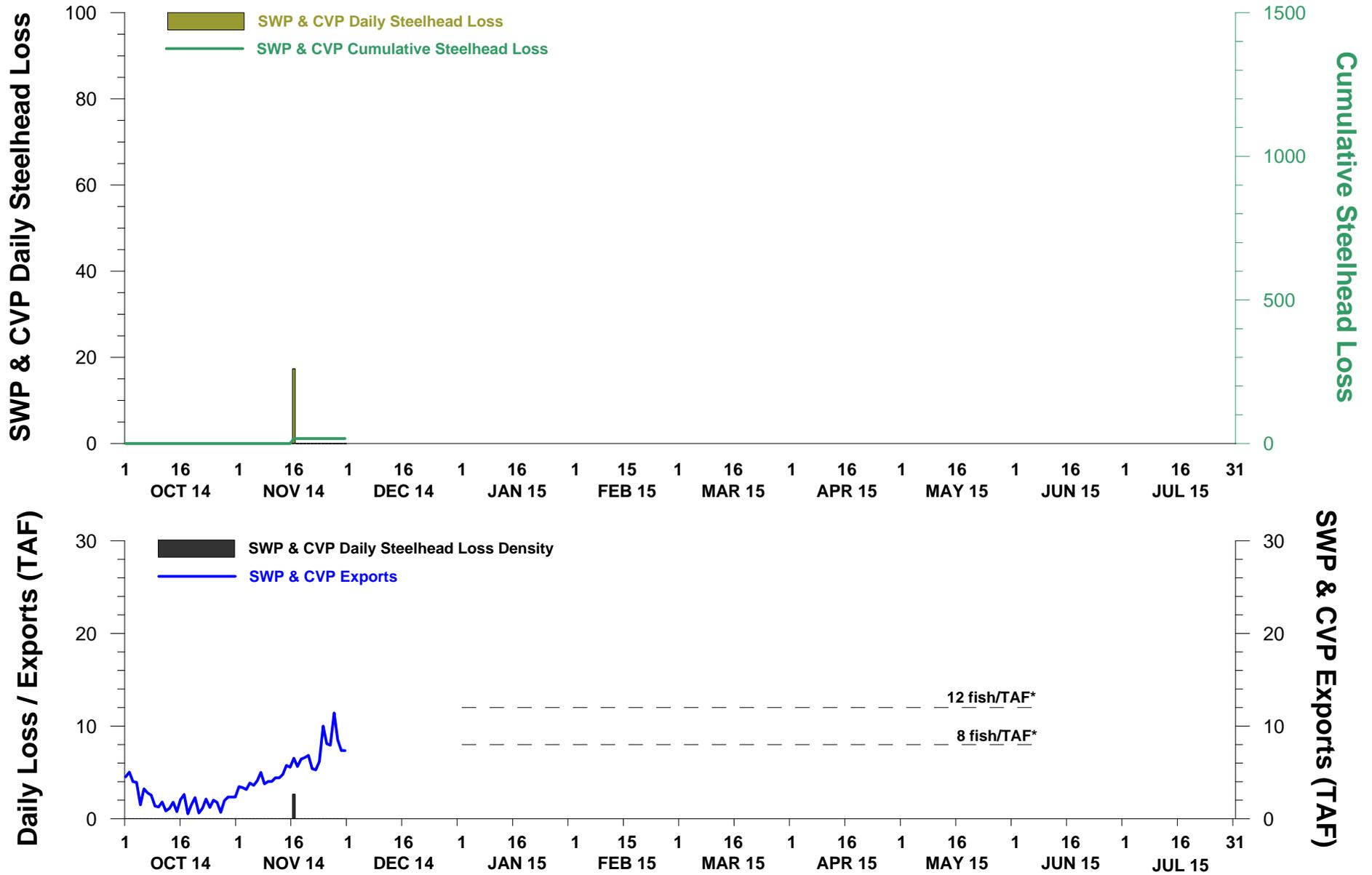
The hydrology data were either downloaded from the California Data Exchange Center (CDEC) (<http://cdec.water.ca.gov>) or obtained directly from the California Department of Water Resources, Operations Control Office.

¹ Formerly known as the California Department of Fish and Game (DFG).

STEELHEAD SALVAGE AT THE DELTA FISH FACILITIES 01 OCT 2014 THROUGH 30 NOVEMBER 2014



NON-CLIPPED STEELHEAD LOSS AT THE DELTA FISH FACILITIES 01 OCT 2014 THROUGH 30 NOVEMBER 2014



DWR-DES 01 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.