

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 12/23/2014 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 (CVP) and the State Water Project (SWP) 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: Kevin Reece, Mike Ford, Aaron Miller, Dan Yamanaka, Farida Islam, Rhiannon Mulligan

Reclamation: Josh Israel

NMFS: Jeff Stuart, Meiling Roddam

USFWS: Craig Anderson, Leigh Bartoo

CDFW: Bob Fujimura, Ken Kundargi, Duane Linander

SWRCB: Matt Holland

Agenda Items

1. Agenda review and introductions
2. Fish Monitoring
3. Current Operations
4. SPECIAL TOPIC: Interim winter-run JPE-based fish density triggers
5. Smelt Working Group
6. RPA Implementation review
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	Chipps Is. Midwater Trawl ^A	Prisoners Pt ^A	Jersey Pt. ^A	Sacramento Trawls ^A	Mossdale Kodiak Trawl ^A	GCID RST ^B	Knights Landing RST ^C	Tisdale RST ^D	Beach Seines ^A
Sample Date	12/14-12/20	12/16, 12/18, 12/20, 12/22	12/17, 12/19, 12/21	12/16, 12/22	12/14-12/20		12/15-12/21	12/15-12/22	12/15, 12/17, 12/19, 12/22
Total Catch	53	13	41	56	0		404 (30mm-124mm)	440 (28mm-120mm)	218
FR Chinook		2	11	49			205	389	112
WR Chinook	1			1			8	11	18
SR Chinook		3	3	3			93	30	86
LFR Chinook	2			1			1	4	1
Ad-Clipped Chinook	13			2			7	6	1
Delta Smelt	3	8	27						
Splittail	13								
Longfin Smelt	21								
Steelhead (ad-clip)									
Steelhead (wild)									
Green Sturgeon									
W. Temp. (avg. °F)							52	50	
Flows (avg. cfs)							24,557	31,964	
Turbidity (avg. NTU)							155	119	

^A Full DAT data were sent to DOSS after the call. Catch data from 12/14 to 12/20 were reported during the call.

Catch data for Prisoners Point, Jersey Point, and Sacramento Trawls from 12/14 to 12/16 were reported in last week's DOSS notes (12/16/14) and are not reported in this week's notes; catch data from 12/21-12/22 are reported in this week's notes for reference.

^B Trap cones lifted the morning of 12/3 due to forecasted increase in flow and subsequent stage change, so no catch available since then.

^C Both traps were sampling at full efficiency and fishing during daylight only.

^D From 12/15-12/21 both RSTs were modified to 50% catch. From 12/15 through 12/17 both traps were fishing during daylight only. From 12/18 at 830 hours to 12/22 at 0800 hours both traps fished during the day and night.

Fish Salvage¹:

Fujimura (CDFW) provided the following summaries of salvage and loss at the SWP and CVP fish collection facilities. The two salvage figures were generated on the CDFW salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

DOSS Weekly Salvage Update
 Reporting Period: December 15-21, 2014
 Prepared by Bob Fujimura on December 22, 2014 2100
 Preliminary Results -Subject to Revision

Criteria	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	Trend	
Loss Densities									
Wild older juvenile CS	0	0	0	0	0	0	0.94	→	0.13
Wild steelhead	0	0	0	0	0	0	0	→	0.00
Exports									
SWP daily export	14,120	7,756	5,450	4,869	5,005	4,817	5,683	↘	6,814
CVP daily export	6,970	5,342	5,351	4,609	3,874	3,873	3,867	↘	4,841

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)

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
Wild					
Winter Run	0	0	→	0	0
Spring Run	0	0	→	0	0
Late Fall Run	2	9	↘	6	26
Fall Run	0	0	→	0	0
Unclassified	0	0	↘	24	NC
Total	2	9		30	26
Hatchery					
Winter Run	20	29	↘	24	46
Spring Run	0	0	→	0	0
Late Fall Run	64	196	↘	80	221
Fall Run	16	71	↘	35	154
Unclassified	0	0	→	0	0
Total	100	296		139	421

Trend = weekly loss per race; Salvage = estimated number of fish collected by the CVP and SWP fish protective facilities per unit of time
 NC = can not be calculated

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	→	4	17
Hatchery	0	0	→	0	0
Total	0	0		4	17

State Water Project loss = salvage x 4.33; Central Valley Project loss = salvage x 0.68

Figure 1. DOSS weekly salvage update for the reporting period 12/15/14-12/22/14.

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.

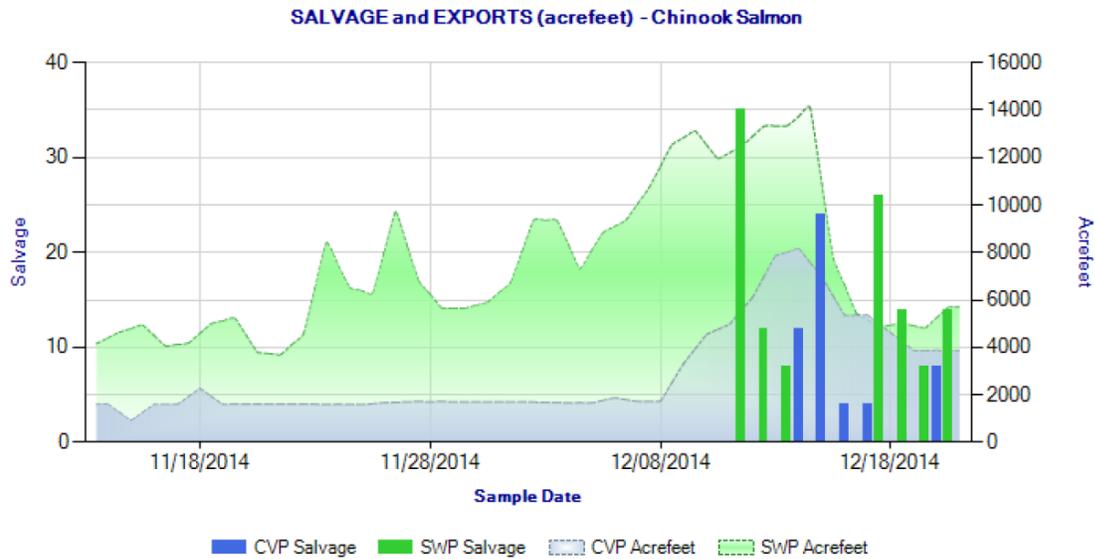


Figure 2. Daily salvage of Chinook salmon (all races) and water exports from the state and federal fish salvage facilities during November 14 through Dec 21, 2014.

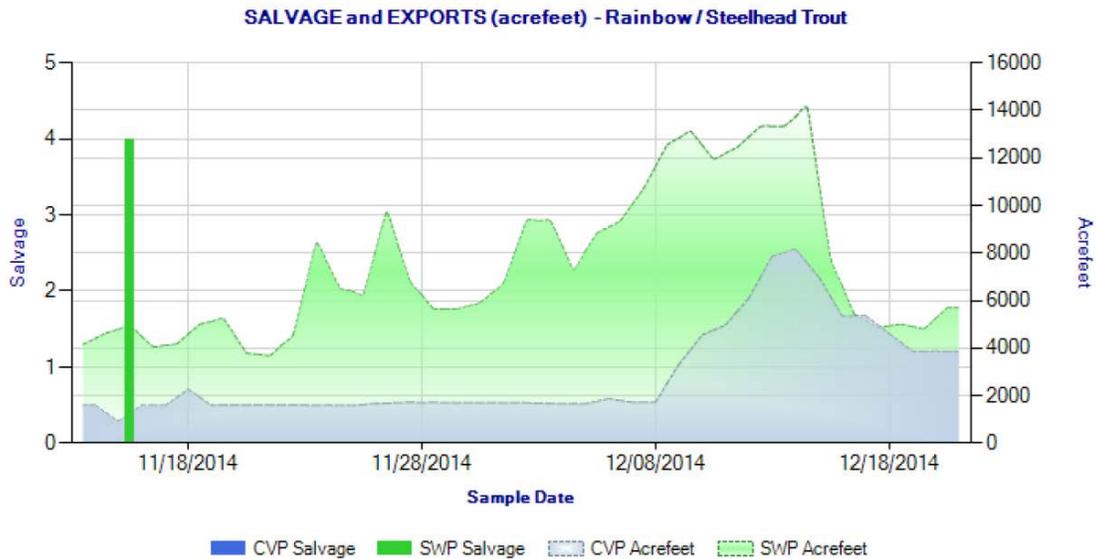


Figure 3. Daily salvage of steelhead and water exports from the state and federal fish salvage facilities during November 14 through Dec 21, 2014.

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 most of the winter-run Chinook salmon juveniles have entered the Delta past Knights Landing.

Though no yearling spring-run Chinook have been observed in monitoring, the recent conditions (high flow, turbidity) in the tributaries to the Sacramento River are associated with yearling outmigration and so DOSS updated the distribution of spring-run yearling based on those observed physical conditions and the capture of production and experimental release Coleman National Fish Hatchery late fall-run Chinook salmon in downstream locations and in salvage. DOSS also expects the recent and upcoming rain events to further cue salmonid emigration 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>	< 10% (last week: < 10%)	>90% (last week: >90%)	<5% (last week: 0%)
<i>YOY spring-run Chinook salmon</i>	50% - 60% (last week: 85% - 90%)	40% - 50% (last week: < 10% - 15%)	< 5% (last week: 0%)
<i>Yearling spring-run Chinook salmon*</i>	< 10% (last week: < 25%)	>75% (last week: > 75%)	< 10%% (last week: 0%)

* 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 (12/23/2014)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	3,200	Jones Pumping Plant	2,600
Reservoir Releases (cfs)			
Feather - Oroville	950	American - Nimbus	900
		Sacramento - Keswick	3,250
		Stanislaus - Goodwin	200
Reservoir Storage (in TAF)			
San Luis (SWP)	481	San Luis (CVP)	246
Oroville	1,267	Shasta	1,723
New Melones	539	Folsom	401
Delta Operations			
Delta Cross Channel (DCC)	Closed	Sacramento River at Freeport (cfs)	~51,000
Outflow Index (cfs)	~ 47,000	San Joaquin River at Vernalis (cfs)	~1,600
E:I	11-12% (14 day avg.)	X2	59 km

Exports are expected to be managed to maintain an Old and Middle River (OMR) flow of no more negative than -5,000 cfs on 12/23, and may increase to -5,500 cfs on 12/24 and no more

negative than -6,000 cfs by 12/25. Operations will be informed by local turbidity levels and special daily monitoring for listed species and adjustments made as warranted.

Agenda Item 4.

SPECIAL TOPIC: Interim winter-run Juvenile Production Estimate (JPE) based fish density triggers

It is anticipated that the JPE-based density triggers for OMR flow management will most likely be less than the minimum 2.5 fish/TAF. The RPA set the minimum fish density trigger at 2.5 fish/TAF to avoid a trigger each time a single fish is salvaged. The first stage JPE-based trigger under RPA Action IV.2.3 for OMR flows is equal to 2% of JPE divided by 2,000, with a minimum of 2.5 fish/TAF. This action takes effect on January 1 of each year. Until the official letter identifying the JPE and JPE-based incidental take limit for the projects is issued, DOSS is advising that the projects use the minimum (2.5 fish/TAF) fish density trigger in RPA Action IV.2.3.

Agenda Item 5.

Smelt Working Group

Bartoo (USFWS) provided the update:

The SWG made no recommendation for a change in projected operations, which were reported to target an OMR of no more negative than -5000cfs for the week. The SWG also agreed that if OMR flows become more negative than -5000cfs, the SWG would need to reconvene to discuss Delta Smelt entrainment risk. The SWG agreed that the voluntary cutbacks in exports that occurred last week through this past weekend were successful in preventing turbidity from being drawn into the south Delta, and likely reduced overall Delta Smelt entrainment risk.

Agenda Item 6.

RPA Implementation Review

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.

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

Agenda Item 7.

DOSS Advice

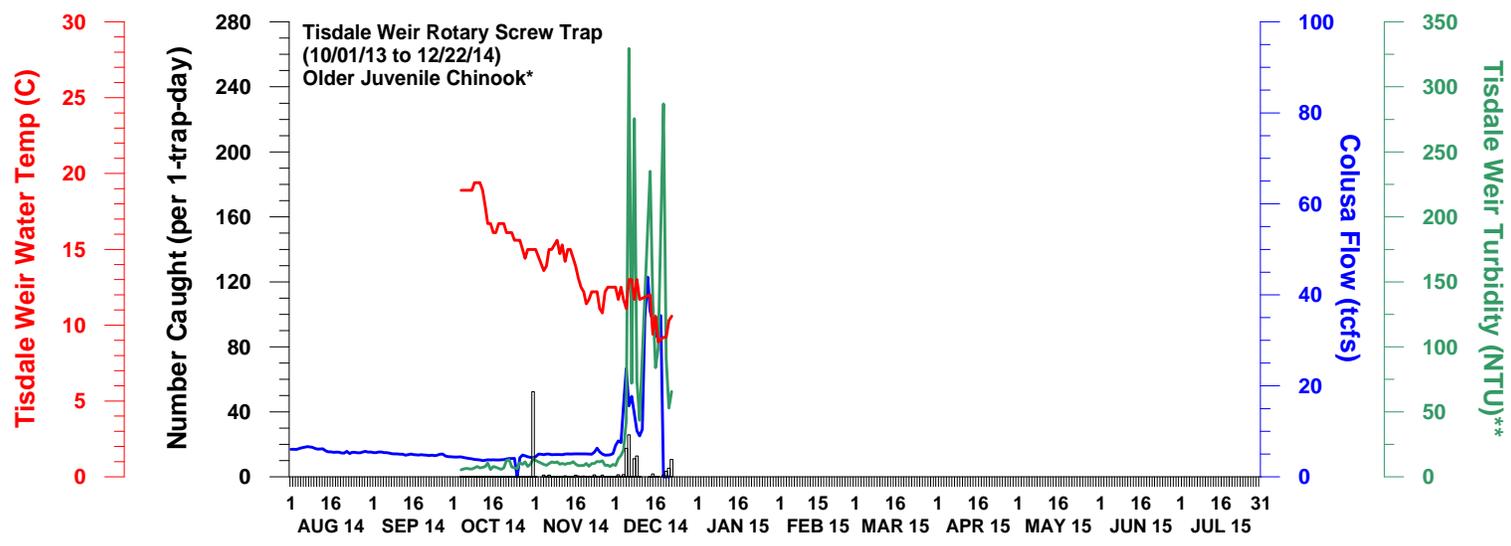
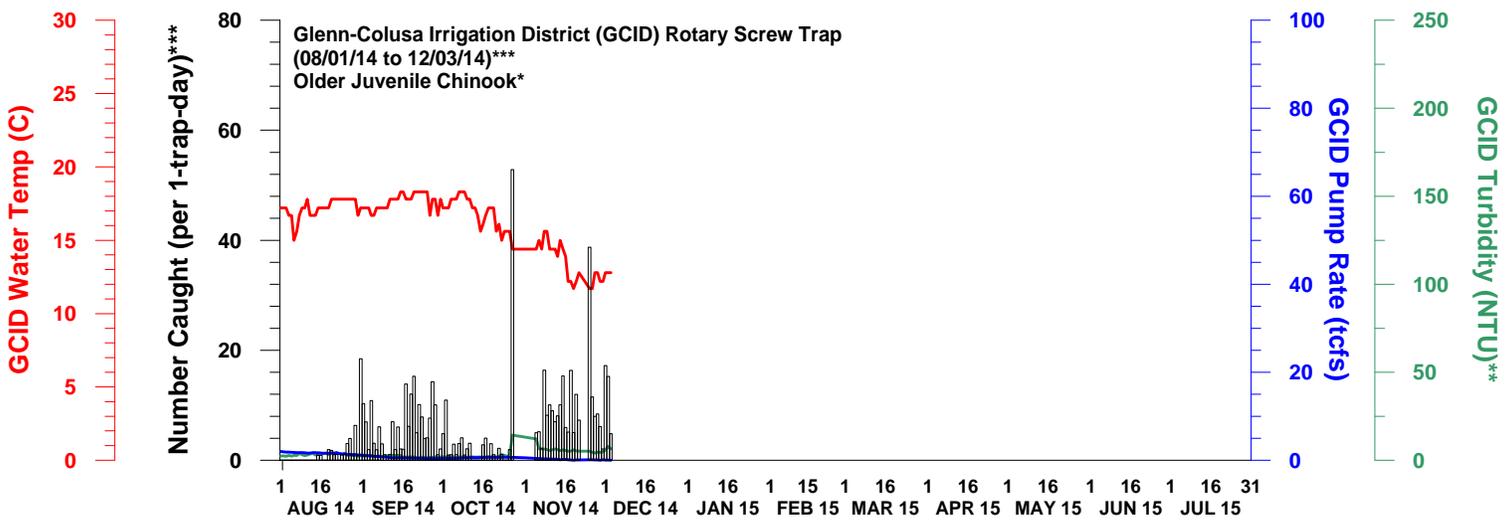
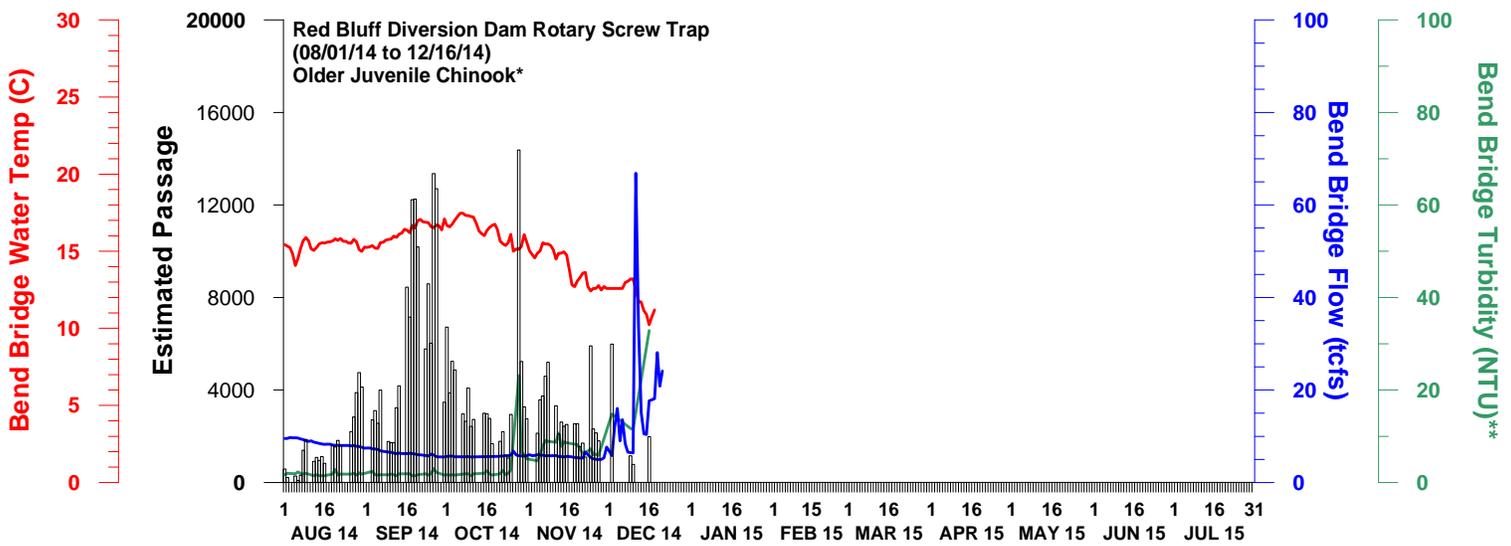
DOSS Advice to WOMT and NMFS: None.

Next Meeting: The next DOSS conference call will be on 12/30/14 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:

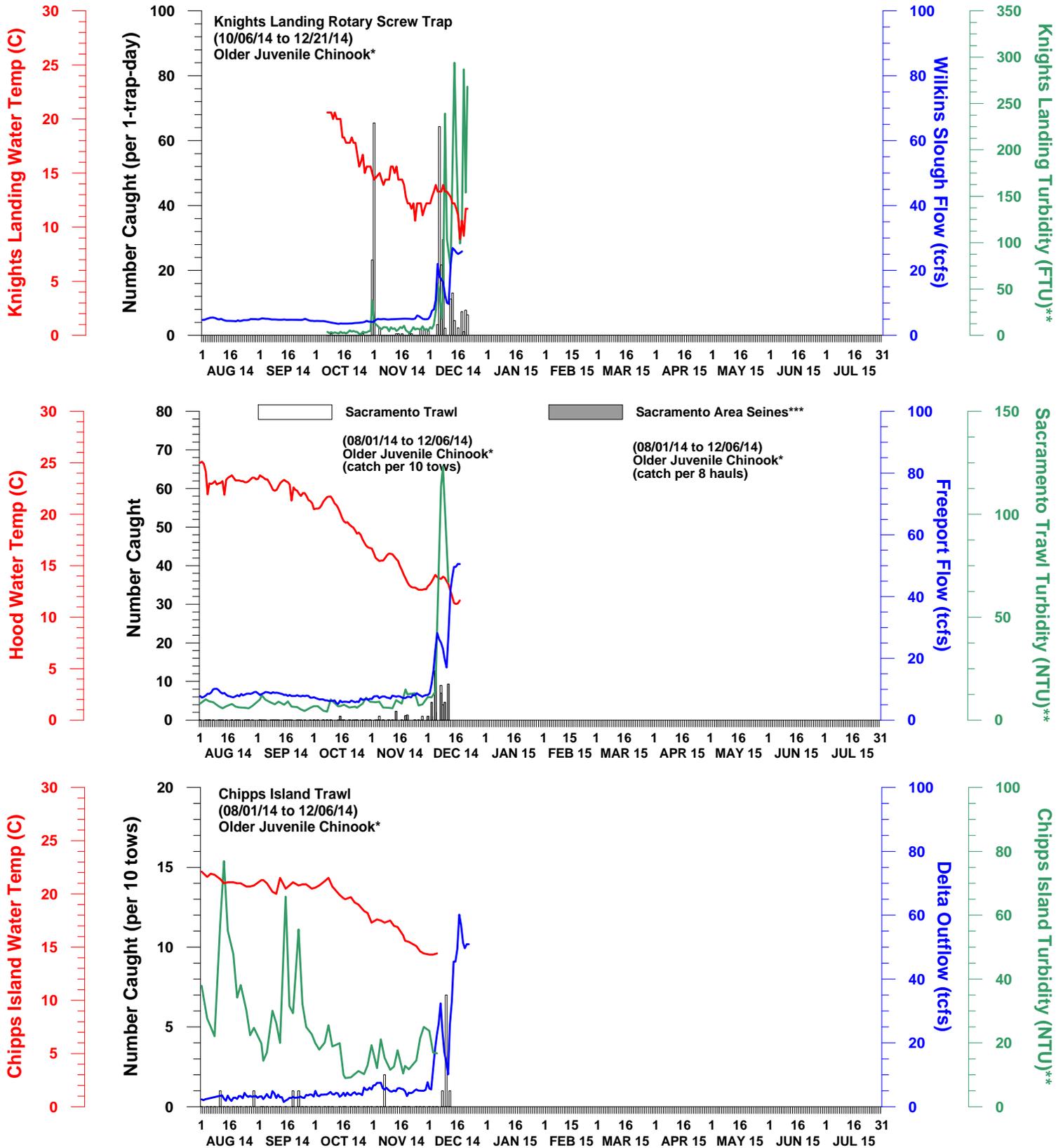
<http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 22 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 again on 12/14/14 due to forested debris in flow and subsequent destruction of trap.

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



DWR-DES 22 DECEMBER 2014

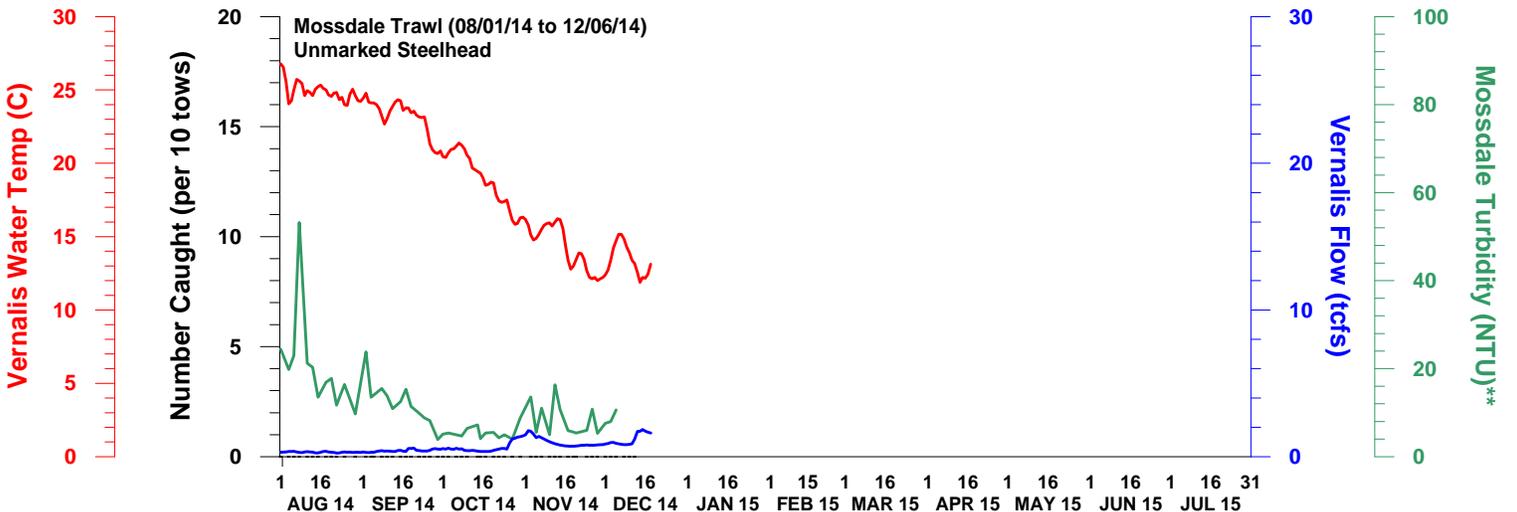
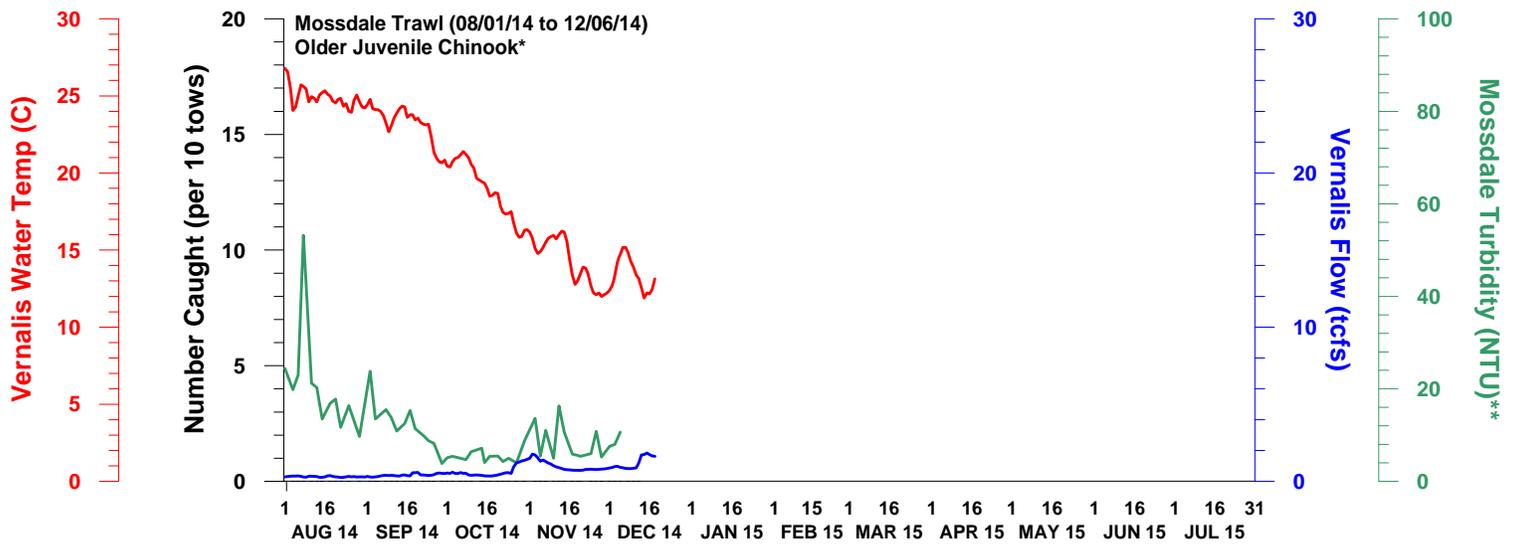
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***Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the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

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

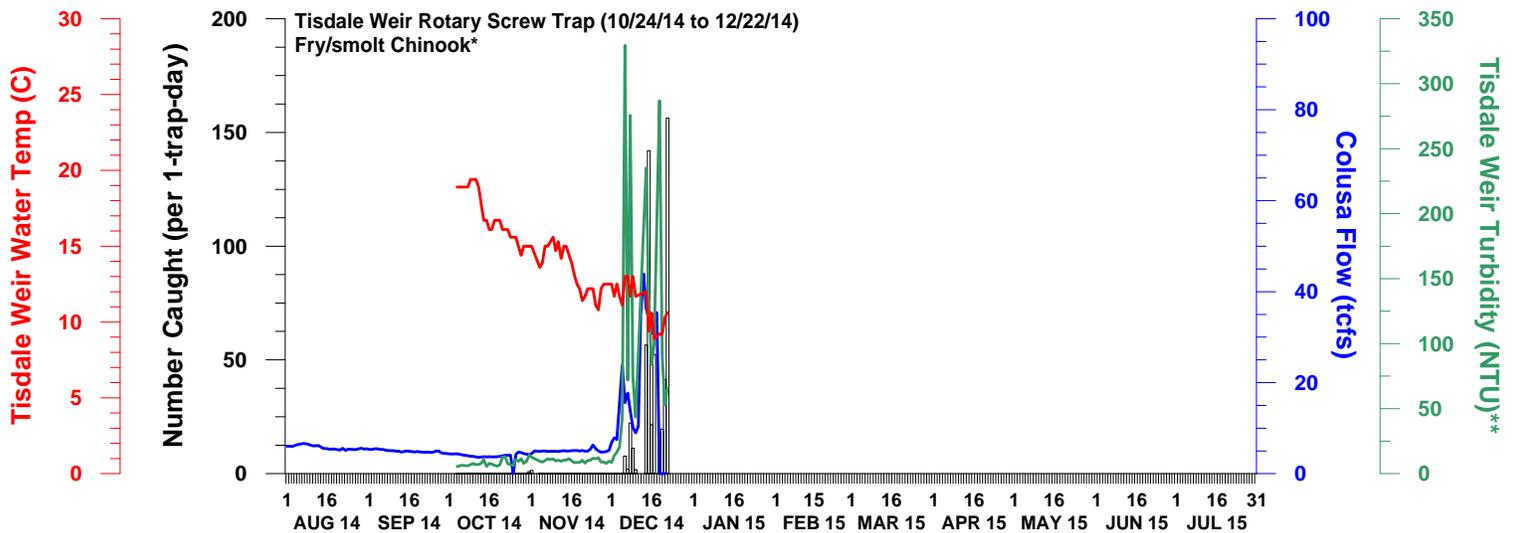
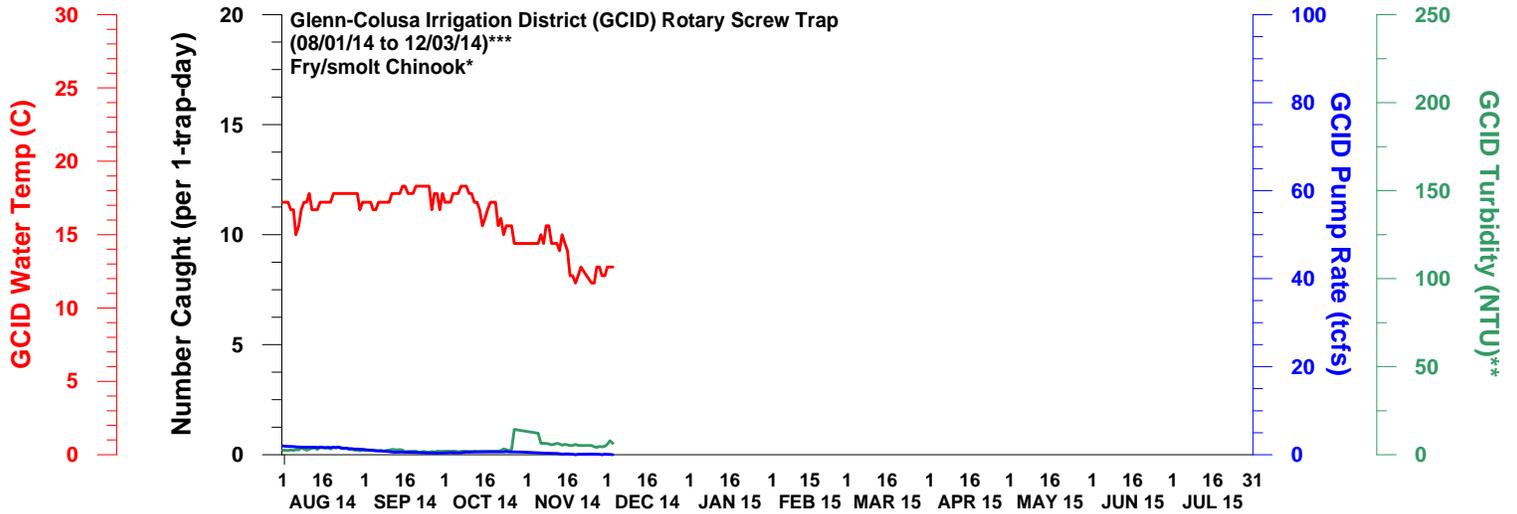
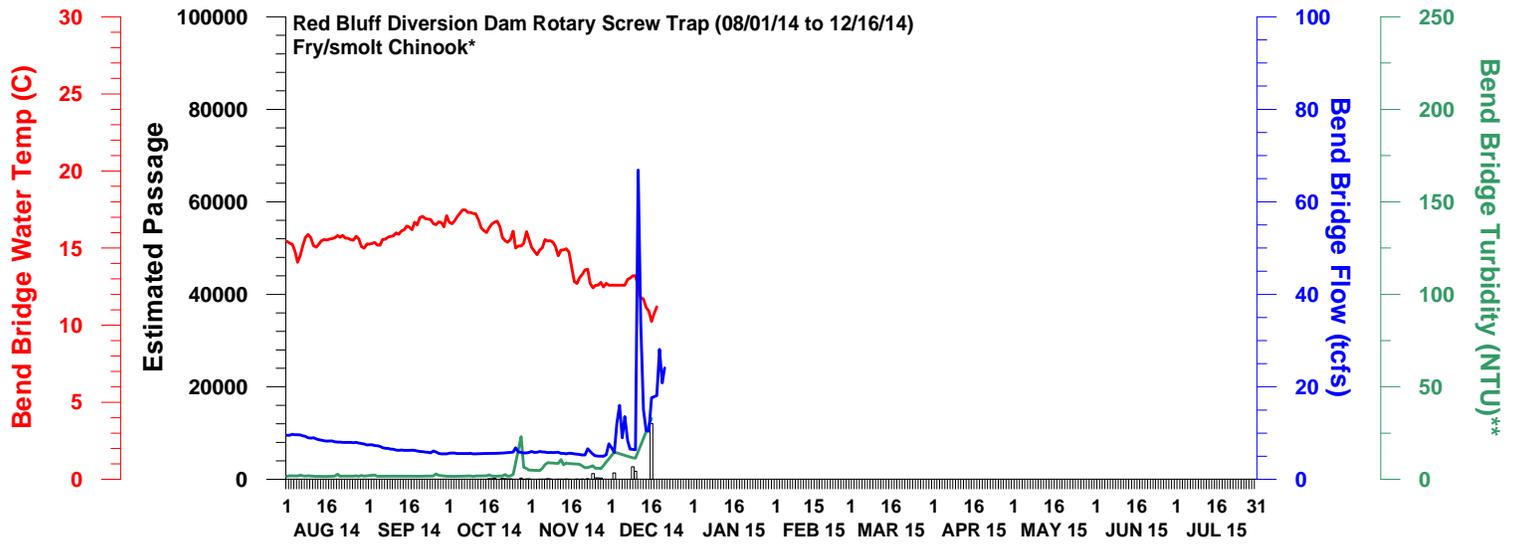


DWR-DES 22 DECEMBER 2014
Preliminary data from FWS and CDEC; subject to revision.

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



DWR-DES 22 DECEMBER 2014

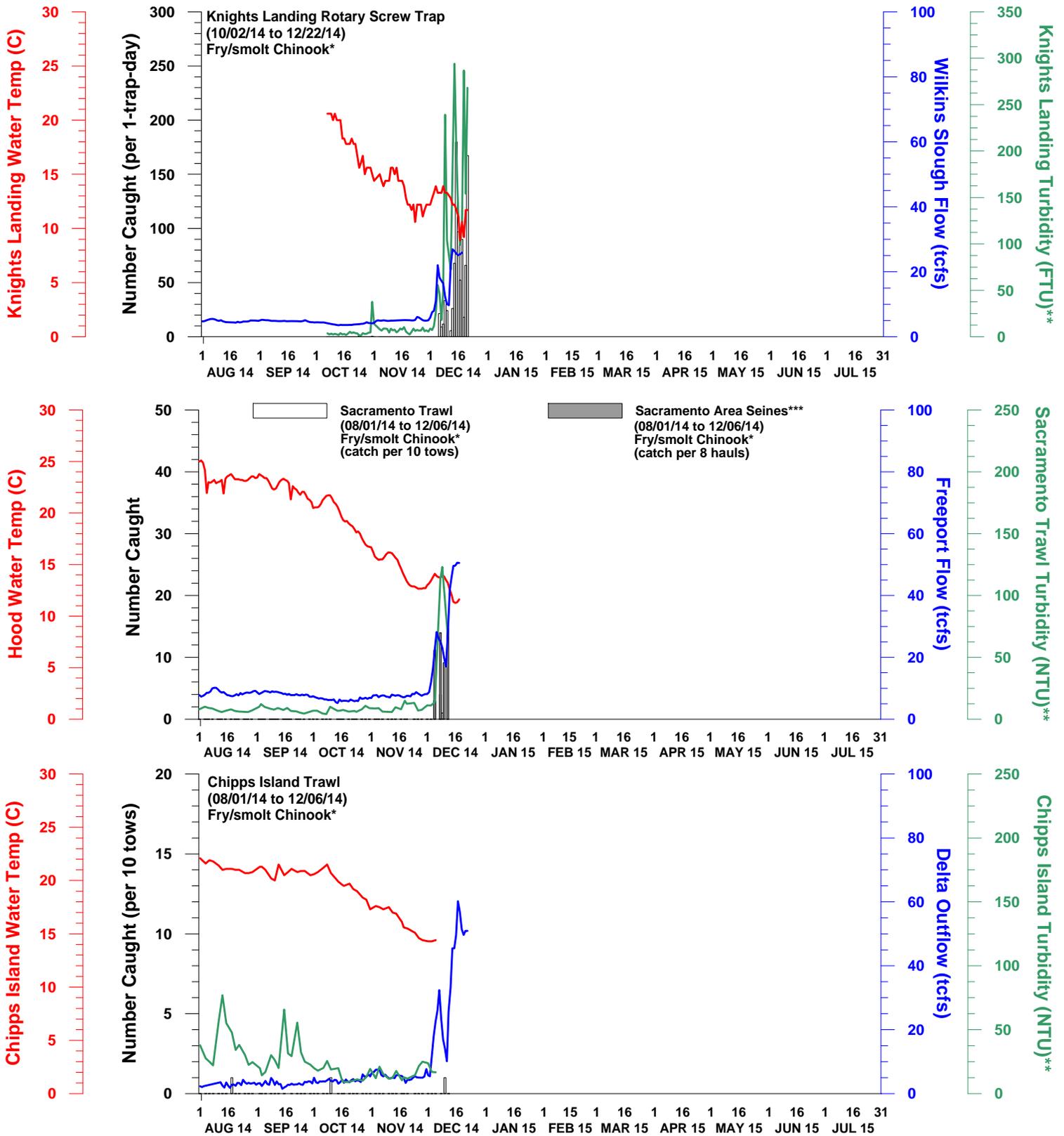
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.

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

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



DWR-DES 22 DECEMBER 2014

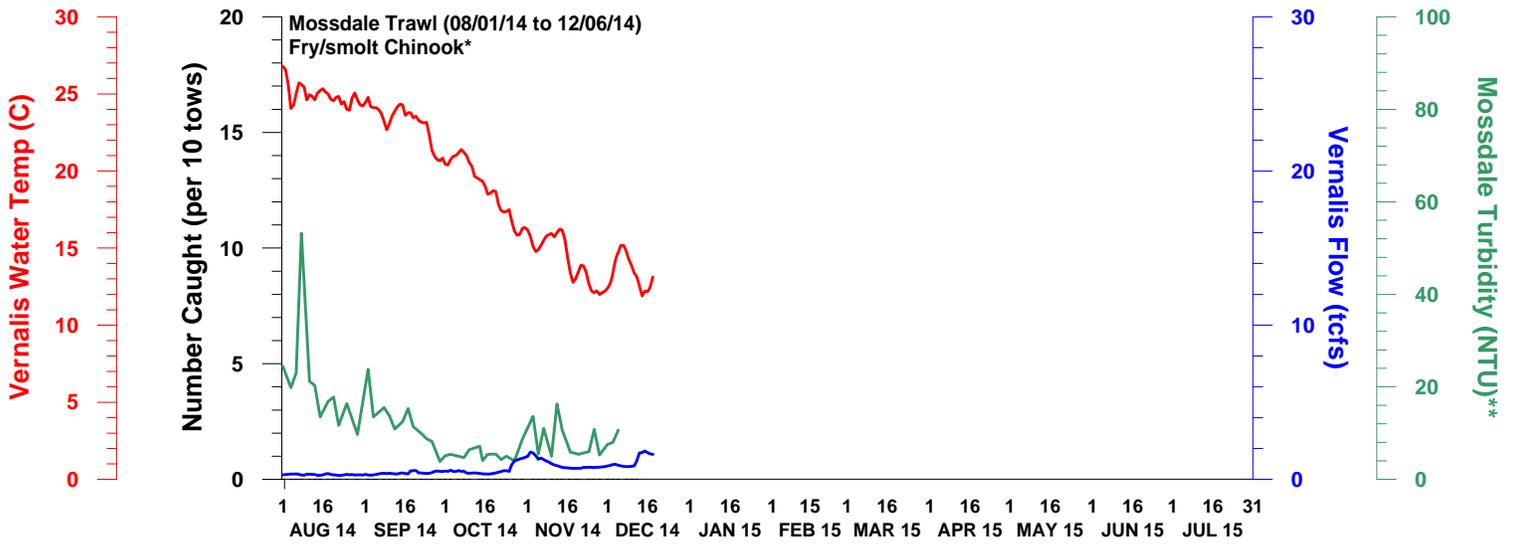
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NUMBER OF UNMARKED FRY/SMOLT CHINOOK MEASURED IN THE SAN JOAQUIN RIVER



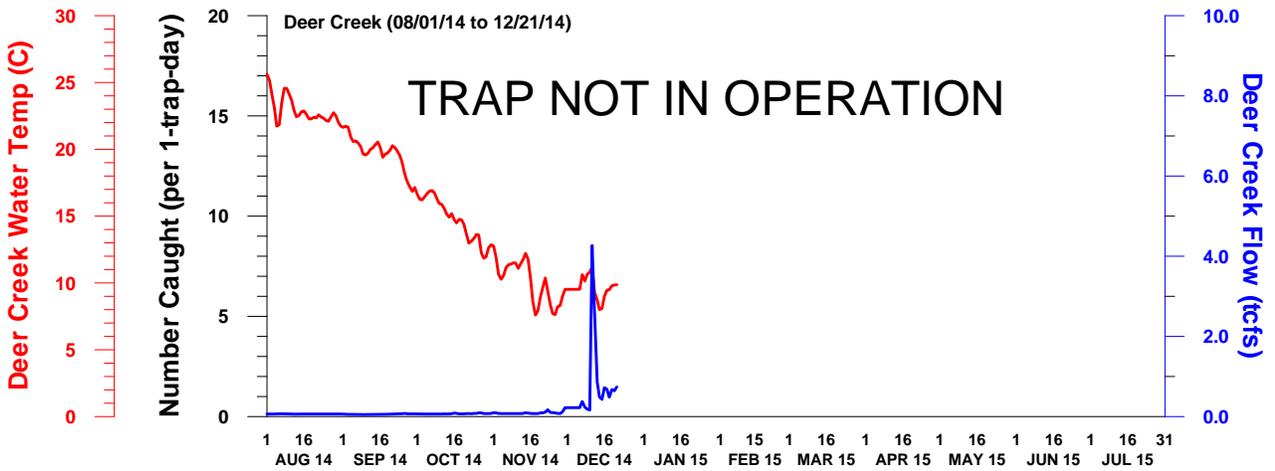
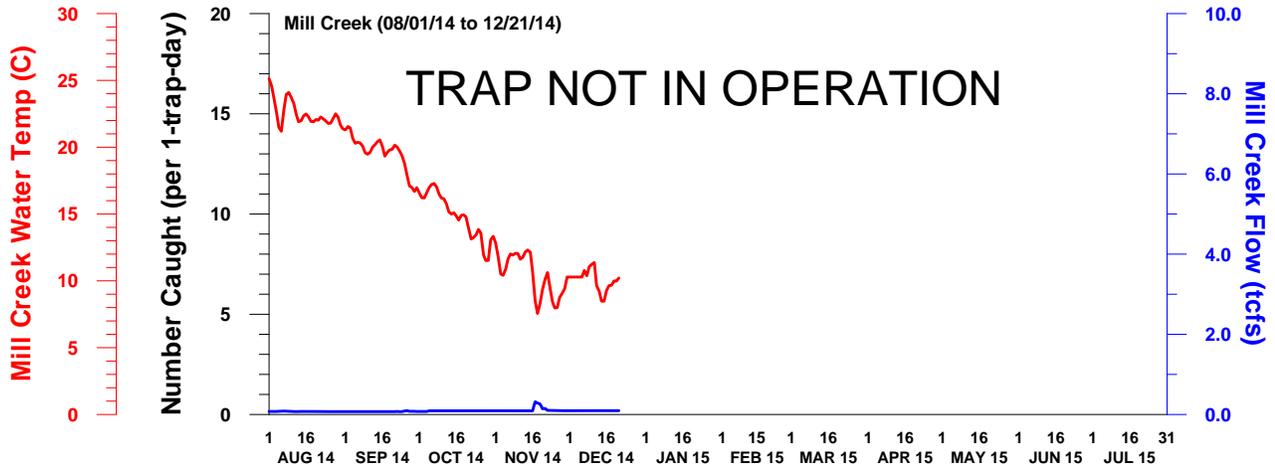
DWR-DES 22 DECEMBER 2014

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).

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.

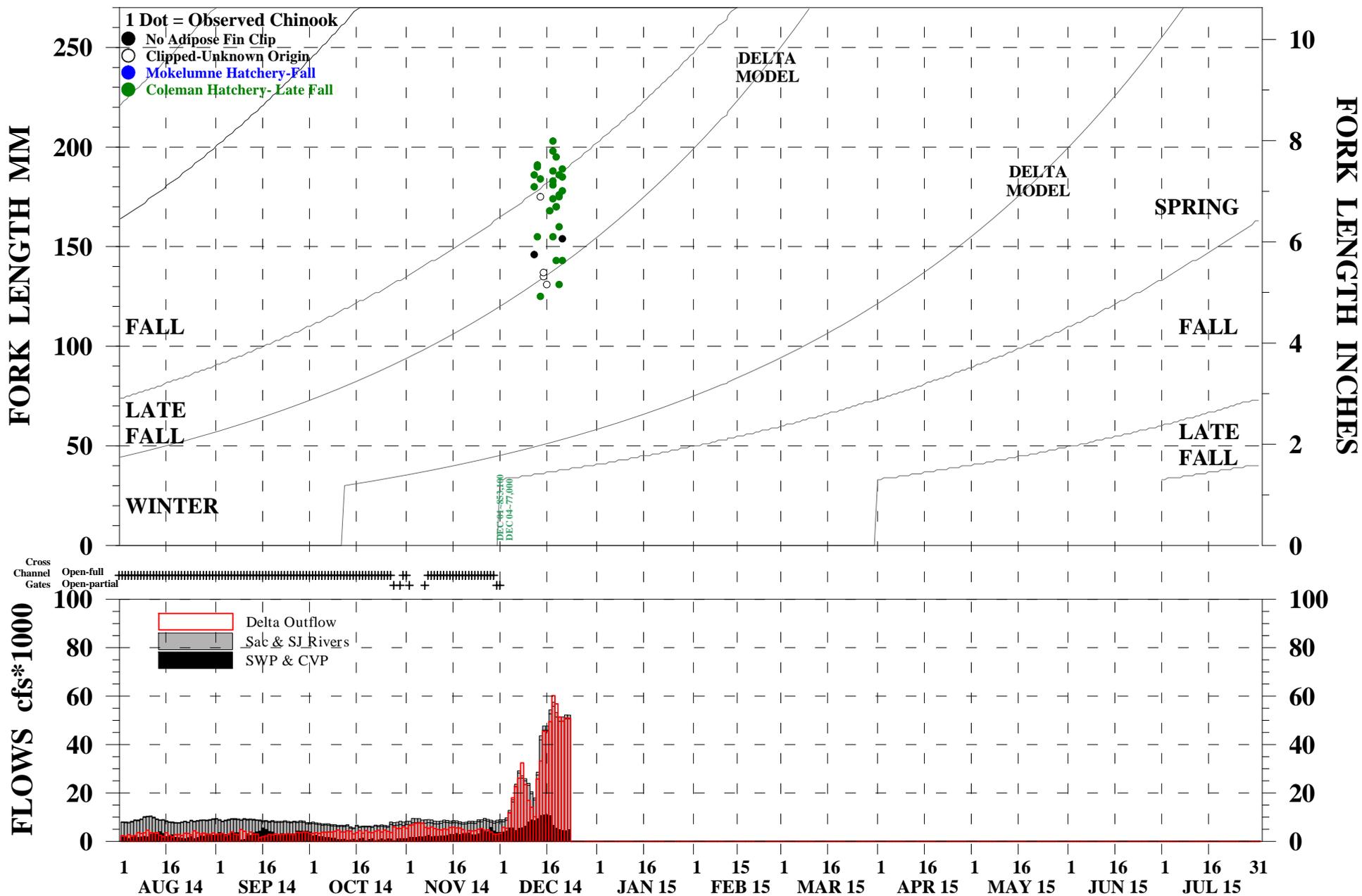
Sacramento River Trawl, Sacramento Area Beach Seine, and Chipps Island Trawl data were obtained directly from FWS, Stockton Fish and Wildlife Office (<http://www.fws.gov/stockton/ifmp/>).

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).

OBSERVED CHINOOK SALVAGE AT THE SWP & CVP DELTA FISH FACILITIES 08/01/2014 THROUGH 12/21/2014



DWR-DES 22 DEC 2014

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

*Chinook not measured for length and Chinook outside of the length-at-date criteria (Delta model) are not reported.