

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 11/10/2015 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: Bryant Giorgi, Kevin Reece, Dan Yamanaka, Mike Ford

Reclamation: Josh Israel, Peggy Manza

NMFS: Barb Byrne, Jeff Stuart, Meiling Roddam

USFWS: Craig Anderson, Leigh Bartoo

CDFW: Duane Linander

SWRCB: Chris Carr

Agenda Items

1. Agenda review and introductions
2. RPA Implementation review
3. Current Operations
4. Fish Monitoring
5. RAPIDS protocol update
6. Recap of Annual Review panel feedback on ePTM pilot application
7. DOSS Advice
8. Next DOSS meeting

Agenda Item 2.

RPA Implementation Review

Delta RPA Actions that may affect operations during November:

Action IV.1.1 (Alerts that indicate the Delta Cross Channel (DCC) gate operations may be triggered soon)¹:

- Recent (11/2-11/9/15) conditions for:
 - Wilkins Slough flow: 4,069-4,569 cfs (range of mean daily flow)
 - Knights Landing temperature: 54-61°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]:

¹ 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. 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	% increase in mean daily flow	mean daily flow	% increase in mean daily flow
10/27/2015	73	--	63	--
10/28/2015	77	5.5%	66	4.8%
10/29/2015	81	5.2%	70	6.1%
10/30/2015	76	-6.2%	66	-5.7%
10/31/2015	75	-1.3%	65	-1.5%
11/1/2015	76	1.3%	66	1.5%
11/2/2015	93	22.4%	80	21.2%
11/3/2015	87	-6.5%	81	1.3%
11/4/2015	80	-8.0%	70	-13.6%
11/5/2015	77	-3.8%	68	-2.9%
11/6/2015	77	0.0%	67	-1.5%
11/7/2015	76	-1.3%	67	0.0%
11/8/2015	78	2.6%	69	3.0%
11/9/2015	107	37.2%	97	40.6%

- The first alert (triggered if either component is met) has been triggered based on Mill Creek and Deer Creek flows >95 cfs on 11/9/15
- The first component of the second alert has been met based on Knights Landing temperatures less than 56.3°F on 11/5-11/7, but the second alert is not triggered unless both components (Knights Landing water temperature and Wilkins Slough flow) are met.

Action IV.1.2² (DCC gate operations):

- Since 10/1/15, none of the criteria requiring DCC gate closure have been met.

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 3.

Current Operations (11/10/2015)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	1,000	Jones Pumping Plant	1,850-2,000
Reservoir Releases (cfs)			
Feather - Oroville	1,200	American - Nimbus	500
		Sacramento - Keswick	5,000*
		Stanislaus - Goodwin	200
		Trinity - Lewiston	300

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

Reservoir Storage (in TAF)			
San Luis (SWP)	296	San Luis (CVP)	79
Oroville	977	Shasta	1,380
New Melones	265	Folsom	143
Delta Operations			
DCC	Open	Sacramento River at Freeport (cfs)	5,914
Outflow Index (cfs)	4,800	San Joaquin River at Vernalis (cfs)	1,000**
E:I	~ 39% (3-day avg.)	X2	>81 km

*Scheduled to begin decreasing on 11/12/15, will be at 4,250 cfs on 11/16/15.

**The fall pulse flow on the Stanislaus River contributed to Vernalis flows over the last three weeks; because the Stanislaus pulse ended today, Vernalis flows are expected to decrease over the next few days.

Seasonal salinity management is currently controlling exports.
Current daily OMR based on the USGS gauges is approximately -3,012 cfs.

Agenda Item 4.

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 Trawl	Beach Seines	Knights Landing RST ^A	Tisdale RST ^B	GCID RST	Mossdale Kodiak Trawl
Sample Date	11/1-11/7	11/1-11/7	11/1-11/7	11/1-11/8	11/2-11/9	11/2-11/9	11/1-11/7
Total Catch	1 (662 mm, Chinook adult)	1	1	0	0	39	0
FR Chinook						2	
WR Chinook		1 (66 mm)				19	
SR Chinook							
LFR Chinook						18	
Ad-Clipped Chinook							
Delta Smelt							
Splittail			1				
Longfin Smelt							

Steelhead (ad-clip)							
Steelhead (wild)							
Green Sturgeon							
Flows (avg. cfs)				4,270	4,329	832	
W. Temp. (avg. °F)				57.4	55	57.6	
Turbidity (avg. NTU)				4.4	8	4.21	

^A Sampling period was from 11/1 at 1:30 pm to 11/8 at 10:00 am

^B Sampling period was from 11/2 at 8:00 am to 11/9 at 8:00 am.

Red Bluff Diversion Dam (RBDD)

USFWS biweekly report (10/22-11/4/15) for preliminary estimates of passage by brood-year and run for unmarked juvenile Chinook salmon captured by rotary screw traps at RBDD included:

Run and Species	Biweekly Total	Brood Year Total
Winter-run Chinook (BY2015)	18,731	236,220

Fish Salvage⁴: No species of management concern have been salvaged during WY 2016.

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. DOSS estimates the bulk of young-of-year winter-run Chinook are still upstream of the Delta. Young-of-year juveniles from other runs (fall, spring, late-fall) are assumed rare or absent; many spring-run juveniles have likely not emerged yet from redds, fall-run spawning is still in progress, and late-fall-run spawning has yet to occur.

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>	>95%	<5%	0%

Agenda Item 5.

RAPIDS protocol update

Kevin Reece (DWR) gave an update on the RAPIDS Standard Operating Procedures protocol (for rapid genetic testing of “older juvenile”-sized Chinook salmon salvaged at the CVP or SWP

⁴Salvage 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.

fish collection facilities) that was sent out to DOSS for review on 10/20/15. The logistics for the implementation of RAPIDS genetic testing are in place, however there is ongoing discussion in other venues regarding how the genetic results will be used.

Agenda Item 6.

Recap of Annual Review panel feedback on ePTM pilot application

Byrne (NMFS) provided a recap of the panel's initial feedback/recommendations on the pilot application of the ePTM. The panel was appreciative of the agencies' efforts to link biological information (*e.g.*, fish movement data) to physical outcomes (*e.g.*, flows) of water project operations, but stated very strongly that the model needed to be validated and refined further before it should be considered for use in management decisions. For all 2015 Annual Review materials, see: <http://deltacouncil.ca.gov/events/2015-long-term-operations-biological-opinions-annual-science-review>)

Agenda Item 7.

DOSS Advice to WOMT and NMFS: None.

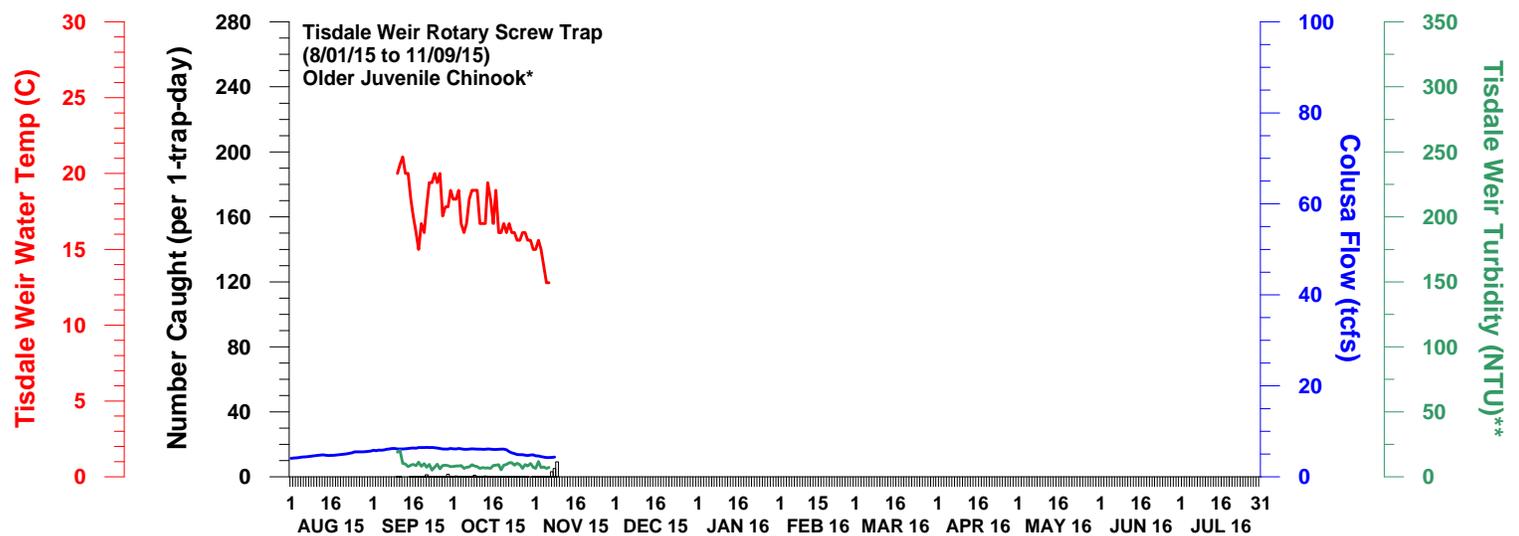
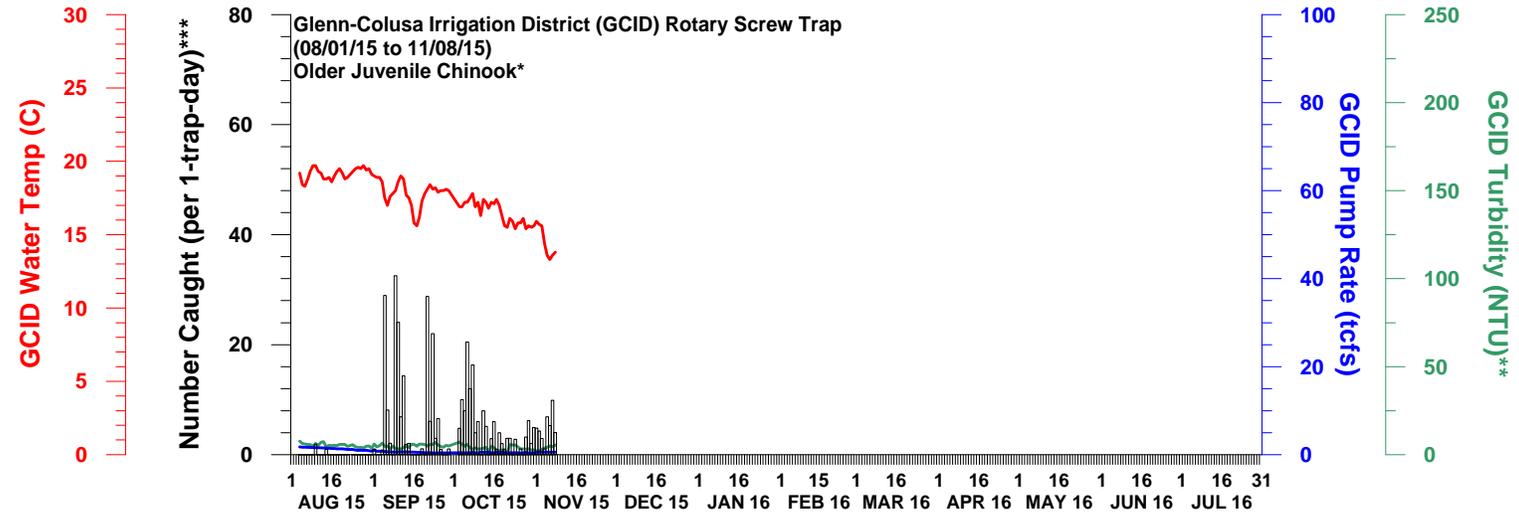
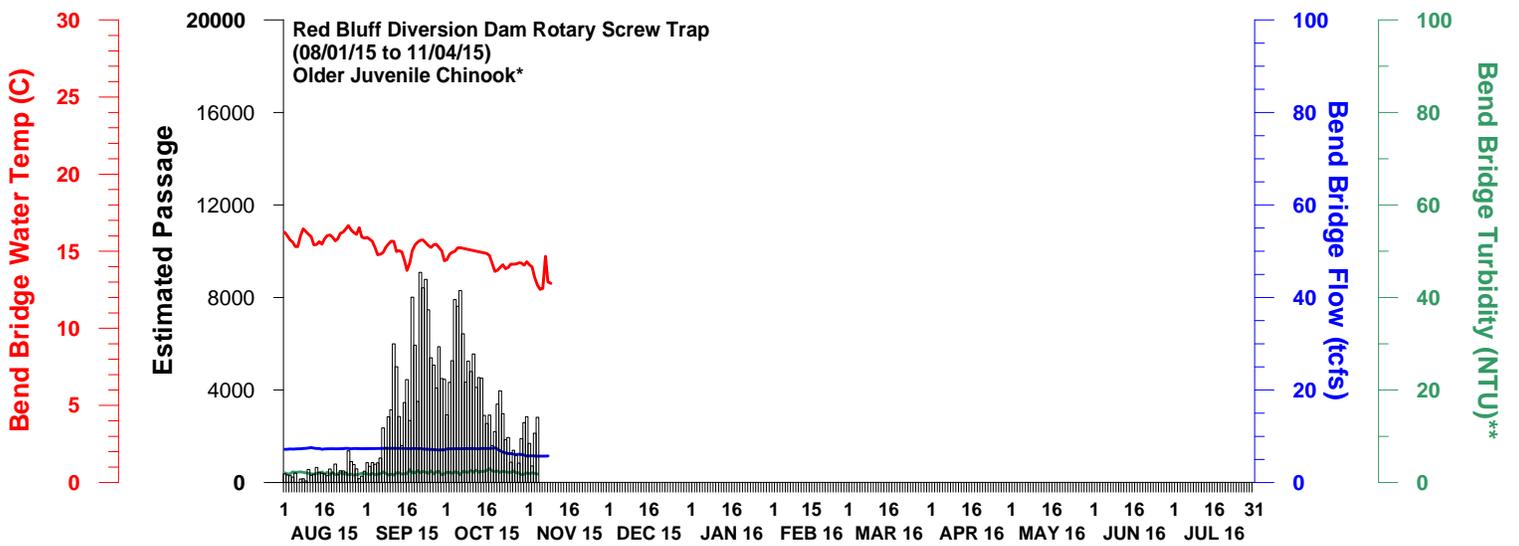
Agenda Item 8.

Next Meeting: The next DOSS conference call will be on 11/17/15 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. While these figures were provided after the DOSS call, the data summarized in these graphs were available during the DOSS call. For additional graphs, please visit the DWR website at:

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

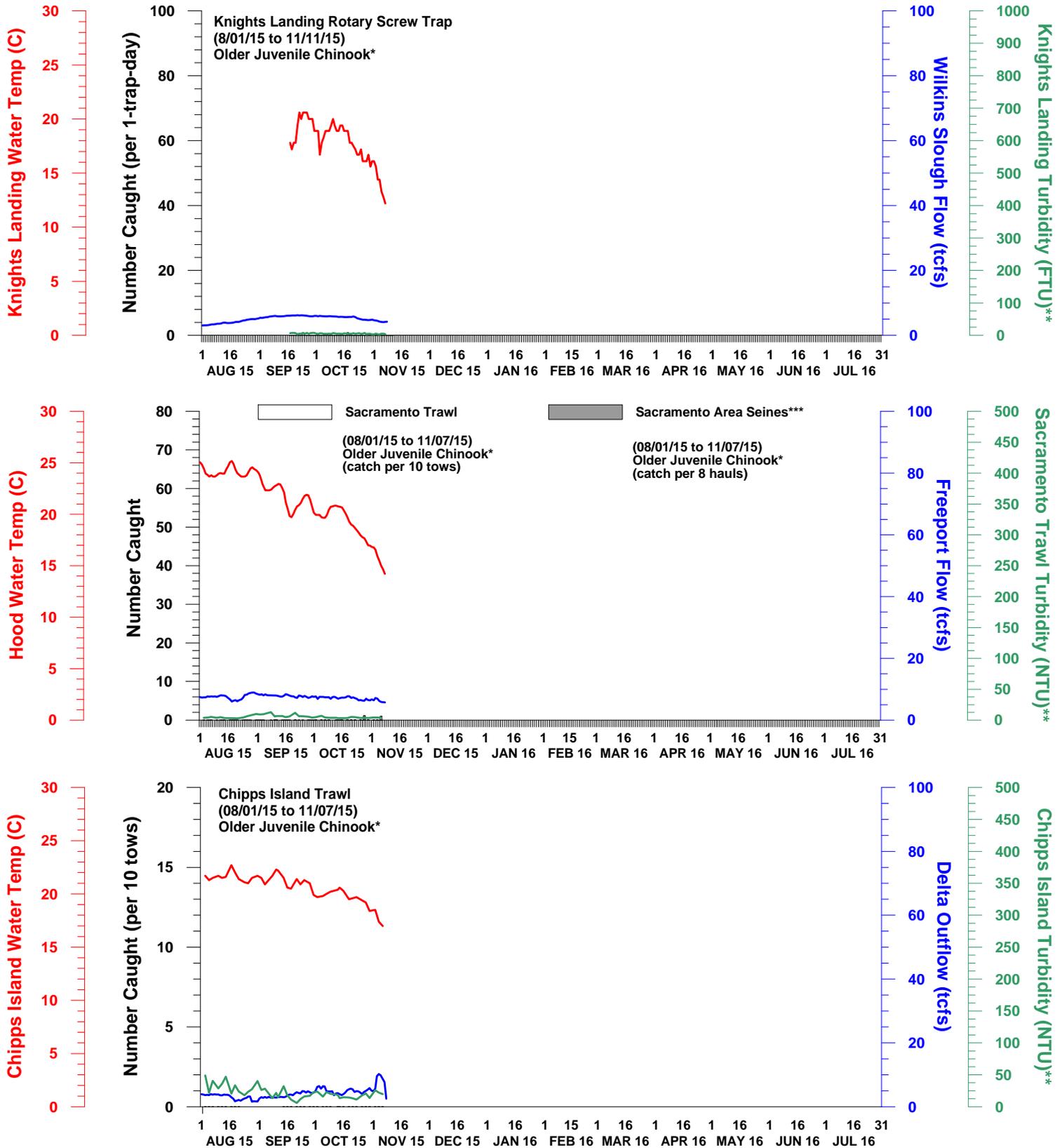
NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



DWR-DES 12 November 2015
 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.

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



DWR-DES 12 November 2015

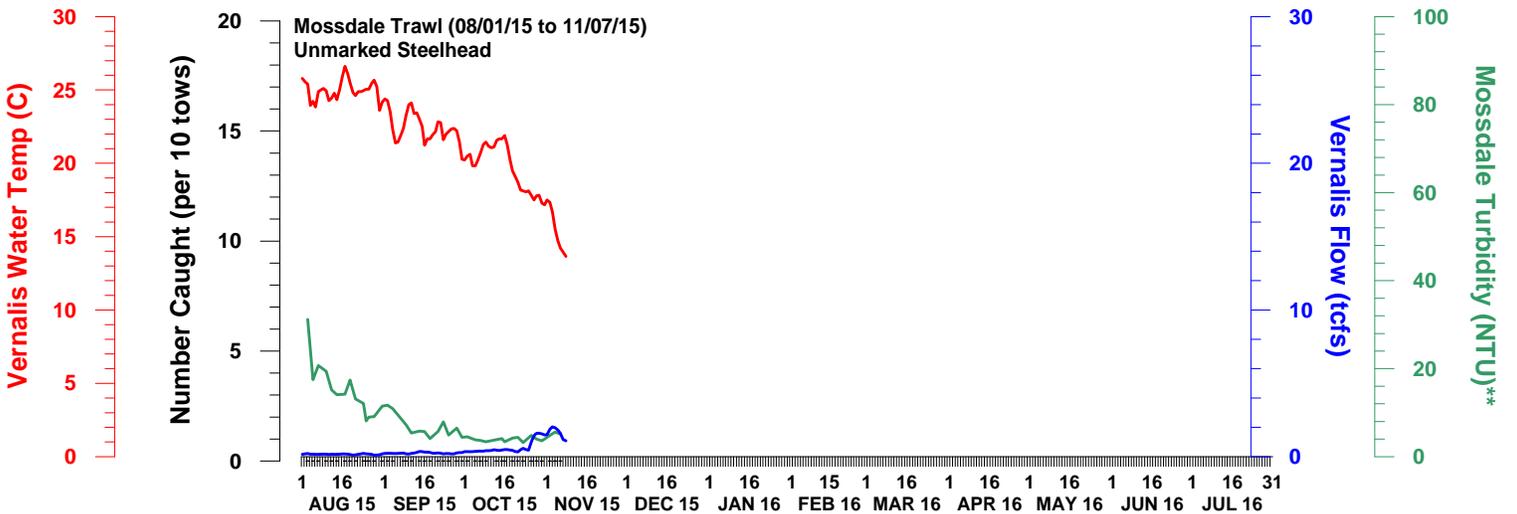
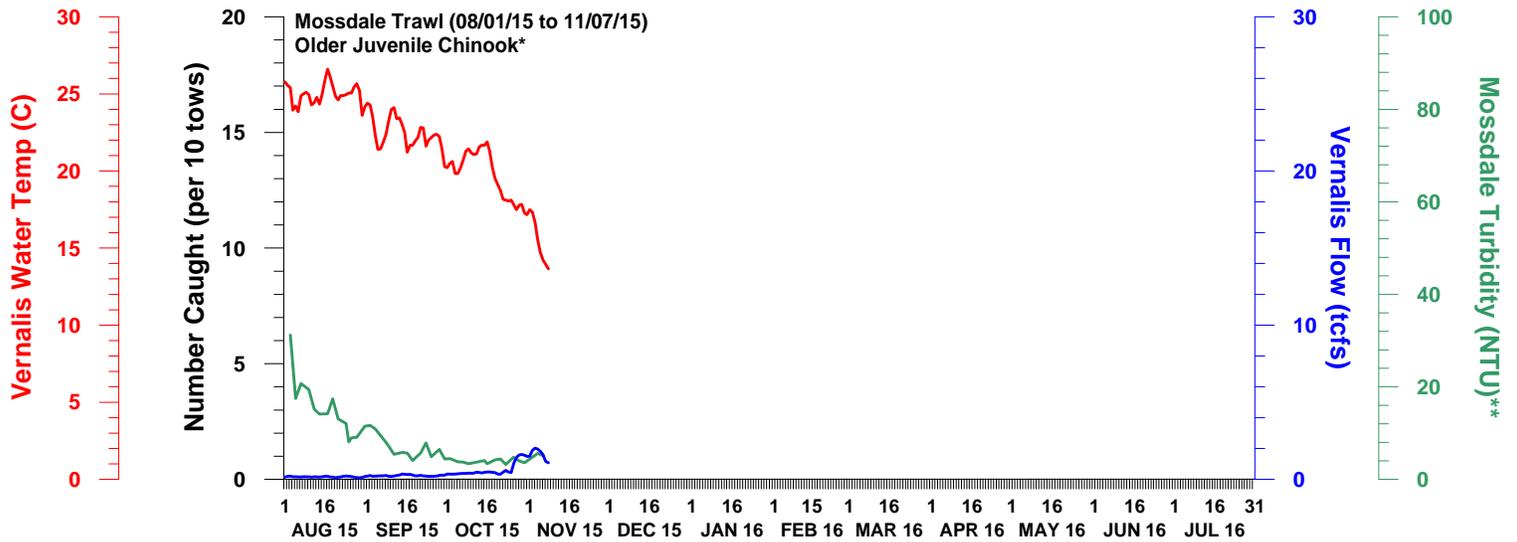
Preliminary data from DFW, FWS, and CDEC; subject to revision.

*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

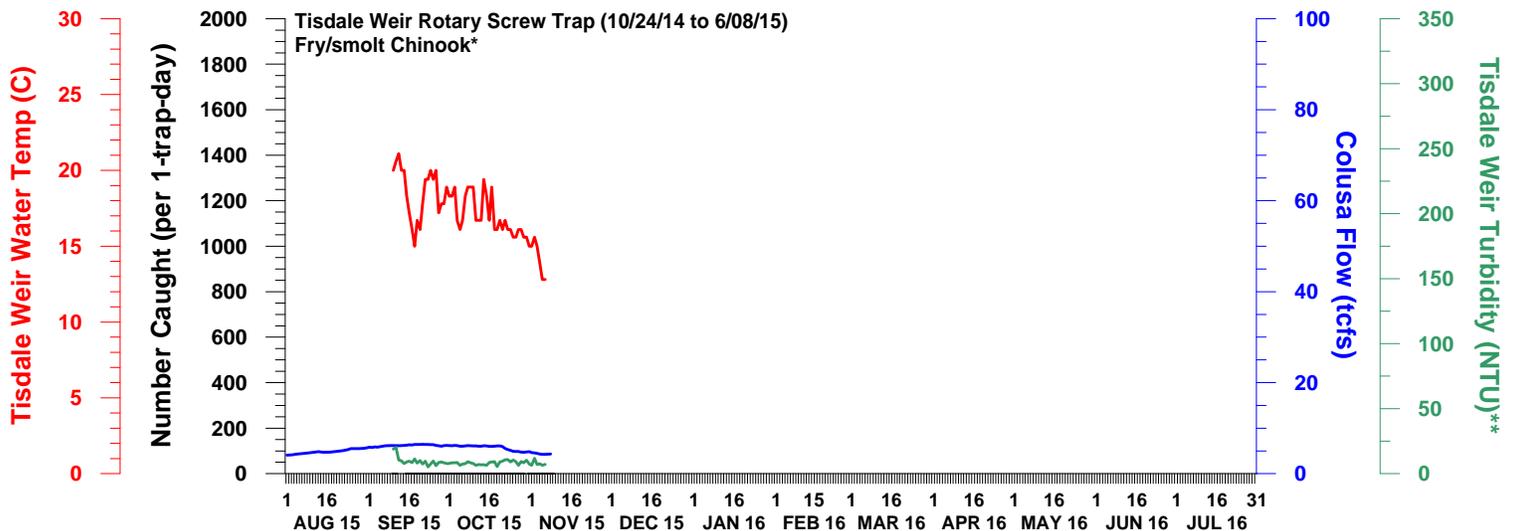
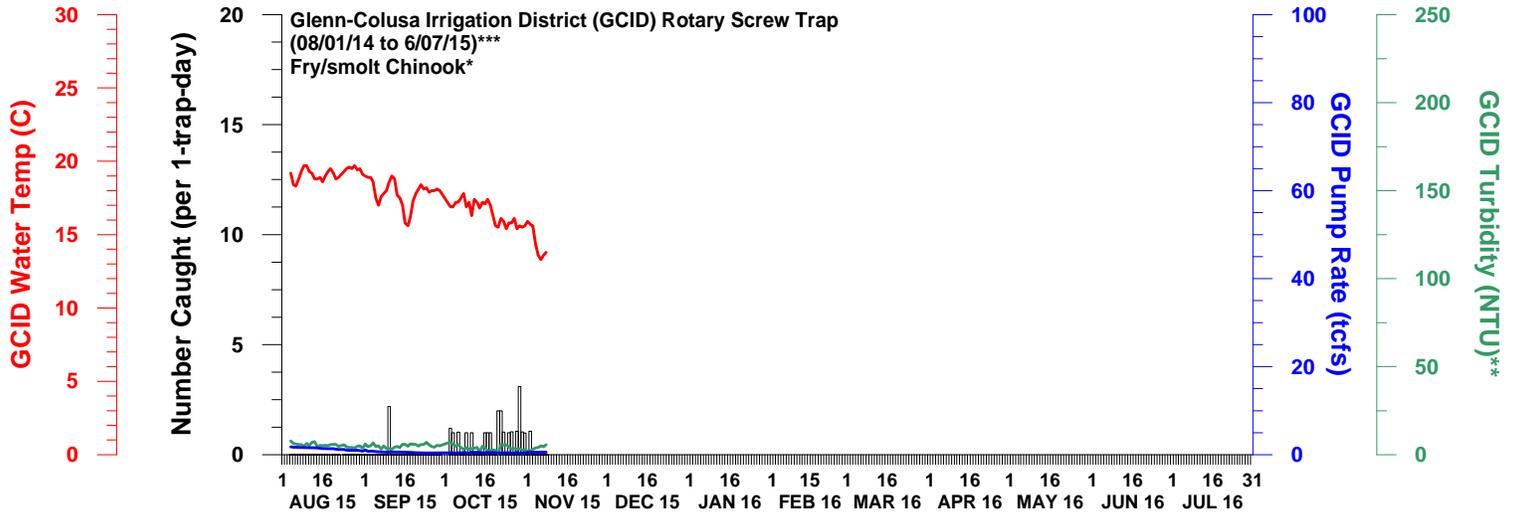
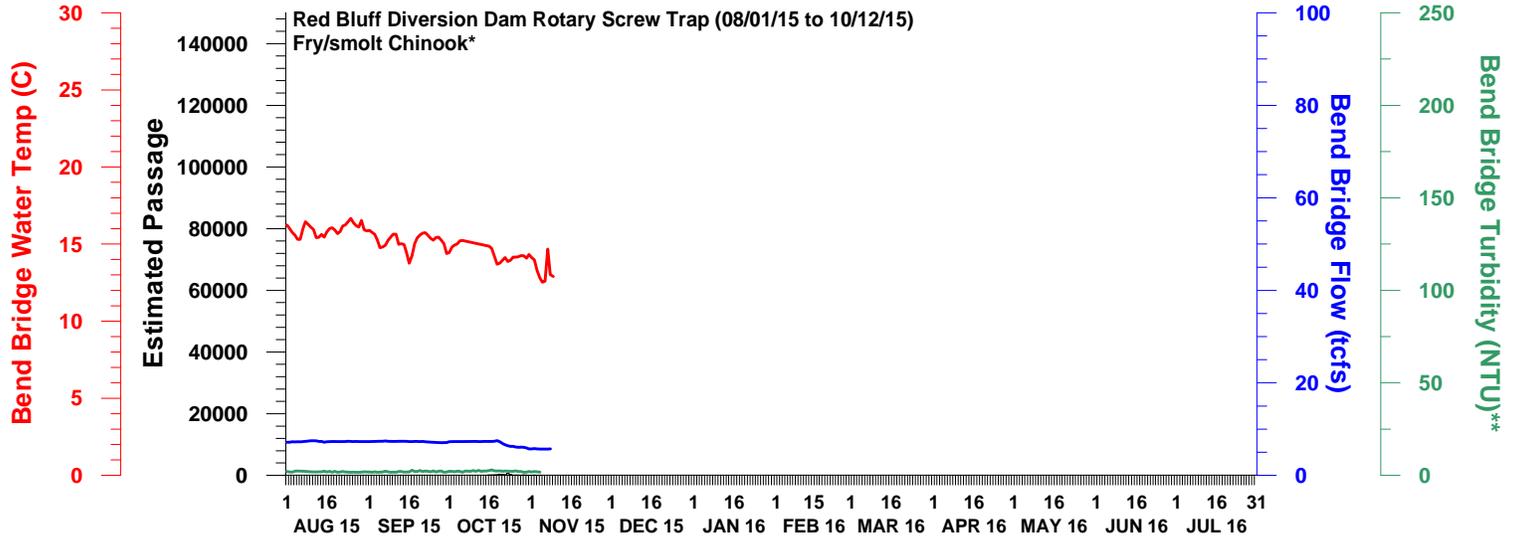


DWR-DES 12 November 2015
Preliminary data from FWS and CDEC; subject to revision.

*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.

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



DWR-DES 22 JUNE 2015

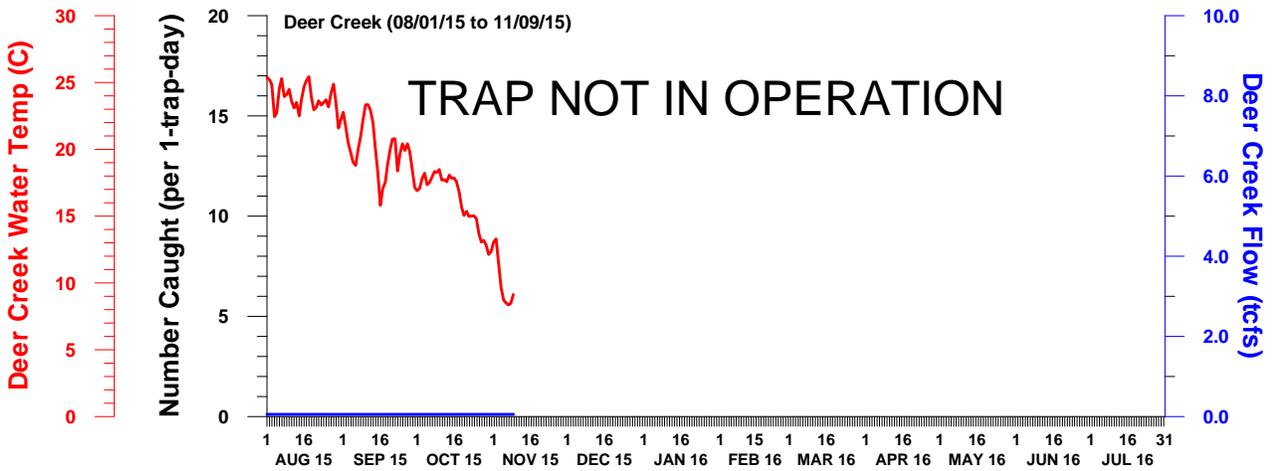
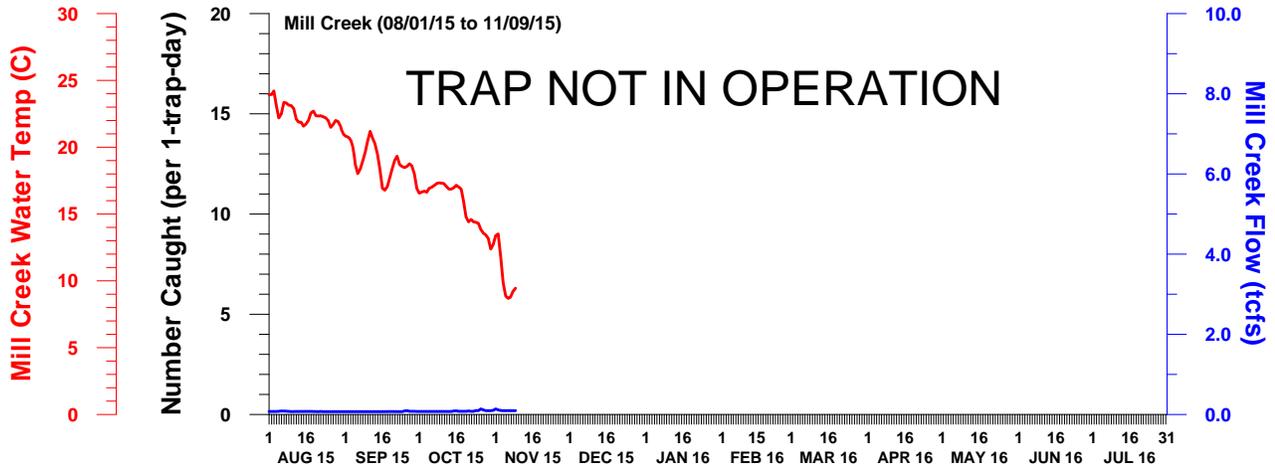
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.

*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. Traps were not in operation on 12/3/14 - 1/6/15, 2/5/15 - 2/16/15, and 4/25/15 - 5/4/15 due to various reasons.

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_final.html).

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).