Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 10/22/13 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.
Note that over the next few months, all content from the NMFS Southwest Region website will be transferred to the NMFS West Coast Region website; the URL for the new DOSS page on the West Coast region website will be shared once all DOSS content has been transferred.

DWR: Mike Ford, Edmund Yu, Kevin Reece, Andy Chu, Dan Yamanaka, James Gleim, Farida Islam, Aaron Miller
FWS: Craig Anderson, Roger Guinee, Leigh Bartoo
NMFS: Barbara Rocco, Jeff Stuart, Barb Byrne, Garwin Yip
Reclamation: Russ Yaworsky, Josh Israel
DFW: Bob Fujimura, Chris McKibbin, Colin Purdy, Krystal Acierto
SWRCB: Scott Ligare
EPA: Erin Foresman
USGS: not present

Agenda
1. Fish monitoring
2. Special report on winter-run stranding & rescue (related materials provided to DOSS by e-mail on 9/30)
3. Current operations
4. Update on monitoring of juveniles at Red Bluff
5. RPA implementation update
6. Annual review
7. SWG update
8. DOSS advice

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.

NOTE: NMFS thanked Farida Islam and Edmund Yu of DWR for tracking monitoring data relevant to Delta Cross Channel (DCC) operations during the partial federal government shutdown.

Location	Chipps Is. Midwater Trawl	Sacramento Trawls	Mossdale Kodiak Trawl	GCID	Knights Landing RST	Tisdale RST	Beach Seines
Sample Date	10/18–21	10/18–21	10/18–21	10/1–21	10/2–21	10/2–21	10/18–21
Total Catch	**0**	**0**	**0**	**596**	**5**	**2**	**0**
FR				5			
WR				589	5	2	

SR							
LFR				2			
Ad-Clipped Chinook							
DS							
Splittail							
Longfin							
SH (ad-clip)							
SH (wild)				8			
W. Temp. (avg. °F)	63.7	59.5	61.7	60.9	61.0	59.0	15.9
Flows (avg. cfs)					5181.3	5053.0	
Turbidity (avg. NTU)	11.7	4.7	4.6	1.2	1.5 (FTU)[1]	5.3	6.6
WR/LFR Avg. CPUE				1.16	0.006	0.002	
FR/SR Avg. CPUE							

CPUE = catch per unit of effort; ACT = acoustic tag
[1]Note that FTU is used at Knight's Landing in place of NTU

Tisdale: DFW might increase capture efficiency by placing the rotary screw traps (RSTs) farther out in the river; they are now trapping 24 hours/day. Because incidental take was exceeded last year, modifications to the sampling protocols at Tisdale (and Knights Landing) include provisions that link RST operations and sampling frequency (including sampling of fish in the live box) to river conditions and catch of salmonids. With an increase in flow and debris, and also an increase in catch, there is a corresponding increase in the frequency of trap maintenance and fish sampling, and in some circumstances, a reduction in sampling time.

Knights Landing: Because incidental take was exceeded last year, NMFS provided modification to the incidental take permit before sampling began on 10/1/13. The first winter run-sized Chinook juvenile was caught on 10/4. The RSTs are functioning better (sampling more water, as indicated by the number of cone revolutions) here than at Tisdale.

East Bay Municipal Utility District (EBMUD) study on the Mokelumne: EBMUD and partners planned some pulse flows on the Mokelumne River to attract returning fall-run Chinook to the Mokelumne River. Ideally, the DCC gates would be closed during the pulse flows to reduce straying of Mokelumne fish to the Sacramento River. Because of water quality concerns expected during October, the project operators informed EBMUD that coordinated DCC closure was unlikely; however, because of the Rio Vista flow requirements on the Sacramento River, the DCC gates were closed a number of times in October, and it was reported that releases were being made by EBMUD to coincide with the expected DCC closures. Israel (Reclamation) noted that Reclamation was involved in the DCC gate operations component of the study, but not in the fish-tagging component. EBMUD staff, or DFW staff (Joe Johnson or Robert Vincik), would have more information on the tagging efforts. Israel also noted that one primary objective of the study was to use coded wire tag data to determine how the stray rate was affected by the duration of the DCC closure; Stuart (NMFS) noted that passage at the ladder at Woodbridge Dam would also be evaluated in the context of pulse flows and DCC gate condition. Byrne (NMFS) will ask for an update at the CALFED Ops meeting tomorrow and determine whether someone can send DOSS some additional information.

Red Bluff Rotary Screw Traps: Yip (NMFS) reported that the Red Bluff RSTs were not sampling from 10/1 to 10/17 during the partial federal government shutdown because the sampling operations were deemed "non-essential." Unfortunately, per FWS staff in Red Bluff, the estimated peak of winter-run Chinook passage (predicted based on spawning timing and temperature-dependent fry development rates) was expected to have occurred DURING the shutdown. The sampling supports this, as catch was on the rise when the RSTs were pulled and catch is currently decreasing.

FWS reported the following with its most recent Red Bluff juvenile fish monitoring update:

> Please note that passage estimates for October 1 through October 17, 2013 (federal government shutdown period) will not be generated or added to brood-year totals and confidence intervals until the November 5, 2013 biweekly report is generated. Daily passage for this un-sampled period will be interpolated using a monthly mean daily passage estimate calculated from data collected between October 18 through October 31, 2013.

Some DOSS participants expressed concern about the interpolation approach. Israel noted that the Red Bluff RST data, and the associated Juvenile Production Index (JPI), would most likely be reviewed by the IEP Winter-run Project Work Team (WR PWT) and that any DOSS participant with concerns should feel free to attend the WR PWT meeting.

NMFS management is aware of the gap in juvenile winter-run monitoring data at Red Bluff, and the possibility of not being able to compare the NMFS-calculated Juvenile Production Estimate (JPE, based on carcass surveys and other information) to the JPI (that uses the Red Bluff RST counts) in its annual JPE letter. NMFS will most likely acknowledge the additional uncertainty in the JPI in the JPE letter for brood year 2013.

Fish Salvage:

Fujimura (DFW) reported than no salmon, steelhead, or sturgeon were salvaged since 10/1. Sampling continued at the CVP salvage facility throughout the federal shutdown and while entry of those data was delayed because of the shutdown, they have been added to the database.

Fish Rescues in Colusa Basin (materials sent to DOSS on 9/30)**:** Purdy (DFW) provided an update on the fish rescue effort in the Colusa Basin. Adult winter and spring run were entrained in the Colusa Basin drain, which parallels the Sacramento River. There were approximately 300 fish captured and tagged; some were genetically sampled and were determined to be winter run; some of these were taken to Livingston Stone National Fish Hatchery and some were released back in the Sacramento River. Some of those that were released in river have been observed spawning in the mainstem as well as in tributaries, such as Clear Creek. One was recaptured roughly 50 miles upstream of its release location. DFW has installed a weir and trap into the drain 14 miles upstream of Knights Landing and is developing protocols for rescuing entrained fish and relocating them back into the river.

There has been no determination made about what conditions are conducive to the fish entering the drain and becoming trapped. Some possible points of entry include passage through the Knights Landing outfall gates or through the Cache Slough complex at the downstream end of the Yolo Bypass. DFW and DWR are discussing how to resolve this issue. Some current efforts (initial feasibility study at the outfall gates, telemetry studies in the toe drain) may provide

information that could be used to reduce the risk of straying into (and possible subsequent stranding in) these areas. For example, operational changes this year at the Knights Landing outfall gates might have created flows that were not conducive to passage from the Sacramento River into the Colusa Basin Drain. Wallace weir is closed so no fish are getting above that point right now.

Operations (10/22/13)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	800	Jones Pumping Plant	2,400 (decreasing to 1,600 on 10/23 to help meet D-1641 Delta outflow requirements)
Reservoir Releases (cfs)			
Feather - Oroville	1,750 (releases are likely to remain at this level at least through November)	American - Nimbus	1,300 (releases will remain at this level through December)
		Sacramento - Keswick	6,250
		Stanislaus - Goodwin	450 (since the end of first pulse last week; next pulse will start 10/23 and will peak at ~2,000 cfs)
Reservoir Storage (in TAF, % of capacity)			
San Luis (SWP)	214	San Luis (CVP)	246 (25)
Oroville		Shasta	1,786
New Melones		Folsom	315
Delta Operations			
DCC	Closed on 10/8–10/10, 10/17–10/18, and 10/21 until further notice. Closure implemented to help meet D-1641 Rio Vista flow requirement.	Sacramento River at Freeport (cfs)	6,838
Outflow Index (cfs)	3,100	San Joaquin River (cfs) at Vernalis	1,216
Total Delta Inflow (cfs)	8,415	OMR (daily) (cfs)	
Water Temperature (°F)		OMR 5-day avg (cfs)	
X2 (km)	81	OMR 14-day avg (cfs)	
E/I (%)	38.8 (3-d avg.)		

Water Quality: D-1641 water quality standards of concern right now include:

- Contra Costa chloride levels
- Rio Vista flow, and
- Delta outflow.

Rio Vista flow and Delta outflow can be increased by closing the DCC gates; export reductions can help boost Delta outflow. Fall pulse flows from the San Joaquin tributaries, particularly the Stanislaus River, might help to improve water quality conditions this week.

RPA Actions Currently in Effect:

- Action IV.1.1: For the first component of the first alert, Reclamation proposed and NMFS approved the criterion of mean daily flows >110 cfs at Mill or Deer Creek for 2013 in lieu of the criterion of capture of yearling-sized spring-run Chinook in natal tributaries (from the 2009 RPA with 2011 amendments). Since 10/1, none of the criteria have been met.

- Action IV.1.2: DCC gate closures. Since 10/1, none of the criteria have been met. Note that no Sacramento Catch Index was available until 10/18 because of the partial federal government shutdown.

Israel reported that some DOSS participants and people from other technical teams worked on the documentation of an alternative to the loss equations this past spring and summer. On 9/30, he sent the draft to the Delta Science Program (DSP) as part of the annual review. He has not had a chance to send this to DOSS, but it is posted on the DSP website. He will send it to DOSS tomorrow afternoon. The independent review panel (IRP) will be asked whether the proposed loss equations for green sturgeon, steelhead, and salmon make sense. After feedback from the IRP, Israel expects that Reclamation will make some recommendations about how to move forward with the proposed equations.

Israel intended to have a preliminary draft of the 2011 results of the 6-year steelhead study (looking at route selection, travel time, and survival of acoustically tagged steelhead released just upstream of the Delta) this month, but fell behind because of the furlough; he is hoping to have a draft by mid-November. He did recently receive some preliminary analysis of the 2012 results from Rebecca Buchanan (University of Washington statistician analyzing the 6-year study data) and is checking whether he can share this with others.

Smelt Working Group (SWG): The group has not yet met but will most likely begin meeting in early December. Previous SWG meeting notes are available at: http://www.fws.gov/sfbaydelta/cvp-swp/smelt_working_group.cfm.

2013 Annual Review: Byrne reported that she sent the 2013 annual report to DOSS on 9/30. It is also posted as part of the supplementary materials on the DSP website (http://deltacouncil.ca.gov/science-event/9954). Because of the timeline crunch and limited time for review, and the fact that the IRP is not charged with reviewing DOSS issues in this year's review, the sections related to monitoring at Tisdale, Knights Landing, Mill Creek, and Deer Creek were not included in the report. As proposed in late September, NMFS suggests that these sections be completed as an addendum and posted on the DOSS website. Byrne will repackage those sections and send out to DOSS for review. If there are any suggestions for additional topics to include in the addendum, please provide them to her.

The annual review is scheduled for 11/6 (all day) and 11/7 (afternoon). Yip reported that the dates for dry runs of the review will be decided within the next few days; a block of time for Monday and Wednesday next week has been set aside. The review will focus on (1) Shasta operations, (2) alternative loss calculations required by Term & Condition 2a of the NMFS BiOp, and (3) Delta operations for delta smelt. The annual review team will review a draft agenda for the workshop tomorrow. Because of lost time as a result of the furlough, NMFS, FWS, and Reclamation agreed that the presentations will be less detailed.

NMFS' New West Coast Region: The Northwest and Southwest Regions of NMFS were merged effective 10/1 and the new West Coast Region now comprises Idaho, Washington, Oregon, and California. Not much has changed for the NMFS Water Operations and Delta Consultations Branch (Garwin et al.) here in Sacramento, but there are some merger-related changes that might be of interest to DOSS:

- Will Stelle is the regional administrator for the West Coast Region.
- The local NMFS office is now the California Central Valley Area Office instead of the Central Valley Office.
- The California Central Valley Area Office will have new jurisdiction over Federal Emergency Regulatory Commission projects in the Central Valley.
- There is a new West Coast Region website (http://www.westcoast.fisheries.noaa.gov/index.html)

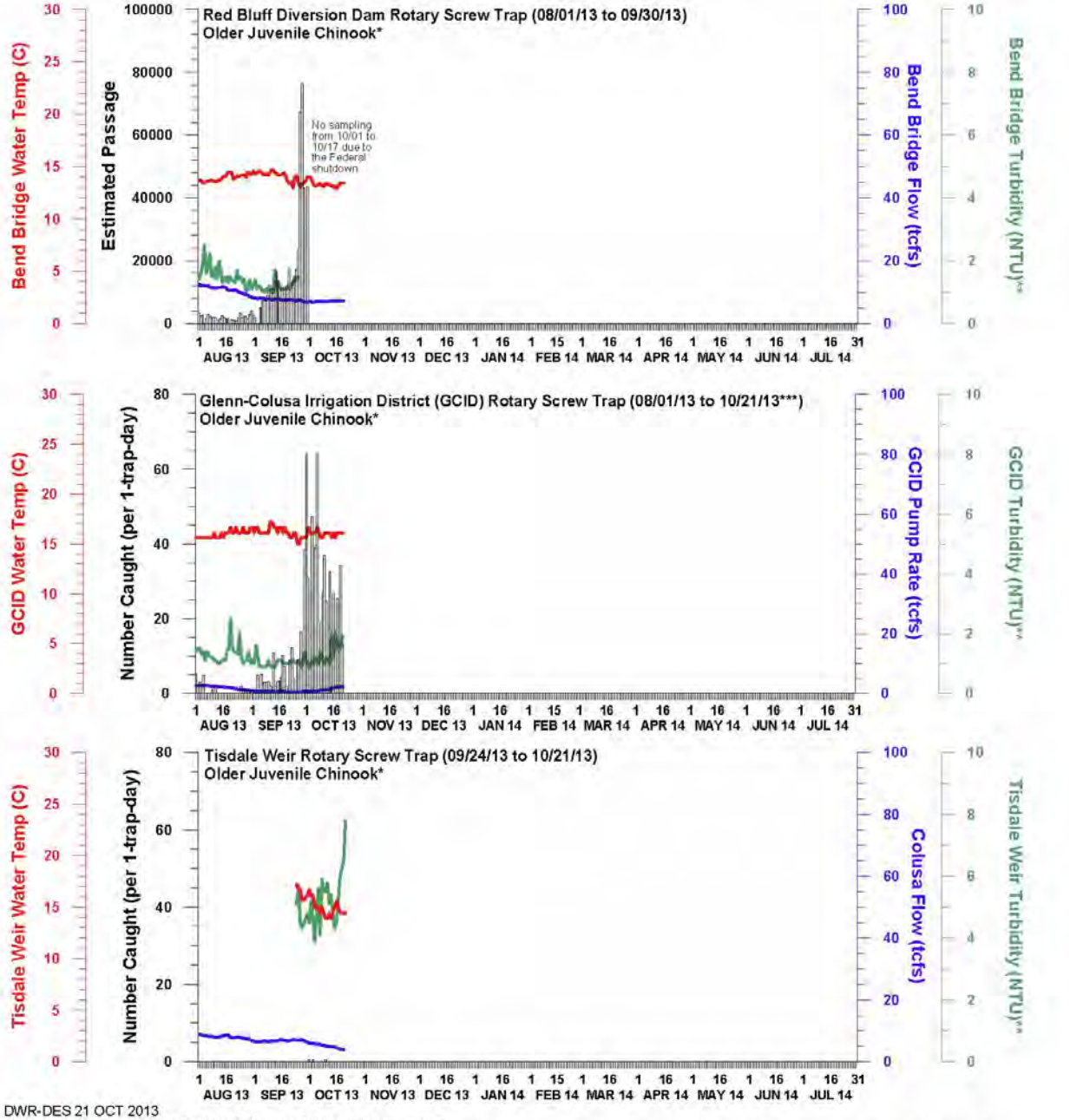
Contact Byrne or Yip if you have questions about the merger.

DOSS Advice to WOMT and NMFS: None.

Next Meeting: The next DOSS conference call will be on 10/29/13 at 9:00 a.m.

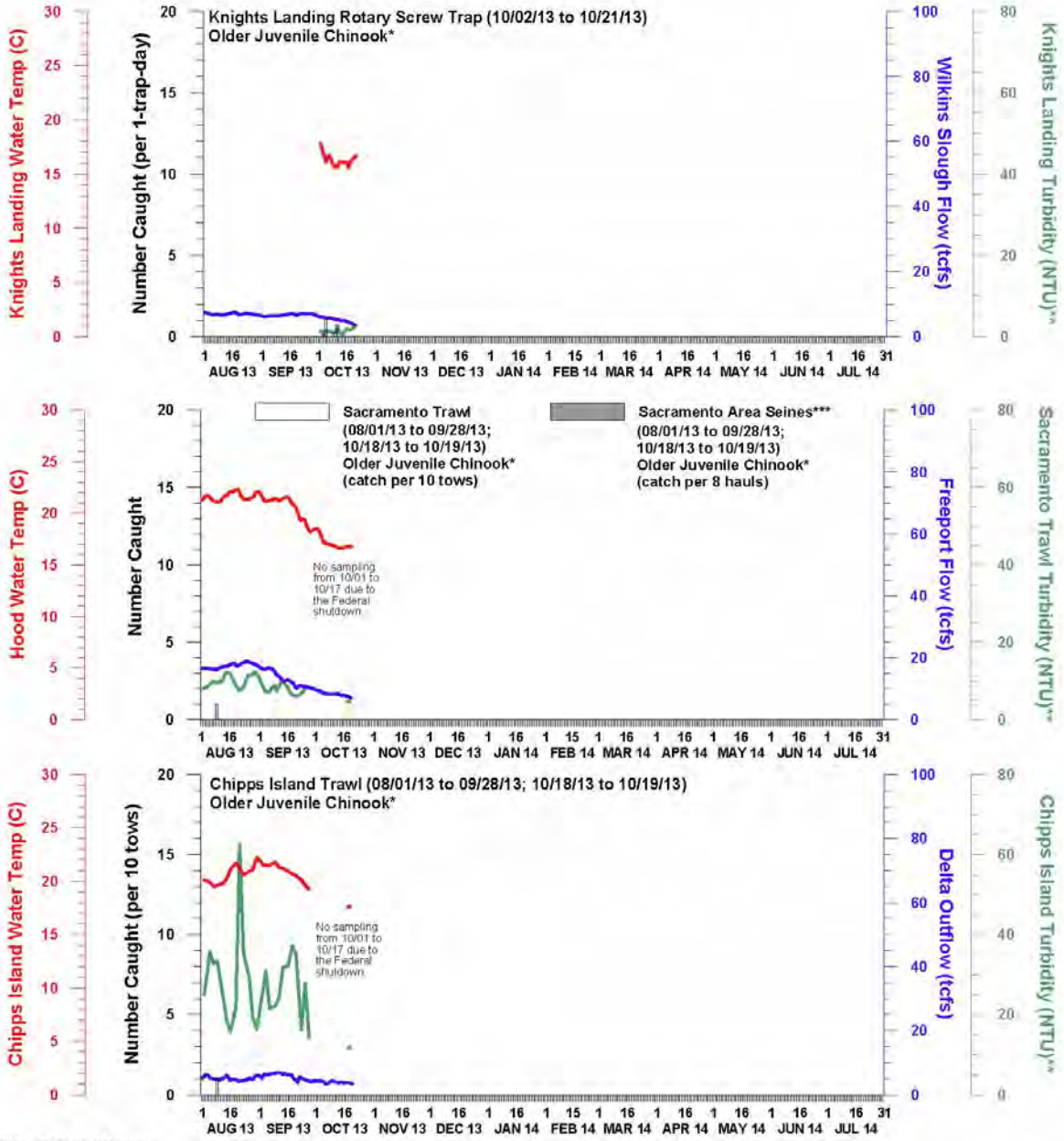
Below are graphs provided by DWR for Chinook salmon and steelhead observed at monitoring locations in the Sacramento and San Joaquin rivers and delta. For additional graphs, please visit the DWR website at: http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



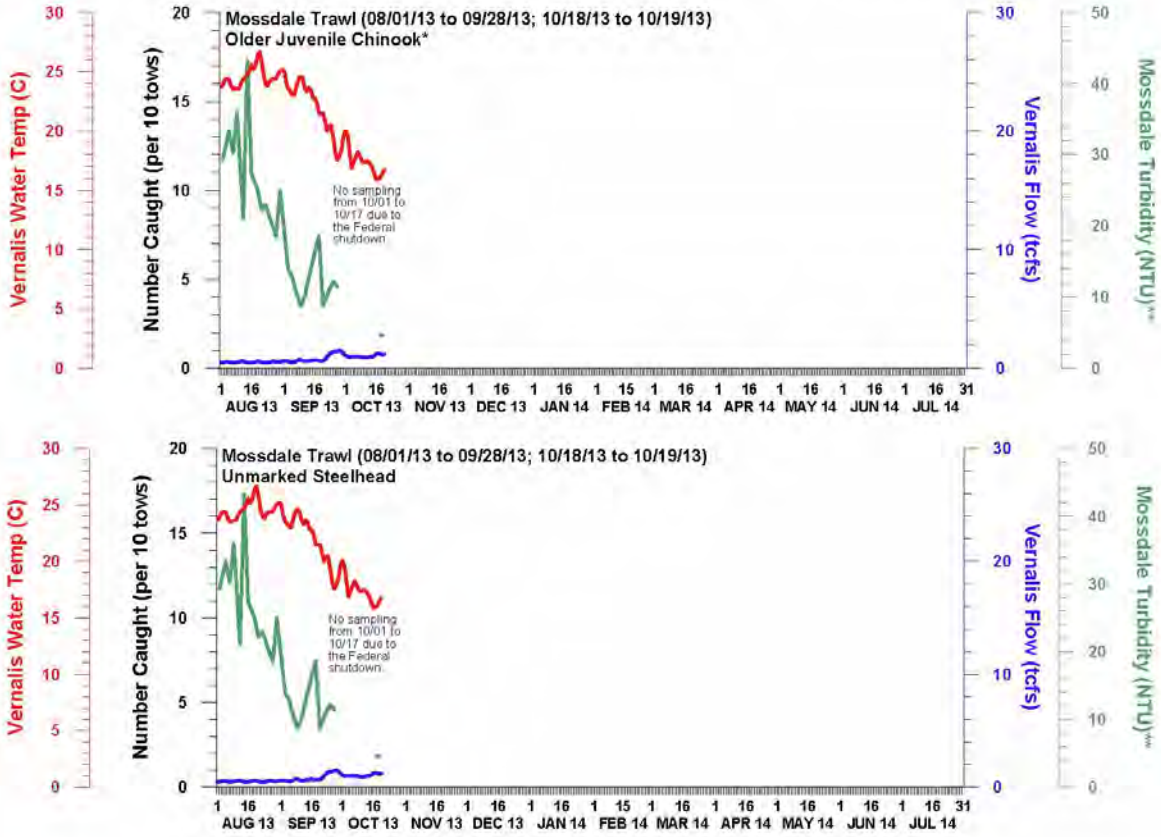
DWR-DES 21 OCT 2013
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.
*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for 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.
***GCID: Five older juveniles caught on 9/25, 9 older juveniles caught on 9/27, and 57 older juveniles caught on 10/5. However, catch could not be standardized to 1-trap day since hours fished could not be calculated due to problems with the cone clicker. As a result, data are not presented on the graph.

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



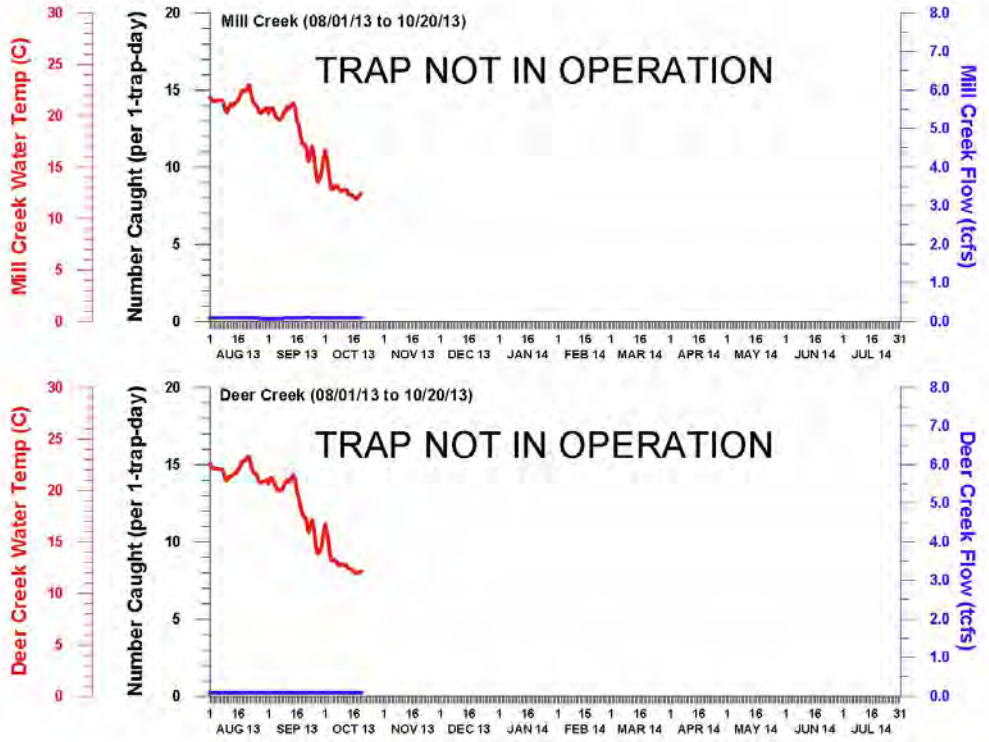
DWR-DES 21 OCT 2013
Preliminary data from DFW, FWS, and CDEC; subject to revision.
*Older Juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher Model) for which 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.
***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 21 OCT 2013
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.

WATER TEMPERATURE AND FLOW MEASURED AT MILL AND DEER CREEK



DWR-DES 21 OCT 2013
Preliminary data from CDEC; subject to revision.