

Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 5/15/12 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 coordinate the work of other technical teams. DOSS notes and advice can be found at: <http://www.swr.noaa.gov/ocap/doss.htm>

DWR: Mike Ford, Andy Chu, Angela Llaban, James Gleim, Kevin Reece, Edmund Yu, Reza Shahcheraghi

FWS: Craig Anderson, Roger Guinee, Leigh Bartoo

NMFS: Barbara Rocco, Barb Byrne, Garwin Yip, Jeff Stuart, Bruce Oppenheim

Reclamation: Russ Yaworsky, Josh Israel

DFG: Julio Adib-Samii, Joe Johnson, Robert Vincik

EPA, SWRCB, USGS: not present

Agenda

1. Fish monitoring
2. Current operations
3. Latest tag results
4. Water-year change and OMR experimental treatment

Fish Monitoring: The following table presents fish monitoring data. Unless otherwise noted, reported sizes are fork length. See:

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

NOTE: There was no report from FWS received before the conference call.

Location	Chippis Is. Midwater Trawl	Sacramento Trawls	Mossdale Kodiak Trawl	Beach Seines	Knights Landing RST	Tisdale Weir RST
Sample Date			5/7-5/12		5/7-5/11, 5/14	5/7-5/11, 5/14
Total Catch			304		360	1,859
FR			176		262	1,468
WR						
SR					4	
LFR						
Ad-Clipped Chinook			125 (purple dorsal)		94	391 (probably from Coleman release)
DS						
Splittail						
Longfin						
SH (ad-clip)			2			

SH (wild)			1			
W. Temp. (avg. °F)					67.0	62
Flows (avg. cfs)					4,679	6,418
Turbidity (avg. NTU)					15.2	9.3
WR/LFR Avg. CPUE						
FR/SR Avg. CPUE					0.65	8.51

Key: FR = Fall run; LFR = Late-fall run; SR = Spring run; WR = Winter run; SH = Steelhead; DS = Delta smelt; LFS = Longfin smelt; CPUE = catch per unit of effort

Fish Salvage Data (5/7–5/13): Reports are also posted at <ftp://ftp.delta.dfg.ca.gov/salvage>: located the table under folder “DOSS salvage tables” (also try <http://www.dfg.ca.gov/delta/apps/salvage/Default.aspx>) and click on “salvage FTP site.”

Compiled by J. Adib-Samii on May 14, 2012.

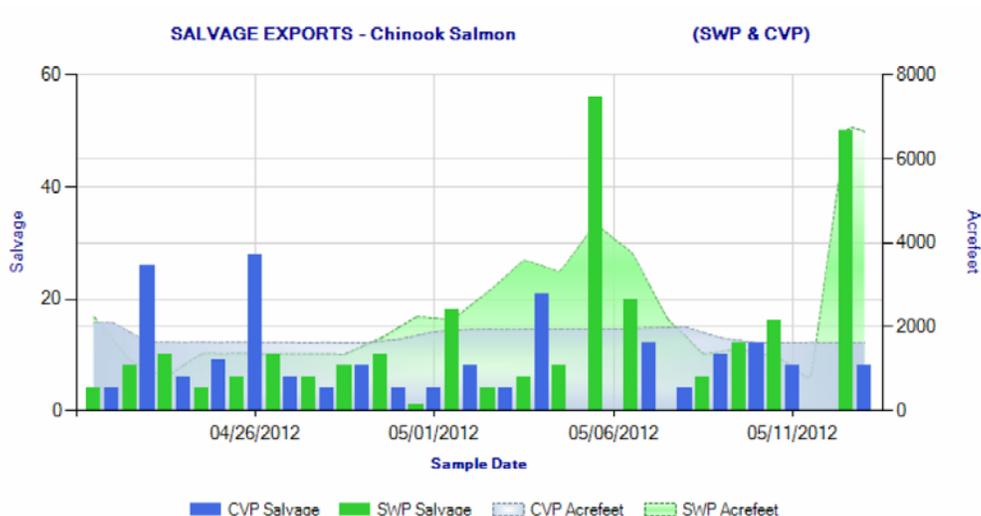


Figure 1. Daily salvage of Chinook salmon (all races) and water exports from the state and federal fish salvage facilities during April 22 through May 13, 2012. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

Wild Spring Run Sized Chinook Salmon Loss

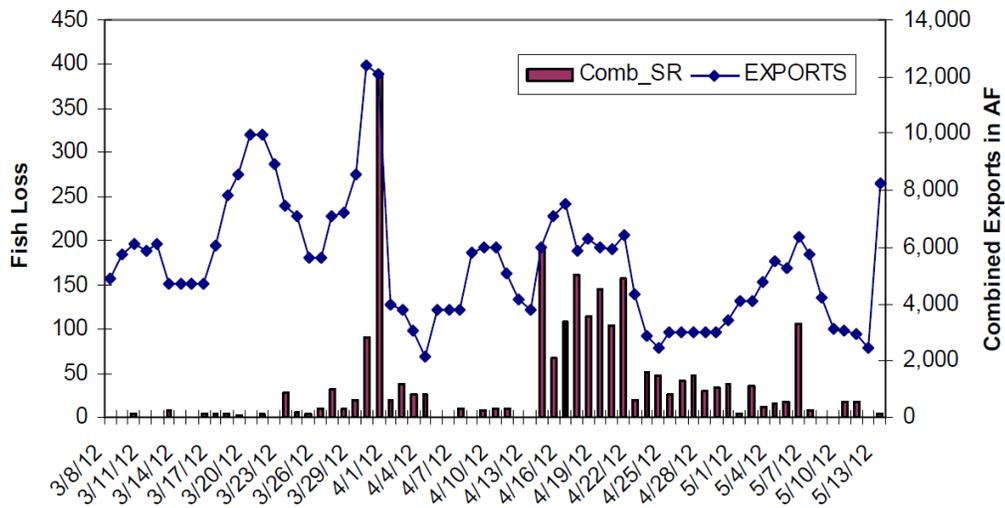


Figure 2. Daily losses of wild spring-run sized Chinook salmon and exports for the combined CVP and SWP facilities from March 8 through May 13, 2012. Information from DFG daily salmon and smelts summary tables (G. Aasen; 5/14/12). Prepared by J. Adib-Samii on May 14, 2012.

Wild Steelhead Loss Densities

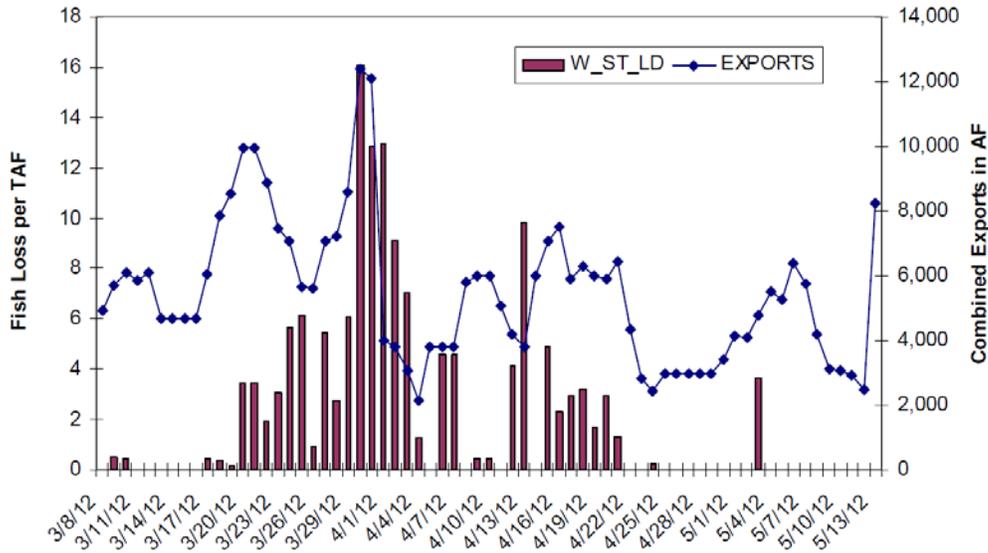


Figure 3. Wild steelhead loss densities and exports for the combined CVP and SWP facilities from March 8 through May 13, 2012. Information from DFG salvage monitoring web-page and smelts summary tables (G. Aasen; 5/14/12). Prepared by J. Adib-Samii on May 14, 2012.

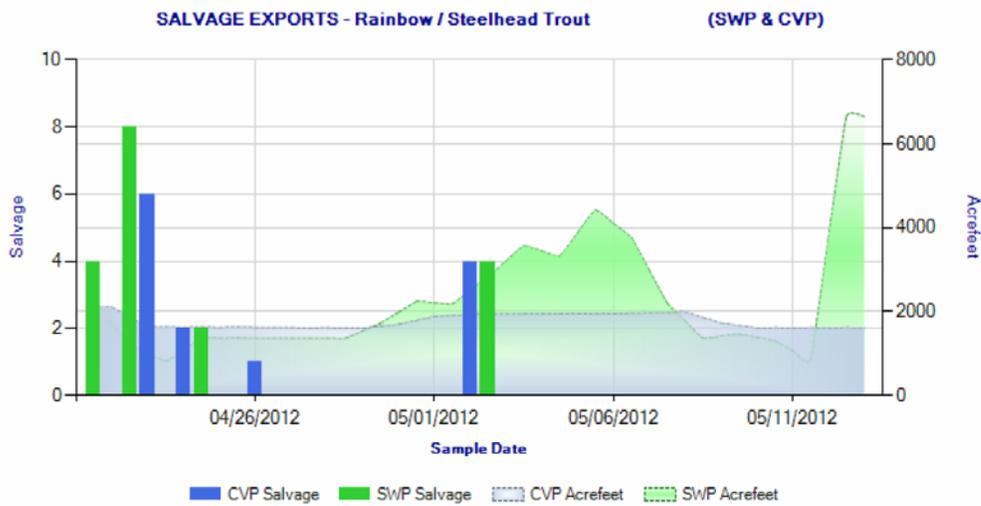


Figure 4. Daily salvage of steelhead and water exports from the state and federal fish salvage facilities during April 22 through May 13, 2012. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>

The following table reported by DFG shows weekly and water-year totals for salvage and loss densities of Chinook salmon and steelhead.

DOSS Weekly Salvage Update
 Reporting Period: May 7 - May 13, 2012
 Prepared by J. Adib-Samir on May 14, 2012
 Preliminary Results - Subject to Revision

Criteria	7-May	8-May	9-May	10-May	11-May	12-May	13-May	Trend
Loss Densities								
Wild winter-run CS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	↘
Wild steelhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	↘
SWP daily export	3,765	2,207	1,365	1,465	1,302	846	6,645	↘
CVP daily export	1,967	1,992	1,734	1,618	1,620	1,619	1,620	↘

Loss Density = fish lost/TAF; water export = AF; Trend = compared to previous week; wild = adipose fin present

Chinook Salmon 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					
Winter Run	0	0	↘	833	2,039 exceeds "warning level"
Spring Run	20	44	↘	1,023	2,367
Late Fall Run	0	0	→	20	14
Fall Run	134	422	↗	259	722
Total	154	466		2,135	5,142
Hatchery					
Winter Run	4	18	↗	460	1,210
Spring Run	0	0	→	4	17
Late Fall Run	0	0	→	25	20
Fall Run	0	0	→	0	0
Total	4	18		489	1,247

Race determined by size at date of capture; hatchery = adipose fin missing;

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	0.0	↘	320	1,090
Hatchery	0	0.0	↘	589	1,101
Total	0	0		909	2,191

Sturgeon: No green or white sturgeon were salvaged at either facility.

Coded Wire Tagged (CWT) Salvage and Loss as of 5/14/12 (see table below):

Hatchery Late-Fall Run, Winter-Run, and Spring-Run Chinook Loss at the Delta Fish Facilities, 2011/2012

Release Date	CWT Race	Hatchery	Release Site	Release Type	Confirmed Loss	Number Released	Total Entering Delta	% Loss ¹	First Concern Level	Second Concern Level	Date of First Loss	Date of Last Loss
12/16/11	LF	Coleman	Battle Creek	Production	134.66	394,700	n/a	0.034	n/a	n/a	1/11/12	3/31/12
12/23/11	LF	Coleman	Battle Creek	Spring Surrogate	2.92	62,400	n/a	0.005	0.5%	1.0%	1/18/12	1/31/12
1/3/12	LF	NFH	Battle Creek	Production	653.06	448,600	n/a	0.146	n/a	n/a	1/19/12	5/7/12
1/13/12	LF	Coleman	Battle Creek	Spring	52.17	80,800	n/a	0.065	0.5%	1.0%	1/31/12	2/18/12

		NFH	Creek	Surrogate									
1/20/2012	2	LF	Coleman NFH	Battle Creek	Spring Surrogate ²	101.04	20,000	n/a	0.505	n/a	n/a	1/30/12	3/29/12
2/9/2012	W		Livingston Stone NFH	Redding	Production	16.96	185,281	96,525	0.018	0.5%	1.0%	3/31/12	3/31/12
4/3/12-4/25/12	S		Feather River Hatchery	Feather River	Production	0.00	1,110,709	n/a	0.000	n/a	n/a	-	-

For Chinook lost 10/1/2011 through 5/13/2012

SWP coded-wire tags read 10/1/2011 through 5/14/2012

CVP coded-wire tags read 10/1/2011 through 5/14/2012

¹LF % Loss = (Confirmed Loss/Number Released)*100; W % Loss = (Confirmed Loss/Total Entering Delta)*100

²Because of the equipment malfunction that stranded a large proportion of the release in the gravel, this 3rd surrogate release is tracked for monitoring and information only and not for compliance with Action IV.2.3.

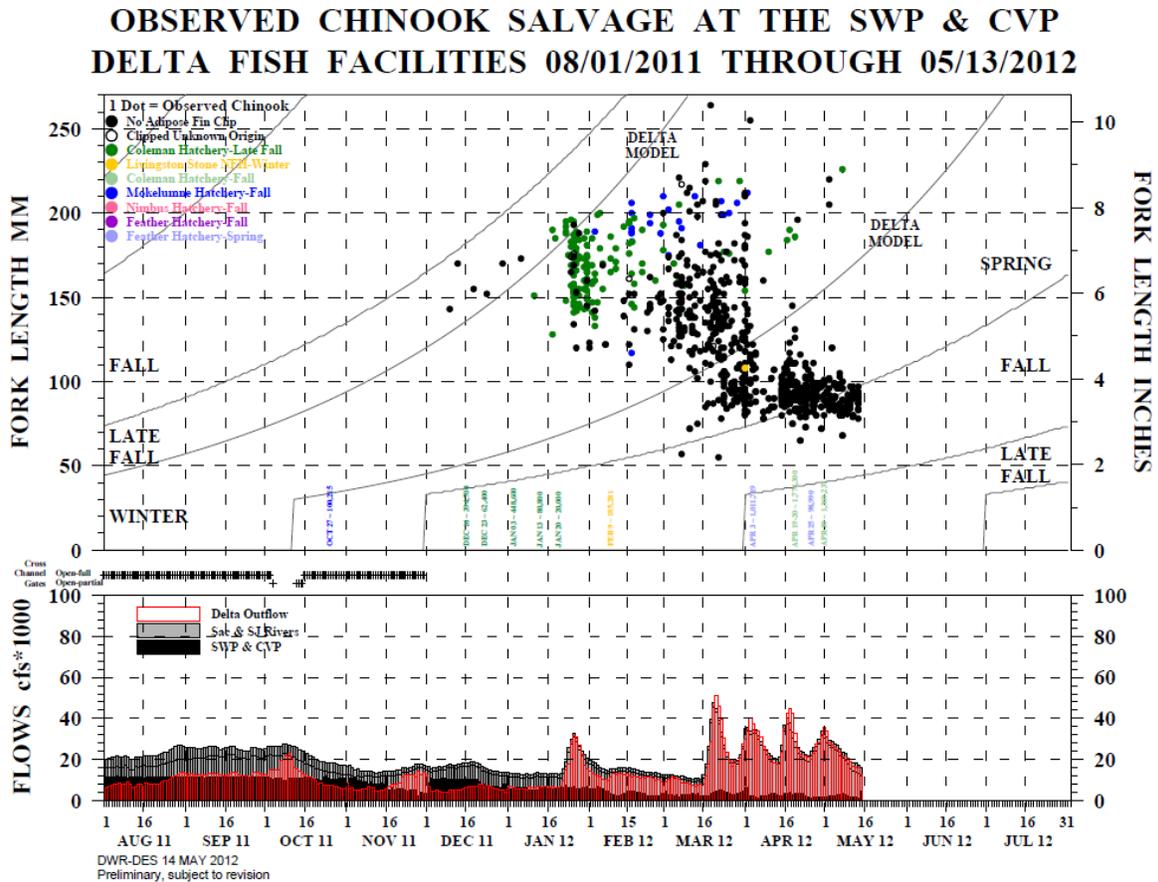
DWR-DES Revised 5/14/2012

Preliminary, subject to revision

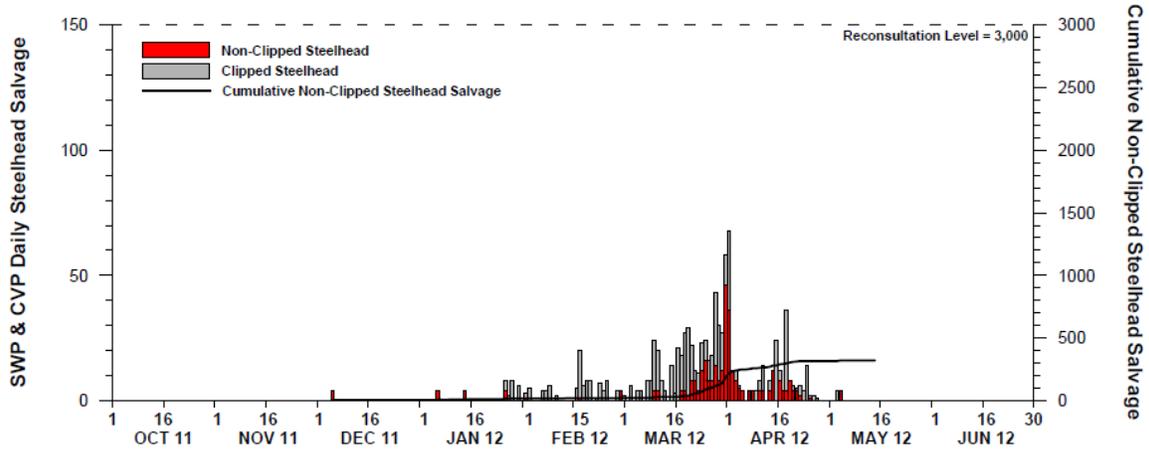
The only change in the CWT data above was that four ad-clipped fish were salvaged on 5/7 at the SWP from the Coleman 1/3/12 late-fall Chinook production release (see highlighted cell).

Below are the salvage and loss graphs for Chinook and steelhead from Llaban (DWR) as of 5/14/12. For additional salvage and loss graphs, please visit the DWR website at:

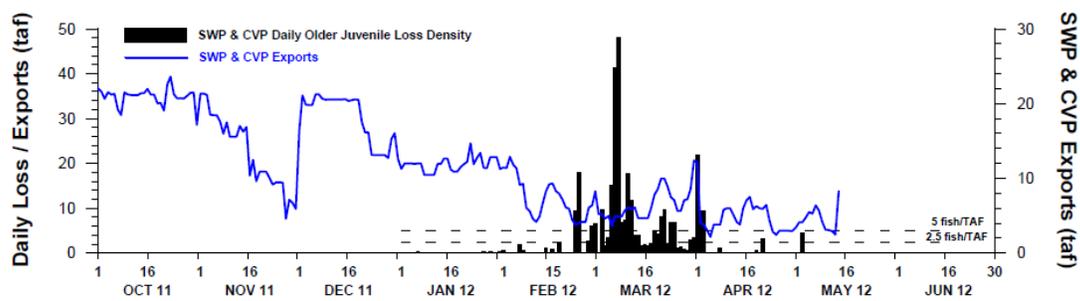
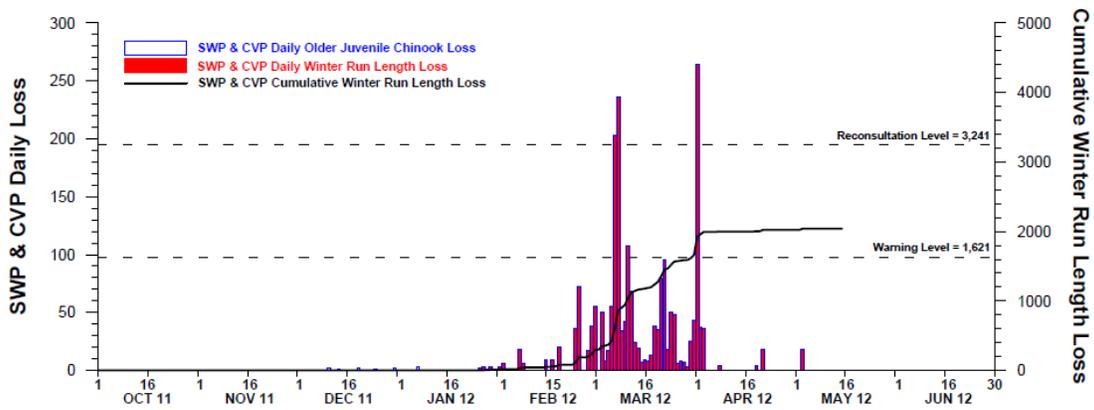
<http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>.



STEELHEAD SALVAGE AT THE DELTA FISH FACILITIES 01 OCT 2011 THROUGH 13 MAY 2012



NON-CLIPPED WINTER RUN & OLDER JUVENILE CHINOOK LOSS AT THE DELTA FISH FACILITIES 01 OCT 2011 THROUGH 13 MAY 2012



DWR-DES 14 MAY 2012
 Preliminary, subject to revision
 * Older juveniles defined as all Chinook above the minimum winter run length line (Delta model)

Operations (5/15/12)

SWP		CVP	
Exports (cfs)			
Clifton Court Forebay	800 (might cut for today's 1:1 as Vernalis flow is dropping)	Jones Pumping Plant	4,000 (increased to 4,200 today)
Reservoir Releases (cfs)			
Feather - Oroville	1,800 (reducing into Feather by noon tomorrow to 1,500 and 1,300 on Thursday)	Nimbus	3,700 (will be reduced to 3,500 today and to 3,000 tomorrow to conserve storage)
		Sacramento - Keswick	10,000 (will increase to 10,500 on Thursday)
		Stanislaus - Goodwin	1,500 (to meet Vernalis)
Reservoir Storage (in TAF, % of capacity)			
San Luis (SWP)	827 (78)	San Luis (CVP)	665 (69)
Oroville	3,517 (99)	Shasta	4,455 (98)
New Melones	1,903 (79)	Folsom	908 (93)
Delta Operations			
DCC	Closed as of 12/1/11	Sacramento River at Freeport (cfs)	12,382
Outflow Index (cfs)	11,400	San Joaquin River (cfs) at Vernalis	4,418
Total Delta Inflow (cfs)	18,615	OMR (daily) (cfs)	-3,575
Water Temperature (°F)	21-22	OMR 5 day (cfs)	-2,127
X2 (km)	67 (close to Chipps Island)	OMR 14 day (cfs)	-2,552
E/I (%)	23.3		

X2: Port Chicago: 7 days in May but 30 days carryover from April so Port Chicago will be met for the month.

DCC Gates: The gates were open for 1 day for maintenance but are closed now. They will open again on Friday (5/25/12) before the Memorial Day weekend and then will open only on weekends until approximately the middle of June, when the DCC gates will be opened for the rest of the summer.

Delta Conditions Team (DCT) Report: There was no call yesterday, but DCT will most likely meet next week. As of this morning, DOSS/NMFS has not received any new information since last week relating to OMR management from any member of the DCT.

Number of Sentinel Tags: As of the 5/14/12 receiver download, the cumulative total of tags from the second steelhead release is 49 at the Railroad (RR) Cut receivers and no new tags have been detected since 5/11/12. Forty-nine happens to be the same number of tags detected at RR Cut during the first experimental period; however, the tags were detected at RR Cut a bit sooner during the second experimental period.

5/11/12 NMFS determination:

Per the 5/11/12 NMFS determination, the projects will operate to an OMR of -5,000 cfs for at least the first 5 days of the 3rd experimental period, beginning tomorrow, with an exposure trigger at RR Cut of 31 sentinel steelhead (if the release group size is not less than 165; else the trigger will be as outlined in trigger table in the 5/11/12 NMFS determination). The third experimental period sentinel release is scheduled for today and tomorrow.

The latest steelhead data from the FISHBIO San Joaquin Basin newsletter, which includes rotary screw trap data from the Calaveras and Mokelumne rivers, includes data through only the end of April 2012. *O. mykiss* counts show fish migrating out of the tributaries at that time. Byrne (NMFS) will forward any more recent data received to the group. Water temperatures are an increasing concern: Mossdale was 65.0°F yesterday, Prisoner's Point was 68.0°F, Antioch was 66.0°F, Middle River was 69.0°F, and Clifton Court was 71.5°F. The warmest waters are in the central Delta; the coolest are at the edges of the Delta.

After last week's WOMT meeting, the San Joaquin Valley Water Year Type Index changed from "critical" to "dry". This change in year type (considered effective for operations as of 5/9/12) causes changes in the Vernalis flow requirement in D-1641 (increases the flow requirement) and the inflow:export ratio that would have been required (absent the stipulation) under NMFS RPA Action IV.2.1 (from a 1:1 I:E ratio under the critical year type to a 2:1 I:E ratio under the dry year type). In response to this change, NMFS' 5/11/12 determination letter noted that "... NMFS will discuss with DOSS during its meeting next Tuesday whether any changes to the post-response flow level (likely to be May 28–31, 2012) are warranted."

Some concern was expressed about why we would change what was recommended by the DOSS group last week just because the hydrology changed.

Byrne reminded the group that the intent of the stipulation was to provide equal or better protection for fish emigrating from the San Joaquin River basin than those afforded by RPA Action IV.2.1, and that some of the previous adjustments to the sentinel study design were considered in the context of current hydrology. For example, one adjustment made for the second experimental period was to cap the action response at 5 days—this decision took into account both the fact that the I:E ratio under IV.2.1 would have been 1:1 and that D-1641 export restrictions were in effect that limited exports to 100% of Vernalis flow. NMFS assumes a difference in fish protection between a 1:1 and 2:1 inflow:export ratio. Given that assumed increase in the "baseline" level of protection, and the consideration that the D-1641 export restrictions are less restrictive beginning 5/16, it may be appropriate to revisit the duration of the action response during the third experimental period.

On Thursday, 5/10/12, NMFS was advised of the change in water year for the San Joaquin River basin as it was finalizing its determination. At that time, NMFS considered three options:

- 1) Accept the DOSS advice and issue the NMFS determination, being silent about the change in San Joaquin year type.
- 2) Partially accept the DOSS advice, but reflect in the NMFS determination a different operation in light of the change in San Joaquin year type; the determination would most likely have been different from anything discussed at the DCT, DOSS, or WOMT.

- 3) Add a footnote to clarify that all DOSS' discussion and advice assumed 1:1, then ask DOSS to discuss whether a change in operation is warranted in light of the change in San Joaquin year type.

There was no intention of excluding DCT. NMFS' intention was to stick to the established process and coordinate with the other agencies before issuing a NMFS determination. NMFS added the statement in the determination because of the possibility of change, but did not make any determination as to whether a change is warranted. Ford (DWR and DCT) expressed his concern that if he had known that NMFS was considering a change to what was already approved based on the year-type change, he would have had a DCT call yesterday, discussed this, and gotten a recommendation. The reason he did not was that he assumed that the protocol described in the 5/11/12 NMFS determination would not change. Whether DCT will have any specific information regarding a possible change in experimental conditions resulting from the change in year type, Ford wanted to be sure that DCT members had an opportunity to consider the issue and express their viewpoints.

It was agreed that DOSS advice and a NMFS determination, if warranted, could wait until next week, which would allow DCT to meet and provide information about whether a change to the experimental protocol would be warranted given the change in year type. As far as NMFS is concerned, DCT should provide information to DOSS, and not advice or recommendations. DOSS tends to receive opposing views and proposals from DCT members depending on who provides input and whether they are water users or environmental groups.

DOSS agreed to focus the discussion regarding a possible adjustment to the experimental conditions during the May 28–31 period. That is, no changes are currently being contemplated to the initial OMR treatment level of -5,000 cfs, the maintenance of that initial treatment level for 7 days (May 16–22), or to the implementation of an action response (if the RR Cut trigger is exceeded) of 1,500 cfs combined exports for 5 days (May 23–27).

The group discussed the challenges in quantifying the level of protection provided by different I:E ratios, and various opinions were expressed regarding the expected benefits (or lack thereof) of adjusting operations from 5/28 to 5/31 from the currently planned operations targeting an OMR of -5,000.

Experimental conditions that were discussed for 5/28–5/31 include:

- (1) OMR target of -5,000 cfs, per the experimental conditions described in the 5/11/12 NMFS determination
- (2) OMR target of -1,250 cfs (or minimum combined exports of 1500 cfs), per the protections afforded in the 3/16/12 tech memo, which called for the action response to continue through the end of the experimental period
- (3) intermediate OMR target (e.g., -3,500 cfs).

The group discussed the consequences of an adjustment during 5/28–5/31 to the experimental data that could be collected. It was noted that the primary data of interest were movement patterns of sentinel steelhead during the initial OMR treatment level, and movement patterns of sentinel steelhead in response to the shift to more positive OMR conditions (assuming the trigger is exceeded). No changes to these experimental conditions are being considered. If export

restrictions are relaxed for the last 4 days of the experimental period, the movement of sentinel fish can be assessed in response to a shift to more negative OMR conditions. If the action response restricting exports is extended through the end of the period, the movement of sentinel fish under more positive OMR conditions can be evaluated over 9, vs. 5, days.

The 5-day period is in the RPA as part of the action response for Action IV.2.3. Whether the action response is in effect for 5 or 9 days, one can assess the response at 5 days. There is a challenge in responding quickly to the loss density trigger in Action IV.2.3 because of the 2–3 business days of planning required for operational changes.

Some origins for the 5 days were based on VAMP study and releases of fish exiting the Delta from 4 to 7 days. If it takes 5 days from Mossdale to Jersey Point/Chippis, reducing exports for 5 days would give the fish ample time to move far enough out of the system to avoid the exports. This was best available science at the time. The 6-year study will give us a much better resolution of how fish move through the system.

It was noted that the stipulation study was not designed to emulate the action response in RPA Action IV.2.3, but to learn about fish movement during different hydrodynamic conditions. DFG and FWS have stated that protection of the species with any operation should outweigh the experimental considerations; however, at the same time, there is the question about whether water temperature conditions will be suitable for steelhead and salmon by the end of May. There are still a lot of questions, but protection is still the most important consideration.

DOSS may want to consider whether it makes sense to have a temperature off ramp for operations under the stipulation. We could do some kind of average temperature at three locations to capture conditions for steelhead entering the Delta from upstream of Vernalis, or from the Calaveras or Mokelumne River. How deep are our temperature probes and where are they located in the water column? The shipping channel is nearly 50 feet deep, colder at the bottom, and warmer at the surface. Steelhead can find thermal refugia on the bottom and follow that channel out of the Delta. Steelhead are observed, even in July, at the salvage facilities. The group was encouraged to consider, for discussion next week, what locations/durations would be appropriate for a potential temperature off ramp.

Smelt Working Group (SWG): SWG decided that operations as planned were sufficiently protective for smelt so there was no need to change operations. Longfin salvage went up slightly, but is still low and DFG anticipates that this is toward the tail end. There was increased salvage at the SWP of delta smelt, but given the results from the fall midwater trawl, the SWG was not troubled by the number; it is not unexpected to have greater salvage of juveniles at this time. The SWG will continue to monitor this closely.

It was noted that there was a high incidental take limit this year because of results of the fall midwater trawl but we are still well below the take limits for delta smelt.

DOSS advice to WOMT and NMFS: DOSS does not have advice to WOMT and NMFS this week, but will provide an update on its discussions pertaining to possible adjustments to operations during the 5/28–5/31 period based on the change in San Joaquin Water Year Index classification from critical to dry on 5/9, and a possible water temperature off ramp for operations under the stipulation.

Next Meeting: The next DOSS conference call will be May 22, 2012, at 9:00 a.m. On that call, DOSS will decide whether to meet on 5/29 after Memorial Day holiday.