

## **Delta Operations for Salmonids and Sturgeon (DOSS) Group**

05/04/10 Conference call 9:00 am

**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 to salmonids and green sturgeon. DOSS will coordinate the work of other technical teams. DOSS notes and advice can be found at: <http://swr.nmfs.noaa.gov/ocap/actions.htm>

**Attendees:** Mike Ford, Carol Stroble, & Andy Chu (DWR); Nick Hindman (FWS); Bruce Oppenheim, Jeff Stuart, Garwin Yip & Barbara Byrne (NMFS); Thuy Washburn, John Hannon & Josh Israel (USBR); Dan Kratville (DFG), Greg Wilson & Kari Kyler (SWRCB)

**Agenda:** fish monitoring, Delta water operations, SWP outage, & DCC Gate Study

### **Fish Monitoring:**

Mill and Deer Creek (4/27-5/2)

The Mill Creek trap fished for 4 days during the reporting period. The trap catch included: 58 YOY Chinook (39-81 mm fl), 3 spring-run Chinook yearlings (110-147 mm fl) and one steelhead (234 mm fl). Flows ranged from 516 to 1,580 cfs.

The Deer Creek trap fished also for 4 days. Trap catch included 49 YOY Chinook, one spring-run Chinook yearling and no steelhead. Flows ranged from 691 - 2,350 cfs.

*Knights Landing (4/28- 5/3):* The catch for the week increased from last week due to an increase in hatchery fish. A total of 433 Chinook were caught in 3 days of sampling, of which there were 6 spring-run, 0 winter-run, 60 ad-clipped Chinook, 0 steelhead, and 3 ad-clipped steelhead. The weekly CPUE was 29.9 for fall/spring-run, 0 for winter-run/late fall, and 0.22 for non-clipped steelhead.

*FWS Sampling Data (4/25-5/1):*

Beach Seines: 64 fall-run Chinook, 9 late-fall Chinook, 28 ad-clipped Chinook, & 74 splittail  
Sacramento Trawls: 54 fall-run Chinook, 22 spring-run Chinook, 24 ad-clipped Chinook, & 1 ad-clipped steelhead

Chippis Island Trawls: 459 fall-run Chinook, 71 spring-run Chinook, 1 winter-run Chinook, 591 ad-clipped Chinook, 1 ad-clipped steelhead, 2 splittail, & 1 delta smelt

*Mossdale Kodiak trawl (4/27-5/1) Steve Tsao, DFG:* 20 non-clipped juvenile Chinook salmon were caught in 3 days of sampling. No steelhead were caught. Steve reported that last week's steelhead measured 360 and 275 mm (classified as smolts).

*CVP and SWP Fish Salvage Facilities ( 4/26 Monday – 5/2 Sunday):* No winter-run Chinook were reported at either facility for the week. Total non-clipped winter-run YTD remains at 1,657.

17 non-clipped steelhead were salvaged at the SWP. The YTD non-clipped cumulative total is 848. No green sturgeon, delta smelt, or longfin smelt were salvaged this week.

*Daily loss densities for Chinook salmon (4/26-5/2):* No older juveniles were loss this week.

*CWT data:* All unread tags have now been read. The hatchery winter-run loss is 139, or 0.128 percent of the total release. This is below the first concern level of 0.5 percent. It is not expected that any more hatchery winter-run will be salvaged this year since most have moved through the delta by now.

Summary: The fish monitoring data indicate that fall-run Chinook are still entering the Delta from both the Sacramento and San Joaquin Rivers. Large numbers of juvenile Chinook have been observed leaving the Delta at Chipps Island, however, most of these are hatchery produced fish. A few spring-run and steelhead are still entering the Delta, but the loss at the pumps has been very low. The current loss rates and loss densities are below the triggers identified in the NMFS Opinion.

***DOSS subgroup update*** (reconstruct 2<sup>nd</sup> OMR Trigger): Sheila Greene has provided some analysis of the second trigger, as reconstructed by the subgroup last month. Bruce O. proposed a conference call of the subgroup to review the results, so that an update could be provided to WOMT at the May 11 meeting. A subgroup call was tentatively set for Wednesday May 5, in the afternoon; Bruce will confirm with others and send out an e-mail

***Smelt Working Group (SWG):*** No update

## **Operations:**

### **CVP**

Current releases at Keswick are approximately 7,500 cfs. Releases are going up on the American R. to compensate for upstream releases from reservoirs higher up in the American River system. Flood control space in Folsom will be adjusted as a result. It is anticipated that releases will be approximately 3,500 cfs on 5/4/10, 4,000 cfs on 5/5/10, and 5,000 cfs by 5/6/10. Stanislaus R release is 1,000 cfs. Trinity R is releasing 5,600 cfs for spring pulse flows (ROD schedule).

Jones pumping plant is operating one unit at 800 cfs.

Daily OMR is running positive (1,000 cfs).

The 5-day OMR = 1282 cfs.

The 14-day OMR = 1200 cfs.

### **SWP**

Vernalis is 5000 cfs and declining.

The Sacramento R. is just over 22,000 cfs and declining.

Delta outflow is over 27,000 cfs

Feather River at Oroville is 800 cfs

### **SWP outage update:**

Several rough operational schedules were discussed by the group. The group was reminded that the SWP would be able to pump 700 cfs at Banks on the first (May 11) and last (May 21) days of the power shutdown (because the power would be off for only part of those days); and that Clifton Court Forebay (CCF) operations could likely provide roughly 700 cfs day for at least five days (May 12-16). The following schedules' "first day" would thus be May 17<sup>th</sup>.

#### Schedule 1 for the CVP (numbers are exports, in cfs):

"First" day mid-day =  $800+400=1200$  (one pump continues to operate; second pump turned on mid-day)

"Second" day = 1600 (two pumps operate all day)

"Third" day =  $800 + 400=1200$  (one pump continues to operate; second pump turned off mid-day)

"Fourth" day = 1600 (second pump turned back on; two pumps operate all day)

"Fifth" day =  $800+400=1200$  (one pump continues to operate; second pump turned off mid-day)

*[5-day average of daily exports = 1360 cfs; note that "fifth" day would be May 21<sup>st</sup> and SWP would be able to pump for part of the day]*

#### Schedule 2 for the CVP (numbers are exports, in cfs):

"First" day mid-day =  $800+400=1200$  (one pump continues to operate; second pump turned on mid-day)

"Second" day = 1600 (two pumps operate all day)

"Third" day = 1600 (two pumps operate all day)

"Fourth" day = 1600 (two pumps operate all day)

"Fifth" day =  $800+400=1200$  (one pump continues to operate; second pump turned off mid-day)

*[5-day average of daily exports = 1440 cfs; note that "fifth" day would be May 21<sup>st</sup> and SWP would be able to pump for part of the day]*

DWR suggested the possibility of reducing the effective SWP shutdown period from 10 days to 3-7 days by continuing to take water into Clifton Court Forebay (CCF) even when Banks Pumping Plant (Banks) is without power to pump/export the water as a result of the high voltage electrical transmission line work. This operational plan could be achieved by creating a "hole" in CCF by pumping the water level down to approximately three feet below mean sea-level (msl) in advance of the power shutdown at Banks, then operating the CCF gates to allow a volume of inflow equivalent to a daily export rate of 700 cfs to enter CCF each day. DWR estimates that CCF could likely be filled to about one foot above msl, for a total stage change inside CCF of four feet (a volumetric change approximately equivalent to the amount of water brought in by pumping at 4000 cfs for one day, or at 700 cfs/day for just less than six days. A change in water elevation of 1 foot in CCF is equivalent to the volume of water exported at a rate of 1,000 cfs/day). A CCF inflow of 700 cfs/day would combine with a single CVP unit pumping at 800 cfs/day for a total export of 1500 cfs/day.

The only drawdown of CCF would be due to the Byron-Bethany Irrigation District (BBID) diversion which pumps out of the inlet channel leading from the CCF to the SWP. It was noted that pumping by BBID during the shutdown (expected to range between 50 and 200 cfs) would help to "empty" CCF and provide capacity for CCF inflow during the SWP shutdown.

The group discussed the high predation in CCF (currently estimated at 75-95%), noting that CCF inflow without pumping and salvage operations would increase the residence time of a fish in CCF. Since fish would enter CCF but would not exit due to the absence of water flowing to the pumps, no fish would be salvaged at the fish collection facilities. It is anticipated that these fish would be lost due to higher predation rates (100%). The CCF predation assumptions used in calculating loss at the SWP fish facility is a constant (75%) and there is not a straightforward way, at this time, to quantify loss in proportion to the expected residence time in CCF when the pumps are shut down. At higher flows during the VAMP period it was noted that it would be less likely that differences in salvage numbers could be detected.

NMFS noted a concern that there is no explicit implementation flexibility in the 1500 cfs export limit that would suggest an exception for the current shutdown, though implicitly there is an expectation that the export rates would be managed in a way similar to the export management during VAMP, which traditionally has called for managing exports to within  $\pm 2.5\%$  of the target export rate.

NMFS also noted that although there is no averaging period explicitly documented in Action IV.2.1, the averaging period provided in D-1641 is 3 days. Therefore, NMFS expects the averaging period for Action IV.2.1 to also be 3 days.

Schedule 3 for both the SWP and CVP:

NMFS sent out a draft export schedule to the DOSS members for discussion (pasted below):

DAY	SWP inflow to CCFB	cumulative cfs into CCFB	CVP#1	CVP#2	total exports	
1	700	700	800	off	1500	
2	700	1400	800	off	1500	
3	700	2100	800	off	1500	
4	700	2800	800	off	1500	
5	700	3500	800	off	1500	
6			800	700	1500	pump #2 turned on for partial day
7			700	800	1500	pump #1 turned off for partial day
8	700?		off	800	800+	
9	700?		off	800	800+	
10	700?		off	800	800+	

Several variations to this schedule were discussed, including options such as:

- Implementing one additional on/off cycle of a unit at the CVP for two more days of 1500 cfs exports (i.e. Days 8 & 9 could be operated in a way similar to Days 5 & 6)
- Shifting the CVP pump cycling a bit earlier to allow for more CCF drawdown by the BBID pumps; this might provide enough additional CCF capacity for an additional day or two of CCF inflow beyond the 5 days expected to be provided by the pre-shutdown “hole creation” in CCF.

There exists the possibility that the current VAMP and South Delta barrier experiments utilizing acoustically tagged fall-run Chinook salmon may provide near real time information as to the vulnerability of fish in the proximity of the CCF gates to the proposed gate openings. Acoustic tag receivers are located both adjacent to the CVP trash racks and in the channel leading to the CCF radial gates. It may be possible to make crude assessments of fish movement and behavior in response to the gate operations prior to the analysis of the tag data. Final determination of fish

movement and fate will have to wait until after the tag data is analyzed, which will provide information for future gate operations but may not be useful for this year's actions.

DWR and Reclamation will discuss scheduling options further and send out a revised draft schedule to DOSS.

### **DCC Operations:**

Reclamation received a request from Dennis Westcot, Project Administrator of the VAMP experiments for the San Joaquin River Group Authority, for the DCC gates to remain closed until May 28<sup>th</sup>. The request was made to allow the VAMP experiment to:

- Maintain consistency of gate closure position between the earlier fish releases and the later releases of the 2010 VAMP study;
- Retain the hydraulic conditions throughout the final fish release without confounding it with additional flow through the interior Delta; and
- Maintain conditions similar to the previous VAMP experiments.

In addition, the request pointed out the collaboration between the different agencies involved with the VAMP experiment and the level of logistical coordination required to carryout the experiment successfully.

There are two study-related requests for specific DCC operations:

1. For purposes of keeping conditions "constant" during the VAMP study, there is interest in keeping the DCC closed until May 28<sup>th</sup> (this would keep the gates closed for one weekend after the D-1641 "gates always closed" restriction is lifted).
2. For purposes of the Mokelumne R. predator study, there is interest in opening the gates for a three day period before the weekend of May 28<sup>th</sup>.

It was noted that for safety concerns when the Sacramento River is flowing at 25,000 cfs (Freeport) or greater, the DCC is closed to protect interior levees.

The fish agencies (DFG, NMFS, FWS) advise<sup>1</sup> keeping the gates closed through the weekend of May 21-23 to allow time (7-10 days) for the last release of VAMP fish (expected to happen May 18) to get past Chipps Island.

Fish agency recommendation compared to historical DCC ops:

It was noted that, historically, the DCC is seldom open before Memorial Day, so that the proposed closure until May 28<sup>th</sup> for the Mokelumne R study would be inconsistent with past DCC gate operations. It was also noted that, historically, the DCC was usually opened the first weekend it was allowed to be open, which would make the proposed closure until May 28<sup>th</sup> NOT

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<sup>1</sup> Per footnote [22] of D-1641, "The USBR will determine the timing and duration of the gate closure after consultation with the USFWS, the NMFS, and the DFG. Consultation with the CALFED Operations Group established under the Framework Agreement will satisfy the consultation requirement." Because the next Calfed Ops meeting is not scheduled until 4/26/2010, the SWRCB representative confirmed that consultation with the fish agencies present on the DOSS call (FWS, NMFS & DFG all present) would also satisfy the consultation requirement. This item will be put on the Calfed Ops Agenda for the 4/26/2010 meeting for reporting.

consistent with past practice. The apparent discrepancy between these historical patterns arises because, usually, Memorial Day weekend is the first weekend after the D-1641 restriction lifts on May 21. In 2010, Memorial Day weekend happens to be the *second* weekend after the gates are allowed to be open.

In response to a comment that it was unusual to be discussing DCC operations in connection with the VAMP experiment, it was noted that the DCC operations only become an issue from May 21<sup>st</sup> onward (per D-1641) and that in the past, VAMP was usually over by that time. This year, VAMP was delayed because the size of the fish was not large enough to meet the recommended tag to body weight ratio. This necessitated the VAMP experimental period be delayed, resulting in a later start date and extending the study beyond May 21<sup>st</sup> into a period during which the DCC is not necessarily closed.

**DOSS advice for NMFS and WOMET (5/3-5/11).**

1. DOSS advises NMFS and WOMET to not consider the DOSS advice from April 20 and 27, 2010. Rather, DOSS advises NMFS and WOMET to implement Schedule 3, above, during the SWP outage, scheduled for May 11-21, 2010. That is, SWP will adjust its CCF inflow to 700 cfs per day, and when CCF is full, CVP will cycle its pumps/units, with one unit pumping full days at 800 cfs, and a second unit pumping most of each day to attain an export volume equivalent to pumping 700 cfs per day. This export schedule will meet the NMFS RPA Action IV.2.1, that is, to not exceed 1,500 cfs combined pumping from April 1 through May 31.

2. Fish agencies advice to Reclamation for DCC gate operations is to keep the DCC closed through May 28 (Friday before Memorial Day) and then open on weekends only to allow for 14 days of closure from May 21 to June 15.

Next Mtg: May 11 at 9:00 am.