

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

Conference call: 11/1/11 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:** Andy Chu, Angela Llaban, Dan Yamanaka, Mike Ford, Tracy Pettit

**FWS:** Leigh Bartoo, Roger Guinee

**NMFS:** Barbara Rocco, Jeff Stuart, Bruce Oppenheim

**Reclamation:** Josh Israel, Russ Yaworsky

**DFG:** Bob Fujimura, Joe Johnson

**EPA, SWRCB:** not present

### Action items

- Check on new green sturgeon ID protocols for this year. Since there was no resolution from last meeting, the group agreed to keep this item on the action list and revisit it as information becomes available. (See discussion below)
- ESA take coverage for genetic sampling of green sturgeon. Keep green sturgeon protocol information on the agenda to check on each week. (See discussion below)

After the discussion (see below), it was decided that both action items could be removed from future DOSS agenda; however, the sturgeon protocol for the SWP will be updated as it becomes available.

### Agenda

1. Fish Monitoring
2. Current operations
3. Annual review presentations
4. Sturgeon ID protocols

**Fish Monitoring:** The following table presents fish monitoring data from 10/24 through 10/31/11. see: <http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm>

Location	Chippis Is. Midwater Trawl	Sacramento Kodiak Trawl	Mossdale Kodiak Trawl	Beach Seines	Knights Landing RST	Tisdale Weir RST
Sample Date	10/26	10/24, 26, 28	10/24, 26, 28	10/24–10/26, 10/28	10/24, 27, 31	10/24, 26, 28, 31
Total Catch	11	0	0	5	1	2
FR						
LFR						

<b>WR</b>				2		2
<b>SR</b>					1	
<b>Ad-Clipped Chinook</b>						
<b>DS</b>	7			1		
<b>LFS</b>						
<b>SPTL</b>	4			2		
<b>SH (ad-clip)</b>						
<b>SH (wild)</b>						
<b>W. Temp. (avg. °F)</b>	53.6	59.0	58.8	62.1	59.7	58.4
<b>Flows (avg. cfs)</b>					6681	6,468
<b>Turbidity (avg. NTU)</b>					6.9	6.76
<b>FR/SR Avg. CPUE</b>					0.056	
<b>WR/LFR Avg. CPUE</b>						0.10

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

Tisdale: The 2 winter-run Chinook caught measured 37 and 41 mm. These were the first juvenile Chinook caught since 7/1/11. A 1-day drop of 6.4° F (10/28/11) may have been the result of a change in the time of day that measurements were taken or a change in the source of river flows for that particular day. CDFG will check the records for more information as to the cause.

Chippis Island Monitoring: The recommendation from the DOSS subgroup to reduce monitoring to 1 day/week (Wednesday) was implemented to ensure that the IEP delta smelt take limit is not reached. Four splittail and 7 delta smelt were caught last week. So far, delta smelt catch is staying under the self-imposed daily take limit (10 fish/day). The daily limit was established by the subgroup as a working “marker” or “maximum” for the day so as not to exceed the annual take limit. The subgroup’s recommendation was submitted to IEP for its approval. IEP agreed with the subgroup’s monitoring protocol.

Fall Midwater Trawl (FMWT): In addition to the above locations, DFG reported on FMWT results for October. Sampling was done from 10/3 through 10/14. Forty-nine delta smelt were collected in the October survey for a monthly index of 54. The 2011 combined index for September and October is 104, the highest since 2003, when the combined index for the same period was 151. There were 13 longfin caught in October 2011, for an index of 16; the combined 2011 September and October index is 84, the highest since 2006, which was 1,732. Last year, the longfin index was 9. Striped bass and American shad indices increased over last year’s (62 vs. 21 for striped bass, 204 vs. 184 for American shad); threadfin shad index decreased to 20 from last year’s index of 73. The FMWTs are scheduled for November 7 through November 21; data should be available around the beginning of December.

Updated Mokelumne River monitoring data from 10/19/11 through 10/25/11 were sent out by DFG to the DOSS group (see table below). Although the effect of the DCC gate closure is still being analyzed, the results show Chinook salmon were definitely keying in on the pulse flows. CDFG reported a few weeks ago that 4,000 fish had passed Woodbridge Dam (where the monitoring camera is set up). As of today, more than 12,000 fish had passed Woodbridge Dam. The pulse flows are dropping today and will level out at 600–650 cfs. This flow rate is targeted for this Friday and will be held through mid-November. A majority of the salmon observed (8,000) were 2 year old grilse (see table below). According to telemetry monitoring, the travel time estimated for tagged (hatchery) fish (only 1 so far) is only a few days from release to Woodbridge. CDFG anticipates that between 18,000 and 20,000 fish will pass Woodbridge Dam before the end of the season.

**MOKELUMNE RIVER FISHERIES MONITORING PROGRAM OF THE EAST BAY M.U.D.**  
**Fish Passage Monitoring Task**  
**Weekly Fish Passage at Woodbridge Dam - Summary Report**  
**(data are preliminary and subject to change)**  
 Week of: 10/19/11 to 10/25/11

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Weekly	Season*
Date	10/19	10/20/	10/21	10/22	10/23	10/24	10/25	Totals	Totals
Count Method	V	V	V	V	V	V	V		
<b>Chinook Salmon</b>									
Adclipped	771	324	378	230	369	754	886	3712	9927
Adult Male	75	26	62	23	33	79	71	369	1349
Adult Female	85	42	67	32	42	77	72	417	1443
Adult Unknown Sex	0	0	0	0	0	0	0	0	1
Grilse Male	487	226	177	164	223	450	646	2373	6117
Grilse Female	184	56	83	32	89	199	150	793	2009
Grilse Unknown Sex	1	2	0	0	4	0	0	7	25
Male Unknown Stage	0	0	0	0	0	0	0	0	0
Female Unknown Stage	0	0	0	0	0	0	0	0	0
Unknown Sex Unknown Stage	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>832</b>	<b>352</b>	<b>389</b>	<b>251</b>	<b>391</b>	<b>805</b>	<b>939</b>	<b>3959</b>	<b>10944</b>
<b>Steelhead (<i>O. mykiss</i> &gt; 38cm)</b>									
Adclipped Adult	3	5	3	1	4	3	3	22	163
Adult Male	0	1	0	0	0	0	1	2	25
Adult Female	0	0	2	0	0	0	1	3	12
Adult Unknown	3	4	1	1	4	3	1	17	129
<b>TOTAL</b>	<b>3</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>22</b>	<b>166</b>

**Salvage:** No listed species were salvaged at the Federal or state facilities this past week (10/24 through 10/30/11).

**White sturgeon:** One white sturgeon measuring 351 mm FL was collected at the TFCF on 10/25/11. The sample time was reduced to 10 minutes because of excessive debris; the expansion factor was 12. The season (since 10/1) total is 44.

## Operations (11/1/11)

SWP		CVP	
<b>Exports (cfs)</b>			
Clifton Court Forebay	6,680	Jones Pumping Plant	4,200
<b>Reservoir releases (cfs)</b>			
Feather - Oroville	2,300	American - Nimbus	2,500
		Sacramento - Keswick	7,000
		Stanislaus - Goodwin	1,900 down to 1,300 by this afternoon and to 700 by tomorrow afternoon
<b>Reservoir Storage (TAF)</b>			
San Luis (SWP)	968	San Luis (CVP)	753
Oroville	2,896	Shasta	3,227
		Folsom	577
		New Melones	1,944
<b>Delta Operations</b>			
DCC	Open	Sacramento River at Freeport (cfs)	12,378
Outflow Index (cfs)	5,700	San Joaquin River (cfs)	4,379 down to 2–3,000 at Vernalis by end of the week.
Total Delta Inflow (cfs)	18,512	OMR (daily)	
Water Temperature (°F)		OMR 5 day	
X2 (km)	79	OMR 14 day	
E/I	51%		

San Luis Reservoir: The Federal side is filling right now; the state side nearly full. CVP and SWP are forecasting that San Luis will be full in December 2011.

American River: The flows will decrease to 2,000 cfs from now through December.

Stanislaus River: Inflows into New Melones Reservoir are between 300 and 700 cfs. Yesterday, it was approximately 460 cfs; therefore, releases to the Stanislaus River are decreasing. We are trying to stabilize flows for fall-run Chinook spawning (NMFS BiOp minimum is 300 cfs).

Vernalis: Pulse flows to attract fall-run Chinook spawners into the San Joaquin River are nearly finished and flows are going back to the minimum.

X2: The projects are meeting the X2 standard for the last 2 weeks in October and November. X2 was at 75 km in the second half of October and will be maintained at 79 km (monthly average) for all of November. X2 is not limiting any exports at this point; however, it is being carefully monitored.

Merced River: Flows have decreased from 1,200 cfs to 500 cfs and are projected to decrease to approximately 350 cfs as measured at Cressey; flows farther downstream at Stevinson have been higher.

Weather forecast: There is rain forecasted for this weekend but it is expected to be light.

### Annual Review

DOSS held a “dry run” last Friday. Oppenheim is incorporating comments from last week and those from the practice last Friday. He will send out the next draft presentation to the DOSS group and solicit feedback. To check the agenda for next week’s OCAP annual review, check the Delta Stewardship Council website:

([http://www.deltacouncil.ca.gov/sites/default/files/documents/files/OCAP\\_2011\\_meeting\\_notice\\_102411.pdf](http://www.deltacouncil.ca.gov/sites/default/files/documents/files/OCAP_2011_meeting_notice_102411.pdf)).

The review will be held on November 8, 2011, from 9:00 a.m. to 5:00 p.m., and on November 9, 2011, from 2:00 p.m. to 5:00 p.m. at 650 Capitol Mall, First Floor, Stanford Room, Sacramento.

### New Sturgeon Protocol for the Federal Salvage Facility

Sturgeon juvenile stage (90–120 mm TL): At this size range, sturgeon should be past metamorphosis; therefore, scute counts, scute shape, barbels, and vent location should be similar to those of adults.

Primary characteristics (Fig. 1):

Characteristic	Green Sturgeon	White Sturgeon
Lateral (side) scutes count	23–30	38–48
Dorsal fin ray count	33–36	≥42
Dorsal scute description	Fewer (8–11) and spread apart	Greater (11–14) and close together



Figure 1. Primary characteristics: green sturgeon (left) and white sturgeon (right)

Secondary Characteristics (Fig. 2):

Characteristics	Green Sturgeon	White Sturgeon
Shape of snout	Narrow, pointed	Wider and spade-shaped, pointed
Line on belly	Green line	Sometimes present and usually faint

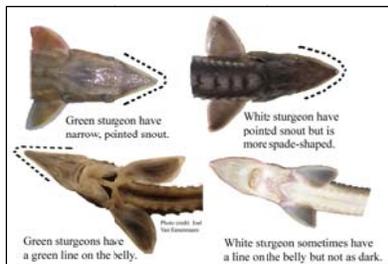


Figure 2. Secondary characteristics: green sturgeon (left) and white sturgeon (right).

The above protocol for the Federal facility was sent out on October 31 in response to the salvage of sturgeon from last year. This protocol applies only to sturgeon 90–120 mm, and above. Some DOSS members had previously asked about genetic identification; however, tissue sampling of sturgeon was not included in the NMFS BiOp. Israel reported the Tracy Fish Facility has standard operating procedures (SOPs) for handling threatened and endangered species; the operators will collect a tissue sample from each sturgeon and hold them until there is a positive ID (those up to 120 mm). A genetic marker was used last year but it is not yet clear from the researcher at Cramer Fish Sciences (UCD) or staff at Tracy Fish Facility whether this protocol can continue. Cramer is doing broad-scope genetic analyses to develop bar coding methods for fish in the Central Valley. It would not be difficult to include a task for the genetic analysis of green sturgeon with other genetic programs in the future for species identification or salmon loss information (e.g., at UC, Davis). It is a matter of which agencies and labs are willing to do the work.

Genetic samples could be taken off the caudal fin or front dorsal fin if fish are  $\geq 90$  mm. The morphological and meristic characteristics are not fully formed in smaller fish  $< 90$  mm. Tissue sampling for genetic identification is not considered to be an invasive technique. If the incidental take limit is reached, the outcome is more significant than working with NMFS to identify the species. The export agencies will want to know the species because the take limit is fairly low for green sturgeon. Genetic sampling of salvaged Chinook salmon is also planned for this year.

Do the fish facilities need a recommendation from DOSS? No, they are not requesting one and will develop sturgeon ID protocols on their own. As far as NMFS is concerned, the genetic identification request needs to be added to the BiOp. NMFS believes that it can add genetic tissue sampling of green sturgeon to the BiOp terms and conditions. This would be a change in reporting requirements, but not a change in the RPA. There still needs to be a funding source and an established size range. The Federal facility will tissue sample sturgeon under 120 mm. DFG is in discussions with operators at the state facilities to have SOPs for fish larger than 120 mm. It was agreed that the secondary characteristics (see above) are not as reliable as the primary characteristics, especially in smaller fish. These salvaged fish are less than 5% of their adult size. DFG biologists are working with DWR to provide more rigorous checks for fish larger than 120 mm. Genetic testing will need to wait until there is infrastructure and a directive from NMFS. DWR will most likely adopt whatever protocols are used at the Federal facilities with less emphasis on secondary characteristics. Technicians at the facilities will use the easiest means by which to identify the sturgeon; therefore, there will be more emphasis on primary characteristics. It was noted that it is rare to even see green sturgeon  $< 120$  mm at the state facilities. It was also noted that the previous misidentification of white sturgeon occurred with much smaller specimens ( $< 90$  mm) of which taxonomic identification are more difficult.

**DOSS advice to WOMT and NMFS:** None

**Next Meeting:** Because of the OCAP annual review being held next Tuesday, and to allow members to attend, it was decided to hold the next DOSS conference call in 2 weeks on November 15, 2011, at 9:00 a.m. unless there is a need (e.g., a major weather event) to meet earlier.