



**UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE  
Southwest Region  
501 West Ocean Boulevard, Suite 4200  
Long Beach, California 90802-4213

**April 27, 2012**

Mr. Don Glaser  
Regional Director  
Mid-Pacific Region  
U.S. Bureau of Reclamation  
2800 Cottage Way, MP-3700  
Sacramento, California 95825-1898

Mr. Mark Cowin  
Director  
California Department of Water Resources  
P.O. Box 942836, Room 1115-1  
Sacramento, California 94236-0001

Dear Mr. Glaser and Mr. Cowin:

On January 12, 2012, Plaintiffs, Plaintiff-Intervenor, and Federal Defendants to the Consolidated Salmonid Cases (Case 1:09-cv-01053-LJO –DLB) signed and filed with the Federal court a joint stipulation (Document 659-2) that included Central Valley Project and State Water Project operations for April and May 2012. On March 16, 2012, NOAA's National Marine Fisheries Service (NMFS) transmitted to the U.S. Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR) the real-time operations technical memorandum (tech memo) required as part of the joint stipulation (Paragraph 2.a.v).

Following a meeting of the Delta Conditions Team (DCT) on April 23, 2012, Tom Boardman (a member of the DCT) sent to the Delta Operations for Salmonids and Sturgeon (DOSS) technical team a proposal from the Public Water Agencies (PWA, attachment 1 to the enclosed DOSS advice) for consideration. During the DOSS call on April 24, 2012, the DOSS discussed the PWA proposal, in addition to a similar proposal from Reclamation. Reclamation offered an alternate proposal to continue the combined exports of 1,500 cfs through Thursday, April 26, 2012, then increase exports to 100% of Vernalis flow through the rest of the period on April 30, 2012.

The DOSS advice (see enclosure) to the Water Operations Management Team (WOMT) and NMFS are to: (1) continue to operate per the OMR technical memorandum, *i.e.*, continue to hold combined exports at 1,500 cfs through the current experimental period which ends on April 30; (2) refer the PWA's questions and concerns to Kevin Clark (DWR), the lead investigator of the



stipulation study, for his review first; and (3) target an OMR treatment level of -5,000 cfs (or as negative an OMR level as is feasible given all other regulatory constraints, including D-1641) for the May 1-May 15 experimental period. DOSS did not advise seeking a variance to the D-1641 1:1 Vernalis flow:export requirement.

NMFS accepts the DOSS advice and determines that combined 1,500 cfs exports through the end of the period on April 30, 2012, is consistent with the intent and objective of OMR flow management, as provided in the tech memo. The tech memo provides the DOSS with the flexibility to switch the order of the experimental OMR targets, that is, "DOSS may adjust the ordering of OMR flow management targets opportunistically during April and May 2012" (tech memo page 8). NMFS determines that since the OMR flow through April 30, 2012, and switching OMR experimental flows in May, is consistent with the joint stipulation and associated tech memo, that it will avoid jeopardizing the continued existence of Central Valley steelhead.

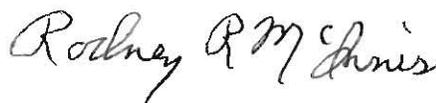
NMFS also agrees with the DOSS advice that the principal investigator should respond to the technical questions from the PWA regarding the sentinel steelhead stipulation study. NMFS understands that Reclamation and DWR will not be requesting from the State Water Resources Control Board a variance of the export limit under Decision-1641, and supports that decision.

The sentinel steelhead study is the first of its kind, that is, to study the fine scale movements of acoustically-tagged steelhead within and throughout the Delta, and to utilize some of the data to inform in-season management and water operations. Considering the results from the first sentinel release group at the experimental OMR flow of -3,500 cfs (in actuality, OMR values were closer to the -2,000 to -2,500 cfs range), we would expect more acoustic tags to pass the Railroad Cut receivers, and also earlier in the experimental period, with the increased level of exports beginning May 1.

In an effort to continually review the scientific foundation of this action, I am directing my staff to reconvene the group that developed the sentinel study and the tech memo (the planning committee), to re-evaluate the trigger and action response from the tech memo based on the new information received from the first experimental period. In anticipation of the potential observed detection of a high frequency of sentinel steelhead at the Railroad Cut receivers during the experimental period in the first half of May, NMFS is willing to consider possible adjustment to either the trigger or the action response.

NMFS appreciates the continued coordination of the parties towards the implementation of the joint stipulation and the technical memorandum.

Sincerely,



Rodney R. McInnis  
Regional Administrator

Enclosure

**DOSS Advice for operations for the remainder of the April 15-April 30, 2012, time period,  
and for the May 1-May 15, 2012, time period**

**Old and Middle River Flow Management per the 2012 Joint Stipulation, in lieu of Action  
IV.2.1 of the NMFS Biological Opinion for the Long-Term Operations of the Central  
Valley Project and State Water Project (NMFS Opinion)**

**Summary of Advice from the Delta Operations for Salmonids and Sturgeon (DOSS) group:**

**Background:**

On Friday, April 20, 2012, NMFS was notified that the exposure trigger at the Railroad Cut receivers (9 fish for the April 15-30 experimental period) was exceeded. NMFS, in turn, notified the Water Operations Management Team (WOMT) that the projects should, within 48 hours, adjust operations to target an Old and Middle River (OMR) flow of -1,250 cfs, or, if targeting that OMR would require combined exports to drop below 1,500 cfs, reduce exports to the minimum health and safety level of 1,500 cfs. The projects have been operating with combined exports at 1,500 cfs since Sunday, April 22, 2012.

The Public Water Agencies submitted some concerns and questions (Attachment 1) to NMFS on April 24, 2012, prior to the Delta Operations for Salmonids and Sturgeon (DOSS) technical team call, and recommended that operations be adjusted to target an OMR flow of no more negative than -2,500 cfs for the rest of April. The recommended operations would represent a change in operations from the required operations for the remainder of the current experimental period of April 15-30.

The concerns and recommendation were discussed by DOSS, along with some alternate recommendations offered by DOSS representatives. In addition, the U.S. Bureau of Reclamation offered an alternate proposal to continue at combined exports of 1,500 cfs through Thursday, April 26, 2012, and then increase exports to 100% of Vernalis flow through the remainder of the experimental period (through April 30). Other DOSS representatives proposed holding OMR at -1,250 cfs or holding combined exports to 1500 cfs combined exports (whichever option allows greater exports) through April 30, per the OMR Technical Memorandum<sup>1</sup>.

**DOSS advice for Tuesday 4/24/12:**

DOSS advice re: operations per the stipulation -- remainder of April 15-April 30 time period  
DOSS advises that the projects continue to operate per the OMR technical memorandum, *i.e.* continue to hold combined exports at 1,500 cfs through the current experimental period which ends on April 30. DOSS also advises that the questions and concerns submitted by the public water agencies be reviewed first by Kevin Clark (California Department of Water Resources), the lead investigator of the stipulation study.

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<sup>1</sup> Available at [http://swr.nmfs.noaa.gov/ocap/2012\\_stipulation.htm](http://swr.nmfs.noaa.gov/ocap/2012_stipulation.htm)

*Rationale for Advice for remainder of April 15-30, 2012, time period:*

While there were no objections to this DOSS advice, the discussion included diverse perspectives on the recent tag detections at Railroad Cut and the significance for managing outmigration conditions for Central Valley steelhead. Notwithstanding, the following points brought up on DOSS indicates that the existing protections should continue:

1. Sentinel steelhead continue to pass the Railroad Cut receivers (Attachment 2);
2. Wild steelhead continue to be salvaged and lost at the fish facilities on a regular basis (<ftp://ftp.dfg.ca.gov/salvage/DOSS%20Salvage%20Tables/>); and
3. An increase in wild steelhead being observed at Mossdale this past week compared to previous years.

DOSS advice re: operations per the stipulation -- initial OMR treatment level for May 1-May 15 time period:

DOSS advises that the initial OMR treatment level for the May 1-May 15 experimental period target an OMR treatment level of -5,000 cfs, or as negative an OMR level as is feasible given all other regulatory constraints, including D-1641. DOSS did not advise seeking a variance to the D-1641 1:1 Vernalis flow:export requirement.

*Rationale for Advice for May 1-May 15, 2012, time period:*

The current trend in OMR levels for the April 15-30 time period will result in an effective OMR treatment level more positive than the target treatment level of -3,500 cfs, likely in the -2,000 to -2,500 cfs range. Rather than implement the -1,250 cfs OMR treatment level indicated for May 1-May 15 in the OMR Technical Memorandum, another quite positive OMR treatment level, DOSS advises targeting a more negative OMR treatment level. One of the concerns about waiting until the second half of May to implement a more negative OMR treatment level is that some parties are concerned that smelt protections could restrict exports and limit the feasibility of a more negative OMR treatment level. Recent increases in water temperature in the Delta have also raised concerns about the suitability of water conditions in the second half of May. Shifting the more negative OMR treatment level to the first half of May increases the likelihood of having at least two different OMR treatment levels. Note that DOSS provided this advice with an expectation (based on WOMT and other discussions last week) that an intermediate initial OMR treatment level would likely be implemented during the second half of May.

DOSS advice re: operations per Action IV.2.3:

The older juvenile loss density for April 20, 2012 was reported to be 3.1 fish/TAF, which exceeds the first stage trigger of 2.5 fish/TAF under Action IV.2.3. DOSS advises that, under IV.2.3, the projects would be required to operate to an OMR level of no more negative than -3,500 cfs for at least five days<sup>2</sup>.

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<sup>2</sup> At the WOMT meeting on the afternoon of April 24, 2012, it was clarified that the first day of the five-day action response was Monday, April 23, 2012, the day NMFS was notified that the loss density trigger had been exceeded.

# **ATTACHMENT 1**

Concerns, questions, and recommendation submitted  
April 24, 2012, by public water agencies for consideration  
by DOSS



Barbara Byrne <barbara.byrne@noaa.gov>

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## For DOSS: Contractor letter to DOSS

1 message

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Barbara Byrne <barbara.byrne@noaa.gov>

Tue, Apr 24, 2012 at 8:57 AM

To: Garwin.Yip@noaa.gov, Alice Low <ALOW@dfg.ca.gov>, "Anderson, Craig" <Craig\_Anderson@fws.gov>, Andy Chu <andychu@water.ca.gov>, Angela Llaban <allaban@water.ca.gov>, Anne Snider <asnider@waterboards.ca.gov>, Aondrea Bartoo <aondrea\_bartoo@fws.gov>, Barbara Byrne <barbara.byrne@noaa.gov>, Barbara Rocco <barbara.rocco@noaa.gov>, Barbara Rocco <barocco@sbcglobal.net>, Bob Fujimura <bfujimura@dfg.ca.gov>, Bruce Herbold <Herbold.Bruce@epa.gov>, Brycen Swart <brycen.swart@noaa.gov>, Chad Dibble <CDIBBLE@dfg.ca.gov>, Cynthia LeDoux-Bloom <cledoux@water.ca.gov>, Dan Yamanaka <dany@water.ca.gov>, Edmund Yu <eyu@water.ca.gov>, "Ford, Mike" <jmford@water.ca.gov>, Jason Roberts <JDROBERTS@dfg.ca.gov>, Jeff Stuart <j.stuart@noaa.gov>, Jim Gleim <jamesg@water.ca.gov>, Joe Johnson <jrjohnson@dfg.ca.gov>, John Hannon <JHannon@usbr.gov>, Jon R Burau <jrburau@usgs.gov>, Joshua A Israel <JAIsrael@usbr.gov>, Kevin Reece <creece@water.ca.gov>, "Kiteck, Elizabeth" <EKiteck@usbr.gov>, "Kyler, Kari" <KKyler@waterboards.ca.gov>, "Oppenheim, Bruce" <Bruce.Oppenheim@noaa.gov>, Pat Brandes <Pat\_Brandes@fws.gov>, Paul Fujitani <PFujitani@usbr.gov>, "Pettit, Tracy" <pettit@water.ca.gov>, Rachel Johnson <rbarnettjohnson@usbr.gov>, Robert Vincik <rvincik@dfg.ca.gov>, Roger Guinee <roger\_guinee@fws.gov>, Russell Yaworsky <rpyaworsky@usbr.gov>, Scott Cantrell <SCANTREL@dfg.ca.gov>, Thomas Morstein-Marx <TMorsteinMarx@usbr.gov>, "Washburn, Thuy" <TWashburn@usbr.gov>

FYI, information from DCT members below:

----- Forwarded message -----

From: **Ford, John M (Mike)** <jmford@water.ca.gov>

Date: Tue, Apr 24, 2012 at 8:53 AM

Subject: RE: Contractor letter to DOSS

To: Tom Boardman <tboardman@apex.net>

Cc: Barbara Byrne <barbara.byrne@noaa.gov>, bruce <bruce.oppenheim@noaa.gov>

Tom,

Yes, I will make sure its sent out and discussed

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**From:** Tom Boardman [mailto:tboardman@apex.net]

**Sent:** Tuesday, April 24, 2012 8:42 AM

**To:** Ford, John M (Mike)

**Subject:** Contractor letter to DOSS

Hi Mike,

Below is a letter that the water contractors would like to submit to the DOSS group for discussion at their meeting this morning. Could you make sure the group receives it?

Thanks

Tom

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To the DOSS group:

In response to the discussions that occurred yesterday on the DCT team's conference call, public water agencies south of the Delta have the following concerns and recommendations related to the current management action that began April 22 intended to protect endangered steelhead trout. The listed concerns apply equally to export and flow-related decisions made during May under the Stipulation.

1. Concerns & Questions

- a. Were the Stipulation acoustic tagged hatchery steelhead sufficiently acclimated to behave normally? The Stipulation results appear to be inconsistent with the preliminary 6-Year Study results in that a higher percentage of the Stipulation fish have been detected in the interior delta.
- b. Were the Stipulation fish released at Buckley Cove too close to Turner Cut and Railroad Cut to produce realistic results? Turner Cut is the first junction into the interior Delta, just three miles downstream of the release point. Railroad Cut receiver is just 5 miles downstream from Turner Cut.
- c. Only 3% of the 6-year study acoustic tagged steelhead have been detected in the vicinity of the intakes. Could that be because the 6-year study fish were released about 10 miles farther upstream than Buckley Cove and had more time to acclimate?
- d. What is the comparison of detection rates of Stipulation fish versus 6-year Study fish at Railroad Cut?
- e. Is the 5% detection criterion at Railroad Cut, which is based on 3% detection at the export facilities, too restrictive considering the winter run Chinook take level is 2% of juvenile Chinook entering the Delta? Given that winter run Chinook have already traveled miles in a riverine and tidal estuarine environment, the detection limit seems questionable.
- f. The Stipulation does not provide that exports may be reduced to serve as an experiment. Particularly in light of the water supply losses incurred, exports should not be reduced to provide more data.
- g. What has been the actual salvage of endangered steelhead at the state and federal facilities? How does the actual salvage differ from the passage detection of the Stipulation fish?

2. Additional information

- a. Determine if the Stipulation fish traveled north or south in Old River using 6-Year Study receiver information and the Stipulation Study receiver inside Clifton Court Forebay.

- b. Estimate effect of predation by using more of the receivers to determine movement patterns.
- c. Develop the Delta Simulation Model-2 and Particle Tracking Model results representing this time period for comparison to actual steelhead detection patterns.
- d. Evaluate real time fish movement using data from all possible monitoring programs. Such basic fish behavioral understanding is essential to fully inform policy makers of the implications of their decisions.

### 3. Recommendation

- a. Considering our concerns expressed above, with this first Stipulation study, we recommend increasing the allowable OMR for the remainder of April from -1250 cfs to -2,500 cfs, which is approximately 1:1 at Vernalis.

The technical memo driving project operations clearly needs to be modified to reflect what we presently know and don't know regarding the movement of wild steelhead through the estuary. In addition, the data relative to the actual occurrence of wild steelhead at the export facilities does not justify the "default" assumption of the regulatory agencies that the most restrictive approach to project exports is justified given the biological uncertainties and economic certainties for our State.

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**Barb Byrne**  
Fish Biologist

*barbara.byrne@noaa.gov* | office: 916-930-5612 | fax: 916-930-3629  
NMFS Central Valley Office | 650 Capitol Mall, Suite 5-100 | Sacramento, CA 95814

# **ATTACHMENT 2**

Daily Analysis of Sentinel Steelhead in the  
2012 Stipulation Study  
Hanson Environmental, Inc.  
April 24th, 2012

2012 Stipulation Study

Daily Analysis – April 24th, 2012

Natalie Stauffer, Hanson Environmental, Inc.

On April 24th, 2012, data from the Railroad Cut VEMCO receivers at Old and Middle River was downloaded at approximately 10:00 and analyzed by Hanson Environmental, Inc. Data from 5 receivers was analyzed to determine if any fish released by the 2012 stipulation study's first tagging and release effort were detected. Additionally, data from Site 3C was analyzed for 2 days, as the data downloaded yesterday was not accurate or usable. Five new tags were detected and verified (detected at least twice in a 30 minute interval) since the last data retrieval. Thus, a cumulative total of 42 tags have been detected. All of the receivers were working accurately, as verified by the number of beacon tag hits detected and recorded.

Tag ID	Site 2A	Site 2B	Site 3A	Site 3B	Site 3C	Initial Detection Date
A180-1702-14022/3		X	X	X	X	4/17/2012
A180-1702-17738/9	X	X	X	X	X	4/17/2012
A180-1702-2894/5	X	X	X	X	X	4/17/2012
A180-1702-2902/3	X	X	X	X	X	4/17/2012
A180-1702-3328/9			X	X	X	4/17/2012
A180-1702-2826/7	X	X	X	X	X	4/19/2012
A180-1702-17756/7		X	X	X	X	4/19/2012
A180-1702-19376/7			X	X	X	4/19/2012
A180-1702-2808/9	X	X	X	X	X	4/19/2012
A180-1702-2842/3	X	X	X	X	X	4/19/2012
A180-1702-3484/5	X	X	X	X	X	4/19/2012
A180-1702-14032/3	X	X		X	X	4/19/2012
A180-1702-14042/3	X	X	X	X	X	4/19/2012
A180-1702-14048/9	X	X	X	X	X	4/20/2012
A180-1702-8032/3			X	X	X	4/20/2012
A180-1702-3480/1	X	X	X	X	X	4/21/2012
A180-1702-19370/1	X	X	X	X	X	4/21/2012
A180-1702-8030/1	X	X	X	X	X	4/21/2012
A180-1702-23798/9			X	X	X	4/21/2012
A180-1702-17760/1			X			4/21/2012
A180-1702-14038/9			X	X	X	4/21/2012
A180-1702-23778/9			X	X	X	4/21/2012
A180-1702-3482/3			X	X	X	4/21/2012
A180-1702-8026/7			X	X	X	4/21/2012
A180-1702-14052/3			X	X	X	4/21/2012

A180-1702-2836/7			X	X	X	4/21/2012
A180-1702-3466/7			X	X	X	4/21/2012
A180-1702-2892/3	X	X	X	X	X	4/22/2012
A180-1702-2810/1	X	X	X	X	X	4/22/2012
A180-1702-17754/5				X	X	4/22/2012
A180-1702-23776/7	X	X	X		X	4/22/2012
A180-1702-3496/7	X	X				4/23/2012
A180-1702-2900/1	X	X	X	X	X	4/23/2012
A180-1702-2838/9	X	X				4/23/2012
A180-1702-14024/5			X	X	X	4/23/2012
A180-1702-19404/5			X	X	X	4/23/2012
A180-1702-2906/7				X	X	4/23/2012
A180-1702-19400/1	X	X				4/24/2012
A180-1702-14050/1	X	X	X	X	X	4/24/2012
A180-1702-2898/9			X	X	X	4/24/2012
A180-1702-2904/5			X	X	X	4/24/2012
A180-1702-23794/5			X	X	X	4/24/2012

Note of change from previous report: Tag ID A180-1702-23776/7 was detected, but not verified at Site 3B. It was, however, detected and verified at Site 3C. These changes are reflected in the table above.