



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
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Sacramento, California 95814-4700

SEP 28 2015

Mr. David Murillo  
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Bureau of Reclamation  
2800 Cottage Way  
Sacramento, California 95825

Mr. Mark Cowin  
Director  
California Department of Water Resources  
1416 Ninth Street  
Sacramento, California 95814

Re: Proposed Modification to the June 25, 2015, Sacramento River Water Temperature Management Plan

Dear Mr. Murillo and Mr. Cowin:

This letter responds to the U.S. Bureau of Reclamation's (Reclamation) September 8, 2015, letter and enclosure, wherein Reclamation proposes modifications to the Sacramento River Temperature Management Plan (TMP) that it submitted to NOAA's National Marine Fisheries Service (NMFS) for concurrence on June 25, 2015<sup>1</sup> (June Plan). On July 1, 2015, NMFS concurred<sup>2</sup> that storage in Shasta Reservoir, and the quantity and quality of the cold water pool, would not provide for suitable winter-run habitat needs throughout their egg and alevin incubation periods. The base operations outlined in the June Plan represented the best that could be done with a really poor set of conditions and were based on extensive analyses of alternative scenarios (6,000 to 8,000 cfs Keswick releases). However, as a result of the August meteorological conditions, the cumulative runoff into Shasta Reservoir (which was greater than that modeled in the 90 percent exceedance forecast), and the close management of the Temperature Control Device (TCD) shutter operations, the volume of cold water in Shasta Reservoir at the end of August is measurably better than what was forecasted in the June Plan. In response to the continuing changes in Shasta Reservoir conditions, Reclamation has proposed to modify the Sacramento River TMP so as to account for the increase in available cold water and to allow for management flexibility in a way that will benefit winter-run Chinook salmon,

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[http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/bor\\_s\\_june\\_25\\_2015\\_request\\_for\\_nmfs\\_concurrence\\_on\\_contingency\\_plan\\_and\\_sac\\_tmp\\_for\\_july\\_through\\_november\\_2015.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/bor_s_june_25_2015_request_for_nmfs_concurrence_on_contingency_plan_and_sac_tmp_for_july_through_november_2015.pdf)

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[http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/nmfs\\_determinations\\_on\\_tuc\\_petition\\_and\\_sacramento\\_river\\_tmp\\_-\\_july\\_1\\_2015.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/nmfs_determinations_on_tuc_petition_and_sacramento_river_tmp_-_july_1_2015.pdf)



fall-run Chinook salmon, and project water supplies this year. Reclamation seeks concurrence from NMFS that the operations described in the updated Base Operations are consistent with the real-time provisions of Sacramento River TMP submitted in June and the overall Drought Contingency Plan prepared pursuant to reasonable and prudent alternative (RPA) Action I.2.3.

Since June, the cold-water management strategy at Shasta Reservoir has been conducted consistent with the submitted Plan, and the Keswick release has generally been held at 7,200 cfs through the summer. June and July ambient air temperatures in Redding were very warm, but tracked closely with the assumed values used to prepare the June Plan. By contrast, the August air temperatures have been much closer to average and smoke cover from nearby wildland fires have reduced radiant heating to the Sacramento River. In addition, inflows to Shasta Reservoir this summer have also been slightly better than the 90% exceedance forecast used as part of the June Plan. In consideration of the relative improvement in reservoir conditions, Reclamation proposes a modified base operation of Keswick releases that will benefit winter-run Chinook salmon, fall-run Chinook salmon, and project water supplies this year. In support of this proposal, Reclamation has provided technical information, including modeling results and operational forecasts for Sacramento River temperature management, comparing the continuation of the Keswick release schedule outlined in their June Plan and various scenarios of potential increased releases patterns for the remainder of the summer and fall.

Through multiple discussions and review of model results, the multi-agency group [comprised of representatives of Reclamation, NMFS, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife (CDFW), California Department of Water Resources, and the State Water Resources Control Board] agreed that Keswick releases should follow scenario 2, as proposed by Reclamation. Specifically, Keswick releases would continue at the current release of 7,200 cfs through approximately October 20 (the exact date will be based on field data for winter-run Chinook salmon fry emergence from the gravel), and also subject to ongoing monitoring of river conditions, cold water pool volume, and TCD performance. Maintaining a release of 7,200 cfs will provide flow stability for all winter-run Chinook redds currently in the river. Once fry emergence has been completed, flows will gradually be ramped down (following the ramping rates in Reclamation's 2008 biological assessment<sup>3</sup>) to target a Keswick release of 4,250 cfs by late October. The current proposal is to target this flow through January 2016 to provide stable flows through the majority of fall-run Chinook salmon egg and alevin incubation season. As the fall progresses, this minimum flow target would be met through a combination of Keswick releases and valley runoff.

Recently, on September 13, Reclamation opened one of the two side gates of the Shasta TCD as a result of increasing Shasta release temperatures, seemingly a week earlier than projected in the June Plan (which indicated September 20). As a result, and in consideration of the perceived increase in risk of running out of cold water earlier than expected, Keswick releases were reduced to 7,000 cfs (200 cfs reduction to conserve cold water) beginning in the morning of September 15. Through various real-time operations venues, NMFS received clarification that the side gate operation projected in the June Plan was one side gate open along with one pressure relief gate (PRG) open (resulting in the majority of Shasta release going through the one side

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<sup>3</sup> Available online at: [http://www.usbr.gov/mp/cvo/OCAP/sep08\\_docs/OCAP\\_BA\\_002\\_Aug08.pdf](http://www.usbr.gov/mp/cvo/OCAP/sep08_docs/OCAP_BA_002_Aug08.pdf). See page 2-38.

gate). The actual/current operation is one side gate open along with all five PRGs open, so considerably less flow is being released from the side gate. Four PRGs would need to close before the TCD operation is reflective of the one side gate open on or about September 20 in the June Plan. Therefore, the current operation is on track with the water temperature objective as proposed in the June Plan.

NMFS supports the September 8, 2015, revisions, specifically scenario 2, to the Sacramento River Temperature Management Plan, with the following provisions:

- Reclamation shall continue to implement the June 25, 2015, Project Description in accordance with the drought contingency procedures of RPA Action I.2.3.C except where operations would differ according to the revised Sacramento River TMP.
- NMFS identified several key conditions to its July 1, 2015, concurrence to the Sacramento River TMP. Those key conditions are incorporated here by reference.
- Ramping down Keswick releases from the current flow to 4,250 cfs in mid-October shall occur during weekdays to provide enough time for CDFW staff to evaluate pools for stranded or isolated juvenile winter-run.
- Temperature model runs with new Shasta and Trinity reservoir shall be distributed to the interagency real-time operations team by close of business on October 2. Reclamation shall convene a real-time Shasta operations team meeting early during the week of October 5 to discuss the results of the temperature model runs.
- Actual operations will continue to be decided using a real-time monitoring and decision making process that includes representatives from the relevant Federal and State agencies. This decision making process may yield adjustments to base operations depending on real-time conditions on the ground (*e.g.*, real-time water temperatures and resulting cold water pool volume).


### Conclusions

In conclusion, NMFS concurs with Reclamation's September 8, 2015, revision to the Sacramento River Temperature Management Plan. We are making this finding based on collaborative interagency discussions and the information provided in Reclamation's September 8, 2015, letter. NMFS has previously acknowledged that storage in Shasta Reservoir at the beginning of the temperature management season in June, and the quantity and quality of the cold water pool, would not provide for suitable winter-run habitat needs throughout their egg and alevin incubation and fry rearing periods. However, based on a relative improvement of reservoir conditions, Reclamation's proposed Scenario 2 modifications to the Sacramento River TMP will reduce the potential for winter-run and fall-run Chinook salmon redd dewatering, and provide a modest increase in project water supplies this year.

We look forward to continued close coordination with you and your staff throughout this extremely challenging water year.

If you have any questions regarding this letter, please contact me at will.stelle@noaa.gov, (206) 526-6150, or contact Maria Rea at (916) 930-3600, maria.rea@noaa.gov.

Sincerely,

  
per William W. Stelle, Jr.  
Regional Administrator

cc: Copy to file: ARN 151422SWR2006SA00268

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