

From: Palafox, Carolina@DWR <Carolina.Palafox@water.ca.gov>
Sent: Monday, April 3, 2023 2:03 PM
To: Ekdahl, Erik@Waterboards <Erik.Ekdahl@waterboards.ca.gov>
Cc: Riddle, Diane@Waterboards <Diane.Riddle@waterboards.ca.gov>; Leahigh, John@DWR <John.Leahigh@water.ca.gov>; Mizell, Tripp (James)@DWR <James.Mizell@water.ca.gov>; White, Kristin N. <knwhite@usbr.gov>
Subject: TUCO Condition 4 FR Pulse Flow Plan

EXTERNAL:

Hello Mr. Ekdahl,

Please see the attached report.

Thank you,

Carolina Palafox



DEPARTMENT OF WATER RESOURCES
Division of Operations and Maintenance
3310 El Camino Avenue, Suite 300
Sacramento, California 95821

Erik Ekdahl
State Water Resources Control Board
1001 I Street
Sacramento, California 95814

Re: Condition 4 of the February 21, 2023 Temporary Urgency Change Order

Dear Mr. Ekdahl:

Consistent with the February 21, 2023 Temporary Urgent Change Order by the State Water Resources Control Board (SWRCB) issued to the U.S. Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR), and in compliance with Condition 4 of that Order, DWR hereby submits this plan to provide for pulse flows for the benefit of native fish and wildlife.

The California Department of Fish and Wildlife (CDFW) recently issued Amendment 7 to the Incidental Take Permit No. 2081-2019-066-00 for the Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta added Condition of Approval 9.2.3, Mitigation for Impacts Associated with WY 2023 TUCP. The amendment requires DWR to implement up to two pulse flow actions on the Feather River (for a total of 25 TAF) in the March through April 2023 period to aid outmigration of Central Valley Spring run Chinook salmon (CHNSR) and benefit late migrating Sacramento River Winter run Chinook salmon (CHNWR).

Two primary sources of potential mortality for emigrating Feather River CHNSR which pulse flow(s) may alleviate include 1) infection from *Ceratanova shasta* and 2) predation. A pulse flow increases the volume and velocity of discharge down the Feather River during outmigration and is expected to reduce the prevalence of diseased CHNSR by reducing the density of *C. shasta* spores in the water column and the exposure time of CHNSR to spores, thus reducing the infection rate of *C. shasta* in emigrating CHNSR and improving their survival. Reduced travel time through the Feather River is also expected to reduce the impact of predation on emigrating CHNSR by reducing exposure time to predators.

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The quantity, timing, magnitude, and duration of the pulse are still being developed in consultation with CDFW. However, the example pulse flow schedule (below) maximizes the magnitude of a single pulse released down the low flow channel (LFC), follows ramping rate criteria for the LFC, and assumes a minimum release from the Thermalito Afterbay Outlet (TAO) of 2,500 cfs.

Example pulse flow schedule:

Day	LFC Release	LFC Pulse Flow	TAO Release	Total Release	Acre Feet
0	650	0	2500	3150	0
1	4000	3350	2500	6500	6645
2	3000	2350	2500	5500	4661
3	2500	1850	2500	5000	3669
4	2200	1550	2500	4700	3074
5	1900	1250	2500	4400	2479
6	1600	950	2500	4100	1884
7	1300	650	2500	3800	1289
8	1000	350	2500	3500	694
9	700	50	2500	3200	99
10	650	0	2500	3150	0
Total AF					24,397

Staff from DWR and CDFW continue to coordinate on the final schedule to coincide with the last hatchery spring run release.

If you have any questions, please contact me at (916) 574-2722.

Sincerely,



for MW

Molly White, Manager
 Water Operations Branch
 Division of Operations and Maintenance
 Department of Water Resources

cc: Diane Riddle
 John Leahigh
 James Mizell
 Kristin White