

SYSTEM OPERATIONAL REQUEST: #2025-2
Walla Walla District

Corps of Engineers Northwestern Division (NWD)	
WALLA WALLA DISTRICT (NWW)	
TO:	
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Tribal Liaisons: Dean Holecek (NWD)

FROM: Trevor Conder, NOAA Fisheries

DATE: June 25, 2025

SUBJECT: Water Management Proposal for Lower Snake River during the Snake River Sockeye Migration

SPECIFICATIONS: We specifically request a ramp up and release of approximately 10kcf from Dworshak Dam beginning June 29th through July 20th. Current modeling suggests this volume provides a reasonable probability of effectively passing the Snake River sockeye ESU

currently moving through the lower Snake River. Emergency adult sockeye trapping may occur at Lower Granite Dam in conjunction with this request as available and approved. Consider relaxing the temperature criteria from 68°F maximum in the Lower Granite tailrace between July 23rd and August 15th 2025, as necessary to achieve the Dworshak Reservoir elevation threshold of 1535 ft on 31 August. On or around August 15th, return to 68°F tailwater at LWG to facilitate adult passage and fall Chinook broodstock collection.

JUSTIFICATION:

This request is needed to improve adult sockeye conversion and survival to natal spawning areas by reducing temperature related impacts. For the last four years, the conversion rates of Snake River sockeye have been lower than expected, and a portion of PIT tagged SR sockeye have been detected migrating into the upper Columbia River. The drivers for these behaviors are not clear, but there is evidence that higher than average water temperatures are likely impacting their behavior and survival. Crozier et al. (2020) notes that the Snake River sockeye survival rates drop significantly between 20 to 22 °C. Within the last four years, water temperature at Ice Harbor Dam tailwater has exceeded these thresholds in July while Snake River sockeye are returning. Recent modeling efforts indicate early releases of Dworshak cooling water likely provide a cooling benefit in the lower Snake River all the way down to the Ice Harbor Dam tailrace that is proportional to the timing and volume released. This result is supported empirically in Karr and Fryer (1998) where large volume Dworshak releases resulted in a substantial reduction in temperature downstream of Ice Harbor Dam.

SOR 2023-5 states that fall Chinook salmon broodstock collection typically begins 17 August and requires temperatures at the Lower Granite Dam adult fish trap to be below 70°F and ideally below 68°F. Allowing the temperature of the Lower Granite Dam tailrace to exceed 68 degrees from July 23 to August 15th may extend summer flow augmentation from Dworshak Dam without using water managed under the Nez Perce Agreement. Salmon and steelhead migrations generally slow or pause during this period. We acknowledge that temporarily increasing the temperature creates a more stressful environment for fish migrating during the specified period. However, the proportion of each species migrating from late July to mid-August is relatively low. Snake River sockeye arriving at Lower Granite Dam after July 23rd do not typically survive to their natal spawning areas (Johnson et al. 2019, 2020) due to thermal stress accumulated between Bonneville Dam and Lower Granite Dam as well as high water temperatures in the Snake River and lower Salmon River in August. As such, increasing the temperature target for the Lower Granite Dam tailrace at the end of July and in the beginning of August is unlikely to impact salmon populations as a whole.

This request is consistent with the NMFS 2020 CRS BiOp and ITS Term and Condition 1.F. CRS Operations and Maintenance Actions, which seeks to improve passage conditions for adult Snake River sockeye salmon to the extent practicable using Dworshak reservoir management and improved temperature modeling (NMFS 2020).

REFERENCES:

Crozier, L. G., J. E. Siegel, L. W. Wiesebron, E. M. Trujillo, F. J. Burke, B. P. Sandford, and D. L. Widener. 2020. Snake River sockeye and Chinook salmon in a changing climate: Implications for upstream migration survival during recent extreme and future climates. PLoS One. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0238886>

Johnson, E., K. Plaster, Z. Nemeth, and J. Powell. 2020. Snake River sockeye salmon captive broodstock program: Annual progress report January 01, 2019 - December 31, 2019. IDFG Report Number 20-07.

Johnson, E., K. Plaster, Z. Nemeth, and J. Powell. 2020. Snake River sockeye salmon captive broodstock program: Annual progress report January 01, 2020 - December 31, 2020. IDFG Report Number 21-10.

Karr, H M., Fryer J. K. 1998. Snake River Water Temperature Control Project Phase II Methods for managing and monitoring water temperatures in relation to salmon in the lower Snake River May 12, 1998.

NMFS (National Marine Fisheries Service). 2020. Endangered Species Act Section 7(a)(2) biological opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat consultation for the continued operation and maintenance of the Columbia River System.