American Fisheries Society
Western Division

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April 12, 2020

U.S. Army Corps of Engineers
Northwestern Division
ATTN: CRSO EIS
P.O. Box 2870
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Dear Sir or Madam:

On behalf of the 3,000 members of the Western Division of the American Fisheries Society (WDAFS), we respectfully submit the following comments in response to the Columbia River Systems Operation Draft Environmental Impact Statement (CSRO DEIS).

WDAFS represents scientists and natural resource managers from the states of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming; U.S. associated entities in the West Pacific Ocean; the Province of British Columbia; and the Yukon Territory in Canada. Our mission is to advance sound science, promote professional development and disseminate science-based fisheries information for the global protection, conservation and sustainability of fisheries resources and aquatic ecosystems. Our members represent a tremendous array of fisheries experts involved in all aspects of the fisheries profession and employed in academia, government agencies, nongovernmental organizations, and private consulting.

WDAFS membership has unanimously passed resolutions in 2009 and 2011 in support of CRSO operations that result in self-sustaining and harvestable populations of anadromous fishes because of their cultural and economic importance to the region (https://wdafs.org/download/archive/resolutions/2011-Final-WDAFS-Snake-River-Resolution.pdf).

First and foremost, WDAFS believes that the public comment period for the CSRO DEIS should be extended for at least another 60 days (to June 13, 2020) to allow for a full assessment of the DEIS. We were not able to review the entire document because of its length and disruptions to daily life due to the COVID-19 pandemic. Since an extension is not certain, the WDAFS provides these brief comments that focus on fisheries impacts due to the Preferred Alternative and select other alternatives evaluated in the DEIS.

WDAFS understands that the CSRO DEIS addresses difficult policy trade-offs between electricity, transportation, flood control, irrigation water, recreation, fish, culture, and other values. WDAFS' comments focus on the fisheries science contained in the DEIS, particularly as it relates to the Endangered Species Act (ESA), sustainability, and harvest opportunities. The DEIS states that the purpose of the public review is to "seek input on the alternatives considered, effects of the alternatives, and associated mitigation." We have used these three topics as outlined in our review below.

Alternatives considered:

The DEIS should have included an alternative that included fish passage or reintroduction upstream of Grand Coulee and Chief Joseph dams. One of the largest impacts to CRSO Salmon and steelhead abundance was the construction of these dams that were built without fish passage and therefore eliminated access to a large and productive portion of the Columbia Basin. Although we understand the political challenges associated with fish passage into the blocked areas, we do not think it is appropriate to leave this very important action out of the alternatives considered. Reintroduction of anadromous fish into the blocked area is among the most likely alternatives that could be implemented to increase natural production of salmon and steelhead in the Columbia Basin.

Effects of the alternatives:

Based on analyses presented in the DEIS and fisheries objectives set by councils and partnerships in the basin, the Preferred Alternative in the DEIS will not allow for self-sustaining, natural origin, and harvestable anadromous fish populations throughout the Columbia River basin, and only the MO3 Alternative that includes breaching the four Lower Snake River dams is the best alternative to achieving abundant natural-origin, fishable, and harvestable populations of spring/summer Chinook salmon and steelhead in the Snake River.

The Northwest Power and Conservation Council's (NPCC) smolt-to-adult return ratio (SAR) objectives required to support recovery and tribal and non-tribal harvest goals for ESA-listed Snake River and upper Columbia River salmon and steelhead are stated to be 2%-6% (4% average, 2% minimum) (NPCC 2014). These SAR objectives were based on analyses demonstrating a median SAR of 4% was necessary to meeting National Marine Fisheries Service (NMFS) 48-year recovery standard for Snake River spring/summer Chinook salmon; meeting the interim NMFS 100-year survival standard required a median SAR of 2%. The Columbia Basin Partnership, a diverse group of 31 Columbia Basin stakeholders and sovereigns, including representatives of the four Columbia Basin states, tribes, ports, public power entities, irrigators, commercial and recreational fishers, and conservationists, have set even more ambitious but agreed-upon goals for recovering healthy and harvestable salmon and steelhead populations in the basin.

The CRSO DEIS presents predictions of Snake River spring/summer Chinook salmon SARs under various scenarios, including the Preferred Alternative, using two models: NOAAs Life Cycle Model (LCM), and the Comparative Survival Study (CSS). When considering the NPCC and Partnership objectives stated above, the Preferred Alternative presented in the DEIS will not even result in recovery (minimum viable populations) of ESA-listed salmon and steelhead based on the LCM, whereas the CSS suggests that achieving recovery might be possible but achieving self-sustaining, natural origin, and fishable and harvestable populations is clearly not. In addition, other actions will be necessary to improve survival of other listed populations that will not benefit appreciably from breaching the Lower Snake River dams.

Tables 3-61 and 7-25 of the DEIS clearly show that the LCM predicts a maximum SAR of 1.0 under the MO3 Alternative, and the SAR under the Preferred Alternative ranges from 0.81 to 1.12% (high estimates assume no latent mortality). The CSS predicts the highest SAR for the MO3 alternative at 4.3%; the CSS SAR estimate for the Preferred Alternative is 2.7%. The CCS SAR estimates for Snake River steelhead are also highest under alternative MO3; the LCM does not have SAR estimates available for steelhead. More specifically, recent analyses for the CSS also show that major population declines of Snake River spring/summer Chinook salmon and steelhead are associated with SARs less than 1%, and increased lifecycle productivity has occurred in years that SARs exceeded 2% (DeHart et al. 2019). Pre-harvest SARs in the range of 4% to 6% are associated with historical (pre-FCRPS) productivity for Snake River spring/summer Chinook salmon. Historical levels of productivity for John Day River spring Chinook salmon are associated with pre-harvest SARs in the range of 4% to 7%. Major population declines were associated with SARs (LGR - GRA) less than 1%, and increased life-cycle productivity as SARs exceeded 2%. Again, these model predictions suggested the Preferred Alternative will not allow for self-

sustaining, natural origin, and harvestable anadromous fish populations throughout the Columbia River basin.

Mitigation:

WDAFS recommends quantifying the impacts to fish from CSRO and comparing those impacts to quantitative estimates of the improvement to fish caused by mitigation actions (e.g., hatcheries, habitat actions in tributaries and estuary). An objective mitigation standard might be to achieve no-net-loss. Although the DEIS states qualitative objectives of improving juvenile and adult survival, it is not clear how much improvement is needed to meet objectives for recovery of ESA-listed populations. Improvements relative to the No Action Alternative seems insufficient to evaluate whether improvements are enough to meet mitigation and achieve viability standards. This makes it difficult to evaluate how much mitigation is appropriate.

Questions that need answers:

It would be helpful if the DEIS contained answers to the following questions in order to help readers interpret the conclusions and recommendations provided in the DEIS. We acknowledge that some of the answers may be found in the DEIS, but we have not been able to read and comprehend fully the entire DEIS in light of the time constraints associated with COVID-19. If the answers to our questions are provided, then please direct us to those sections. Otherwise, we recommend including the answers to the questions and associated data or sources in the DEIS.

1) What are the SARs of CRSO relative to a) historic SARs, and b) contemporary SARs in dammed and undammed rivers along the Pacific Coast?

2) How much of the SARs and adult-to-adult mortality can be attributed to CRSO relative to other factors such as natural, harvest, habitat, predation, hatcheries, and other relevant factors?

3) What portion of the total mortality should CRSO be responsible for avoiding, reducing, or mitigating for compared to other users?

4) Can a combination of natural and hatchery production achieve ESA delisting (i.e., meet goals and objectives in recovery plans) as well as desired harvest levels under the alternatives considered?

5) If breaching were to occur, would all hatchery production and associated monitoring and evaluation (M&E) cease? How would this influence harvest and science in the region?

Thank you for the opportunity to review and comment on the CRSO DEIS.

Regards,

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References:

NPCC. 2014. Columbia River Basin Fish and Wildlife Program. Northwest Power and Conservation Council. Document 2014-12. available: www.nwcouncil.org/fw/program

DeHart, M., and co-authors. 2019. Comparative Survival Study of PIT-tagged Spring/Summer/Fall Chinook, Summer Steelhead, and Sockeye: 2019 Annual Report. Report prepared by Comparative Survival Study Oversight Committee and Fish Passage Center for Bonneville Power Administration, BPA Contract #19960200 and Contract #78040.