April 18, 2022

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

ORCA SALMON ALLIANCE

Docket Numbers P-14803-001 and P-2082-063
Comments submitted via FERC eFiling

Re: License Surrender and Removal of Project Works for the Lower Klamath Project No. 14803, Draft Environmental Impact Statement.

The undersigned groups, as members of the Orca Salmon Alliance (OSA), support the Proposed Action of decommissioning and removing the four Lower Klamath River dams and restoring the Klamath River. Increasing the health and abundance of Klamath River salmon honors commitments made to Klamath Basin Tribes, supports river-dependent communities and economies, and is a significant step forward in restoring a critical prey resource for the endangered Southern Resident killer whale (orca) population.

While we appreciate the goal of the Federal Energy Regulatory Commission (FERC) staff modifications to finalize all consultations, management plans, and agreements before surface disturbance commences, OSA wants to remind FERC of the crisis facing salmon and endangered orcas that is being exacerbated by ongoing drought and marine heat waves.[1] We urge FERC to condense this process and move the project forward as soon as possible.

The Southern Resident orca population is a unique group that was listed under the Endangered Species Act (ESA) in 2005, following a precipitous drop in abundance from 98 orcas in 1995 to 78 in 2001.[2] Today, they number just 73 individuals.[3] These orcas have struggled to recover for decades because the many threats that have contributed to their decline have yet to be fully addressed, including a lack of their primary prey, Chinook salmon, impacts from toxic contaminants, and anthropogenic disturbance.[4] Because these threats act in a synergistic manner with compounding effects, the orcas require a holistic, multifaceted approach encompassing every part of their range and supporting ecosystem – including river systems like the Klamath that support their primary food, Chinook salmon. To survive and recover, the Southern Residents need abundant and available food throughout their range, including salmon from the Klamath River. Thus, OSA supports the Proposed Action, an historic step forward in salmon and orca recovery on the West Coast.

We appreciate that FERC's staff incorporated the previous, thorough analyses from FERC itself, the U.S. Department of the Interior, and the California State Water Resources Control Board in this DEIS, and we hope those studies continue to help FERC reach a swift decision and approval of the Proposed Action. We offer the following additional comments on this DEIS.

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[1] Cheung, W.W.L., Frölicher, T.L. 2020. Marine heatwaves exacerbate climate change impacts for fisheries in the northeast *Pacific. Sci Rep* 10, 6678, https://doi.org/10.1038/s41598-020-63650-z; U.S. Drought Monitor: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?West

[2] National Marine Fisheries Service, Endangered Status for Southern Resident killer whales. 70 FR 69903

[3] A new calf was recently born in the Southern Resident population and will be included in the July 2022 census. All population data from Center for Whale Research, https://www.whaleresearch.com/

[4] National Marine Fisheries Service. 2008. "Recovery Plan for Southern Resident Killer Whales (*Orcinus orca*).; National Marine Fisheries Service, West Coast Region. December 2021. "Southern Resident Killer Whales (*Orcinus orca*) 5-Year Review: Summary and Evaluation. Available: https://www.fisheries.noaa.gov/resource/document/2021-southern-resident-killer-whales-orcinus-orca-5-year-review-summary-and

1. The Proposed Action will benefit Southern Resident orcas

OSA agrees with the DEIS' conclusion that the No Action alternative will have a long-term, significant adverse effect on both the Klamath's anadromous salmon runs and the Southern Residents. Retaining the dams will *continue* to drive the decline of Klamath River salmon by blocking migration routes, negatively affecting water quality, and fostering the spread of disease and toxic algae. The presence of these dams has *already* decimated salmon populations, and, in turn, has negatively affected prey availability for Southern Resident orcas. Retaining the dams will cause further harm to these critically important species. We also agree that the anticipated short-term negative impacts of dam removal on Chinook salmon and the resulting reduced prey availability for the Southern Residents will be outweighed by the overall, long-term benefit of dam removal for both salmon and whales, which the DEIS notes are "beneficial and significant". Recent efforts to restore rivers and salmon by removing dams have shown remarkable improvement in river systems and watersheds.[5]

2. The DEIS should update information on the Southern Resident orcas' habitat

All three pods in the Southern Resident community use coastal waters year-round, with highest use during the winter and early spring months.[6] Data compiled from passive acoustic monitoring, satellite tagging, opportunistic sightings and boat-based surveys show areas of "high occurrence" to include the mouth of the Columbia River and the northern California coast, and indicate that the movements of Southern Residents in coastal waters are likely driven by the seasonal timing of Chinook salmon returns to major river systems, including the Columbia, Klamath, and Central Valley Rivers.[7] The area including the mouth of the Klamath River ("Area 4" – from the Oregon/California border to Cape Mendocino, CA) is an important foraging habitat for the orcas, with "prey resources" (quantity, quality, and availability) recognized as the area's primary essential feature.[8]

However, the DEIS contains conflicting information on the range and habitat of the Southern Residents, between section 3.6.2.4, which directly discusses the Southern Residents, and in Table 3.6-1, which summarizes

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[5] Bellmore, J.R. et al 2019. Conceptualizing Ecological Responses to Dam Removal: If You Remove It, What's to Come?, *BioScience*, 69(1):26-39, https://doi.org/10.1093/biosci/biy152; Foley, M. M., et al. 2017. Dam removal: Listening in. *Water Resour.Res.*,53, 5229–5246, doi:10.1002/2017WR020457; Magilligan, F.J. 2016. River Restoration by dam removal: Enhancing connectivity at watershed scales. *Elementa: Science of the Anthropocene,* 4:000108, doi:10.12952/journal.elementa.000108; Warrick, J.A. et al. 2019. World's largest dam removal reverses coastal erosion. *Sci Rep*, 9, 13968, https://doi.org/10.1038/s41598-019-50387-7

[6] Hanson, M.B. et al. 2013. "Assessing the coastal occurrence of endangered killer whales using autonomous passive acoustic recorders." *The Journal of the Acoustical Society of America*, 134(5), 3486-3495; Hanson, M.B., "Distribution and Diet of Southern Resident Killer Whales" (Northwest Fisheries Science Center, 2015), https://tinyurl.com/ybkdawje; Hanson, M.B., et al. 2018. Modeling the occurrence of endangered killer whales near a U.S. Navy Training Range in Washington State using satellite-tag locations to improve acoustic detection data. Prepared for: U.S. Navy, U.S. Pacific Fleet, Pearl Harbor, HI. Prepared by: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center under MIPR N00070-17-MP-4C419. 8 January 2018. 33 p.; NOAA Fisheries. 2014. "Southern Resident Killer Whales: 10 Years of Research and Conservation"; *See also* National Marine Fisheries Science Center data and reports on Southern Resident tagging project, https://tinyurl.com/vj4dcbs; Northwest Fisheries Science Center: "Science to Inform SRKW Distribution and Diet." Presentation for Pacific Fishery Management Council, May 23, 2019. https://tinyurl.com/rf6yao3; Revision of the Critical Habitat Designation for Southern Resident Killer Whales: Final Biological Report. National Marine Fisheries Service, July 2021. Available: https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/critical-habitat-southern-resident-killer-whales

[7] Hanson, M.B., et al. 2018. Modeling the occurrence of endangered killer whales near a U.S. Navy Training Range in Washington State using satellite-tag locations to improve acoustic detection data. Prepared for: U.S. Navy, U.S. Pacific Fleet, Pearl Harbor, HI. Prepared by: National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center under MIPR N00070-17-MP-4C419. 8 January 2018. 33 p.; Revision of the Critical Habitat Designation for Southern Resident Killer Whales: Final Biological Report. National Marine Fisheries Service, July 2021. Available: https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/critical-habitat-southern-resident-killer-whales

[8] Revision of the Critical Habitat Designation for Southern Resident Killer Whales: Final Biological Report. National Marine Fisheries Service, July 2021. Available: https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/critical-habitat-southern-resident-killer-whales

information about federally listed species, as well as within the text of the table. The DEIS first states that the Southern Resident orcas "occur primarily in the inland waters of Washington State and southern Vancouver Island," citing the 2008 National Marine Fisheries Service (NMFS) Recovery Plan, but then notes the substantial new information available from the recent expansion of coastal critical habitat, which establishes their regular, seasonal use of West Coast waters from "late fall through spring" – a significant amount of time. The DEIS should cite the Biological Report that accompanied this critical habitat expansion and update distribution and habitat use information in Section 3.6.2.4 and Table 3.6-1: the Southern Residents spend more than half the year in the coastal waters, and are regular, seasonal inhabitants of the area.[9]

3. The DEIS should clarify the contribution of Chinook salmon to Southern Resident diet

OSA also asks that the DEIS clarify the importance of Chinook salmon to the diet of the Southern Residents. Although the DEIS refers to Chinook generally as the primary prey of the Southern Resident population, it should more explicitly explain the importance of Chinook salmon for the orcas and include the approximate percentage of Chinook in the orcas' diet year-round, which is available in recent publications and reports from NMFS.[10] Chinook ranges from approximately 50% of the Southern Residents' diet in the fall to 70-80% in the mid-winter and early spring to nearly 100% in the spring.[11] Chinook has been identified in over 65% of fecal samples collected in coastal waters.[12]

The DEIS states that Klamath salmon "only" contribute approximately 2.3% of the prey base for Southern Residents. This does not consider the extremely low current abundance of Klamath River salmon compared to historic numbers, which affects the likelihood that Klamath salmon will be collected in prey and fecal samples, or the potential increase in the contribution of Klamath salmon to Southern Resident orca diet following dam removal. According to NMFS, Area 4 of the orcas' critical habitat, including the mouth of the Klamath River, has two of the top 10 identified priority prey stocks for the Southern Resident orcas: Klamath River and Central Valley Chinook,[13] and NMFS estimates that Klamath River Chinook salmon may be as much as 45% of local salmon abundance available to Southern Residents in this area.[14]

Klamath Basin Chinook currently contribute a small but essential portion of the Southern Residents' diet, and most importantly, provide a foraging opportunity around the mouth of the Klamath River. The DEIS should include an analysis of the increase in Klamath Chinook in the orcas' diet following dam removal and salmon

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[9] Revision of the Critical Habitat Designation for Southern Resident Killer Whales: Final Biological Report. National Marine Fisheries Service, July 2021. Available: https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/critical-habitat-southern-resident-killer-whales; and NMFS. 2014. Southern Resident Killer Whales: 10 Years of Research and Conservation. Northwest Fisheries Science Centre, West Coast Region, available: http://komonews.s3.amazonaws.com/140625_orca_report_quality.pdf

[10] Revision of the Critical Habitat Designation for Southern Resident Killer Whales: Final Biological Report. National Marine Fisheries Service, July 2021. Available: https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/critical-habitat-southern-resident-killer-whales; Northwest Fisheries Science Center presentation to Pacific Fisheries Management Council Ad Hoc Southern Resident Killer Whale Workgroup: NWFSC Science to Inform SRKW Distribution and Diet. Available: https://media.fisheries.noaa.gov/dam-migration/agendaitemb3adhocdistribution.pdf

[11] Ford, M.J et al. 2016. Estimation of a Killer Whale (Orcinus orca) Population's Diet Using Sequencing Analysis of DNA from Feces. PLoS ONE 11(1): e0144956. doi:10.1371/journal.pone.0144956; Hanson M.B. et al 2021. Endangered predators and endangered prey: Seasonal diet of Southern Resident killer whales. *PLoS One.* Mar 3;16(3):e0247031. doi: 10.1371/journal.pone.0247031; Hanson, M.B. et al. 2010. Species and stock identification of prey consumed by endangered southern resident killer whales in their summer range." Endangered Species Research, 11(1):69-82

[12] Hanson M.B. et al 2021. Endangered predators and endangered prey: Seasonal diet of Southern Resident killer whales. *PLoS One.* Mar 3;16(3):e0247031. doi: 10.1371/journal.pone.0247031

[13] *Ibid.* and NMFS and WDFW. 2018. Southern Resident killer whale priority Chinook stocks report. 8 pp. Available: https://www.westcoast.fisheries.noaa.gov/publications/protected_species/marine_mammals/killer_whales/recovery/srkw_priority_chinook_stocks_conceptual_model_report___list_22june2018.pdf.

[14] National Marine Fisheries Service ESA Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response. WCR-2019-11512, WCRO-2019-00113

recovery. Including this information emphasizes the dependence of the orcas on Chinook, the importance of Klamath Basin Chinook, and the urgency to increase Chinook prey for the orcas.

4. The DEIS should provide life history information specific to Southern Resident orcas

Although the DEIS describes general life history information about orcas, OSA comments that it should add specific details for the Southern Resident population, which, due to their endangered status, no longer reflect historic orca demographics. This population has shown concerning health metrics like reductions in growth rates, adult length, social cohesion, fecundity, and overall survival, as well as impaired individual body condition.[15] Perhaps most notably, a high rate of pregnancy failure in the population has been linked to nutritional stress, with 69% of detected pregnancies ultimately unsuccessful, severely impacting the population's ability to recover.[16] These issues have shown a strong correlation between coastwide Chinook abundance and the health of the Southern Residents.

The DEIS provides a brief overview of the historic population census of the Southern Resident population, and should also note historic, pre-exploitation estimates of abundance levels.[17] In addition, the reference for the 5-year ESA review should be updated from 2016 to 2022 to reflect the most current status review.[18]

Removing the Klamath River dams and moving forward with river restoration is already an urgent issue and is only increasing in necessity as climate change effects escalate. We urge FERC to authorize decommissioning and move forward with the Proposed Action as soon as possible.

Thank you for the opportunity to comment, and please contact colleen.weiler@whales.org with any questions.

Regards,

Colleen Weiler
Jessica Rekos Fellow for Orca Conservation
Whale and Dolphin Conservation

Nora Nickum
Senior Ocean Policy Manager
Seattle Aquarium

Lovel Pratt
Marine Protection and Policy Director
Friends of the San Juans

Blair Englebrecht
Boating Programs Manager and Policy Analyst
Puget Soundkeeper Alliance

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[15] Revision of the Critical Habitat Designation for Southern Resident Killer Whales: Final Biological Report. National Marine Fisheries Service, July 2021. Available: https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/critical-habitat-southern-resident-killer-whales; Fearnbach, H. et al. 2018. "Using aerial photogrammetry to detect changes in body condition of endangered southern resident killer whales." Endang Species Res 35:175-180. https://doi.org/10.3354/esr00883; Ford, J.K.B. et al. 2005. "Linking prey and population dynamics: Did food limitation cause recent declines of 'resident' killer whales (Orcinus orca) in British Columbia." Fisheries and Oceans; Ford J.K.B et al. 2010. "Linking killer whale survival and prey abundance: food limitation in the oceans' apex predator?" Biology Letters, 6:139–142; Groskreutz et al. 2019. "Decadal changes in adult size of salmon-eating killer whales in the eastern North Pacific." Endang. Species Res. (40):183-188. https://doi.org/10.3354/esr00993; Stewart, J.D. et al. 2021. "Survival of the fattest: linking body condition to prey availability and survivorship of killer whales." *Ecosphere* 12(8): https://doi.org/10.1002/ecs2.3660; Ward E.J et al. 2009. "Quantifying the effects of prey abundance on killer whale reproduction." Journal of Applied Ecology, 46: 632–640

[16] Wasser S.K. et al. 2017. Population growth is limited by nutritional impacts on pregnancy success in endangered Southern Resident killer whales (*Orcinus orca*). *PLoS ONE* 12(6): e0179824 https://doi.org/10.1371/journal.pone.0179824

[17] National Marine Fisheries Service. 2008. Recovery Plan for Southern Resident Killer Whales (*Orcinus orca*). National Marine Fisheries Service, Northwest Region, Seattle, Washington

[18] National Marine Fisheries Service. 2021. Southern Resident Killer Whales (*Orcinus orca*) 5-Year Review: Summary and Evaluation. Available: https://www.fisheries.noaa.gov/resource/document/2021-southern-resident-killer-whales-orcinus-orca-5-year-review-summary-and

Meg Townsend
Staff Attorney
Center for Biological Diversity

Howard Garrett
President
Orca Network

Joseph Bogaard
Executive Director
Save Our wild Salmon Coalition

Whitney Neugebauer
Director
Whale Scout

Kathleen S. Gobush, PhD
Northwest Program Director
Defenders of Wildlife

Deborah Giles, PhD
Science & Research Director
Wild Orca

Giulia Good Stefani
Senior Attorney, Oceans
Marine Mammal Protection Project
Natural Resources Defense Council