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State Water Resources Control Board
Division of Water Rights
Water Quality Certification Program
Attention: Ms. Michelle Siebal (WR401Program@waterboards.ca.gov)
P.O. Box 2000
Sacramento, CA 95812

July 23, 2018

Dear Ms. Siebal,

Whale and Dolphin Conservation (WDC) is the leading global charity dedicated to the conservation and protection of whales, dolphins, and their habitats worldwide. We are writing in support of the proposed water quality certification for the Lower Klamath Project, as submitted to the State Water Board from the Klamath River Renewal Corporation (KRRC), and ask that the State Water Board issue final certification in time for the Project to proceed on schedule, with full dam removal in 2021.

We note that the Project has already fallen a year behind its original scheduled completion date (full dam removal in 2020) and wish to emphasize the impacts that further delay could have on declining salmon and endangered orcas that rely on the Klamath River watershed. The Upper Klamath-Trinity Chinook salmon Evolutionarily Significant Unit (ESU) was recently proposed for listing under the Endangered Species Act (ESA)[1], and we wish to emphasize the urgency of issuing a water quality certification and allowing the Project to move forward. Removing the four dams included in the Project is necessary to prevent the extinction of critically endangered Southern Resident orca population. This unique community is the only Resident orca population to utilize the California Current ecosystem and is one of the most endangered marine mammal populations living in US waters[2].

Added to the Endangered Species List in 2005 with 88 members, the Southern Resident orcas are now at their lowest population number in over 30 years, with just 75 individuals remaining[3]. This unique orca community is threatened by prey depletion, toxic contamination, and acoustic and physical disturbance. Due to their small population size, they are also at risk from inbreeding, disease outbreak, and oil spill. Their highly social nature increases the risk that disease or a major oil spill could completely devastate the entire population. The threats facing this fragile group of orcas operate in a synergistic manner, and thus recovery efforts must encompass the sum effects of these threats. The Southern Residents are currently living on the brink of extinction, and they are in dire need of meaningful, science-based recovery efforts to ensure that the whales, the Chinook salmon, and their habitats are not lost forever.

As part of the fish-obligate ecotype of orcas, the Southern Residents prefer salmon and are particularly reliant on Chinook salmon, which can comprise up to 80% of their diet[4]. Prey depletion is recognized as the top threat to this small population, and ensuring a reliable and abundant food supply throughout their range is a priority in recovery efforts for the Southern Resident orcas. Chinook abundance has impacted their survival and recovery[5], and the ecosystem recovery of

[1] Endangered and Threatened Wildlife; 90-day finding on a petition to list Chinook salmon in the Upper Klamath-Trinity Rivers Basin as threatened or endangered under the Endangered Species Act. 83 FR 8410.

[2] Krahn, M.M. et al. 2004. "2004 status review of southern resident killer whales (Orcinus orca) under the Endangered Species Act." NOAA Technical Memorandum NMFS-NWFSC-62, U.S. Department of Commerce, Seattle, Washington; Reynolds, J.E. H. Marsh & T.J. Ragen. 2009. Marine Mammal Conservation. Endangered Species Research. 7. Pp23-28.

[3] ESA listing rule for Southern Residents 70 FR 69903 (11/18/2005); population census data from Center for Whale Research.

[4] 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. 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.

[5] 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; Shields, M.W., J. Lindell, J. Woodruff. 2018. "Declining spring usage of core habitat by endangered fish-eating killer whales reflects decreased availability of their primary prey." Pacific Conservation Biology 24(2): 189-193, https://doi.org/10.1071/PC17041; Ward E.J et al. 2009. "Quantifying the effects of prey abundance on killer whale reproduction." Journal of Applied Ecology, 46: 632–640.

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rivers on the west coast – including the Klamath – is necessary to restore salmon populations and help ensure the long-term survival of the Southern Resident orcas (Figure 1).

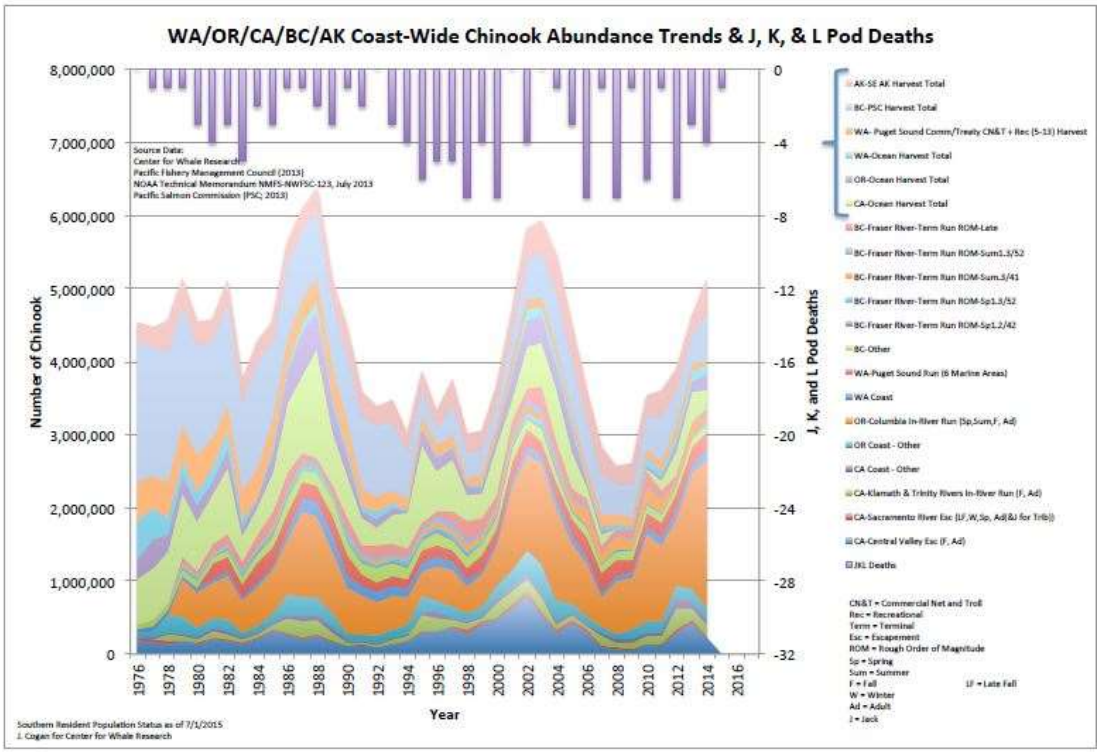

Figure 1: Mortality in the Southern Resident population is correlated with coastwide Chinook abundance (graph courtesy Center for Whale Research)

Over a decade of research efforts focused on establishing the range of Southern Resident orcas by the National Oceanic and Atmospheric Administration (NOAA) have confirmed that they utilize the coastal habitats of Washington, Oregon, and California, particularly in late fall through spring months[6] (Figure 2). The same research has also shown that the Southern Residents continue to target Chinook salmon when foraging on the outer coast, and consume Chinook from rivers in the Pacific Northwest and California, including the Klamath[7].

[6] NOAA Fisheries. 2014. Southern Resident Killer Whales: 10 Years of Research & Conservation.

[7] Ibid; Ford JKB. 2012. "Resident killer whale feeding habits: assessment methods, winter diet, and chum stock ID." Evaluating the Effects of Salmon Fisheries on Southern Resident Killer Whales: Workshop 2, March 13–15, 2012. NOAA Fisheries and Fisheries and Oceans Canada:Vancouver, BC.

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Figure 2. Tracks of satellite-tagged Southern Resident orcas in 2013 showed their presence off the coast of Northern California for an extended period of time (early February through early March; data and image from NOAA).

River restoration efforts, including dam removal, are vital to rebuilding wild salmon populations in the western United States and addressing the threat of prey depletion for the Southern Residents. Four dams on the Klamath River – Iron Gate, J.C. Boyle, Copco No. 1 and Copco No. 2 – have contributed to the decline of as much of 98% of the Klamath's Chinook salmon population (Table 1)[8]. These dams block access to historic spawning habitat, alter the natural flow of the river, and create poor water quality that affects both wildlife and human populations in the Klamath Basin. Removing these four dams and restoring the Klamath River are efforts essential to ensuring the lasting recovery of wild salmon in Oregon and California.

*Table 1: Declines in Klamath River salmon *Spring-run Chinook salmon likely substantially outnumbered fall-run Chinook (abundance in the millions) but have been extirpated from a large part of their historical range. (Data from Dept. of Interior Klamath Dam Removal report)*

Species	Observed Historical Levels	% Reduction
Steelhead	400,000	98%
Coho	15,400-20,000	52-95%
Fall-run Chinook	500,000	92-96%
Spring-run Chinook	100,000	98%
Shasta River (subset)	20,000-80,000	88-95%

The detailed analyses completed in the 2012 State and Federal EIR/EIS[9] and the 2013 report from the Department of the Interior[10] concluded that dam removal would have a net benefit on the Klamath and larger Pacific ecosystems, and could restore Chinook populations by as much as 81%[11]. The net positive effects of a free-flowing river will be observed outside of the river itself, in the beneficial

[8] Dept of Interior Klamath Dam Removal report (Klamath Dam Removal Overview Report for the Secretary of the Interior http://klamathrestoration.gov/sites/klamathrestoration.gov/files/2013%20Updates/Final%20SDOR%20/0.Final%20Accessible%20SDOR%2011.8.2012.pdf)

[9] See Final EIS on https://klamathrestoration.gov/

[10] See footnote 8.

[11] Ibid.

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recovery of anadromous salmon populations and the more than 130 other species that rely on them, including the critically endangered Southern Resident orcas. Recovering the Klamath River benefits more than just the people and other wildlife that live on, in, or near the river. It benefits entire ecosystems in Oregon and California, the California Current, and a healthy river for future generations of people and orcas alike.

The Southern Resident orcas are already living on the edge of extinction, and further delay of the proposed timeline for dam removal would be extremely detrimental to the continued survival of these whales, as well as the salmon upon which they depend. The 2012 joint California and Federal EIR/EIS concluded that removing the four Klamath River dams would have a net positive impact for water quality and fish in the Klamath Basin[12]. This conclusion, and the extensive research and information the EIR analyzes, supports the issuance of a water quality certification in California for the Project, and we urge the California State Water Board to complete and issue a final certification in time for the Project to proceed on its current schedule.

Thank you for the opportunity to provide comments on the draft certification, and please do not hesitate to contact me with any questions or for more information about how Southern Resident orcas depend on Klamath River salmon.

Regards,

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810-813-1643
Jessica Rekos Fellow for Orca Conservation
Whale and Dolphin Conservation

[12] See footnote 9.

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