From:	Colleen Weiler
To:	Wr401program
Subject:	Lower Klamath Project License Surrender - comments on DEIR
Date:	Monday, February 25, 2019 7:13:53 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png image006.png image007.png image008.png image009.png WDC CA water board Klamath EIR 2.26.2019.pdf

Please accept the attached comments for the Water Board DEIR on the Lower Klamath Project License Surrender application. Contact me with any questions or for additional information.

Thank you!
-Colleen

Colleen Weiler
WDC Fellow, Rekos Fellowship for Orca Conservation

Telephone: +1 508 746 2522
Mobile: +1 810 813 1643
Skype: cmweiler

WDC, Whale and Dolphin Conservation
7 Nelson Street
Plymouth
MA
02360-4044
United States
whales.org

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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

February 26, 2019

Re: Notice of Availability for Public Comment on a Draft Environmental Impact Report for the Lower Klamath Project License Surrender Federal Energy Regulatory Commission Project No. 14803

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 Lower Klamath Project License Surrender (Proposed Project) to improve water quality conditions in the Klamath River and advance the long-term restoration of Klamath River salmon and recovery of the Southern Resident orca population.

We appreciate the opportunity to provide comments on the Environmental Impact Report (EIR) and the detailed information included in the EIR. We urge the State Water Board to continue its thorough and timely review of the Proposed Project and issue the final certification in time for the Proposed Project to maintain its current schedule of drawdown and full dam removal, to be completed in 2021. In previous comments, we have noted the potential beneficial impact to the endangered Southern Resident orca population from this Project, through an increase in prey stocks that these fish-eating orcas rely on. We appreciate the inclusion of the Southern Resident orcas in this EIR and wish to note some corrections that should be made in the analysis.

Southern Resident distribution
The EIR notes that the Southern Resident orca DPS "primarily occurs in the inland waters of Washington State and southern Vancouver Island" and "(d)uring most of the year Southern Residents are present in Washington inland waters" with "occasional and short-duration winter visits" to the California Coast. However, data from the National Marine Fisheries Service (NMFS) shows that the orcas spend **well over 50% of their time on the outer coast**[1]. The inland waters of the Salish Sea are historically where the orcas spend time and forage in the summer and early fall months[2], but coastal waters are critical for their survival in the late fall through late spring – particularly for K and L pods, which travel more widely than J pod[3]. The EIR itself also contradicts this information by later noting that K and L pods frequent the outer west coast in the winter, a more accurate statement given the information about Southern Resident coastal distribution.

The coasts of Washington, Oregon, and Northern California are currently under consideration for critical habitat designation for Southern Resident orcas due to the acknowledged importance of this area to the orcas and the significant time spent in coastal habitat. The deadline for a draft revision by the end of 2017 already passed, and NMFS is currently facing litigation over the delay[4]. We urge the State Water Board to acknowledge the importance of Northern California coastal waters to the Southern Resident orcas and consider the area as pending critical habitat.

Importance of Klamath River salmon
We also wish to clarify the importance of Klamath River Chinook and what their recovery could add to the prey supply of the Southern Resident orcas. We have noted in previous comments that the primary threat to this orca population is a lack of their preferred food, Chinook salmon, and that the orcas also consume other types of salmon (chum and Coho), particularly when in coastal habitat[5]. While the EIR states that the very limited information available for the overall composition of the orcas' winter diet indicates a small (<1%)

[1] NOAA Fisheries. 2014. Southern Resident Killer Whales: 10 Years of Research and Conservation. Available: https://www.nwfsc.noaa.gov/news/features/killer_whale_report/pdfs/bigreport62514.pdf
[2] Designation of Critical Habitat for Southern Resident killer whale, 71 FR 69054.
[3] Ford, J.K.B. et al. 2017. "Habitats of Special Importance to Resident Killer Whales (*Orcinus orca*) off the West Coast of Canada." DFO Can. Sci. Advis. Sec. Res. Doc. 2017/035. viii + 57 p.
[4] Center for Biological Diversity: "Trump Administration Sued for Failing to Protect Orcas' West Coast Habitat." https://www.biologicaldiversity.org/news/press_releases/2018/southern-resident-killer-whale-08-16-2018.php
[5] NOAA Fisheries. 2014. Southern Resident Killer Whales: 10 Years of Research and Conservation. Available: https://www.nwfsc.noaa.gov/news/features/killer_whale_report/pdfs/bigreport62514.pdf

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contribution of Klamath River salmon, we wish to note that this information is based on very few samples and likely reflects the small run sizes of salmon in the Klamath Basin, particularly of spring Chinook[6].

Klamath Basin salmon are available in a lower proportion overall in coastal waters, and Klamath spring Chinook are estimated to be reduced by 98% from their historic levels, although it is difficult to determine the size of historic runs[7]. An annual NMFS report to Congress on the status of the Klamath River Basin notes that dam construction eliminated a "substantial amount" of the historical spawning and rearing habitat for spring Chinook salmon, and at least seven spring Chinook populations have been extirpated from the Klamath Basin[8]. The run has further declined in recent years, with three of the six worst years on record occurring in the past decade[9]. In addition, fishing on the fall run has been restricted and the stock determined to be "overfished" in the fall of 2018[10]. The relatively low proportion of Klamath River salmon sampled in Southern Resident orca diet – and again, we note the small dataset available to determine the composition of coastal diet – is likely due to the unnaturally low abundance of Klamath salmon in the ocean.

The Klamath River was once home to the third-largest run of Chinook salmon on the west coast[11], and the Southern Resident orcas have evolved over millennia to specialize on these large and fatty salmon. They rely on Chinook from large watersheds including the Columbia, Central Valley, and Klamath systems, as well as from smaller coastal rivers. Even the level and ratio of contaminants (DDT, PCBs, and PBDEs) measured from individual orcas indicates a "California signature" for K and L pods[12]. This unique signature of contaminants comes from consuming prey that has higher levels of DDT, found in California Chinook runs[13], and indicates regular foraging on salmon from California rivers.

The travel patterns of the Southern Resident orcas also overlap with areas where salmon from the Klamath River and other areas are distributed in the ocean, as noted in the priority stock report from NMFS and the Washington Department of Fish and Wildlife[14]. Different runs of salmon have specific ocean distribution patterns, with fall Chinook generally having narrow distributions closer to natal rivers, and spring Chinook traveling widely north or out to the continental shelf[15]. Klamath fall Chinook tend to distribute between Cape Falcon, Oregon and Point Sur,

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[6] Hanson, M.B. 2015. "Distribution and Diet of Southern Resident Killer Whales." Presentation for NOAA Northwest Fisheries Science Center. Available: https://swfsc.noaa.gov/uploadedFiles/Events/Meetings/MMT_2015/Presentations/3.1percent20PPT%20ProgramReviewSRKWDistributionDiet071515MBHv2.pdf

[7] Klamath Dam Removal Overview. 2012. Report for the Secretary of the Interior: An Assessment of Science and Technical Information, Department of Interior.

[8] NMFS 2017. Report to Congress: NOAA's Klamath River Basin Recovery and Restoration Progress. Arcata, CA. Available: https://www.westcoast.fisheries.noaa.gov/publications/Klamath/18-062951_klamath_2017_report_to_congress_fp_wcr_gcsw_review_gc_edits__10.2-508.pdf; see also: Hamilton J.B. et al. 2005. "Distribution of Anadromous Fishes in the Upper Klamath River Watershed Prior to Hydropower Dams – a Synthesis of the Historical Evidence." *Fisheries Magazine* 30(4), 10-20.

[9] CA Department of Fish and Wildlife (CDFW). 2017. Klamath River basin fall Chinook Salmon spawner escapement, in-river harvest and run-size estimates, 1978 –2016. Klamath/Trinity Program. CA Dept. Fish and Wildlife. Arcata, CA; CDFW 2017. Klamath River basin spring Chinook Salmon spawner escapement, in-river harvest and run-size estimates, 1978 –2016. Klamath/Trinity Program. CA Dept. Fish and Wildlife. Arcata, CA; "Klamath spring Chinook second lowest in twenty years, says annual survey." Accessed 2/25/2019 http://krcrtv.com/archive/klamath-spring-chinook-second-lowest-in-twenty-years-says-annual-survey

[10] NOAA Fisheries. 2018 Status of the Salmon Stocks. Accessed 1/24/2019. https://www.westcoast.fisheries.noaa.gov/fisheries/salmon_steelhead/faqs_2018_status_of_salmon_stocks.html

[11] Hamilton et al. 2016. "The Persistence and Characteristics of Chinook Salmon Migrations to the Upper Klamath River Prior to the Exclusion by Dams." *Oregon Historical Society*, 117:3.

[12] Mongillo, T.M. et al. 2016. Exposure to a mixture of toxic chemicals: Implications for the health of endangered Southern Resident killer whales. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-135, 107 p. doi:10.7289/V5/TM-NWFSC-135

[13] Krahn, M.M. et al. 2007. Persistent organic pollutants and stable isotopes in biopsy samples (2004/2006) from Southern Resident killer whales. Mar. Pollut. Bull. 54:1903–1911.

[14] NMFS and WDFW. "Southern Resident killer whale priority Chinook stocks Report." June 22, 2018. 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

[15] Weitkamp, L. A. 2010. "Marine distributions of Chinook salmon from the west coast of North America determined by coded wire tag recoveries." *Trans. Am. Fish. Soc.* 139:147–170.

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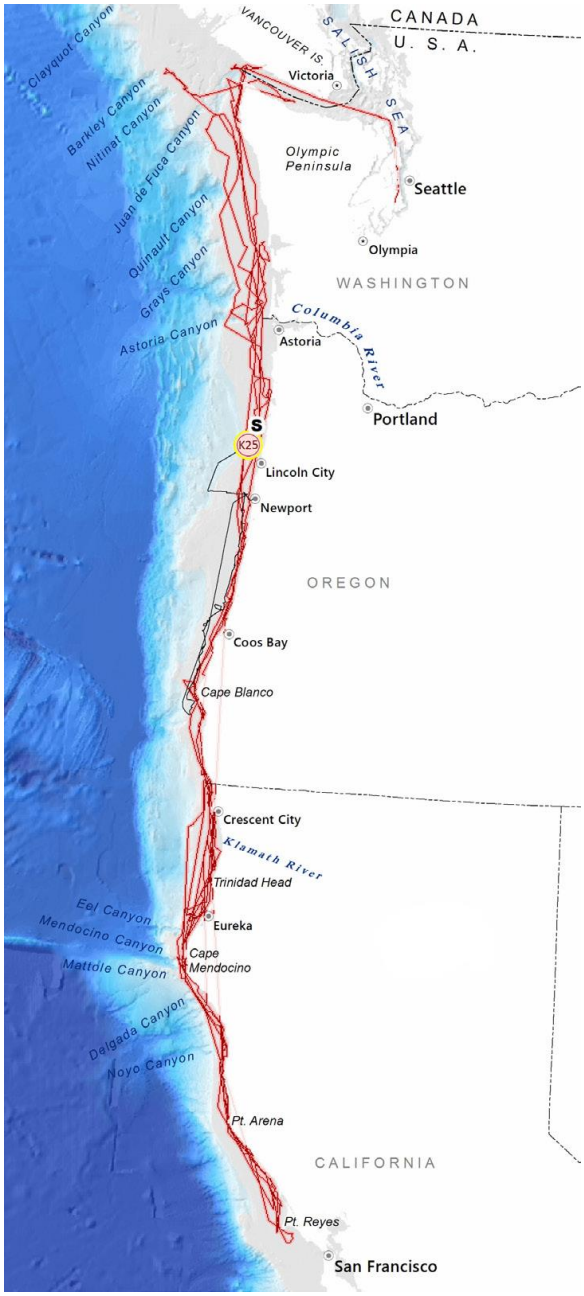

Figure 1: Movements of tagged orca K25 over an approximately 3-month period. (Image from NMFS 2014).

California, and spring Chinook to the outer coastal waters[16]. The path of tagged Southern Resident orcas and detection on acoustic recorders indicates movement throughout this area, suggesting the orcas are foraging on these widely distributed salmon (Figure 1)[17].

Historical information on the orcas' range and diet, as well as the former abundance of Klamath Chinook, indicates that this run was once very important to the orcas, and might be again if the Proposed Project proceeds. Removing the four Lower Klamath River dams is expected to restore Chinook populations by up to 81% - a significant boost to the coastal food supply of the Southern Resident orcas[18].

Increasing importance of coastal salmon abundance

The dependence of Southern Resident orcas on coastal food sources, such as the Columbia, Klamath, Central Valley, and coastal rivers, may increase in the near future as salmon runs in the Fraser River, their primary source of food in the summer, continue to decline[19]. The orcas are spending less time in Salish Sea waters and are consistently arriving later each year, spending more time on the outer coast[20]. With this shifting distribution and possible increased reliance on prey in coastal waters, removing the four Lower Klamath River dams may be more important than ever to restore a once-abundant Chinook run in the region.

Removing dams is an option increasingly applied to restore rivers and ecosystem processes. Examples in the Pacific Northwest and California provide proof of concept that the long-term benefits of dam removal outweigh the short-term impacts to river systems, wildlife, and fish, including changes in sediment flow and water quality. Research into the response of rivers to dam removal indicates that even considering the unique conditions of each river and dam, the ecological responses after dam removal follow similar general patterns, such as the temporary downstream flow of sediment[21]. The Proposed Project follows similar successful dam removal in the Elwha, White Salmon, Sandy, and Carmel

[16] California State of the Fisheries Report. 2011. California Department of Fish and Game. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=65498

[17] Hanson, M.B. 2015. "Distribution and Diet of Southern Resident Killer Whales." Presentation for NOAA Northwest Fisheries Science Center. Available: https://swfsc.noaa.gov/uploadedFiles/Events/Meetings/MMT_2015/Presentations/3.1percent20PPT%20ProgramReviewSRKWDistributionDiet071515MBHv2.pdf; NOAA Fisheries. 2014. Southern Resident Killer Whales: 10 Years of Research and Conservation. Available: https://www.nwfsc.noaa.gov/news/features/killer_whale_report/pdfs/bigreport62514.pdf

[18] Klamath Dam Removal Overview. 2012. Report for the Secretary of the Interior: An Assessment of Science and Technical Information, Department of Interior.

[19] Hanson, M.B. et al. 2010. "Species and stock identification of prey selected by endangered "southern resident" killer whales in their summer range." *End. Species Res.* 11: 69-82.

[20] Shields, M.W, J. Lindell, and 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* https://doi.org/10.1071/PC17041

[21] Bellmore et al. 2019. "Conceptualizing Ecological Responses to Dam Removal: If You Remove It, What's to Come?" *BioScience* (69):1, 26-39.

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Rivers in Washington, Oregon, and California – all projects intended to recover salmon populations and restore river systems[22]. These examples highlight the rapid ecosystem response of rivers and the return to healthy conditions, often faster than originally anticipated, following major dam removals[23].

We urge the State Water Board to approve and certify the Proposed Project for full removal of all three Lower Klamath River dams in California, and to support removal of the J.C. Boyle Dam in Oregon. With continued habitat loss and climate change, salmon and orcas will continue to struggle in the Pacific Northwest and California. Restoring rivers and giving salmon their best chance to survive helps the more than 130 other species who depend on salmon, including the Southern Resident orcas. Extensive analysis has already been done on the benefits of restoring the Lower Klamath River to a free-flowing condition, and what the ecosystem will gain from dam removal – clean water, stronger salmon runs, and more food for endangered Southern Resident orcas.

Thank you for the opportunity to provide comments, and please do not hesitate to reach out with questions or for additional information.

Regards,

Colleen Weiler
Jessica Rekos Fellow
Whale and Dolphin Conservation

[22] See: "Two Years After California's Biggest Dam Removal, Fish Rebound," by Enrique Gill, available: https://www.newsdeeply.com/water/articles/2017/10/30/two-years-after-californias-biggest-dam-removal-fish-rebound. Accessed 2/25/2019; "With Dam Gone, California River Comes Back to Life," by Lindsey Hoshaw. Available: https://www.newsdeeply.com/water/articles/2017/10/30/two-years-after-californias-biggest-dam-removal-fish-rebound. Accessed 2/25/2019; "At the Elwha River, forests, fish and flowers where there were dams and lakes," by Lynda Mapes, available: https://www.seattletimes.com/seattle-news/environment/at-elwha-river-forests-fish-and-flowers-where-there-were-dams-and-lakes/. Accessed 2/25/2019.

[23] Foley, M. M., et al. 2017. "Dam removal: Listening in." Water Resour. Res., 53, 5229–5246, doi:10.1002/2017WR020457.