From:	Regina Chichizola
To:	Wr401program; Thaler, Parker@Waterboards
Subject:	Comments on the 2018 Draft Environmental Impact Report (DEIR) for the Lower KKlamath Project License Surrender State Clearinghouse Doc. No.: 2016122047
Date:	Tuesday, February 26, 2019 12:00:59 PM
Attachments:	Klamath Dam removal comments_ Save California Salmon.docx (1).pdf

Dear Michelle Siebal and Parker Thaler,

Please accept the following comments from Save California Salmon.

Thank you,

Regina Chichizola

Save California Salmon

P.O.Box 142 Orleans, CA 95556

CA State Water Resources Control Board
ATTN: Ms. Michelle Siebal
Division of Water Rights – Water Quality Certification Program PO Box 2000
Sacramento, CA 95812-2000
Email: WR401Program@waterboards.ca.gov

cc: Mr. Parker Thaler
State Water Resources Control Board
Division of Water Rights Water Quality Certification Program
parker.thaler@waterboards.ca.gov

via email

February 26, 2019

RE: Comments on the 2018 Draft Environmental Impact Report (DEIR) for the Lower Klamath Project License Surrender State Clearinghouse Doc. No.: 2016122047

Dear Ms. Siebal, Mr. Parker and Board members,

Please accept the following comment letter from Save California Salmon on the the current application to provide a 401 certification to take down four of the Klamath River dams and transfer the license for the dams from PacifiCop to the Klamath River Renewal Corporation. We support this permit and transfer and urge the water board to process and approve a final license

for the removal of four Klamath River dams.

We thank you for producing a well supported and thorough CEQA document, and for your professionalism and commitment in providing for public comment opportunities and to creating a final 401 permit that protects, and restores, the Klamath River. We support the conclusion that the removal of four of PacifiCorp's dams is the only way to restore water quality in the Klamath River. We also wish to apologize for the disinformation campaigns, and at times poor treatment, the board and staff has had to deal with throughout this process. Your commitment to civility, ahearance to state laws and water quality standards, and use of the best available science is commendable. We thank you for this commitment.

At this time we wish to incorporate by reference the comments of the Karuk Tribe, the Yurok Tribe, the Klamath Tribes of Oregon, the Pacific Coast Federation of Fishermen's Associations, The Institute for Fisheries Resources, the Klamath River Renewal Corporation, California Trout, and the California Hydropower Reform Commission.

Years of studies and peer reviewed science surrounding these dams operations have been exhaustive and have proven that the only legal alternative pursuant to state law, is dam removal of four Klamath dams. All other possible alternatives and mitigations have been explored and found unachievable or to be too expensive to be attainable. We feel that the application from the Klamath River Renewal Corporation is thorough and supported by science and their plan for removal is achievable and provides for the best possible mitigations for any short term adverse impacts to water quality. These impacts are minimized to the level of an foreseeable winter storm events and this is amazing considering that this is the largest river restoration project even planned.

We are also incorporating by reference our January 29th, 2016 comment letter, which gives a much more detailed argument for taking down, rather than permitting, the Klamath Dams.

The remainder of this comment letter will be focused on the impacts from dam removal only and will mainly consist of quotes from dam removal studies or science magazines. Links to referenced studies will be included. They will show that even the fears of short term impacts are overblown and the actual impacts of dam removal and been very short term and less than significant even in dam removal projects with extremely high levels of PCBs and sedimentation.

Short term impacts verse. Long term benefits of dam removal

There has been much negative misinformation shared in the public hearings on the dam removal that is easily disproved. The impacts and toxicity from sediments behind the dams and flood control are the most common talking points used for misinformation campaigns be dam removal opponents. In truth the movement of sediments and a dynamic river system is absolutely necessary for healthy river and fishery, and multiple studies have been done to show that the sediments that can be mobilized are non-toxic.

Sediments from dam removal which may have a short lived negative impact, will likely provide for new, and needed in river and estuary habitat, and deposit sediments that will allow for streamside restoration. In the Klamath where much of the habitat in river is starved for gravel and much of riverbars have been heavily mined and grazed leading to lack of streamside vegetation, this sediment could actually provide much needed habitat in the long term. The positive impacts of increasing habitat, when coupled with the reduced temperatures and fish diseases that will come with dam removal can not be overstated.

Many studies speak to the short term impacts and long term benefits of dam removal and impacts of sediment. The most recent is in Volume 69 Issue 1 of BioScience Magazine at:
https://academic.oup.com/bioscience/article/69/1/26/5285462

"Although sediment deposition may initially perturb aquatic organisms and riparian vegetation, it is also a resource for ecological recovery. Sediment-starved river channels downstream from dams can become incised, armored, and disconnected from their floodplains (Ligon et al. 1995). Deposition and subsequent redistribution of reservoir sediments create new gravel bars, a more heterogeneous streambed, and more suitable spawning habitats for nest-building fishes (Kibler et al. 2011). Entrained reservoir sediments can also aggrade downstream channels and reconnect lateral floodplain habitats (East et al. 2015, Magilligan et al. 2016). Increased channel migration, creation of new gravel bars, and sediment deposition on floodplains provide new surfaces for colonization by pioneer plant species and potentially restore a shifting riparian habitat mosaic (Shafroth et al., 2002, 2016)."
https://academic.oup.com/bioscience/article/69/1/26/5285462

"In the past there have been concerns about the short term impacts from sediment plumes as a result of dam removal. Dam removals on the Elwha and White Salmon River, along with dam removals in Florida, Wisconsin, Maine, and Arizona provide a wealth of information on methods to minimize this risk. Studies and observation have shown that rivers have been extremely efficient at moving fine sediments. Related water quality studies have shown temperature and Dissolved Oxygen improvement almost immediately following dam removal, which in turn can have a positive impact on fish disease and attached algae composition.

There are several approaches to sediment mitigation during dam removal. They can range from slow drawdown and complete sediment removal to a quick removal allowing sediment to be washed down river." A discussion of these methods can be found at:"http://repository.usfca.edu/cgi/viewcontent.cgi?article=1137&context=capstone

Until large scale dam removal was initiated in the Pacific Northwest, physical sediment removal was a preferred method of sediment management. This was true until the Condit dam removal in Washington, where a "blow and go" method was used due to monetary concerns. This proved very effective with minimal impacts at the Marmot Dam.

"The results were impressive — but very different at the two sites. At Marmot, the sediment contained an equal mixture of sand and gravel. Once exposed to river action, it eroded out relatively quickly but sedately, with about half of it gone within 8 months. Researchers were surprised to find that the fish seemed little affected — the first curious salmon poked its nose

back towards the former dam site within a day. At Condit, the sediment contained a higher proportion of fine-grained material: 35% mud, 60% sand and just 5% gravel. The result was predictable in retrospect, but nobody anticipated it.

When engineers blew open a hole at the bottom of the dam, a jet of black liquid shot out as if from a giant fire hose. Instead of the expected flood of water, what came out was more like a mudflow, as waterlogged sediment from the reservoir slumped into the rapidly dropping water, then blasted downriver in a slurry that was as much as 28% sediment by volume. The reservoir lost its water and much of its sediment load in three hours. "It was almost like a volcanic event," says Jon Major, a geomorphologist at the USGS's Cascades Volcano Observatory in Vancouver, Washington. The 5-kilometre-long stretch of river between the dam and its confluence with the Columbia River temporarily became a muddy wasteland. With this kind of approach, says East, the slug of sediment wipes out everything, but the river can start recovering much sooner."

http://www.nature.com/news/dam-removals-rivers-on-the-run-1.15636

In the Elwha Dam removal, a more conservative approach was used "Unwilling to risk the blow-and-go approach on both dams, engineers opted for a compromise. They quickly removed the lower, 32-metre-high Elwha Dam, which contained only about one-sixth of the total sediment. But the upstream Glines Canyon Dam, which is twice as big, came out in a series of steps that have so far lowered it to a 9-metre stub of its former self. East compares the method to deciding whether to uncover a wound quickly or gradually. The approach on the Elwha, she says, is like "pulling the Band-Aid off slowly, over the course of three years".
http://www.nature.com/news/dam-removals-rivers-on-the-run-1.15636

Initial findings on sediment movement during dam removal have shown that gravel has migrated slowly, while silt coming out of the Olympic Mountains tended to move quickly downstream and into the Strait of Juan de Fuca. This fine sediment has thus far been found to be beneficial to river mouths. In the removal of the dams from the Elwha River in Washington new sandy beaches were found to be prime habitat for shellfish, which could greatly benefit the commercial and subsistence fisheries in this area. Though benefits of sediment recruitment are already occurring, there are short term impacts to kelp and shellfish beds. As far as short term sediment release, the rivers have proved unexpectedly efficient at flushing the worst of the mud downstream towards the sea, rather than letting it accumulate in river-choking mudflats. It is important to note that the Klamath reservoirs and Klamath River have less sediment-related issues then the sediment-impaired rivers that were removed in Washington. Reports regarding sediment behind the Klamath dams can be found in the Klamath River dams secretarial determination record.

Impacts to Fisheries

We believe that this dam removal project will have limited to no negative impact on endangered, subsistence, commercial and threatened fisheries in the short term because the removal is well planned. This dam removal has been planned mimic a large flood event, which often actually benefit fisheries by scouring out fine sediments and attached algae, and providing new habitat. The long term positive impacts of restoring water quality and fisheries populations can not be overstated. This is a rare opportunity to restore a watershed that is climate change adaptable and

delist a river for many water quality impairments.

“Data on the recent dam removals suggest that the fish are now coming back to the unfettered rivers. At Condit, fish were seen returning within weeks of the explosion. Two years later, the total exceeded 5,500, including steelhead and spring Chinook (*Oncorhynchus tshawytscha*), which had been effectively extirpated from the river,” said Jody Lando, a quantitative ecologist with Stillwater Sciences in Portland, Oregon, who reported her results in May at an aquatic-sciences meeting in Portland.”
http://www.nature.com/news/dam-removals-rivers-on-the-run-1.15636

”Furthermore, observations have shown that benefits have been almost immediate, with salmon spawning in above-dam tributaries within the first two years that dams were removed for fish entering the river, researchers can barely contain their excitement about last fall’s migration of chinook, coho and pink salmon, along with steelhead trout. At least some of every species made it past the spot where the Elwha Dam stood just two years ago.”
http://www.kitsapsun.com/news/environment/dramatic-changes-following-elwha-dam-removal-ep-416589177-356243611.html/ For salmon and insect-dependent species, such as the dipper recovery was also almost immediately.

“In one study, the researchers documented that American dippers with access to salmon were in better physical condition and more likely to attempt multiple broods of offspring in a season. They also produced larger female offspring and were more likely to stay in breeding territories year-round. The research, published early online, will appear in an upcoming issue of the journal *Ecography” (https://news.osu.edu/news/2015/12/28/river-ecosystems/)*

“Returning steelhead are not the only signs of success. Just above the old dam site, Coffin winds his way through patches of alder trees that were planted after the dam was removed, then crosses a rocky beach to the river. The rounded stones range from the size of potatoes to loaves of bread, and make for tricky footing. But Coffin is thrilled to see them because none of these ankle-breakers was here when the dam was first taken out. “All of this washed in,” he says.

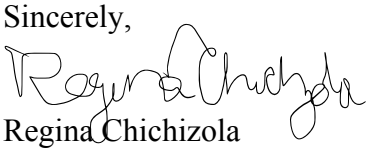
The cobbles provide nesting spots for the trout and a habitat for the insects that the fish eat. “People pay attention to the big animals,” Coffin says, “but the bugs are an important part of the system.” Reaching into the water, he plucks out a couple of rocks, turns them over and points out six types of insect clinging to the underside, including caddisfly larvae and a stonefly. “The year after the dam was removed, these wouldn't have been here,” he says with satisfaction.”
http://www.nature.com/news/dam-removals-rivers-on-the-run-1.15636

The lack of water quality impacts and immediate fisheries restoration are not specific to Northwest Rivers. “other parts of the United States have also seen dramatic fish returns. On south-central Wisconsin's Baraboo River, the removal of a string of dams has allowed sturgeon to reach their former spawning grounds. And in New England, the destruction of two dams 7–9 metres high on Maine's Kennebec River and one of its tributaries has allowed Atlantic alewives (*Alosa pseudoharengus*) to repopulate 100 kilometres of previously blocked-off river. In 1999, before the first dam was taken out, no alewives were recorded in the upper part of the watershed, says Serena McClain, head of river restoration for American Rivers. By 2013, the annual run had

rebounded to around 3 million."
http://www.nature.com/news/dam-removals-rivers-on-the-run-1.15636

Thank you for the opportunity to comment and for coming to Siskiyou and Humboldt Counties so we could provide verbal testimony.

Sincerely,



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