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Humboldt County Planning Department
3015 H St
Eureka, CA 95501

Re: Marshall Ranch Streamflow Enhancement Project
Record Number: PLN-2019-15661

November 1, 2021

To all concerned,

I am writing to express my strong support for the proposed Marshall Ranch Flow Enhancement project. For the last three years, I have been monitoring low flows in Redwood Creek and I did my master's thesis on impact of stream drying on lamprey larva habitat in this watershed. I have witnessed the drying of this critical tributary and the 2021 flow conditions were historically low. Compared to the rest of our bioregion, the creeks on the west side of the South Fork of the Eel River have high potential for salmon recovery because they are mostly forested and have cool temperatures. These creeks are lacking the most important ingredient for salmon habitat, water. There are many reasons for the lack of water, from the logging practices that changed the way water is drained and retained in our watersheds, current water demand, and longer dry seasons.

The Redwood Creek Watershed community has been working to restore salmon populations for years and has been making small changes, yet the salmon populations keep dwindling. In recent years, our community has stepped up with water conservation and storage and forbearance. Some landowners are thinning their forests to protect against fire and create less demand of water from the trees. We still need a large project to create enough water for the fish.

Every water year is unique in the Redwood Region, but since SRF has been monitoring streamflow, most years the flow on Redwood Creek gets low enough to stress juvenile salmonids risking their survival. In the water year 2019, most of Redwood Creek had continuous flow during the duration of the season, but we had very little rain in the fall, so we had low flow conditions through November. The summers of 2020 and 2021, most of the stream had stopped flowing. There were isolated pools where very few salmon survived. When the flow ceases between pools there is no longer incoming food and oxygen from upstream. As the pools shrink the competition between fish for space, food, and oxygen increase. Stream ecological processes depend on the frequency, magnitude, duration, and timing of streamflows.

Redwood Creek streamflow is altered, humans are responsible for altering it, and we have a responsibility to restore it.

The Marshall Pond is an opportunity to put water directly into Redwood Creek, near Briceland. It is a pond designed for the purpose of releasing water into the stream during the driest time of the year. The pond will be an active release supplementing the watershed. A study of flow augmentation in Sonoma County (Rossi 2020) found that there were significant increases in dissolved oxygen, volume of habitat, and food for salmonids in the form of benthic invertebrate. The Marshall Pond project design is funded by Proposition 1, for which the state of California voted because water projects like this are valued by the whole state. I am currently monitoring streamflow directly upstream and downstream of the proposed pond site as pre-project monitoring. SRF will be able to measure the difference in the flow post project.

The flow enhancement pond on the Marshall Ranch will improve streamflow during the driest time of the year to support the stream ecosystem, in a watershed that has potential to help salmon.

For Water,



Katrina Nystrom
Streamflow Monitor & Project Associate
Salmon Restoration Federation