
San Francisco Bay Regional Water Quality Control Board

August 20, 2021

Board of Directors
Marin Municipal Water District
220 Nellen Ave.
Corte Madera, CA 94925

Subject: Comments on Proposed Temporary Urgency Change Petition

Honorable Marin Municipal Water District Board Members:

Thank you for the opportunity to comment on the proposed temporary urgency change petition (Petition), and for the opportunity to work with your staff to provide input to the model and study prepared to support the Petition. We appreciate the challenges that Marin Water faces in trying to maintain water supplies for people and fish. We commend your staff for working closely with the California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), the Lagunitas Technical Advisory Committee and our agency through regular meetings and joint field reconnaissance, and for a willingness to address our concerns and input in designing the study. We appreciate Marin Water staff's refinements to the scope and resolution of the model prepared in response to input from our agency, and others as listed above, to the extent feasible given constraints of schedule and summer baseflow conditions.

Overarching Context

It is important first to frame our comments in the proper context. Lagunitas Creek supports the only stable population of Coho salmon south of Mendocino County, and one of the most important remaining populations in California. Flow releases required under Water Rights Order 95-17 together with significant habitat restoration have been essential to maintaining a stable population. We applaud Marin Water's commitment in both arenas, and trust that you will be judicious and precautionary in your Petition.

Summary of Modeling Results

The model prepared for Marin Water infers a linear relationship between baseflow and the amount spawning habitat in Lagunitas Creek. The relationship was modelled at three values of baseflow: 20, 15, and 10 cubic feet per second (CFS). The model predicts that if winter baseflow is reduced from 20 to 15 CFS, there will be about a 20 percent reduction in the amount of spawning habitat for Coho salmon. These results are nearly identical to earlier studies in Lagunitas Creek (Bratovich and Kelley 1988) that informed Water Rights Order 95-17. In summary, Bratovich and Kelley also inferred a linear relationship between baseflow and the amount of spawning habitat in Lagunitas Creek, with an approximately 20 percent reduction in total habitat also forecast to occur if baseflow is reduced from 20 to 15 CFS, and a 40 percent

reduction in the amount of spawning habitat for Coho salmon if baseflow is reduced from 25 to 15 CFS.

Specific Comments

We are encouraged by Marin Water staff's efforts to minimize reductions in winter baseflow as proposed under the Petition in response to the extreme drought conditions. Accordingly, we support Marin Water staff's recommendation to limit the requested reduction in winter baseflow to 16 CFS. Additional considerations in support of limiting the reduction to 16 CFS are as follows:

1. In evaluating potential impacts to Coho salmon, the appropriate benchmark for comparison is the baseflow that is required under a "Normal Year." Specifically, the amount of spawning habitat available when baseflow is 25 CFS (Water Rights Order 95-17). Based on the information summarized above, we infer that there would be at least a 40 percent reduction in the amount of spawning habitat for Coho salmon at 15 CFS as compared to a "Normal Year." Conditions under a "Normal Year" are the appropriate benchmark for comparison in considering potential impacts to Coho salmon spawning.
2. The potential magnitude of this impact (of winter baseflow being reduced from 25 to 15 CFS) is likely even greater than what would be inferred solely from a 40 percent overall reduction in habitat area in Lagunitas Creek, because in a "Normal Year" a large proportion of the Coho salmon run has access to and spawns in the tributaries; on average half-or-more of the total run. Similarly, in a "Normal Year" most steelhead spawn in the tributaries. If runoff conditions this winter are like Water Year 2021, only a few Coho salmon and steelhead will gain access to the tributaries, and most of the spawning of both populations will be in Lagunitas Creek.
3. Under such a scenario, we would expect a much greater amount of superimposition - where some of the nests prepared by female salmon that spawned earlier in the season are excavated/partially excavated by a female salmon or steelhead that spawn later - further reducing overall spawning success of Coho salmon beyond what would be expected alone from a 40 percent reduction in habitat area.
4. Also, in recent years there has been a modest run of Chinook salmon in Lagunitas Creek that also compete with Coho salmon to establish nests at suitable spawning sites. The Chinook salmon run was not documented at the time that releases were established under Water Rights Order 95-17. As such, under the scenario of a dry start to Water Year 2022, it is plausible that three species of spawning adult salmonids would be confined largely to Lagunitas Creek and be competing to spawn within a suitable habitat area that has been reduced by approximately 40 percent.
5. Available habitat suitability models for Lagunitas Creek, define suitable spawning habitat as being simply the overlap of suitable gravel sizes, flow depth, and velocity for spawning. It's clear that other habitat attributes influence selection by the fish of spawning sites including cover, and likely a recognition of streambed areas where hyporheic flow is accentuated (Geist and Dauble 1998). These are important limitations of the models for Lagunitas Creek that lend additional credence to a precautionary approach.

Also, we note a motivation stated by Marin Water staff for considering potential reductions in releases to support winter baseflow is to ensure that reservoir storage will be sufficient to maintain adequate summer baseflows in Lagunitas Creek. We urge Marin Water to predicate the proposed reduction in winter baseflow to 16 CFS on a commitment to maintain dry season baseflows at 6 CFS throughout Water Year 2022. Thank you for your time and consideration.

Sincerely,

Xavier Fernandez
Planning Division Manager