

State of California

The Resources Agency

Memorandum

To : Elden H. Vestal, Fisheries Management Supervisor
Region 3

Date: October 28, 1976

From : Department of Fish and Game

Subject: Inspection of Proposed Alternate Marine Resources and Engineering Development, Inc., Salmon Rearing Pond Project, Russian Gulch Creek, Sonoma County

On October 22, 1976 in company with Bill Heubach of Anadromous Fisheries Branch, Mr. Tom Finn of MR&ED, Inc., and Mr. Lee Fuller, reporter of the Russian River News, I inspected a new site located by Mr. Finn where they propose to establish a sportsmen's salmon offstream rearing project.

This site, similar to the first, is located on the Middle Branch of Russian Gulch; however, it is located about a mile or so further upstream in a rather steep canyon, adjacent to a point where an old logging road formerly crossed the stream* Vehicle access is possible to this point; however, no attempt has been made to maintain the road upstream from this point, and the ford and the road beyond are in a state of disrepair.

The proposed assembly site for the fish rearing tank(s) is located across the creek from the entrance road. Therefore, a bridge would have to be constructed across the creek to provide access to the pool during winter storm periods* Mr. Finn states he has permission from the owners to fall a couple of trees to construct a bridge for this purpose. The site will also have to be graded and enlarged in order to hold the tank(s).

Mr. Finn indicated the most recent flow measurement he has made at the site was with a Ventura Weir. He found the surface flow (in October 1976) to be 88 gallons per minute. Visually, that figure seemed to be about right. About 1200 - 1400 feet of 4 - 6-inch pipe will be required to obtain sufficient head to provide aeration for the tank(s).

Mr. Finn indicated they now have on hand and plan to use an 18-foot diameter 4-foot deep doughboy pool, which would be the initial unit they will attempt to raise the fish in.

I informed Mr. Finn that with the flow available, plus the size of the rearing pond he could not expect to rear more than about 10,000 silver salmon to yearling size under optimum conditions. I said that if his project is approved he could expect the Department to provide fish if and when available.

Mr. Finn indicated he was disappointed the estimated yearling production was not greater; nevertheless, he still desires and plans to go ahead with the project.

Mr. Finn requested we provide him with a written summary of our findings.

In evaluating this project, I arrived at the following conclusions:

1. This new site although more remote and difficult to reach is equal to, and in my opinion is better than, the original site he proposed.
2. The stream gradient between the proposed rearing pond and diversion point sites is relatively steep and pressure on the water line should be around 20 - 30 psi. This will provide a more efficient aeration system than if a gravity flow system is used.
3. The new site is at, or upstream from, the upper limits of the area with fisheries value in this tributary. No fish of any type were observed in this section.
4. A minimum flow of 80 - 85 gpm can be expected to be available at this site for it has been measured under extreme drought conditions at the site this year and was found to exceed this amount. Water temperature range is expected to remain on the 50° to low 60° range.
5. The 4-foot deep x 18-foot diameter pool they expect to use has a volume of approximately 950 cubic feet. Assuming an optimum annual production capacity of between 10 - 15 pounds per gallon per minute of flow, it should be possible to raise between 800 and 1200 pounds of silver salmon yearlings annually.
6. With an assumed production capacity of between 1 and 1.5 pounds of fish per cubic foot of water, it should be possible to raise 10,000 ten-per-pound yearlings in the single 4 x 18-foot diameter doughboy pool.
7. Assuming a 3 to 5% return from a release of the number of fish, it is estimated the returns for this project would be approximately 300 - 500 spawning adults.
8. The water exchange rate in the pool would be approximately 1.5 times per hour which should prove more than adequate to remove excess metabolic wastes.

I recommend that: (1) If this unit is constructed and funding meets Department criteria, an initial allotment of not more than 10,000 silver salmon fingerlings be authorized. (2) Due to the small size of the drainage, not more than 25 percent of the fish raised be stocked in the drainage. The other 75 percent be stocked in tributaries in the lower Russian River drainage or other suitable streams nearby.



Jack T. Allen
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Region 3