

**DEPARTMENT OF FISH AND GAME**  
**INTRAOFFICE CORRESPONDENCE**

DATE

May 28, 1953

TO: Willis A. Evans

FROM: Herbert E. Pintler

SUBJECT: The Rough Fish Control Project on Sulphur Creek, Sonoma County, Calif.

The subject project was initiated to test the hypothesis that rough fish, mainly Sacramento squawfish, cause significant damage to the young trout and steelhead populations through predation or competition. Four phases of this project have been carried out to date. For their origination of the idea and active participation in the project, Captain Shea and his men are to be complimented.

The first phase was an inspection of Sulphur Creek to choose a suitable site for a rough fish barrier and subsequently to obtain an estimate of the cost of constructing such a barrier. Mr. Benson, President of the Cloverdale Rod and Gun Club; Mr. Elliger, State Div. of Architecture; Mr. Garth I. Murphy; Warden Harley Groves and the writer, Dept. Fish and Game, visited the area in the spring of 1950. A site was chosen a few miles above mouth of stream where a narrow rock gorge exists. Later an estimate, \$25,000, was given us by the Div. of Architecture as the cost. Since this was so high, the plan was temporarily shelved, while a program of investigation of the fish population was begun.

The investigation, which constituted the second phase of the program, was for two purposes. First, was the cost of such a barrier justified? Second, could another means of control be used? An experimental wire barrier and trap were installed a short distance above the mouth of Sulphur Creek from March 31 to about May 13, 1951. Details of the barrier are described in a letter dated April 3, 1951, from G. I. Murphy to the Bureau of Fish Conservation, filed in the survey file under Sulphur Creek. Results, although not entirely conclusive, did show that almost no migration of rough fish upstream into the trap occurred during the trial period.

The third phase was devoted to checking the fish population in several pools in the creek during mid-summer of 1952. Shocking revealed only a few RT (SH), mostly above 9", great numbers of Sacramento squawfish and a good many western suckers. One species of minnow was abundant in one pool, as were a species of cottid. No large size cottids were found.

The fourth phase involved chemical treatment of the stream in late August, 1952, when the mouth was dry for a sufficient distance upstream to prevent harm to fishes in the Russian River. Nearly the entire Sulphur Creek drainage was treated. Exceptions were the upper portions of the main stream and certain tributaries where, because of the great abundance of RT and the relative lack of rough fish, it was felt undesirable. Results of the chemical treatment were similar to shocking. Many large suckers and squawfish were taken, but RT remained scarce. Lamprey ammocoetes forced out of the stream bottom by the action of the chemical, were killed in great numbers. Following these results, chemical treatment of a portion of Dry Creek, Sonoma County, was undertaken. In this stream, more RT were found as well as a few viviparous perch, but, in general, conditions were similar to Sulphur Creek.

In the spring of 1953 check of anglers on Sulphur Creek revealed that almost everyone caught a limit (15) of 6" to 9" RT (SH?) as compared with one example the previous year where six anglers caught a total of only one. Fly fishing was excellent. Dry Creek was also nearly as good.

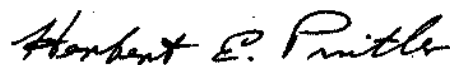
#### RECOMMENDATIONS

From what has been learned to date, it appears that future activities should include the following:

1. August, 1953 - repeat shocking and/or chemical treatment of several of the pools treated in 1952 to discover rate of recruitment of rough fish.
2. Also on this date to analyze the stomachs of any rough fish taken if shocking method is used.
3. In 1953 to check the stream again to locate, if possible, a site where a barrier may be erected at a cost low enough to be feasible.
4. Based upon findings under 1 and 2 above, to check other streams tributary to the Russian River in the area, with the idea of extending chemical treatment following fish rescue work.

Before the above recommendations are officially adopted by the region, a meeting should be held by all personnel involved, and perhaps even representative sportsmen, to review this summary and acquaint everyone with our plans. By doing this, misunderstandings and mistakes may be avoided and additional helpful facts discovered.

It is important that all information possible be collected on the project to allow satisfactory evaluation to guide the region in determining where and under what conditions it can be carried out throughout the region in future years. A study of costs, degree of improvement in fishing and rate of recruitment of rough fish may not be of particular significance or justification if Sulphur Creek were to be the entire project. If, however, everything points to value in expanding such a program throughout the region, then we should get such information to guide us. In any case, determination of the existing population is essential prior to any chemical treatment.



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