Ref ID: 71472

JOB COMPLETION REPORT

INVESTIGATIONS PROJECTS

State of Montana

Project No. F-7-R-1 Work Plan No. V Job No. V-A

Title of Job: Effectiveness of Smith Lake Rearing Pond.

Objectives:

The primary objectives are to measure the actual annual production of Smith Lake as received from a known number of fry cutthroat planted and to determine the economics of the operation considering the cost of the installation (construction was completed in 1948), the cost of the fry, the cost of operation, and the value of the yearling fish produced. As an incidental objective, since each fish must be handled for weighing and measuring, each fish was marked prior to release into Whitefish Lake. Random creel checks and resort operator reports will indicate the percentage contribution of these fish to the total catch.

Techniques Used:

The inlet stream was diverted and the rearing pond slowly drained starting June 18, 1951. A screen was installed that prevented fish from escaping during this operation. From June 22 to 26 the fish were captured, left pelvic fin clipped, and their individual lengths were taken. (Urethane was used to anesthetize the fish). Weights were taken of 25 fish and the weights of all others were calculated from these data. The trout were released in the stream below the gate. After draining, the pond was left dry until July 22, and on July 30, 29,000 cutthroat trout fry were planted. The pond was completely filled by August 29. Posters requesting anglers to report any fin-clipped cutthroat trout caught were distributed to the resort owners on Whitefish Lake and the program was also given publicity in the local newspaper.

Findings:

Smith Lake is an artificial body of water and prior to any developmental work, the lake bed was marshy with a slow moving stream passing through. In 1931, the Works Progress Administration financed the building of a dam and a wooden gate. The purpose of the impoundment was for the rearing of trout. In 1948 the Montana Fish and Game Department replaced the wooden structure with one of concrete and also built a concrete structure in order to divert the inlet stream around the lake. (Fig. 1) The size of the impoundment is 15.7 acres and the deepest part when filled is 8 feet.

The usual procedure of releasing the fish was to open the gate and flush the fish down a stream one mile into Whitefish Lake. Members of the Whitefish Sportsmen Club drained the pond and then replaced the planks when the lake was empty.

A total of 1,707 cutthroat trout and 4 eastern brook trout were taken out of the pond. Thirty thousand cutthroat trout and no eastern brook trout were planted in 1950. The average length of the cutthroat was 6.0 inches with a range of 2.8 to 9.2 inches. The total weight of the cutthroat trout was 143.94 pounds. Two were reported caught in August in Whitefish Lake by an angler but were released because of their small size.

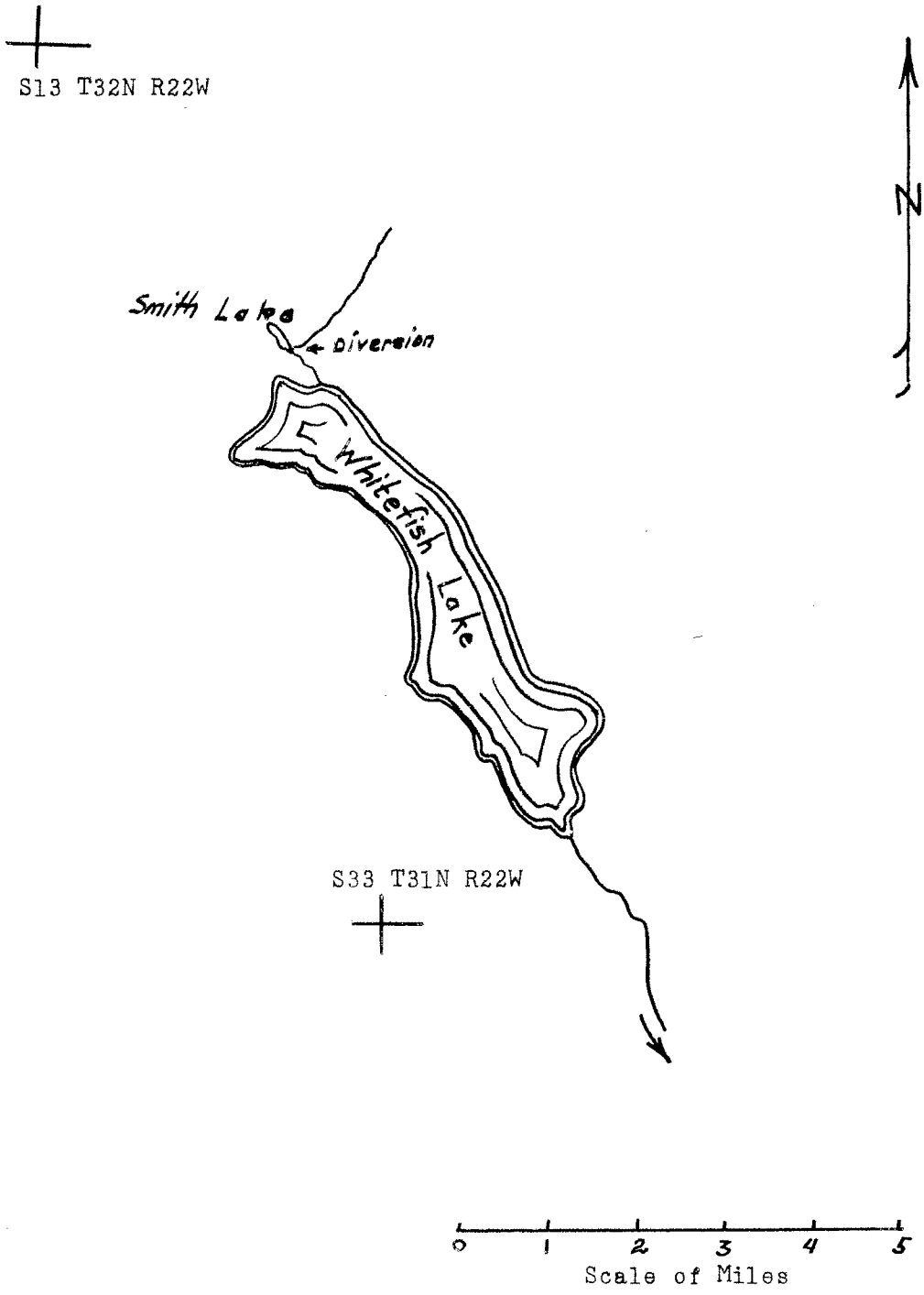

Figure 1. Smith Lake rearing pond and its relation to Whitefish Lake.

Analysis and Recommendations:

The number of fish caught out of the pond was 5.69 percent of the number planted. The value of the 143.94 pounds of fish produced is $179.90. The amount of $1.25 per pound is what it would cost a fish hatchery to raise the same weight of fish. However, on the debit side of the production we have the following:

30,000 fry at $12.50 per thousand (Cost obtained from Somers Fisheries Station Foreman)	$ 375.00
Law Enforcement (Pond is closed to fishing)	22.00
Cost of operation (8 man days)	68.80
Transportation (400 miles at 7¢)	28.00
Expected return on investment (5% of $5960.00 which is cost of dam to the Department)	298.00
Cost of one years operation	$ 791.80
Value of fish produced	179.90
Net yearly loss	$ 611.90

It is realized that some fish could escape over the planks of the gate but this loss if it does occurr has not been observed. The stream below the spillway is comparatively open and when the water was diverted no fish were observed below the spillway when it began to dry up. The number of fry planted was chosen arbitrarily and is probably too high. It is recommended that this study be continued and that a screen be installed at the gate as early as possible in the spring.

Summary:

The number of fish produced after one year in the pond was 5.69 percent of the number planted. The average length was 6.0 inches as only fry were planted.

Data and Reports:

The original data is with the fisheries biologist at Somers, Montana and the Superintendent of Fisheries in Helena.

Prepared by Frank A. Stefanich Approved by R. V. Lambuth

Date: December 27, 1951.