JOB COMPLETION REPORT

INVESTIGATIONS PROJECTS

State of Montana

Project No. F-7-R Work Plan No. VI Job No. VI-A

Title of Job Grayling Spawning Areas of Rogers Lake

Objectives:

To determine the tributaries used by grayling for spawning in Rogers Lake, and to find measures, if any are needed, to enlarge the spawning areas.

Techniques Used:

While the ice was still on Rogers Lake, observations were made of all tributaries. After the grayling had started to spawn in the main tributary, all other tributaries were observed. While the spawning run was on, a barrier was removed so that some of the spawning fish could go further upstream.

Findings:

Rogers Lake has an area of 325 acres and has much shallow water. There is no visible outlet to the lake. The only species of fish found to be present were grayling (Thymallus signifer) and the redside shiner (Richardsonius balteatus). Grayling spawn is taken each year by hatchery personnel for propogation and planting in other areas. The first grayling to appear in the spawning tributary was on April 27, 1952. Their numbers increased gradually until by May 9, the stream was occupied by many spawning fish. On May 26th only one grayling was left in the stream. About 180 feet of this stream was used for spawning as a man-made barrier prevented further movement upstream. As there appeared to be good spawning beds above this barrier, it was removed and the grayling then moved further upstream, until another barrier stopped their movement. This last barrier was a natural falls and no beds for spawning purposes were observed above the falls, as the stream bottom was composed almost entirely of mud. Removing the man-made barrier increased the spawning area about 160 feet. This was the only tributary (unnamed) that was used by grayling. The stream averages approximately five feet in width and about five inches deep during high water in the later part of April. A large volume of water flows in this stream from melting snows and rains and can recede rapidly as demonstrated by a three inch drop between May 9th and May 12th. On August 21, 1951, this stream was almost dry. Small rock dams were constructed along the stream so as to provide deep enough water for the fish to swim in. In shallow areas at least 1/3 of the fish would be out of the water while moving in the stream.

The grayling were observed while in the spawning act. No indication was noticed of any attempt to excavate a depression in the gravel where spawning occurred. The males were aggressive, and were noticed to nudge the females constantly. Whenever a female decided to spawn, the male would be along side the female, and both would erect their dorsal fin with an accompanying

quivering of their bodies. At times a male would be on each side of the female. Eggs were found on the gravel where the spawning act occurred.

On May 12th, 25 males and 25 females, taken at random from the creek, were measured and weighed. The average length of the males was 15.9 inches with a range from 14.7 to 16.6 inches. The average weight was 1.36 pounds. The average length of the females was 15.7 inches with a range from 14.5 to 16.4 inches and an average weight of 1.58 pounds. The heaviest was a 15.8 female that weighed 2.08 pounds. All of the measured fish were in various stages of spawning.

At the mouth of the tributary, grayling fry approximately three inches long were collected on August 21, 1951.

Analysis and Recommendations:

Due to the fluctuation of water in the spawning stream this tributary should be observed frequently and when the stream gets low, the water channeled so that the grayling may navigate this stream. There is real danger of grayling becoming stranded. As many fish are concentrated in this small stream and and are vulnerable to all types of predation, a watchman should be present during the spawning run. This lake is open to fishing from December 1st to February 28th and closed the remainder of each year. However, many shortsighted people will take the spawning fish out of this stream. This happened on May 11th during daylight hours and with the watchman present, however the culprits were apprehended.

Summary:

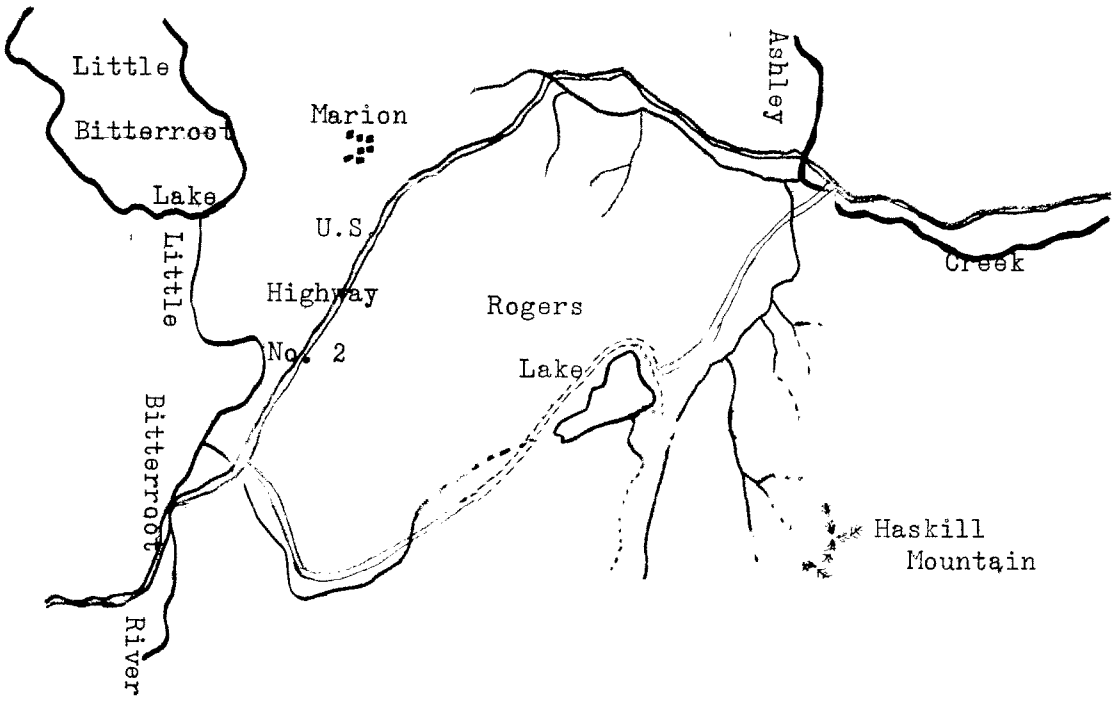
One tributary (unnamed) was used by grayling for spawning. A man-made barrier was removed and thus increased the length of spawning stream by about 160 feet for a total of approximately 340 feet.

Data and Reports:

The original data and related reports are with the project leader at Somers, Montana.

Prepared by Frank A. Stefanich Approved by P. H. Landwick

Date May 27, 1952



Rogers Lake

Flathead County, Montana

Scale: ½" to the mile