

MONTANA STATE DEPARTMENT OF FISH AND GAME
 FEDERAL AID IN FISH RESTORATION SECTION
 HELENA, MONTANA

JOB COMPLETION REPORT
 INVESTIGATIONS PROJECTS

State of Montana

Project No. F-7-R-4

Job No. VII-A, B, and C

Title of Jobs: Job No. VII-A: Natural reproduction of cutthroat and Dolly Varden trout in tributaries to the North Fork River and the Flathead River below West Glacier

Job No. VII-B: Extent of movement of Dolly Varden and cutthroat trout in the Flathead River and tributaries

Job No. VII-C: Recruitment of Dolly Varden and cutthroat trout to Flathead Lake

Abstract:

An investigation was made on the North Fork of the Flathead River and correlated information obtained on the lower river and in Flathead Lake. The work involved spawning observations of cutthroat and Dolly Varden trout, construction of weirs, periodic shocking of tributary streams, tagging and marking of fish, and use of fyke and gill nets in the lower river and Flathead Lake. Information was obtained on spawning dates and activities, populations of young fish, size and age classes, age at maturity, time of migration, and distances travelled. A total of 98 cutthroat and 159 Dolly Varden were tagged and released. Six Dolly Varden tags were recovered from Flathead Lake.

Objectives:

Job No. VII-A: In order to determine management procedures it is necessary to have information on the success of natural reproduction, time of spawning, and age and size at maturity. The purpose of this study is to obtain the above information and establish the position of the cutthroat and Dolly Varden trout in the North Fork and in the Flathead River below West Glacier.

Job No. VII-B: The aim of this job is to establish proof that both Dolly Varden and cutthroat trout are migratory in Flathead River and Flathead Lake and to determine the time and extent of movement.

Job No. VII-C: This job is related to VII-B in that it involves migration but it is concerned with the age and time of movement of the young cutthroat and Dolly Varden from the tributaries to Flathead Lake.

Techniques Used:

A manuscript is being submitted in accordance with Section 1542 of the Federal Aid Manual prior to publication.

Recommendations:

The following are proposed recommendations for the management of cutthroat and Dolly Varden trout in the North Fork of the Flathead River and related waters. Recommendations are based on data presented in the manuscript being submitted.

1. Continuation of the later opening of the fishing season on the North Fork, as adopted for the first time in 1933, and possible extension to include the lower part of the river also.

2. Continuation of the 18-inch size limit now in effect on Dolly Varden to give the fish an opportunity to reach spawning size before being caught. Of 205 mature fish checked on the North Fork only two fish were under 21-inches in total length. Average length of all spawning fish was 27 1/2 inches.

3. In view of the comparatively large number of Dolly Varden tag returns from Flathead Lake during the past winter, the indications are: that the total population of spawning fish is not large for the size of the lake and its tributaries; that the Dolly Varden congregate during the winter in preferred areas where they are readily available to the fishermen; and, that the winter catch, while not large in actual numbers, may be too heavy a drain on the present reduced population because it selects the larger fish. Therefore, it is recommended that a winter creel census be conducted on Flathead Lake to determine the approximate catch with a view to the curtailing of winter fishing if warranted.

4. That those streams on the North Fork which are now closed to fishing for the protection of spawning Dolly Varden be kept closed. All, with the exception of Coal Creek, now have fair runs of fish and a good population of young Dolly Varden.

5. In the event of a continuation of the present tagging program, it is recommended that a nominal reward be advertised and given for tag returns. It is known that several tagged fish were caught during the summer, but the tags and desired information were never sent in. In view of the original expense involved in carrying on the investigation, the additional number of tags received should justify the small extra cost.

6. Since the scope of the project and the size of the waters involved precluded the possibility of covering any one phase thoroughly, many gaps exist in the information obtained. It is recommended that the project be continued with emphasis placed on those phases and methods which gave the best information.

Summary:

A survey was made of the cutthroat and dolly varden population on the North Fork of the Flathead River, and related work was done on the lower river and on Flathead Lake. Early history of the river shows a large population of both cutthroat and Dolly Varden. Present findings show that both species have diminished greatly. Cutthroat numbers were so low that it was difficult to find mature fish from which information could be gained. Cutthroat were observed spawning through June, but most had completed spawning by the first of July. Mature cutthroat were from three to five years old. Dolly Varden spawned from the middle of August to the middle of October with major activity in September. Age of

spawning fish ranged from five to eight years. Evidence was obtained that mature fish did not spawn every year. Periodic shocking of tributaries showed a good population of young Dolly Varden and a poor population of young cutthroat. Neither cutthroat or Dolly Varden over three years old were found in the tributaries except during the spawning season. The evidence indicated that both species were migratory when a certain size had been reached. Of 158 Dolly Varden tagged on the North Fork in 1954, six returns were obtained from Flathead Lake by April, 1955. Returns of cutthroat have not yet been obtained from the lake.

Data and Reports:

The original data is with the project assistant at Missoula, Montana.

Prepared by Daniel G. Block Approved by _____

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