MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

FISHERIES DIVISION

Job Progress Report

State: Montana

Title: Northwest Montana Fisheries Investigations

Project No. F-7-R-30

Job No. I-a

Title: Inventory of waters of project area

Period Covered: September 1, 1980 through September, 1981

Report Period: September 1, 1980 through September, 1981

ABSTRACT

Data from limited creel census and gill netting is presented for Lake Mary Ronan. Fisheries survey data for several lakes is described. Numerous stream hydraulic projects were reviewed. Mature kokanee were collected for age and size determination.

OBJECTIVES

Job objectives include: 1) to determine flow regimes for the Whitefish, Stillwater and Thompson Rivers to select minimum flow requirements for aquatic life; 2) to continue monitoring fishing success and population trends of kokanee and trout at Lake Mary Ronan; 3) to determine the fisheries potential of small lakes and streams by obtaining chemical, physical and biological parameters for the management of game fish species; 4) to investigate and approve stream alteration projects as required by the Montana Streambed Preservation Act; 5) to develop a fisheries management plan for high mountain lakes; and 6) to monitor annual size fluctuations of kokanee spawning populations of lakes supporting wild and stocked fish.

ACCOMPLISHMENTS

In 1981, cross sectional stream profile measurements were determined at three stations each on the Whitefish, Stillwater and Thompson Rivers. From three to four transects were established at each station. Stream profile measurements were taken at high, medium and low flows at which wetted-perimeter discharge relationships will be determined for each regime. These data are presently being summarized and transcribed on computer forms for analysis. From these data, an inflection point will be plotted where the increase in wetted stream perimeter will become less rapid as stream discharge increases. Individual stream flow reservations will then be slected for each individual stream.

The monitoring of fishing success at Lake Mary Ronan is determined in part by periodic spot creel census conducted through the year. In 1981, data were collected on the opening day of fishing season and on four separate occasions during the winter months. Periodic summer censusing was deleted in 1981 because of other job commitments.

Catch success on the opening day averaged 5.0 fish per angler in 1981 as compared to 4.4 fish in 1980. Kokanee comprised 87 percent of the total catch as compared to eight percent for cutthroat trout, three percent for rainbow trout and two percent for largemouth bass. This is in sharp contrast to the catch composition of 1980 when kokanee made up 46 percent and cutthroat trout 49 percent of the catch, respectively. Limit catches of kokanee (10 fish) in 1981 increased to 11 percent, up from five percent in 1980. Accordingly, the percent of successful anglers (those catching one or more fish) increased from 84 percent in 1980 to 97.5 percent in 1981. Winter anglers (4 census days) averaged 3.3 fish per angler of which 95 percent were kokanee.

Fish population trend data is determined in part from data collected during spring and fall netting. Both kokanee and cutthroat trout exhibited a decline in 1981 of the average catch per net night for comparable fall netting data collected in 1980. Rainbow trout, which reproduce naturally, have continued to show a gradual increase in numbers since 1975.

The average length of mature spawning kokanee (males) taken in the fall of 1981 measured 16.9 inches. From 1976 through 1980, the average size of mature kokanee increased gradually from 12.4 to 14.0 inches. Annual fry stocking rates were increased from 400,000 to 600,000 beginning in 1980 to increase stock density with the intent of improving the rate of angler success. However, in 1981, a reduction in the number of kokanee eggs collected by Flathead Lake Hatchery personnel made it necessary to lower the 1981 plant to 400,000 fish. Subsequent annual plants will be 500,000 if hatchery commitments can be met.

Initial lake surveys were conducted for Big and Little Therriault lakes in the Kootenai River drainage and follow up surveys were conducted for Burnt, Fire and Smokey lakes in the Flathead River drainage. Data collection included gill netting data, a reconnaissance of potential spawning areas, depth measurements, water chemistry, water temperatures and various physical measurements. Contour maps were prepared for Big and Little Therriault lakes and stocking recommendations were proposed for all five lakes. The mountain lake survey segment was inactive during the report period.

A total of 38 hydraulic stream projects affecting fisheries habitat were reviewed during the project period. A breakdown of projects submitted by various government agencies is as follows: County 11, State Highway 4, State Forest 8, U.S. Forest Service 13, and State Fish, Wildlife and Parks 2. All projects were investigated in the field followed by specific written recommendations for minimizing the loss of fish habitat.

The average size and age group composition of spawning year class of kokanee were determined for several lakes in Region One. Fish were collected during late fall spawning migration with gill nets and by seining. The average size range of mature spawning kokanee (males) varied from 8.9 inches at Tally Lake to 17.8 inches for Spar Lake. Collections were taken from Swan, Lake Mary Ronan, Middle Thompson, Whitefish, Bitterroot, McGregor, Ashley, Tally, Blaine, Bull, Spar and Dickey lakes.

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Waters referred to: Lake Mary Ronan 07-7700-03

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