

MONTANA FISH AND GAME DEPARTMENT
FISHERIES DIVISION
HELENA, MONTANA

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT

State of Montana

Project No. F-7-R-12

Name: Northwest Montana Fishery Study

Job No. I

Title: Inventory of Water of the Project Area

Period Covered: July 1, 1962 to June 30, 1963

Abstract: A total of 27 lakes in the project area were surveyed for general biological, chemical and physical characteristics. Most are considered mountain lakes. They contained varying populations of rainbow trout, cutthroat trout and Dolly Varden.

The use of a helicopter greatly accelerated the rate at which high mountain lakes (inaccessible by road) could be surveyed. Thirteen of 27 lakes surveyed were completed with the assistance of the helicopter.

Conductance meter readings converted to concentrations of total dissolved solids afforded a comparison of relative productivity in the waters surveyed. Concentrations ranged from 33 to 3200+ppm throughout waters of the project area.

Recommendations: It is recommended that this project be continued as a means of furnishing data needed for sound fish management recommendations. Recommendations on individual waters are recorded on the lake survey cards.

Objectives: The purpose of this project is to obtain information on the physical, chemical and biological characteristics of the waters of highest importance to the total recreational fisheries picture of the project area, and where practicable, to obtain estimates of existing or potential fisherman use. The information gained is used in determining what may be done to improve fishing.

Techniques Used: Samples of fish were taken by gill nets (125 foot graduated experimental nets), 110 - 220 A.C. electro-fishing device and cresol. Angler creels were also checked. Inlets to lakes and potential gravel areas in streams were observed for spawning facilities. SCUBA was used in observing size composition of fish populations in assessing reproduction. Aerial photographs of lakes surveyed were converted to work maps from which areas and volumes were determined. Depths were determined with the use of an echo sounder. Age and growth determinations were made at the department's fisheries laboratory, Bozeman. The use of a helicopter greatly accelerated the rate at which high mountain lake surveys were accomplished.

Findings: Initial survey data on 23 lakes and supplemental information on 4 lakes was acquired during the report period. Thirteen of the 24 initial surveys were completed by a helicopter crew of two men. This crew worked in two general areas, the Eureka area (Kootenai Drainage) where 6 lakes in the Wolverine Basin were surveyed and in the Condon area (Swan drainage). Lakes surveyed in the upper Swan area included: Glacier, Lagoon, Lake, East (Lost), Turquoise, High Park, and Mountaineer Lakes. Information was obtained on fish populations, fish growth, spawning areas and temperatures. All of the above lakes are inaccessible by motor vehicle.

Other lakes surveyed in the district, accessible by road, included: Fishtrap, Holland, Foys, Talley, Chinook, Cree, Swimming, Gilbertson, Loon, Marl, Thirsty, Petleirs "L", Hanson, and Upper Whitefish Lakes. Water volumes were calculated on Holland, Fishtrap, Foys and Upper Whitefish Lakes.

All of the lakes surveyed are trout lakes; most are catagorized as mountain lakes.

Total dissolved solids concentrations ranged from 33 to 3200+ ppm in the waters surveyed, indicating the variety of waters concerned in the lake survey program. Because of the variety of waters found within the same area, surveys of individual waters are necessary before proper management procedures can be employed.

Information collected during the report period was placed on two sets of standard 6 x 9 inch survey cards, one set retained at district headquarters and the other forwarded to the Helena office.

Prepared by Delano A. Hanzel

Approved by George D. Holton

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