

MONTANA DEPARTMENT OF FISH AND GAME  
FISHERIES DIVISION  
JOB PROGRESS REPORT

STATE: Montana TITLE: Southwestern Montana Fisheries Study  
PROJECT NO.: F-9-R-22 TITLE: Evaluation of River Fish Populations  
JOB NO.: III-a  
PERIOD COVERED: July 1, 1973 to January 31, 1974

ABSTRACT

Trout populations estimates were made on two section of the East Gallatin River, three sections of the Madison River and two sections of O'Dell Creek. Wild trout were tagged in each section for future movement and angler harvest data.

BACKGROUND

Effective fisheries management of larger rivers and creeks depends on the quality of the fish population data available. Information on standing crops, mortality rates, age structure, production rates, and movement should be obtained. Mortality rates for individual periods of the year, such as summer and winter, are necessary to determine when mortality is occurring and what is causing it. Age structure information is necessary to determine if reproduction or recruitment is adequate to maintain the existing standing crop. Production rates are useful in determining how much of the standing crop can be harvested before endangering the resource. Movement should be evaluated to determine the importance of spawning runs, certain spawning areas, and movement as a factor in population stability. The amount of movement sometimes indicates favorable or unfavorable habitat.

OBJECTIVES

The overall objective of this job was to develop shocking gear and techniques for sampling fish populations of large rivers and to compile data that reflect the status of river trout populations.

PROCEDURES

Electro-fishing gear was used to sample fish populations in the East Gallatin River, Madison River, and O'Dell Creek. Sections set up on each stream ranged in length from 1 to 5 miles. To aid in the section of movement, each of the sections was further subdivided into subsections ranging in length from 500-2500 feet. Electro-fishing was carried out while floating through a section in a flat-bottomed fiberglass boat. Population estimates were made using the Peterson-type mark-and-recapture method.

FINDINGS

Trout population estimates were made on two sections of the East Gallatin River. Both sections (Manley-XII and Hoffman-XI) were electrofished during the summer (August, 1973). Population estimates were made for wild brown and rainbow

trout. A total of 300 wild trout in Section XII and 300 in Section XI were tagged for movement and angler harvest information.

Trout population estimates were made on three sections of the Madison River. Spring wild trout population estimates were made on the Norris and Burnt Tree sections (March-April, 1973). Fall population estimates were made on the Varney and Burnt Tree sections (September, 1973). Wild trout were tagged in all three sections.

Spring and fall populations estimates were made on Lower O'Dell Creek and spring estimate was made on Upper O'Dell Creek. Estimates were made for brown trout, wild rainbow trout and mountain whitefish. A total of 200 wild trout were tagged in the upper section and 300 in the lower section during the spring electro-fishing period.

Results of the 1973 population data will be compiled and presented in a later progress report.

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