MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

FISHERIES DIVISION
Job Performance Report

STATE: Montana

TITLE: Northwest Fisheries Investigations

PROJECT NO.: F-7-R-32

TITLE: Inventory of waters of project area

JOB NO.: I-a

PERIOD COVERED: July 1, 1983 through June 30, 1983

REPORT PERIOD: June 30, 1982 through June 30, 1983

ABSTRACT

Provisional instream minimum flow requirements were determined for the Whitefish, Stillwater and Thompson rivers. Creel census and gill netting data is presented for Lake Mary Ronan. Gill net surveys for several lakes is described and fish population estimates of the Thompson River. The size trends of mature spawning kokanee were determined for several lakes. Minimum flow recommendations were determined for 19 streams where micro-hydro developments have been proposed. Numerous stream hydraulic projects were reviewed.

OBJECTIVES

Job objectives include: 1) to determine flow and habitat requirements in selected streams in the Whitefish, Stillwater, Thompson and Swan river drainages for the purpose of establishing reservation of flows to provide minimum flow requirements for aquatic life; 2) to monitor kokanee fishery of Lake Mary Ronan by: 1) periodic creel census checks (opening day, and occasionally during winter and summer), and 2) collecting fish population data with gill nets to determine catch success, size and age and growth rates of kokanee; 3) to determine fisheries potential of lakes and streams by obtaining chemical, physical and biological parameters for the management of sport fish species; 4) to monitor size fluctuations and age of annual kokanee spawning populations in several lakes; 5) to investigate and approve stream alteration projects as required by the Montana Streambed Preservation and Lakeshore Protection Acts; 6) to establish minimum stream flow requirements for aquatic life and other mitigation measures in streams where proposed micro-hydro development permit applications have been received, and to assess potential adverse effects of fishing values on both migratory and resident trout species. Objectives were completed and presented under Accomplishments.

ACCOMPLISHMENTS

Preliminary instream flow measurements to determine minimum flows for trout and associated aquatic life were completed for the mainstem of the Whitefish, Stillwater and Thompson rivers, but time constraints prevented the collection of data for the Swan River.

Periodic winter and opening day creel censuses were conducted at Lake Mary Ronan to determine the relative success of kokanee and trout fishing. In addition, gill net sampling conducted in spring and fall provided supplemental data to provide the relative abundance of kokanee available to the angler.

The kokanee fishery appears to have rebounded after two successive year class failures of fish stocked in 1979 and 1980. The strong year class of 1981 was the predominate age class (age II+) in both the winter and summer fishery. This single year class represented over 95 percent of kokanee catch in 1983. The 1982 year class strength entering the fishery will be determined by gill net monitoring in the fall of 1983 and spring of 1984 and catch rate success during the 1984 winter and spring opening day creel census.

The fish populations of several lakes in Region 1 were sampled with gill nets to determine the status of the existing fishery. Lakes sampled during the report period include Whitefish, Bull, Meadow, Dollar and Woods lakes. In addition, fish population estimates were determined for the Little Thompson section of the Thompson River.

The size and age composition of mature spawning kokanee has been monitored annually each fall for the past several years. Fish are collected by one of several methods; beach seining in conjunction with hatchery spawn taking operations, gill netting and electrofishing. Fish samples were collected from 15 lakes in 1981. Of this number, 10 lakes are maintained totally or are supplemented by hatchery stock. Lakes successful in maintaining a thriving kokanee population include Ashley, Bitterroot, Glen, Lindbergh, Spar, Tally, Swan, Middle Thompson, and Dickey lakes and Lake Mary Ronan and Lake Blaine. Lakes having limited success include Bull, McGregor, Whitefish and Holland lakes.

Instream flow recommendations were determined for 19 headwater streams in the Kootenai and Clark Fork River drainages where proposed micro-hydro development projects have been proposed. The flow needs to maintain suitable channel width are based on a wetted perimeter-discharge relationship in stream sections at proposed diversion sites. The program uses two sets of stage-discharge data collected at medium and low flow discharges. Recommended flows were selected where the wetted perimeter begins to decrease abruptly with decreasing flows.

A total of 27 hydraulic stream projects affecting fisheries habitat were reviewed in Region 1 during the project period. A breakdown of projects submitted for review by the various government agencies is as follows: County 3, Montana Department of Highways 3, U.S. Forest Service 13, municipals 4, Montana Department of State Lands 3 and Fish, Wildlife and Parks 1. Field reviews were made of these projects along with specific written recommendations to minimize the impact on fisheries habitat.

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