MONTANA DEPARTMENT OF FISH AND GAME
FISHERIES DIVISION

JOB PROGRESS REPORT

State Montana Title Investigation of More Important Waters

Project No. F-12-R-24

Job No. II-b Title Georgetown Lake Management Survey

Period Covered: July 1, 1977 - June 30, 1978

ABSTRACT

Summer fishermen averaged 0.6 fish per hour, and ice fishermen, 2.5 fish per hour during the 1977-78 fishing season on Georgetown Lake. Rainbows comprised 71.6% of the summer catch while kokanee made up 58.1% of the winter catch.

Rainbows averaged 11.1 inches and 10.0 inches in the summer and winter respectively while kokanee averaged 11.6 inches and 9.3 inches in summer and winter. Younger fish generally predominate in the winter catch. Spawning kokanee averaged 12.0 inches while spawning brook trout averaged 10.5 inches in length. The kokanee spawners are comparable to spawners in past years but the brook trout spawners declined approximately 1.5 inches.

Age O+ and 1+ rainbows predominated in the catch. The majority of the rainbows are captured by anglers before they reach age II. Flourescent pigments were used to mark 46.8% of the rainbows planted in May, 1977, but only 11.3% of the recaptured fish were marked. All the fish showed an apparent scale planting check, indicating that they were all hatchery trout and that mark loss was substantial. Natural reproduction appears to be nominal.

Winter dissolved oxygen levels suffered only moderate declines even though maximum snow depths reached 20.0 inches and ice depths reached 26.5 inches.

BACKGROUND

Georgetown Lake is a shallow, 2,768 acre lake at an elevation of 6,400 feet, approximately 18 miles west of Anaconda. Georgetown is rated as one of the most heavily fished lakes in the state. Sub-catchable rainbows are planted each spring, while the kokanee and brook trout are self-sustaining. Rainbows are the dominant gamefish but kokanee have steadily increased in the catch in recent years.

OBJECTIVES

The objectives of the study were:

1). To determine the growth and age distribution of game fish in Georgetown Lake.

2). To provide estimates of angler effort and success and to provide length and weight information on game fish creeled.

3). To measure the contribution of hatchery trout to the fishery.

4). To measure the size of spawning kokanee and brook trout.

5). To monitor dissolved oxygen concentrations in the lake during periods of ice-cover.

All of the objectives were attained.

PROCEDURES

Individual anglers were contacted during the summer and winter fishing seasons for information on angling effort and success. Scales and otoliths were taken from rainbows and kokanee respectively along with length and weight data.

Fish were also captured in 125 foot experimental gillnets with graduated mesh sizes. Two nets (1 sinking, 1 floating) were set in Rainbow Bay on a monthly basis from June through August.

Age and length data for spawning brook trout and salmon were gathered by electro-fishing Stuart Mill Creek and the North Fork of Flint Creek with a Smith-Root, D.C. backpack shocker.

Rainbow scales were aged with the aid of a Bausch and Lomb scale projector (70x). Otoliths were aged with a Bausch and Lomb binocular microscope (30x). The otoliths were immersed in water in a petri dish painted flat black and light was directed at the otoliths at a 45-degree angle to illuminate the annuli.

Rainbows to be planted in Georgetown Lake were mass-marked at the Lewistown Hatchery. The fish were sprayed with flourescent polystyrene pigments at an air pressure of approximately 100 psi. Marked fish were detected with a Blak-Ray UVL-56 long-wave ultraviolet lamp in a box painted flat-black.

Dissolved oxygen was measured during periods of ice-cover at standardized sites on the lake with a Yellow Springs Instruments (YSI) Model 57 dissolved oxygen meter calibrated by the Winkler Method.