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MONTANA DEPARTMENT OF FISH AND GAME
FISHERIES DIVISION
JOB PROGRESS REPORT

State Montana Title Western Montana Fishery Investigations

Project No. F-12-R-19 Title Inventory of Waters of the Project Area

Job No. I-a

Period Covered June 1, 1972 to June 30, 1973

currently being run off in Helena

ABSTRACT

An estimated 12,645 fishermen fished 44,670 hours and caught 63,048 game fish during the 1972-73 Georgetown Lake winter fishing season. Kokanee continued to decrease in length and comprised nearly 30% of the harvest. The yield was nearly 9 pounds per acre.

See next page for Rock Cr

Diurnal water quality monitoring during the Hoerner-Waldorf kraft mill discharge period in May and June, 1973 showed a decrease in dissolved-oxygen when comparing a station above to those below discharge outlets. Other parameters such as temperature, turbidity, and conductivity were determined and the results presented.

Fish populations were estimated on two sections on Rock Creek, three sections on Flint Creek, two sections on the St. Regis River, and one section on the South Fork of Fish Creek.

BACKGROUND

General surveys have been conducted in Western Montana since 1957 in an effort to gather basic fishery data on all waters of the region. Much of the previously gathered information has provided a basis to evaluate areas where more emphasis is needed. This report provides additional survey information on selected streams but also concentrates on areas where more detailed data is required to provide for proper management or habitat maintenance for the fisheries resource.

OBJECTIVES

The objectives of this study are:

(1) To obtain physical, chemical, and biological information on waters in the study area.

Stream Fish Population Studies

Fish population estimates were determined using the Petersen mark and recapture technique. Fish were marked using partial fin clips. Recapture run or runs were made approximately one week after marking. Fish captured were weighed and measured to the nearest 0.01 pound and 0.1 inch, respectively. Population estimates and 80% confidence intervals were determined by computer analysis following the outline in "Procedures for Using Computer System to Compute Fish Population Statistics" by the Montana Department of Fish and Game. Scales were used for age determination in sections where age-class estimates were desired.

Population estimates were obtained from two sections on Rock Creek, three sections on Flint Creek, two sections on the St. Regis River, and one section on the South Fork of Fish Creek. The estimates for each stream are presented below.

Rock Creek

Trout population estimates on Rock Creek were obtained on the Fish and Game section (6,700 feet), approximately 13 miles upstream from the mouth, and on the Hogback section (7,200 feet) about 25 miles above the mouth.

Fish and Game Section

Rainbow trout was the dominant trout species followed by Dolly Varden and brown trout (Table 9). Several brook trout were also captured but an estimate was not possible.

Table 9. Trout population estimates of trout from the Fish and Game Section of Rock Creek in September, 1972 (80% confidence interval in parentheses)

Species	Size Group (inches)	Number Estimate	Weight Estimate (pounds)
Rainbow	3.3-11.9	1363	270
	12.0-18.2	200	238
	Total	1563 (± 243)	508 (± 68)
Brown	7.1-17.3	28	25
	Total	28 (± 10)	25 (± 9)
Dolly Varden	5.0-11.9	171	52
	12.0-26.0	235 (± 60)	38)
	Total	206 (± 60)	90 (± 25)

A breakdown by age class (Table 10) found age-group III and older trout comprising slightly over 10% of the yearling and older trout population.

Table 10. Age-group estimates of yearling and older rainbow trout in the Fish and Game Section of Rock Creek, September, 1972 (80% confidence interval in parentheses)

Age group	Number Estimate	Weight Estimate (pounds)
I	934	92
II	464	207
III and older	165	209
Total	1563 (± 243)	508 (± 68)

Although the point estimate of 1,563 rainbow trout in 1972 exceeded the estimate of 1,199 in 1971, a statistical comparison at the 80% level shows no significant change in the population (Table 11).

Table 11. Rainbow trout population estimates from the Fish and Game Section of Rock Creek September 1971 and 1972 (80% confidence interval in parentheses)

Year	Number Estimate	Weight Estimate (pounds)
1971[1/]	1199 (± 345)	555 (± 141)
1972	1563 (± 243)	508 (± 68)

1/ See Marcoux (1973)

Hogback Section

Trout population estimates were determined in September, 1972 and April, 1973 in the Hogback section (Table 12). This was the initial sampling effort for this portion of Rock Creek. Rainbow trout and Dolly Varden were the dominant species; however, no brown trout were captured which differed from that found in the Fish and Game Section. Two large Dolly Varden in excess of 7 pounds were captured in this section.

Table 12. Size group estimates of rainbow trout and Dolly Varden from the Hogback section on Rock Creek in September, 1972 and April, 1973 (80% confidence interval in parentheses)

Date	Species	Size Group (Inches)	Number Estimate	Weight Estimate
September, 1972	Rainbow trout	3.8-7.9	1095	89
		8.0-11.9	560	220
		12.0-17.9	210	233
		Total	1865 (± 321)	542 (± 133)
	Dolly Varden	8.0-27.5	167	158
		Total	167 (± 80)	158 (± 76)
April, 1973	Rainbow trout	2.3-7.9	910	67
		8.0-11.9	996	376
		12.0-17.9	203	218
		Total	2109 (± 446)	661 (± 153)
	Dolly Varden	8.0-28.0	111	141
		Total	111 (± 36)	141 (± 45)

Flint Creek

Flint Creek begins at the outlet of Georgetown Lake and flows approximately 40 miles to its confluence with the Clark Fork River. Three sections were established to determine fish populations with the primary objective of evaluating whether the stream below Philipsburg classified for D_1 classification under the Montana Water Pollution Control Act. The stream had been designated D_2 or capable of providing only a marginal fishery.

Sections were established in the vicinity of the campground approximately one mile below Georgetown Lake, another near Maxville approximately 16 miles downstream from the lake and one at New Chicago approximately two miles above the confluence with the Clark Fork.

Trout populations were considerably greater on a per 1000 foot basis in the uppermost section where rainbow and brook trout were dominant (Table 13). Brown trout and whitefish were the most abundant gamefish in both downstream stations, although whitefish were not sampled in the New Chicago section because of the large number involved.

Sampling efficiencies were low in the Maxville section due to many deep pools. However, sampling in the New Chicago section found a brown trout population that was not marginal and was comprised of several age-groups (Table 13). The results of this investigation aided in upgrading the classification of Flint Creek to D_1 water throughout its length.