

MONTANA FISH AND GAME DEPARTMENT
FISHERIES DIVISION

JOB COMPLETION REPORT
RESEARCH PROJECT SEGMENT

State of Montana Name Helicopter Mountain Lake Survey
Project No. F-32-R-1 Title Mountain Lake Survey - Bitterroot
Job No. I River Drainage
Period Covered: July 1, 1964 through June 30, 1965

ABSTRACT:

A pontoon equipped helicopter and two men were employed to survey ten remote mountain lakes in the Bitterroot River Drainage in Western Montana. Experimental gill nets were used to measure fish populations. Six of the ten lakes surveyed contained fish. Physical features, fish population, age and growth and management recommendations are included in the report.

RECOMMENDATIONS:

Fish populations were found in six of the ten lakes surveyed (Table 1). Net catches from these six lakes indicate dense populations with comparatively slow growth. Dolly Varden were the only species netted in Burnt Fork Lake. Historic records on this lake indicate good rainbow fishing. Consideration should be given to re-introducing rainbow or cutthroat into this lake on completion of road improvements scheduled for the summer of 1966.

Tenmile and Twelvemile lakes in the Lost Horse Creek drainage should be stocked with westslope cutthroat trout every third year. These lakes are accessible by short back-pack trips.

Gleason Lake in the Willow Creek drainage has an irrigation dam on its outlet. Water use causes extreme drawdowns during late summer and fall. Meetings should be scheduled with the irrigation company to see if a minimum water level, permitting over-winter fish survival, could be maintained.

Shadow Lake is located close to Legend and Spud lakes which contain good populations of westslope cutthroat trout. It is recommended that no introductions be made into Shadow Lake at this time. Fish populations sufficient to meet present day fishing pressure are also present in both Fish Lakes and Willow Lake.

This type of survey should be continued to provide fish management information in these remote areas.

OBJECTIVES:

The objective of the job is to conduct fisheries surveys on mountain lakes in the Bitterroot River Drainage inaccessible by road.

TECHNIQUES USED:

Ten lakes in two secondary tributaries of the Bitterroot River drainage were selected for survey on the basis of fishermen use as reflected by fishermen logs, warden creel census and trail access. A helicopter equipped with floats was used to transport fisheries survey equipment to the lakes. Survey data from each lake were entered on standard Montana Fish and Game lake survey forms. Sketch maps were constructed for each lake. Maps included information on shoal area, aquatic weed beds, tributary streams and approximate locations of experimental gill net sets. Lake depth information was obtained through the use of a transistorized portable sonar and plotted on the sketch map. Standard experimental monofilament gill nets were used in assessing fish populations. Net set information and catch were recorded on gill net catch forms. Data from the survey were evaluated and used to formulate a management plan for the individual lakes.

FINDINGS:

Findings for the ten mountain lakes surveyed in 1964 are summarized in Tables 1 through 4.

Table 1. Data on mountain lakes surveyed in Bitterroot Drainage 1964

Name of Lake	Location	Depth in feet	Surface acreage	Hours fished	Number of fish	Species ^{1/}
Burnt Fork	T6N R18W S 3 & 10	103	28	11	10 No fish taken	DV
Gleason	T6N R18W S 6 & 7	37	13	12		
Fish	T3N R17W S 17	12	6	12	9	Rb
Fish	T4N R23W S 9 & 16	73	37	25	62	Ct
Legend	T3N R17W S 7 & 18	24	7.7	24	2 No fish taken	Ct
Shadow	T3N R17W S 5 & 8	20	5.7	23		
Spud	T3N R17W S 17	25	8.5	12	31 No fish taken	Ct
Tenmile	T5N R23W S23	12	12.5	12	No fish taken	
Twelvemile	T4N R23W S 27	12	7.2	12	No fish taken	
Willow	T6N R18W S 17	20	5.1	24	21	Rb

^{1/}DV = Dolly Varden trout, Ct = Cutthroat trout, Rb = Rainbow trout

Table 2. Age and growth of Dolly Varden trout from mountain lake survey

Lake	Average total length in inches at annulus			
	I	II	III	IV
Burnt Fork	3.6 (9)*	6.4 (9)	9.2 (6)	10.0 (1)

*Number in parentheses denotes sample size.

Table 3. Age and growth of cutthroat trout from mountain lake survey

Lake	Average total length in inches at annulus				
	I	II	III	IV	V
Legend				13.3 (2)	
Spud	2.4 (31)*	4.6 (30)	6.9 (26)	7.6 (17)	10.3 (2)
Fish (T4N, R23W, S9, 16)	3.4 (50)	6.1 (49)	7.9 (29)	8.7 (1)	10.0 (1)

*Number in parentheses denotes sample size

Table 4. Age and growth of rainbow trout from mountain lake survey

Lake	Average total length in inches at annulus				
	I	II	III	IV	V
Willow	2.8 (19)*	6.0 (19)	8.6 (12)	10.2 (5)	
Fish (T3N R17W, S17)	3.4 (9)	6.4 (8)	8.6 (8)	11.2 (2)	

*Number in parentheses denotes sample size

Prepared by Boyd R. Opheim

Approved by Berge D. Haltn

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