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JOB COMPLETION REPORT

INVESTIGATIONS PROJECTS

State of Montana

Project No. F-7-R Work Plan No. VII Job No. VII-D

Title of Job: Distribution of Cutthroat Trout and Yellow Perch in Lower Thompson Lake.

Objectives:

To establish the distribution and seasonal variations in distribution of cutthroat trout, yellow perch and other resident fish in a trout lake contaminated with yellow perch.

Techniques Used:

Gill net sets were made in all regions of the lake and at various depths. The gill nets were 125 feet long with five sizes of mesh, of 25 feet each. The sizes were 3/4, 1, 1-1/4, 1-1/2 and 2 inches bar measure. Records were made of time of set, hours set, species caught and lengths of all fish taken.

Findings:

The work for this job was done on Lower Thompson Lake. Seventy 24-hour sets were made during the summer. The yellow perch were caught chiefly in weed beds in about 15 feet of water during the summer. There was some movement of perch into open water in August where some were captured until the study was terminated in September. The areas in which the various species of fish were captured are given in Table 1. Perch were most numerous around shoal and weed bed areas. No explanation can be given for the lack of perch in the west weed bed.

Table 1. The average number of fish captured for a 24-hour gill net set taken from 70 sets in Lower Thompson Lake from June through September, 1952.

Area	Yellow Perch	Whitefish	Suckers	Squawfish	Cutthroat Trout
Bays	4.5	6.5	3.0	1.0	
Shoals	22.3	8.2	5.0		
Weed bed (Southwest shore)		1.1	2.7	2.5	
Weed bed (Northeast shore)	17.5	5.5	1.4	1.4	
Stream mouth	17.4	3.0	2.5	1.9	0.6

The perch were captured in water 20 feet deep. No perch were found in

water below 4 ppm dissolved oxygen. The distribution of other species of fish along with the yellow perch are given in Table 2.

Table 2. The species of fish captured at the various depths of Lower Thompson Lake from June to September 1952.

Depth in feet	Species of fish
Surface to 10	Perch, sunfish, shiners, bass, squawfish
10 to 20	Perch, squawfish, whitefish
20 to 30	Whitefish, suckers
30 to 40	Suckers

Analysis and Recommendations:

There was some indication that yellow perch moved out into open water as the lake warmed up in August (Table 3). The thermocline was at 14 feet on June 16 and at 20 feet on September 4. The perch seem to stay for the most part in shoal areas, weed beds and stream mouths and in less than 20 feet of water. Insufficient number of cutthroat trout were captured by gill net to determine the areas and depths preferred. However, some cutthroat trout, eastern brook trout and kokanee were captured by angling and it was impossible to determine their vertical distribution. It is recommended that more emphasis be placed on catching cutthroat trout by gill net to determine their distribution.

Table 3. The temperatures (F.) at the various depths in Lower Thompson Lake on various dates from June to September, 1952.

Depth in feet	June			July		August	September
	16	24	28	10	21	10	4
Surface	59	61	65	70.5	71	69	65
6	59		63.5	68	69.5	65.5	63.5
12	59	60.5	60.5	65	65	64	63
14	59	60	60			63	63
16	56.5	57	57.5	60.5	60.5	63	63
17	54.5	54	55	59	59	63	63
18	52	51.5	52.5	57	56	63	63
19	49	50	51.5	54	54	62.5	63
20	48.5	49	50	53	52.5	57	63
25	45	45	45.5	47	49	53	54.5
30	42.5	42.5	43	43	43.5	45	47
40	41	41.5	41.5	41.5	42	43	44
50				41	41	40.5	42.5
60	40.5			40.5	40.5	40.5	41
70			40.25	40.25	40.25	40.25	
80					40	40.25	
90	40			40		40	
100		40	40				40.25
120							40.5

Summary:

Yellow perch were captured in shoal areas, weed beds and stream mouths in less than 20 feet of water. There was some movement of perch into open water in August. The distribution of cutthroat trout was not ascertained due to insufficient numbers being caught.

Data and Reports:

The data and reports are with the project assistant at Montana State College, Bozeman, Montana.

Prepared by John Echo Approved by _____

Date May 6, 1953