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REPORT NO. 963

FISHING RESULTS ON PORTAGE CREEK POND

FOR THE 1944 TROUT SEASON

by

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The description of this pond and the regulations governing the fishing of the same have been discussed in Report Number 920, entitled, Observations on the Waterloo Rearing Pond and Suggestions For Its Use In Fisheries Experiments, and will be referred to occasionally throughout the present text. Likewise, the data from Report No. 942 which summarized the fishing results for the first two days of the 1944 season, will also be incorporated in the present writing.

The fishing data for this report was obtained through cooperation of the anglers who used this pond. Most of them (estimate of 82% based on several field checks and comparison of records) filled in the voluntary creel blanks (see sample copy, page 11) providing a fair amount of valuable information. Only 60 blanks or roughly 10 percent of the total creel records received had to be discarded because of incomplete data. The present discussion is based on actual usable records. The total number of anglers and total catch may be estimated at approximately 18% greater than given in this report.

As the fishing regulations in force at the Portage Creek Pond were newly introduced and in an experimental stage, personnel of the Field Administration, Department of Conservation, from the Jackson District cooperated in full with the Fish Division in giving this project added attention. The area was frequently patrolled for evidence of violations and the officers in charge collected the creel blanks at regular intervals. They have reported very satisfactory observance of these regulations.

Analyses of the Creel Data from Portage Creek Pond

As had been anticipated fishing at the pond was good during the early and latter part of the season and poor during the hot periods of summer. On the two fishing days in April, a total of 80 anglers visited the pond and took 104 trout in 198 hours of fishing, representing a catch of 0.52 fish per hour (see Table 1). In May, records show that 287 anglers fished 682 hours catching 129 trout, making a calculated catch of 0.19 fish per hour. The number of fishermen using the pond began to slacken during the month of June, even though creel returns indicated that the catch per hour had somewhat improved over May. During this month a total of 122 anglers fished 230 hours, catching 85 trout, representing a catch per hour of 0.37 fish. A further reduction in fishermen frequenting the pond was evident during the remainder of the season. In July, only 26 fishermen were recorded as using the pond. These anglers took 12 trout in 43 hours of fishing (see Table 1) representing a catch per hour of 0.28. However during August even though only 44 fishermen were present, the catch per hour showed a sharp increase. These anglers took 46 trout in 69 hours of fishing, representing a catch of 0.66 fish per hour. The catch per hour for September (only four fishing days present) was comparable to that of August, being 0.56. During these four days, 15 anglers took 14 trout in 25 hours.

Table 1

Monthly Catch Per Hour of Trout on Portage Creek Pond and  
the Number and Per Cent of Anglers Recorded as Using the Pond

Month and number of fishing days	Number of fishermen	Total hours fished	Total No. of trout reported	Catch per hour	Per cent of anglers per month	Number of unsuccessful anglers
April (2)	80	198	104	0.52	14	34
May (31)	287	682	129	0.19	50	190
June (30)	122	230	85	0.37	21	63
July (31)	26	43	12	0.28	4	18
August (31)	44	69	46	0.66	7	19
September (4)	15	25	14	0.56	3	5
Total	574	1,247	390	0.31	...	329

As can be seen in Table 1, fishing was good during April and the fore- part of May and the greatest number of fishermen frequenting the pond (85 per cent for the first half of the season) was during this same period. Also, in Table 1 a definite slump in the number of anglers can be noted for the remainder of the season, even though the catch per hour remained favorable. The fluctuation in the number of fishermen and the catch per hour is thought to have been brought about by at least two factors, namely, weather and availability of other waters starting June 25.

During the early part of the season, the surface water was cool and trout inhabited this layer during feeding and consequently were available to fly fishermen. This condition changed drastically during the latter part of May when we encountered our first "hot spell" The surface water became too warm for trout and they were forced to the lower layers, out

of reach of the fly fishermen. This condition prevailed through out the summer with the exception of a few cool days in late June and July. The latter part of August and the fore part of September were unseasonably cold and the surface temperatures lowered sufficiently to allow the trout to again utilize the upper layers during feeding and to become susceptible to the artificial fly.

The number of anglers using the pond was greatly reduced after the middle of June. This was undoubtedly due to the opening of lake fishing on June 25 which afforded a greater variety of fishing and fishing waters. Also, it is possible that the hot weather during the latter part of May, bringing about poor trout fishing, may have discouraged a number of anglers for the remainder of the season.

In referring to Report No. 920, 300 of each species, brooks, browns and rainbows were planted in the fall of 1943. The creel records for the 1944 season showed that 390 of these trout were captured, composed of 74 brooks, 164 browns and 152 rainbows representing 24, 54 and 50 per cent respectively of the original planting (see Table 2 for data).

Table 2

Number of Each Species Reported Caught During the 1944 Season  
and Per Cent of Original Planting

Trout caught	Fishing Period (Months)						Total Record	Per cent of total catch	original plant (300 each sp.)
	Apr.	May	June	July	Aug.	Sept.			
Brooks	32	22	16	1	3	...	74	19	24
Browns	22	58	38	5	31	10	164	42	54*
Rainbows	50	49	31	6	12	4	152	39	50
Total	104	129	85	12	46	14	390	...	43

\*High percentage accounted for in part by fish present in stream system before the 1943 planting.

The largest recovery of brook trout was recorded during April and May, at which time 73 per cent of the total catch of this species was taken. The browns and rainbows were recovered in normal numbers throughout the season. Brown trout fishing was a little slack during the first few weeks, but improved as the season advanced. Since an unknown number of "wild" brown trout were present prior to the planting in 1943, the catch of this species was not entirely the result of the planting. The size of the brown trout taken during the season also was influenced by these resident fish as indicated by the figures which follow.

Growth and Size Range of the Portage Creek Trout

During the lapse of time from the original 1943 planting, all three species of trout showed a good growth, the brooks grew approximately three inches during this period and the browns and rainbows averaged about four inches each. The data in Table 3 gives the approximate sample size range for the three species of trout.

Table 3

Size Range of Planted and Recovered Trout  
From Portage Creek Pond

Species	Total Lengths of Trout in Inches					
	Planted Trout			Captured Trout		
	at original planting date			all summer average		
	Maximum	Minimum	Average	Maximum	Minimum	Average
Brooks	8	6.1	7.4	13	7.25	10.01
Browns	9.25	6.1	7.6	*21	7.0	11.07
Rainbows	8.5	6.25	7.3	15	8.5	10.78

\* This trout was probably a representative of a former stocking or natural reproduction as browns had been planted in this stream for a number of years prior to 1943 and are known to have spawned there successfully.

Distribution of Anglers Frequenting Portage Creek Pond

Most of the 574 fishermen using this pond lived within a thirty mile radius (see Plate 1) the larger proportion coming from the cities of Jackson and Ann Arbor, each being represented by better than 100 anglers. Presented in Table 4 is the list of cities and the number of anglers from each which were recorded as fishing at the pond during the current season. Of the 574 anglers only 495 listed the home residence and only these are presented in the table below. Most of the anglers were from areas lying east of the city of Jackson, indicating the scarcity of trout waters in this section of the state, whereas very few fishermen were recorded as living west of Jackson, and this area does have a number of fair trout streams. There were 19 anglers present from other states, the largest number coming from Ohio which was represented by 13 fishermen.

Table 4

Home Distribution of Anglers Recorded  
as Using Portage Creek Pond

Number of Anglers from each City Recorded at Pond					
Residence	Number anglers	Residence	Number anglers	Residence	Number anglers
Jackson	159	Mason	7	Dexter	1
Ann Arbor	105	Dundee	5	Coldwater	1
Mich. Center	36	Camp Waterloo	5	Ackerson Lake	1
Detroit	26	Munith	5	Albion	1
Dearborn	22	Stockbridge	3	Manchester	1
Howell	18	Ypsilanti	3	New York City	1
Grass Lake	18	Wayne	3	McComb, Ohio	1
Leslie	17	Battle Creek	3	Grand Rapids	1
Portage Lake	12	Chicago, Ill.	3	Fenton	1
Toledo, Ohio	11	Napoleon	2	Newark, Ohio	1
Saline	8	Lansing	2	Hastings	1
Chelsea	7	Marion, Ind.	2	Fairway	1
				Gillets Lake	1

Results of Draining the Pond in 1944

It was originally planned to drain Portage Creek Pond soon after the current 1944 trout season, and to make a count of the remaining trout in

order to determine the relative growth and survival of the residual stock and also, an additional check on the creel returns. This project was undertaken during the week of September 25, supervised by Robert Fortney, District Fisheries Supervisor from Hastings. Most of the water was removed from the pond on Monday and Tuesday, September 25 and 26. On September 27, attempts were made to recover the fish within the pond. The pipe log to the seining basin was opened and a net inserted to obtain the passing fish, also David Shetter and two assistants, Ora Corbett and Robert Barber applied the electric shocker to sections of the stream flowing through the pond basin. The whole project was abandoned on Friday, September 29, as impractical, and the pond was again made ready for impoundment. Many difficulties were encountered during the operation and will be enumerated briefly. First, the pipe to the seining basin was partially plugged and it required a portion of a day to remove the debris. Second, the flow of water entering the pond (no by-pass ditch is present to control this condition) was greater than could be accommodated through the seining log, hence a large pool always remained immediately above the dam and some of the water passed over the spillway. Third, the old stream bed in the pond basin was soft and unwadable, consequently it was almost impossible to use a seine or the electric shocker in this area for fish removal, as only small sections of the original bed were firm enough to traverse.

The net result of this work consisted in the removal of several thousand fish. It was estimated that 10,000 bluegills and pumpkinseeds were put over the dam and it was recorded that 500 (fingerling) bass were also removed. Other fish present in large numbers which were removed were bullheads, mud pickerel, chub suckers and dace. A total of 43 trout

was recovered, consisting of 39 browns and two of each brooks and rainbows. The average lengths for these trout were as follows: Brooks 9.75 inches, rainbows 10.6 inches, and browns 10.25 inches.

#### SUMMARY AND CONCLUSIONS

A recorded total of 574 anglers fished 1,247 hours for 390 trout, representing a catch per hour of 0.31 fish. Of the 390 trout captured records show that 43 or 11 per cent were released by the fishermen. Also, these 390 trout represent 43 per cent of the total original planting. Fishing was best during the early and latter parts of the current year as had been anticipated. Further, the largest number of fishermen using the pond was in the early part of the season, before June 25. Most of these anglers came from an area located within 30 miles of the pond.

#### RECOMMENDATIONS

1. That a planting of 300 of each species, brooks, browns and rainbows be made again in the fall of 1944. All of these fish are to be marked by the removal of the right pectoral fin and a sample (60 of each species) will be measured.

2. It is recommended that observations be made at the inlet streams during the fall of 1944 and spring of 1945 spawning seasons to determine the extent and results of natural spawning.

3. That the regulations governing the fishing in the pond be the same as those during the 1944 season and in addition a regulation requiring that creel records be filled at the pond.

4. It is recommended that the temporary signs at the pond (in use during the 1944 season) be replaced with permanent department signs. Further, that the pond and stream be posted as trout waters to discourage out of season fishing.



5. It will again be desirable to obtain a complete creel census during the opening week end of the 1945 season.

6. As soon as possible adequate provisions should be made to by-pass the water entering the pond and to eliminate competitive and predaceous species of fish now present in the Portage Creek Pond Drainage System.

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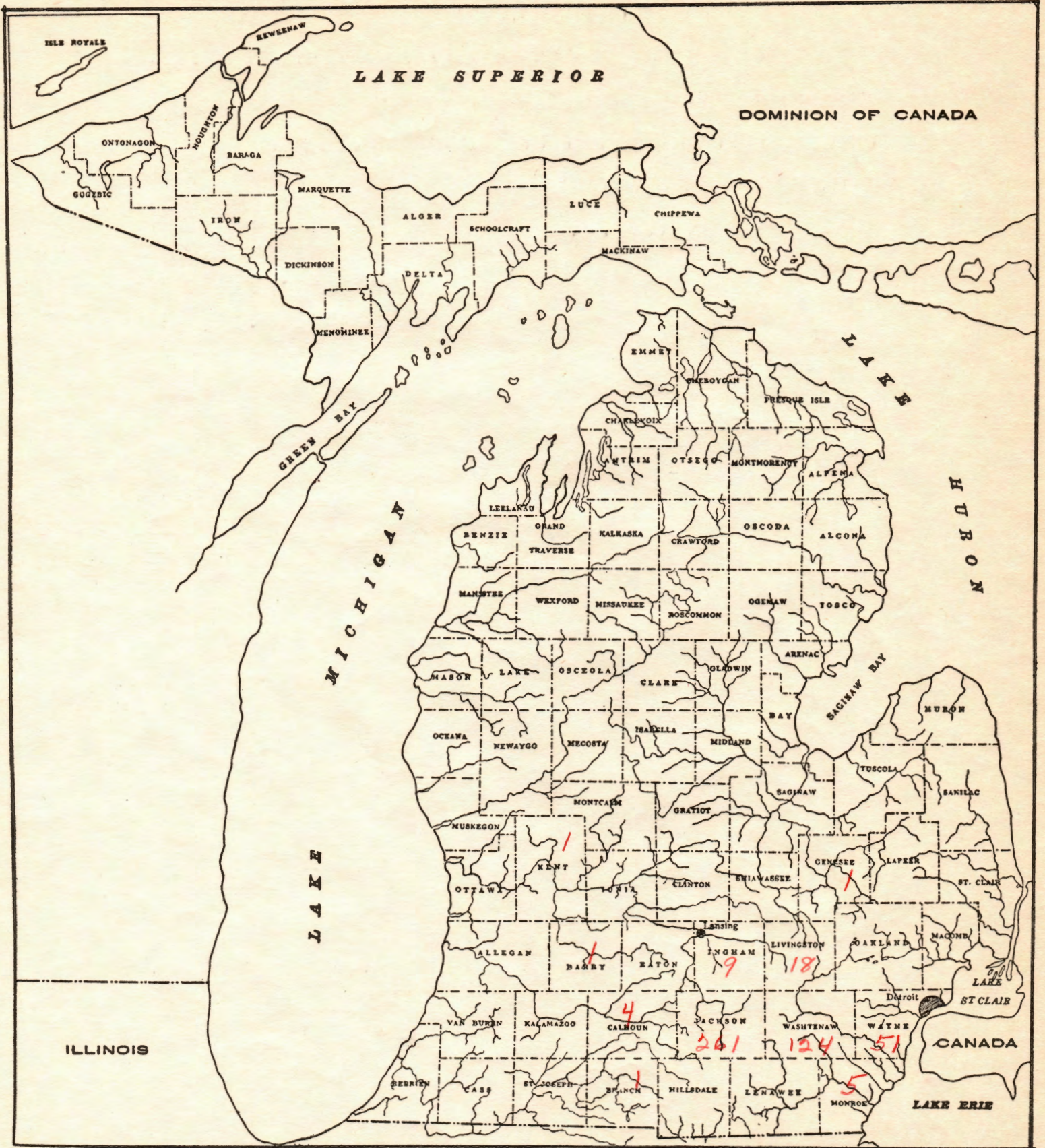
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Approved by: A. S. Hazzard

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Plate I

County and out-of-state distribution of fishermen, recorded at Portage Creek Pond



New York City, New York . . . . .	1
Chicago, Ill. . . . .	3
McComb, Ohio. . . . .	1
Marion, Ind. . . . .	2
Newark, Ohio . . . . .	1
Toledo, Ohio . . . . .	11

