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A SUMMARY OF THE NETTING OPERATIONS DURING THE SUMMER OF 1947

by

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A program of netting on 29 inland lakes was conducted in the spring and summer of 1947. Four types of netting were done. On two lakes, population estimates were made by using trap nets, marking, releasing and subsequently recapturing the marked fish. Craig Lake in Branch County and Cadillac Lake in Wexford County were investigated in this manner. ↓ Separate reports are being made for these lakes.

Burt Lake and Mullet Lake in Cheboygan County, Hubbard Lake in Alcona County, and Carp (Paradise) Lake in Emmet County were netted by commercial fishermen in the spring of the year for the removal of suckers. In taking the suckers, numbers of game fishes were caught, counted and released. In late July and early August Black, Burt and Mullet lakes in Cheboygan County were netted again using the same gear as in the spring. The results of these netting operations have been summarized by Walter Crowe, supervisor for this netting operation, in Institute Reports No. 1119 and 1130.

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↓ The crew members were R. D. Van Deusen, party leader, William Mason and Kenneth Waldron, assistants. On Cadillac Lake, Stanley Lievense and Walter Crowe assisted in getting the program started.

Green and West Lakes in Washtenaw County; Goose, Batteese and Markle lakes in Jackson County; Huntoon Lake in Oakland County; and Duck Lake in Montcalm County are lakes subject to winterkill. They all suffered a winterkill in the winter of 1944-45 at which time an adequate sample of fishes was taken and scale sampled. A check is being made on the growth rates of the fishes in these lakes. It is hoped that a preliminary report on these lakes can be made early in 1948. The time required to prepare the scales for study and then to assess the ages and tabulate the data is the limiting factor in getting the report completed.

Myers Lake in Genesee County and Woodward Lake in Ionia County had, when surveyed in 1937 and 1938, stunted populations of pan fish. A check to determine whether these conditions still existed was believed of value and these lakes were netted during the year. A forthcoming report will deal with these two lakes.

Another netting operation<sup>1</sup> was conducted on Island, Helmar and Loon Lakes in Oscoda County; Silver Lake in Grand Traverse County; Lakeville, Orchard, and Cass lakes in Oakland County; Rifle, Clear and Peach lakes in Ogemaw County; Bostwick and Reeds lakes in Kent County; Crystal Lake in Montcalm County; and Gun Lake in Barry County. In addition two waters were briefly netted, namely, the backwaters of the Au Sable River at the Mio Dam, and George Lake in Ogemaw County. The remainder of this report will deal with these lakes.

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<sup>1</sup> The members of the crews conducting the netting were: R. D. Van Deusen, party leader; Kenneth Waldron, assistant; and C. Taube, party leader, Robert Ormsby, assistant.

The primary purpose of the netting operations on these waters was to give the sportsmen and local residents an opportunity to see for themselves that adequate numbers of young-of-the-year fishes are present in the waters and can be maintained without the aid of artificial stocking. Most of the above waters have not been stocked with hatchery fishes since 1941 and thus lent themselves to the program very well. Prior to the netting of these lakes, representatives<sup>↓</sup> of the Department contacted the interested local sportsmen's groups or associations and discussed the plans for the netting in their vicinity. Help was requested from each group to assist the netting crew in carrying out their netting operations. It was impossible for the two-man crew from the Institute to carry out the entire program without some assistance from the men of the local clubs. For the most part help was generously provided.

The netting procedure was primarily seining the shoal areas for the young-of-the-year and yearling game and pan fishes. Seines varying in length from 10 to 159 feet were used. Some lakes were not adapted to shore seining and gill or fyke nets were used. In Cass Lake, Oakland County, only trap nets were used, while in Gun Lake, Barry County, both seines and trap nets were used.

In comparison with the local club membership and the number of cottagers on the lakes, the numbers of spectators witnessing the netting operations were usually very few. On several days there were no spectators at all. The largest group to witness any haul was about 125

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<sup>↓</sup>Mr. C. A. Paquin, Mr. Richard Gearhart, and Mr. Everett Warren of the Education Division and William C. Beckman of the Institute for Fisheries Research arranged for and participated in the publicity for this netting program.

persons. The lack of spectators cannot be attributed to lack of publicity because the local clubs were informed of the netting and their assistance requested, and local newspapers all ran stories on the netting.

Before presenting any of the results of the netting some of the difficulties and inadequacies of the program should be set forth. One of the biggest sources of trouble in the netting program was the difficulty of seining and securing the fish. Most of the lakes have an abundance of weed beds which are the favorite locations for the young fishes. These same weed beds make seining extremely difficult. The nets in being hauled through these beds roll up and thus do not fish, or if they do not roll up they ride over the matted vegetation and the fish escape beneath the net. In other areas deadheads and various other types of snags will hook the net and make it necessary for the seiners to unhook the net which permits the fish to escape beneath or around the ends of the net thus giving a very poor catch. The best areas for seining are the clean, clear sandy beach areas, which are practically devoid of fish life. Thus it is that the numbers of fish in the seine hauls are by no means a true picture of what fishes are present. Just because there were few fishes in the net does not mean that there were few fish present in the lake. The main value of seining in fisheries work is to determine the relative numbers of each species present and not to make accurate counts.

Another disturbing factor is the weather. On windy days, with waves rolling up on the beaches, the fishes tend to seek the shelter of quieter, deeper waters. As our netting program required strict adherence to a prearranged schedule, some difficulty was experienced because of unfavorable weather.

Most of the spectators did not remain at the lake for an adequate period. Many drove up and spent a few minutes and then drove off again. Many lost interest due to the delays between net hauls. Our crews had to sort and count the various kinds of fishes taken in each haul and record these figures. This necessary routine caused many persons to leave after witnessing just one haul. Some wrong impressions may have been gathered by their not having remained for longer periods. For example, one group of spectators arrived in a car just as our crew completed a haul of the net. There were practically no fish in the net. The group that had just arrived muttered something about no fish in the lake just as they had known and then left. The next haul the netters made brought in almost a thousand fish. Yet this one group left with the impression that no fish were present in the lake. It is hoped however that those persons who did spend the time and gave their assistance to the operation will be able to present the correct picture to these persons.

In addition to the above difficulties the major objection to this type of netting program, in the view of the author, is the lack of any really useful application of the data gathered. The results of the netting merely show that on certain days of a certain month there were so many fish taken in so many net hauls over so many square feet of shoal area in the lake seined. As has been pointed out, these areas seined are not necessarily the best area for the fishes to inhabit or are inadequately covered because of seining difficulties. In view of this, it is strongly urged that a return to the lake inventory of former years be made. An adequate publicity campaign can be conducted to inform the sportsmen in the areas where the surveys are to be conducted just as was done this summer. With the general lake inventory procedures a much

better picture of the fisheries problems can be presented to these sportsmen and in the end the results of the survey can be usefully applied in the form of a management program. It is suggested that a small portable exhibition be constructed and used by the inventory party, together with some of the reprints of articles by the staff members for distribution to interested parties. Charts on the age and growth of fishes, how to tell the age of fishes, food organism samples, some preserved fish specimens, charts of the parasites which infest some of the fishes, and other similar materials could be used. To do this suggested program would require the return to four man crews as were used in earlier years. Yet in the long<sup>run</sup> the advantages of the survey program would pay much greater dividends both to the public relations feature and the usefulness of the data gathered.

The results of the seining operations are presented in Table 1. The vast majority of the fishes taken in the seines were young-of-the-year or yearlings. From the numbers of fish taken it would appear that there has been adequate reproduction and that no stocking of warm-water fishes is necessary in these lakes at the present time. Table 2 presents the numbers of fish taken by fyke, gill and trap nets in some of the lakes.

Some scale samples were taken from the fishes caught during the summer and these have been studied. Bostwick Lake in Kent County shows a stunted population of bluegills. The bluegills averaged 4.8 inches at age III, 5.2 inches at age IV and 6.2 inches at age V, whereas the average bluegill in the state attains a length of 6.6 inches at age IV. The bluegills in Lakeville Lake in Oakland County were stunted also.

Table 1.--Numbers of fish taken by seining in the summer of 1947

Species	Lake and County											
	Clear, Ogemaw	Rifle, Ogemaw	Bostwick, Kent	Reeds, Kent	Crystal, Montcalm	Island, Oscoda	Loon, Oscoda	Mio backwaters Au Sable River	Silver, Grand Traverse	Orchard, Oakland	Lakeville, Oakland	Gun, Berry
Bluegill	2,308	3,613	2,306	20	487	56	249	8	1,865	272	1,004	147
Pike	2	...	...	...	3	...	...	7	...	1	...	1
Largemouth black bass	30	69	63	50	86	300	8	...	191	445	92	160
Smallmouth black bass	6	3	...	...	57	...	...	22	10	19	...	43
Pumpkinseed	246	378	345	323*	71*	25	73	101	250	50	276	...
Rock Bass	...	5	...	...	61	...	...	131	98	1	17	5
Black crappie	...	...	10	9	18	...	...	...	...	...	...	24
Perch	675	176	144	53	46	31	110	23	492	40	474	561
Longeared sunfish	...	...	...	**	**	...	...	...	...	...	78	...
Green sunfish	...	...	...	...	...	...	...	...	...	35	...	...
Mud pickerel	...	...	...	...	...	...	...	...	...	1	2	2
Gar pike	...	...	...	...	...	...	...	...	...	...	...	1
Number of seine hauls	11	14	20	12	19	17	3	3	8	11	6	9
Total area covered (acres)	3.2	5.9	6.8	4.4	5.1	2.0	1/4	3/4	2.0	2.0	1-1/2	1
Average number fish per haul	297	303	143	38	44	24	147	97	351	79	324	105
Number of fish per acre seined	1,021	719	422	103	163	206	1,760	389	1,453	432	1,295	944

\* Includes some longeared sunfish

\*\* Included in pumpkinseed

\*\*\* Areas are approximate; no accurate measurements were made

Table 2.--Summary of gill, fyke and trap netting in summer of 1947.

	Peach, Ogemaw	George, Ogemaw	Cass, Oakland	Gun, Barry
Bluegill	33	...	36	86
Yellow Perch	39	14	...	1
Rock Bass	13	2	3	5
Yellow pikeperch	4	5	...	1
Pike	3	...	...	...
Largemouth black bass	2	1	4	6
Smallmouth black bass	...	1	5	3
Black crappie	1	...	76	67
Pumpkinseed	18	...	...	...
Longeared sunfish	17	...	...	...
Brown trout	...	1	...	...
Brook trout	...	5	...	...
Common sucker	1	2	...	9
Yellow bullhead	2	...	...	1
Brown bullhead	...	...	2	...
Carp	...	...	286	9
Dogfish	...	...	2	...
Number of gill net sets	4	6	...	...
Number of fyke net sets	2	...	...	...
Number of trap net sets	...	...	7	5



However the other species in the lake were all average in growth. The fish in all the other lakes from which scale samples were studied were average in growth.

During the course of the netting on each lake the fish from one seining area were fin-clipped and released. Just enough of the dorsal fin was removed to insure recognition upon recapture. The fish were usually marked on Friday afternoon and recovery attempts made on Sunday. Nothing very conclusive can be drawn from the data gathered in this manner because we do not know the extent of movement of the fishes after being marked and released. They do give a rough idea of the numbers of fish present. In Clear Lake, Ogemaw County, about 39,000 square feet of shoal area were seined, and 1,052 bluegills, 100 yellow perch, 130 pumpkinseeds, 6 largemouth black bass, and 1 smallmouth black bass were caught and marked. Two days later the area was reseeded and 1,235 bluegills, 323 yellow perch, 79 pumpkinseeds, 4 largemouth black bass, 1 smallmouth black bass and 2 pike were caught. Of this number 111 bluegills, 45 pumpkinseeds and 59 yellow perch were recoveries. If a simple proportion calculation is made we find a population of 11,705 bluegills, 4,474 yellow perch and 228 pumpkinseeds inhabiting the vicinity in which the seining occurred. In a similar procedure on Bostwick Lake covering approximately the same amount of shoal area, a calculated population of bluegills was found to be 49,966. This is over four times as many bluegills for the same area, and in Bostwick Lake the bluegills were stunted. Thus it would appear that 49,000 bluegills for that area was too great for the food supply, resulting in the stunted population, if one can go by the growth rate and population estimates. Experiments

are being conducted to determine the causes of stunting and what corrective methods might be employed. When these experiments are completed we may have some answers on the stunted population problem.

The above data as gathered by the seining crews, however, indicate only the numbers of fish taken in the areas seined on the days they seined. If regular inventories had been conducted we would have had some information on food supply, vegetation and shelter, chemistries of the water, and physical data on the water in addition to the numbers and kinds of fish taken. Some of these data might have shown why one lake is better than another and might give an idea as to what could be done to improve the poorer ones. Therefore it is again urged that the work for next summer be the lake inventory rather than the strictly public relations demonstration seining.

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