

Original: Fish Division

cc: Education-Game

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INSTITUTE FOR FISHERIES RESEARCH

DIVISION OF FISHERIES

MICHIGAN DEPARTMENT OF CONSERVATION

COOPERATING WITH THE

UNIVERSITY OF MICHIGAN

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March 13, 1942

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ANN ARBOR, MICHIGAN

REPORT NO. 756

REPORT OF THE GENERAL CREEL CENSUS FOR 1940

by

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The general creel census has been conducted in Michigan for the past fourteen years. The records have been collected by the Conservation officers as an adjunct to their regular duties. The records thus obtained should afford a random sample of the fishing in all parts of the state and represent all types of inland lake and stream angling during the entire fishing season. In the 1940 census there are no records from the following counties: Allegan, Bay, Cass, Ionia, Kalamazoo, Ottawa, Saginaw, St. Clair, Sanilac, and Van Buren. In some of these counties, as Bay and Sanilac, there is a scarcity of good fishing water but in others, notably Allegan, Cass, Kalamazoo and Van Buren, there is an abundance of good fishing water which is heavily fished.

This report will follow the previous general creel census reports rather closely to facilitate any comparisons which might be made. The methods used in compilations and analyses of data are the same as in previous reports. No records from the intensive lake and stream censuses have been included in this report except where reference is made to them.

By the term fisherman-day, as used in this report, is meant the amount of time spent by the fisherman in angling before he was interviewed

by the Conservation officer. Only the legal-sized fish have been considered in this report.

The 29,477 fishermen interviewed by the officers in 1940 fished a total of 98,114.50 hours on all waters and caught 96,910 legal-sized fish at the rate of 0.99 fish per hour (Table I). This rate of catch per hour is 0.07 lower than that of 1939, 0.30 lower than that of 1938, and 0.47 lower than that of 1937. The rate of catch per hour for non-trout waters was 1.04 for 1940, which is 0.12 fish per hour lower than that of 1939; 0.37 fish per hour lower than that of 1938, and 0.64 fish per hour lower than that of 1937 (Table V). The rate of catch per hour for trout waters was 0.77 for 1940, which is 0.05 fish per hour lower than that of 1939; 0.14 fish per hour lower than that of 1938, but 0.02 fish per hour higher than that of 1937 (Table VI).

Of all the fishermen interviewed by the officers, 15.0 per cent were non-residents in 1940, a decrease of 1.2 per cent from that of 1939.

Women anglers made up 13.9 per cent of all fishermen in 1940, an increase of 2.3 per cent over 1939, an 8 per cent increase over 1938 and an increase of 6.5 per cent over 1937. The women caught fish at the rate of 0.80 fish per hour, whereas the men averaged 1.02 fish per hour. The women preferred non-trout fishing to trout fishing at the ratio of 13 to 1, whereas the men preferred non-trout to trout fishing at the ratio of 4 to 1. Preference is assumed on the basis of the relative number of returns from each class of water.

Detailed Analysis

Number of Records

During 1940 the Conservation officers obtained records from 29,477 fishermen as compared with 32,432 records taken in 1939. This decrease

in the number of records does not mean that the officers are becoming more lax in securing data because the total number of fishing licenses sold in 1940 was only 773,250 as compared with a total of 858,362 fishing licenses sold in 1939. If it is assumed that each fisherman who purchased a license fished the same number of days each of these years, it would show that the officers contacted 3.78 per cent of the fishermen in 1939 and 3.81 per cent in 1940.

The 29,477 fisherman-days reported in 1940 represented 98,114.50 hours of fishing, a decrease of 11,916.75 hours from that of 1939, an increase of 16,549.25 hours over that of 1938, and an increase of 36,472.50 hours over that of 1937.

As previously mentioned, there are ten counties from which we have no records in 1940. In addition to these counties having no records, there are sixteen counties from which less than 100 reports were submitted. Some of these counties have good fishing water and others do not have so much. These counties, with the numbers of reports sent in, are:

Gratiot	- 1	Washtenaw	- 31
Livingston	- 3	Genesee	- 33
Clinton	- 5	Berrien	- 36
Eaton	- 5	Missaukee	- 58
Calhoun	- 10	Oceana	- 71
Tuscola	- 11	Keweenaw	- 73
Kalkaska	- 12	Shiawassee	- 88
Ogemaw	- 28	Menominee	- 97

In the Report of the General Creel Census for 1939 (Institute Report No. 625) a goal of 400 records for the Conservation officers of each county

was recommended. In 1940 the officers succeeded in getting 400 records from the following twenty-four counties: Alcona, Baraga, Benzie, Branch, Charlevoix, Cheboygan, Chippewa, Gladwin, Grand Traverse, Houghton, Ingham, Iosco, Iron, Lake, Lapeer, Leelanau, Manistee, Midland, Osceola, Oscoda, Presque Isle, Roscommon, Wayne, and Wexford. Of these counties, Roscommon, in Hatchery District 5, heads the list with 5,304 records. This number of records exceeds not only that of any other county, but also that of any other Hatchery District (Table I). It has previously been suggested

Table I

Number of Fishermen, Hours Fished and Legal-sized Fish Caught for Each Hatchery District

District	Number of fishermen	Total hours fished	Number of legal-sized fish caught	Catch per hour
1	2,159	9,970.25	4,942	0.50
2	2,698	8,933.25	12,145	1.36
3	1,745	6,247.50	5,159	0.83
4	5,298	15,674.75	16,405	1.05
5	7,601	22,620.50	17,270	0.76
6	1,941	6,106.50	3,817	0.63
7	2,156	7,627.50	9,230	1.21
8	796	2,228.25	2,993	1.34
9	896	3,455.25	4,532	1.31
10	1,101	3,740.25	5,588	1.51
11	3,086	11,510.25	14,829	1.29
Total or Average	29,477	98,114.50	96,910	0.99

that a few records be taken each week by the Conservation officers and that these should be pro-rated as far as ^{is} practicable according to the fishing pressure for that time of year. The records should not all be gathered in one day from one lake because this will tend to bias the results. Rather, the records should be spread out over the entire fishing year, and on as many different waters as possible.

In 1940, according to the general creel census, 15 per cent of the fishermen were non-residents. This is a decrease of one per cent from 1939 and 0.8 per cent greater than 1938. The total number of non-resident fishermen was 4,432 as compared with 5,097 in 1939. Of these 4,432 non-resident anglers, 4,084 (92.1 per cent) preferred non-trout fishing and 348 (7.9 per cent) preferred trout fishing. The greatest concentration of non-resident anglers was in District number 9, which includes Allegan, Berrien, Branch, Cass, Hillsdale, Kalamazoo, St. Joseph, and Van Buren Counties. In this District the records show that 41.0 per cent of the fishermen were non-residents. This is probably not a true picture because of the lack of returns from Allegan, Cass, Kalamazoo and Van Buren Counties.

Table II

Number of Fishermen, Resident and Non-resident, and Percentage of Non-resident Fishermen for Each Hatchery District

District	Number of fishermen	Resident	Non-resident	Per cent non-resident fishermen
1	2,159	1,927	232	10.8
2	2,698	2,206	492	18.2
3	1,745	1,283	462	26.5
4	5,298	4,034	1,264	23.9
5	7,601	6,526	1,075	14.1
6	1,941	1,740	201	10.4
7	2,156	1,961	195	9.0
8	796	728	68	8.5
9	896	529	367	41.0
10	1,101	1,049	52	4.7
11	3,086	3,062	24	0.8
Total or Average	29,477	25,045	4,432	15.0

Trout and Non-trout Fishing, by Hatchery Districts

The largest percentage of records for trout fishing was from District 7 with 44.3 per cent, based on 2,156 records. In 1940, District 1 ranked second with 43.3 per cent, based on 2,159 records, and District 2 ranked third with 35.9 per cent, based on 2,698 records. The seven Hatchery Districts lying north of the Bay City-Muskegon line afforded 99.3 per cent of all the trout fishing in the state, as shown by the general creel census. In these seven districts, trout fishing made up 21.3 per cent of the total fishing, whereas in the other four districts it comprised only 0.6 of one per cent.

Table III

Numbers and Percentages of Fishermen Using Trout and Non-trout Waters, by Hatchery Districts

District	Trout		Non-trout	
	Number of fishermen	Per cent of fishermen	Number of fishermen	Per cent of fishermen
1	934	43.3	1,225	56.7
2	969	35.9	1,729	64.1
3	550	31.5	1,195	68.5
4	691	13.0	4,607	87.0
5	584	7.7	7,017	92.3
6	371	19.1	1,570	80.9
7	955	44.3	1,201	55.7
8	22	2.8	774	97.2
9	...	...	896	100.0
10	8	0.7	1,093	99.3
11	6	0.2	3,080	99.8
Total or Average	5,090	17.3	24,387	82.7

The largest percentage of non-trout fishing records were submitted from District 9 with 100.00 per cent, based on 896 records. District 9 was followed in order by District 11 with 99.8 per cent, based on 3,086 records, and District 10 with 99.3 per cent, based on 1,101 records.

Table III shows the percentage of trout and non-trout fishing in the various hatchery districts.

Quality of Fishing

The quality of fishing, as indicated by the catch per hour, is best in the southern part of the state. Hatchery District 2, however, has shown a better catch per hour than any of the other districts in the entire state for 1940, with the exception of District 10. There was an increase in the catch per hour in Districts 2 and 11. Districts 4, 9, and 10 remained the same as in 1939 and in all the other districts there was a decrease in the quality of the fishing. Table IV shows the catch per hour for all waters by hatchery districts for the past 5 years.

Table IV

Catch per Hour for All Waters by Hatchery Districts

District	1936	1937	1938	1939	1940
1	1.0	0.8	0.6	0.6	0.5
2	1.1	1.1	1.1	1.1	1.4
3	1.0	0.8	1.0	1.2	0.8
4	1.2	1.4	1.5	1.1	1.1
5	1.0	1.4	1.1	0.9	0.8
6	1.3	0.9	1.1	1.0	0.7
7	1.4	1.4	1.5	1.3	1.2
8	1.7	1.9	1.4	1.4	1.3
9	2.4	2.7	2.0	1.3	1.3
10	1.3	1.9	1.8	1.5	1.5
11	2.4	2.1	1.6	0.9	1.3
State average	1.4	1.5	1.3	1.1	1.0

For the state as a whole, the catch per hour has decreased by one-third during the past four years. Since the inception of the general creel census in 1927, the average catch per hour for the fourteen years has been 1.26 fish. In 1927 the catch per hour was 1.15 fish. This dropped gradually to a low of 0.88 fish per hour in 1930. Then it

increased to a high point of 1.64 fish per hour in 1934, and in 1940 it has returned to a low of 0.99 fish per hour. This indicates a cycle in the quality of fishing over a period of about 10 years. There may be fluctuations within this cycle and, as it appears at the present, the fishing in 1941 will probably be better than in 1940, although the low of 0.88 fish per hour reached in 1930 has not yet been attained. Thus there is the possibility that the fishing in 1941 will be poorer than in 1940. More data are needed, however, over a longer period of time, in order to reach sound conclusions as to the cyclic fluctuations in the quality of fishing.

The value of data, such as has been collected in the general creel census, increases as the years go by. The fluctuations in the catch per hour have been shown so far to follow some sort of cycle and the accumulated data for the individual lakes in the state gives an index as to the kinds and relative numbers of fish which are most readily taken.

Catch per Hour - Non-trout Waters, by Hatchery Districts.

The catch per hour for the non-trout waters showed an increase in Hatchery Districts 2, 7, and 11. In District 8, the catch per hour was the same as in 1939. All other hatchery districts showed a decrease in the catch per hour for non-trout waters.

Table V

Catch per Hour - Non-trout Waters by Hatchery Districts

District	1936	1937	1938	1939	1940
1	0.9	0.6	0.4	0.4	0.3
2	1.1	1.2	1.2	1.1	1.5
3	1.1	1.3	1.4	1.4	0.9
4	1.5	1.6	1.7	1.2	1.1
5	1.2	1.6	1.1	1.0	0.8
6	1.3	1.0	1.0	1.0	0.7
7	2.2	1.7	2.0	1.4	1.6
8	1.8	1.9	1.5	1.4	1.4
9	2.5	2.7	2.1	1.4	1.3
10	1.3	1.9	1.8	1.5	1.5
11	2.4	2.1	1.6	0.9	1.3
State Average	1.7	1.7	1.4	1.1	1.0

Table V shows the rate of catch per hour of non-trout fishing for each of the hatchery districts for the past five years. The non-trout fishing represents 82.7 per cent of all the angling as shown by the general census in 1940.

Catch per Hour - Trout Waters, by Hatchery Districts.

Table VI shows the catch per hour for trout waters by hatchery districts for the past five years.

Table VI

District	1936	1937	1938	1939	1940
1	1.2	1.1	0.9	0.8	0.8
2	1.2	0.9	1.1	1.2	1.1
3	0.8	0.7	0.8	1.0	0.7
4	0.7	0.7	0.8	0.7	0.6
5	0.6	0.4	0.6	0.5	0.6
6	1.3	0.7	1.2	1.0	0.4
7	0.6	0.8	0.9	1.0	0.8
8	0.2	0.4	0.4	0.2	1.2
9	0.3	0.5	0.8	0.6	...
10	1.9	0.8	1.8	1.1	0.5
11	1.5	...	...	0.1	0.2
State average	0.8	0.8	0.9	0.8	0.8

As previously mentioned, the seven hatchery districts north of the Bay City-Muskegon line afforded 99.3 per cent of the trout fishing in the state. The other four districts do not have an abundance of trout water and the number of records from these districts are limited. District 9 was the only district from which no trout fishing was reported in 1940, whereas in 1937 and 1938, District 11 was the one district from which we had no reports on trout fishing.

The catch per hour does not seem to vary in the fishing on trout waters as much as in non-trout waters. Of the last five years, the catch per hour has been the same in all but 1938, when it increased 0.1 fish per hour. The highest catch per hour was reported from District 8 with 1.2 fish, based on 22 records, and the next highest was reported from District 2 with 1.1 fish per hour, based on 969 records.

For the individual counties, the highest catch per hour was reported from Missaukee County, with one fisherman taking five trout in one and one-half hours for an average of 3.3 fish per hour. The County with the highest average, having over one hundred records, was Chippewa with a catch of 1.7 fish per hour, based on 153 records. These records are based on all fish recorded in the general census from trout waters and not the trout alone.

Number and Size of Trout - Trout Waters

The numbers and kinds of trout, with the average length in inches and the percentage of the trout catch for each of the hatchery districts is given in Table VII.

Table VII

District	Brook trout			Rainbow trout			Brown trout		
	Number	Average size	Per cent catch	Number	Average size	Per cent catch	Number	Average size	Per cent catch
1	2,457	8.8	90.7	227	9.4	8.4	26	10.3	0.9
2	3,956	8.9	97.4	70	10.9	1.7	36	9.6	0.9
3	680	9.0	47.0	593	9.7	41.0	174	9.5	12.0
4	537	8.0	46.2	544	9.6	46.7	83	10.4	7.1
5	859	8.2	59.5	109	10.0	7.5	477	10.4	33.0
6	260	8.3	72.0	85	12.3	24.6	16	11.0	4.4
7	992	8.4	32.3	930	9.0	32.5	1,005	10.6	35.2
8	59	8.6	88.1	5	11.2	7.4	2	9.0	4.5
9	...	...	...	...	...	...	...	...	...
10	3	9.0	75.0	...	...	...	1	9.0	25.0
11	1	8.0	25.0	...	...	...	3	16.2	75.0
Total or Average	9,804	8.7	69.1	2,563	9.5	18.1	1,823	10.4	12.8

From these data it is apparent that the trout catch is predominantly brook trout (69.1 per cent), followed by the rainbow trout (18.1 per cent), and the brown trout (12.8 per cent). These figures adhere rather closely to those of the 1939 general census in which the brook trout made up 72 per cent, the rainbow made up 16 per cent and the brown trout, 12 per cent of the total catch. However, in 1939 the total trout catch reported exceeded that of 1940 by 3,649 fish. The greatest percentage of brook trout was taken in Hatchery Districts 2, 1, and 6, whereas in 1939 the greatest percentages were recorded from Districts 2, 6, and 3. The greatest percentage of rainbow trout were taken in Districts 4, 3, and 6, whereas in 1939 the greatest percentages were from Hatchery Districts 4, 9, and 7. Only in Hatchery Districts 4 and 7 did the percentage of rainbow trout taken exceed that of the brook trout. The greatest percentages of brown trout were reported from Hatchery Districts 7, 5, and 3, and only in District 7 did the percentage of brown trout taken exceed that of the brook trout. The catches from Hatchery Districts 9, 10,

and 11 must be disregarded in these comparisons of percentage of catch because of the few records available.

The average length of the brook trout was 8.7 inches, an increase of 0.1 inch over the average of 1939. The rainbows averaged 9.5, a decrease of 0.4 inch from the 1939 average. Brown trout averaged 10.4 inches, or 0.2 inch shorter than in 1939. The largest average brook trout came from Districts 2, 1, and 8. The largest rainbows came from Hatchery Districts 6, 8, 2, and 5. The largest average brown trout came from Hatchery Districts 6, 7, 5, 4, and 1. Hatchery Districts 9, 10, and 11 are omitted from these comparisons because of insufficient data.

Other Fish Taken From Trout Waters

Table VIII lists the numbers and kinds of other fish taken from trout waters during 1940.

Table VIII

Other Species in Trout Waters

Rock bass	200
Yellow perch	138
Sucker	138
Smallmouth black bass	92
Walleye	62
Northern pike	58
White bass	46
Bullhead	22
Largemouth black bass	19
Bluegill	12
Redhorse	4
Chubs	4
Sunfish	2
Mullet	2
Total	799

These figures represent only those fish reported by the creel census, and probably do not present a true picture of the relative abundance of these fishes in the trout streams. Suckers and bullheads, for instance, would probably not be caught as often as would the game fish and also would probably not be kept by many trout fishermen. Suckers are often found in close association with trout in trout streams.

Composition of Catch in Non-trout Waters

As in past years, the bluegills dominated the catch from non-trout waters. The bluegills were followed in order of abundance in the creel census reports by yellow perch, rock bass, pumpkinseed (sunfish), black crappie, northern pike, smallmouth black bass, walleye, and largemouth black bass. These nine kinds of fish made up 89.5 per cent of the anglers' catch as shown by the 1940 census (Table XIII). Table IX shows the percentage of the total catch for each of these nine kinds of fish for the past six-year period, together with the percentage of total catch of six lakes on which an intensive creel census was taken during the summer of 1940.

Table IX

Percentage Composition by Species - Non-trout Waters

Species	General census						Intensive census*
	1935	1936	1937	1938	1939	1940	1940
Bluegill	42.7	44.8	44.5	44.7	41.3	32.4	57.6
Yellow perch	18.2	21.5	22.1	17.4	22.2	28.3	10.1
Rock bass	7.1	4.0	5.8	5.9	5.9	7.6	2.4
Pumpkinseed	4.5	4.7	6.0	5.6	5.6	5.4	3.2
Black crappie	6.8	5.3	5.8	3.0	3.4	5.0	13.8
Northern pike	2.8	2.8	2.7	3.2	3.1	3.6	0.4
Smallmouth bass	1.9	2.8	2.0	2.3	2.4	2.8	0.2
Walleye	2.2	2.0	2.0	2.6	2.6	2.3	Trace
Largemouth bass	3.5	3.7	2.6	2.6	2.2	2.1	6.3

* Census figures from Bear Lake, Hillsdale County; Craig Lake, Branch County; Christiana Lake, Cass County; Paw Paw Lake, Berrien County; Stearn's Bayou, Ottawa County; and Twin Lake, Oscoda County.

There is a decided drop in the percentage of total catch of bluegills in 1940 from that of 1939 (8.9 per cent) and even greater when compared with the average for the 5 years preceeding 1940 (11.2 per cent). So far as can be determined, this does not mean that the bluegill fishing in 1940 was not as good as in 1939. As previously mentioned in this paper, there were only a few creel census records submitted from the southern and southwestern parts of the state in 1940 as compared with previous years. In Institute for Fisheries Research Report No. 676 on "The Distribution of Michigan Fishes as Shown by the General Creel Census 1933-1939" it was shown in Figure 2 of that report that all of the counties in Hatchery Districts 9 and 10, the bluegill made up more than 60 per cent of the total catch. In the 1940 census, the bluegill made up more than 60 per cent of the total catch for six of the 13 counties in these two hatchery districts, while no reports were received from four of the counties and one other did not report any bluegills. However, bluegills made up 73.4 per cent of the total catch for the two hatchery districts taken as a whole. Since the percentage of bluegills in the total catch from the southwestern part of the state is about the same or higher than in other years, it seems that the marked decrease in the number of census cards from this section of the state, where the bluegill fishing is reputedly best, is probably largely responsible for the sharp decrease in the per cent of bluegills in the total catch for the state as a whole. The number of returns from Hatchery Districts 9 and 10 was only 1,997 in 1940, whereas in 1938 and 1939 it was nearly twice that figure (3,680 and 3,774 respectively). Allegan, Berrien, Cass, Kalamazoo and Van Buren Counties have some of the finest bluegill lakes in the state, and in all these counties the bluegill is the predominant fish in the creel. If it is possible, at least 400 general

census cards should be submitted from each county in the state. The records should not all be taken on one day, nor all from one lake, but rather should tend to be a random sampling of all the fishing in the county.

Composition of Catch in Non-trout Waters by Hatchery Districts

The percentage of smallmouth black bass in the catch, as indicated by the general creel census reports, is predominant over that of the largemouth black bass in all hatchery districts, with the exception of Districts 7, 9, and 10. This is probably not an accurate picture of the bass fishing. It might be reasonable to conceive of better smallmouth fishing in some certain lakes but inasmuch as our surveys indicate largemouth black bass in greater abundance than smallmouth black bass in the Lower Peninsula, we are led to believe that there has been repeated misidentification of these two species of black bass as recorded on the creel census slips.

The bluegill is by far the most abundant fish as recorded by the census takers and is followed in order by the yellow perch, rock bass, pumpkinseed sunfish, black crappie, northern pike, smallmouth black bass, walleye, and largemouth black bass. Other fishes taken in the catch were not present in sufficient numbers to warrant individual attention in this report. Table X shows the percentage composition of the catch in non-trout waters by hatchery districts for 1940, as shown by the general census.

Table X

Percentage Catch for Non-trout Waters,
by Hatchery Districts

Species	Hatchery Districts										
	1	2	3	4	5	6	7	8	9	10	11
Bluegill	6.0	1.2	23.3	10.3	31.8	3.8	68.8	76.8	81.0	67.3	32.2
Yellow perch	19.3	60.6	30.2	37.1	14.7	64.0	10.3	7.4	4.9	8.6	35.7
Rock bass	2.3	8.7	10.2	10.0	14.8	5.6	6.0	0.5	1.4	2.4	3.2
Pumpkinseed	2.4	2.1	7.7	1.7	17.2	3.3	4.0	0.3	2.2	3.7	1.8
Crappie	1.1	0.5	5.8	1.7	12.8	1.5	2.0	10.5	4.8	4.5	4.5
Northern pike	17.7	11.9	6.0	1.2	2.9	6.8	1.2	0.7	0.6	1.8	2.1
Smallmouth bass	7.6	5.0	10.6	2.9	1.3	2.8	1.2	1.0	0.1	1.0	2.9
Walleye	8.6	7.2	1.3	2.5	2.9	2.9	0.2	...	...	0.1	0.9
Largemouth bass	3.3	1.7	1.1	1.0	0.6	0.4	4.2	0.3	2.9	7.0	2.7

To follow the method set up in the General Census Report for 1939, the composition of the catch has been determined for the 1940 general census by geographical regions. These regions are the natural divisions of the state; the Upper Peninsula is the first region, the upper half of the Lower Peninsula north of a line drawn roughly from Saginaw Bay to Muskegon, the second region, and that portion of the state south of the above-mentioned line as the third region. There are two methods of comparison between these regions. First, the percentage of the total catch of each species which was taken in each of the regions. For instance, 54.6 per cent of all the bluegills were taken in the lower half of the Lower Peninsula, 44.6 per cent were taken in the upper half of the Lower Peninsula and the remainder, 0.8 of one per cent, were taken in the Upper Peninsula. The percentages for nine species are shown in Map I and Table XI. Secondly, the percentage of the anglers' catch for each of the three regions as shown in Map II and Table XII. For instance, the percentage of bluegills in the total catch of fish in the Upper Peninsula is 2.2 per cent, yellow perch 51.9 per cent, smallmouth black bass 5.6 per cent, etc., for each of the nine species of fish. These figures are shown in Map II.

From these figures it may be concluded that most of the bluegills and largemouth black bass are taken in Region III, most of the yellow perch, rock bass, pumpkinseed, black crappie, smallmouth bass and walleye are taken in Region II, and most of the northern pike taken in Region I. However, the lack of creel census reports from the southern part of the state has thrown the bulk of the fishing and numbers of fish taken into the northern part of the Lower Peninsula. The bluegill and largemouth are taken in larger numbers south of the Bay City-Muskegon line than in other parts of the state.

Table XI

Percentage of Total Catch for the State of Each of Nine Species Taken in Each Geographical Region of Michigan

Species	Region I		Region II		Region III	
	Upper Peninsula		N. half of L. P.		S. half of L. P.	
	Number	Per cent	Number	Per cent	Number	Per cent
Bluegill	220	0.8	11,813	44.6	11,447	54.6
Yellow perch	5,231	22.6	11,692	50.6	6,208	26.8
Rock bass	737	11.9	4,755	76.9	690	11.2
Pumpkinseed	216	4.9	3,586	81.8	581	13.3
Black crappie	27	0.7	2,645	64.3	1,437	35.0
Northern pike	1,322	45.4	1,137	39.0	456	15.6
Smallmouth bass	562	24.7	1,186	52.1	528	23.2
Walleye	755	40.1	988	52.5	139	7.4
Largemouth bass	205	12.1	571	33.8	921	5.2
Total or Average	9,275	12.7	38,373	52.5	25,407	34.8

Table XII

Percentage Composition of Anglers' Catch by Species Reported
in Each Geographical Region of Michigan

Species	Region I		Region II		Region III		Entire State	
	Upper Peninsula		N. half of L. P.		S. half of L. P.		Number	Per cent
	Number	Per cent	Number	Per cent	Number	Per cent		
Bluegill	220	2.2	11,813	26.9	14,447	51.8	26,480	32.4
Yellow perch	5,231	51.9	11,692	26.6	6,208	22.3	23,131	28.3
Rock bass	737	7.3	4,755	10.8	690	2.5	6,182	7.6
Pumpkinseed	216	2.1	3,586	8.2	581	2.1	4,383	5.4
Black crappie	27	0.3	2,645	6.0	1,437	5.2	4,109	5.0
Northern pike	1,322	13.1	1,137	2.6	456	1.6	2,915	3.6
Smallmouth bass	562	5.6	1,186	2.7	528	1.9	2,276	2.8
Walleye	755	7.5	988	2.3	139	0.5	1,882	2.3
Largemouth bass	205	2.0	571	1.3	921	3.3	1,697	2.1
Total or Average	9,275	92.0	38,373	87.4	25,407	91.2	73,055	89.5

Resident and Non-resident Anglers

Data showing the numbers of resident and non-resident fishermen and the catch per hour for each group is compiled by hatchery districts, as shown in Table XIII.

Table XIII

District	Resident Anglers			Non-resident Anglers		
	Fishermen			Fishermen		
	Number	Number taking no fish	Catch per hour	Number	Number taking no fish	Catch per hour
1	1,927	761	0.47	232	78	0.70
2	2,206	551	1.40	492	156	1.03
3	1,283	501	0.82	462	200	0.86
4	4,034	1,560	1.14	1,264	653	0.67
5	6,526	2,627	0.75	1,075	444	0.86
6	1,740	747	0.61	201	79	0.78
7	1,961	538	1.15	195	44	1.78
8	728	300	1.30	68	14	1.85
9	529	85	1.68	367	121	0.72
10	1,049	238	1.49	52	9	1.51
11	3,062	842	1.29	24	5	0.72
Total or Average	25,045	8,750	1.00	4,432	1,803	0.88

The resident anglers were more successful than the non-residents as shown by the numbers of anglers taking no fish. Of all resident anglers contacted during the census, 34.78 per cent were unsuccessful whereas among the non-resident anglers 40.63 per cent were "blanked".

As previously stated, 15.0 per cent of all the fishermen contacted in the general census in 1940 were non-resident anglers. This is a decrease of 1.1 per cent from that shown by the 1939 census. The percentage of non-residents, as shown by the license sales, was 23.5 in 1939 and increased to 27.9 per cent in 1940. Table XIV shows the numbers of resident and non-resident fishermen with the number of hours spent in fishing and the numbers of fish taken. The data is listed by hatchery districts.

Table XIV

District	Number of fishermen		Number of hours		Number legal fish taken	
	Resident	non-resident	Resident	Non-resident	Resident	Non-resident
1	1,927	232	9,049.25	921.00	4,297	643
2	2,206	492	7,130.75	1,801.00	9,948	1,847
3	1,283	462	4,834.00	1,413.50	3,946	1,213
4	4,034	1,264	12,510.75	3,164.00	14,283	2,122
5	6,526	1,075	19,921.75	2,698.75	14,936	2,334
6	1,740	201	5,639.25	467.25	3,453	364
7	1,961	195	6,883.25	744.25	7,902	1,328
8	728	68	2,044.25	184.00	2,653	340
9	529	367	2,116.25	1,339.00	3,564	968
10	1,049	52	3,589.50	150.50	5,361	227
11	3,062	24	11,428.25	82.00	14,770	59
Total	25,045	4,432	85,149.00	12,965.50	85,463	11,447

During the past several years the majority of the non-resident fishermen in Michigan have come from the adjoining State of Ohio. Again in 1940 the Ohioans fishing in Michigan waters far outnumber the other non-residents as shown by the general census. Records were obtained from

2,400 Ohio anglers. This represents 54.6 per cent of the total out-of-state fishing records. Indiana, Illinois, and Wisconsin follow in order, and anglers from these four states bordering Michigan made up 93.7 per cent of the non-resident fishermen contacted during the 1940 general census. Table XV lists the numbers of anglers from each of the counties in Michigan and those who came from outside the state to fish. In all, 4,393 non-resident fishermen from 26 states and the Province of Ontario are represented in the data collected.

Of the resident fishermen contacted, those from Wayne County were most numerous, followed in order by Genesee, Ingham, Kent, and Saginaw. These are the only counties represented by more than 900 fishermen in the census. Of the 83 counties in the state, only one--Cass County--had no representative in the census.

Table XV

Residence of Fishermen

Resident fishermen		Non-resident fishermen			
County	Number	County	Number	State or Province	Number
Alcona	116	Lake	152	Arizona	1
Alger	83	Lapeer	143	California	6
Allegan	70	Leelanau	278	District of Columbia	5
Alpena	232	Lenawee	174	Florida	11
Antrim	98	Livingston	26	Georgia	2
Arenac	77	Luce	254	Illinois	633
Baraga	267	Mackinac	71	Indiana	986
Barry	156	Macomb	98	Iowa	8
Bay	210	Manistee	802	Kansas	9
Benzie	271	Marquette	287	Kentucky	44
Berrien	122	Mason	191	Maryland	3
Branch	206	Mecosta	88	Minnesota	2
Calhoun	321	Menominee	82	Missouri	36
Cass	...	Midland	455	Montana	4
Charlevoix	194	Missaukee	65	New Jersey	8
Cheboygan	51	Monroe	58	New Mexico	3
Chippewa	509	Montcalm	174	New York	22
Clare	210	Montmorency	110	North Carolina	1
Clinton	136	Muskegon	311	Ohio	2,439
Crawford	135	Newaygo	147	Oklahoma	1
Delta	261	Oakland	504	Pennsylvania	72
Dickinson	200	Oceana	3	South Dakota	4
Eaton	141	Ogemaw	28	Tennessee	4
Emmet	39	Ontonagon	297	Texas	3
Genesee	1,991	Osceola	314	Virginia	3
Gladwin	93	Oscoda	61	West Virginia	16
Gogebic	166	Otsego	51	Wisconsin	103
Grand Traverse	610	Ottawa	52		
Gratiot	256	Presque Isle	206	Ontario	3
Hillsdale	165	Roscommon	622		
Houghton	509	Saginaw	903	TOTAL	4,432
Huron	101	St. Clair	51		
Ingham	1,792	St. Joseph	81		
Ionia	49	Sanilac	9		
Iosco	24	Schoolcraft	114		
Iron	505	Shiawassee	159		
Isabella	388	Tuscola	61		
Jackson	542	Van Buren	12		
Kalamazoo	184	Washtenaw	138		
Kalkaska	76	Wayne	4,325		
Kent	965	Wexford	540		
Keweenaw	19				
		TOTAL	24,796		

Male and Female Anglers

Table XVI shows the numbers of men and women anglers as well as the number of hours spent fishing, the number of fish taken and the catch per hour for each group in each hatchery district.

Table XVI
Comparison of Male and Female Anglers for All Waters
by Hatchery Districts

District	No. of anglers		No. of hours fished		Legal fish taken		Catch per hour	
	Male	Female	Male	Female	Male	Female	Male	Female
1	2,065	94	9,558.00	411.75	4,841	101	0.51	0.25
2	2,419	279	8,001.75	931.50	10,948	1,197	1.37	1.29
3	1,496	223	5,447.25	698.00	4,853	474	0.89	0.68
4	4,526	770	13,629.00	2,044.75	14,957	1,448	1.10	0.71
5	6,244	1,359	19,305.25	3,315.25	15,059	2,211	0.78	0.67
6	1,470	210	4,415.00	644.25	3,123	273	0.71	0.42
7	1,870	286	6,694.25	943.25	8,198	1,032	1.22	1.17
8	713	83	1,992.00	236.25	2,684	309	1.35	1.31
9	752	144	2,954.75	500.50	4,080	452	1.38	0.90
10	963	138	3,288.75	451.50	5,075	513	1.54	1.14
11	2,615	471	9,884.00	1,626.25	13,431	1,398	1.36	0.86
Total or Average	25,133	4,057	85,170.50	11,803.25	87,249	9,408	1.02	0.80

The women anglers made up 13.9 per cent of the total fishermen but caught only 9.7 per cent of the fish. Also, 47.15 per cent of the women fishermen failed to catch legal fish, whereas only 33.80 per cent of the men were "blanked". The catch for the women anglers on all waters was 0.2 fish per hour less than that for the men in 1939 and again in 1940. In 1938 the catch per hour was identical for both sexes.

Number of Fishermen Taking No Fish

In 1940, 35.7 per cent of the fishermen contacted by the officers took no fish. This is an increase over the 34 per cent who took no fish in 1939.

Table XVIII

Comparison of Fishing for 6 Years as Shown by the
General Creel Census

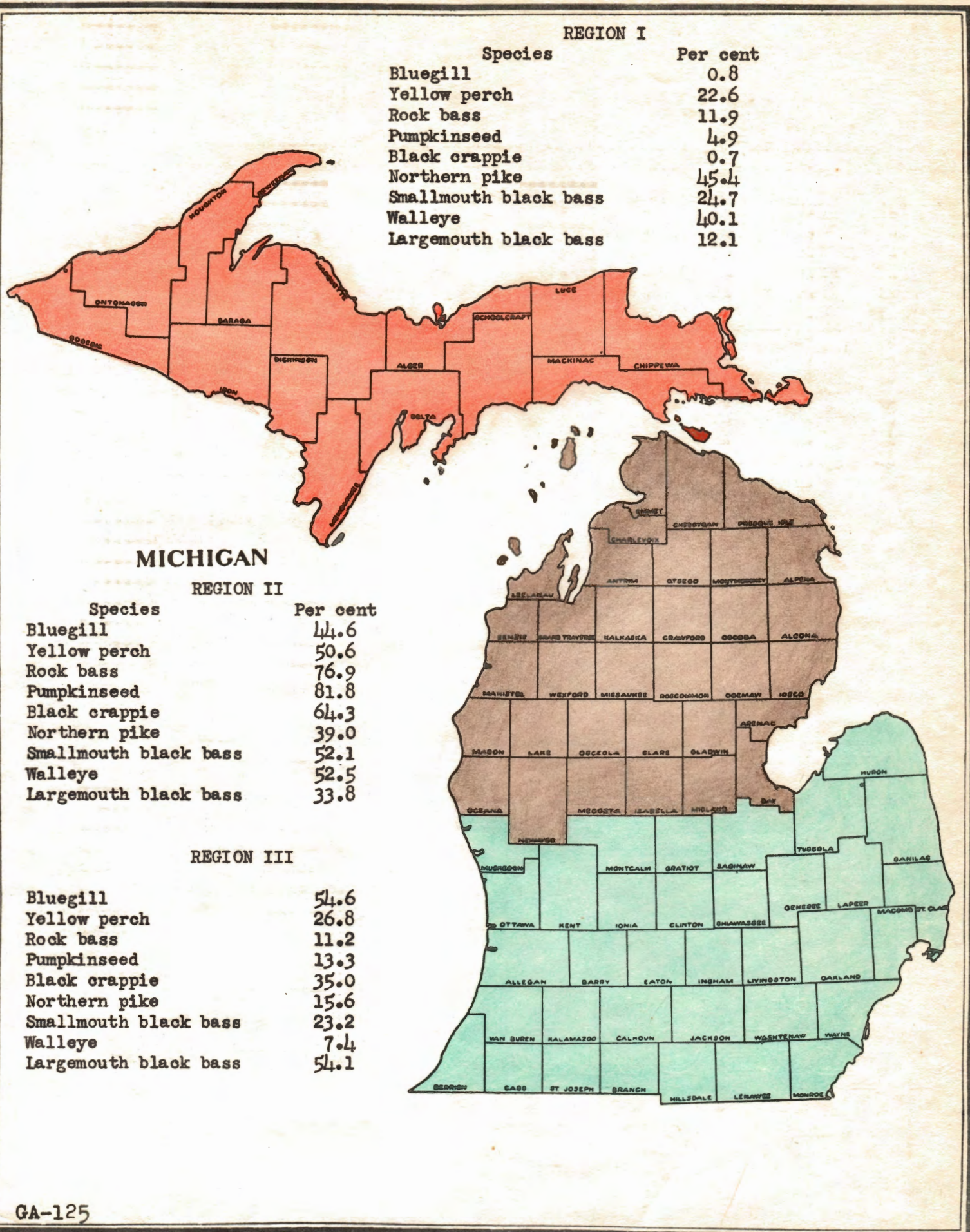
	1935	1936	1937	1938	1939	1940
1. Catch per hour						
All waters	1.5	1.4	1.5	1.3	1.1	1.0
Resident--all waters	1.6	1.4	1.5	1.3	1.1	1.0
Non-resident--all waters	1.4	1.2	1.1	1.1	0.9	0.9
Male anglers--all waters	1.5	1.4	1.5	1.3	1.1	1.0
Female anglers--all waters	1.4	1.4	1.3	1.3	0.9	0.8
Trout waters	0.8	0.8	0.8	0.9	0.8	0.8
Resident--trout waters	0.8	0.8	0.8	0.9	0.8	0.8
Non-resident--trout waters	1.1	0.5	0.6	0.7	0.7	0.5
Male anglers--trout waters	0.9	0.8	0.8	0.9	0.8	0.8
Female anglers--trout waters	0.5	0.5	0.5	0.5	0.4	0.3
Non-trout waters	1.9	1.7	1.7	1.4	1.1	1.0
Resident--non-trout waters	2.0	1.7	1.8	1.5	1.1	1.1
Non-resident--non-trout waters	1.4	1.4	1.2	1.1	1.0	0.9
Male anglers--non-trout waters	1.9	1.7	1.7	1.4	1.1	1.1
Female anglers--non-trout waters	1.7	1.6	1.4	1.4	0.9	0.8
2. Percentage of all fishermen represented by non-residents	13.9	17.4	17.2	14.2	16.2	15.1
3. Percentage of trout fishermen represented by non-residents	9.0	8.5	7.0	6.0	7.0	6.9
4. Percentage of non-trout fishermen represented by non-residents	14.0	20.0	20.0	17.0	18.0	16.7
5. Percentage of all fishermen represented by female anglers	6.0	7.0	7.5	6.0	11.6	13.9
6. Percentage of trout fishermen represented by female anglers	4.5	4.0	4.0	3.0	4.0	5.8
7. Percentage of non-trout fishermen represented by female anglers	7.0	8.0	9.0	7.0	13.0	15.7
8. Percentage of fishermen taking no fish--all waters	...	...	...	31.0	34.0	35.7
9. Percentage of fishermen taking no fish--trout waters	...	...	...	34.0	33.0	34.8
10. Percentage of fishermen taking no fish--non-trout waters	...	...	...	30.0	34.0	36.1
11. Average size of fish caught:						
Bluegills	7.4	7.4	7.5	7.5	7.5	7.5
Yellow perch	8.1	8.0	8.2	8.0	8.1	8.5
Northern pike	21.4	19.7	20.6	20.3	20.6	21.1
Smallmouth black bass	13.0	13.0	12.7	12.8	13.0	13.3
Largemouth black bass	14.0	13.2	13.0	13.1	12.8	13.2
Brook trout	8.6	8.6	8.3	8.7	8.6	8.7
Rainbow trout	12.1	9.7	10.5	10.3	10.0	9.5
Brown trout	10.0	10.4	10.5	10.4	10.6	10.4

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Report approved by: A. S. Hazzard

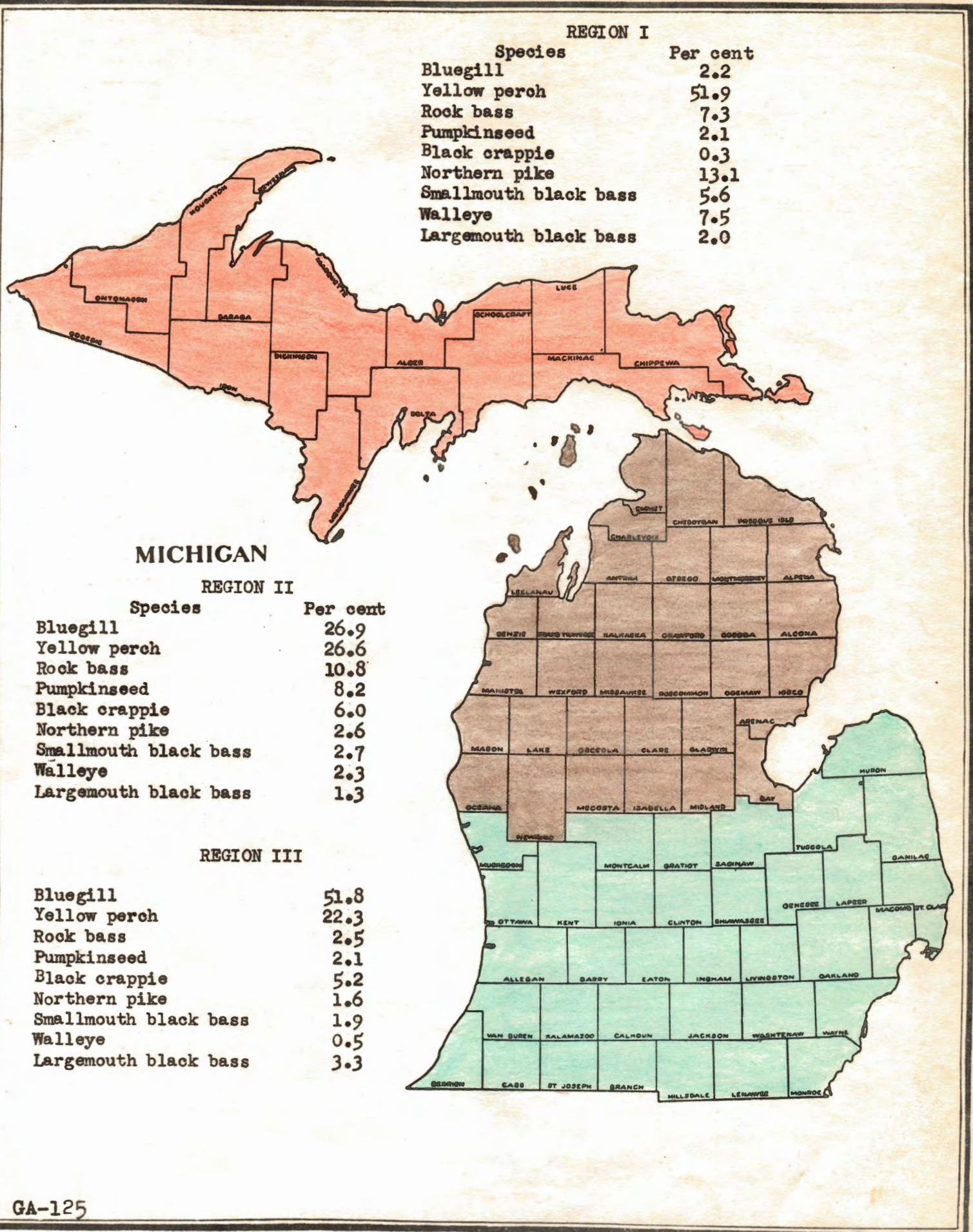
By Louis A. Krumholz

Report typed by: R. Bauch



GA-125

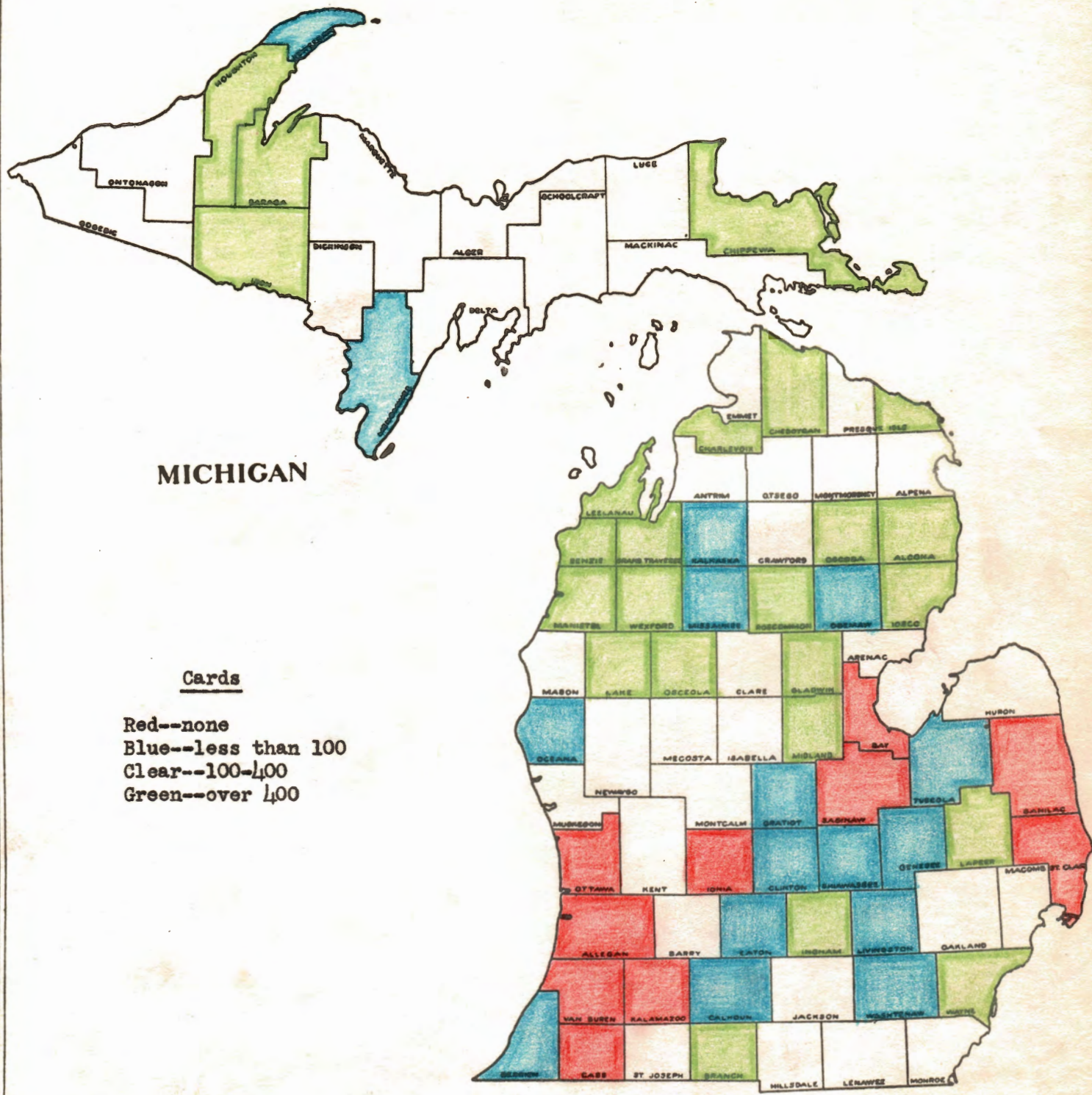
Map I. Percentage of total catch of each species taken in each geographical region of Michigan



GA-125

Map II. Percentage of each species in the total catch of each geographical region of Michigan





GA-125

Map IIIa. The number of general creel census records returns by Counties during 1940.

APPENDIX 4

Comparison of the quality of fishing as shown by the
 general creel census
 for the thirteen-year period--1928 through 1940

Year	Catch per hour		
	All waters	Trout waters	Non-trout waters
1928	1.09	1.17	1.05
1929	0.96	1.17	0.88
1930	0.88	0.93	0.85
1931	0.91	0.97	0.88
1932	1.26	1.10	1.32
1933	0.97	0.68	1.28
1934	1.73	0.79	1.80
1935	1.58	0.80	1.85
1936	1.40	0.79	1.66
1937	1.46	0.76	1.68
1938	1.29	0.91	1.41
1939	1.06	0.83	1.12
1940	0.99	0.78	1.04
Average	1.19	0.90	1.30

APPENDIX 5

Data for 1940 general creel census
for all fishermen--all waters
by districts and counties

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#1					
Baraga	455	150	2,868.00	994	0.35
Gogebic	339	139	1,427.50	780	0.55
Houghton	479	229	1,660.50	955	0.58
Iron	576	216	2,614.25	1,423	0.54
Keweenaw	73	24	327.50	324	0.99
Ontonagon	237	81	1,072.50	466	0.43
Total	2,159	839	9,970.25	4,942	0.50
#2					
Alger	157	61	653.25	643	0.98
Chippewa	946	108	2,700.50	5,516	2.04
Delta	279	116	744.25	986	1.32
Dickinson	121	48	410.75	350	0.85
Luce	391	90	1,538.75	2,109	1.37
Mackinac	273	90	858.00	987	1.15
Marquette	255	73	1,240.00	841	0.68
Menominee	97	50	292.50	180	0.62
Schoolcraft	179	71	495.25	533	1.08
Total	2,698	707	8,933.25	12,145	1.36
#3					
Antrim	236	122	1,094.00	491	0.45
Charlevoix	494	97	1,855.50	2,775	1.50
Cheboygan	558	317	1,595.75	650	0.41
Emmet	157	34	457.00	523	1.14
Otsego	117	44	587.50	349	0.59
Presque Isle	183	87	657.75	371	0.56
Total	1,745	701	6,247.50	5,159	0.83
#4					
Benzie	1,361	686	4,195.50	5,546	1.32
Grand Traverse	460	189	1,284.50	890	0.69
Kalkaska	12	9	20.00	20	1.00
Leelanau	936	331	2,248.25	3,299	1.47
Manistee	1,381	473	4,746.50	4,278	0.90
Missaukee	58	18	133.25	115	0.86
Wexford	1,090	497	3,046.75	2,257	0.74
Total	5,298	2,213	15,674.75	16,405	1.05

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#5					
Bay	...	...	...	...	...
Crawford	347	118	1,344.25	764	0.57
Gladwin	548	338	1,771.75	937	0.53
Midland	443	168	1,227.50	1,607	1.31
Montmorency	234	78	1,036.00	595	0.57
Ogemaw	28	16	82.00	128	1.56
Oscoda	697	171	2,803.25	2,914	1.04
Roscommon	5,304	2,122	14,455.75	10,245	0.71
Total	7,601	3,011	22,620.50	17,270	0.76
#6					
Alcona	615	260	1,627.00	1,190	0.73
Alpena	121	83	485.00	85	0.18
Arenac	238	101	870.50	451	0.52
Iosco	420	204	1,153.00	705	0.61
Presque Isle	547	228	1,971.00	1,386	0.70
Total	1,941	876	6,106.50	3,817	0.63
#7					
Clare	280	76	997.50	1,348	1.35
Isabella	259	79	1,002.00	768	0.77
Lake	625	164	2,535.25	3,071	1.21
Mason	112	33	399.00	512	1.28
Mecosta	168	51	378.75	721	1.90
Newaygo	157	46	499.00	594	1.19
Oceana	71	5	269.25	351	1.30
Osceola	484	128	1,547.00	1,865	1.21
Total	2,156	582	7,627.75	9,230	1.21
#8					
Clinton	5	5	14.50	...	...
Gratiot	1	...	3.00	3	1.00
Kent	379	185	906.25	811	0.89
Montcalm	116	61	453.00	407	0.90
Muskegon	295	63	851.50	1,772	2.08
Total	796	314	2,228.25	2,993	1.34
No fishing reported from Ionia and Ottawa Counties					
#9					
Berrien	36	...	269.00	205	0.76
Branch	498	154	1,832.50	1,926	1.05
Hillsdale	177	37	686.25	1,205	1.76
St. Joseph	185	15	667.50	1,196	1.79
Total	896	206	3,455.25	4,532	1.31
No fishing reported from Allegan, Cass, Kalamazoo and Van Buren Counties.					

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#10					
Barry	323	29	1,004.75	2,029	2.02
Calhoun	10	3	41.00	11	0.27
Eaton	5	2	18.50	8	0.43
Ingham	478	153	1,702.50	1,158	0.68
Jackson	285	60	973.50	2,382	2.45
Total	1,101	247	3,740.25	5,588	1.51
#11					
Genesee	33	4	110.50	171	1.55
Huron	375	16	1,905.50	4,840	2.54
Lapeer	582	128	2,094.00	2,287	1.09
Lenawee	214	55	1,001.25	485	0.48
Livingston	3	...	8.00	11	1.38
Macomb	127	22	411.50	529	1.29
Monroe	103	50	363.25	262	0.72
Oakland	324	42	1,091.00	2,569	2.35
Shiawassee	88	8	358.50	798	2.23
Tuscola	11	1	63.00	47	0.75
Washtenaw	31	6	138.50	266	1.92
Wayne	1,195	515	3,965.25	2,564	0.65
Total	3,086	847	11,510.25	14,829	1.29
No fishing reported from Saginaw, St. Clair and Sanilac Counties.					
State Totals	29,477	10,543	98,114.50	96,910	0.99

APPENDIX 6

Data from 1940 general creel census for all fishermen--trout waters
by districts and counties

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#1					
Baraga	92	16	365.00	364	1.00
Gogebic	106	50	391.50	284	0.73
Houghton	280	124	929.75	709	0.76
Iron	241	88	1,136.75	792	0.70
Keweenaw	65	23	243.00	294	1.21
Ontonagon	150	32	662.00	373	0.56
Total	934	333	3,728.00	2,816	0.76
#2					
Alger	126	50	477.75	549	1.15
Chippewa	153	21	550.50	910	1.65
Delta	106	40	291.00	264	0.91
Dickinson	61	25	242.75	171	0.70
Luce	163	26	718.75	1,048	1.46
Mackinac	53	15	178.25	172	0.96
Marquette	153	48	760.25	513	0.67
Menominee	86	43	252.50	171	0.68
Schoolcraft	68	12	262.25	389	1.48
Total	969	280	3,734.00	4,187	1.12
#3					
Antrim	10	...	46.50	67	1.44
Charlevoix	90	8	455.50	637	1.40
Cheboygan	246	130	861.75	340	0.39
Emmet	26	4	65.00	88	1.35
Otsego	108	39	557.50	328	0.59
Presque Isle	70	34	262.00	157	0.62
Total	550	215	2,248.25	1,617	0.72
#4					
Benzie	211	114	755.50	247	0.33
Grand Traverse	110	30	272.75	212	0.78
Kalkaska	2	...	7.00	19	2.71
Leelanau	88	25	231.75	199	0.86
Manistee	168	46	592.00	392	0.66
Missaukee	1	...	1.50	5	3.33
Wexford	111	40	450.50	204	0.45
Total	691	255	2,311.00	1,278	0.55

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#5					
Bay	...	...	...	...	...
Crawford	151	35	788.75	584	0.74
Gladwin	76	43	268.25	157	0.59
Midland	...	...	...	...	...
Montmorency	81	23	309.25	315	1.02
Ogemaw	6	5	14.50	1	0.07
Oscoda	265	116	986.75	424	0.43
Roscommon	5	1	23.00	42	1.83
Total	584	223	2,390.50	1,523	0.64
#6					
Alcona	107	52	368.00	173	0.47
Alpena	...	...	...	...	...
Arenac	218	100	756.00	291	0.38
Iosco	29	14	94.00	52	0.55
Presque Isle	17	15	56.00	2	0.04
Total	371	181	1,274.00	518	0.41
#7					
Clare	114	46	428.00	268	0.63
Isabella	11	5	53.00	12	0.23
Lake	456	146	1,937.50	1,367	0.71
Mason	63	16	238.75	216	0.90
Mecosta	4	1	11.00	3	0.27
Newaygo	98	32	317.00	336	1.06
Oceana	71	5	269.25	351	1.30
Osceola	138	41	439.25	420	0.96
Total	955	292	3,693.75	2,973	0.80
#8					
Montcalm	2	2	3.50	...	...
Muskegon	20	2	54.25	67	1.24
Total	22	4	57.75	67	1.16
No trout fishing reported from Clinton, Gratiot, Ionia, Kent and Ottawa Counties.					
#9					
No trout fishing reported from Allegan, Berrien, Branch, Cass, Hillsdale, Kalamazoo, St. Joseph and Van Buren Counties.					
#10					
Ingham	1	1	1.75	...	...
Jackson	7	5	7.50	4	0.53
Total	8	6	9.25	4	0.46
No trout fishing reported from Barry, Calhoun, and Eaton Counties.					

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#11 Oakland	6	4	18.00	4	0.22
No trout fishing reported from Genesee, Huron, Lapeer, Lenawee, Livingston, Macomb, Monroe, Saginaw, St. Clair, Sanilac, Shiawassee, Tuscola, Washtenaw, and Wayne Counties.					
State Totals	5,090	1,793	19,464.50	14,987	0.77

APPENDIX 7

Data from 1940 General Creel Census for resident fishermen--trout waters
by districts and counties.

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#1					
Baraga	74	13	288.50	302	1.05
Gogebic	88	44	302.50	238	0.79
Houghton	261	119	874.75	644	0.74
Iron	216	79	1,020.75	705	0.69
Keweenaw	65	23	243.00	294	1.21
Ontonagon	149	32	654.50	359	0.55
Total	853	310	3,384.00	2,542	0.75
#2					
Alger	97	29	375.25	523	1.39
Chippewa	153	21	550.50	910	1.65
Delta	105	39	282.00	264	0.94
Dickinson	60	24	238.75	171	0.72
Luce	148	24	672.25	1,003	1.49
Mackinac	53	15	178.25	172	0.96
Marquette	148	47	712.25	490	0.69
Menominee	86	43	252.50	171	0.68
Schoolcraft	63	7	254.25	389	1.53
Total	913	249	3,516.00	4,093	1.16
#3					
Antrim	6	...	30.00	37	1.23
Charlevoix	84	6	437.50	613	1.40
Cheboygan	162	77	546.25	241	0.44
Emmet	26	4	65.00	88	1.35
Otsego	99	35	502.50	316	0.63
Presque Isle	69	34	258.00	150	0.58
Total	446	156	1,839.25	1,445	0.79
#4					
Benzie	183	94	660.00	217	0.33
Grand Traverse	105	27	258.75	205	0.79
Kalkaska	2	...	7.00	19	2.71
Leelanau	88	25	231.75	199	0.86
Manistee	158	43	552.00	362	0.66
Missaukee	1	...	1.50	5	3.33
Wexford	109	40	445.50	202	0.45
Total	646	229	2,156.50	1,209	0.56

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#5					
Bay	...	...	...	...	...
Crawford	149	34	777.75	583	0.75
Gladwin	76	43	268.25	157	0.59
Midland	...	...	...	...	...
Montmorency	76	21	270.25	309	1.14
Ogemaw	6	5	14.50	1	0.07
Oscoda	241	107	884.25	389	0.44
Roscommon	4	0	22.00	42	1.91
Total	552	210	2,237.00	1,481	0.66
#6					
Alcona	104	49	356.00	173	0.49
Alpena	...	...	...	...	...
Arenac	215	98	746.25	290	0.39
Iosco	29	14	94.00	52	0.55
Presque Isle	17	15	56.00	2	0.04
Total	365	176	1,252.25	517	0.41
#7					
Clare	113	45	423.00	268	0.63
Isabella	11	5	53.00	12	0.23
Lake	437	141	1,835.00	1,332	0.73
Mason	63	16	238.75	216	0.90
Mecosta	4	1	11.00	3	0.27
Newaygo	94	31	303.00	328	1.08
Oceana	71	5	269.25	351	1.30
Osceola	138	41	439.25	420	0.96
Total	931	285	3,572.25	2,930	0.82
#8					
Montcalm	2	2	3.50	...	...
Muskegon	20	2	54.25	67	1.24
Total	22	4	57.75	67	1.16
No resident trout fishermen reported from Clinton, Gratiot, Ionia, Kent, and Ottawa Counties.					
#9					
No resident trout fishermen reported from Allegan, Berrien, Branch, Cass, Hillsdale, Kalamazoo, St. Joseph, and Van Buren Counties.					
#10					
Ingham	1	1	1.75	...	...
Jackson	7	5	7.50	4	0.53
Total	8	6	9.25	4	0.46
No resident trout fishermen reported from Barry, Calhoun, and Eaton Counties.					

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#11 Oakland	6	4	18.00	4	0.22
No resident trout fishermen reported from Genesee, Huron, Lapeer, Lenawee, Livingston, Macomb, Monroe, Saginaw, St. Clair, Sanilac, Tuscola, Washtenaw, and Wayne Counties.					
State Totals	4,742	1,629	18,042.25	14,292	0.79

APPENDIX 8

Data from 1940 General Creel Census for non-resident fishermen--trout waters
by districts and counties

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#1					
Baraga	18	3	76.50	62	0.81
Gogebic	18	6	89.00	46	0.52
Houghton	19	5	55.00	65	1.18
Iron	25	9	116.00	87	0.75
Keweenaw	...	...	...	...	...
Ontonagon	1	...	7.50	14	1.87
Total	81	23	344.00	274	0.80
#2					
Alger	29	21	102.50	26	0.25
Delta	1	1	9.00	...	...
Dickinson	1	1	4.00	...	...
Luce	15	2	46.50	45	0.97
Marquette	5	1	48.00	23	0.48
Schoolcraft	5	5	8.00	...	...
Total	56	31	218.00	94	0.43
No non-resident trout fishermen reported from Chippewa, Mackinac, and Menominee Counties.					
#3					
Antrim	4	...	16.50	30	1.82
Charlevoix	6	2	18.00	24	1.33
Cheboygan	84	53	315.50	99	0.31
Emmet	...	...	...	...	...
Otsego	9	4	55.00	12	0.22
Presque Isle	1	...	4.00	7	1.75
Total	104	59	409.00	172	0.42
#4					
Benzie	28	20	95.50	30	0.31
Grand Traverse	5	3	14.00	7	0.50
Manistee	10	3	40.00	30	0.75
Wexford	2	...	5.00	2	0.40
Total	45	26	154.50	69	0.45
No non-resident trout fishermen reported from Kalkaska, Leelanau and Missaukee Counties.					
#5					
Crawford	2	1	11.00	1	0.09
Montmorency	5	2	39.00	6	0.15
Oscoda	24	9	102.50	35	0.34
Roscommon	1	1	1.00	...	...
Total	32	13	153.50	42	0.27
No non-resident trout fishermen reported from Bay, Gladwin, Midland, and Ogemaw Counties.					

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#6					
Alcona	3	3	12.00	...	...
Arenac	3	2	9.75	1	0.10
Total	6	5	21.75	1	0.05
No non-resident trout fishermen reported from Alpena, Iosco, and Presque Isle (east of R. 4 E.) Counties.					
#7					
Clare	1	1	5.00	...	...
Lake	19	5	102.50	35	0.34
Newaygo	4	1	14.00	8	0.57
Total	24	7	121.50	43	0.35
No non-resident trout fishermen reported from Isabella, Mason, Mecosta, Oceana, and Osceola Counties.					
#8					
No non-resident trout fishermen reported from Clinton, Gratiot, Ionia, Kent, Montcalm, Muskegon, and Ottawa Counties.					
#9					
No non-resident trout fishermen reported from Allegan, Berrien, Branch, Cass, Hillsdale, Kalamazoo, St. Joseph, and Van Buren Counties.					
#10					
No non-resident trout fishermen reported from Barry, Calhoun, Eaton, Ingham, and Jackson Counties.					
#11					
No non-resident trout fishermen reported from Genesee, Huron, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, Saginaw, St. Clair, Sanilac, Shiawassee, Tuscola, Washtenaw, and Wayne Counties.					
State Totals	348	164	1,422.25	695	0.49

APPENDIX 9

Data from 1940 General Creel Census for all fishermen--non-trout waters
by districts and counties.

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#1					
Baraga	363	134	2,503.00	630	0.25
Gogebic	233	89	1,036.00	496	0.48
Houghton	199	105	730.75	246	0.37
Iron	335	128	1,477.50	631	0.43
Keweenaw	8	1	84.50	30	0.36
Ontonagon	87	49	410.50	93	0.23
Total	1,225	506	6,242.25	2,126	0.34
#2					
Alger	31	11	175.50	94	0.54
Chippewa	793	87	2,150.00	4,606	2.14
Delta	173	76	453.25	722	1.59
Dickinson	60	23	168.00	179	1.07
Luce	228	64	820.00	1,061	1.29
Mackinac	220	75	679.75	815	1.20
Marquette	102	25	479.75	328	0.68
Menominee	11	7	40.00	9	0.23
Schoolcraft	111	59	233.00	144	0.62
Total	1,729	427	5,199.25	7,958	1.53
#3					
Antrim	226	122	1,047.50	424	0.40
Charlevoix	404	89	1,400.00	2,138	1.53
Cheboygan	312	187	734.00	310	0.42
Emmet	131	30	392.00	435	1.11
Otsego	9	5	30.00	21	0.70
Presque Isle	113	53	395.75	214	0.54
Total	1,195	486	3,999.25	3,542	0.89
#4					
Benzie	1,150	572	3,440.00	5,299	1.54
Grand Traverse	350	159	1,011.75	678	0.67
Kalkaska	10	9	13.00	1	0.08
Leelanau	848	306	2,016.50	3,100	1.54
Manistee	1,213	437	4,154.50	3,886	0.94
Missaukee	57	18	131.75	110	0.83
Wexford	979	457	2,596.25	2,053	0.79
Total	4,607	1,958	13,363.75	15,127	1.13

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#5					
Bay	...	...	...	...	...
Crawford	196	83	555.50	260	0.47
Gladwin	472	295	1,403.50	780	0.56
Midland	443	168	1,227.50	1,607	1.31
Montmorency	153	55	726.75	280	0.39
Ogemaw	22	11	67.50	127	1.88
Oscoda	432	55	1,816.50	2,490	1.37
Roscommon	5,299	2,121	14,432.75	10,203	0.71
Total	7,017	2,788	20,230.00	15,747	0.78
#6					
Alcona	508	208	1,259.00	1,017	0.81
Alpena	121	83	485.00	85	0.18
Arenac	20	1	114.50	160	1.40
Iosco	391	190	1,059.00	653	0.62
Presque Isle	530	213	1,915.00	1,384	0.72
Total	1,570	695	4,832.50	3,299	0.68
#7					
Clare	166	30	569.50	1,080	1.90
Isabella	248	74	949.00	756	0.80
Lake	169	18	597.75	1,704	2.85
Mason	49	17	160.25	296	1.85
Mecosta	164	50	367.75	718	1.95
Newaygo	59	14	182.00	258	1.42
Oceana	...	...	...	...	...
Osceola	346	87	1,107.75	1,445	1.30
Total	1,201	290	3,934.00	6,257	1.59
#8					
Clinton	5	5	14.50	...	...
Gratiot	1	...	3.00	3	1.00
Kent	379	185	906.25	811	0.89
Montcalm	114	59	449.50	407	0.91
Muskegon	275	61	797.25	1,705	2.14
Total	774	310	2,170.50	2,926	1.35
No non-trout fishing reported from Ionia and Ottawa Counties.					
#9					
Berrien	36	...	269.00	205	0.76
Branch	498	154	1,832.50	1,926	1.05
Hillsdale	177	37	686.25	1,205	1.76
St. Joseph	185	15	667.50	1,196	1.79
Total	896	206	3,455.25	4,532	1.31
No non-trout fishing reported from Allegan, Cass, Kalamazoo, and Van Buren Counties.					

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#10					
Barry	323	29	1,004.75	2,029	2.02
Calhoun	10	3	41.00	11	0.27
Eaton	5	2	18.50	8	0.43
Ingham	477	152	1,700.75	1,158	0.68
Jackson	278	55	966.00	2,378	2.46
Total	1,093	241	3,731.00	5,584	1.50
#11					
Genesee	33	4	110.50	171	1.55
Huron	375	16	1,905.50	4,840	2.54
Lapeer	582	128	2,094.00	2,287	1.09
Lenawee	214	55	1,001.25	485	0.48
Livingston	3	...	8.00	11	1.38
Macomb	127	22	411.50	529	1.29
Monroe	103	50	363.25	262	0.72
Oakland	318	38	1,073.00	2,565	2.39
Shiawassee	88	8	358.50	798	2.23
Tuscola	11	1	63.00	47	0.75
Washtenaw	31	6	138.50	266	1.92
Wayne	1,195	515	3,965.25	2,564	0.65
Total	3,080	843	11,492.25	14,825	1.29
No non-trout fishing was reported from Saginaw, St. Clair, and Sanilac Counties.					
State Totals	24,387	8,750	78,650.00	81,923	1.04

APPENDIX 10

Data from 1940 General Creel Census for resident fishermen--non-trout waters
by districts and counties

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#1					
Baraga	354	131	2,470.00	618	0.25
Gogebic	177	66	839.50	366	0.44
Houghton	190	99	699.25	237	0.34
Iron	259	105	1,163.50	414	0.36
Keweenaw	8	1	84.50	30	0.36
Ontonagon	86	49	408.50	90	0.22
Total	1,074	451	5,665.25	1,755	0.31
#2					
Alger	16	5	65.50	38	0.58
Chippewa	670	76	1,673.75	3,973	2.37
Delta	164	70	435.25	715	1.64
Dickinson	48	17	144.00	139	0.97
Luce	136	43	428.50	547	1.28
Mackinac	88	27	282.75	410	1.45
Marquette	82	19	380.75	261	0.69
Menominee	11	7	40.00	9	0.23
Schoolcraft	78	38	165.75	113	0.68
Total	1,293	302	3,616.25	6,205	1.72
#3					
Antrim	224	122	1,040.50	413	0.40
Charlevoix	247	51	886.00	1,389	1.57
Cheboygan	141	88	348.00	144	0.41
Emmet	115	27	349.50	401	1.15
Otsego	9	5	30.00	21	0.70
Presque Isle	101	52	340.75	133	0.39
Total	837	345	2,994.75	2,501	0.84
#4					
Benzie	712	310	2,370.75	4,742	2.00
Grand Traverse	257	129	751.25	419	0.56
Kalkaska	9	8	12.00	1	0.08
Leelanau	650	225	1,590.00	2,690	1.69
Manistee	880	269	3,171.75	3,299	1.04
Missaukee	44	13	106.75	88	0.82
Wexford	836	377	2,351.75	1,835	0.78
Total	3,388	1,331	10,354.25	13,074	1.26

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#5					
Bay	...	...	...	...	...
Crawford	136	56	399.00	183	0.46
Gladwin	458	290	1,337.50	680	0.51
Midland	438	165	1,215.00	1,604	1.32
Montmorency	135	52	645.25	241	0.37
Ogemaw	19	11	55.50	88	1.59
Oscoda	310	51	1,247.25	1,526	1.22
Roscommon	4,478	1,792	12,785.25	9,133	0.71
Total	5,974	2,417	17,684.75	13,455	0.76
#6					
Alcona	435	184	1,084.00	874	0.81
Alpena	121	83	485.00	85	0.18
Arenac	20	1	114.50	160	1.40
Iosco	359	177	990.00	595	0.60
Presque Isle	440	176	1,713.50	1,222	0.71
Total	1,375	621	4,387.00	2,936	0.67
#7					
Clare	152	22	523.50	1,063	2.03
Isabella	236	71	902.00	712	0.79
Lake	102	14	314.75	767	2.44
Mason	49	17	160.25	296	1.85
Mecosta	149	50	329.75	642	1.95
Newaygo	49	5	150.00	257	1.71
Oceana	...	...	...	...	...
Osceola	293	74	930.75	1,235	1.33
Total	1,030	253	3,311.00	4,972	1.50
#8					
Clinton	5	5	14.50	...	...
Gratiot	1	...	3.00	3	1.00
Kent	379	185	906.25	811	0.89
Montcalm	114	59	449.50	407	0.91
Muskegon	207	47	613.25	1,365	2.23
Total	706	296	1,986.50	2,586	1.30
No resident non-trout fishing reported from Ionia and Ottawa Counties.					
#9					
Berrien	36	...	269.00	205	0.76
Branch	247	39	994.50	1,613	1.62
Hillsdale	162	34	583.00	1,159	1.99
St. Joseph	84	12	269.75	587	2.18
Total	529	85	2,116.25	3,564	1.68
No resident non-trout fishing reported from Allegan, Cass, Kalamazoo, and Van Buren Counties.					

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#10					
Barry	274	22	871.75	1,809	2.08
Calhoun	10	3	41.00	11	0.27
Eaton	5	2	18.50	8	0.43
Ingham	474	150	1,683.25	1,151	0.68
Jackson	278	55	966.00	2,378	2.46
Total	1,041	232	3,580.50	5,357	1.50
#11					
Genesee	33	4	110.50	171	1.55
Huron	372	14	1,896.50	4,837	2.55
Lapeer	566	128	2,031.00	2,235	1.10
Lenawee	214	55	1,001.25	485	0.48
Livingston	3	...	8.00	11	1.38
Macomb	127	22	411.50	529	1.29
Monroe	103	50	363.25	262	0.72
Oakland	318	38	1,073.00	2,565	2.39
Shiawassee	88	8	358.50	798	2.23
Tuscola	11	1	63.00	47	0.75
Washtenaw	31	6	138.50	266	1.92
Wayne	1,190	512	3,955.25	2,560	0.65
Total	3,056	838	11,410.25	14,766	1.29
No resident non-trout fishermen reported from Saginaw, St. Clair, and Sanilac Counties.					
State Totals	20,303	7,171	67,106.75	71,171	1.06

APPENDIX 11

Data from 1940 General Creel Census for non-resident fishermen--non-trout waters
by districts and counties

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#1					
Baraga	9	3	33.00	12	0.36
Gogebic	56	23	196.50	130	0.66
Houghton	9	6	31.50	9	0.29
Iron	76	23	314.00	217	0.69
Keweenaw	...	...	...	...	...
Ontonagon	1	0	2.00	3	1.50
Total	151	55	577.00	371	0.64
#2					
Alger	15	6	110.00	56	0.51
Chippewa	123	11	476.25	633	1.33
Delta	9	6	18.00	7	0.39
Dickinson	12	6	24.00	40	1.67
Luce	92	21	391.50	514	1.31
Mackinac	132	48	397.00	405	1.02
Marquette	20	6	99.00	67	0.68
Menominee	...	...	...	...	...
Schoolcraft	33	21	67.25	31	0.46
Total	436	125	1,583.00	1,753	1.11
#3					
Antrim	2	...	7.00	11	1.57
Charlevoix	157	38	514.00	749	1.46
Cheboygan	171	99	386.00	166	0.43
Emmet	16	3	42.50	34	0.80
Otsego	...	...	...	...	...
Presque Isle	12	1	55.00	81	1.47
Total	358	141	1,004.50	1,041	1.04
#4					
Benzie	438	262	1,069.25	557	0.52
Grand Traverse	93	30	260.50	259	0.99
Kalkaska	1	1	1.00	...	...
Leelanau	198	81	426.50	410	0.96
Manistee	333	168	982.75	587	0.60
Missaukee	13	5	25.00	22	0.88
Wexford	143	80	244.50	218	0.89
Total	1,219	627	3,009.50	2,053	0.68

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#5					
Bay	...	...	...	...	...
Crawford	60	27	156.50	77	0.49
Gladwin	14	5	66.00	100	1.52
Midland	5	3	12.50	3	0.24
Montmorency	18	3	81.50	39	0.48
Ogemaw	3	...	12.00	39	3.25
Oscoda	122	4	569.25	964	1.69
Roscommon	821	329	1,647.50	1,070	0.65
Total	1,043	371	2,545.25	2,292	0.89
#6					
Alcona	73	24	175.00	143	0.82
Iosco	32	13	69.00	58	0.84
Presque Isle	90	37	201.50	162	0.80
Total	195	74	445.50	363	0.81
No non-resident non-trout fishermen reported from Alpena and Arenac Counties.					
#7					
Clare	14	8	46.00	17	0.37
Isabella	12	3	47.00	44	0.94
Lake	67	4	283.00	937	3.31
Mecosta	15	0	38.00	76	2.00
Newaygo	10	9	32.00	1	0.03
Osceola	53	13	177.00	210	1.19
Total	171	37	623.00	1,285	2.06
No non-resident non-trout fishermen reported from Mason and Oceana Counties.					
#8					
Muskegon	68	14	184.00	340	1.85
No non-resident non-trout fishermen reported from Clinton, Gratiot, Ionia, Kent, Montcalm and Ottawa Counties.					
#9					
Branch	251	115	838.00	313	0.37
Hillsdale	15	3	103.25	46	0.45
St. Joseph	101	3	397.75	609	1.53
Total	367	121	1,339.00	968	0.72
No non-resident non-trout fishermen reported from Allegan, Berrien, Cass, Kalamazoo, and Van Buren Counties.					
#10					
Barry	49	7	133.00	220	1.65
Ingham	3	2	17.50	7	0.40
Total	52	9	150.50	227	1.51
No non-resident non-trout fishermen reported from Calhoun, Eaton, and Jackson Counties.					

District and County	No. of fishermen	No. taking no fish	No. of hours fished	Legal fish taken	Catch per hour
#11					
Huron	3	2	9.00	3	0.33
Lapeer	16	...	63.00	52	0.83
Wayne	5	3	10.00	4	0.40
Total	24	5	82.00	59	0.72
No non-resident non-trout fishermen reported from Genesee, Lenawee, Livingston, Macomb, Monroe, Oakland, Saginaw, St. Clair, Sanilac, Shiawassee, Tuscola, Washtenaw, and Wayne Counties.					
State Totals	4,084	1,579	11,543.25	10,752	0.93

APPEN DIX 14

Data from 1940 General Creel Ce
average size in inche
Hatchery Districts,

nsus showing number of fish and
s for each species by
all waters combined.

Species	District #1		District #2		District #3		District #4		District #5		District #6		District #7		District #8		District #9		District #10		District #11		Total		
	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	No.	Av. size	
Largemouth bass	71	13.0	1118	13.1	40	13.9	157	13.6	99	11.9	13	11.4	267	12.6	9	11.2	129	12.0	389	11.0	394	13.1	1,716	13.2	
Smallmouth bass	184	12.8	401	13.0	382	12.7	486	13.1	214	12.1	92	12.1	83	12.1	30	13.0	6	11.2	58	13.6	434	15.0	2,370	13.2	
Bluegill	132	7.1	93	7.3	830	7.6	1,556	7.8	5,005	8.2	122	7.2	1,307	7.6	2,248	7.1	3,672	7.4	3,757	7.2	4,770	7.3	26,492	7.5	
Pumpkinseed	51	8.1	165	7.3	265	7.4	254	7.3	2,709	7.9	105	6.9	247	7.2	8	6.8	100	6.9	206	6.8	267	6.9	4,377	7.6	
Yellow perch	422	7.9	4,904	8.7	1,068	8.3	5,620	8.3	2,312	7.7	2,162	8.5	653	8.9	217	8.0	224	7.5	478	8.1	5,289	9.1	23,349	8.5	
Black crappie	23	9.5	4	12.5	204	8.5	262	9.0	2,012	7.6	47	10.6	120	9.0	307	9.3	217	8.9	251	8.8	662	8.2	4,109	8.2	
Rock bass	52	8.7	708	7.6	427	7.8	1,545	7.7	2,333	7.9	265	8.0	375	7.9	15	8.0	65	6.7	136	7.0	474	7.7	6,395	7.8	
Walleye	190	17.3	575	17.7	75	17.8	390	16.8	468	16.4	92	16.9	15	19.9	...	...	...	...	6	15.3	133	15.2	1,944	16.9
Northern pike	396	20.0	947	22.1	237	20.8	178	22.2	458	20.3	229	21.0	77	19.9	20	22.6	26	23.2	99	20.3	312	20.8	2,979	21.3	
Bullheads	4	10.5	71	9.8	16	11.8	49	8.3	104	11.0	160	8.0	19	11.6	12	8.6	20	9.0	167	6.8	423	9.1	1,045	8.9	
Sucker	70	15.3	20	12.6	20	18.0	365	13.0	100	13.7	17	13.7	87	13.7	54	17.4	3	13.3	20	12.2	162	12.6	918	13.6	
Carp	...	...	2	26.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	15.7	1,456	9.1	1,461	9.1
Whitefish	...	...	2	17.0	12	19.1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	18.8
Brook trout	2,458	8.8	3,963	8.9	680	9.0	542	8.0	859	8.2	260	8.3	993	8.4	59	8.6	...	...	3	9.0	1	8.0	9,818	8.7
Rainbow trout	228	9.4	70	10.9	606	10.1	574	9.9	109	10.0	85	12.3	931	9.0	5	11.2	...	...	...	...	...	...	2,608	9.6
Brown trout	26	10.3	36	9.6	174	9.5	90	10.3	480	10.4	16	11.0	1,005	10.6	2	9.0	...	...	1	9.0	3	16.0	1,833	10.4
Lake trout	633	18.3	3	29.0	58	19.2	7	20.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	701	18.4
Gar	...	...	...	...	...	...	2	15.0	3	19.0	...	...	...	...	...	...	28	20.2	2	20.0	2	25.0	32	20.5
Dogfish	3	13.3	3	13.3
Sheepshead	...	...	...	...	...	...	1	24.0	...	...	14	19.4	15	12.7	4	16.0	...	...	1	16.0	...	...	35	16.2
Redhorse	...	...	...	...	...	...	4	7.0	...	...	...	...	...	...	...	...	...	...	6	6.4	...	...	10	6.6
Warmouth bass	...	...	...	...	...	...	4,111	8.7	...	...	133	8.0	...	...	...	...	...	...	...	...	16	8.0	4,260	8.7
Smelt	...	...	29	9.0	18	12.1	208	11.5	...	...	5	12.4	...	...	...	...	...	...	...	...	...	...	260	11.3
Cisco	...	...	...	...	1	35.0	4	37.5	...	...	...	...	...	...	...	...	...	...	3	48.0	...	...	10	40.2
Muskellunge	2	36.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	12.0	1	12.0
Sauger	...	...	...	...	...	...	...	...	...	...	...	...	18	7.0	...	...	...	...	...	...	1	8.0	19	7.1
Shiner	...	...	...	...	46	11.9	...	...	...	...	...	...	18	9.0	1	12.0	...	...	...	...	...	...	65	13.2
White bass	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	16.00	9	16.0
Catfish	...	...	...	...	...	...	...	...	2	7.0	...	...	...	...	...	...	...	...	...	...	...	...	2	7.0
Grayling	...	...	...	...	...	...	...	...	3	7.5	...	...	...	...	...	...	...	...	...	...	...	...	3	7.5
Cutthroat trout	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	6.0
Chub	...	...	4	6.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	6.0
TOTAL	4,942		12,145		5,159		16,405		17,270		3,817		9,230		2,993		4,532		5,588		11,829		96,910		