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REPORT ON THE GENERAL CREEL CENSUS, 1936

The following comments are inserted for possible use (when modified)  
in news release:

Probably no other state has as accurate or complete a picture of its sport fishing as Michigan. For ten years Conservation Officers have been contacting fishermen over the state to obtain information regarding the angling. This general creel census represents a random sampling of the fishing and, while it does not give any indication of the complete catch, it gives a variety of helpful and interesting information.

The sampling is for all fishermen, the beginner as well as the experienced angler and is for poor fishing waters as well as for the good ones. A good fisherman would, of course, catch many more fish than the average angler and on good fishing waters the average would be higher than on the poorer waters.

Information on the 1936 fishing has just been compiled and represents 20,543 fishing days or 67,354 fishing hours and a catch of 94,186 legal-sized fish. Based on these figures, information on the 1936 fishing was as follows:

The average fisherman caught about one and a half legal-sized fish per hour for each hour he fished. If he was fishing

*see supplement attached*

on lakes, he averaged one and three-fourths fish each hour; if he was fishing for trout, he took half that number (0.8 fish per hour).

The average angler had more fish at the end of his day's fishing if he fished in southern Michigan; he had larger fish if he fished in northern Michigan.

The average length for all fish caught was eight and a half inches. Bluegills, ranking first in the catch, had an average length of seven and a half inches, and this species decidedly reduced the average size. The average size for some of the commonly caught fish, other than bluegills, was approximately: brook trout 8 1/2 inches, rainbow trout 9 3/4 inches, brown trout 10 1/2 inches, northern pike 19 3/4 inches, large-mouthed bass 13 1/4 inches, small-mouthed bass 13 inches, and perch 8 inches.

Of the trout caught, about 4 of each 5 were brook trout. The other 20 per cent was about two-thirds rainbow and one-third brown.

Non-residents and residents caught the same number of fish per hour on lakes, but the residents excelled on trout streams. In 1935 the information on trout streams was just the reverse. It is possible that the dyed-in-the-wool trout fishermen from out of state managed to come regardless of economic conditions, but that in 1936, when the depression presumably had more nearly passed, more of the less experienced trout fishermen came to Michigan and reduced the average for the group.

Non-residents showed a preference for lake fishing.

Women compared favorably with men as lake fishermen, but, as in 1935, they proved to be only about half as effective as

men in catching trout. They seemed to recognize this weakness-- at least they showed a decided preference for lake fishing. Only 4% of the stream fishermen were women; on lakes they were represented by twice that percentage.

A number of reasons can be given for the women's preference for lake fishing and for their poor showing on trout streams without even mentioning the matter of ability. Stream fishing might be compared with playing solitaire, while lake fishing, with several individuals in the boat, more nearly resembles bridge. The one kind of fishing is social, the other non-social. Women seem to prefer the company of others. Some of the better trout fishing is near or after dark, at which time most women have probably left the stream. Trout fishing, especially in rapid streams, calls for considerable careful wading and always offers the possibility of getting wet in relatively cold water. And, according to those addicted to the pipe (chiefly men), pipe smoking while fishing permits one to give more attention to trout and less to mosquitoes.

The nature of collecting and summarizing the data contained in these annual reports on the general creel census has been discussed in previous reports and is not repeated here. The 1935 data were compiled in greater detail than those for previous years. Information for 1936 has been compiled by use of the sorting and tabulating equipment of the Mathematics Department of the University (as was the information for the previous year), but some of the compilations made in 1935 have not been repeated. One addition has been made: The information in this report is summarized by hatchery districts as well as by geographical districts. Division of the state into geographical areas is undoubtedly preferable and more

informative, but a summary by hatchery districts also seems desirable, since this information may be of interest to the several district superintendents of fisheries operations.

One problem invariably enters into the compilation of the data: Two averages are obtainable for each kind of information, depending on whether a simple average or a weighted average is taken. The difficulty is well illustrated in the following example:

<u>Area</u>	<u>No. of Anglers</u>	<u>Fish Caught</u>	<u>Catch per Angler</u>
1	100	1,000	10.0
2	200	100	0.5
3	200	200	1.0
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Total	500	1,300	...
Simple average . . . . .			3.8
Weighted average . . . . .			2.6

The simple average, obtained by adding the catch per angler for the three areas and dividing by 3 is 3.8 fish per angler. The weighted average obtained by adding the fish caught and the number of anglers and dividing the one by the other gives 2.6 fish per angler. If the data are compiled by use of simple average, districts with very few returns (therefore probably unreliable) carry as much weight as districts with abundant records. A county with a dozen records carried as much weight as one with a thousand records. When a weighted average is used, counties with the most records probably carry more weight than they should. Lake County, for example, with a large number of records and with more brown trout than are probably found over the state as a whole will bring the proportion of brown trout, compared with brooks and rainbows, too high when the weighted average is used.

It has been decided that, generally, the weighted averages be used instead of simple averages and it is understood that these averages have been used except where the text indicates that the figures are for simple averages.

Comparisons with the 1935 data are made at intervals and at the conclusion of the report.

Number of Reports

Reports were submitted for 20,543 fisherman-days, covering 67,354 hours of fishing and a catch of 94,186 legal-sized fish. This number of records represents an increase of almost 3000 over the previous year.

By geographical districts the number of returns, together with the number of hours and number of fish represented, were as follows:

<u>Geographical District</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>No. Legal-sized Fish Caught</u>
1	1629	5678.25	12938
2	2211	7468.00	14585
3	5954	19766.00	28398
4	3542	11959.25	12869
5	2077	6979.25	8133
6	920	2636.50	3967
7	593	2106.25	2889
8	3617	10760.50	10407
<b>Total</b>	<b>20543</b>	<b>67354.0</b>	<b>94186</b>

This same information by hatchery districts is given below:

<u>Hatchery District</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>No. Legal-sized Fish Caught</u>
1	2907	8684.50	8579
2	1303	4182.25	4717
3	447	1446.25	1414
4	2123	6826.75	8505
5	2958	9821.75	9761
6	908	2895.25	3751
7	4799	15275.75	20801
8	1634	6066.50	10589
9	1614	5759.00	13773
10	745	2541.00	3200
11	1105	3855.00	9096
<b>Total</b>	<b>20543</b>	<b>67354.00</b>	<b>94186</b>

The number of records submitted from each county are given in the appendix, Table 1. There were no records from nine counties, and fewer than 100 from each of twenty-three counties. The figures given in this report refer to the number of fishermen, not to the number of sheets.

The records summarized by counties are:

<u>Number of Records</u>	<u>Number of Counties</u>
0	9
1-100	23
100-200	19
200-300	7
300-400	7
400-500	8
500-600	2
600-700	1
700-800	2
800-900	2
1000-1100	1
1200-1300	1
1600-1700	1

Records for intensive census, taken by the CCC are not included.

With very few exceptions, all data submitted were taken by the Conservation Officers.

In 1935 the counties yielding the most records were (in order): Roscommon, Lake, Osceola and Muskegon. The next year the four counties showing the greatest number of records were (in order): Lake, Iron, Newaygo and Gogebic. Roscommon dropped from first place in 1935 to last place in 1936, having no records for the latter year. This is probably due, partly at least, to the intensive winter creel census taken on Houghton Lake by the CCC, which gave almost complete winter returns for this lake. With some thousands of records obtained from this source, it may have been felt that further records were unnecessary.

Reports from Lake County have been consistently high in number. The rise of Iron and Gogebic counties in 1936 was especially desirable, since records from the Upper Peninsula have been none too abundant in the past.

Catch Per Hour--All Waters

The catch per hour, by geographical districts was:

<u>District</u>	<u>Catch Per Hour</u>
1	2.3
2	2.0
3	1.4
4	1.1
5	1.2
6	1.5
7	1.4
8	1.0

Average for state 1.4

The average for the state, 1.4, was almost the same as for the previous year (1.5 fish per hour in 1935). In the separate districts the catch per hour increased in some and decreased in others. Whether this change reflected actual increase or decrease in fishing or was due to difference in sampling could not be determined.

In the Lower Peninsula the catch per hour tended to decrease with latitude each year except that the catch (per hour) in the upper several tiers of counties was slightly higher than the catch in District 4, immediately south of these counties. As will be noted later, the average size of the fish caught tended to increase with latitude and the pounds of fish per hour were probably as high or higher to the north than in the south.

The catch per hour, by hatchery districts, was:

<u>District</u>	<u>Catch Per Hour</u>
1	1.0
2	1.1
3	1.0
4	1.2
5	1.0
6	1.3
7	1.4
8	1.7
9	2.4
10	1.3
11	2.4

Catch Per Hour--Trout Waters

Data were sorted by trout and non-trout waters rather than by lakes and streams. Over most of the state trout waters are almost equivalent to streams and non-trout waters to lakes. Because of this close relationship, it was considered inadvisable to reparate the data by lakes and streams. In this report the terms are used interchangeably. Lakes are considered non-trout waters and streams are considered trout waters.

Classifying of lakes into trout and non-trout waters is not especially difficult as a rule, but the matter becomes decidedly complicated in streams which are trout waters in some localities and non-trout waters in others. Such streams are classed as one or the other in any one county, but may be considered the opposite in another county. Some discrepancy undoubtedly arises from this method, but in general the error is probably not great.

The number and percentage of reports for trout waters, as compared with non-trout waters is shown by geographical districts below:

<u>Geographical District</u>	<u>No. of Records For Trout Waters</u>	<u>% of Total Return</u>	<u>No. of Records For Non-trout waters</u>	<u>% of Total Returns</u>
1	31	1.9	1598	98.1
2	130	5.9	2081	94.1
3	2427	40.8	3527	59.2
4	1430	40.4	2112	59.6
5	407	19.6	1670	80.4
6	148	16.1	772	83.9
7	310	52.3	283	47.7
8	1084	30.0	2533	70.0
Totals or Average	5967	29.0	14576	71.0

If the data are representative, between a fourth and a third of the fishing in Michigan is trout fishing. In the southern several tiers of counties only about two per cent of the records are for trout fishing; in the eastern half of the Upper Peninsula slightly more than half of the records are for trout fishing. The upper end of the Lower Peninsula



apparently affords much less trout fishing than the counties in the north central portion of the peninsula. District 5 (see map) including Leelenau, Antrim, Otsego, Montmorency and Alpena counties and the counties to the north of these has only about half the trout fishing (in proportion to lake fishing) as have the counties in Districts 3 and 4. The proportion of trout and non-trout fishing by hatchery districts is:

<u>Hatchery District</u>	<u>No. of Records For Trout Waters</u>	<u>% of Total Returns</u>	<u>No. of Records For Non-trout Waters</u>	<u>% of Total Returns</u>
1	944	32.0	1963	68
2	450	34.5	853	65.5
3	162	36.0	285	64
4	590	28.0	1533	72
5	915	31.0	2043	69
6	307	34.0	601	66
7	2423	50.5	2376	49.5
8	82	0.5	1552	95
9	67	0.4	1547	96
10	7	0.1	738	99
11	20	0.2	1085	98
Total or Average 5967		29.0	14576	71

The catch per hour of fish in trout waters in each geographical district was:

<u>District</u>	<u>Catch Per Hour, 1936</u>	<u>Catch Per Hour, 1935</u>
1	(0.2)	(1.0)
2	0.5	0.4
3	0.6	0.7
4	0.6	0.5
5	1.3	0.9
6	0.7	0.5
7	1.3	2.0
8	1.2	1.2
Average	0.8	0.8

Trout fishing was decidedly better in the Upper Peninsula (1.25 per hour) than in the Lower Peninsula (0.65 per hour) except for District 5 (1.3 per hour). The catch per hour for the state was identical for 1935 and 1936, although it varied somewhat in the individual districts. Both years trout fishing was best in the Upper Peninsula. Data on trout for Geographical District 1 (the lower two tiers of counties) were too few both years to be reliable.

By hatchery districts the catch per hour in 1936 was:

<u>District</u>	<u>Catch Per Hour</u>
1	1.2
2	1.2
3	0.8
4	0.7
5	0.6
6	1.3
7	0.6
8	0.2
9	0.3
10	1.9
11	1.5

Catch Per Hour--Non-trout Waters

The catch per hour on non-trout waters by geographical districts was:

<u>District</u>	<u>Catch Per Hour(1936)</u>	<u>Catch Per Hour, 1935</u>
1	2.3	2.4
2	2.0	1.6
3	2.0	2.2
4	1.4	1.5
5	1.1	1.8
6	1.6	1.6
7	1.4	1.6
8	0.9	0.8
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Average	1.7	1.9

The catch per hour was highest in the extreme southern portion of the state and lowest in the western half of the Upper Peninsula. The same was true in 1935. The catch per hour in 1936 was slightly lower than the catch per hour in 1935. It was about twice the catch per hour for trout waters each year.

The catch per hour by hatchery districts in 1936 was:

<u>Hatchery District</u>	<u>Catch Per Hour</u>
1	0.9
2	1.1
3	1.1
4	1.5
5	1.2
6	1.3
7	2.2
8	1.8
9	2.5
10	1.3
11	2.4

Number and Size of Trout--Trout Waters

The number of brook, brown and rainbow trout recorded, by geographical districts, are shown in Table 1. Average sizes for each of these species and for the species combined are also shown. The number recorded include 9,194 brook trout, 2,629 rainbow trout and 1,602 brown trout.

If the records were representative, the catch of trout in Michigan in 1936 was predominately brook trout. By simple average the percentages of brooks, rainbows and browns were 80, 13 and 7 respectively; when computed by weighted average, the percentages are 68, 20 and 12. District 1 is excluded from these figures. Records for trout fishing were very few in District 1 (only 36 trout recorded) and the information for that area is therefore probably not representative. The simple average is probably the more nearly correct because the fishing in District 3 (records chiefly from Lake County) differs, apparently, from fishing elsewhere so far as species of trout are concerned. A third of the trout recorded are for this one area.

The percentage of the several species in the trout catch, by geographical districts, was:

<u>District</u>	<u>Total No. of Trout</u>	<u>% Brook Trout</u>	<u>% Rainbow Trout</u>	<u>% Brown Trout</u>
1	36	31	6	64
2	198	90	2	8
3	5,010	38	38	24
4	2,399	71	17	12
5	751	88	10	2
6	227	81	14	4
7	1,259	97	3	1
8	3,545	94	5	1
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Simple Average (entire state)		74	12	14
Simple Average (exclusive of District 1)		80	13	7
Weighted Average (exclusive of District 1)		68	20	12

Brook trout constituted almost the entire catch of trout in the Upper Peninsula. Rainbow and browns were most prominent in the catch in District 3 (exclusive of District 1 where the returns were very few).

Average lengths for the three species were: brook trout 8.6 inches, rainbow trout 9.7 inches and brown trout 10.4 inches. Almost all lengths were probably estimated rather than actually measured. Average sizes of brook trout in each district (District 1 excluded) were relatively uniform, ranging from 8.3 in District 4 to 9.0 in District 7. Rainbows were larger in the north than in Districts 2, 3 and 4. Browns were smallest in District 5 and largest in District 7. Average sizes of each species, by districts, are shown in Table 1.

The data give some information regarding the fish associated with the trout or found in the streams below where they are primarily trout waters. A large number of bullheads and northern pike were taken in Thunder Bay River in Alpena County (in District 5) where no trout were taken. For this reason District 5 is omitted. In the other seven districts the fish taken along with trout or in waters regarded as trout waters were:

Small-mouthed bass	259
Suckers	236
Rock Bass	179
Walleyes	168
Perch	161
Northern Pike	146
Bluegills	83
Large-mouthed Bass	31
Sunfish	30
Bullheads	27
Cisco	25
Calico Bass	14
Sauger	13
Dogfish	8
Redhorse	2
Lake Trout	2

The figures are for fish actually caught. The relative abundance of non-trout species present in trout waters is probably quite different from the relative abundance shown. Suckers, for instance, would not be caught

Table 1

Distribution of Species of Trout in the Catch, and Average Length of the Trout

By Geographical Districts, By Trout Waters

District	1		2		3		4		5		6		7		8		Total & Ave. Size	
	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size
Brook Trout	11	7.7	179	8.4	1911	8.5	1702	8.3	667	8.4	183	8.8	1220	9.0	3321	8.8	9194	8.6
Rainbow Trout	2	13.5	4	9.5	1894	9.2	399	9.6	73	10.7	35	13.6	32	12.1	190	12.4	2629	9.7
Brown Trout	23	9.7	15	11.3	1205	10.2	298	10.9	11	9.7	9	13.4	7	13.5	34	11.4	1602	10.4

nearly as readily as would the game fish. If trout fishing were chiefly in lakes, lake trout would probably be much more prominent in the catch. The largest variety of species caught in trout waters was in District 8, where a considerable portion of the trout fishing was probably in lakes.

The relative abundance of the several species of trout in the catch is shown by hatchery districts in Table 2. The percentage of each species in the catch was:

<u>Hatchery District</u>	<u>Total No. of Trout*</u>	<u>% Brook Trout</u>	<u>% Rainbow Trout</u>	<u>% Brown Trout</u>
1	3,131	93.4	5.6	0.96
2	1,673	96.5	2.8	0.7
3	428	81.0	16.4	2.6
4	1,222	69.0	22.7	8.3
5	1,321	76.4	8.8	14.8
6	297	85.5	12.5	2.0
7	5,101	39.1	37.2	23.7
8	53	79.2	5.7	15.1
9	77	58.4	3.9	37.7
10	5	75.0	...	25.0
11	118	100.0	...	...

\* Data for some districts are too few to be reliable.

#### Number and Size of Fish--Non-trout Waters

The number and size of fish taken in non-trout waters is shown by geographical districts in Table 3. Non-trout waters are considered those waters in which trout, if present at all, are relatively not abundant compared with the other fish present. A few trout naturally are recorded. The more important species of warm-water fish are discussed below.

Black Bass. Bass constituted 6.4% of the whole catch in non-trout waters. For the state as a whole, both were of about equal average size (large-mouthed 13.2 inches, small-mouthed 13.0 inches). The relative abundance of bass in the several geographical districts varies decidedly.

Table 2

Distribution of Species of Trout in the Catch, and Average Length of the Trout

By Hatchery Districts, By Trout Waters

District	1		2		3		4		5		6	
	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size
Brook Trout	2926	8.8	1615	9.0	347	8.2	843	8.2	1009	8.4	254	8.6
Rainbow Trout	175	12.4	47	12.2	70	10.5	278	8.9	117	11.2	37	13.1
Brown Trout	30	11.1	11	13.4	11	9.7	101	9.0	195	11.9	6	12.2

District	7		8		9		10		11		Total	
	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size
Brook Trout	1992	8.5	42	8.5	45	8.3	3	8.0	118	8.2	9194	8.6
Rainbow Trout	1899	9.2	3	10.3	3	11.3	...	...	...	...	2629	9.7
Brown Trout	1210	10.2	8	13.1	29	9.7	1	7.5	...	...	1602	10.4

Table 3

Catch by Species, and Average Length of Fish,  
By Geographical Districts, Non-trout Waters

District Species	1		2		3		4		5		6		7		8		Total	
	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size
Brook Trout	...	...	12	7.0	61	9.3	11	9.2	30	9.2	3	8.0	14	8.0	18	9.4	149	8.9
Rainbow Trout	...	...	7	8.0	2	7.5	30	14.7	...	...	...	...	...	...	...	...	39	13.1
Brown Trout	...	...	...	...	...	...	...	...	...	...	1	17.0	...	...	...	...	1	17.0
Large-mouthed Bass	329	12.5	473	13.6	762	12.9	240	14.2	99	13.0	203	14.2	8	13.5	755	13.3	2869	13.2
Small-mouthed Bass	113	12.1	79	12.6	296	12.3	463	12.9	342	12.3	220	15.2	96	13.4	559	13.1	2168	13.0
Bluegills	10469	7.5	10978	7.4	8242	7.5	3032	7.4	291	7.2	1237	7.3	165	7.2	390	7.7	34804	7.4
Sunfish	438	7.2	376	6.5	842	7.0	814	7.3	839	7.2	56	7.2	44	6.6	263	7.2	3672	7.0
Yellow Perch	530	7.9	536	7.6	9194	7.8	2583	8.2	600	8.1	54	7.5	785	8.2	2524	8.3	16806	8.0
Calico Bass	236	8.7	574	8.5	1782	8.2	326	8.5	2	14.0	1066	7.8	...	...	155	9.5	4141	8.2
Rock Bass	143	7.4	239	7.1	1016	6.9	1123	7.3	251	7.9	80	7.2	153	7.7	129	7.4	3134	7.4
Walleyed Pike	27	16.9	24	18.6	326	17.7	246	17.2	25	18.0	16	17.6	34	18.0	892	17.3	1590	17.4
Northern Pike	29	21.5	150	18.3	329	23.3	227	20.6	801	18.0	110	18.8	148	21.3	389	19.8	2183	19.7
Bullheads	219	9.3	195	7.3	137	9.8	299	9.4	1490	7.7	154	7.4	57	8.2	2	13.0	2553	8.1
Dogfish	2	21.0	5	18.0	5	25.8	...	...	...	...	...	...	...	...	...	...	12	21.8
Gar Pike	1	26.0	...	...	...	...	1	22.0	...	...	...	...	...	...	...	...	2	24.0
Cisco	...	...	...	...	...	...	2	13.0	...	...	...	...	...	...	3	7.3	9	8.2
Minnows	13	6.2	...	...	4	6.5	...	...	...	...	...	...	...	...	...	...	14	6.3
Redhorse	...	...	...	...	1	7.0	...	...	...	...	...	...	...	...	...	...	54	15.4
Sheepshead	...	...	44	15.4	1	15.0	...	...	...	...	8	15.9	...	...	1	12.0	11	12.0
Sauger	...	...	...	...	2	16.0	...	...	...	...	9	11.1	...	...	...	...	3	13.0
Warmouth Bass	...	...	...	...	3	13.0	...	...	...	...	...	...	...	...	...	...	10	7.1
White Bass	1	15.0	1	8.0	...	...	8	7.0	1	7.0	...	...	...	...	...	...	3	13.7
Whitefish	...	...	...	...	2	13.0	...	...	...	...	...	...	...	...	...	...	8	15.5
Lake Trout	...	...	...	...	...	...	...	...	3	18.0	...	...	...	...	5	14.0	2	15.0
Muskellunge	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	15.0	1	55.0
Smelt	...	...	...	...	...	...	1469	5.8	...	...	...	...	...	...	...	...	1469	5.8
Total or Average	12550	7.8	13693	7.8	23007	8.3	10875	8.4	4774	9.9	3217	8.9	1504	9.9	6087	11.4	75707	8.5

\* The catch also included the following fish for which sizes were not given: 1845 suckers, 455 carp, 63 gar, 54 dogfish and 5 cisco and 70 for which the species could not be determined.



The percentage of each in the bass catch was:

<u>District</u>	<u>Total No. of Bass</u>	<u>% Large-mouth</u>	<u>% Small-mouth</u>
1	442	74.4	25.6
2	552	85.7	14.3
3	1,058	72.0	28.0
4	703	34.1	65.9
5	441	22.4	77.6
6	423	48.0	52.0
7	104	7.7	92.3
8	1,314	57.5	42.5
<hr/>			
Total or average	5,037	Simple Ave. 50.2	49.8
		Weighted Ave. 57.0	43.0

In southern Michigan large-mouthed bass decidedly predominate; in northern Michigan small-mouthed bass decidedly predominate except in the western half of the Upper Peninsula.

Bluegills and perch. As was anticipated, bluegills were decidedly the most abundant in the catch in the lower several districts (1 and 2). They tended to decrease, in proportion, to the north where they are replaced by the perch as the most common fish in non-trout waters. The change northward is well shown by the comparison below where, for each district, the percentage of the two species combined is shown for each species:

<u>District</u>	<u>Total No. of Bluegills and Perch</u>	<u>% Bluegills</u>	<u>% Perch</u>
1	10,999	95.2	4.8
2	11,514	95.3	4.7
3	17,436	47.3	52.7
4	5,615	54.0	46.0
5	891	32.7	67.3
6	1,291	95.8	4.2
7	950	17.4	82.6
8	2,914	13.4	86.6
<hr/>			
Total or ave.	51,610	Simple Ave. 56.4	43.6
		Weighted Ave. 67.4	32.6

Over the entire state bluegills apparently rank first in the state and perch second so far as the number caught is concerned.

Walleyes and northern pike. The catch over the entire state shows the ratio of northern pike and walleyes to be 2:1. The proportion varies decidedly from one district to another. In District 1 the two appear to be about equally abundant, but both are poorly represented in the catch. It is doubtful whether the data here are representative; actually the catch of northern pike is probably much greater than the catch of walleyes. In District 2 northern pike are decidedly the more abundant. In areas 3 and 4 both are equally divided, but in the northern counties (District 5) 97% of the "pike" were northern pike.

The data differ decidedly for the two areas in the Upper Peninsula. Pike recorded for the eastern half were chiefly northern pike; those from the western half were dominantly walleyes. The ratio by districts is given below:

<u>District</u>	<u>Total No. of Walleyes and Northern Pike</u>	<u>% Walleyes</u>	<u>% Northern Pike</u>
1	56	48.2	51.8
2	174	13.8	86.2
3	655	49.8	50.2
4	473	52.0	48.0
5	826	3.0	97.0
6	126	12.7	87.3
7	182	18.7	81.3
8	1281	69.6	30.4
Total or Average	3773	Simple Ave. 33.5 Weighted Ave. 42.1	66.5 57.9

Other species. The relative abundance of other species is shown by districts in Table 3.

The average size for fish taken in the state was 8 1/2 inches. The average size increased northward as other fish tended more and more to replace the bluegills in the catch.

The catch by species, together with the average size of each species, is given by hatchery districts in Table 4.

Comparison of Resident and Non-resident Anglers

Data on the relative take by residents and non-residents were compiled by geographical districts and are recorded, for all fishing, in Table 5. The records indicate that residents were slightly the better so far as catching numbers of fish is concerned.

The percentage of fishing by non-residents in each district was:

<u>District</u>	<u>Per Cent of Anglers Who Were Non-residents</u>
1	23
2	11
3	12
4	18
5	20
6	2
7	20
8	30
<hr/>	
Average	17

If the data were representative, 17% of the anglers (fisherman-days) in Michigan are non-residents. Of the licenses sold in 1936, 25 $\frac{1}{2}$ % were for non-residents (including 10-day, general and wife for non-residents and excluding wife for residents). District 6 had almost no non-residents; in the Upper Peninsula, a fourth of the fishing was by out-of-state anglers. The large percentage of non-residents in the southern two tiers of counties is probably explained by the proximity of this area to Ohio, Indiana and Illinois, the home state of most non-residents fishing in Michigan.

Of the records for trout waters, 8.5% were for non-residents; on non-trout waters 20% were for non-residents. Lake fishing was apparently more attractive to the visitors than trout fishing. Compared with the residents, the "outsiders" were relatively more successful on lakes than on trout streams. The catch per hour of residents and non-residents on

Table 4

## Catch By Species and Average Length of Fish, Non-trout Waters,

By Hatchery Districts

Species	1		2		3		4		5		6		7		8		9		10		11		Total		
	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	
Brook Trout	18	9.4	14	8.0	14	9.0	5	8.2	25	9.4	...	...	61	9.3	...	...	...	...	...	...	12	7.0	149	8.9	
Rainbow Trout	...	...	...	...	...	...	30	14.7	2	7.5	...	...	...	...	...	...	...	...	...	...	7	8.0	39	13.1	
Brown Trout	650	13.2	113	14.2	12	12.7	...	...	...	...	...	...	1	17.0	...	...	...	...	...	...	...	1	17.0		
Large-mouthed Bass	499	12.9	156	13.7	21	13.3	297	13.1	252	12.4	242	12.3	169	12.3	234	13.1	389	12.7	66	13.8	348	13.8	2869	13.2	
Small-mouthed Bass	360	7.7	195	7.2	155	7.3	1317	7.3	1498	7.3	621	7.4	6079	7.5	4309	7.3	80	12.0	37	12.6	235	14.7	2168	13.0	
Bluegills	168	7.2	139	6.9	129	7.4	240	7.2	558	7.3	766	7.2	654	7.2	287	6.6	10931	7.6	2332	7.3	7007	7.4	34804	7.4	
Sunfish	1614	8.9	1695	7.7	272	8.1	1874	8.3	1030	7.9	173	7.8	5797	7.9	3353	7.6	340	7.2	132	6.8	279	6.5	3672	7.0	
Yellow Perch	139	9.4	16	10.9	...	...	23	7.8	1808	7.7	8	11.0	1012	8.7	459	8.5	577	7.8	117	7.1	304	8.0	16806	8.0	
Calico Bass	122	7.5	160	7.6	125	8.0	915	7.8	342	7.9	91	7.5	312	7.6	721	8.3	485	8.7	121	8.3	70	8.5	4141	8.2	
Rock Bass	870	17.3	56	17.8	21	18.3	214	17.3	20	16.5	16	17.6	143	17.8	217	6.6	144	7.6	44	6.3	158	7.3	3134	7.4	
Walleyes	311	20.2	226	20.3	155	20.0	89	20.6	746	18.1	78	20.5	324	22.0	98	17.7	...	...	1	23.0	32	17.0	1590	17.4	
Northern Pike	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21.0	39	...	36	19.4	81	20.9	2183	19.7	
Gar Pike	2	13.0	57	8.1	6	9.0	68	10.7	1449	8.0	282	7.6	111	10.0	...	...	100	9.7	...	...	1	26.0	2	24.0	
Pullheads	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7.9	...	...	...	...	187	7.8	2553	8.1	
Mimnows	...	...	...	...	...	...	...	...	1	7.0	...	...	...	...	...	...	13	6.2	...	...	...	...	14	6.3	
Cisco	...	...	...	...	...	...	...	...	4	6.5	...	...	...	...	...	...	...	...	...	...	...	...	9	8.2	
Dogfish	...	...	...	...	...	...	...	...	...	...	...	...	4	26.5	...	...	...	...	...	6	17.8	1	25.0	12	21.8
White Bass	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	15.0	3	13.7	
Whitefish	5	14.0	...	...	3	18.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	15.0	8	15.5	
Redhorse	...	...	...	...	...	...	...	...	1	7.0	...	...	...	...	...	...	...	...	...	...	...	...	...	54	15.4
Warmouth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	44	15.3	10	15.4	
Sauger	...	...	...	...	...	...	...	...	...	...	1	7.0	...	...	...	...	...	...	...	...	...	...	...	10	7.1
Muskellunge	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	13.0
Sheepshead	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	55.0
Lake Trout	2	15.0	...	...	...	...	...	...	...	...	...	...	2	16.0	...	...	...	...	...	...	9	11.1	11	12.0	
Smelt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	15.0
Totals or Averages	4760	12.0	2831	9.5	913	10.3	6688	8.3	7891	8.9	2357	8.6	15337	8.5	9966	8.0	13098	7.8	3090	7.7	8776	8.0	75707	8.5	

↴ The catch also included the following fish for which sizes were not given: 1845 suckers, 455 carp, 63 gar, 54 dogfish and 5 cisco and 70 for which the species could not be determined.

Table 5

## Comparison of Fishing On All Waters by Residents and Non-residents

District	Number of Fishermen		Hours Fished		Number of Legal-sized Fish Caught		Catch Per Hour	
	Resident	Non-resident	Resident	Non-resident	Resident	Non-resident	Resident	Non-resident
1	1253	376	4393.00	1285.25	10473	2465	2.4	1.9
2	1957	254	6660.50	807.50	11846	2739	1.8	3.4
3	5268	686	16874.50	2891.50	25758	2640	1.5	0.9
4	2906	636	9832.50	2126.75	10422	2447	1.1	1.2
5	1671	406	5535.25	1444.00	6681	1452	1.2	1.0
6	899	21	2583.50	53.00	3899	68	1.5	1.3
7	474	119	1504.75	601.50	2197	692	1.5	1.2
8	2536	1081	7616.25	3144.25	8235	2172	1.1	0.7
Totals	16964	3579	55000.25	12353.75	79511	14675	1.4	1.2

non-trout waters was 1.7 and 1.4 respectively; on trout waters 0.8 and 0.5 respectively.

Comparison of Males and Females as Anglers

Assuming the data to be representative, 7 per cent of the anglers are females. The smallest percentage of women for any district was 3 in District 6. The catch per hour for men and women on all waters was identical. On lakes men averaged 1.7 fish per hour and women 1.6 fish per hour; on streams the catch per hour was 0.8 and 0.5 respectively. Men did better on both trout and non-trout waters, but the averages on all waters are identical. This would seem to be a discrepancy, but more men, in proportion, trout fished, reducing their average for all waters collectively.

Data for 1936 were similar to those for 1935: Women were about as efficient as men in catching fish in lakes each year, but were not nearly so capable on trout streams. The women also showed a decided preference for lake fishing each year. On trout waters only 4% were women; on non-trout waters they included 8% of the anglers.

Comparison of the Fishing, 1935 and 1936

Compiled below are comparative data for 1935 and 1936:

<u>Item</u>	<u>1935</u>	<u>1936</u>
Catch per hour, all waters	1.5	1.4
Catch per hour, trout waters	0.8	0.8
Catch per hour, non-trout waters	1.9	1.7
Catch per hour--residents, trout waters	0.3	0.8
Catch per hour--non-residents, trout waters	1.1	0.5
Per cent of trout fishermen represented by non-residents	9	8.5

<u>Item</u>	<u>1935</u>	<u>1936</u>
Per cent of non-trout fishermen, non-residents	14	20
Catch per hour--residents, non- trout waters	2.0	1.7
Catch per hour--non-residents, non-trout waters	1.4	1.4
Catch per hour--residents, all waters	1.6	1.4
Catch per hour--non-residents, all waters	1.4	1.2
Catch per hour--female anglers, trout waters	0.5	0.5
Catch per hour--male anglers, trout waters	0.9	0.8
Catch per hour--female anglers, non-trout waters	1.7	1.6
Catch per hour--male anglers, non-trout waters	1.9	1.7
Catch per hour--female anglers, all waters	1.4	1.4
Catch per hour--male anglers, all waters	1.5	1.4
Percentage of stream fishermen represented by female anglers	4.5	4
Percentage of lake fishermen represented by female anglers	7	8
Percentage of all fishermen represented by female anglers	6	7
Average size of fish caught (inches):		
All fish	8.7	8.4
Brook Trout	8.6*	8.6**
Rainbow Trout	12.1	9.7
Brown Trout	10.0	10.4
Northern Pike	21.4	19.7
Large-mouthed Bass	14.0	13.2
Small-mouthed Bass	13.0	13.0
Bluegills	7.4	7.4
Perch	8.1	8.0

\* Unweighted

\*\* Weighted

Table 6

Comparison of Fishing On All Waters By Male and Female Anglers

District	Number of Anglers		Hours Fished		Number of Legal-sized Fish Caught (by)		Catch Per Hour	
	Male	Female	Male	Female	Male	Female	Male	Female
1	1517	107	5278.75	384.00	12028	866	2.3	2.3
2	2078	133	7038.25	429.75	13324	1261	1.9	2.9
3	5476	471	18321.00	1426.50	26572	1812	1.5	1.3
4	3329	210	11412.00	538.25	12198	668	1.1	1.2
5	1913	156	6444.00	507.75	7425	678	1.2	1.3
6	889	31	2541.00	95.50	3791	168	1.5	1.8
7	569	23	2015.00	88.25	2787	101	1.4	1.1
8	3325	290	10061.00	696.50	9932	472	1.0	0.7
Totals	19096	1421	63111.00	4166.50	88057	6026	1.4 Weighted	1.4 Weighted



The data for 1935 were compiled by lakes and streams; those for 1936 by trout and non-trout waters. With relatively few exceptions, however, the two are comparable, streams and trout waters being almost always identical.

With a few exceptions, the data for the two years are very much alike, suggesting that the data are relatively dependable and that fishing was about equally good in 1935 and 1936.

INSTITUTE FOR FISHERIES RESEARCH



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APPENDIX TO REPORT ON GENERAL CREEL CENSUS  
1936

Data Listed By Counties

Some of the data listed  
by counties are obviously  
not reliable because of  
the small number of returns

Table 1 (Appendix)

Number of fishermen contacted, hours fished,  
number of legal-sized fish caught, and catch per hour,  
all fishing, by counties

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
1. Alcona	7	33.50	6	0.2
2. Alger	100	612.00	424	0.7
3. Allegan	392	1328.50	2292	1.7
4. Alpena	134	597.00	1070	1.8
5. Antrim	1	7.00	2	0.3
6. Arenac	105	278.75	144	0.5
7. Barry	61	212.00	619	2.9
8. Baraga	173	513.25	724	1.4
9. Bay	...	...	...	...
10. Benzie	661	2363.75	2518	1.1
11. Berrien	23	88.00	389	4.4
12. Branch	461	1474.25	5917	4.0
13. Calhoun	133	463.50	414	0.9
14. Cass	65	188.00	845	4.5
15. Charlevoix	6	23.50	32	1.4
16. Cheboygan	102	317.00	261	0.8
17. Chippewa	114	279.75	834	3.0
18. Clare	68	226.75	257	1.1
19. Clinton	95	324.50	252	0.8
20. Crawford	133	378.25	454	1.2
21. Delta	225	628.75	576	0.9
22. Dickinson	463	1203.50	688	0.6
23. Eaton	354	1216.00	1032	0.8
24. Emmet	118	433.75	773	1.8
25. Genesee	31	107.50	201	1.9
26. Gladwin	598	1482.75	1240	0.8
27. Gogebic	864	2281.75	1418	0.6
28. Grand Traverse	266	745.75	967	1.3
29. Gratiot	175	453.25	1299	2.9
30. Hillsdale	326	1442.75	1666	1.2
31. Houghton	152	492.25	641	1.3
32. Huron	47	155.50	214	1.4
33. Ingham	33	127.50	257	2.0
34. Iosco	166	629.50	1111	1.8
35. Ionia	118	269.50	244	0.9
36. Iron	1300	4312.75	5027	1.2
37. Isabella	360	961.00	856	0.9
38. Jackson	164	522.00	878	1.7
39. Kalamazoc	...	...	...	...
40. Kalkaska	92	217.00	231	1.1
41. Kent	329	1050.75	1581	1.5
42. Keweenaw	78	241.00	239	1.0
43. Lake	1651	5587.25	4138	0.7
44. Lapeer	405	1331.50	4884	3.7
45. Leelanau	262	755.00	1349	1.8
46. Lenawee	98	224.75	135	0.6
47. Livingston	266	996.75	1982	2.0
48. Luce	60	223.75	366	1.6
49. Mackinac	48	178.50	386	2.2
50. Macomb	...	...	...	...

Table 1 - Appendix (Continued)

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
51. Manistee	425	1356.75	2492	1.8
52. Marquette	102	292.50	302	1.0
53. Mason	409	1430.25	1631	1.1
54. Mecosta	346	1037.50	2925	2.8
55. Menominee	145	580.00	838	1.4
56. Midland	114	290.00	1045	3.6
57. Missaukee	142	421.75	248	0.6
58. Monroe	15	52.00	47	0.9
59. Montcalm	134	542.50	1066	2.0
60. Montmorency	733	2829.50	2880	1.0
61. Muskegon	783	3426.00	6147	1.8
62. Newaygo	1050	3031.75	3516	1.2
63. Oakland	90	355.50	1105	3.1
64. Oceana	465	1539.00	5390	3.5
65. Ogemaw	550	2029.00	2655	1.3
66. Ontonagon	340	843.50	530	0.6
67. Otsego	220	660.00	346	0.5
68. Ottawa	...	...	...	...
69. Osceola	450	1462.25	2038	1.4
70. Oscoda	825	2812.25	1487	0.5
71. Presque Isle	496	1351.50	1420	1.1
72. Roscommon	...	...	...	...
73. Saginaw	...	...	...	...
74. St. Clair	...	...	...	...
75. St. Joseph	84	304.50	831	2.7
76. Sanilac	...	...	...	...
77. Schoolcraft	46	183.50	303	1.7
78. Shiawassee	37	148.00	136	0.9
79. Tuscola	...	...	...	...
80. Van Buren	263	933.00	1833	2.0
81. Washtenaw	12	37.50	30	0.8
82. Wayne	104	446.00	362	0.8
83. Wexford	275	966.75	700	0.7
Totals	20543	67354.00	94186	1.4 (average)

Table 2 (Appendix)

Number of fishermen contacted, hours fished,  
number of legal-sized fish caught, and catch per hour,  
for all fishermen, trout waters, by counties

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
1. Alcona	1	4.00	3	0.8
2. Alger	41	167.00	232	1.4
3. Allegan	41	157.00	73	0.5
4. Alpena	116	506.50	998	2.0
5. Antrim	...	...	...	...
6. Arenac	105	278.75	144	0.5
7. Barry	3	9.50	33	3.5
8. Baraga	162	480.25	679	1.4
9. Bay	...	...	...	...
10. Benzie	157	521.50	262	0.5
11. Berrin	...	...	...	...
12. Branch	2	6.00	10	1.7
13. Calhoun	4	10.00	4	0.4
14. Cass	...	...	...	...
15. Charlevoix	5	21.50	18	0.8
16. Cheboygan	70	238.75	179	0.7
17. Chippewa	34	81.25	131	1.6
18. Clare	51	172.25	193	1.1
19. Clinton	...	...	...	...
20. Crawford	132	372.25	454	1.2
21. Delta	122	331.50	265	0.8
22. Dickinson	42	135.00	127	0.9
23. Eaton	...	...	...	...
24. Emmet	7	20.00	33	1.7
25. Genesee	...	...	...	...
26. Gladwin	32	65.25	42	0.6
27. Gogebic	143	442.50	378	0.9
28. Grand Traverse	103	264.75	133	0.5
29. Gratiot	...	...	...	...
30. Hillsdale	17	84.50	11	0.1
31. Houghton	138	458.75	606	1.3
32. Huron	6	14.00	13	0.9
33. Ingham	...	...	...	...
34. Iosco	40	124.50	163	1.3
35. Ionia	...	...	...	...
36. Iron	390	1451.75	1855	1.3
37. Isabella	37	122.50	152	1.2
38. Jackson	...	...	...	...
39. Kalamazoo	...	...	...	...
40. Kalkaska	66	179.50	166	0.9
41. Kent	73	252.00	48	0.2
42. Keweenaw	47	151.50	159	1.0
43. Lake	1293	4615.00	2711	0.6
44. Lapeer	5	16.00	45	2.8
45. Leelanaw	25	62.00	53	0.9
46. Lenawee	1	2.50	...	...
47. Livingston	8	44.50	60	1.3
48. Luce	43	154.00	195	1.3
49. Mackinac	26	111.00	208	1.9
50. Macomb	...	...	...	...

Table 2 - Appendix (Continued)

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
51. Manistee	100	323.75	395	1.2
52. Marquette	76	216.00	247	1.1
53. Mason	171	751.00	389	0.5
54. Mecosta	83	211.50	546	2.6
55. Menominee	22	76.00	55	0.7
56. Midland	...	...	...	...
57. Missaukee	83	237.75	102	0.4
58. Monroe	...	...	...	...
59. Montcalm	9	37.00	5	0.1
60. Montmorency	59	238.25	284	1.2
61. Muskegon	...	...	...	...
62. Newaygo	583	1718.75	948	0.6
63. Oakland	...	...	...	...
64. Oceana	4	9.00	12	1.3
65. Ogemaw	98	417.00	196	0.5
66. Ontonagon	64	224.25	99	0.4
67. Otsego	80	311.25	268	0.9
68. Ottawa	...	...	...	...
69. Osceola	201	672.75	353	0.5
70. Oscoda	594	1956.00	709	0.4
71. Presque Isle	45	115.75	77	0.7
72. Roscommon	...	...	...	...
73. Saginaw	...	...	...	...
74. St. Clair	...	...	...	...
75. St. Joseph	...	...	...	...
76. Sanilac	...	...	...	...
77. Schoolcraft	44	180.50	300	1.7
78. Shiawassee	...	...	...	...
79. Tuscola	...	...	...	...
80. VanBuren	7	57.00	11	0.2
81. Washtenaw	...	...	...	...
82. Wayne	...	...	...	...
83. Wexford	56	273.50	155	0.6
Totals	5967	20156.50	15987	0.8

Table 3 (Appendix)

Number of fishermen contacted, hours fished,  
number of legal-sized fish caught, and catch per hour,  
non-trout waters, by counties

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
1. Alcona	6	34.50	3	0.1
2. Alger	59	445.00	192	0.4
3. Allegan	351	1171.50	2219	1.9
4. Alpena	18	90.50	72	0.8
5. Antrim	1	7.00	2	0.3
6. Arenac	...	...	...	...
7. Barry	58	202.50	586	2.9
8. Baraga	11	33.00	45	1.4
9. Bay	...	...	...	...
10. Benzie	504	1842.25	2256	1.2
11. Berrien	23	88.00	389	4.4
12. Branch	459	1468.25	5907	4.0
13. Calhoun	129	453.50	410	0.9
14. Cass	65	188.00	845	4.5
15. Charlevoix	1	2.00	14	7.0
16. Cheboygan	32	78.25	82	1.0
17. Chippewa	80	198.50	703	3.5
18. Clare	17	54.50	64	1.2
19. Clinton	95	324.50	252	0.8
20. Crawford	1	6.00	...	...
21. Delta	103	297.25	311	1.0
22. Dickinson	421	1068.50	561	0.5
23. Eaton	354	1216.00	1032	0.8
24. Emmet	111	418.75	740	1.8
25. Genesee	31	107.50	201	1.9
26. Gladwin	566	1417.50	1198	0.8
27. Gogebic	721	1839.25	1040	0.6
28. Grand Traverse	163	481.00	834	1.7
29. Gratiot	175	453.25	1299	2.9
30. Hillsdale	309	1358.25	1655	1.2
31. Houghton	14	33.50	35	1.0
32. Huron	41	141.50	201	1.4
33. Ingham	33	127.50	257	2.0
34. Iosco	126	505.00	948	1.9
35. Ionia	118	269.50	244	0.9
36. Iron	910	2861.00	3172	1.1
37. Isabella	323	833.50	704	0.8
38. Jackson	164	522.00	878	1.7
39. Kalamazoo	...	...	...	...
40. Kalkaska	26	37.50	65	1.7
41. Kent	256	798.75	1533	1.9
42. Keweenaw	31	89.50	80	0.9
43. Lake	358	972.25	1477	1.5
44. Lapeer	400	1315.50	4839	3.7
45. Leelanau	237	693.00	1296	1.9
46. Lenawee	97	222.25	135	0.6
47. Livingston	258	952.25	1922	2.0
48. Luce	17	69.75	171	2.5
49. Mackinac	22	67.50	178	2.6
50. Macomb	...	...	...	...

Table 3 - Appendix (Continued)

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
51. Manistee	325	1033.00	2097	2.0
52. Marquette	26	76.50	55	0.7
53. Mason	238	679.25	1242	1.8
54. Mecosta	263	826.00	2379	2.9
55. Menominee	123	504.00	783	1.6
56. Midland	114	290.00	1045	3.6
57. Missaukee	59	184.00	146	0.9
58. Monroe	15	52.00	47	0.9
59. Montcalm	125	505.50	1061	2.1
60. Montmorency	679	2591.25	2596	1.0
61. Muskegon	783	3426.00	6147	1.8
62. Newaygo	467	1313.00	2568	2.0
63. Oakland	90	355.50	1105	3.1
64. Oceana	461	1530.00	5378	3.5
65. Ogemaw	452	1612.00	2459	1.5
66. Ontonagon	276	619.25	431	0.7
67. Otsego	140	348.75	78	0.2
68. Ottawa	...	...	...	...
69. Osceola	249	789.50	1685	2.1
70. Oscoda	231	856.25	778	0.9
71. Presque Isle	451	1235.75	1343	1.1
72. Roscommon	...	...	...	...
73. Saginaw	...	...	...	...
74. St. Clair	...	...	...	...
75. St. Joseph	84	304.50	831	2.7
76. Sanilac	...	...	...	...
77. Schoolcraft	2	3.00	3	1.0
78. Shiawassee	37	148.00	136	0.9
79. Tuscola	...	...	...	...
80. Van Euren	256	876.00	1822	2.1
81. Washtenaw	12	37.50	30	0.8
82. Wayne	104	446.00	362	0.8
83. Wexford	219	693.25	545	0.8
Totals	14576	47197.50	78199	1.7



Table 4 (Appendix)

Number of resident fishermen contacted, hours fished,  
number of legal-sized caught, and catch per hour,  
non-trout waters, by counties

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
1. Alcona	6	34.50	3	0.09
2. Alger	15	102.00	43	0.4
3. Allegan	311	1056.00	2121	2.0
4. Alpena	14	70.50	60	0.9
5. Antrim	1	7.00	2	0.3
6. Arenac	...	...	...	...
7. Barry	55	194.00	564	2.9
8. Baraga	8	18.00	35	1.9
9. Bay	...	...	...	...
10. Benzie	316	1238.25	1864	1.5
11. Berrien	21	80.00	380	4.8
12. Branch	321	997.50	4694	4.7
13. Calhoun	124	433.50	410	1.0 or 0.945
14. Cass	46	119.50	536	4.5
15. Charlevoix	1	2.00	14	7.0
16. Cheboygan	18	35.75	24	0.7
17. Chippewa	66	165.00	519	3.1
18. Clare	17	54.50	64	1.2
19. Clinton	91	313.50	247	0.8
20. Crawford	1	6.00	...	...
21. Delta	90	254.25	225	0.9
22. Dickinson	155	367.50	287	0.8
23. Eaton	352	1208.00	1032	0.9
24. Emmet	92	355.25	650	1.8
25. Genesee	31	107.50	201	1.9
26. Gladwin	552	1389.00	1150	0.8
27. Gogebic	399	1066.00	613	0.6
28. Grand Traverse	103	312.50	392	1.3
29. Gratiot	165	422.25	1260	3.0
30. Hillsdale	262	1153.25	1554	1.3
31. Houghton	13	31.50	33	1.0
32. Huron	41	141.50	201	1.4
33. Ingham	32	125.50	255	2.0
34. Iosco	73	232.50	424	1.8
35. Ionia	116	267.50	244	0.9
36. Iron	636	1919.25	2269	1.2
37. Isabella	313	817.00	675	0.8
38. Jackson	155	502.75	864	1.7
39. Kalamazoo	...	...	...	...
40. Kalkaska	25	35.50	65	1.8
41. Kent	256	798.75	1533	1.9
42. Keweenaw	23	70.50	61	0.9
43. Lake	277	743.75	1217	1.6
44. Lapeer	216	713.50	2307	3.2
45. Leelanau	169	491.00	849	1.7
46. Lenawee	58	159.00	106	0.7
47. Livingston	251	932.25	1898	2.0
48. Luce	12	48.75	118	2.4
49. Mackinac	9	27.50	59	2.1
50. Maconb	...	...	...	...

Table 4 - Appendix (Continued)

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
51. Manistee	233	926.25	1944	2.1
52. Marquette	28	76.50	55	0.7
53. Mason	166	467.00	820	1.8
54. Mecosta	228	701.50	2044	2.9
55. Menominee	109	446.50	691	1.5
56. Midland	113	289.50	1045	3.6
57. Missaukee	53	175.00	130	0.7
58. Monroe	15	52.00	47	0.9
59. Montcalm	122	495.50	1043	2.1
60. Montmorency	516	1896.00	2070	1.1
61. Muskegon	704	2911.25	5716	2.0
62. Newaygo	408	1125.50	2193	1.9
63. Oakland	85	335.50	1050	3.1
64. Oceana	413	1438.00	5250	3.7
65. Ogemaw	377	1369.50	2038	1.5
66. Ontonagon	243	566.75	410	0.7
67. Otsego	122	319.75	74	0.2
68. Ottawa	...	...	...	...
69. Osceola	223	710.50	1546	2.2
70. Oscoda	154	586.25	496	0.8
71. Presque Isle	383	1034.00	1174	1.1
72. Roscommon	...	...	...	...
73. Saginaw	...	...	...	...
74. St. Clair	...	...	...	...
75. St. Joseph	46	170.50	553	3.2
76. Sanilac	...	...	...	...
77. Schoolcraft	2	3.00	3	1.0
78. Shiawassee	37	148.00	136	0.9
79. Tuscola	...	...	...	...
80. Van Buren	179	591.50	1311	2.2
81. Washtenaw	12	37.50	30	0.8
82. Wayne	104	446.00	362	0.8
83. Wexford	201	644.25	523	0.8
Total	11632	37584.50	64931	1.7

Table 5 (Appendix)

Number of non-resident fishermen contacted, hours fished,  
number of legal-sized fish caught, and catch per hour,  
non-trout waters, by counties

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
1. Alcona	...	...	...	...
2. Alger	44	343.00	149	0.4
3. Allegan	40	115.50	98	0.8
4. Alpena	4	20.00	12	0.6
5. Antrim	...	...	...	...
6. Arenac	...	...	...	...
7. Barry	3	8.50	22	2.6
8. Baraga	3	15.00	10	0.7
9. Bay	...	...	...	...
10. Benzie	188	604.00	392	0.6
11. Berrien	2	8.00	9	1.1
12. Branch	138	470.75	1213	2.6
13. Calhoun	5	20.00	...	...
14. Cass	19	68.50	309	4.5
15. Charlevoix	...	...	...	...
16. Cheboygan	14	42.50	58	1.4
17. Chippewa	14	33.50	184	5.5
18. Clare	...	...	...	...
19. Clinton	4	11.00	5	0.5
20. Crawford	...	...	...	...
21. Delta	13	43.00	86	2.0
22. Dickinson	266	701.00	274	0.4
23. Eaton	2	8.00	...	...
24. Emmet	19	63.50	90	1.4
25. Genesee	...	...	...	...
26. Gladwin	14	28.50	48	1.7
27. Gogebic	322	773.25	427	0.6
28. Grand Traverse	60	168.50	442	2.6
29. Gratiot	10	31.00	39	1.3
30. Hillsdale	47	205.00	101	0.5
31. Houghton	1	2.00	2	1.0
32. Huron	...	...	...	...
33. Ingham	1	2.00	2	1.0
34. Iosco	53	272.50	524	1.9
35. Ionia	2	2.00	...	...
36. Iron	274	941.75	903	1.0
37. Isabella	10	21.50	29	1.3
38. Jackson	9	19.25	14	0.7
39. Kalamazoo	...	...	...	...
40. Kalkaska	1	2.00	...	...
41. Kent	...	...	...	...
42. Keweenaw	8	19.00	19	1.0
43. Lake	81	228.50	260	1.1
44. Lapeer	184	602.00	2532	4.2
45. Leelanau	68	202.00	447	2.2
46. Lenawee	39	63.25	29	0.5
47. Livingston	7	20.00	24	1.2
48. Luce	5	21.00	53	2.5
49. Mackinac	13	40.00	119	3.0
50. Macomb	...	...	...	...

Table 5 - Appendix (Continued)

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
51. Manistee	42	106.75	153	1.4
52. Marquette	...	...	...	...
53. Mason	72	212.25	422	2.0
54. Mecosta	35	124.50	335	2.7
55. Menominee	14	57.50	92	1.6
56. Midland	1	.50	...	...
57. Missaukee	6	9.00	16	1.8
58. Monroe	...	...	...	...
59. Montcalm	3	10.00	13	1.3
60. Montmorency	163	695.25	526	0.8
61. Muskegon	79	514.75	431	0.8
62. Newaygo	59	187.50	375	2.0
63. Oakland	5	20.00	55	2.8
64. Oceana	48	92.00	128	1.4
65. Ogemaw	75	242.50	371	1.5
66. Ontonagon	33	52.50	21	0.4
67. Otsego	18	29.00	4	0.1
68. Ottawa	...	...	...	...
69. Osceola	26	79.00	139	1.8
70. Oscoda	77	270.00	282	1.0
71. Presque Isle	68	201.75	169	0.8
72. Roscommon	...	...	...	...
73. Saginaw	...	...	...	...
74. St. Clair	...	...	...	...
75. St. Joseph	38	134.00	278	2.1
76. Sanilac	...	...	...	...
77. Schoolcraft	...	...	...	...
78. Shiawassee	...	...	...	...
79. Tuscola	...	...	...	...
80. Van Buren	77	284.50	511	1.8
81. Washtenaw	...	...	...	...
82. Wayne	...	...	...	...
83. Wexford	18	49.00	22	0.4
Total	2944	9613.00	13268	1.4

Table 6 (Appendix)

Number of resident fishermen contacted, hours fished  
number of legal-sized fish caught, and catch per hour,  
trout waters, by counties

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
1. Alcona	1	4.00	3	0.8
2. Alger	38	151.00	226	1.5
3. Allegan	37	147.00	72	0.5
4. Alpena	113	489.50	991	2.0
5. Antrim	...	...	...	...
6. Arenac	105	278.75	144	0.5
7. Barry	3	9.50	33	3.5
8. Baraga	155	452.75	666	1.5
9. Bay	...	...	...	...
10. Benzie	144	435.50	220	0.5
11. Berrien	...	...	...	...
12. Branch	2	6.00	10	1.7
13. Calhoun	4	10.00	4	0.4
14. Cass	...	...	...	...
15. Charlevoix	5	21.50	18	0.8
16. Cheboygan	33	105.75	95	0.9
17. Chippewa	33	78.25	127	1.6
18. Clare	50	170.25	193	1.1
19. Clinton	...	...	...	...
20. Crawford	119	330.50	394	1.2
21. Delta	112	292.50	245	0.8
22. Dickinson	40	129.00	120	0.9
23. Eaton	...	...	...	...
24. Emmet	...	...	...	...
25. Genesee	...	...	...	...
26. Gladwin	32	65.25	42	0.6
27. Gogebic	75	237.50	215	0.9
28. Grand Traverse	85	183.75	63	0.4
29. Gratiot	...	...	...	...
30. Hillsdale	17	34.50	11	0.1
31. Houghton	135	444.50	602	1.4
32. Huron	6	14.00	13	0.9
33. Ingham	...	...	...	...
34. Iosco	38	119.50	154	1.3
35. Ionia	...	...	...	...
36. Iron	332	1225.75	1631	1.3
37. Issabella	37	122.50	152	1.2
38. Jackson	...	...	...	...
39. Kalamazoo	...	...	...	...
40. Kalkaska	62	167.50	159	0.9
41. Kent	71	243.50	48	0.2
42. Keweenaw	47	151.50	159	1.0
43. Lake	1107	3789.50	2356	0.6
44. Leapeer	5	16.00	45	2.8
45. Leelanau	25	62.00	53	0.9
46. Lenawee	1	2.50	...	...
47. Livingston	8	44.50	60	1.3
48. Luce	32	117.00	159	1.4
49. Mackinac	25	107.00	202	1.9
50. Macomb	...	...	...	...

Table 6 - Appendix (Continued)

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
51. Manistee	98	320.75	392	1.2
52. Marquette	72	208.50	238	1.1
53. Mason	153	591.00	358	0.6
54. Mecosta	83	211.50	546	2.6
55. Menominee	22	76.00	55	0.7
56. Midland	...	...	...	...
57. Missaukee	83	237.75	102	0.4
58. Monroe	...	...	...	...
59. Montcalm	9	37.00	5	0.1
60. Montmorency	58	229.25	276	1.2
61. Muskegon	...	...	...	...
62. Newaygo	525	1321.75	873	0.7
63. Oakland	...	...	...	...
64. Oceana	4	9.00	12	1.3
65. Ogemaw	97	416.75	196	0.5
66. Ontonagon	46	128.25	95	0.7
67. Otsego	76	300.25	254	0.8
68. Ottawa	...	...	...	...
69. Osceola	195	642.75	345	0.5
70. Oscoda	533	1770.50	661	0.4
71. Presque Isle	45	115.75	77	0.7
72. Roscommon	...	...	...	...
73. Saginaw	...	...	...	...
74. St. Clair	...	...	...	...
75. St. Joseph	...	...	...	...
76. Sanilac	...	...	...	...
77. Schoolcraft	40	158.50	271	1.7
78. Shiawassee	...	...	...	...
79. Tuscola	...	...	...	...
80. Van Buren	5	45.00	10	0.2
81. Washtenaw	...	...	...	...
82. Wayne	...	...	...	...
83. Wexford	54	255.50	144	0.6
Totals	5332	17415.75	14580	0.8

Table 7 (Appendix)

Number of non-resident fishermen contacted, hours fished,  
 number of legal-sized fish caught, and catch per hour,  
trout waters, by counties

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
1. Alcona	...	...	...	...
2. Alger	3	16.00	6	0.4
3. Allogan	4	10.00	1	0.1
4. Alpena	3	17.00	7	0.4
5. Antrim	...	...	...	...
6. Arenac	...	...	...	...
7. Barry	...	...	...	...
8. Baraga	7	27.50	13	0.5
9. Bay	...	...	...	...
10. Benzie	13	56.00	42	0.8
11. Berrien	...	...	...	...
12. Branch	...	...	...	...
13. Calhoun	...	...	...	...
14. Cass	...	...	...	...
15. Charlevoix	...	...	...	...
16. Cheboygan	37	133.00	84	0.6
17. Chippewa	1	3.00	4	1.3
18. Clare	1	2.00	...	...
19. Clinton	...	...	...	...
20. Crawford	13	41.75	60	1.4
21. Delta	10	39.00	20	0.5
22. Dickinson	2	6.00	7	1.2
23. Eaton	...	...	...	...
24. Emmet	7	20.00	33	1.7
25. Genesee	...	...	...	...
26. Gladwin	...	...	...	...
27. Gogebic	68	205.00	163	0.8
28. Grand Traverse	18	81.00	65	0.8
29. Gratiot	...	...	...	...
30. Hillsdale	...	...	...	...
31. Houghton	3	14.25	4	0.3
32. Huron	...	...	...	...
33. Ingham	...	...	...	...
34. Iosco	2	5.00	9	1.8
35. Ionia	...	...	...	...
36. Iron	58	226.00	224	1.0
37. Isabella	...	...	...	...
38. Jackson	...	...	...	...
39. Kalamazoo	...	...	...	...
40. Kalkaska	4	12.00	7	0.6
41. Kent	2	8.50	...	...
42. Keweenaw	...	...	...	...
43. Lake	136	825.50	375	0.5
44. Lapeer	...	...	...	...
45. Leelanau	...	...	...	...
46. Lenawee	...	...	...	...
47. Livingston	...	...	...	...
48. Luce	11	37.00	36	1.0
49. Mackinac	1	4.00	6	1.5
50. Macomb	...	...	...	...

Table 7 - Appendix (Continued)

<u>County</u>	<u>No. of Fishermen</u>	<u>Hours Fished</u>	<u>Legal-sized Fish Caught</u>	<u>Catch Per Hour</u>
51. Manistee	2	3.00	3	1.0
52. Marquette	4	7.50	9	1.2
53. Mason	18	160.00	31	0.2
54. Mecosta	...	...	...	...
55. Menominee	...	...	...	...
56. Midland	...	...	...	...
57. Missaukee	...	...	...	...
58. Monroe	...	...	...	...
59. Montcalm	...	...	...	...
60. Montmorency	1	9.00	8	0.9
61. Muskegon	...	...	...	...
62. Newaygo	58	397.00	75	0.2
63. Oakland	...	...	...	...
64. Oceana	...	...	...	...
65. Ogemaw	1	0.25	...	...
66. Ontonagon	18	96.00	4	0.04
67. Otsego	4	11.00	14	1.3
68. Ottawa	...	...	...	...
69. Osceola	6	30.00	8	0.3
70. Oscoda	61	185.50	48	0.3
71. Presque Isle	...	...	...	...
72. Roscommon	...	...	...	...
73. Saginaw	...	...	...	...
74. St. Clair	...	...	...	...
75. St. Joseph	...	...	...	...
76. Sanilac	...	...	...	...
77. Schoolcraft	4	22.00	29	1.3
78. Shiawassee	...	...	...	...
79. Tuscola	...	...	...	...
80. Van Buren	2	12.00	1	0.08
81. Washtenaw	...	...	...	...
82. Wayne	...	...	...	...
83. Wexford	2	18.00	11	0.6
Totals	635	2740.75	1407	0.5





Hatchery Districts



Geographical Districts

Original: Fish Division  
cc: Mr. Ruhl  
Miss Mary Cadley, Evanston, Ill.

INSTITUTE FOR FISHERIES RESEARCH  
DIVISION OF FISHERIES  
MICHIGAN DEPARTMENT OF CONSERVATION  
COOPERATING WITH THE  
UNIVERSITY OF MICHIGAN

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October 20, 1938

SUPPLEMENT TO REPORT NO. 451

DISTRIBUTION OF NON-RESIDENT ANGLERS ON MICHIGAN WATERS BY STATES.

Data From General Creel Census for 1936  
(Includes Both Trout and Non-Trout Waters)

<u>State</u>	<u>Number of Fishermen</u>	<u>Per Cent of Total</u>
Ohio	1283	6.24
Illinois	868	4.22
Indiana	739	3.59
Wisconsin	233	1.13
Pennsylvania	42	0.20
Missouri	33	0.16
Kentucky	18	0.09
New York	14	0.07
Oregon	13	0.06
West Virginia	11	0.05
Minnesota	11	0.05
Wyoming	9	0.04
California	8	0.03
Florida	6	0.03
Oklahoma	5	0.02
Iowa	4	0.02
District of Columbia	4	0.02
Texas	3	0.01
Alabama	2	0.009
Nebraska	2	0.009
New Jersey	2	0.009
Massachusetts	2	0.009
Virginia	2	0.009
Arkansas	1	0.004
Arizona	1	0.004
Maryland	1	0.004
Louisiana	1	0.004
Virgin Islands	1	0.004
Unknown	260	1.26
Total	3579	17.4

Total Resident Anglers ..... 16,964  
Total Non-resident Anglers.. 3,579  
Total Anglers ..... 20,543