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REPORT NO. 364

ANALYSIS OF THE MICHIGAN CREEL CENSUS FOR THE YEAR 1934¹

The data given in the accompanying tables were compiled by N.Y.A. help under the supervision of Mrs. Carl L. Hubbs. The information was collected almost entirely by the Michigan conservation officers.

Data for the intensive survey on several lakes taken by the Michigan E.C.W. were not included. Since these data from the intensive census generally were much more extensive for one lake in a county than were all data for the county collected for the general census, inclusion of the intensive census appeared unwise.

In all cases each table in this report corresponds to the table of the same number in Report 282. In a number of the tables the data for 1934 are compared with the data for 1933 and average data for the 1928-1932 period.

The number of hours of fishing checked in 1934 (Table 1) was considerably higher than the number for 1933 and was almost equivalent to the average for the 1928-1932 period. The relation between records for trout and non-trout waters differed decidedly for 1933 and 1934. The total hours represented were higher in 1934 than in 1933, but the number of hours of trout fishing recorded were lower in 1934. The fish catch listed for 1934 was very much higher than the catch for the previous year, suggesting that the 1934 fishing was decidedly the better (provided the sampling was representative both years).

The figures in Table 1 show an increase in the number of Brown Trout taken, even though the hours of trout fishing recorded were fewer. There is an indication that some species fluctuated decidedly in the catch while others remained relatively the same. Most of the common warm-water species were recorded in greater abundance in 1934 than in 1933.

¹ For a thorough understanding of this report see Report No. 238.

Table 1 shows the approximate number of census cards and sheets obtained from each county. It is obvious that the number of cards from each county is not always in proportion to the extent of fishing.

Table 2 shows the percentage of total reported catch in all waters of each species caught in each of the three areas. Of the 92,285 fish reported, 69.5% were from below Town 20, 23.9% from the Lower Peninsula north of Town 20 and 7.0% from the Upper Peninsula. Rainbow Trout were approximately equally represented in the two areas in the Lower Peninsula; Brown Trout constituted almost three-fourths of the trout taken below Town 20 and only 3.9% of those taken in the Upper Peninsula. Brook Trout were best represented in the trout catch in the Upper Peninsula and poorest below Town 20. A comparison of the figures for 1933 and 1934 shows a similarity in the abundance of each species with respect to the abundance of the other two kinds of trout. In the Upper Peninsula only 4.0% of the records were for non-trout waters, while 73.3% of the records below Town 20 were for non-trout waters. The areas apparently differ widely with respect to the relative abundance of trout and non-trout waters.

Table 2 shows, for each species, the relative abundance of that species in catches reported for each of the three regions. These interesting data show that there is a decided difference between the species common to the Upper Peninsula and those common to the area below Town 20.

Table 3 (a, b, c, d) shows, for each county, the total reported catch by species. There is reason to believe that the reports for some counties were not representative for the fishing in these counties. The figures for any one county are therefore probably not as reliable as the figures for each of the three areas as a whole.

It will be noted in Table 4 that trout constituted 85% of all fish reported; most of the trout were Brook Trout. Bluegills constituted 41.3% of all fish reported caught. Perch (18.7%) ranked next to Bluegills in percentage caught. There is little reason to doubt that the Bluegill ranks first in the state in number of fish caught, even though this species appears to be taken relatively little in the Upper Peninsula.

Table 5 shows the relative abundance of Brook, Brown and Rainbow Trout recorded for each county. In general, these figures should not be considered reliable, because of the scarcity of data for many of the counties and because of the probability that figures for some counties were not representative. In Table 6 the computations of the relative abundance of each of the three species of trout are summarized. Table 7 shows the relative abundance of the more important warm-water species in each of the three districts and in the state as a whole. Table 8 gives similar data (by counties) for all fish.

The percentage of bluegills in the catch (by counties) for 1934, 1933, and average for 1928-1935 is shown in Table 9. The reliability of these data depends on the number of records and on the degree to which the records were representative.

Table 10 shows the catch per hour for all fish, by counties. It will be noted that fishing improved decidedly in 1934 over 1933 in all three districts, also that the 1934 figures (for districts) were invariably higher than average figures for the 1928-1932 period. In the Lower Peninsula below Town 20, the per hour catch in 1934 was 1.85 fish as compared with 1.12 for the previous year; above Town 20 the catch was 1.31 per hour as compared with .83 for 1933. Upper Peninsula fishing was almost identical with fishing above Town 20 in the Lower Peninsula and showed a similar increase. Had time been available to determine the length of the fish, the figures probably would indicate that the fish in the northern part of the state had a larger average size, making up somewhat for the smaller catch per hour in northern Michigan as compared with the catch per hour in southern Michigan. The fish caught in the southern part of the state were dominantly Bluegills which are of a relatively small average size, while the fish in northern Michigan include a greater percentage of fish representing major game species. In the state as a whole, the 1934 fishing must be regarded as having been exceptionally good.

Table 11 shows, by counties, the trout catch per hour. For many counties these data are not reliable because of scarcity of records.

Table 12 and 13 show, by counties, the catch per hour for non-trout waters and for Bluegills respectively. Table 14 shows for each district and for the state as a whole

the catch per hour of various species and combinations of species.

General Comments

It appears desirable to repeat the comment made in the report for 1933: "In order to obtain the fullest benefit, it is imperative that this creel census be continued over a long period of time and that there be more adequate and uniform yearly returns from all counties."

The records obtained in 1934 were considerably greater than those obtained for 1933.

The census is at present entering its ninth year. It should be possible, in the relatively near future, to determine certain trends in the fishing and to obtain, by a comparison of fishing over this period, some interesting and helpful information. Much information not indicated in the reports to date (information on average length of fish, etc.) is still available on the records. Lack of time and funds have prevented the full utilization of the material and the compilation of data not given here.

Data for the 1935 census will be more complete due to the use of tabulating and sorting equipment previously not available.

Several types of blanks are now in use. It is considered advisable that the cards in general use in the past be entirely replaced by the more complete white sheets which are now available.

It is anticipated that a report covering data for all census work since 1928 will be prepared at some later date.

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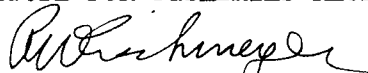

By: R. W. Eschmeyer

TABLE 1. CREEL CENSUS DATA

Indicating extent of data utilized in the tabulations, for the entire state. The figures for individual species refer to the fish caught in all waters (trout and non-trout).

Item being summarized	1934	1933	Ave. for 1928-1932
No. of cards used (approximately)	12,346	7320	10,523
Total no. of hours of fishing reported	53,456	46,821	54,867
Total no. of legal-size fish reported	92,285	57,975	57,501
Total no. of hours fishing, trout waters	9256	13,327	15,244
Total no. of legal-sized fish reported for trout waters	8332	11,012	17,129
Brook, Brown and Rainbow Trout, all waters	7918	10,883	16,877
Brook Trout	6044	9,690	14,726
Brown Trout	571	495	390
Rainbow Trout	1303	1,298	1,761
Total no. of hours fishing, non-trout waters	44,200	33,495	37,623
Total no. of fish reported for non-trout waters	83,953	46,963	40,372
Smallmouth Bass	1491	874	818
Large-mouth Bass	2834	1695	1502
Bluegill	38,107	28,649	11,902
Common Sunfish	4446	1881	1917
Rock Bass	4121	1951	2427
Black Crappie	4194	1725	1459
Perch	17,177	6909	11,032
Walleye	2592	1502	1197
Northern Pike	4138	3403	4122
Bullheads	2431	3108	2276
Catfish	44	68	28
Carp	308	1160	319
Common Sucker	1182	754	859
Mulletts & Redhorses	51	10	54
Cisco & Whitefish	240	283	177
Dogfish	26	27	115
Smelt	261	662	293
Lake Trout	10	0	19
Chubs & Shiners	18	43	45
Herring	74	0	0
Warmouth	4	0	6
Sheepshead	20	27	6
White Bass	8	1	16
Gars	32	1	14
Muskellunge	4	0	3
Sauger	1	0	0
Unknown	19	69	8
Brook)	25	0	0
Brown) Trout	1	0	0
Rainbow)	34	0	0
Lawyer	0	0	0
Grayling	0	156	5
	0	5	4

Table 1a. Approximate Number of cards returned from each county, 1934

County	No. of cards	County	No. of cards
Alcona	3	Lake	295
Alger	69	Lapeer	173
Allegan	284	Leelanau	316
Alpena	26	Lenawee	262
Antrim	60	Livingston	348
Arenac	142	Luce	125
Barry	82	Mackinac	12
Baraga	127	Macomb	33
Bay	0	Manistee	349
Benzie	473	Marquette	5
Berrien	121	Mason	161
Branch	311	Mecosta	156
Calhoun	60	Menominee	101
Cass	244	Midland	53
Charlevoix	20	Missaukee	29
Cheboygan	110	Monroe	140
Chippewa	0	Montcalm	105
Clare	183	Montmorency	72
Clinton	167	Muskegon	447
Crawford	19	Newaygo	234
Delta	84	Oakland	247
Dickinson	60	Oceana	79
Eaton	306	Ogemaw	239
Emmet	60	Ontonagon	49
Genesee	130	Otsego	111
Gladwin	549	Ottawa	12
Gogebic	245	Osceola	146
Grand Traverse	391	Oscoda	6
Gratiot	28	Presque Isle	44
Hillsdale	36	Roscommon	1094
Houghton	99	Saginaw	0
Huron	0	St. Clair	41
Ingham	6	St. Joseph	140
Iosco	82	Sanilac	0
Ionia	53	Schoolcraft	72
Iron	164	Shiawassee	42
Isabella	102	Tuscola	87
Jackson	294	Van Buren	8
Kalamazoo	119	Washtenaw	175
Kalkaska	15	Wayne	307
Kent	562	Wexford	56
Keewenaw	89		

TABLE 2. PERCENTAGE OF TOTAL REPORTED CATCH IN ALL WATERS OF EACH SPECIES WHICH IS CAUGHT IN EACH REGION FOR THE YEAR 1934

The trout include the few reported for essentially non-trout waters. The warm-water fish of given species include those caught in trout waters.

Species	Total catch Entire state (= 100%)	Per cent of total catch caught in each region		
		Lower Peninsula		Upper Peninsula
		South of T. 20	North of T. 20	
All species	92285	69.1	23.9	7.0
All species caught in trout waters	8332	26.8	36.0	37.3
Brook Brown & Rainbow Trout	7918	27.4	35.7	30.9
Brook Trout	6044	20.3	35.0	44.7
Brown Trout	571	71.1	25.0	3.9
Rainbow Trout	1303	40.9	44.0	15.1
All species caught in non-trout waters	83953	73.3	22.7	4.0
Four major game-fishes ¹	11207	51.0	39.1	9.9
Five major pan-fishes ²	68089	77.7	19.8	2.5
Five propagated fishes ³	62346	77.7	18.8	3.5
Five non-propagated fishes ⁴	19398	62.8	33.7	3.5
Small-mouth Bass	1511	51.0	33.4	15.7
Large-mouth Bass	2900	80.7	12.4	6.9
Bluegill	38107	91.8	7.6	0.6
Common Sunfish	4446	73.9	25.6	0.5
Rock Bass	4130	32.7	42.5	4.7
Black Crappie	4194	85.1	14.7	0.1
Perch	17212	51.6	41.1	7.3
Walleye	2616	57.3	33.6	9.1
Grass Pike	4180	26.6	63.1	10.3
Bullheads	2448	83.4	15.7	0.9
Catfish	44	45.5	54.5	-
Carp	308	100.0	-	-
Common Sucker	1307	37.0	24.6	38.3
Mulletts and Redhorses	68	47.1	52.9	-
Cisco	221	4.5	95.5	-
Dogfish	26	61.5	38.5	-
Smelt	261	-	100.0	-
Whitefish	31	3.2	96.8	-
Lake Trout	149	0.7	-	99.3
Chubs and Shiners	46	41.3	4.3	54.3
Herring	74	-	100.0	-
Warmouth	4	50.0	50.0	-
Sheepshead	20	100.0	-	-
White Bass	8	100.0	-	-
Gars	32	90.6	9.4	-
Muskellunge	4	75.0	25.0	-
Sauger	1	100.0	-	-
Unknown	19	26.3	73.7	-

¹ Small-mouth Bass, Large-mouth Bass, Walleye and Northern Pike.

² Bluegill, Common Sunfish, Rock Bass, Black Crappie and Perch.

³ Small-mouth Bass, Large-mouth Bass, Bluegill, Perch and Walleye.

⁴ Common Sunfish, Rock Bass, Black Crappie, Northern Pike and Bullheads.

TABLE 3a. PERCENTAGE OF TOTAL REPORTED CATCH BY IMPORTANT SPECIES, FOR 1934,
FOR ALL WATERS, IN COUNTIES OF LOWER PENINSULA SOUTH OF TOWNLINE 20.
0 = no reports for this species; tr. = trace, less than 0.1%

County	Trout			Bass		Bluegill	Common Sunfish	Rock Bass	Black Crappie	Perch	Walleye	Northern Pike	Bullhead	Total No. of fish reported
	Brook	Brown	Rainbow	Small-mouth	Large-mouth									
1. Berrien	5.1	5.9	2.5	0	4.5	47.9	5.5	1.2	3.5	2.4	0	0.4	8.1	509
2. Cass	2.9	2.5	1.2	0.9	2.3	73.4	2.0	tr.	5.8	5.8	0	1.0	2.2	2930
3. St. Joseph	8.8	0.2	0.3	2.7	4.0	69.1	2.4	2.3	2.1	2.5	0	1.3	0.7	667
4. Branch	0	0	0	0.4	1.4	88.9	0.9	0.5	4.0	2.0	0	0.2	1.6	6505
5. Hillsdale	0	0	0	0	2.8	82.0	3.7	0.6	1.4	7.5	0	0	1.8	772
6. Lenawee	0	0	0	0.5	12.4	51.3	13.4	10.3	0.3	6.3	0.2	0.7	3.7	2503
7. Monroe	0	0	0	0	0	1.4	1.4	19.3	0	13.1	0	0	34.5	420
8. Van Buren	0	0	0	0	5.8	91.6	1.3	0	0.3	0.9	0	0	0.1	1071
9. Kalamazoo	0	0	0	1.1	1.7	89.2	0.7	0.5	0.3	3.9	0	0.1	2.3	988
10. Calhoun	2.5	1.1	0.2	0.3	14.4	69.8	4.6	0.5	2.9	0.8	1.8	0.5	0.5	610
11. Jackson	0	0	0	0.1	1.2	30.8	3.2	3.7	5.0	50.0	0	3.9	1.3	1423
12. Washtenaw	0	0	0	0	3.7	34.9	12.1	2.3	1.1	29.0	0	9.0	1.8	730
13. Wayne	0	0	1.6	0.4	0.1	4.5	3.1	2.5	4.2	16.6	0.4	0.7	44.4	1020
14. Allegan	1.9	0.1	0.1	tr.	0.8	62.5	2.3	2.2	17.6	9.5	0.2	0.4	1.8	2052
15. Barry	0	0	0	0.8	2.0	67.4	5.4	0.6	9.6	9.5	1.1	2.4	0.1	884
16. Eaton	0	0	0.1	0	2.0	71.0	6.3	2.2	1.4	1.2	0.1	0.4	6.8	1784
17. Ingham	0	0	0	0	0	0	13.6	0	0	83.0	0	6.4	0	47
18. Livingston	0	0	0	0.1	2.8	51.1	8.5	0.9	5.0	24.0	0	4.1	2.3	2850
19. Oakland	0	0	0	2.9	3.3	57.5	3.4	3.6	2.5	22.0	0.3	2.3	2.0	2472
20. Macomb	0	0	0	4.0	0.6	1.2	4.0	.06	0.3	87.5	0.3	0	0.9	328
21. Ottawa	0	0	0	0.1	7.6	46.1	6.8	0.1	1.6	34.4	1.1	0.8	0.8	872
22. Kent	3.9	0.2	0.1	0.4	3.6	65.7	3.7	2.9	7.0	7.8	0.1	1.6	2.3	2801
23. Ionia	0	0	0	1.3	9.6	41.4	13.6	1.3	1.3	18.9	0	10.6	1.0	302
24. Clinton	0	0	0	2.1	2.2	50.5	17.9	1.5	9.5	3.0	0.1	6.7	6.4	671
25. Shiawassee	0	0	0	0.5	18.1	48.4	5.1	16.7	4.2	0.9	0	6.0	0	215
26. Genesee	0	0	0	1.0	2.4	64.9	0.7	2.8	9.1	6.4	0	5.3	7.4	942
27. Lapeer	0.1	0.3	0	0.6	3.5	90.3	0.2	2.6	0.6	1.6	0	0.3	0	1587
28. St. Clair	0	0	0	0	0	0	0	2.0	0	0	91.2	2.0	3.9	102
29. Gratiot	0	0	0	21.7	0.9	47.3	17.0	2.1	0	2.4	0	0	8.6	336
30. Saginaw	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31. Tuscola	0	0	0	2.9	9.5	34.0	3.5	1.2	6.2	7.2	0	7.4	28.0	485
32. Sanilac	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33. Midland	0	0	0	0	0	0	2.3	3.5	57.0	32.6	1.2	0	2.3	86
34. Bay	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35. Huron	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36. Muskegon	0.9	0	0	1.7	3.0	19.5	4.1	7.4	10.3	27.4	23.9	0.6	0.8	4543
37. Montcalm	0	0	0	0.4	1.1	61.0	0.7	0.9	16.3	17.4	0	0.5	0.1	1089
38. Newaygo	2.7	1.6	0.5	2.3	5.4	49.5	5.5	6.6	3.4	12.6	5.3	2.1	1.5	2385
39. Mecosta	6.1	tr.	0.6	0.6	4.8	14.3	12.9	5.0	14.8	30.2	4.2	4.5	1.6	2438
40. Isabella	11.8	1.5	0.9	3.4	15.0	18.1	4.2	3.2	28.2	4.4	1.1	8.0	0	525
41. Cladwin	7.1	0.1	0	2.4	1.4	8.9	4.2	13.2	24.7	15.9	0	6.3	10.7	1922
42. Arenac	16.3	1.1	3.0	0	0	0	0	0.4	0	75.2	0	0	0	734
43. Oceana	2.0	0.6	0.3	3.0	2.9	68.1	7.3	0.6	3.7	8.3	0.1	1.4	1.3	2001
44. Mason	5.2	0.8	1.6	0.4	6.2	20.2	6.3	8.3	2.3	36.2	2.4	6.6	0.8	965
45. Lake	6.1	6.1	11.5	1.4	4.9	61.1	1.3	0.1	0	6.9	0	0	0.3	2741
46. Osceola	2.8	0.5	0.8	3.2	6.8	50.4	4.2	16.6	0	12.2	0	0.4	1.6	1298
47. Clare	0.7	0.7	1.3	2.0	3.3	70.7	12.6	0.9	0	7.5	0	0.1	0.1	4172
Total for year	1.9	0.6	0.8	1.2	3.7	54.8	5.2	3.4	6.0	13.9	2.4	1.7	3.2	63777

TABLE 3b. PERCENTAGE OF TOTAL CATCH BY IMPORTANT SPECIES FOR 1934, FOR ALL WATERS, IN COUNTIES NORTH OF TOWNLINE 20.

Region and County	Trout			Black Bass		Bluegill	Common Sunfish	Rock Bass	Black Crappie	Perch	Walleye	Grass Pike	Bullheads	Total No. of fish reported
	Brook	Brown	Rain-bow	Small-mouth	Large-mouth									
Lower Peninsula N. of T. 20														
48. Manistee	4.4	0.2	4.3	1.7	0.3	8.7	0.4	1.8	0.2	64.7	3.6	0.6	0	5315
49. Wexford	18.2	0.1	2.1	10.2	5.1	31.8	2.4	16.6	0	9.9	1.9	1.6	0	374
50. Missaukee	0	0	0	0	0	0	0	0	0	0	0	100.0	0	75
51. Roscommon	0	0	0	0.3	0.2	1.8	9.0	14.9	0	21.4	9.3	40.7	1.6	4067
52. Ogemaw	4.0	0.2	0.5	1.5	2.3	31.9	13.0	2.8	19.6	13.9	2.8	4.8	2.1	3094
53. Iosco	65.7	3.6	9.9	0.6	0.6	0	0	0	0	0	4.1	7.6	7.9	832
54. Benzie	7.0	0.4	3.2	4.4	0.9	6.9	2.2	8.6	0	52.5	1.9	2.3	0.5	2185
55. Grand Traverse	0.3	1.4	0.3	4.2	4.2	41.8	4.5	20.8	0	12.1	0.2	3.0	1.7	2157
56. Kalkaska	48.0	0.7	6.8	1.4	4.1	0.7	29.1	0.7	0	8.8	0	0	0	148
57. Crawford	14.8	48.1	31.5	0	0	0	0	0	0	0	0	5.6	0	54
58. Oscoda	48.0	12.0	8.0	0	0	2.0	0	0	0	6.0	0	0	0	50
59. Alcona	37.5	0	0	0	0	0	0	0	0	0	12.5	50.0	0	8
60. Leelanau	5.7	1.3	0.2	8.5	4.1	2.0	1.4	6.5	0	57.3	0	2.8	0.2	1104
61. Antrim	64.2	0	8.1	0	0.8	5.8	0	5.8	0	7.5	4.8	0.4	2.5	481
62. Otsego	19.5	0	3.1	0	0	0	0	0	0	0	0	73.0	0	318
63. Montmorency	9.2	0	0.7	16.3	12.6	15.0	12.6	4.2	0	5.9	9.2	32.6	1.7	239
64. Alpena	0	0	0	4.5	0	15.9	9.1	11.4	0	38.6	0	20.5	0	44
65. Charlevoix	17.7	0	4.6	0	3.1	7.7	0	4.6	0	46.2	0	3.8	12.3	130
66. Emmet	8.7	0.2	0.9	1.7	2.6	17.7	18.9	26.7	0	3.3	0.5	17.5	1.2	423
67. Cheboygan	47.4	1.3	10.4	0	0.1	7.3	2.2	1.5	0	8.1	12.6	4.5	3.8	682
68. Presque Isle	11.8	0	0.7	2.0	10.1	1.7	2.0	9.1	0	12.5	1.0	24.6	24.9	297
Averages	9.6	0.6	2.6	2.3	1.6	13.2	5.1	8.0	2.8	32.0	4.0	11.9	1.7	22077
Upper Peninsula														
69. Menominee	28.5	0	0	0	1.4	2.6	0	11.2	0	28.5	5.2	16.1	3.5	347
70. Dickinson	87.8	0	0	0	8.6	0	0	0	0	0	3.0	0.5	0	197
71. Delta	52.9	0	2.3	14.4	8.2	0	0	0	0	0.7	4.6	10.8	0	306
72. Schoolcraft	32.3	0	0.1	3.5	0.5	21.7	1.1	2.6	0	28.3	7.8	2.0	0	734
73. Mackinac	0	0	0	0	0	0	0	0	0	25.0	0	75.0	0	8
74. Gogebic	12.1	0	0.2	6.1	5.5	1.6	1.3	0.3	0	17.0	6.7	7.2	0	1185
75. Iron	52.9	0	0.3	0.5	3.2	3.0	0	6.6	0.1	23.0	1.7	8.4	0	1010
76. Marquette	20.0	0	0	0	80.0	0	0	0	0	0	0	0	0	5
77. Alger	89.4	0	1.3	0.3	0.8	1.6	0	0	0	0	0	5.5	1.3	385
78. Luce	29.9	0	0.7	3.0	0.3	0	0	4.7	0	50.6	0.4	9.8	0.5	772
79. Chippewa	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80. Ontonagon	19.3	0	4.4	0	0	0	0	0	4.4	57.9	11.4	2.6	0	114
81. Houghton	74.6	0	9.6	9.6	1.5	0	0	0	0	0	0.2	4.4	0	456
82. Baraga	44.2	4.4	24.8	1.2	7.1	0	0	6.5	0	2.2	4.0	5.5	0	495
83. Keweenaw	47.2	0	0.2	3.8	0.2	0	0	0	0	12.2	2.2	0.5	0	417
Averages (for year)	42.0	0.3	3.1	3.7	3.1	3.5	0.4	3.0	0.1	19.6	3.7	6.7	0.3	6431
South of T.20	1.9	0.6	0.8	1.2	3.7	54.8	5.2	3.4	6.0	13.9	2.4	1.7	3.2	63777
L.P. north of T. 20	9.6	0.6	2.6	2.3	1.6	13.2	5.1	8.0	2.8	32.0	4.0	11.9	1.7	22077
Total (all counties)	6.5	0.6	1.4	1.6	3.1	41.3	4.8	4.5	4.5	18.7	2.8	4.5	2.7	92285

TABLE 3c. PERCENTAGE OF TOTAL CATCH BY MINOR SPECIES, FOR 1934, FOR ALL WATERS, IN COUNTIES OF LOWER PENINSULA SOUTH OF TOWNLIN 20.

tr. = trace (less than 0.1%)

County	Catfish	Carp	Common Sucker	Mulletts & Redhorses	Cisco	Dogfish	Smelt	Whitefish	Lake Trout	Chubs & Shiners	Warmouth	Sheepshead	White Bass	Gars	Muskallunge
1. Berrien	0	0.2	11.4	0	0	0.4	0	0	0	0.2	0	0	0	0	0
2. Cass	0	tr.	0	0	0	0	0	0	0	0	0	0	0	0	0
3. St. Joseph	0	0	3.3	0	0	0	0	0	0	0.2	0	0	0	0	0
4. Branch	0	0	0.1	0	0	tr.	0	0	0	0	0	0	0	0	0
5. Hillsdale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Lenawee	0	0.7	tr.	0	0	tr.	0	0	0	0	tr.	0	0	0	0
7. Monroe	0	18.6	8.6	0	0	0	0	0	0	0	0	3.1	0	0	0
8. Van Buren	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Kalamazoo	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0
10. Calhoun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Jackson	0	0	0	0	0.7	0.1	0	0	0	0	0.1	0	0	0	0
12. Washtenaw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13. Wayne	0.7	17.7	1.7	0	0	0	0	0	0	0.1	0	0.6	0.6	0	0
14. Allegan	0.1	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0
15. Barry	0	0	0.9	0	0	0	0	0	0	0	0	0	0	0	0.1
16. Eaton	0	0.7	7.4	0	0	0.4	0	0	0	0	0	0	0	0	0
17. Ingham	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18. Livingston	0	0	0.7	0	0	tr.	0	0	0	0	0	0	0	1.0	0
19. Oakland	0	tr.	tr.	0.1	0	0	0	0	0	0	0	0	0	0	0
20. Macomb	0.3	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0
21. Ottawa	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22. Kent	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0
23. Ionia	0	0	1.0	0	0	0	0	0	0	0	0	0	0	0	0
24. Clinton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25. Shiawassee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26. Genesee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27. Lapeer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28. St. Clair	0	0	1.0	0	0	0	0	0	0	0	0	0	0	0	0
29. Gratiot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30. Saginaw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31. Tuscola	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32. Sanilac	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33. Midland	0	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0
34. Bay	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35. Huron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36. Muskegon	tr.	0.1	0.2	0	0	0	0	tr.	0	0	0	0	tr.	tr.	tr.
37. Montcalm	0	0	1.5	0.1	0	0.1	0	0	0	0	0	0	0	0	0
38. Newaygo	0	0	0.2	0	0	0	0	0	0	0.7	0	0	0	0	0
39. Mecosta	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0
40. Isabella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41. Gladwin	0	0.2	3.4	1.5	0	0	0	0	0	0	0	0	0	0	0
42. Arenac	0	0	4.0	0	0	0	0	0	0	0	0	0	0	0	0
43. Oceana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44. Mason	0	0	2.7	0	0	0	0	0	0	0	0	0	0	0	0
45. Lake	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0
46. Osceola	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0
47. Clare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Averages	tr.	0.5	0.8	0.1	tr.	tr.	0	tr.	0	tr.	tr.	tr.	tr.	tr.	tr.

TABLE 3d. PERCENTAGE OF TOTAL CATCH BY MINOR SPECIES, FOR 1934, FOR ALL WATERS, IN COUNTIES NORTH OF TOWNLINE 20.

Region and County	Catfish	Carp	Common Sucker	Mulletts and Redhorses	Cisco	Dogfish	Smelt	Whitefish	Lake Trout	Chubs and Shiners	Herring	Warmouth	Sheepshead	White Bass	Gars	Muskellunge
Lower Peninsula N. of T. 20:																
48. Manistee	0	0	3.9	0	1.9	0	1.5	0	0	0	1.4	0	0	0	0.1	tr.
49. Wexford	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50. Missaukee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51. Roscommon	0.6	0	0	tr.	0	0.2	0	0	0	0	0	0	0	0	0	0
52. Ogemaw	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
53. Iosco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54. Benzie	0	0	0.9	0	0	0	8.3	0	0	0	0	0.1	0	0	0	0
55. Grand Traverse	0	0	3.7	1.6	0	0	0	0	tr.	0	0	0	0	0	0	0
56. Kalkaska	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57. Crawford	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58. Oscoda	0	0	0	0	0	0	0	24.0	0	0	0	0	0	0	0	0
59. Alcona	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60. Leelanau	0	0	0.3	0	9.8	0	0	0	0	0	0	0	0	0	0	0
61. Antrim	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62. Otsego	0	0	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0
63. Montmorency	0	0	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0
64. Alpena	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65. Charlevoix	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66. Emmet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67. Cheboygan	0	0	0	0	0	0	0	0.4	0	0.3	0	0	0	0	0	0
68. Presque Isle	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	0.1	0	1.5	0.2	1.0	tr.	1.2	0.1	tr.	tr.	0.3	tr.	0	0	tr.	tr.
Upper Peninsula:																
69. Menominee	0	0	0	0	0	0	0	0	0	2.9	0	0	0	0	0	0
70. Dickinson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71. Delta	0	0	6.2	0	0	0	0	0	0	0	0	0	0	0	0	0
72. Schoolcraft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73. Mackinac	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74. Gogebic	0	0	40.1	0	0	0	0	0	0.9	1.3	0	0	0	0	0	0
75. Iron	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0
76. Marquette	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77. Alger	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78. Luce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79. Chippewa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80. Ontonagon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81. Houghton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
82. Baraga	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83. Keweenaw	0	0	1.7	0	0	0	0	0	31.9	0	0	0	0	0	0	0
Total for year	0	0	7.8	0	0	0	0	0	2.3	0.4	0	0	0	0	0	0
South of T. 20	tr.	0.5	0.8	0.1	tr.	tr.	0	tr.	0	tr.	0	tr.	tr.	tr.	tr.	tr.
L.P. North of T. 20	0.1	0	1.5	0.2	1.0	tr.	1.2	0.1	tr.	tr.	0.3	tr.	0	0	tr.	tr.
Total (all counties)	tr.	0.3	1.4	0.1	0.2	tr.	0.3	tr.	0.2	0.1	0.1	tr.	tr.	tr.	tr.	tr.

TABLE 4a. SUMMARY OF COMPUTATIONS OF PERCENTAGE OF TOTAL REPORTED CATCH FOR ALL WATERS WITHIN EACH REGION, FOR TROUT, BASS, SUNFISH, ETC.

Species	Region	No. of Species	Percentage
Brook, Brown & Rainbow Trout	1. Lower Peninsula south of T. 20	2167	3.3
	2. Lower Peninsula north of T. 20	2830	12.8
	3. Upper Peninsula	2921	45.4
	4. Entire state	7918	8.5
Brook Trout	1. Lower Peninsula south of T. 20	1228	1.9
	2. Lower Peninsula north of T. 20	2114	9.6
	3. Upper Peninsula	2702	42.0
	4. Entire state	6044	6.5
Brown Trout	1. Lower Peninsula south of T. 20	406	0.6
	2. Lower Peninsula north of T. 20	143	0.6
	3. Upper Peninsula	22	0.3
	4. Entire state	571	0.6
Rainbow Trout	1. Lower Peninsula south of T. 20	533	0.8
	2. Lower Peninsula north of T. 20	573	2.6
	3. Upper Peninsula	197	3.1
	4. Entire state	1303	1.4
Small- mouth Bass	1. Lower Peninsula south of T. 20	770	1.2
	2. Lower Peninsula north of T. 20	504	2.3
	3. Upper Peninsula	237	3.7
	4. Entire state	1511	1.6
Large- mouth Bass	1. Lower Peninsula south of T. 20	2339	3.7
	2. Lower Peninsula north of T. 20	361	1.6
	3. Upper Peninsula	200	3.1
	4. Entire state	2900	3.1
Blue- gills	1. Lower Peninsula south of T. 20	34974	54.8
	2. Lower Peninsula north of T. 20	2910	13.2
	3. Upper Peninsula	223	3.5
	4. Entire state	38107	41.3
Common Sunfish	1. Lower Peninsula south of T. 20	3287	5.2
	2. Lower Peninsula north of T. 20	1136	5.1
	3. Upper Peninsula	23	0.4
	4. Entire state	4446	4.8
Rock Bass	1. Lower Peninsula south of T. 20	2178	3.4
	2. Lower Peninsula north of T. 20	1756	8.0
	3. Upper Peninsula	196	3.0
	4. Entire state	4130	4.5
Black Crappie	1. Lower Peninsula south of T. 20	3571	6.0
	2. Lower Peninsula north of T. 20	617	2.8
	3. Upper Peninsula	6	0.1
	4. Entire state	4194	4.5

TABLE 4b. SUMMARY OF COMPUTATIONS OF PERCENTAGE OF TOTAL REPORTED CATCH FOR ALL WATERS WITHIN THIS REGION, SECOND PART: FOR 10 OTHER SPECIES

Tr. = trace, less than 0.05%. 0 = no fish of this species reported.

Species	Region	No. of Species	Percentage
Perch	1. Lower Peninsula south of T. 20	8880	13.9
	2. Lower Peninsula north of T. 20	7069	32.0
	3. Upper Peninsula	1263	19.6
	4. Entire state	17212	18.7
Walleye	1. Lower Peninsula south of T. 20	1499	2.4
	2. Lower Peninsula north of T. 20	880	4.0
	3. Upper Peninsula	237	3.7
	4. Entire state	2616	2.8
Northern Pike	1. Lower Peninsula south of T. 20	1112	1.7
	2. Lower Peninsula north of T. 20	2638	11.9
	3. Upper Peninsula	430	6.7
	4. Entire state	4180	4.5
Bull-heads	1. Lower Peninsula south of T. 20	2042	3.2
	2. Lower Peninsula north of T. 20	385	1.7
	3. Upper Peninsula	21	0.3
	4. Entire state	2488	2.7
Gars	1. Lower Peninsula south of T. 20	29	tr.
	2. Lower Peninsula north of T. 20	3	0
	3. Upper Peninsula	0	tr.
	4. Entire state	32	tr.
Dogfish	1. Lower Peninsula south of T. 20	16	tr.
	2. Lower Peninsula north of T. 20	10	tr.
	3. Upper Peninsula	0	0
	4. Entire state	26	tr.
Smelt	1. Lower Peninsula south of T. 20	0	0
	2. Lower Peninsula north of T. 20	261	1.2
	3. Upper Peninsula	0	0
	4. Entire state	261	0.3
Cisco & Whitefish	1. Lower Peninsula south of T. 20	11	tr.
	2. Lower Peninsula north of T. 20	241	1.1
	3. Upper Peninsula	0	0
	4. Entire state	252	0.3
Lake Trout	1. Lower Peninsula south of T. 20	0	0
	2. Lower Peninsula north of T. 20	1	tr.
	3. Upper Peninsula	148	2.3
	4. Entire state	149	0.2
Suckers	1. Lower Peninsula south of T. 20	484	0.8
	2. Lower Peninsula north of T. 20	322	1.5
	3. Upper Peninsula	501	7.8
	4. Entire state	1307	1.4

TABLE 4c. SUMMARY OF COMPUTATIONS OF PERCENTAGE OF TOTAL REPORTED CATCH FOR ALL WATERS WITHIN EACH REGION, THIRD PART: FOR 10 ADDITIONAL SPECIES

Species	Region	No. of Species	Percentage
Milletts and Redhorses	1. Lower Peninsula south of T. 20	32	0.1
	2. Lower Peninsula north of T. 20	36	0.2
	3. Upper Peninsula	0	0
	4. Entire state	68	0.1
Carp	1. Lower Peninsula south of T. 20	308	0.5
	2. Lower Peninsula north of T. 20	0	0
	3. Upper Peninsula	0	0
	4. Entire state	308	0.3
Chubs & Shiners	1. Lower Peninsula south of T. 20	19	tr.
	2. Lower Peninsula north of T. 20	2	tr.
	3. Upper Peninsula	25	0.4
	4. Entire state	46	0.1
Catfish	1. Lower Peninsula south of T. 20	20	tr.
	2. Lower Peninsula north of T. 20	24	0.1
	3. Upper Peninsula	0	0
	4. Entire state	44	tr.
Muskal- lunge	1. Lower Peninsula south of T. 20	3	tr.
	2. Lower Peninsula north of T. 20	1	tr.
	3. Upper Peninsula	0	0
	4. Entire state	4	tr.
White Bass	1. Lower Peninsula south of T. 20	8	tr.
	2. Lower Peninsula north of T. 20	0	0
	3. Upper Peninsula	0	0
	4. Entire state	8	tr.
Warmouth	1. Lower Peninsula south of T. 20	2	tr.
	2. Lower Peninsula north of T. 20	2	tr.
	3. Upper Peninsula	0	0
	4. Entire state	4	tr.
Sheeps- head	1. Lower Peninsula south of T. 20	20	tr.
	2. Lower Peninsula north of T. 20	0	0
	3. Upper Peninsula	0	0
	4. Entire state	20	tr.
Herring	1. Lower Peninsula south of T. 20	0	0
	2. Lower Peninsula north of T. 20	74	0.3
	3. Upper Peninsula	0	0
	4. Entire state	74	0.1
Sauger	1. Lower Peninsula south of T. 20	1	tr.
	2. Lower Peninsula north of T. 20	0	0
	3. Upper Peninsula	0	0
	4. Entire state	1	tr.

TABLE 4d. SUMMARY OF COMPUTATIONS OF PERCENTAGE OF TOTAL REPORTED CATCH
FOR ALL WATERS WITHIN EACH REGION

Species	Region	No. of species	Percentage
Unknown	1. Lower Peninsula south of T. 20	5	tr.
	2. Lower Peninsula north of T. 20	14	tr.
	3. Upper Peninsula	0	0
	4. Entire state	19	tr.
All Species	1. Lower Peninsula south of T. 20	63,777	69.11
	2. Lower Peninsula north of T. 20	22,077	23.92
	3. Upper Peninsula	6,431	6.97
	4. Entire state	92,285	100.00

TABLE 5a. RELATIVE ABUNDANCE OF BROOK, BROWN AND RAINBOW TROUT BY COUNTIES OF LOWER PENINSULA SOUTH OF TOWNLINE 20

Exclusive of the few trout caught in essentially non-trout waters. The figures represent the percentage of the total catch of these three species for each county. 0 indicates that no trout of this species was reported, though some trout fishing was reported for the county. 100 indicates that only this species of trout was reported from the county. - (dash) indicates that no trout fishing at all was reported.

County	Total	Brook Trout	Brown Trout	Rainbow Trout
1. Berrien	69	37.7	43.5	18.8
2. Cass	193	43.5	38.3	18.1
3. St. Joseph	62	95.2	1.6	3.2
4. Branch	-	-	-	-
5. Hillsdale	-	-	-	-
6. Lenawee	-	-	-	-
7. Monroe	-	-	-	-
8. Van Buren	-	-	-	-
9. Kalamazoo	-	-	-	-
10. Calhoun	23	65.2	30.4	4.3
11. Jackson	-	-	-	-
12. Washtenaw	-	-	-	-
13. Wayne	-	-	-	-
14. Allegan	45	86.7	6.7	6.7
15. Barry	-	-	-	-
16. Eaton	-	-	-	-
17. Ingham	-	-	-	-
18. Livingston	-	-	-	-
19. Oakland	-	-	-	-
20. Macomb	-	-	-	-
21. Ottawa	-	-	-	-
22. Kent	117	92.3	4.3	3.4
23. Ionia	0	0	0	0
24. Clinton	-	-	-	-
25. Shiawassee	-	-	-	-
26. Genesee	-	-	-	-
27. Lapeer	6	33.3	66.7	0
28. St. Clair	-	-	-	-
29. Gratiot	-	-	-	-
30. Saginaw	-	-	-	-
31. Tuscola	-	-	-	-
32. Sanilac	-	-	-	-
33. Midland	-	-	-	-
34. Bay	-	-	-	-
35. Huron	-	-	-	-
36. Muskegon	39	100.0	0	0
37. Montcalm	-	-	-	-
38. Newaygo	110	56.4	35.5	8.2
39. Mecosta	164	90.2	0.6	9.1
40. Isabella	75	82.7	10.7	6.7
41. Gladwin	136	99.3	0.7	0
42. Arenac	150	80.0	5.3	14.7
43. Oceana	48	65.3	24.5	10.2
44. Mason	73	68.5	11.0	20.5
45. Lake	652	25.8	25.8	48.5
46. Osceola	53	67.9	13.2	18.9
47. Clare	114	25.4	25.4	49.1
Average	2130	57.0	19.0	24.0

TABLE 5b. RELATIVE ABUNDANCE OF BROOK, BROWN AND RAINBOW TROUT BY COUNTIES OF LOWER PENINSULA NORTH OF TOWNLIN 20

For further explanation see Table 5a

County	Total	Brook Trout	Brown Trout	Rainbow Trout
Lower Peninsula north of Townline 20:				
48. Manistee	469	50.3	2.3	47.3
49. Wexford	77	88.3	1.3	10.4
50. Missaukee	-	-	-	-
51. Roscommon	-	-	-	-
52. Ogemaw	147	85.0	3.4	11.6
53. Iosco	659	83.0	4.6	12.4
54. Benzie	227	66.1	3.5	30.4
55. Grand Traverse	43	14.0	72.1	14.0
56. Kalkaska	82	86.6	1.2	12.2
57. Crawford	51	15.7	51.0	33.3
58. Oscoda	34	70.6	17.6	11.8
59. Alcona	3	100.0	0	0
60. Leelanau	79	79.7	17.7	2.5
61. Antrim	348	88.8	0	11.2
62. Otsego	72	86.1	0	13.9
63. Montmorency	22	100.0	0	0
64. Alpena	-	-	-	-
65. Charlevoix	29	79.3	0	20.7
66. Emmet	42	88.1	2.4	9.5
67. Cheboygan	397	81.4	2.3	16.4
68. Presque Isle	35	100.0	0	0
Average	2816	75.0	5.1	19.9
Upper Peninsula:				
69. Menominee	99	100.0	0	0
70. Dickinson	173	100.0	0	0
71. Delta	164	95.7	0	4.3
72. Schoolcraft	237	99.6	0	0.4
73. Mackinac	-	-	-	-
74. Gogebic	145	98.6	0	1.4
75. Iron	537	99.4	0	0.6
76. Marquette	1	100.0	0	0
77. Alger	349	98.6	0	1.4
78. Luce	234	97.4	0	2.6
79. Chippewa	-	-	-	-
80. Ontonagon	27	81.5	0	18.5
81. Houghton	384	88.5	0	11.5
82. Baraga	364	60.2	6.0	33.8
83. Keweenaw	198	99.5	0	0.5
84. Isle Royale	-	-	-	-
Average	2912	92.5	0.8	6.8
Entire State	7858	76.6	7.3	16.1

TABLE 6. SUMMARY OF COMPUTATIONS ON RELATIVE ABUNDANCE OF TROUT

Inclusive of the few trout caught in essentially non-trout waters. The figures represent the percentage of the total catch of these three species for each region.

Species	Region	1934	Percentage
Brook Trout	1. Lower Peninsula S. of T. 20	1228	56.7
	2. Lower Peninsula N. of T. 20	2114	74.7
	3. Upper Peninsula	2702	92.5
	4. Entire state	6044	76.3
Brown Trout	1. Lower Peninsula S. of T. 20	406	18.7
	2. Lower Peninsula N. of T. 20	143	5.1
	3. Upper Peninsula	22	0.7
	4. Entire state	571	7.2
Rainbow Trout	1. Lower Peninsula S. of T. 20	533	24.6
	2. Lower Peninsula N. of T. 20	573	20.2
	3. Upper Peninsula	197	6.7
	4. Entire state	1303	16.5
Totals	1. Lower Peninsula S. of T. 20	2167	100.0
	2. Lower Peninsula N. of T. 20	2830	100.0
	3. Upper Peninsula	2921	99.9
	4. Entire state	7918	100.0

TABLE 7a. SUMMARY OF COMPUTATIONS ON RELATIVE ABUNDANCE OF THE MAIN WARM-WATER FISHES WITHIN EACH REGION, FIRST PART: MORE IMPORTANT SPECIES.

The figures represent the percentage of the total catch of fish in non-trout waters, for each region and year.

Species	Region	1934	1933	Average 1928-1932
Small-mouth Bass	1. Lower Peninsula S. of T. 20	1.2	1.7	1.2
	2. Lower Peninsula N. of T. 20	2.6	0.7	3.3
	3. Upper Peninsula	7.1	5.5	2.9
	4. Entire state	1.8	1.5	2.0
Large-mouth Bass	1. Lower Peninsula S. of T. 20	3.8	4.0	4.7
	2. Lower Peninsula N. of T. 20	1.9	0.9	1.9
	3. Upper Peninsula	6.0	5.3	2.9
	4. Entire state	3.4	3.6	3.7
Blue-gill	1. Lower Peninsula S. of T. 20	56.8	57.4	42.2
	2. Lower Peninsula N. of T. 20	15.3	2.0	11.0
	3. Upper Peninsula	6.7	3.4	1.7
	4. Entire state	45.4	44.0	29.5
Common Sunfish	1. Lower Peninsula S. of T. 20	5.3	4.1	6.0
	2. Lower Peninsula N. of T. 20	6.0	4.2	3.3
	3. Upper Peninsula	0.7	2.2	0.6
	4. Entire state	5.3	4.0	4.7
Rock Bass	1. Lower Peninsula S. of T. 20	3.5	3.1	4.7
	2. Lower Peninsula N. of T. 20	9.2	8.9	9.4
	3. Upper Peninsula	5.9	4.4	4.1
	4. Entire state	4.9	4.2	6.0
Calico Bass	1. Lower Peninsula S. of T. 20	5.8	4.8	5.4
	2. Lower Peninsula N. of T. 20	3.2	0.1	0.9
	3. Upper Peninsula	0.2	0.3	0.2
	4. Entire state	5.0	3.7	3.6
Perch	1. Lower Peninsula S. of T. 20	14.4	9.1	22.8
	2. Lower Peninsula N. of T. 20	37.0	35.3	30.3
	3. Upper Peninsula	37.5	34.7	47.8
	4. Entire state	20.5	14.7	27.2
Walleye	1. Lower Peninsula S. of T. 20	2.4	2.5	0.7
	2. Lower Peninsula N. of T. 20	4.5	5.5	5.6
	3. Upper Peninsula	7.0	5.2	9.6
	4. Entire state	3.1	3.2	2.9
Northern Pike	1. Lower Peninsula S. of T. 20	1.8	1.3	2.5
	2. Lower Peninsula N. of T. 20	13.7	31.8	24.3
	3. Upper Peninsula	12.7	12.4	15.4
	4. Entire state	4.9	7.2	10.0
Bull-heads	1. Lower Peninsula S. of T. 20	3.3	7.5	6.3
	2. Lower Peninsula N. of T. 20	1.9	2.0	5.0
	3. Upper Peninsula	0.6	8.0	3.3
	4. Entire state	2.9	6.6	5.6

TABLE 7b. SUMMARY OF COMPUTATIONS ON RELATIVE ABUNDANCE OF THE WARM-WATER FISHES WITHIN EACH REGION, SECOND PART: FOR LARGER GAME-FISHES VS. PAN-FISHES, AND FOR MINOR SPECIES

For further explanation see Table 7a.

Species	Region	1934	1933	Average 1928-1932
Larger game-fishes ¹	1. Lower Peninsula S. of T. 20	9.2	9.5	9.1
	2. Lower Peninsula N. of T. 20	22.7	38.9	35.1
	3. Upper Peninsula	32.8	28.4	30.8
	4. Entire state	13.2	15.9	18.6
Pan-fishes ²	1. Lower Peninsula S. of T. 20	85.8	77.5	81.1
	2. Lower Peninsula N. of T. 20	70.7	50.5	54.5
	3. Upper Peninsula	51.0	45.0	54.3
	4. Entire state	81.1	70.6	71.1
Ratio: pan-fish to game-fishes	1. Lower Peninsula S. of T. 20	9.3	8.2	8.9
	2. Lower Peninsula N. of T. 20	3.1	1.3	1.6
	3. Upper Peninsula	1.6	1.6	1.8
	4. Entire state	6.1	4.4	3.8
Smelt	1. Lower Peninsula S. of T. 20	0	0	0
	2. Lower Peninsula N. of T. 20	1.4	8.3	2.5
	3. Upper Peninsula	0	0.3	0
	4. Entire state	0.3	1.4	0.7
Cisco & White-fish	1. Lower Peninsula S. of T. 20	tr.	0.0	tr.
	2. Lower Peninsula N. of T. 20	1.2	tr.	0.6
	3. Upper Peninsula	0.0	7.7	2.5
	4. Entire state	0.3	0.6	0.4
Mulletts, Suckers, and Red-horses	1. Lower Peninsula S. of T. 20	0.8	1.4	1.6
	2. Lower Peninsula N. of T. 20	1.4	tr.	1.4
	3. Upper Peninsula	14.5	7.2	8.1
	4. Entire state	1.5	1.6	2.1
Carp	1. Lower Peninsula S. of T. 20	0.5	3.3	1.1
	2. Lower Peninsula N. of T. 20	0.0	0.0	0.1
	3. Upper Peninsula	0.0	0.0	0.7
	4. Entire state	0.4	2.5	0.8
Other Species and Un-named	1. Lower Peninsula S. of T. 20	0.3	0.6	0.7
	2. Lower Peninsula N. of T. 20	0.7	0.2	0.4
	3. Upper Peninsula	1.1	3.3	0.3
	4. Entire state	0.4	0.6	0.6

¹ Four important species (small-mouth and large-mouth bass, walleyes and northern pike) added together. Other game-fishes, as the muskallunge, lake trout, etc., are caught in proportionately immaterial numbers.

² Five species, (bluegill, common sunfish, rock bass, black crappie, and perch) added together. Bullheads, smelt and ciscoes are excluded. Other species, coming under the term "pan-fish" are caught in immaterial numbers.

TABLE 8a. RELATIVE ABUNDANCE OF THE MAIN WARM-WATER FISHES, FOR 1934, IN COUNTIES OF THE LOWER PENINSULA SOUTH OF TOWNLIN E 20.

The figures represent the percentage of the total reported catch of fish in non-trout waters, for each county, which total is given in the first column. Unless this total amounts to several hundred, the relative abundance figures are of low reliability. Tr. = trace, less than 0.05%. 0 indicates that no fish of the given species was reported for the county, although some fishing was reported for the county.

County	Total catch, non-trout waters	BLACK BASS		Bluegill	Common Sunfish	Rock Bass	Calico Bass	Perch	Walleye	Grass Pike	Bull-heads	Catfish	Carp	Common Sucker
		Small-mouth	Large-mouth											
1. Berrien	440	0	5.2	55.5	6.4	1.4	4.1	2.7	0	0.5	9.3	0	0.2	13.2
2. Cass	2727	0.6	2.4	78.9	2.2	tr.	6.3	6.2	0	1.0	2.3	0	tr.	0
3. St. Joseph	605	3.0	4.5	76.2	2.6	2.5	2.3	2.8	0	1.5	0.8	0	0	3.6
4. Branch	6505	0.4	1.4	88.9	0.9	0.5	4.0	2.0	0	0.2	1.6	0	0	0.1
5. Hillsdale	772	0	2.8	82.0	3.8	0.6	1.4	7.5	0	0	1.8	0	0	0
6. Lenawee	2503	0.5	12.4	51.4	13.4	10.3	0.3	6.3	0.2	0.7	3.7	0	0.7	tr.
7. Monroe	420	0	0	1.4	1.4	19.3	0	13.1	0	0	34.5	0	18.6	8.6
8. Van Buren	1071	0	5.8	91.6	1.3	0	0.3	0.9	0	0	0.1	0	0	0
9. Kalamazoo	988	1.1	1.7	89.2	0.7	0.5	0.3	3.9	0	0.1	2.3	0	0	0.1
10. Calhoun	587	0.3	15.0	72.6	4.8	0.5	3.1	0.9	1.9	0.5	0.5	0	0	0
11. Jackson	1423	0.1	1.2	30.8	3.2	3.7	5.0	50.0	0	3.9	1.3	0	0	0
12. Washtenaw	730	0	3.7	34.9	12.1	2.3	1.1	29.0	0	9.0	7.8	0	0	0
13. Wayne	1020	0.4	0.1	4.5	3.1	2.5	4.2	16.6	0.4	0.7	44.4	0.7	17.7	1.7
14. Allegan	2007	0.1	0.3	63.9	2.4	2.2	18.0	9.7	0.2	0.4	1.8	0.1	0.3	0
15. Barry	884	0.8	2.0	67.4	5.4	0.6	9.6	9.5	1.1	2.4	0.1	0	0	0.9
16. Eaton	1784	0	2.0	71.0	6.3	2.2	1.4	1.2	0.1	0.4	6.3	0	0.7	7.4
17. Ingham	47	0	0	0	10.6	0	0	83.0	0	6.4	0	0	0	0
18. Livingston	2850	0.1	2.8	50.7	8.5	0.9	5.0	24.0	0	4.1	2.3	0	0	0.7
19. Oakland	2472	2.9	3.3	57.5	3.4	3.6	2.5	22.0	0.3	2.3	2.0	0	tr.	tr.
20. Macomb	328	4.0	0.6	1.2	4.0	0.6	0.3	87.5	0.3	0	0.9	0.3	0	0
21. Ottawa	872	0.1	7.6	46.1	6.8	0.1	1.6	34.4	1.1	0.8	0.8	0.6	0	0
22. Kent	2684	0.4	3.7	68.6	3.9	3.0	7.3	8.2	0.1	1.7	2.4	0	0	0.7
23. Ionia	302	1.3	9.6	41.4	13.6	1.3	1.3	18.9	0	10.6	1.0	0	0	1.0
24. Clinton	671	2.1	2.2	50.5	17.9	1.5	9.5	3.0	0.1	6.7	6.4	0	0	0
25. Shiawassee	215	0.5	18.1	48.4	5.1	16.7	4.2	0.9	0	6.0	0	0	0	0
26. Genesee	942	1.0	2.4	64.9	0.7	2.8	9.1	6.4	0	5.3	7.4	0	0	0
27. Lapeer	1581	0.6	3.5	90.6	0.2	2.7	0.6	1.6	0	0.3	0	0	0	0
28. St. Clair	102	0	0	0	0	2.0	0	0	91.2	2.0	3.0	0	0	1.0
29. Gratiot	336	21.7	0.9	47.3	17.0	2.1	0	2.4	0	0	8.6	0	0	0
30. Saginaw	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31. Tuscola	485	2.9	9.5	34.0	3.5	1.2	6.2	7.2	0	7.4	28.0	0	0	0
32. Sanilac	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33. Midland	86	0	0	0	2.3	3.5	57.0	32.6	1.2	0	2.3	0	1.2	0
34. Bay	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35. Euron	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36. Muskegon	4504	1.8	3.0	19.7	4.1	7.5	10.4	27.7	24.1	0.6	0.8	tr.	0.1	0.2
37. Montcalm	1089	0.4	1.1	61.0	0.7	0.9	16.3	17.4	0	0.5	0.1	0	0	1.5
38. Newaygo	2255	2.4	5.7	52.3	5.8	7.0	3.6	13.3	5.6	2.1	1.5	0	0	0.2
39. Mecosta	2274	0.7	5.1	15.5	13.9	5.4	15.3	32.4	4.5	4.8	1.7	0.1	0	0.1
40. Isabella	431	1.9	17.9	22.0	5.1	2.8	34.3	5.3	1.4	9.3	0	0	0	0
41. Gladwin	1775	2.6	1.5	9.7	4.6	14.3	26.7	16.6	0	6.9	11.6	0	0.2	3.7
42. Arenac	552	0	0	0	0	0	0	100.0	0	0	0	0	0	0
43. Oceana	1952	3.1	3.0	69.8	7.5	0.7	3.8	8.6	0.2	1.4	1.4	0	0	0
44. Mason	887	0.5	6.8	22.0	6.9	9.0	2.5	39.3	2.1	7.1	0.9	0	0	2.9
45. Lake	2087	1.8	6.5	80.3	1.3	0.2	0	9.0	0	0	0.4	0	0	0
46. Osceola	1245	3.4	7.1	52.5	4.4	17.3	0	12.8	0	0.5	1.7	0	0	0.4
47. Clare	4058	2.0	3.4	72.7	12.9	1.0	0	7.7	0	0.1	0.1	0	0	0
Total or average for region	61548	1.2	3.8	56.8	5.3	3.5	5.8	14.4	2.4	1.8	3.3	tr.	0.5	0.7

TABLE 8b. RELATIVE ABUNDANCE OF THE MAIN WARM-WATER FISHES, FOR 1934, IN COUNTIES NORTH OF TOWNLINE 20

For further explanation refer to Table 8a.

Region and County	Total catch, non-trout waters	BLACK BASS											Catfish	Carp	Common Suckers
		Small-mouth	Large-mouth	Bluegill	Common Sunfish	Rock Bass	Calico Bass	Perch	Walleye Pike	Grass Pike	Bullheads				
Lower Peninsula north of T. 20:															
48. Manistee	4815	1.9	0.3	9.7	0.4	2.0	0.2	71.5	3.7	0.6	0	0	0	0	3.9
49. Wexford	297	12.8	6.4	40.1	3.0	20.9	0	12.5	2.4	2.0	0	0	0	0	0
50. Missaukee	75	0	0	0	0	0	0	0	0	100.0	0	0	0	0	0
51. Roscommon	4067	0.3	0.2	1.8	9.0	14.9	0	21.4	9.3	40.7 2.2	0	0	0	0	0
52. Ogemaw	2947	1.6	2.4	33.5	13.7	3.0	20.6	14.6	2.9	5.0	2.2	0	0	0	0
53. Iosco	173	2.9	2.9	0	0	0	0	0	19.7	36.4	38.1	0	0	0	0
54. Benzie	1930	5.0	1.0	7.8	2.4	9.6	0	59.2	2.2	2.3	0.6	0	0	0	0.2
55. Grand Traverse	2033	4.5	4.3	44.4	4.8	22.0	0	12.6	0.2	3.2	1.0	0	0	0	2.0
56. Kalkaska	66	3.0	9.1	1.5	65.1	1.5	0	19.7	0	0	0	0	0	0	0
57. Crawford	3	0	0	0	0	0	0	0	0	100.0	0	0	0	0	0
58. Oscoda	4	0	0	25.0	0	0	0	75.0	0	0	0	0	0	0	0
59. Alcona	5	0	0	0	0	0	0	0	20.0	80.0	0	0	0	0	0
60. Leelanau	1025	9.2	4.4	2.1	1.5	7.0	0	61.8	0	3.0	0.2	0	0	0	0.3
61. Antrim	133	0	3.0	21.1	0	21.1	0	27.1	17.3	1.5	9.0	0	0	0	0
62. Otsego	246	0	0	0	0	0	0	0	0	95.5	0	0	0	0	4.5
63. Montmorency	192	7.8	15.6	6.2	15.6	5.2	0	7.3	11.5	28.6	2.1	0	0	0	0
64. Alpena	44	4.5	0	15.9	9.1	11.4	0	38.6	0	20.5	0	0	0	0	0
65. Charlevoix	101	0	4.0	10.0	0	6.0	0	59.4	0	5.0	15.8	0	0	0	0
66. Emmet	381	1.8	2.9	19.7	21.0	29.7	0	3.7	0.5	19.4	1.3	0	0	0	0
67. Cheboygan	280	0	0.4	17.9	5.4	3.6	0	19.6	29.6	11.1	9.3	0	0	0	0
68. Presque Isle	262	2.3	11.5	1.9	2.3	10.3	0	14.1	1.1	27.9	28.2	0	0	0	0.4
Totals for region	19079	2.6	1.9	15.3	6.0	9.2	3.2	37.0	4.5	13.7	1.9	0.1	0	0	1.3
Upper Peninsula:															
69. Menominee	238	0	2.1	3.8	0	16.4	0	41.6	7.6	23.5	5.0	0	0	0	0
70. Dickinson	24	0	70.8	0	0	0	0	0	25.0	4.2	0	0	0	0	0
71. Delta	117	37.6	21.4	0	0	0	0	1.7	12.0	23.1	0	0	0	0	0
72. Schoolcraft	497	5.2	0.8	32.0	1.6	3.8	0	41.9	11.5	3.0	0	0	0	0	0
73. Mackinac	8	0	0	0	0	0	0	25.0	0	75.0	0	0	0	0	0
74. Gogebic	1020	7.1	6.4	1.9	1.5	0.3	0	18.6	7.5	8.3	0	0	0	0	46.6
75. Iron	472	1.1	6.8	6.4	0	14.2	0.2	49.2	3.6	17.8	0	0	0	0	0
76. Marquette	4	0	100.0	0	0	0	0	0	0	0	0	0	0	0	0
77. Alger	36	2.8	8.3	16.7	0	0	0	0	0	58.3	13.9	0	0	0	0
78. Luce	538	4.3	0.4	0	0	6.7	0	72.7	0.5	14.1	0.7	0	0	0	0
79. Chippewa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80. Ontonagon	87	0	0	0	0	0	5.7	75.9	14.9	3.4	0	0	0	0	0
81. Houghton	72	61.1	9.7	0	0	0	0	0	1.4	27.8	0	0	0	0	0
82. Baraga	127	4.7	27.6	0	0	25.2	0	5.5	15.7	21.3	0	0	0	0	0
83. Keweenaw	86	18.6	1.2	0	0	0	0	59.3	10.5	2.3	0	0	0	0	8.1
84. Isle Royale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals (U.P.)	3326	7.1	6.0	6.7	0.7	5.9	0.2	37.5	7.0	12.7	0.6	0	0	0	14.5
South of T. 20	61548	1.2	3.8	56.8	5.3	3.5	5.8	14.4	2.4	1.8	3.3	tr.	0.5	0.7	
L.P. north of T. 20	19079	2.6	1.9	15.3	6.0	9.2	3.2	37.0	4.5	13.7	1.9	0.1	0	1.3	
Total(all counties)	83953	1.8	3.4	45.4	5.3	4.9	5.0	20.5	3.1	4.9	2.9	0.1	0.4	1.4	

TABLE 9a. RELATIVE ABUNDANCE OF BLUEGILLS IN THE TOTAL CATCH IN ALL NON-TROUT WATERS, BY COUNTIES IN THE LOWER PENINSULA SOUTH OF TOWNLINE 20.

0 indicates no reports of this species.

County	No. reported 1934	Percentage		
		1934	1933	Average 1928-1932
1. Berrien	244	55.5	59.9	60.0
2. Cass	2152	78.9	84.1	47.3
3. St. Joseph	461	76.2	72.9	56.4
4. Branch	5783	88.9	84.5	59.3
5. Hillsdale	633	82.0	81.2	57.7
6. Lenawee	1286	51.4	50.3	57.3
7. Monroe	6	1.4	1.0	0.1
8. Van Buren	981	91.6	73.3	64.3
9. Kalamazoo	881	89.2	75.4	50.9
10. Calhoun	426	72.6	44.2	52.8
11. Jackson	438	30.8	52.2	49.2
12. Washtenaw	255	34.9	73.1	51.9
13. Wayne	46	4.5	3.1	1.6
14. Allegan	1282	63.9	76.7	64.4
15. Barry	596	67.4	45.3	57.1
16. Eaton	1266	71.0	63.4	54.4
17. Ingham	0	0	79.7	53.9
18. Livingston	1445	50.7	69.2	57.6
19. Oakland	1422	57.5	69.0	53.6
20. Macomb	4	1.2	5.1	7.5
21. Ottawa	402	46.1	-	50.2
22. Kent	1841	68.6	56.4	36.1
23. Ionia	125	41.4	72.2	33.5
24. Clinton	339	50.5	79.6	46.2
25. Shiawassee	104	48.4	15.2	26.2
26. Genesee	611	64.9	55.6	47.9
27. Lapeer	1433	90.6	81.1	67.1
28. St. Clair	0	0	-	0
29. Gratiot	159	47.3	59.2	17.6
30. Saginaw	-	-	-	-
31. Tuscola	165	34.0	33.9	48.7
32. Sanilac	-	-	-	-
33. Midland	0	0	0	0
34. Bay	-	-	-	-
35. Huron	-	-	0	0
36. Muskegon	886	19.7	22.0	51.9
37. Montcalm	664	61.0	47.0	53.3
38. Newaygo	1180	52.3	45.9	31.5
39. Mecosta	353	15.5	12.9	51.5
40. Isabella	95	22.0	-	18.4
41. Gladwin	172	9.7	17.7	11.1
42. Arenac	0	0	12.7	0
43. Oceana	1362	69.8	79.9	10.4
44. Mason	195	22.0	27.0	37.3
45. Lake	1676	80.3	62.8	63.8
46. Osceola	654	52.5	97.7	32.8
47. Clare	2951	72.7	81.3	41.5
Averages		56.8	57.4	42.2
Total	34974			

TABLE 9b. RELATIVE ABUNDANCE OF BLUEGILLS IN THE TOTAL CATCH IN ALL
NON-TROUT WATERS BY COUNTIES NORTH OF TOWNLIN E 20.

For further explanation see Table 9a.

Region & County	No. reported	Percentage		
		1934	1933	Average 1928-1932
Lower Peninsula N. of T. 20:				
48. Manistee	465	9.7	0	24.9
49. Wexford	119	40.1	-	23.2
50. Missaukee	0	0	-	22.9
51. Roscommon	75	1.8	1.0	0.7
52. Ogemaw	988	33.5	60.0	25.4
53. Iosco	0	0	15.4	24.3
54. Benzie	150	7.8	0	6.0
55. Grand Traverse	902	44.4	18.9	27.6
56. Kalkaska	1	1.5	0	18.8
57. Crawford	0	0	9.5	0.1
58. Oscoda	1	25.0	0	8.8
59. Alcona	0	0	0	58.0
60. Leelanau	22	2.1	-	0.5
61. Antrim	28	21.1	0	5.1
62. Otsego	0	0	0	1.5
63. Montmorency	12	6.2	0	0
64. Alpena	7	15.9	0	0
65. Charlevoix	10	10.0	0	5.1
66. Emmet	75	19.7	0	3.5
67. Cheboygan	50	17.9	1.5	1.1
68. Presque Isle	5	1.9	-	7.0
Average	2910	15.3	2.0	11.0
Upper Peninsula:				
69. Menominee	9	3.8	0.4	tr.
70. Dickinson	0	0	0	0
71. Delta	0	0	0	0.7
72. Schoolcraft	159	32.0	43.9	23.6
73. Mackinac	0	0	0	8.6
74. Gogebic	19	1.9	12.8	1.7
75. Iron	30	6.4	0	0
76. Marquette	0	0	0	1.5
77. Alger	6	16.7	14.2	5.6
78. Luce	0	0	0	0
79. Chippewa	-	-	0	0
80. Ontonagon	0	0	0	14.4
81. Houghton	0	0	0	1.9
82. Baraga	0	0	0	0
83. Keweenaw	0	0	0	0.2
84. Isle Royale	-	-	-	0
Average	223	6.7	3.4	1.7

TABLE 10a. TOTAL FISH CATCH PER HOUR OF ALL SPECIES, BY COUNTIES IN THE LOWER PENINSULA SOUTH OF TOWNLINE 20, ALL WATERS.

County	Total Hours	Total Fish	Average catch per hour		
			1934	1933	Ave. 1928-1932
1. Berrien	734	507	0.69	0.83	1.14
2. Cass	903	2724	3.01	2.54	1.26
3. St. Joseph	357	662	1.85	1.39	2.06
4. Branch	1423	6461	4.54	3.81	2.24
5. Hillsdale	250	772	3.09	2.98	1.22
6. Lenawee	1393	2484	1.78	1.32	1.33
7. Monroe	564	372	0.66	1.42	1.69
8. Van Buren	403	1071	2.66	2.31	1.72
9. Kalamazoo	448	988	2.21	1.43	1.02
10. Calhoun	289.5	610	2.11	1.86	1.53
11. Jackson	947	1423	1.50	0.85	1.38
12. Washtenaw	462	699	1.51	1.65	1.15
13. Wayne	757	917	1.21	0.84	0.81
14. Allegan	900.5	2041	2.27	2.66	1.35
15. Barry	264	741	2.81	2.10	1.56
16. Eaton	1125	1730	1.54	0.90	0.93
17. Ingham	25	47	1.88	1.99	0.86
18. Livingston	1370	2778	2.03	1.98	1.47
19. Oakland	943	2358	2.50	3.43	1.68
20. Macomb	264	328	1.24	1.70	0.34
21. Ottawa	343	872	2.54	-	2.39
22. Kent	2007	2730	1.36	1.59	2.29
23. Ionia	226.5	231	1.02	1.64	1.24
24. Clinton	439	618	1.41	1.36	1.61
25. Shiawassee	96	212	2.21	0.73	1.47
26. Genesee	532	942	1.77	2.00	2.10
27. Lapeer	770	1578	2.05	2.45	1.82
28. St. Clair	143	102	0.71	-	2.97
29. Gratiot	108	277	2.57	1.00	0.19
30. Saginaw	-	-	-	-	-
31. Tuscola	549	485	0.88	2.07	0.84
32. Sanilac	-	-	-	-	14.4
33. Midland	158	81	0.51	0.73	0.32
34. Bay	-	-	-	-	0.33
35. Huron	-	-	-	3.75	0.56
36. Muskegon	2011	4482	2.23	1.19	1.70
37. Montcalm	460	1089	2.37	3.25	1.42
38. Newaygo	1621.5	2186	1.35	1.53	1.20
39. Mecosta	711.5	2307	3.23	1.43	2.41
40. Isabella	0	0	0	0	0.90
41. Gladwin	2666	1876	0.70	0.60	0.47
42. Arenac	966	734	0.76	0.27	0.92
43. Oceana	658.5	1831	2.78	1.65	1.51
44. Mason	591	943	1.60	1.04	1.86
45. Lake	2165	2630	1.21	0.79	1.39
46. Oscoda	733	1278	1.74	1.07	0.65
47. Clare	802	2986	3.72	2.10	0.95
Average & totals	32579	60183	1.85	1.12	1.33

TABLE 10 b. TOTAL FISH CATCH PER HOUR OF ALL SPECIES, BY COUNTIES NORTH OF TOWNLIN E 20.

Region and County	Total hours 1934	Total Fish 1934	Average catch per hour		
			1934	1933	Ave. 1928-1932
Lower Peninsula N. of T. 20:					
48. Manistee	1987.5	5270	2.65	1.08	1.18
49. Wexford	413	371	0.90	-	0.77
50. Missaukee	167	72	0.43	-	0.84
51. Roscommon	4567	4011	0.88	0.71	0.31
52. Ogemaw	1581	3003	1.90	1.00	0.98
53. Iosco	574	761	1.33	0.95	0.90
54. Benzie	1780	2146	1.21	3.54	0.09
55. Grand Traverse	1220	1901	1.56	0.12	0.64
56. Kalkaska	57.5	126	2.19	1.33	0.97
57. Crawford	115.5	54	0.47	1.32	0.59
58. Oscoda	76	50	0.66	1.31	0.77
59. Alcona	66	8	1.21	2.75	1.18
60. Leelanau	856	1064	1.24	-	1.16
61. Antrim	256	405	1.58	1.67	1.14
62. Otsego	651	315	0.48	1.11	1.07
63. Montmorency	470	230	0.49	1.32	1.60
64. Alpena	106	43	0.41	3.75	1.01
65. Charlevoix	67	93	1.39	1.66	1.66
66. Emmet	188.5	351	1.86	1.50	1.26
67. Presque Isle	296	272	0.92	-	2.20
67. Cheboygan	681	593	0.87	0.41	6.77
Average & totals	16176	21139	1.31	0.83	0.72
Upper Peninsula:					
69. Menominee	274	340	1.24	0.97	1.46
70. Dickinson	218	197	0.90	0.55	0.80
71. Delta	301	299	0.99	1.35	1.22
72. Schoolcraft	326	732	2.25	1.22	1.45
73. Mackinac	33.5	7	0.21	1.39	2.08
74. Gogebic	651.5	1151	1.77	1.12	0.83
75. Iron	699.5	980	1.40	0.94	1.25
76. Marquette	12	5	0.42	0.62	0.91
77. Alger	331.5	381	1.15	1.29	0.94
78. Luce	478	737	1.54	0.62	1.08
79. Chippewa	-	-	-	2.07	1.67
80. Ontonagon	104	98	0.94	0.35	1.22
81. Houghton	380.5	443	1.16	0.45	0.85
82. Baraga	485.5	436	0.90	0.84	0.75
83. Keweenaw	406	405	1.00	0.47	0.51
84. Isle Royale	-	-	-	-	0.68
Average & totals	4701	6211	1.32	0.82	1.02
Entire State	53456	87533	1.64	-	-

TABLE 11a. TROUT CATCH PER HOUR BY COUNTIES IN THE LOWER PENINSULA SOUTH OF TOWNLIN 20, FOR TROUT WATERS

Lake trout, and stream trout when in essentially non-trout waters, not included.

County	1934		1933		1928-1932	
	Av. per hr.	Total hours	Av. per hr.	Total hours	Av. per hr.	Total hours
1. Berrien	1.20	56	0.37	103	0.93	168
2. Cass	1.28	123	-	-	1.07	380
3. St. Joseph	1.48	42	1.33	12	6.00	3
4. Branch	-	-	-	-	-	-
5. Hillsdale	-	-	-	-	3.31	13
6. Lenawee	-	-	0.43	28	-	-
7. Monroe	-	-	-	-	-	-
8. Van Buren	-	-	-	-	0.46	119
9. Kalamazoo	-	-	-	-	0.89	111
10. Calhoun	0.98	23.5	1.62	55.5	1.48	44
11. Jackson	-	-	0.36	14	2.18	22
12. Washtenaw	-	-	-	-	-	-
13. Wayne	-	-	-	-	-	-
14. Allegan	0.41	102.5	0.63	125	0.46	205
15. Barry	-	-	1.03	58	1.04	231
16. Eaton	-	-	-	-	-	-
17. Ingham	-	-	-	-	-	-
18. Livingston	-	-	3.00	4	0.80	10
19. Oakland	-	-	9.80	5	-	-
20. Macomb	-	-	-	-	0.66	33
21. Ottawa	-	-	-	-	-	-
22. Kent	0.50	229	0.86	148	1.24	640
23. Ionia	-	0.5	-	-	0.88	55
24. Clinton	-	-	-	-	-	-
25. Shiawassee	-	-	-	-	-	-
26. Genesee	-	-	-	-	2.00	5.5
27. Lapeer	0.67	0	0.50	6	1.67	84
28. St. Clair	-	-	-	-	-	-
29. Gratiot	-	-	-	-	-	-
30. Saginaw	-	-	-	-	-	-
31. Tuscola	-	-	-	-	-	-
32. Sanilac	-	-	-	-	-	-
33. Midland	-	-	-	-	0	101
34. Bay	-	-	-	-	-	-
35. Euron	-	-	-	-	-	-
36. Muskegon	1.22	32	-	-	1.03	207
37. Montcalm	-	-	-	-	0.99	83
38. Newaygo	0.92	130.5	1.28	183.5	1.13	1493
39. Mecosta	2.42	61.5	2.91	124.2	2.63	539
40. Isabella	-	-	0	5	1.62	81
41. Gladwin	0.66	207	0.61	477.5	0.46	493
42. Arenac	0.19	800	147.4	0.25	0.79	562
43. Oceana	0.68	60.5	1.11	113.5	1.27	370
44. Mason	0.85	87	0.50	14	1.54	868
45. Lake	0.74	845	0.79	673.5	1.16	1819
46. Osceola	0.81	59	1.09	56	0.48	868
47. Clare	1.27	67	0.45	56	1.29	970
Average and total	0.66	2935	0.67	3735.7	1.14	10575

TABLE 11b. TROUT CATCH PER HOUR BY COUNTIES NORTH OF TOWNLINE 20,
FOR TROUT WATERS.

Region and County	1934		1933		1928-1932	
	Av. per hr.	Total hours	Av. per hr.	Total hours	Av. per hr.	Total hours
Lower Peninsula N. of T. 20:						
48. Manistee	0.74	621.5	0.47	59	1.29	3146
49. Wexford	0.56	134	-	-	1.07	1841
50. Missaukee	-	-	-	-	1.00	1737
51. Roscommon	-	-	0.46	13	0.68	270
52. Ogemaw	0.68	217	0.83	135.5	1.18	2734
53. Iosco	1.42	440	1.52	355.3	1.14	1290
54. Benzie	0.39	586	0.38	79	0.95	3015
55. Grand Traverse	0.10	239	-	-	0.64	1201
56. Kalkaska	1.43	47	1.33	114.5	0.97	2011
57. Crawford	0.54	95	1.33	143.5	0.67	3836
58. Oscoda	0.46	74	1.27	26	0.81	470
59. Alcona	.083	36	2.75	37.5	1.15	751
60. Leelanau	0.55	129	-	-	0.98	638
61. Antrim	1.72	180	1.67	261.25	1.35	2361
62. Otsego	0.66	104	1.08	781.5	1.43	4080
63. Montmorency	0.25	89	1.32	35.5	1.64	660
64. Alpena	-	-	3.75	12	0.48	137
65. Charlevoix	0.82	28	1.66	56	1.06	458
66. Emmet	0.61	65.5	1.50	158.3	1.53	1013
67. Cheboygan	0.64	516	0.37	887.3	0.76	2489
68. Presque Isle	1.73	15	-	-	1.64	174
Average & Total	0.72	3616	1.02	3157.2	1.08	34312
Upper Peninsula						
69. Menominee	1.21	82	1.02	54.75	0.51	776
70. Dickinson	0.95	182	0.77	221.5	0.79	1152
71. Delta	0.88	186	1.33	258	1.22	1101
72. Schoolcraft	1.11	213	1.18	369	1.50	891
73. Mackinac	-	-	1.19	78	1.81	526
74. Gogebic	0.96	146.5	0.97	434.5	0.95	3814
75. Iron	1.19	438	0.92	738	1.45	1781
76. Marquette	0.11	9	0.42	839	0.88	3137
77. Alger	1.24	280.5	1.28	320.5	1.03	1896
78. Luce	1.03	209	0.47	96	1.13	537
79. Chippewa	-	-	0.50	98.5	1.48	1570
80. Ontonagon	2.25	12	0.37	145	1.42	879
81. Houghton	1.23	303.5	0.42	2120	0.87	6378
82. Baraga	0.92	350.5	0.86	329	0.81	3542
83. Keweenaw	0.63	293	0.52	332	0.55	2429
84. Isle Royal	-	-	-	-	0.68	922
Average & Total	1.04	2705	0.69	6433.75	0.98	31331
Entire State	0.79	9256	-	-	-	-

TABLE 12a. TOTAL FISH CATCH PER HOUR BY COUNTIES IN THE LOWER PENINSULA SOUTH OF TOWNLIN 20, FOR NON-TROUT WATERS.

County	1934		1933		1928-1932	
	Av. per hr.	Total hours	Av. per hr.	Total hours	Av. per hr.	Total hours
1. Berrien	0.65	678	1.05	206	1.16	1699
2. Cass	3.28	780	2.54	1133	1.25	6601
3. St. Joseph	1.91	315	1.39	469.5	2.09	1523
4. Branch	4.54	1423	3.81	1034.5	2.24	3471
5. Hillsdale	3.09	250	3.00	157.5	1.20	1627
6. Lenawee	1.78	1393	1.38	445.75	1.33	3751
7. Monroe	0.66	564	1.42	1005.25	1.69	3702
8. Van Buren	2.66	403	2.31	162	1.81	1636
9. Kalamazoo	2.21	448	1.43	375.5	1.04	1220
10. Calhoun	2.21	266	2.04	75.5	1.53	1644
11. Jackson	1.50	947	0.87	490.25	1.33	2445
12. Washtenaw	1.51	462	1.65	218.75	1.15	3752
13. Wayne	1.21	757	0.84	2922	0.81	11457
14. Allegan	2.51	798	3.17	500.5	1.46	1688
15. Barry	2.81	264	2.51	150	1.60	2851
16. Eaton	1.54	1125	0.90	934	0.93	4805
17. Ingham	1.88	25	1.99	254.5	0.86	465
18. Livingston	2.03	1370	1.97	730.5	1.47	3704
19. Oakland	2.50	943	3.34	356.5	1.68	2572
20. Macomb	1.24	264	1.70	23	0.23	94
21. Ottawa	2.54	343	-	-	2.39	212
22. Kent	1.47	1778	1.97	288.5	2.65	1825
23. Ionia	1.02	226	1.64	406.75	1.30	320
24. Clinton	1.40	439	1.36	115.5	1.61	1313
25. Shiawassee	2.21	96	0.73	200	1.47	505
26. Genesee	1.77	532	2.00	225.5	2.10	1493
27. Lapeer	2.07	761	2.48	378	1.83	2079
28. St. Clair	0.71	143	-	-	2.97	666
29. Gratiot	2.57	108	1.00	52	0.19	93
30. Saginaw	-	-	-	-	-	-
31. Tuscola	0.88	549	2.07	257	0.84	921
32. Sanilac	-	-	-	-	14.4	125
33. Midland	0.51	158	0.73	139	0.50	172
34. Bay	-	-	-	-	0.33	24
35. Huron	-	-	3.75	8	0.56	41
36. Muskegon	2.25	1979	1.19	809.5	1.97	523
37. Montcalm	2.37	460	3.27	15	1.46	955
38. Newaygo	1.37	1491	1.60	626.25	1.26	1769
39. Mecosta	3.32	650	0.80	292.25	2.14	441
40. Isabella	-	-	-	-	0.82	662
41. Gladwin	0.71	2459	0.59	3224.5	0.47	5606
42. Arenac	3.33	166	0.45	122	3.79	75
43. Oceana	2.99	598	1.73	766	1.66	605
44. Mason	1.71	504	0.13	86	2.01	1783
45. Lake	1.51	1320	0.69	13	0.06	661
46. Osceola	1.83	674	1.03	30	0.73	1864
47. Clare	3.95	735	2.23	627	0.81	2211
Totals & Averages	1.96	29644	1.54	20327.5	1.35	87451

TABLE 12b. TOTAL FISH CATCH PER HOUR BY COUNTIES NORTH OF TOWNLINE 20, FOR NON-TROUT WATERS.

Regions and County	1934		1933		1928-1932	
	Av. per hr.	Total hours	Av. per hr.	Total hours	Av. per hr.	Total hours
Lower Peninsula N. of T. 20						
48. Manistee	3.50	1366	1.42	107	1.17	5501
49. Wexford	1.06	279	-	-	0.49	2074
50. Missaukee	0.43	167	-	-	0.79	5628
51. Roscommon	0.88	4567	0.71	8856	0.31	49465
52. Ogemaw	2.09	1364	12.5	2	0.88	5531
53. Iosco	0.99	134	0.63	633.5	0.82	1747
54. Benzie	1.58	1194	5.56	123.5	1.17	5452
55. Grand Traverse	1.83	981	0.12	164.5	0.64	3127
56. Kalkaska	5.62	10.5	-	-	0.98	878
57. Crawford	0.15	20.5	1.25	16.75	0.44	1906
58. Oscoda	2.00	2	1.67	3	0.72	388
59. Alcona	0.17	30	-	-	1.52	83
60. Leelanau	1.37	727	-	-	1.18	3902
61. Antrim	1.26	76	-	-	0.67	1027
62. Otsego	0.45	547	1.83	6	0.31	1945
63. Montmorency	0.48	381	-	-	0.86	37
64. Alpena	0.41	106	-	-	1.29	259
65. Charlevoix	1.80	39	-	-	1.03	1234
66. Emmet	2.53	123	-	-	1.96	912
67. Cheboygan	1.58	165	0.55	112.5	0.76	3395
68. Presque Isle	0.88	281	-	-	2.49	336
Total & Averages	1.46	12560	0.76	10024.75	0.60	94827
Upper Peninsula:						
69. Menominee	1.20	192	0.96	1102.8	1.60	5514
70. Dickinson	0.67	36	0.29	186	0.87	248
71. Delta	0.97	115	1.43	87	1.22	211
72. Schoolcraft	4.38	113	1.58	36	1.23	199
73. Mackinac	0.21	33.5	1.93	29	2.33	575
74. Gogebic	1.97	505	1.32	189.5	0.58	1990
75. Iron	1.76	261.5	0.89	780	0.88	971
76. Marquette	1.33	3	2.12	103.5	1.00	1111
77. Alger	0.67	51	1.30	191	0.76	909
78. Luce	1.94	269	1.03	34	0.38	36
79. Chippewa	-	-	5.36	47	2.83	265
80. Ontonagon	0.77	72	0.25	20	0.54	257
81. Houghton	0.90	77	0.88	133.5	0.78	1601
82. Baraga	0.80	135	0.76	92	0.36	594
83. Keweenaw	0.76	113	0.13	131	0.44	1347
84. Isle Royal	-	-	-	-	0	11
Total & Averages	1.61	1996	1.03	3142.3	1.09	15839
Entire State	1.80	44200	-	-	-	-

TABLE 13a. BLUEGILL CATCH PER HOUR, BY COUNTIES IN THE LOWER PENINSULA SOUTH OF TOWNLINE 20.

County	1934		1933		1928-1932	
	Av. per hr.	Total hours	Av. per hr.	Total hours	Av. per hr.	Total hours
1. Berrien	0.36	678	0.63	206	0.69	1699
2. Cass	2.60	780	2.18	1133	0.59	6601
3. St. Joseph	1.45	315	1.01	469.5	1.19	1523
4. Branch	4.04	1423	3.23	1034.5	1.39	3471
5. Hillsdale	2.53	250	2.46	157.5	0.70	1627
6. Lenawee	0.92	1393	0.71	445.75	0.76	3751
7. Monroe	0.01	564	0.02	1005.25	0.09	3702
8. Van Buren	2.43	403	1.70	162	1.14	1636
9. Kalamazoo	1.97	448	1.08	375.75	0.54	1220
10. Calhoun	1.60	266	0.90	75.5	0.82	1644
11. Jackson	0.46	947	0.44	490.25	0.65	2445
12. Washtenaw	0.52	462	1.21	218.73	0.61	3752
13. Wayne	0.06	757	0.03	2922	0.01	11457
14. Allegan	1.60	798	2.41	500.5	0.96	1688
15. Barry	2.08	264	2.00	150	0.91	2851
16. Eaton	1.12	1125	0.57	934	0.51	4805
17. Ingham	None	25	1.59	254.5	0.55	465
18. Livingston	1.01	1370	1.37	730.5	0.84	3704
19. Oakland	1.46	943	2.35	356.5	0.91	2572
20. Macomb	0.02	264	0.09	23	None	94
21. Ottawa	1.17	343	-	-	1.20	212
22. Kent	1.03	1778	0.97	288.5	0.95	1825
23. Ionia	0.30	226	1.21	406.75	0.50	320
24. Clinton	0.74	439	1.08	115.5	0.77	1313
25. Shiawassee	1.08	96	0.17	200	0.39	505
26. Genesee	1.15	532	1.12	225.5	1.06	1493
27. Lapeer	1.88	761	2.00	378	1.24	2079
28. St. Clair	None	143	-	-	None	666
29. Gratiot	1.26	108	0.63	52	0.03	93
30. Saginaw	-	-	-	-	-	-
31. Tuscola	0.30	549	0.73	257	0.42	921
32. Sanilac	-	-	-	-	None	125
33. Midland	None	158	None	139	None	172
34. Bay	-	-	-	-	None	24
35. Huron	-	-	None	8	None	41
36. Muskegon	0.44	1979	0.26	809.5	1.02	523
37. Montcalm	1.44	460	1.47	15	0.46	955
38. Newaygo	0.70	1491	0.75	626.25	0.40	1769
39. Mecosta	0.54	650	0.11	293.25	1.07	441
40. Isabella	None	None	-	-	0.15	662
41. Gladwin	0.07	2459	0.10	3224.5	0.05	5406
42. Arenac	None	166	0.06	122	None	75
43. Oceana	2.07	598	1.35	766	0.16	605
44. Mason	0.37	504	0.31	86	0.78	1783
45. Lake	1.22	1320	0.23	13	1.25	661
46. Osceola	0.95	674	1.00	30	0.23	1864
47. Clare	2.79	735	1.77	627	0.34	2211
Averages and totals	1.12	29644	0.89	20327.5	0.57	87451

TABLE 13b. BLUEGILL CATCH PER HOUR, BY COUNTIES NORTH OF TOWNLINE 20.

County and Region	1934		1933		1928-1932	
	Av. per hr.	Total hours	Av. per hr.	Total hours	Av. per hr.	Total hours
Lower Peninsula N. of T. 20:						
48. Manistee	3.40	1366	0	107	0.29	5501
49. Wexford	0.43	279	-	-	0.12	2074
50. Missaukee	0	167	-	-	0.18	5628
51. Roscommon	0.02	4567	0.01	8856	tr.	49465
52. Ogemaw	0.72	1364	7.50	2	0.23	5531
53. Iosco	0	134	0.10	633.5	0.20	1747
54. Benzie	0.13	1194	0	123.5	0.07	5452
55. Grand Traverse	0.84	981	0.04	164.5	0.17	3127
56. Kalkaska	0.10	10.5	0	0	0.20	878
57. Crawford	0	20.5	0.12	16.75	tr.	1906
58. Oscoda	0.50	2	0	3	0.06	388
59. Alcona	0	30	0	0	0.79	83
60. Leelanau	0.03	727	-	-	0.03	3902
61. Antrim	0	76	0	0	0.03	1027
62. Otsego	0	547	0	6	0.06	1945
63. Montmorency	0.03	381	0	0	0	37
64. Alpena	0.07	106	0	0	0	259
65. Charlevoix	0	39	0	0	0.10	912
66. Emmet	0.61	123	0	0	0.04	1234
67. Cheboygan	0.30	165	0.01	112.5	0.01	3395
68. Presque Isle	0.01	281	-	-	0.18	336
Averages and totals	0.22	12560	0.02	10024.75	0.07	94827
Upper Peninsula:						
69. Menominee	0.06	192	tr.	1102.8	tr.	5514
70. Dickinson	0	36	0	186	None	248
71. Delta	0	115	0	87	0.01	211
72. Schoolcraft	1.41	113	0.69	36	0.03	199
73. Mackinac	0	33.5	0	29	0.22	575
74. Gogebic	0.04	505	0.18	189.5	0.01	1990
75. Iron	0.11	261.5	0	760	0	971
76. Marquette	0	3	0	103.5	0.02	1111
77. Alger	1.18	51	0.30	191	0.04	909
78. Luce	0	269	0	34	0	36
79. Chippewa	-	-	0	47	0	265
80. Ontonagon	0	92	0	20	0.08	257
81. Houghton	0	77	0	133.5	0.02	1601
82. Baraga	0	135	0	92	0	594
83. Keweenaw	0	113	0	131	tr.	1347
84. Isle Royal	-	-	-	-	0	11
Averages and totals	0.11	1896	0.04	3142.3	0.02	15839
Entire State	0.82	44200	-	-	-	-

TABLE 14a. SUMMARY OF COMPUTATIONS OF TOTAL FISH CATCH PER HOUR, FIRST PART, FOR ALL SPECIES, FOR TROUT AND FOR PROPAGATED VS. NON-PROPAGATED FISH.

Species	Waters	Region	Average		Average 1928-1932
			1934	1933	
All species	All waters	1. Lower Peninsula S. of T. 20	1.85	1.40	1.33
		2. Lower Peninsula N. of T. 20	1.31	0.83	0.72
		3. Upper Peninsula	1.32	0.82	1.02
		4. Entire state	1.64	1.12	1.00
All species	Non-trout waters	1. Lower Peninsula S. of T. 20	1.96	1.54	1.35
		2. Lower Peninsula N. of T. 20	1.46	0.76	0.60
		3. Upper Peninsula	1.61	1.03	1.12
		4. Entire state	1.80	1.26	0.87
Brook, Brown, and Rainbow Trout	Trout Waters	1. Lower Peninsula S. of T. 20	0.66	0.67	1.15
		2. Lower Peninsula N. of T. 20	0.72	1.03	1.08
		3. Upper Peninsula	1.04	0.69	0.97
		4. Entire state	0.79	0.76	1.04
Brook Trout	Trout Waters	1. Lower Peninsula S. of T. 20	0.38	0.49	0.82
		2. Lower Peninsula N. of T. 20	0.54	0.85	0.94
		3. Upper Peninsula	0.96	0.62	0.93
		4. Entire state	0.61	0.64	0.92
Brown Trout	Trout Waters	1. Lower Peninsula S. of T. 20	0.12	0.08	0.08
		2. Lower Peninsula N. of T. 20	.035	0.04	0.02
		3. Upper Peninsula	.008	tr.	tr.
		4. Entire state	.055	0.03	0.02
Rainbow Trout	Trout Waters	1. Lower Peninsula S. of T. 20	0.16	0.10	0.25
		2. Lower Peninsula N. of T. 20	0.15	0.14	0.12
		3. Upper Peninsula	.069	0.07	0.04
		4. Entire state	0.13	0.09	0.11
5 Propagated Lake Fishes ¹	Non-trout Waters	1. Lower Peninsula S. of T. 20	1.55	1.15	0.97
		2. Lower Peninsula N. of T. 20	0.90	0.34	0.31
		3. Upper Peninsula	1.04	0.58	0.73
		4. Entire state	1.35	0.85	0.63
5 Non-propagated lake fishes ²	Non-trout waters	1. Lower Peninsula S. of T. 20	0.38	0.31	0.33
		2. Lower Peninsula N. of T. 20	0.49	0.36	0.27
		3. Upper Peninsula	0.32	0.28	0.27
		4. Entire state	0.41	0.32	0.30
Ratio, 5 propagated to 5 non-propagated fishes		1. Lower Peninsula S. of T. 20	4.07	3.71	2.94
		2. Lower Peninsula N. of T. 20	1.85	0.94	1.15
		3. Upper Peninsula	3.27	2.07	2.70
		4. Entire state	3.28	2.66	2.10

¹ Large-mouth and Small-mouth Bass, Bluegills, Perch and Walleyes.

² Common Sunfish, Rock Bass, Black Crappie, Northern Pike and Bullheads.

TABLE 14b. SUMMARY OF COMPUTATIONS OF TOTAL FISH CATCH PER HOUR, SECOND PART,
FOR MORE IMPORTANT SPECIES IN NON-TROUT WATERS

Species	Region	Average 1934	Average 1933	Average 1928-1932
Small- mouth Bass	1. Lower Peninsula S. of T. 20	0.02	0.02	0.02
	2. Lower Peninsula N. of T. 20	0.04	tr.	0.02
	3. Upper Peninsula	0.12	0.06	0.03
	4. Entire state	0.03	0.02	0.02
Large- mouth Bass	1. Lower Peninsula S. of T. 20	0.07	0.06	0.06
	2. Lower Peninsula N. of T. 20	0.03	tr.	0.01
	3. Upper Peninsula	0.10	0.05	0.03
	4. Entire state	0.06	0.04	0.03
Bluegill	1. Lower Peninsula S. of T. 20	1.12	0.89	0.57
	2. Lower Peninsula N. of T. 20	0.22	0.02	0.07
	3. Upper Peninsula	0.11	0.04	0.02
	4. Entire state	0.82	0.55	0.29
Common Sunfish	1. Lower Peninsula S. of T. 20	0.10	0.07	0.08
	2. Lower Peninsula N. of T. 20	0.09	0.03	0.02
	3. Upper Peninsula	.012	0.03	0.01
	4. Entire state	0.09	0.05	0.05
Rock Bass	1. Lower Peninsula S. of T. 20	0.07	0.05	0.06
	2. Lower Peninsula N. of T. 20	0.13	0.07	0.06
	3. Upper Peninsula	0.09	0.05	0.05
	4. Entire state	0.09	0.06	0.06
Black Crappie	1. Lower Peninsula S. of T. 20	0.11	0.06	0.07
	2. Lower Peninsula N. of T. 20	0.05	tr.	tr.
	3. Upper Peninsula	tr.	tr.	tr.
	4. Entire state	0.09	0.03	0.03
Perch	1. Lower Peninsula S. of T. 20	0.29	0.13	0.32
	2. Lower Peninsula N. of T. 20	0.55	0.27	0.18
	3. Upper Peninsula	0.61	0.38	0.54
	4. Entire state	0.38	0.20	0.27
Walleye Pike	1. Lower Peninsula S. of T. 20	0.05	0.04	0.01
	2. Lower Peninsula N. of T. 20	0.07	0.04	0.03
	3. Upper Peninsula	0.11	0.05	0.11
	4. Entire state	0.06	0.04	0.04
Northern Pike	1. Lower Peninsula S. of T. 20	0.03	0.02	0.03
	2. Lower Peninsula N. of T. 20	0.20	0.24	0.14
	3. Upper Peninsula	0.20	0.13	0.17
	4. Entire state	0.09	0.10	0.09
Bullheads	1. Lower Peninsula S. of T. 20	0.07	0.12	0.09
	2. Lower Peninsula N. of T. 20	0.02	0.02	0.03
	3. Upper Peninsula	.011	0.07	0.03
	4. Entire state	0.05	0.08	0.06