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UNIVERSITY OF MICHIGAN

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REPORT NO. 1053

REPORT OF THE GENERAL CREEL CENSUS FOR 1945

by

Kiyoshi G. Fukano

The data, on which this the nineteenth report is based, was taken by the various conservation officers on general census forms (see sample) as a part of their regular duties. It is because of the fine cooperation of the Division of Field Administration that this report can be written. The writer wishes to express appreciation to the conservation officers, who collected the data, and the Institute for Fisheries Research staff, who have contributed comments or additions to the report.

The aim of the general creel census is to obtain a sample of the sport fishing in all parts of the state. The records of fishing have been divided into three main groups: trout waters, non-trout waters, and Great Lakes waters and these in turn have been subdivided into lakes and streams. It is believed that these separate tabulations of the data give the best available indication of the fishing quality, and to some degree fishing intensity, in the six types of water administered by the state. The higher catch per hour for the Great Lakes and their connecting waters does not give a true index of the quality of fishing in non-trout lakes when these ecologically different waters are lumped together. The number of anglers interviewed on each of the different types of waters are as follows:

(1) Trout waters, 7,387 fishermen (17.5% of all fishermen checked) of whom 798 fished on designated trout lakes and the remaining 6,589 fished on

streams; (2) non-trout waters, 31,589 anglers (74.7%) of whom 25,614 fished on lakes and 5,975 fished on streams; (3) Great Lakes waters, 3,307 anglers (7.8%) of whom 2,248 fished in the Great Lakes and the other 1,059 fished in the connecting waters.

Of the 42,283 fishermen interviewed by officers, 4,289 (10.14 %) were non-residents and women constituted 16.94 per cent (6,971) of all those checked.

Table 1

Total number of fishermen, total hours fished, total number of legal-sized fish taken, and catch per hour for each Field Administration District and Region, all waters, 1945

	Number of male anglers	Number of female anglers	Total number of anglers	Total hours fished	Number of legal-sized fish caught	Catch per hour
District 1	1,973	171	2,144	7,783.1	6,427	0.8
District 2	2,976	339	3,315	15,640.0	8,738	0.6
District 3	1,168	158	1,326	4,739.7	7,500	1.6
District 4	1,000	112	1,112	4,954.2	4,585	0.9
<u>Region 1</u>	7,117	780	7,897	33,117.0	27,250	0.8
District 5	3,210	652	3,862	13,476.1	9,523	0.7
District 6	2,545	399	2,944	9,247.6	10,518	1.1
District 7	3,966	1,044	5,010	14,785.2	9,421	0.6
District 8	1,595	257	1,852	6,279.4	8,859	1.4
District 9	1,845	400	2,245	7,037.4	7,813	1.1
<u>Region 2</u>	13,161	2,752	15,913	50,825.7	46,134	0.9
District 10	5,559	1,320	6,879	20,578.4	32,694	1.6
District 11	5,069	1,001	6,070	18,860.7	21,500	1.1
District 12	4,406	1,118	5,524	20,532.1	33,437	1.6
<u>Region 3</u>	15,034	3,439	18,473	59,971.2	87,631	1.5
<u>District Total</u>	35,312	6,971	42,283	143,913.9	161,015	1.1

Records of intensive lake and stream censuses have not been included in this report. Only legal-size fish caught by the sports anglers have been considered. The term "fisherman-day" denotes the time which the angler had spent fishing that day prior to being interviewed by the conservation officer.

Detailed Analysis

The officers interviewed 42,283 fishermen during 1945, a decrease of 3,817 anglers (8.28 per cent) from the records collected in 1944. The 1945 records represent 143,913.9 hours of fishing, a decrease of 8,282.6 hours (5.44 per cent) under that for the previous year. In 1945 the number of fish recorded was 161,015, a decrease of 16,247 fish (9.17 per cent) from the previous year. The catch per unit of effort in 1945 was 1.1 fish per hour as compared with 1.2 fish per hour in 1944. It is interesting to note that in 1944 the greatest number of anglers, hours fished, and fish caught were recorded since the inauguration of the general creel census in 1927.

This is the first general creel census report which has records from ~~everyone~~ of the 83 counties in the state. However, a few more records from certain counties would have made the data more reliable. The goal of 400 records per county was attained by officers in thirty-eight counties in 1945. The number of records submitted by counties are found in Table 2.

In this report the various types of waters are separated into Field Administration Districts. Since the conservation officers gather the data from which this report is written, it is thought that the report would be better understood by them if Field Administration Districts were used instead of Hatchery Districts as has been done in the past. There are three counties, Alger, Kent, and Ottawa, which lie in two Field Administration Districts. It was impossible to separate the slips by districts submitting them; therefore, in this report all of Alger County is considered in District 3 and both Kent County and Ottawa County, in District 10.

Table 2

Number of reports submitted by Conservation Officers
during 1944, and 1945 by counties

County	Number of reports for 1945	Number of reports for 1944	County	Number of reports for 1945	Number of reports for 1944
Alcona	214	496	Lake	291	313
Alger	346	340	Lapeer	250	800
Allegan	617	484	Leelanau	242	492
Alpena	591	357	Lenawee	1,004	935
Antrim	367	847	Livingston	791	721
Arenac	270	95	Luce	273	262
Baraga	256	118	Mackinac	283	579
Barry	677	500	Macomb	196	504
Bay	147	82	Manistee	411	751
Benzie	754	155	Marquette	549	961
Berrien	675	500	Mason	119	165
Branch	691	617	Mecosta	34	221
Calhoun	224	174	Menominee	323	424
Cass	499	602	Midland	320	203
Charlevoix	287	589	Missaukee	524	236
Cheboygan	1,201	952	Monroe	529	477
Chippewa	149	604	Montcalm	343	631
Clare	379	361	Montmorency	681	776
Clinton	767	318	Muskegon	291	148
Crawford	36	156	Newaygo	192	274
Delta	431	516	Oakland	767	1,182
Dickinson	469	860	Oceana	191	304
Eaton	106	344	Ogemaw	173	449
Emmet	281	521	Ontonagon	194	469
Genesee	957	760	Osceola	391	197
Gladwin	752	556	Oscoda	903	795
Gogebic	1,075	1,813	Otsego	231	151
Grand Traverse	413	360	Ottawa	1,394	531
Gratiot	214	284	Presque Isle	223	218
Hillsdale	218	332	Roscommon	3,307	4,433
Houghton	421	414	Saginaw	84	114
Huron	763	883	St. Clair	883	1,208
Ingham	303	386	St. Joseph	550	321
Ionia	632	472	Sanilac	211	230
Iosco	347	283	Schoolcraft	407	413
Iron	2,523	1,452	Shiawassee	465	182
Isabella	79	183	Tuscola	102	163
Jackson	944	1,701	Van Buren	195	494
Kalamazoo	339	351	Washtenaw	557	855
Kalkaska	253	...	Wayne	866	766
Kent	1,301	1,105	Wexford	347	677
Keweenaw	198	152			
			Total	42,283	46,100

Fishing in Trout, Non-trout, and Great Lakes Waters
by Field Administration Districts

The data for 1945 on the numbers and percentage of anglers using the various waters arranged by Field Administration Districts and Regions are given in Table 3.

Table 3

Numbers and percentages of fishermen interviewed on trout, non-trout, and Great Lakes waters by Field Administration Districts and Regions, 1945

District	TROUT WATERS		NON-TROUT WATERS		GREAT LAKES WATERS		Total fishermen
	Number of fishermen	Percentage of fishermen	Number of fishermen	Percentage of fishermen	Number of fishermen	Percentage of fishermen	
District 1	1,363	63.57	767	35.77	14	0.65	2,144
District 2	805	24.28	2,497	75.32	13	0.39	3,315
District 3	727	54.83	302	22.77	297	22.40	1,326
District 4	629	56.56	303	27.25	180	16.19	1,112
Region 1	3,524	44.62	3,869	48.99	504	6.38	7,897
District 5	1,231	31.87	2,605	67.45	26	0.67	3,862
District 6	609	20.69	2,320	78.80	15	0.51	2,944
District 7	654	13.05	4,353	86.89	3	0.06	5,010
District 8	391	21.11	1,461	78.89	...	...	1,852
District 9	499	22.23	1,606	71.54	140	6.24	2,245
Region 2	3,384	21.26	12,345	77.58	184	1.16	15,913
District 10	346	5.03	6,533	94.97	...	...	6,879
District 11	114	1.88	5,956	98.12	...	...	6,070
District 12	19	0.34	2,886	52.24	2,619	47.41	5,524
Region 3	479	2.59	15,375	83.23	2,619	14.18	18,473
Entire State	7,387	17.49	31,589	74.69	3,307	7.82	42,283

The greatest percentage of records for trout fishing in any district was taken in District 1 where 63.57 per cent of the 2,144 anglers fished in trout waters. District 4 and District 3 followed with 56.56 per cent based on 1,112 records and 54.83 per cent based on 1,326 records respectively. The nine districts, which make up Regions 1 and 2, furnished 93.5 per cent of all the trout fishing recorded. Also the trout fishing in these regions constituted 29.01 per cent of all the fishing in that area. Trout anglers in Region 3 constituted the remaining 6.5 per cent of all trout

fishing records and these anglers made up only 2.6 per cent of all fishing recorded in this area.

The greatest percentage of non-trout fishing records in any district came from Field Administration District 11 with 98.12 per cent based on 6,070 fisherman days (all records in the district). District 10 followed with 94.97 per cent based on 6,879 records (all records in the district) and then District 7 with 86.89 per cent based on 5,010 fisherman-days (all records in the district).

Of the twelve districts only one, District 11, does not border one of the Great Lakes or their connecting waters. Of the remaining eleven districts nine submitted records on Great Lakes sport fishing. District 12 furnished the highest percentage with 47.41 per cent based on 5,524 records.

Quality of Fishing, All Waters
by Field Administration Districts and Regions

The catch per unit of fishing effort is a general indication of the fishing quality. This varies considerably with the type of fishing done by the anglers as well as the skill of the anglers as indicated in previous reports of the general creel census. Districts 3, 10, and 12 had a catch per hour of 1.6 fish. In District 3 this high figure was due to the huge number of yellow perch (3,955) taken in Lake Michigan off Delta County by 279 anglers in 928.5 hours of fishing. The high catch per unit of fishing effort in District 10 was due to the great percentage of fishermen angling in non-trout waters. In District 12 the high quality of fishing was due mainly to the 19,338 yellow perch recorded taken in the Great Lakes and their connecting waters.

Region 3 furnished a catch of 1.5 fish per hour, which is the best fishing in numbers of fish taken per hour, whereas Regions 1 and 2 furnished catches of only 0.8 and 0.9 fish per hour respectively.

Furthermore, 87,631 fish (54.42 per cent) of the total 161,015 fish recorded in the census were taken in Region 3.

Number of Trout Taken in Trout Waters
by Field Administration Districts and Regions

As in past years, brook trout made up the bulk (76.75 per cent) of the trout catch. Rainbow trout (11.8 per cent) and brown trout (11.44 per cent) made up the remainder of the trout catch. The numbers of the three main species of trout with the percentage of each kind in the total trout catch are given in Table 4. These figures indicate a decrease in the percentage of brook trout (82.20 per cent for 1944) and a rise in the percentage of rainbow trout (10.82 per cent for 1944) and brown trout (6.98 per cent for 1944).

Table 4

Number and percentage of total trout catch made up by each of the three species of trout--trout waters, by Field Administration Districts and Regions, 1945

District or Region	BROOK TROUT		RAINBOW TROUT		BROWN TROUT		Total trout
	Number	Percentage	Number	Percentage	Number	Percentage	
District 1	4,018	93.66	123	2.87	119	3.47	4,290
District 2	2,300	97.29	23	0.97	41	1.73	2,364
District 3	2,069	94.95	67	3.07	43	1.97	2,179
District 4	1,958	94.32	80	3.85	38	1.83	2,076
Region 1	10,345	94.83	293	2.68	271	2.48	10,909
District 5	2,210	58.16	526	13.84	1,064	28.00	3,800
District 6	901	49.61	638	35.17	276	15.21	1,815
District 7	930	71.54	208	16.00	162	12.46	1,300
District 8	694	60.61	341	29.78	110	9.61	1,145
District 9	543	48.14	267	23.67	318	28.19	1,128
Region 2	5,278	57.44	1,980	21.55	1,930	21.00	9,188
District 10	384	53.56	192	26.78	141	19.66	717
District 11	66	47.83	13	9.42	59	42.75	138
District 12	37	100.00	...	...	...	...	37
Region 3	487	54.60	205	22.98	200	22.42	892
Total or percentage	16,110	76.75	2,478	11.81	2,401	11.44	20,989

As might be expected, the largest percentage of all brook trout recorded was taken in the Upper Peninsula (64.22 per cent) and the greatest percentage of rainbow (79.90 per cent) and brown trout (80.38 per cent) were taken in Region 2.

Other Species Taken from Trout Waters

The three species of trout made up 95.04 per cent of all fish recorded from trout water. Fourteen other kinds of fish were recorded from trout waters and are listed in order of abundance as follows:

Sucker	402	Lake trout	21
Bluegill	247	Bullhead	17
Yellow perch	188	Largemouth bass	11
Rock bass	64	Pumpkinseed	4
Walleye	55	Menominee whitefish	3
Smallmouth bass	42	Redhorse	2
Northern pike	38	Carp	1
		Total	1,095

Catch per Hour--Trout Waters
by Field Administration Districts and Regions

Anglers fishing for trout were recorded in all the twelve districts. These anglers, 17.47 per cent of all anglers interviewed, had the same degree of success (0.8 fish per hour) as they did in 1944. Dividing trout waters into lakes and streams revealed that the 0.9 fish per hour in trout streams was considerably better than in trout lakes. (Table 5) It is interesting to note that in 1944 the catch per hour in lakes was slightly better than in the streams. A majority of trout anglers, 89.20 per cent, fished in streams. As shown by the catch per hour, trout fishing was best in District 6. The highest catch per hour for designated trout lakes was recorded from District 4 and in Districts 3, 5, and 6 the highest catches per hour for trout streams were recorded.

Composition of Catch--
All Non-Trout Waters

There were twenty-six different species of fish recorded in the creel from non-trout waters during 1945. Bluegills, again as in past years,

Table 5

General creel census data for trout lakes, trout streams, and all trout waters combined, (by Field Administration Districts and Regions,) 1945

	TROUT LAKES				TROUT STREAMS				ALL TROUT WATERS			
	Number of anglers	Total hrs. fished	Total legal fish taken	Catch per hour	Number of anglers	Total hrs. fished	Total legal fish taken	Catch per hour	Number of anglers	Total hrs. fished	Total legal fish taken	Catch per hour
District 1	52	234.0	82	0.3	1,311	4,631.5	4,327	0.9	1,363	4,865.5	4,409	0.9
District 2	51	260.2	123	0.5	754	2,601.2	2,374	0.9	805	2,861.4	2,497	0.9
District 3	208	666.0	360	0.5	519	1,902.4	1,866	1.0	727	2,568.4	2,226	0.9
District 4	155	684.5	477	0.7	474	2,110.0	1,678	0.8	629	2,794.5	2,155	0.8
Region 1	466	1,844.7	1,042	0.6	3,058	11,245.1	10,245	0.9	3,524	13,089.8	11,287	0.9
District 5	204	748.7	191	0.3	1,027	3,664.2	3,704	1.0	1,231	4,412.9	3,895	0.9
District 6	...	...	...	...	609	1,914.8	1,923	1.0	609	1,914.8	1,923	1.0
District 7	33	90.5	34	0.4	621	2,100.3	1,389	0.7	654	2,190.8	1,423	0.6
District 8	...	...	...	...	391	1,598.3	1,270	0.8	391	1,598.3	1,270	0.8
District 9	95	502.0	326	0.6	404	1,348.3	1,040	0.8	499	1,850.3	1,366	0.7
Region 2	341	1,371.7	608	0.4	3,052	10,625.9	9,326	0.9	3,393	11,997.6	9,934	0.8
District 10	...	...	...	...	346	1,138.4	724	0.6	346	1,138.4	724	0.6
District 11	...	...	...	...	114	347.2	159	0.5	114	347.2	159	0.5
District 12	...	...	...	...	19	99.0	37	0.4	19	99.0	37	0.4
Region 3	...	...	...	...	479	1,584.6	920	0.6	479	1,584.6	920	0.6
District total	798	3,185.9	1,593	0.5	6,589	23,455.6	20,491	0.9	7,387	26,641.5	22,084	0.8

Table 6

Percentage catch of the most important species from non-trout

waters, (by Field Administration districts,) 1945

	Bluegill	Yellow perch	Black crappie	Northern pike	P'seed sunfish	L. M. Bass	Rock bass	Sucker	Walleye	Smelt	Bullhead	S. M. bass
District 1	17.13	22.76	2.54	9.26	3.14	3.93	2.29	...	32.92	...	...	4.58
District 2	2.78	27.20	13.20	25.22	2.42	4.60	0.70	7.50	9.37	...	0.73	6.19
District 3	50.83	18.26	0.74	3.97	...	6.18	5.17	0.74	3.41	...	1.29	4.24
District 4	10.11	34.89	...	30.22	...	2.11	5.89	3.11	2.14	...	6.44	3.78
Region 1	11.40	26.05	8.59	20.24	2.15	4.41	1.95	4.91	12.78	...	1.15	5.45
District 5	7.65	28.10	6.73	28.45	4.60	2.37	5.55	1.15	5.71	...	4.62	2.12
District 6	15.10	39.81	1.42	2.94	2.71	1.32	6.40	1.65	1.41	20.38	0.07	1.36
District 7	50.21	15.83	1.02	8.11	10.11	1.52	5.11	3.08	3.55	...	0.14	1.07
District 8	51.24	39.19	2.85	1.42	0.70	2.38	0.78	0.40	0.64	...	0.05	0.26
District 9	23.57	12.94	40.10	4.60	8.17	2.31	1.65	2.53	0.19	...	1.53	1.44
Region 2	31.28	28.16	8.41	8.11	5.11	1.92	4.00	1.76	2.23	4.83	1.03	1.18
District 10	63.04	14.53	11.05	0.76	1.91	2.68	0.77	1.08	0.20	...	0.49	0.37
District 11	63.64	8.68	8.29	2.09	4.51	2.62	2.14	4.23	0.14	...	0.99	0.31
District 12	59.91	11.33	8.44	1.70	3.70	2.51	1.63	0.46	0.05	...	5.16	0.62
Region 3	62.71	12.04	9.69	1.36	3.08	2.63	1.37	2.02	0.15	...	1.45	0.39
Entire state	47.97	18.45	9.18	5.26	3.64	2.57	2.26	2.21	1.99	1.53	1.29	1.11

were caught in greatest numbers. Other important species reported were: yellow perch, black crappie, northern pike, pumpkinseed, largemouth bass, sucker, rock bass, walleye, smelt, bullhead, and smallmouth bass. These twelve kinds made up 97.46 per cent of the total non-trout waters catch and the remaining fourteen species constituted 2.54 per cent. The fourteen species not listed in Table 6 listed in order of abundance are as follow:

Carp	1,169	Rainbow trout	72
White bass	563	Brown trout	44
Lake trout	255	Dogfish	44
Cisco	221	Whitefish	6
Brook trout	124	Muskellunge	4
Catfish	109	Garpike	1
Redhorse	82	Total	2,769
Warmouth bass	75		

The three species of trout--brook, brown, rainbow--made up only 0.22 per cent of the total catch from non-trout waters.

Composition of Catch--Non-Trout Waters,
by Field Administration Districts and Regions

The twelve species most frequently taken in non-trout waters and their percentage abundance in the total catch for each Field Administration District are given in Table 6. In each district these fish made up at least 94 per cent of the total catch. Furthermore, they constituted more than 98 per cent of the catch in five of the districts.

Table 7

Percentage composition of the total catch for non-trout waters
(most abundant game and pan fish only)

Kind of fish	1938	1939	1940	1941	1942	1943	1944	1945
Bluegill	44.7	41.3	32.8	43.4	37.4	48.3	44.2	48.0
Yellow perch	17.4	22.2	28.3	24.6	23.8	17.8	21.1	18.4
Black crappie	3.0	3.4	5.0	5.1	5.8	8.3	5.8	9.2
Pumpkinseed	5.6	5.6	5.4	5.6	5.1	4.4	4.8	3.6
Northern pike	3.2	3.1	3.6	2.8	3.4	3.3	4.6	5.3
Walleye	2.6	2.6	2.3	2.6	2.8	3.2	3.6	2.0
Rock bass	5.9	5.9	7.6	5.4	4.2	3.2	3.6	2.3
Largemouth bass	2.6	2.2	2.1	2.5	2.2	2.5	2.6	2.6
Smelt	...	...	5.2	2.1	10.4	1.8	1.8	1.5
Smallmouth bass	2.3	2.4	2.8	2.7	2.2	1.7	1.8	1.1
Total	87.3	88.7	95.1	96.8	97.4	94.5	93.9	94.0

The composition of the total non-trout catch has been determined by Field Administration Regions also. Two methods of comparing the catch in the three regions have been used: (1) The percentage of the total state catch of each species taken tabulated by regions (Table 8), and (2) The percentage of each species in the total catch for each of the three regions (Table 9).

Table 8

Number and percentage of the total catch for the whole state of each of 12 species tabulated by Field Administration Regions--all non-trout waters, 1945

Kind of fish	REGION 1		REGION 2		REGION 3		Total	Total percentage
	Number	Percentage	Number	Percentage	Number	Percentage		
Bluegill	1,157	2.21	10,786	20.64	40,305	77.14	52,248	99.99
Yellow perch	2,644	13.16	9,710	48.32	7,739	38.52	20,093	100.00
Black crappie	872	8.72	2,902	29.01	6,228	62.27	10,002	100.00
Northern pike	2,054	35.88	2,796	48.84	875	15.28	5,725	100.00
Pumpkinseed	218	5.50	1,763	44.51	1,980	49.99	3,961	100.00
Largemouth bass	448	15.99	662	23.63	1,692	60.38	2,802	100.00
Rock bass	198	8.05	1,380	56.10	882	35.85	2,460	100.00
Sucker	498	20.73	607	25.27	1,297	54.00	2,402	100.00
Walleye	1,297	59.88	770	35.55	99	4.57	2,166	100.00
Smelt	...	...	1,664	100.00	...	...	1,664	100.00
Bullhead	117	8.32	355	25.25	934	66.43	1,406	100.00
Smallmouth bass	553	45.59	408	33.64	252	20.77	1,213	100.00
Totals or percentages	10,056	9.47	33,803	31.85	62,283	58.68	106,142	

Table 9

Number and percentage of each species caught in the total catch in each of the three Field Administration Regions--all non-trout waters, 1945

Kind of fish	REGION 1		REGION 2		REGION 3	
	Number	Percentage	Number	Percentage	Number	Percentage
Bluegill	1,157	11.40	10,786	31.28	40,305	62.71
Yellow perch	2,644	26.05	9,710	28.16	7,739	12.04
Black crappie	872	8.59	2,902	8.41	6,228	9.69
Northern pike	2,054	20.24	2,796	8.11	875	1.36
Pumpkinseed	218	2.15	1,763	5.11	1,980	3.08
Largemouth bass	448	4.41	662	1.92	1,692	2.63
Rock bass	198	1.95	1,380	4.00	882	1.37
Sucker	498	4.91	607	1.76	1,297	2.02
Walleye	1,297	12.78	770	2.23	99	0.15
Smelt	...	...	1,664	4.83	...	...
Bullhead	117	1.15	355	1.03	934	1.45
Smallmouth bass	553	5.45	408	1.18	252	0.39
Totals or percentages	10,056	99.08	33,803	98.01	62,283	96.90

The bluegill is taken in greater numbers from non-trout waters than any other single species. More than 75 per cent of all bluegills reported in the 1945 general creel census were taken from Region 3. The yellow perch was taken most frequently in Region 2 and next in Region 1 and lastly in Region 3. Nearly nine-tenths (86.79 per cent) of all yellow perch recorded were caught in the Lower Peninsula. The bluegill, black crappie, pumpkinseed, largemouth bass, sucker, and bullhead were taken most often in Region 3. The following species of fish were caught most frequently in Region 2: yellow perch, northern pike, rock bass, and smelt. The walleye and smallmouth bass were recorded as most prevalent in the catch from Region 1. In 1944 northern pike were taken in the greatest numbers in Region 1; whereas in 1945 they were more numerous in Region 2. This species was the only one whose dominance in the catch was not followed by a similar dominance in the same region in the succeeding year.

Only in the Upper Peninsula (Region 1) did the catch of bluegill and perch together fail to constitute more than half of the total catch. For the entire state these two species of fish made up 68.15 per cent of the total catch. The only other species which made up more than 10 per cent of the total catch of any one region were: northern pike which made up 20.24 per cent in Region 1 and the walleye which constituted 12.78 per cent of the total catch in the same region.

Catch per Hour--Non-Trout Waters,
by Field Administration Districts and Regions

For non-trout waters in 1945 the highest catch per hour was recorded in Districts 8 and 10 (Table 10). These districts were followed by Districts 12, 6, 9, and 11, all of these had a catch of better than 1 fish per hour. The catch for the entire state was 1.1 fish per hour, which was the same as for 1944.

Table 10

General creel census data for non-trout lakes, non-trout streams, and
all non-trout waters combined, by Field Administration districts, 1945

Region or District	NON-TROUT LAKES				NON-TROUT STREAMS				ALL NON-TROUT WATERS			
	Number of anglers	Total hours fished	Total legal fish taken	Catch per hour	Number of anglers	Total hours fished	Total legal fish taken	Catch per hour	Number of anglers	Total hours fished	Total legal fish taken	Catch per hour
District 1	740	2,736.0	1,970	0.7	27	95.6	38	0.4	767	2,831.6	2,008	0.7
District 2	1,693	9,391.1	3,451	0.4	804	3,351.5	2,706	0.8	2,497	12,742.6	6,157	0.5
District 3	236	921.1	1,025	1.1	66	237.2	59	0.2	302	1,158.3	1,084	0.9
District 4	272	1,028.7	820	0.8	31	105.5	80	0.7	303	1,134.2	900	0.8
Region 1	2,941	14,076.9	7,266	0.5	928	3,789.8	2,883	0.8	3,869	17,866.7	10,119	0.6
District 5	1,871	6,445.9	4,141	0.6	734	2,525.3	1,339	0.5	2,605	8,971.2	5,480	0.6
District 6	2,093	6,742.6	7,987	1.2	227	533.7	179	0.3	2,320	7,276.3	8,166	1.1
District 7	4,281	12,353.9	7,789	0.6	72	232.5	175	0.7	4,353	12,586.4	7,964	0.6
District 8	1,423	4,570.6	7,484	1.6	38	110.5	105	0.9	1,461	4,681.1	7,589	1.6
District 9	618	1,846.0	2,270	1.2	988	2,802.9	3,017	1.1	1,606	4,648.9	5,287	1.1
Region 2	10,286	31,959.0	29,671	0.9	2,059	6,204.9	4,815	0.8	12,345	38,163.9	34,486	0.9
District 10	5,795	17,240.3	29,961	1.7	738	2,199.7	2,009	0.9	6,533	19,440.0	31,970	1.6
District 11	4,522	13,813.5	18,623	1.3	1,434	4,700.0	2,718	0.6	5,956	18,513.5	21,341	1.1
District 12	2,070	7,127.2	8,761	1.2	816	2,247.2	2,205	1.0	2,886	9,374.4	10,966	1.2
Region 3	12,387	38,181.0	57,345	1.5	2,988	9,146.9	6,932	0.8	15,375	47,327.9	64,277	1.3
District totals	25,614	84,216.9	94,282	1.1	5,975	19,141.6	14,630	0.8	31,589	103,358.5	108,912	1.1

Of all the anglers interviewed in the state non-trout fishermen in inland waters constituted 74.69 per cent. Of these, 81.09 per cent fished in lakes and the remaining 18.91 per cent fished in non-trout streams. Lake fishing was best in District 10, where the anglers caught 1.7 fish per hour, followed by District 7 (1.6 fish per hour) and District 11 (1.3 fish per hour). For non-trout streams District 9 yielded 1.1 fish per hour, the highest catch per hour and in only one other, District 12, was the catch as high as 1 fish per hour.

Composition of Catch--
Great Lakes Waters

Of the 29,870 fish recorded from Great Lakes waters the yellow perch made up the bulk of the total catch, 86.46 per cent (Table 11). The following ten species are arranged according to their abundance in the catch: yellow perch, cisco, walleye, northern pike, smallmouth bass, bullhead, white bass, rock bass, largemouth bass, and catfish. The above mentioned species constituted 99.5 per cent of all fish taken from Great Lakes waters and eleven other species were included in the remaining 0.5 per cent.

Table 11

Percentage composition of the total catch for Great Lakes Waters, by Field Administration Districts (only the ten most abundant species for 1945 are considered).

Kind of fish	1942	1943	1944	1945
Yellow perch	84.23	76.67	72.16	86.46
Cisco	0.09	0.12	1.52	3.28
Walleye	1.68	6.53	6.50	3.09
Northern pike	1.17	1.74	2.12	2.51
Smallmouth bass	2.10	6.29	3.81	1.72
Bullhead	2.66	1.69	2.43	0.88
White bass	...	1.21	1.80	0.80
Rock bass	3.80	2.95	3.82	0.60
Largemouth bass	0.10	0.19	0.11	0.09
Catfish	0.21	0.74	0.43	0.08
Total	96.04	98.13	94.70	99.51

The other species of fish are listed as follows:

Bluegill	22	Whitefish	13
Sauger	22	Carp	12
Black crappie	18	Sheepshead	8
Sucker	18	Brook trout	3
Lake trout	17	Brown trout	1
Pumpkinseed	15	Total	149

Catch per hour--Great Lakes Waters
by Field Administration Districts and Regions

Records of fishing in the Great Lakes and their connecting waters were submitted by 9 districts in 1945. District 11 is the only Field Administration District which does not border on the Great Lakes or their connecting waters.

The greatest success in fishing Great Lakes waters was reported from District 7 (4.2 fish per hour), but this high catch is to be attributed to the very few anglers represented (Table 12). In five of the districts the anglers experienced a catch of better than 2 fish per hour and the average for all Great Lakes waters was 2.2 fish per hour. Fishing in the Great Lakes proper was considerably better than in the connecting waters (2.4 fish per hour and 1.5 fish per hour respectively).

Residence of Anglers
All Waters

During 1945, of the 42,283 anglers recorded in the general creel census, there were 37,994 (89.86 per cent) who resided in Michigan and the remaining 4,289 (10.14 per cent) lived outside the state (Table 13). The greatest number of non-resident anglers were contacted by Conservation officers in District 10. In this district 15.73 per cent of all fishermen interviewed were from outside the state. The officers in District 9 interviewed the fewest non-residents (65) and these anglers comprised only 2.90 per cent of all fishermen recorded in the district.

Table 12

General creel census data for the Great Lakes, connecting waters,
and such waters combined, by Field Administration districts, 1945

Region or District	GREAT LAKES				CONNECTING WATERS				ALL GREAT LAKES WATERS			
	Number of anglers	Total hours fished	Total legal fish taken	Catch per hour	Number of anglers	Total hours fished	Total legal fish taken	Catch per hour	Number of anglers	Total hours fished	Total legal fish taken	Catch per hour
District 1	14	86.0	10	0.1	...	...	...	...	14	86.0	10	0.1
District 2	13	36.0	84	2.3	...	...	...	...	13	36.0	84	2.3
District 3	297	1,013.0	4,190	4.1	...	...	...	...	297	1,013.0	4,190	4.1
District 4	118	603.5	1,282	2.1	62	422.0	248	0.6	180	1,025.5	1,530	1.5
Region 1	442	1,738.5	5,566	...	62	422.0	248	0.6	504	2,160.5	5,814	2.7
District 5	26	92.0	148	1.6	...	...	...	...	26	92.0	148	1.6
District 6	15	56.5	429	0.8	...	...	...	...	15	56.5	429	0.8
District 7	3	8.0	34	4.2	...	...	...	...	3	8.0	34	4.2
District 8	...	...	...	...	...	...	...	...	...	...	...	...
District 9	140	538.2	1,160	2.2	...	...	...	...	140	538.2	1,160	2.2
Region 2	184	694.7	1,771	...	...	...	...	...	184	694.7	1,771	2.5
District 10	...	...	...	...	...	...	...	...	...	...	...	...
District 12	1,622	7,290.8	16,436	2.2	997	3,767.9	5,998	1.6	2,619	11,058.7	22,434	2.0
Region 3	1,622	7,290.8	16,436	2.2	997	3,767.9	5,998	1.6	2,619	11,058.7	22,434	2.0
District Total	2,248	9,724.0	23,773	2.4	1,059	4,189.9	6,246	1.5	3,307	13,913.9	30,019	2.2

Table 13

Number of fishermen, resident and non-resident, and percentage of non-resident fishermen in each Field Administration district, all waters, 1945

F.A. District	Total number anglers	Resident anglers	Non-resident anglers	Percentage non-residents
1	2,144	1,882	262	12.22
2	3,315	2,935	380	11.46
3	1,326	1,233	93	7.01
4	1,112	1,033	79	7.10
5	3,862	3,373	489	12.66
6	2,944	2,675	269	9.14
7	5,010	4,464	546	10.90
8	1,852	1,723	129	6.96
9	2,245	2,180	65	2.90
10	6,879	5,797	1,082	15.73
11	6,070	5,378	692	11.40
12	5,524	5,321	203	3.67
State total	42,283	37,994	4,289	10.14

Table 14

Number of resident and non-resident anglers, number of unsuccessful anglers, number of hours spent fishing, number of legal-sized fish caught, and the catch per hour for each group--all waters, by Field Administration districts, 1945

F. A. District	RESIDENT ANGLERS					NON-RESIDENT ANGLERS				
	Total number	Number unsuccessful	Total hours fished	Number legal fish	Catch per hour	Total number	Number unsuccessful	Total hours fished	Number legal fish	Catch per hour
1	1,882	561	6,797.1	5,943	0.9	262	104	986.0	484	0.5
2	2,935	987	13,668.5	7,582	0.5	380	85	1,971.5	1,156	0.6
3	1,233	406	4,370.6	7,152	1.6	93	8	369.1	348	0.9
4	1,033	225	4,520.7	4,266	0.9	79	11	433.5	319	0.7
5	3,373	1,146	11,936.8	8,579	0.7	489	189	1,539.3	944	0.6
6	2,675	988	8,491.7	9,725	1.1	269	91	755.9	793	1.0
7	4,464	1,901	13,480.6	8,583	0.6	546	307	1,304.6	838	0.6
8	1,723	436	5,880.7	8,383	1.4	129	49	398.7	476	1.2
9	2,180	905	6,730.9	7,313	1.1	65	10	306.5	500	1.6
10	5,797	1,149	17,051.4	29,718	1.7	1,082	339	3,527.0	2,976	0.8
11	5,378	1,743	16,719.5	19,113	1.1	692	183	2,141.2	2,387	1.1
12	5,321	1,497	19,650.6	32,040	1.6	203	16	881.5	1,397	1.6
State total	37,994	11,944	129,299.1	148,397	1.1	4,289	1,392	14,614.8	12,618	0.9

Residents of Wayne County constituted 10.46 per cent of all anglers interviewed during 1945. Other counties from which anglers were recorded in great numbers were Kent County (5.24 per cent), Ingham County (4.83 per cent), Genesee County (4.50 per cent), Iron County (3.16 per cent), and Dickinson County (2.76 per cent). Residents from the above mentioned counties accounted for 30.96 per cent of all the anglers contacted.

Out-of-state fishermen came from twenty-one states in the Union and the province of Ontario. The four states bordering Michigan furnished 97.34 per cent of all the non-resident anglers. Nimrods from Ohio made up 43.46 per cent, from Indiana, 27.00 per cent, from Illinois, 21.33 per cent, and from Wisconsin, 5.55 per cent. The county of residence for Michigan anglers and the state of residence for non-residents are given in Table 15.

Catch per Hour--Resident
and Non-resident Anglers

As in past years, resident anglers were slightly more successful than were the non-residents (Table 14). In only two districts (District 2 and 9) was the catch per hour of non-resident anglers higher than that of the resident anglers. The average catch per hour for all residents (1.1 fish) was 0.2 fish per hour greater than that for all non-resident (0.9 fish). During 1945 a total of 11,944 resident anglers (31.4 per cent) were unsuccessful, whereas 1,392 (32.5 per cent) of the non-resident anglers had caught no fish up to the time they were checked by the conservation officer.

Sex of Anglers
All Waters

There were 6,971 female anglers, who made up 16.94 per cent of all the fishermen interviewed in the 1945 general creel census, a rise of 1.8 per cent from that of 1944.

Table 15

Residence of fishermen

RESIDENT		NON-RESIDENT	
County of residence	Number	County of residence	Number
Aloona	113	Manistee	374
Alger	157	Marquette	527
Allegan	532	Mason	105
Alpena	231	Mecosta	69
Antrim	253	Menominee	286
Arenac	121	Midland	753
Baraga	140	Missaukee	163
Barry	350	Monroe	274
Bay	469	Montcalm	400
Benzie	256	Montmorency	289
Berrien	438	Muskegon	358
Branch	368	Newaygo	150
Calkoun	472	Oakland	644
Cass	155	Oceana	103
Charlevoix	193	Ogemaw	84
Cheboygan	210	Ontonagon	131
Chippewa	142	Osceola	258
Clare	345	Oscoda	216
Clinton	501	Otsego	150
Crawford	18	Ottawa	835
Delta	475	Presque Isle	264
Dickinson	1,168	Roscommon	546
Eaton	225	Saginaw	835
Emmet	233	St. Clair	455
Genesee	1,901	St. Joseph	220
Gladwin	263	Sanilac	79
Gogebie	857	Schoolcraft	291
Grand Traverse	479	Shiawassee	465
Gratiot	332	Tascocla	216
Hillsdale	174	Van Buren	168
Houghton	561	Washtenaw	575
Huron	299	Wayne	4,421
Ingham	2,043	Wexford	378
Ionia	542	Michigan*	636
Iosco	113		
Iron	1,338	Total	37,994
Isabella	123		
Jackson	951		
Kalamazoo	483		
Kalkaska	105		
Kent	2,218		
Keweenaw	62		
Lake	94		
Lapeer	177		
Leelanau	123		
Lenawee	671		
Livingston	220		
Luce	270		
Mackinac	136		
Macomb	176		

State of residence	Number
California	5
Florida	1
Georgia	3
Idaho	3
Illinois	915
Indiana	1,158
Iowa	10
Kentucky	36
Louisiana	5
Maryland	3
Minnesota	2
Montana	1
New York	7
Ohio	1,864
Oklahoma	3
Pennsylvania	22
Tennessee	2
Texas	3
Washington	1
West Virginia	3
Wisconsin	238
Ontario	4
Total	4,289

* Conservation officer did not record the county of residence.

Comparison of 1945 General Creel Census
Data with that of Other Years

General creel census data for the past five years are summarized in Tables 16 and 17. There had been a decrease in the catch per hour for all waters from 1938 through 1940, but from 1941 to 1943 there was a slight but steady increase. The catch per hour for 1943 and 1944 was identical (1.16 fish per hour), but for 1945 was slightly lower again (1.12 fish per hour). The catch per hour for Great Lakes waters has remained consistently higher than that for trout and non-trout waters for the four years these waters have been tabulated separately. In the Great Lakes waters the anglers averaged 1.8 fish per hour for the last four years as compared with an average of 1.1 fish per hour in non-trout waters over the same period.

The appendix to this report in the form of detailed tables has been omitted as in 1941-1944. These detailed tables for the data herein presented are on file at the office of the Institute for Fisheries Research, University Museums Annex, Ann Arbor.

INSTITUTE FOR FISHERIES RESEARCH

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Table 16

Comparison of data from the general creel census for the past five years

	1941	1942	1943	1944	1945	Simple average
CATCH PER HOUR:						
All waters	1.0	1.1	1.2	1.2	1.1	1.1
Resident	1.0	1.2	1.2	1.2	1.1	1.1
Non-resident	0.9	0.8	1.1	1.1	0.9	1.0
Trout waters	0.8	0.9	0.9	0.8	0.8	0.8
Resident	0.8	0.9	1.0	0.8	0.8	0.9
Non-resident	0.6	0.7	0.7	0.7	0.7	0.7
Non-trout waters	1.0	1.1	1.2	1.2	1.1	1.1
Resident	1.1	1.2	1.2	1.1	1.1	1.1
Non-resident	0.9	0.9	1.0	1.0	0.8	0.9
Great Lakes waters	...	1.7	1.6	1.8	2.2	1.8
Resident	...	2.0	1.5	1.8	2.2	1.9
Non-resident	...	0.9	1.8	2.1	1.4	1.3
PERCENTAGE OF ALL ANGLERS REPRESENTED BY:						
Non-residents	14.8	15.7	11.2	11.3	10.1	12.6
Female anglers	16.2	17.1	16.3	15.1	16.9	16.3
PERCENTAGE OF TROUT ANGLERS REPRESENTED BY:						
Non-residents	9.5	11.0	4.0	4.5	4.9	6.8
Female anglers	6.9	10.2	7.6	7.1	8.3	8.2
PERCENTAGE OF NON-TROUT ANGLERS REPRESENTED BY:						
Non-residents	16.1	17.3	12.5	13.8	11.7	14.3
Female anglers	18.4	19.1	17.8	16.3	18.4	18.0
PERCENTAGE OF GREAT LAKES ANGLERS REPRESENTED BY:						
Non-residents	...	9.7	13.3	4.9	6.7	8.6
Female anglers	...	11.6	13.1	19.3	16.5	15.1
PERCENTAGE OF UNSUCCESSFUL ANGLERS:						
All waters	33.1	31.0	28.8	30.6	31.5	31.0
Trout waters	33.8	29.5	29.4	35.6	30.7	31.8
Non-trout waters	33.0	32.1	25.5	25.7	33.1	29.9
Great Lakes waters	...	20.0	11.9	12.2	18.5	15.6
Residents	32.1	29.3	28.7	31.0	31.4	30.5
Non-residents	39.0	32.9	29.9	29.7	32.5	32.8

Table 17

Catch per hour for all waters, trout waters, non-trout water, and Great Lakes waters

by Field Administration Districts and Regions since 1941

	ALL WATERS						ALL TROUT WATERS						ALL NON-TROUT WATERS						ALL GREAT LAKES WATERS					
	1941	1942	1943	1944	1945	Simple average	1941	1942	1943	1944	1945	Simple average	1941	1942	1943	1944	1945	Simple average	1942	1943	1944	1945	Simple average	
District 1	0.7	0.6	0.7	0.6	0.8	0.7	0.8	1.0	0.7	0.8	0.9	0.8	0.5	0.5	0.7	0.5	0.7	0.6	0.2	0.4	0.2	0.1	0.2	
District 2	0.6	0.8	1.2	0.6	0.6	0.8	0.6	1.3	1.0	0.6	0.9	0.9	0.6	0.6	1.3	0.5	0.5	0.7	...	...	1.5	2.3	1.9
District 3	1.0	0.8	0.7	0.9	1.6	1.0	1.0	0.9	0.7	0.8	0.9	0.9	1.0	0.7	0.7	0.8	0.9	8.0	0.3	1.0	1.0	4.1	1.6	
District 4	1.4	1.9	1.2	1.2	0.9	1.3	1.3	1.1	1.4	0.9	0.8	1.1	1.4	1.5	0.9	1.4	0.8	1.2	3.1	2.3	1.2	1.5	2.0	
Region 1	0.8	0.9	1.0	0.8	0.8	0.9	0.9	1.1	0.9	0.8	0.9	0.9	0.8	0.7	0.9	0.7	0.6	0.7	1.5	2.2	1.1	2.7	1.9	
District 5	0.7	0.6	0.9	1.1	0.7	0.8	0.9	0.6	0.7	0.8	0.9	0.8	0.7	0.6	1.0	1.1	0.6	0.8	1.3	3.0	2.7	1.6	2.2	
District 6	1.1	1.9	1.5	1.3	1.1	1.4	0.6	0.6	1.3	1.0	1.0	0.9	1.3	1.9	1.4	1.2	1.1	1.4	0.5	5.9	4.8	0.8	3.0	
District 7	0.7	0.7	0.7	0.6	0.6	7.0	0.6	0.6	0.6	0.8	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.7	...	...	0.8	4.2	2.5
District 8	1.3	1.5	1.1	1.2	1.4	1.3	0.9	1.0	0.6	0.7	0.8	0.8	1.6	1.7	1.1	1.3	1.6	1.5	...	...	...	...	...
District 9	1.0	1.2	1.3	1.4	1.4	1.2	0.6	1.0	1.0	0.9	0.7	0.8	1.1	1.3	1.4	1.3	1.1	1.2	...	...	3.8	2.2	3.0
Region 2	0.9	1.1	1.0	1.0	0.9	1.0	0.7	0.7	0.8	0.8	0.8	0.8	0.9	1.1	1.0	1.0	0.9	1.0	0.5	5.7	3.3	2.5	3.0	
District 10	1.5	1.3	1.5	1.7	1.6	1.5	0.6	0.6	0.7	0.6	0.6	0.6	1.5	1.3	1.5	1.7	1.6	1.5	...	2.9	9.0	...	6.0	
District 11	1.2	1.2	1.2	1.3	1.1	1.2	1.1	1.8	1.6	0.8	0.5	1.2	1.2	1.2	1.1	1.3	1.1	1.2	...	...	...	...	...
District 12	1.2	1.4	1.5	1.7	1.6	1.5	0.6	0.7	1.9	0.6	0.4	0.8	1.2	1.2	1.4	1.4	1.2	1.3	1.6	1.4	1.9	2.0	1.7	
Region 3	1.3	1.3	1.4	1.6	1.5	1.4	0.6	0.7	1.1	0.6	0.6	0.7	1.3	1.3	1.3	1.5	1.3	1.3	1.6	1.4	1.9	2.0	1.7	
Entire state	1.0	1.1	1.2	1.2	1.1	1.1	0.8	0.9	0.9	0.8	0.8	0.8	1.1	1.1	1.2	1.1	1.1	1.1	1.8	1.6	1.8	2.2	1.9	

Table 18

Catch per hour for all waters, trout waters, non-trout waters, and Great Lakes waters as indicated by the general creel census since 1928

Year	All waters	Trout waters	Non-trout waters	Great Lakes waters
1928	1.09	1.17	1.05	...
1929	0.96	1.17	0.88	...
1930	0.88	0.93	0.85	...
1931	0.91	0.97	0.88	...
1932	1.26	1.10	1.32	...
1933	0.97	0.68	1.28	...
1934	1.73	0.79	1.80	...
1935	1.58	0.80	1.85	...
1936	1.40	0.79	1.66	...
1937	1.46	0.76	1.68	...
1938	1.29	0.91	1.41	...
1939	1.06	0.83	1.12	...
1940	0.99	0.78	1.04	...
1941	1.00	0.77	1.06	...
1942	1.14	0.89	1.11	1.67
1943	1.16	0.90	1.17	1.60
1944	1.16	0.79	1.13	1.81
1945	1.12	0.83	1.05	2.16
Simple average	1.18	0.88	1.24	1.81

