

Original: Fish Division
cc: Institute for Fisheries Research
Education-Game
Division of Field Administration
INSTITUTE FOR FISHERIES RESEARCH K. G. Fukano
DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
UNIVERSITY OF MICHIGAN

ALBERT S. HAZZARD, PH.D.
DIRECTOR

ADDRESS
UNIVERSITY MUSEUMS ANNEX
ANN ARBOR, MICHIGAN

June 10, 1948

Report No. 1177

REPORT OF THE GENERAL CREEL CENSUS FOR 1947

by

K. G. Fukano

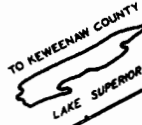
This report includes the data for the twenty-first year of the General Creel Census in Michigan. Conservation officers, as in past years, collected the data on general census forms (see sample) as a part of their regular duties and usually incidental to patrol activities. The fine cooperation by the Division of Field Administration is greatly appreciated and the writer wishes especially to express his thanks to the conservation officers who collected the records.

The aim of the general creel census is to obtain a sample of the sport fishing in all parts of the state. Fishing records have been divided into three major groups: trout, non-trout, and Great Lakes waters and each in turn has been subdivided into lakes and streams. It is believed that this division of the data gives 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 number of anglers interviewed on the different types of waters were as follows: (1) Trout waters, 7,781 anglers (21.6 percent of all anglers contacted) of whom

686 fished on designated trout lakes and the remaining 7,095 fished on streams; (2) non-trout waters, 25,285 fishermen (70.2 percent) of whom 20,669 fished on lakes and 4,616 fished on streams; (3) Great Lakes waters, 2,953 anglers (8.2 percent) of whom 2,675 fished in the Great Lakes and the other 278 fished in the connecting waters. Based on the percentage of trout fishermen contacted and considering the total number of licenses sold (1,064,313) it may be estimated that approximately 230,000 anglers did some trout fishing in 1947.

During 1947 the officers interviewed 36,019 anglers of whom 3,496 (9.7 percent of all anglers contacted) fishermen were non-residents; female anglers constituted 13.9 percent (5,020) of all those interviewed. According to the March 31, 1948 tabulation of fishing licenses sold in 1947, of a total of 1,064,313 licenses 287,467 were non-resident (27.0 percent). Of the 171,937 (16.1 percent of all licenses sold) were temporary non-resident fishing licenses. The difference in percentage of non-residents interviewed in the general creel census and non-resident licenses sold may be due in part to the probability that the conservation officer is less likely to obtain creel data from the ten-day licenses.

ISLE ROYALE



MICHIGAN
DEPARTMENT OF CONSERVATION
FIELD ADMINISTRATION DIVISION

SCALE OF MILES
0 10 20 30 40

REGIONAL AND DISTRICT MAP



LEGEND

- REGIONAL HEADQUARTERS
- DISTRICT HEADQUARTERS
- DISTRICT SUB-HEADQUARTERS
- AUXILIARY EQUIPMENT BUILDING
- FOREST FIRE EXPERIMENT STATION
- CENTRAL REPAIR SHOP

CREEL CENSUS—Michigan Department of Conservation

Check, if Trout Stream _____ If Non Trout Stream _____ If Lake _____ Date _____ 19__

Number of Fishermen in party:		Total hours fished by party (See instructions)	NUMBER OF TAGGED OR FIN-CLIPPED TROUT IN CATCH			TOTAL NUMBER AND SPECIES CAUGHT										T. _____ R. _____			
Male	Female		Brook	Brown	Rainbow	Brook Trout	Brown Trout	Rainbow Trout	Largemouth Bass	Bluegills	Smallmouth Bass	Sunfish	Yellow Perch	Rock Bass	Walleye	Crappies	Northern Pike	Residence:	
																		County	State



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, 1947

	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	932	50	982	2,691.5	1,566	0.58
District 2	1,572	97	1,669	5,480.5	2,842	0.52
District 3	2,468	268	2,737	7,907.0	6,757	0.85
District 4	1,013	155	1,168	3,429.1	3,492	1.02
Region 1	5,985	570	6,555	19,508.1	14,657	0.75
District 5	4,085	774	4,859	12,502.2	14,019	1.12
District 6	2,734	481	3,215	8,524.0	12,870	1.51
District 7	3,009	662	3,671	9,742.9	6,411	0.66
District 8	2,640	460	3,100	7,881.2	12,374	1.57
District 9	3,037	451	3,488	8,485.8	23,644	2.79
Region 2	15,505	2,828	18,333	47,136.1	69,318	1.47
District 10	4,262	764	5,026	14,005.2	22,427	1.60
District 11	1,863	360	2,223	5,721.1	5,913	1.03
District 12	3,384	498	3,882	9,409.6	23,358	2.48
Region 3	9,509	1,622	11,131	29,135.9	51,698	1.77
District total	30,999	5,020	36,019	95,780.1	135,673	1.42

Intensive lake and trout stream census records have not been included in this report. The term "fishermen-day" denotes the time which the angler had spent fishing that day prior to being interviewed by the conservation officer. Only legal-sized fish caught by sport anglers have been considered.

Detailed Analysis

Conservation officers during 1947 interviewed 36,019 anglers, a decrease of 10,022 anglers (21.8 percent) from the records collected in 1946. The 1947 records represent 95,780.1 hours of fishing, a decrease of 49,695.5 hours (34.2 percent) from the previous year. The number of fish caught in 1947 was 135,673, a decrease of 54,532 (28.7 percent) from the previous year. The catch per unit of effort was 1.4 fish per hour in 1947 as compared with 1.3 fish per hour in 1946.

From the following 11 counties: Branch, Calhoun, Eaton, Genesee, Ingham, Kalamazoo, Oceana, Ogemaw, St. Clair, Sanilac, and Tuscola there were no fishing records submitted by conservation officers. A lack of records from these counties and other counties from which there were few records tend to prejudice the statewide sample of fishing. The goal of interviewing four hundred anglers per county was attained by officers of 42 counties in 1947. The number of anglers contacted by counties are found in Table 2.

The various types of waters have been separated in Field Administration Districts in this report. Since the conservation officers gather the data from which the 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. Three counties, Alger, Kent, and Ottawa, lie in two Field Administration Districts. It was impossible to separate slips by the districts submitting them; therefore in this report all of Alger County is considered in District 3 and both Kent and Ottawa Counties, in District 10.

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

In Table 3 the data for 1947 on the numbers and percentage of anglers using the various waters arranged by Field Administration Districts and Regions are given.

The greatest percentage of records for trout fishing in any district was taken in District 1 where 78.8 percent of the 982 anglers fished in trout waters. Districts 4 and 3 followed with 56.7 percent based on 1,168 anglers and 39.6 percent based on 2,736 fishermen, respectively.

Table 2

Number of Anglers Interviewed by Conservation Officers
During 1947, and 1946 by Counties

County	Number of anglers for 1947	Number of anglers for 1946	County	Number of anglers for 1947	Number of anglers for 1946
Aleona	587	192	Lake	755	121
Alger	606	582	Lapeer	1,866	804
Allegan	826	620	Leelanau	371	223
Alpena	572	280	Lenawee	94	867
Antrim	386	195	Livingston	610	313
Arenac	1,111	5,706	Luce	118	179
Baraga	32	484	Mackinac	132	591
Barry	599	243	Macomb	151	278
Bay	77	67	Manistee	806	395
Benzie	290	37	Marquette	937	654
Berrien	377	370	Mason	189	62
Branch	...	657	Mecosta	66	280
Calhoun	...	355	Menominee	354	426
Cass	1,367	464	Midland	542	216
Charlevoix	669	596	Missaukee	598	405
Cheboygan	829	1,307	Monroe	8	77
Chippewa	517	1,011	Montcalm	109	383
Clare	454	209	Montmorency	904	966
Clinton	54	337	Muskegon	750	968
Crawford	407	386	Newaygo	671	368
Delta	1,193	680	Oakland	355	946
Dickinson	499	420	Oceana	...	625
Eaton	...	329	Ogemaw	...	205
Emmet	597	556	Ontonagon	66	314
Genesee	...	932	Osceola	560	298
Gladwin	552	333	Oscoda	1,384	382
Gogebic	517	1,653	Otsego	297	238
Grand Traverse	696	332	Ottawa	454	588
Gratiot	478	129	Presque Isle	605	358
Hillsdale	254	343	Roscommon	1,009	3,959
Houghton	286	487	Saginaw	26	...
Huron	848	455	St. Clair	...	1,097
Ingham	...	126	St. Joseph	457	636
Ionia	89	829	Sanilac	...	267
Iosco	284	56	Schoolcraft	401	555
Iron	816	764	Shiawassee	262	580
Isabella	248	286	Van Buren	403	192
Jackson	328	681	Washtenaw	621	502
Kalkaska	78	...	Wayne	654	649
Kent	454	973	Wexford	376	245
Keweenaw	81	337			
			State total	36,019	46,041

Table 3.--Number and percentages of fishermen interviewed on trout, non-trout, and Great Lakes waters by Field Administration Districts and Regions, 1947.

District or Region	TROUT WATERS		NON-TROUT WATERS		GREAT LAKES WATERS		Total anglers
	Number of anglers	Percentage of anglers	Number of anglers	Percentage of anglers	Number of anglers	Percentage of anglers	
District 1	774	78.82	202	20.57	6	0.61	982
District 2	566	33.91	1,073	64.29	30	1.80	1,669
District 3	1,082	39.55	705	25.77	949	34.68	2,736
District 4	662	56.68	319	27.31	187	16.01	1,168
Region 1	3,084	47.05	2,299	35.07	1,172	17.88	6,555
District 5	1,338	27.54	3,470	71.41	51	1.05	4,859
District 6	803	24.98	2,309	71.82	103	3.20	3,215
District 7	1,070	29.15	2,597	70.74	4	0.11	3,671
District 8	641	20.68	2,459	79.32	...	...	3,100
District 9	503	14.42	2,973	85.24	12	0.34	3,488
Region 2	4,355	23.75	13,808	75.32	170	0.93	18,333
District 10	308	6.13	4,718	93.87	...	...	5,026
District 11	...	...	2,223	100.00	...	...	2,223
District 12	34	0.88	2,237	57.62	1,611	41.50	3,882
Region 3	342	3.07	9,178	82.45	1,611	14.47	11,131
Entire State	7781	21.60	25,285	70.20	2,953	8.20	36,019

The nine districts which make up Regions 1 and 2 furnished 95.6 percent of all the trout fishing recorded. Also, the trout fishing in these regions constituted 29.9 percent of all the fishing in that area. Trout anglers in Region 3 contributed the remaining 4.4 percent of all trout fishing records and these anglers constituted only 3.1 percent of all fishing recorded in this area.

Field Administration District 11 had the greatest percentage of non-trout fishing records with 100.0 percent based on 2,223 fisherman-days. District 10 followed with 93.9 percent based on 5,026 records and then District 9 with 85.2 percent based on 3,488 fisherman-days.

Of the 12 districts only one, District 11, does not border one of the Great Lakes or their connecting waters. Of the remaining 11 districts nine submitted records on Great Lakes sport fishing, only Districts 8 and 10 failed to do so. The conservation officers obtained relatively few records from Great Lakes fishing. Except in sheltered bays and in island areas sport fishing is not widely practiced in these waters. Also it is probable that the conservation officer expects fewer violations on Great Lakes waters and consequently does not spend much time contacting anglers. Furthermore since residents are not required to have a license to fish the Great Lakes and connecting waters he may not feel justified in spending too much time in checking the fishing there. District 12 furnished the highest percentage with 41.5 percent based on 3,882 fisherman-days. District 3 followed with 34.7 percent based on 2,736 anglers and District 4, with 16.0 percent based on 1,168 fisherman-days.

Quality of Fishing, All Waters

by Field Administration Districts and Regions

The catch per unit of fishing effort is used to indicate the fishing quality. The usual catch per unit of effort is stated in terms of number of fish caught per hour of fishing and this varies considerably with the type of angling done by the fisherman as well as to the skill of the angler. Districts 9, 12, 10 and 8 had a catch per hour of 2.8, 2.5, 1.6 and 1.6, respectively. In District 9 the high figure was due to the huge number of yellow perch (16,747) taken in non-trout streams in Arenac County near Saginaw Bay by 862 anglers in 2,570.0 hours

of fishing. The high quality of fishing in District 12 was due mainly to 12,103 yellow perch caught by 832 anglers in 1,929.0 hours of fishing in Saginaw Bay off Huron County. The high catch per unit of fishing effort in District 8 was due to the great percentage of fishermen angling in non-trout waters with good success. In District 10 the high catch per hour was due mainly to 3,316 carp caught in 1,672 hours of fishing in non-trout streams of Allegan County.

Region 3 furnished a catch of 1.8 fish per hour, which is the best fishing in terms of fish taken per hour, whereas Regions 2 and 1 furnished catches of 1.5 and 0.8 fish per hour respectively. Furthermore, 51,698 (38.1 percent) of the total 135,673 fish recorded in the census were taken in Region 3; 69,318 fish (51.1 percent) were caught in Region 2, and the remaining 14,657 fish (10.8 percent) were taken in Region 1.

Number of Trout Taken in Trout Waters

by Field Administration Districts and Regions

Brook trout, as in past years, made up the bulk (72.6 percent) of the total trout catch. Rainbow trout (14.8 percent) and brown trout (12.6 percent) made up the remainder of the trout catch. The numbers and percentages of each of the three main species of trout are given in Table 4. These figures indicate a very slight decrease in the percentage of brook trout (75.0 percent for 1946) and rainbow trout (15.1 percent for 1946), whereas there was a corresponding increase in the percentage of brown trout caught (9.9 percent in 1946).

Of the 11,081 brook trout recorded by conservation officers in the general creel census 5,559 or 50.2 percent were reported taken in Region 1. The greatest percentage of all rainbow and brown trout were

Table 4.--Number and percentage of total trout catch made up by each of the three species of trout--all trout waters, by Field Administration Districts and Regions, 1947.

District or Region	Brook trout		Brown trout		Rainbow trout		Total trout
	Number	Percentage	Number	Percentage	Number	Percentage	
District 1	1,124	89.3	95	7.6	39	3.1	1,258
District 2	807	94.3	14	1.6	35	4.1	856
District 3	1,883	86.1	120	5.5	183	8.4	2,186
District 4	1,745	93.9	35	1.9	79	4.2	1,859
Region 1	5,559	90.3	264	4.3	336	5.4	6,159
District 5	1,618	68.9	446	19.0	285	12.1	2,349
District 6	1,296	51.9	251	10.1	949	38.0	2,496
District 7	1,386	71.2	348	17.9	212	10.9	1,946
District 8	636	53.7	198	16.7	350	29.6	1,184
District 9	352	45.5	307	39.7	115	14.8	774
Region 2	5,288	60.4	1,550	17.7	1,911	21.8	8,749
District 10	173	57.3	109	36.1	20	6.6	302
District 12	61	100.0	...	...	...	...	61
Region 3	234	64.5	109	30.0	20	5.5	363
Total or percentage	11,081	72.6	1,923	12.6	2,267	14.8	15,271

taken in Region 2 (80.6 percent and 84.3 percent respectively). Of the 15,271 trout reported, 97.6 percent were taken in Regions 1 and 2.

Other Species Taken from Trout Waters

The 3 species of trout constituted 94.3 percent of fish censused from trout waters. Ten other species of fish were recorded from trout waters and are listed in order of abundance as follows:

Yellow perch	309	Pumpkinseed sunfish	36
Sucker	203	Yellow pikeperch	19
Bluegill	199	Largemouth bass	14
Smallmouth bass	77	Northern pike	13
Rock bass	56	Menominee whitefish	<u>2</u>
		Total	928

Catch per Hour--Trout Waters

by Field Administration Districts and Regions

Trout anglers were recorded in 11 of the 12 districts. Officers in District 11 failed to interview anglers fishing trout waters. Trout fishermen, 21.6 percent of all anglers contacted, had the same degree of success (0.8 fish per hour) as they did in 1944, 1945 and 1946. As indicated by the catch per hour, trout fishing in streams and lakes combined was best in District 4. Separating trout waters into lakes and streams revealed that the 0.8 fish per hour in trout streams was slightly better than the rate in trout lakes (Table 6). District 6 produced the best stream fishing followed closely by District 3.

Table 5

General Creel Census Data for Trout Lakes, Trout Streams, and all Trout

Waters Combined, by Field Administration Districts and Regions, 1947

	TROUT LAKES				TROUT STREAMS				ALL TROUT WATERS			
	Number of anglers	Total hours fished	Total legal fish taken	Catch per fish hour	Number of anglers	Total hours fished	Total legal fish taken	Catch per fish hour	Number of anglers	Total hours fished	Total legal fish taken	Catch per fish hour
District 1	...	...	...	...	774	1,925.5	1,284	0.67	774	1,925.5	1,284	0.67
District 2	24	84.0	19	0.23	542	1,766.5	844	0.48	566	1,850.5	863	0.47
District 3	266	617.5	407	0.66	816	2,178.5	2,140	0.98	1,082	2,796.0	2,547	0.91
District 4	159	578.1	1,014	1.75	503	1,369.0	1,105	0.81	662	1,947.1	2,119	1.09
Region 1	449	1,279.6	1,440	1.13	2,635	7,239.5	5,373	0.74	3,084	8,519.1	6,813	0.80
District 5	201	763.5	80	0.10	1,137	2,555.8	2,418	0.95	1,338	3,319.3	2,498	0.75
District 6	...	...	...	...	803	2,466.2	2,507	1.02	803	2,466.2	2,507	1.02
District 7	...	...	...	...	1,070	2,786.0	1,991	0.71	1,070	2,786.0	1,991	0.71
District 8	...	...	...	...	641	1,479.2	1,204	0.81	641	1,479.2	1,204	0.81
District 9	32	81.0	49	0.60	471	1,182.0	774	0.65	503	1,263.0	823	0.65
Region 2	233	844.5	129	0.15	4,122	10,469.2	8,894	0.85	4,355	11,313.7	9,023	0.80
District 10	4	14.0	1	0.07	304	653.2	301	0.46	308	667.2	302	0.45
District 12	...	...	...	...	34	100.0	61	0.61	34	100.0	61	0.61
Region 3	4	14.0	1	0.07	338	753.2	362	0.48	342	767.2	363	0.47
District Total	686	2,138.1	1,570	0.73	7,095	18,461.9	14,629	0.79	7,781	20,600.0	16,199	0.79

Table 6

Percentage catch of the most important species from non-trout
waters, by Field Administration Districts, 1947

	Yellow perch	Blue- gill	Black crappie	Smelt	Carp	Northern pike	P'seed sunfish	Rock bass	L.M. bass	Bull- head	Yellow pikeperch	S.M. bass	Sucker
District 1	27.57	12.13	0.74	...	...	16.54	0.74	0.74	9.19	...	22.06	5.88	...
District 2	41.67	0.59	12.37	...	...	38.19	0.21	...	0.75	...	4.50	1.23	0.27
District 3	38.56	8.41	0.38	...	...	16.73	0.38	3.40	3.12	0.66	17.58	4.73	2.74
District 4	31.45	5.51	...	...	...	32.79	0.89	20.12	0.15	1.04	6.26	1.34	...
Region 1	38.06	4.39	6.13	...	...	29.86	0.41	4.47	1.89	0.36	9.62	2.53	0.88
District 5	45.76	4.62	2.11	28.64	...	5.55	0.95	1.82	0.57	5.11	0.90	0.80	2.00
District 6	28.99	11.00	3.34	34.56	...	2.40	1.93	4.06	1.62	0.11	2.17	2.61	1.66
District 7	27.46	35.89	2.04	...	...	9.90	10.97	2.45	3.85	0.34	2.02	1.97	3.06
District 8	53.13	33.63	4.34	...	...	0.57	0.83	3.42	1.24	0.03	0.98	0.31	0.22
District 9	78.68	4.72	12.14	...	0.03	0.42	0.76	1.15	0.43	0.84	0.09	0.17	0.33
Region 2	56.34	13.58	6.65	10.49	0.01	2.46	1.76	2.23	1.05	1.37	0.86	0.80	1.03
District 10	10.59	60.38	7.97	...	15.35	0.43	2.33	0.83	0.76	0.85	0.12	0.13	0.05
District 11	17.30	59.87	4.72	...	0.02	2.03	4.97	5.04	3.69	0.46	...	0.90	0.76
District 12	17.01	62.66	6.96	...	...	1.40	7.62	1.06	1.09	0.27	0.02	1.82	0.05
Region 3	12.96	60.72	7.23	...	9.81	0.89	3.79	1.59	1.33	0.67	0.08	0.58	0.17
Entire state	39.99	30.18	6.84	6.29	3.54	2.99	2.44	2.09	1.18	1.08	0.93	0.79	0.72

During 1947 the conservation officers saw different species of fish in the non-trout anglers' creel. As in 1946 the bluegill was replaced by yellow perch as the species caught in greatest numbers. The change is due to the huge number of yellow perch (16,863) taken in Arenac County from non-trout streams emptying into Saginaw Bay. Other important species recorded were: bluegill, black crappie, smelt, carp, northern pike, pumpkinseed sunfish, rock bass, largemouth bass, bullhead, yellow pikeperch, smallmouth bass, and sucker. The above 13 species comprised 99.1 percent of the total non-trout catch and the remaining 15 species constituted 0.9 percent. The 15 species not listed in Table 9 in order of abundance are as follows:

Cisco	492	Catfish	25
Warmouth bass	136	Dogfish	9
Whitefish	49	Golden shiner	4
Redhorse	47	Garpike	3
Brook trout	40	Sheepshead	3
Rainbow trout	40	Muskellunge	2
Lake trout	27	Brown trout	<u>1</u>
White bass	25	Total	903

The 3 species of trout--brook, brown, rainbow--made up only 0.08 percent of the total catch from non-trout waters.

Composition of Catch--Non-Trout Waters,

by Field Administration Districts and Regions

The 13 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 9. In each district these fish made up at least 94.5 percent of the total catch. Furthermore, they constituted more than 98 percent in 9 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	1939	1940	1941	1942	1943	1944	1945	1946	1947
Bluegills	41.3	32.8	43.4	37.4	48.3	44.2	48.0	27.2	30.2
Yellow perch	22.2	28.3	24.6	23.8	17.8	21.1	18.4	53.7	40.0
Black crappie	3.4	5.0	5.1	5.8	8.3	5.8	9.2	4.3	6.8
Pumpkinseed	5.6	5.4	5.6	5.1	4.4	4.8	3.6	2.4	2.4
Northern pike	3.1	3.6	2.8	3.4	3.3	4.6	5.3	2.8	3.0
Yellow pikeperch	2.6	2.3	2.6	2.8	3.2	3.6	2.0	1.2	0.9
Rock bass	5.9	7.6	5.4	4.2	3.2	3.6	2.3	2.1	2.1
Smelt	...	...	...	10.4	1.8	1.8	1.5	0.2	6.3
Largemouth bass	2.2	2.1	2.5	2.2	2.5	2.6	2.6	1.0	1.2
Smallmouth bass	2.4	2.8	2.7	2.2	1.7	1.8	1.1	0.7	0.8
Total	88.7	89.9	94.7	97.3	94.5	93.9	94.0	95.6	93.7

The composition of the total non-trout catch has been determined by Field Administration Regions also. Two methods of comparing the catch in the 3 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 3 regions (Table 9).

Table 8

Number and percentage of the total catch for the whole state of each of 13 species tabulated by Field Administration Regions--all non-trout water, 1947

Species	REGION 1		REGION 2		REGION 3		Total	Total percentage
	Number	Percentage	Number	Percentage	Number	Percentage		
Yellow perch	1,472	3.83	32,490	84.51	4,485	11.66	38,447	100.00
Bluegill	170	0.59	7,831	26.98	21,019	72.43	29,020	100.00
Black crappie	237	3.60	3,837	58.36	2,501	38.04	6,575	100.00
Smelt	...	...	6,049	100.00	...	...	6,049	100.00
Carp	...	...	7	0.21	3,397	99.79	3,404	100.00
Northern pike	1,155	40.12	1,417	49.22	307	10.66	2,879	100.00
Pumpkinseed sunfish	16	0.68	1,015	43.34	1,311	55.98	2,342	100.00
Rock bass	173	8.60	1,287	64.00	551	27.40	2,011	100.00
Largemouth bass	73	6.43	603	53.13	459	40.44	1,135	100.00
Bullhead	14	1.35	791	76.28	232	22.37	1,037	100.00
Yellow pikeperch	372	41.47	497	55.41	28	3.12	897	100.00
Smallmouth bass	98	12.83	464	60.36	202	26.44	764	100.00
Sucker	34	4.93	595	86.36	60	8.71	689	100.00
Totals or percentage	3,814	4.00	56,883	59.72	34,552	36.28	95,249	100.00

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, 1947

Species	REGION 1		REGION 2		REGION 3	
	Number	Percentage	Number	Percentage	Number	Percentage
Yellow perch	1,472	38.06	32,490	56.34	4,485	12.96
Bluegill	170	4.39	7,831	13.58	21,019	60.72
Black crappie	237	6.13	3,837	6.65	2,501	7.23
Smelt	...	...	6,049	10.49	...	...
Carp	...	...	7	0.01	3,397	9.81
Northern pike	1,155	29.86	1,417	2.46	307	0.89
P'seed sunfish	16	0.41	1,015	1.76	1,311	3.79
Rock bass	173	4.47	1,287	2.23	551	1.59
Largemouth bass	73	1.89	603	1.05	459	1.33
Bullhead	14	0.36	791	1.37	232	0.67
Yellow pikeperch	372	9.62	497	0.86	28	0.08
Smallmouth bass	98	2.53	464	0.81	202	0.58
Sucker	34	0.88	595	1.03	60	0.17
Totals or percentages	3,814	98.60	56,883	98.64	34,552	99.82

In 1947 the yellow perch was caught in greater numbers from non-trout waters than any other single species. Of all the yellow perch recorded in the 1947 general creel census 84.5 percent were taken in Region 2. The bluegill, which has been the dominant species, except for the past two years, was caught most frequently in Region 3, next in Region 2, and lastly in Region 1. Combining yellow perch and bluegills it will be noticed that more than 97 percent of these 2 species were taken in the Lower Peninsula. The yellow perch, black crappie, smelt, northern pike, rock bass, largemouth bass, bullhead, yellow pikeperch, smallmouth bass, and sucker were taken most often in Region 2. The following species were caught most frequently in Region 3: bluegill, carp, and pumpkinseed sunfish. In 1946 yellow pikeperch and smallmouth bass were caught in greatest numbers in Region 1; pumpkinseed sunfish was taken in greatest numbers in Region 2; black crappie, largemouth bass, and sucker were reported in greatest numbers in Region 3.

In the two regions of the Lower Peninsula the catch of bluegill and yellow perch together made up more than half of the total catch (Table 9). For the entire state these two species constituted 70.8 percent of the total catch from non-trout waters. The other species which made up more than 10 percent of the total catch of any one region were the northern pike which made up 29.9 percent in Region 1 and smelt which constituted 10.5 percent in Region 2.

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

The highest catch per hour for non-trout waters was recorded in District 9 with 3.2 fish per hour (Table 13). Districts 8, 10, 6, 12, 5, and 11 had catch of better than 1.0 fish per hour. In 1947 the catch from non-trout waters for the entire state was 1.4 fish per hour, which was the same fishing quality in 1946. Of the anglers interviewed in the state non-trout anglers in inland waters constituted 70.2 percent. Of these 81.7 percent fished in lakes and the remaining 18.3 percent fished in non-trout streams. According to catch per unit of effort, lake fishing was best in 8, where the anglers caught 1.8 fish per hour, followed by Districts 10, 6, and 12 with 1.7, 1.5, and 1.3 fish per hour, respectively. For non-trout streams District 9 yielded the highest catch per hour (4.2 fish per hour) followed by Districts 5, 12, and 10 with 2.5, 1.8, and 1.7 fish per hour respectively.

Table 10

General creel census data for non-trout lakes, non-trout streams, and all non-trout waters combined, by Field Administration Districts and Regions, 1947

	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	184	709.5	254	0.36	18	37.5	18	0.48	202	747.0	272	0.36
District 2	843	2,800.5	1,403	0.50	230	767.5	464	0.60	1,073	3,568.0	1,867	0.52
District 3	480	1,146.0	803	0.70	225	646.5	255	0.39	705	1,792.5	1,058	0.59
District 4	309	827.0	664	0.80	10	13.0	7	0.54	319	840.0	671	0.80
Region 1	1,816	5,483.0	3,124	0.57	483	1,464.5	744	0.51	2,299	6,947.5	3,868	0.56
District 5	2,504	6,900.4	5,722	0.83	966	2,211.5	5,502	2.49	3,470	9,111.9	11,224	1.23
District 6	2,071	5,256.3	7,831	1.49	238	539.0	369	0.68	2,309	5,795.3	8,200	1.41
District 7	2,546	6,841.9	4,266	0.62	51	107.0	147	1.37	2,597	6,948.9	4,413	0.64
District 8	2,433	6,348.0	11,117	1.75	26	54.0	53	0.98	2,459	6,402.0	11,170	1.74
District 9	997	2,466.0	2,803	1.14	1,976	4,728.8	19,859	4.20	2,973	7,194.8	22,662	3.15
Region 2	10,551	27,812.6	31,739	1.14	3,257	7,640.3	25,930	3.39	13,808	35,452.9	57,669	1.63
District 10	4,185	10,961.0	18,069	1.65	533	2,377.0	4,056	1.71	4,718	13,338.0	22,125	1.66
District 11	1,901	4,896.1	5,315	1.09	322	825.0	598	0.72	2,223	5,721.1	5,913	1.03
District 12	2,216	5,100.1	6,507	1.28	21	38.5	70	1.82	2,237	5,138.6	6,577	1.28
Region 3	8,302	20,957.2	29,891	1.43	876	3,240.5	4,724	1.46	9,178	24,197.7	34,615	1.43
District Totals	20,669	54,252.8	64,754	1.19	4,616	12,345.3	31,398	2.54	25,285	66,598.1	96,152	1.44

Composition of catch--

Great Lakes Waters

Of the 23,322 fish recorded from the Great Lakes waters the yellow perch constituted the bulk of the total catch, 82.48 percent (Table 11). The following 6 species are arranged according to their abundance in the catch: Yellow perch, yellow pikeperch, northern pike, herring, smallmouth bass, and rock bass.

Table 11

Percentage composition of the total catch for Great Lakes waters
(only the 6 most abundant species for 1947 are considered)

Kind of fish	1942	1943	1944	1945	1946	1947
Yellow perch	84.23	76.67	72.16	86.46	65.73	82.48
Yellow pikeperch	1.68	6.53	6.50	3.09	7.81	8.23
Northern pike	1.17	1.74	2.12	2.51	2.33	3.02
Herring	0.09	0.12	1.52	3.28	12.47	2.07
Smallmouth bass	2.10	6.29	3.81	1.72	3.15	1.40
Rock bass	3.80	2.95	3.82	0.60	3.19	1.31
Total	93.07	94.30	89.93	97.66	94.68	98.51

The above listed species constituted 98.51 percent of all fish taken from Great Lakes waters and the remaining 1.49 percent was made up of the following 10 species:

Bullhead	150	Bluegill	7
Largemouth bass	80	Smelt	2
P'seed sunfish	59	Sucker	2
Catfish	23	Carp	1
Lake trout	22	Rainbow trout	<u>1</u>
		Total	347

Catch per Hour--Great Lakes Waters

by Field Administration Districts and Regions

Records of angling in the Great Lakes waters were submitted by 9 of the 12 districts in 1947. District 11 is the only Field Administration District which does not border on the Great Lakes or their connecting waters.

The highest catch per unit of effort in Great Lakes waters was reported from District 6 (8.2 fish per hour). In 4 of the districts the anglers experienced a catch of 4.0 fish per hour or better and the average for all Great Lakes waters was 2.7 fish per hour.

Table 12

General creel census data for the Great Lakes, connecting waters, and such waters combined, by Field Administration Districts, 1947

	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	6	19.0	10	0.53	...	...	...	...	6	19.0	10	0.53
District 2	30	62.0	112	1.81	...	...	...	...	30	62.0	112	1.81
District 3	949	3,318.5	3,152	0.95	...	...	...	...	949	3,318.5	3,152	0.95
District 4	26	77.0	482	6.26	161	565.0	220	0.39	187	642.0	702	1.09
Region 1	1,011	3,476.5	3,756	1.08	161	565.0	220	0.39	1,172	4,041.5	3,976	0.98
District 5	51	71.0	279	4.18	...	...	...	...	51	71.0	297	4.18
District 6	103	262.5	2,163	8.24	...	...	...	...	103	262.5	2,163	8.24
District 7	4	8.0	7	0.88	...	...	...	...	4	8.0	7	0.88
District 9	12	28.0	159	5.68	...	...	...	...	12	28.0	159	5.68
Region 2	170	369.5	2,626	7.11	...	...	...	...	170	369.5	2,626	7.11
District 12	1,494	3,837.5	16,046	4.18	117	333.5	674	2.02	1,611	4,171.0	16,720	4.01
Region 3	1,494	3,837.5	16,046	4.18	117	333.5	674	2.02	1,611	4,171.0	16,720	4.01
District total	2,675	7,683.5	22,428	2.92	278	898.5	894	0.99	2,953	8,582.0	23,322	2.72

Fishing in the Great Lakes proper was considerably better than in the connecting waters (2.9 fish per hour and 1.0 fish per hour respectively). The only districts having connecting waters within their limits are District 4 and 12. In both cases the fishing in the Lakes proper was at least twice as productive to the angler as in the connecting waters.

Residence of Anglers

All Waters

Of the 36,019 fishermen interviewed in the 1947 general creel census there were 32,523 (90.3 percent) who resided in Michigan and the remaining 3,496 (9.7 percent) were out-of-state anglers (Table 13). The greatest number of non-resident anglers (1,186) were contacted by conservation officers in District 10. In this district 23.6 percent of all fishermen interviewed were residents of other states than Michigan. In District 12 the officers interviewed the fewest number of non-residents (3) and these anglers comprised only 0.08 percent of all fishermen recorded in the district.

Table 13

Number of fishermen, resident and non-resident, and percentages of non-resident fishermen in each Field Administration District, all waters, 1947

	Total number anglers	Resident anglers	Non- resident anglers	Percentage non- residents
District 1	982	837	145	14.77
District 2	1,669	1,582	87	5.21
District 3	2,736	2,483	253	9.25
District 4	1,168	1,010	158	13.53
Region 1	6,555	5,912	643	9.81
District 5	4,859	4,461	398	8.19
District 6	3,215	2,812	403	12.53
District 7	3,671	3,330	341	9.29
District 8	3,100	2,793	307	9.90
District 9	3,488	3,443	45	1.29
Region 2	18,333	16,839	1,494	8.15
District 10	5,026	3,840	1,186	23.60
District 11	2,223	2,053	170	7.65
District 12	3,882	3,879	3	0.08
Region 3	11,131	9,772	1,359	12.21
State total	36,019	32,523	3,496	9.71

Residents of Wayne County constituted 9.7 percent of all anglers contacted. More than 1,000 anglers were reported from each of 3 other counties as follows: Kent - 1,670 (4.6 percent); Genesee - 1,533 (4.3 percent); and Delta - 1,025 (2.8 percent). Residents of these 4 counties made up 21.4 percent of all anglers interviewed. Residents from all counties in the state were represented in the census (Table 14).

In addition to the resident anglers the conservation officers interviewed fishermen from 22 states in the Union, District of Columbia, and Province of Ontario. The 4 states bordering Michigan furnished 96.0 percent of all the non-resident anglers. Anglers from Ohio made up 37.7 percent, from Indiana, 34.0 percent, from Illinois, 19.3 percent, and from Wisconsin, 5.0 percent. The county of residence for Michigan anglers and the state of residence for non-residents are given in Table 14.

Table 14

Residence of Fishermen

RESIDENT ANGLERS							
Residence County	Number of ♂	Number of ♀	Number of anglers	Residence County	Number of ♂	Number of ♀	Number of anglers
Michigan*	829	5	834	Keweenaw	18	1	19
Alcona	73	15	88	Lake	59	11	70
Alger	313	21	334	Lapeer	642	132	774
Allegan	515	49	564	Leelanau	138	21	159
Alpena	449	97	546	Lenawee	116	4	120
Antrim	239	56	295	Livingston	125	27	152
Arenac	80	11	91	Luce	145	3	148
Baraga	16	2	18	Mackinac	87	6	93
Barry	196	49	245	Macomb	121	19	140
Bay	394	68	462	Manistee	436	65	501
Benzie	107	19	126	Marquette	847	46	893
Berrien	417	79	496	Mason	210	17	227
Branch	14	1	15	Mecosta	88	6	94
Calhoun	101	33	134	Menominee	327	11	338
Cass	587	70	657	Midland	582	153	735
Charlevoix	463	49	512	Missaukee	144	42	186
Cheboygan	248	18	266	Monroe	28	5	33
Chippewa	282	38	320	Montcalm	134	16	150
Clare	291	27	318	Montmorency	301	52	353
Clinton	101	13	114	Muskegon	579	166	745
Crawford	94	19	113	Newaygo	235	22	257
Delta	925	100	1,025	Oakland	521	80	601
Dickinson	631	63	694	Oceana	23	2	25
Eaton	66	8	74	Ogemaw	45	10	55
Emmet	544	69	613	Ontonagon	61	1	62
Genesee	1,266	267	1,533	Osceola	358	27	385
Gladwin	103	10	113	Oscoda	341	70	411
Gogebic	393	23	416	Otsego	143	24	167
Grand Traverse	443	43	486	Ottawa	206	34	240
Gratiot	388	101	489	Presque Isle	507	50	557
Hillsdale	137	19	156	Roscommon	135	34	169
Houghton	267	13	280	Saginaw	596	135	731
Huron	309	36	345	St. Clair	59	5	64
Ingham	547	116	663	St. Joseph	225	29	254
Ionia	111	13	124	Sanilac	10	3	13
Iosco	246	19	265	Schoolcraft	162	38	200
Iron	564	26	590	Shiawassee	219	48	267
Isabella	271	53	324	Tuscola	139	34	173
Jackson	397	70	467	Van Buren	222	18	240
Kalamazoo	476	72	548	Washtenaw	346	78	424
Kalkaska	56	9	65	Wayne	2,954	525	3,479
Kent	1,379	291	1,670	Wexford	295	36	331
				Total	28,257	4,266	32,523
				Grand Total	30,999	5,020	36,019
				(Resident and non-resident)			

* Conservation officer did not record the county of residence.

Table 14 (continued)

Residence of Fishermen

NON-RESIDENT

State of residence	Number of ♂	Number of ♀	Number of anglers	State of residence	Number of ♂	Number of ♀	Number of anglers
Alabama	3	...	3	Minnesota	5	5	10
Arizona	2	...	2	Missouri	3	2	5
California	5	2	7	Nevada	2	1	3
Connecticut	2	...	2	New Jersey	3	...	3
Florida	4	1	5	New York	7	4	11
Illinois	543	133	676	Ohio	999	318	1,317
Indiana	945	242	1,187	Pennsylvania	12	9	21
Iowa	10	6	16	Tennessee	8	7	15
Kansas	3	...	3	Texas	9	5	14
Kentucky	9	1	10	Wisconsin	161	15	176
Maryland	3	1	4	Washington, D.C.	2	2	4
Massachusetts	1	...	1	Ontario	1	...	1
				Total	2,742	754	3,496

Catch per Hour--Resident and

Non-resident Anglers--All Waters

During 1947 as in past years, resident anglers were slightly more only successful than were the non-residents (Table 18). In one of the districts was the catch per unit of effort of non-resident anglers higher than that of the resident anglers. In District 3 resident fishermen had a catch of 0.8 fish per hour whereas non-resident anglers had a catch of 0.9 fish per hour. The average catch per hour for all residents (1.6 fish per hour) was 0.7 fish per hour greater than that for all non-resident anglers (0.9 fish per hour).

Number of resident and non-resident anglers, number of hours spent fishing, number of
legal-size fish caught, and the catch per hour for each group--all waters,
by Field Administration Districts, 1947

F.A. District	RESIDENT ANGLERS				NON-RESIDENT ANGLERS				ALL ANGLERS			
	Total number	Total hours fished	Number legal fish	Catch per hour	Total number	Total hours fished	Number legal fish	Catch per hour	Total number	Total hours fished	Number legal fish	Catch per hour
District 1	837	2,249.5	1,387	0.62	145	442.0	179	0.40	982	2,691.5	1,566	0.58
District 2	1,582	5,215.3	2,766	0.53	87	265.2	76	0.29	1,669	5,480.5	2,842	0.52
District 3	2,483	7,241.0	6,140	0.85	253	666.0	617	0.93	2,736	7,907.0	6,757	0.85
District 4	1,010	2,963.1	3,074	1.04	158	466.0	418	0.90	1,168	3,429.1	3,492	1.02
Region 1	5,912	17,668.9	13,367	0.76	643	1,839.2	1,290	0.70	6,555	19,508.1	14,657	0.75
District 5	4,461	11,709.7	13,449	1.15	398	792.5	570	0.72	4,859	12,502.2	14,019	1.12
District 6	2,812	7,509.0	11,909	1.59	403	1,015.0	961	0.95	3,215	8,524.0	12,870	1.51
District 7	3,330	8,818.9	5,800	0.66	341	924.0	611	0.66	3,671	9,742.9	6,411	0.66
District 8	2,793	7,096.8	11,881	1.67	307	784.4	493	0.63	3,100	7,881.2	12,374	1.57
District 9	3,443	8,358.4	23,552	2.82	45	127.4	92	0.72	3,488	8,485.8	23,644	2.79
Region 2	16,839	43,492.8	66,591	1.53	1,494	3,643.3	2,727	0.75	18,333	47,136.1	69,318	1.47
District 10	3,840	9,956.4	16,266	1.63	1,186	4,048.8	6,161	1.52	5,026	14,005.2	22,427	1.60
District 11	2,053	5,301.6	5,540	1.04	170	419.5	373	0.89	2,223	5,721.1	5,913	1.03
District 12	3,879	9,403.6	23,351	2.48	3	6.0	7	1.17	3,882	9,409.6	23,358	2.48
Region 3	9,772	24,661.6	45,157	1.83	1,359	4,474.3	6,541	1.50	11,131	29,135.9	51,698	1.77
District total	32,523	85,823.0	125,115	1.46	3,496	9,956.8	10,558	1.06	36,019	95,780.1	135,673	1.42

Sex of Anglers

All Waters

A total of 5,020 female anglers were interviewed by conservation officers in 1947. Females constituted 13.9 percent of all the fishermen contacted, a decrease of 5.5 percent from that of 1946.

Comparison of 1947 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). In 1946 the catch per unit of effort was 1.31 fish per hour and in 1947, 1.42 fish per hour.

During the past half decade the catch per unit of effort for trout waters has varied only 0.1 fish per hour. The highest catch per hour during this period was in 1943 (0.9 fish per hour) and in the past 4 years the catch per hour has been 0.8 fish.

The catch per hour for Great Lakes waters has remained consistently higher than that for trout and non-trout waters for the six years these waters have been tabulated separately. In 1947 the difference in the catch per hour for Great Lakes waters (2.7 fish) and non-trout waters (1.4 fish) was more marked than in the past. In the Great Lakes waters the anglers average 1.9 fish per hour for the 6-year period as compared with an average of 1.2 fish per hour in non-trout waters over the same period.

Table 16

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

	1942	1943	1944	1945	1946	1947	Simple average
CATCH PER HOUR:							
All waters	1.1	1.2	1.2	1.1	1.3	1.4	1.2
Resident	1.2	1.2	1.2	1.1	1.4	1.5	1.3
Non-resident	0.8	1.1	1.1	0.9	0.8	1.1	1.0
Trout waters	0.9	0.9	0.8	0.8	0.8	0.8	0.8
Resident	0.9	1.0	0.8	0.8	0.8	0.8	0.9
Non-resident	0.7	0.7	0.7	0.7	0.7	0.6	0.7
Non-trout waters	1.1	1.2	1.2	1.1	1.4	1.4	1.2
Resident	1.2	1.2	1.1	1.1	1.4	1.5	1.3
Non-resident	0.9	1.0	1.0	0.8	0.8	1.1	0.9
Great Lakes waters	1.7	1.6	1.8	2.2	1.6	2.7	1.9
Resident	2.0	1.5	1.8	2.2	1.6	2.7	2.0
Non-resident	0.9	1.8	2.1	1.4	0.6	1.9	1.5
PERCENTAGE OF ALL ANGLERS REPRESENTED BY:							
Non-residents	15.7	11.2	11.3	10.1	11.1	9.7	11.5
Female anglers	17.1	16.3	15.1	16.9	19.4	13.9	16.5
PERCENTAGE OF TROUT ANGLERS REPRESENTED BY:							
Non-residents	11.0	4.0	4.5	4.9	7.7	6.6	6.5
Female anglers	10.2	7.6	7.1	8.3	7.4	9.0	8.3
PERCENTAGE OF NON-TROUT ANGLERS REPRESENTED BY:							
Non-residents	17.3	12.5	13.8	11.7	12.5	11.5	13.2
Female anglers	19.1	17.8	16.3	18.4	21.9	15.9	18.2
PERCENTAGE OF GREAT LAKES ANGLERS REPRESENTED BY:							
Non-residents	9.7	13.3	4.9	6.7	6.1	2.9	7.3
Female anglers	11.6	13.1	19.3	16.5	18.2	9.4	14.7

Table 17

Catch per hour for all waters, trout waters, non-trout waters, and Great Lakes waters
by Field Administration Districts and Regions since 1942

	ALL WATERS							TROUT WATERS							NON-TROUT WATER							GREAT LAKES WATERS						
	1942	1943	1944	1945	1946	1947	Simple average	1942	1943	1944	1945	1946	1947	Simple average	1942	1943	1944	1945	1946	1947	Simple average	1942	1943	1944	1945	1946	1947	Simple average
District 1	0.6	0.7	0.6	0.8	0.7	0.6	0.7	1.0	0.7	0.8	0.9	0.8	0.7	0.8	0.5	0.7	0.5	0.7	0.8	0.4	0.6	0.2	0.4	0.2	0.1	0.1	0.5	0.3
District 2	0.8	1.2	0.6	0.6	0.7	0.5	0.7	1.3	1.0	0.6	0.9	0.6	0.5	0.8	0.6	1.3	0.5	0.5	0.6	0.5	0.7	...	...	1.5	2.3	3.4	1.8	2.3
District 3	0.8	0.7	0.9	0.6	0.9	0.9	0.8	0.9	0.7	0.8	0.9	0.8	0.9	0.8	0.7	0.7	0.8	0.9	0.9	0.6	0.8	0.3	1.0	1.0	4.1	1.2	1.0	1.4
District 4	1.9	1.2	1.2	0.9	0.8	1.0	1.2	1.1	1.4	0.9	0.8	1.0	1.1	1.1	1.5	0.9	1.4	0.8	0.7	0.8	1.0	3.1	2.3	1.2	1.5	0.7	1.1	1.7
Region 1	0.9	1.0	0.8	0.8	0.8	0.8	0.9	1.1	0.9	0.8	0.9	0.8	0.8	0.9	0.7	0.9	0.7	0.6	0.7	0.6	0.7	1.5	2.2	1.1	2.7	0.6	1.0	1.5
District 5	0.6	0.9	1.1	0.7	0.8	1.1	0.9	0.6	0.7	0.8	0.9	0.9	0.8	0.8	0.6	1.0	1.1	0.6	0.7	1.2	0.9	1.3	3.0	2.7	1.6	1.0	4.2	2.3
District 6	1.9	1.5	1.3	1.1	1.0	1.5	1.4	0.6	1.3	1.0	1.0	0.7	1.0	0.9	1.9	1.4	1.2	1.1	0.8	1.4	1.3	0.5	5.9	4.8	0.8	4.6	8.2	4.1
District 7	0.7	0.7	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.8	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	...	...	0.8	4.2	...	0.9	2.0
District 8	1.5	1.1	1.2	1.4	1.3	1.6	1.4	1.0	0.6	0.7	0.8	0.9	0.8	0.8	1.7	1.1	1.3	1.6	1.4	1.7	1.5	...	...	...	...	...	...	...
District 9	1.2	1.3	1.4	1.1	2.9	2.8	1.8	1.0	1.0	0.9	0.7	0.7	0.7	0.8	1.3	1.4	1.3	1.1	3.1	3.2	1.9	...	...	3.8	2.2	2.0	5.7	3.4
Region 2	1.1	1.0	1.0	0.9	1.5	1.5	1.2	0.7	0.8	0.8	0.8	0.8	0.8	0.8	1.1	1.0	1.0	0.9	1.6	1.6	1.2	0.5	5.7	3.3	2.5	2.4	7.1	3.6
District 10	1.3	1.5	1.7	1.6	1.3	1.6	1.5	0.6	0.7	0.6	0.6	0.6	0.5	0.6	1.3	1.5	1.7	1.6	1.3	1.7	1.5	...	2.9	9.0	...	2.8	...	4.9
District 11	1.2	1.2	1.3	1.1	1.3	1.0	1.2	1.8	1.6	0.8	0.5	0.6	...	1.1	1.2	1.1	1.3	1.1	1.3	1.0	1.2	...	...	...	...	...	...	...
District 12	1.4	1.5	1.7	1.6	1.6	2.5	1.7	0.7	1.9	0.6	0.4	0.4	0.6	0.8	1.2	1.4	1.4	1.2	1.1	1.3	1.3	1.6	1.4	1.9	2.0	2.0	4.0	2.2
Region 3	1.3	1.4	1.6	1.5	1.4	1.8	1.5	0.7	1.1	0.6	0.6	0.6	0.5	0.7	1.3	1.3	1.5	1.3	1.2	1.4	1.3	1.6	1.4	1.9	2.0	2.0	4.0	2.2
Entire state	1.1	1.2	1.2	1.1	1.3	1.4	1.2	0.9	0.9	0.8	0.8	0.8	0.8	0.8	1.1	1.2	1.1	1.1	1.4	1.4	1.2	1.7	1.6	1.8	2.2	1.6	2.7	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
1946	1.31	0.80	1.37	1.56
1947	1.42	0.79	1.44	2.72
Simple average	1.19	0.87	1.26	1.92

The appendix to this report in the form of detailed tables has been omitted as in 1941-1946. 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

K. G. Fukano

Approved by: A. S. Hazzard

Typed by: S. E. Putman