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Institute for Fisheries  
Research  
Division of Field  
Administration  
K. G. Fukano

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

ALBERT S. HAZZARD, PH.D.  
DIRECTOR

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ADDRESS  
UNIVERSITY MUSEUMS ANNEX  
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REPORT OF THE GENERAL CREEL CENSUS FOR 1948

By

K. G. Fukano

Data for the twenty-second year of the General Creel Census in Michigan are covered in this report. Conservation officers, as in past years, collected the data on General Creel Census forms (see sample) as a part of their duties and usually incidental to patrol activities. The fine cooperation by the Division of Field Administration and the Game Division are greatly appreciated and the writer wishes especially to express his thanks to the conservation officers who collected the records and the Game Division for the use of sorting and tabulating machines.

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 water were as follows:

### CREEL CENSUS—Michigan Department of Conservation

Check, if Trout Stream \_\_\_\_\_ If Non Trout Stream \_\_\_\_\_ If Lake \_\_\_\_\_ Date \_\_\_\_\_ 19\_\_

Name of Lake or Stream \_\_\_\_\_ County \_\_\_\_\_

Number 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	SEC.

Residence: \_\_\_\_\_  
 County \_\_\_\_\_ State \_\_\_\_\_



(1) Trout waters, 14,740 (21.9 percent of all anglers contacted) of whom 849 fished on designated trout lakes and the remaining 13,891 fished on streams; (2) Non-trout waters, 49,821 fishermen (74.0 percent) of whom 40,937 fished on lakes and 8,884 fished on streams; (3) Great Lakes waters, 2,766 anglers (4.1 percent) of whom 1,951 fished in the Great Lakes and the other 815 fished in the connecting waters.

During 1948, conservation officers interviewed 67,327 anglers of whom 10,507 fishermen (15.6 percent of all anglers contacted) were non-residents; women constituted 18.7 percent (12,572) of all those interviewed.

According to the February 29, 1949, tabulation of fishing licenses sold in 1948, of a total of 1,076,190 licenses 276,933 were non-resident (25.7 percent). Of these 156,976 (14.6 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 interview ten-day license holders because their fishing season is so short; also non-residents cannot fish through the ice in six southern Michigan counties from January 1 to the opening of the trout season. Based on the percentage of trout fishermen contacted (21.9 percent) and the total number of licenses sold (1,076,190) it may be estimated that approximately 235,000 anglers did some trout fishing in 1948. However, only 166,574 trout stamps were sold; this number constitutes 15.5 percent of the total fishing licenses sold. The discrepancy may be due in part to more law enforcement problems on trout waters; therefore, the officers spent more time on the trout waters than the others and secured more records of this type of fishing.

Intensive lake and stream census records such as secured at the Hunt Creek Station and the Rifle River Area have not been included in this report.

The term "fisherman-day" denotes the time which the angler had spent fishing that day prior to being interviewed by the conservation officer. Only legal-size fish caught by sport anglers have been considered.

#### Detailed Analysis

During 1948 the officers interviewed 67,327 fishermen, an increase of 31,308 (86.9 percent) over the records (36,019) collected in 1947. The 1948 records represent 160,509.4 hours of fishing, an increase of 64,729.3 (67.6 percent) over that (95,780.1) for the previous year. The number of fish caught in 1948 was 183,714, an increase of 48,041 (35.4 percent) above the previous year (135,673). The catch per unit of effort for all fishing was 1.1 fish per hour in 1948 as compared to 1.4 fish per hour in 1947.

No records of fishing were submitted in 1948 from one county, Eaton, which has a few non-trout lakes and non-trout streams. A lack of records from this county and other counties from which there are only a few records tend to prejudice the statewide sample of fishing. The goal of four hundred records per county was attained by officers in 58 counties in 1948. The number of records submitted by counties are found in Table 2.

In this report the various types of waters are separated into Conservation Districts. Formerly they were called Field Administration Districts. In 1948 the boundary between Regions 2 and 3 was shifted

Table 1

Total number of fishermen, total hours fished, total number of legal-sized fish taken, and catch per hour for each Conservation

Department District and Region, all waters, 1948

	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	2,282	205	2,487	6,584.9	5,026	0.76
District 2	3,580	443	4,023	12,410.6	10,647	0.86
District 3	3,152	513	3,665	9,583.6	10,802	1.13
District 4	1,495	261	1,756	4,907.0	6,194	1.26
Region 1	10,509	1,422	11,931	33,486.1	32,669	0.98
District 5	7,275	1,474	8,749	21,586.1	16,162	0.75
District 6	4,007	985	4,992	12,702.8	14,558	1.15
District 7	7,603	1,977	9,580	20,640.1	15,739	0.76
District 8	6,878	1,624	8,502	18,889.7	24,987	1.32
District 9	5,143	1,421	6,564	14,293.5	17,243	1.21
Region 2	30,906	7,431	38,337	88,112.2	88,689	1.01
District 10	5,743	1,507	7,250	16,751.6	27,514	1.64
District 11	4,097	1,272	5,369	12,231.0	13,309	1.09
District 12	3,500	890	4,390	9,928.5	21,533	2.17
Region 3	13,340	3,669	17,009	38,911.1	62,356	1.60
District total	54,755	12,572	67,327	160,509.4	183,714	1.14

Table 2

Number of anglers interviewed by conservation officers  
during 1947 and 1948, by counties

County	Number of anglers for 1948	Number of anglers for 1947	County	Number of anglers for 1948	Number of anglers for 1947
Alcona	1,584	587	Lake	1,915	755
Alger	1,122	606	Lapeer	1,797	1,866
Allegan	750	826	Leelanau	301	371
Alpena	1,398	572	Lenawee	1,388	94
Antrim	569	386	Livingston*	1,347	610
Arenac	676	1,111	Luce	169	118
Baraga	395	32	Mackinac	313	132
Barry	352	599	Macomb	376	151
Bay	940	77	Manistee	1,111	806
Benzie	504	290	Marquette	1,786	937
Berrien	211	377	Mason	770	189
Branch	387	...	Mecosta	833	66
Calhoun	129	...	Menominee	693	354
Cass	1,566	1,367	Midland	1,051	542
Charlevoix	655	669	Missaukee	1,035	598
Cheboygan	2,338	829	Monroe	85	8
Chippewa	605	517	Montcalm	452	109
Clare	1,248	454	Montmorency	1,749	904
Clinton	463	54	Muskegon	1,303	750
Crawford	1,341	407	Newaygo	1,896	671
Delta	757	1,193	Oakland	191	355
Dickinson	622	499	Oceana	767	...
Eaton	...	...	Ogemaw	965	...
Emmet	633	597	Ontonagon	633	66
Genesee	53	...	Osceola	1,018	560
Gladwin	1,753	552	Oscoda	1,202	1,384
Gogebic	948	517	Otsego	686	297
Grand Traverse	678	696	Ottawa	472	454
Gratiot	276	478	Presque Isle	721	605
Hillsdale	225	254	Roscommon	3,294	1,009
Houghton	445	286	Saginaw	58	26
Huron	377	848	St. Clair	250	...
Ingham	87	...	St. Joseph	1,480	457
Ionia	141	89	Sanilac	413	...
Iosco	1,194	284	Schoolcraft	669	401
Iron	2,708	816	Shiawassee	452	262
Isabella	896	248	Tuscola	269	...
Jackson	297	328	Van Buren	810	403
Kalamazoo	203	...	Washtenaw	260	621
Kalkaska	1,014	78	Wayne	579	654
Kent	813	454	Wexford	349	376
Keweenaw	66	81			
			State total	67,327	36,019

northward. Now Montcalm County, all of Ottawa and Kent counties are in District 10. Gratiot and Saginaw counties have been added to District 11. Only Alger County lies in two Conservation Districts. It was impossible to tabulate the records by the district submitting them; therefore, in this report all of Alger County is considered in District 3.

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

In Table 3 the data for 1948 on the number and percentage of anglers using the various waters arranged by Conservation Districts and Regions are given.

The greatest percentage of records for trout fishing in any district was taken in District 1 where 67.35 percent of the 2,487 anglers were contacted while fishing in trout waters. Districts 3 and 2 followed with 47.07 percent based on 3,665 records and 36.07 percent based on 4,023 records respectively. The nine districts which make up Regions 1 and 2 furnished 98.66 percent of all the trout fishing records. Also, the trout fishing in these regions constituted 28.90 percent of all the fishing in that area. Trout anglers in Region 3 contributed the remaining 1.34 percent of all trout fishing records and these anglers made up only 1.16 percent of all fishing recorded in this area.

District 12 supplied no trout fishing records. District 11 had 99.85 percent non-trout reports based on 5,369 fisherman-days. District 10 followed with 97.39 percent based on 7,250 records and then District 8 with 81.65 percent based on 8,502 fisherman-days.

Table 3

Number and percentages of fishermen interviewed on trout, non-trout, and  
Great Lakes waters by Conservation Districts and Regions, 1948

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	1,675	67.35	801	32.21	11	0.44	2,487
District 2	1,451	36.07	2,560	63.63	12	0.30	4,023
District 3	1,725	47.07	1,486	40.55	454	12.39	3,665
District 4	435	24.77	711	40.49	610	34.74	1,756
Region 1	5,286	44.30	5,558	46.58	1,087	9.11	11,931
District 5	2,498	28.55	6,126	70.02	125	1.43	8,749
District 6	1,710	34.25	3,250	65.10	32	0.64	4,992
District 7	2,232	23.30	7,346	76.68	2	0.02	9,580
District 8	1,560	18.35	6,942	81.65	...	...	8,502
District 9	1,257	19.15	5,022	76.51	285	4.34	6,564
Region 2	9,257	24.11	28,686	74.73	444	1.16	38,387
District 10	189	2.61	7,061	97.39	...	...	7,250
District 11	8	0.15	5,361	99.85	...	...	5,369
District 12	...	...	3,155	71.87	1,235	28.13	4,390
Region 3	197	1.16	15,577	91.58	1,235	7.26	17,009
District total	14,740	21.89	49,821	74.00	2,766	4.11	67,327



Of the twelve districts only one, District 11, does not border one of the Great Lakes or their connecting waters. Nine of the remaining eleven districts submitted records on Great Lakes sport fishing; only Districts 8 and 10 failed to do so. Officers obtained relatively few records from Great Lakes sport fishing which is restricted somewhat to sheltered bays, island areas, and certain docking areas. District 4 furnished the highest percentage with 34.74 percent based on 1,756 fisherman-days. District 12 followed with 28.13 percent based on 4,390 anglers and District 3, with 12.39 percent based on 3,665 fisherman-days.

Quality of Fishing, All Waters  
by Conservation 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 used by the fisherman as well as to the skill of the angler. Districts 12, 10, and 8 had a catch per hour of 2.2, 1.6, and 1.3 respectively. In District 12 the high figure was due to the huge number of yellow perch (8,847) taken in the Great Lakes waters by 781 anglers in 1,869.5 hours of fishing. The high quality of fishing in Districts 10 and 8 were due mainly to the great percentage of fishermen angling in non-trout lakes with good success.

Region 3 furnished a catch of 1.6 fish per hour, which is the best fishing in terms of fish taken per hour, whereas Regions 2 and 1 both furnished catches of 1.0 fish per hour. Furthermore, 88,689 fish (48.28 percent) of the total 183,714 fish recorded in the census were

taken in Region 2, 62,356 fish (33.94 percent) were caught in Region 3, and the remaining 32,669 fish (17.78 percent) were taken in Region 1.

Number of Trout Taken in Trout Waters  
by Conservation Districts and Regions

As in past years brook trout made up the bulk (67.48 percent) of the total trout catch. Rainbow trout (17.83 percent) and brown trout (14.69 percent) made up the remainder of the trout catch. The number and percentage of each of the three main species of trout are given in Table 4. These figures indicate a decrease in the percentage of brook trout (72.56 percent for 1947) and an increase in the percentage of rainbow and brown trout (14.85 and 12.59 percent for 1947 respectively).

Of the 20,989 brook trout recorded by conservation officers in the 1948 general creel census 10,470 or 49.88 percent were reported caught in Region 1. In Region 2 10,417 brook trout or 49.63 percent were taken. The remaining 102 or 0.49 percent were caught in Region 3.

A total of 5,545 rainbow trout were recorded caught in 1948. Of the total 4,490 or 80.97 percent were taken in Region 2, 974 or 17.57 percent in Region 1, and 81 or 1.46 percent in Region 3.

The greatest percentage of brown trout (81.44 percent) were taken in Region 2. Regions 1 and 3 followed with 15.34 and 3.22 percent respectively. Of the 31,103 trout reported, 98.94 percent were taken in Regions 1 and 2.

Other Species Taken from Trout Waters

The three species of trout constituted 97.00 percent of fish censused from trout waters. Sixteen other species of fish were reported

Table 4

Number and percentage of total trout catch made up by each of the three species of trout--all trout water, by Conservation Districts and Regions, 1948

District or Region	BROOK TROUT		BROWN TROUT		RAINBOW TROUT		Total trout
	Number	Percentage	Number	Percentage	Number	Percentage	
District 1	2,577	82.23	114	3.64	443	14.14	3,134
District 2	2,555	95.59	69	2.58	49	1.83	2,673
District 3	3,929	82.87	450	9.49	362	7.64	4,741
District 4	1,409	88.23	68	4.26	120	7.51	1,597
Region 1	10,470	86.21	701	5.77	974	8.02	12,145
District 5	3,053	66.56	420	9.16	1,114	24.29	4,587
District 6	2,576	54.80	370	7.87	1,755	37.33	4,701
District 7	2,481	55.01	1,333	29.56	696	15.43	4,510
District 8	1,573	53.81	942	32.23	408	13.96	2,923
District 9	734	38.49	656	34.40	517	27.11	1,907
Region 2	10,417	55.92	3,721	19.98	4,490	24.10	18,628
District 10	99	31.13	145	45.60	74	23.27	318
District 11	3	25.00	2	16.67	7	58.33	12
District 12	...	...	...	...	...	...	...
Region 3	102	30.91	147	44.55	81	24.55	330
District total	20,989	67.48	4,569	14.69	5,545	17.83	31,103

taken from trout waters and are listed in order of abundance as follows:

Sucker	391	Smallmouth bass	15
Yellow perch	198	Black crappie	6
Bluegill	133	Chub	6
Rock bass	54	Lake trout	5
Largemouth bass	47	Redhorse	3
Northern pike	43	White bass	2
Walleye	35	Carp	1
Pumpkinseed sunfish	23	Menominee whitefish	1
		Total	963

Catch per Hour--Trout Waters  
by Conservation Districts and Regions

Trout anglers were recorded in 11 of the 12 districts. Officers in District 12 failed to interview any angler fishing trout waters. Trout fishermen, 21.9 percent of all anglers contacted, had the same degree of success (0.8 fish per hour) as they did in 1944, 1945, 1946, and 1947. As shown by the catch per hour, trout fishing 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 (see Table 5). The highest catch per hour for both designated trout lakes (1.1 fish) and trout streams (1.3 fish) was recorded in District 4. The majority of trout anglers interviewed, 94.2 percent, fished in trout streams.

Table 5

General creel census data for trout lakes, trout streams, and all trout waters combined, by Conservation Districts and Regions, 1948

	TROUT LAKES				TROUT STREAMS				ALL 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	122	488.0	340	0.70	1,553	3,932.4	2,943	0.75	1,675	4,420.4	3,283	0.74
District 2	143	474.0	181	0.38	1,308	3,269.4	2,573	0.79	1,451	3,743.4	2,754	0.74
District 3	284	702.7	467	0.66	1,441	3,581.9	4,350	1.21	1,725	4,284.6	4,817	1.12
District 4	118	411.5	456	1.11	317	957.0	1,220	1.27	435	1,368.5	1,676	1.22
Region 1	667	2,076.2	1,444	0.70	4,619	11,740.7	11,086	0.94	5,286	13,816.9	12,530	0.91
District 5	93	269.0	230	0.86	2,405	5,960.3	4,590	0.77	2,498	6,229.3	4,820	0.77
District 6	...	...	...	...	1,710	5,196.5	4,796	0.92	1,710	5,196.5	4,796	0.92
District 7	8	32.0	20	0.63	2,224	6,131.3	4,595	0.75	2,232	6,163.3	4,615	0.75
District 8	14	35.0	8	0.23	1,546	4,513.0	2,997	0.66	1,560	4,548.0	3,005	0.66
District 9	67	311.0	147	0.47	1,190	3,205.0	1,823	0.57	1,257	3,516.0	1,970	0.56
Region 2	182	647.0	405	0.63	9,075	25,006.1	18,801	0.75	9,257	25,653.1	19,206	0.75
District 10	...	...	...	...	189	581.5	318	0.55	189	581.5	318	0.55
District 11	...	...	...	...	8	24.0	12	0.50	8	24.0	12	0.50
District 12	...	...	...	...	...	...	...	...	...	...	...	...
Region 3	...	...	...	...	197	605.5	330	0.55	197	605.5	330	0.55
District total	849	2,723.2	1,849	0.68	13,891	37,352.3	30,217	0.81	14,740	40,075.5	32,066	0.80

Composition of Catch--Non-Trout Waters  
by Conservation Districts and Regions

During 1948 the conservation officers saw 29 different kinds of fish in the non-trout angler's creel. Bluegills, as in past years except in 1946 and 1947, were caught in greatest numbers. Other important species recorded were: yellow perch, black crappie, rock bass, northern pike, pumpkinseed sunfish, largemouth bass, walleye, smallmouth bass and bullhead. These ten species comprised 96.84 percent of the total non-trout waters catch and the remaining 19 species constituted 3.16 percent. The remaining species not listed in Table 6 in order of abundance are as follows:

White bass	1,076	Redhorse	16
Smelt	965	Brown trout	12
Carp	573	Dogfish	11
Sucker	571	Muskellunge	7
Cisco	274	Golden shiner	6
Rainbow trout	266	Garpike	2
Brook trout	117	Lawyer	2
Catfish	85	Sturgeon	2
Lake trout	53	Warmouth bass	<u>2</u>
Sheepshead	50	Total	4,090

The three species of trout--brook, brown, and rainbow--made up only 0.31 percent of the total catch from non-trout waters.

The ten species most frequently taken in non-trout waters and their percentage abundance in the total catch for each Conservation District are found in Table 6. In each district these fish made up at least 84.9 percent of the total catch. Furthermore, they constituted more than 95 percent in ten of the districts.

Table 6

Percentage catch of the most important species from non-trout waters,  
by Conservation Department Districts, 1948

	Bluegill	Yellow perch	Black crappie	Rock bass	Northern pike	Pumpkinseed sunfish	Largemouth bass	Walleye	Smallmouth bass	Bullhead
District 1	23.40	23.28	6.40	2.04	11.99	1.75	2.79	24.51	3.67	...
District 2	4.21	38.79	26.88	0.97	10.08	1.36	1.95	4.96	3.06	6.71
District 3	38.83	33.05	0.20	1.32	3.89	2.86	2.68	6.09	10.13	0.02
District 4	15.42	62.46	...	3.65	10.42	1.92	...	4.09	1.24	0.72
Region 1	17.36	39.17	13.41	1.58	8.63	1.90	1.95	7.16	4.87	3.28
District 5	11.80	47.50	0.74	7.54	17.35	3.01	1.35	2.11	2.21	4.38
District 6	25.46	37.08	1.61	6.25	3.37	5.20	1.81	1.49	2.59	0.01
District 7	23.73	38.42	1.89	11.62	4.68	8.46	2.66	3.16	1.98	1.40
District 8	55.61	20.89	5.40	3.19	1.65	3.81	2.57	0.98	0.70	0.08
District 9	24.97	22.40	36.93	4.91	3.34	2.97	1.29	0.09	1.07	1.22
Region 2	33.25	31.14	8.43	6.14	5.44	4.55	2.06	1.49	1.51	1.24
District 10	71.88	6.70	10.28	1.96	0.68	2.95	2.14	1.12	0.40	0.14
District 11	62.65	7.20	5.14	5.30	2.06	7.32	4.53	0.16	1.08	3.31
District 12	59.49	10.85	10.78	2.77	2.12	5.16	0.70	0.01	2.71	1.61
Region 3	67.07	7.62	9.01	3.00	1.32	4.53	2.51	0.65	1.02	1.26
Entire state	44.28	23.08	9.29	4.34	4.26	4.20	2.22	1.90	1.75	1.51

Table 7

Percentage composition of the total catch for non-trout waters

(most abundant game and pan fish only)

Kind of fish	1940	1941	1942	1943	1944	1945	1946	1947	1948
Bluegill	32.8	43.4	37.4	48.3	44.2	48.0	27.2	30.2	44.3
Yellow perch	28.3	24.6	23.8	17.8	21.1	18.4	53.7	40.0	23.1
Black crappie	5.0	5.1	5.8	8.3	5.8	9.2	4.3	6.8	9.3
Pumpkinseed	5.4	5.6	5.1	4.4	4.8	3.6	2.4	2.4	4.2
Northern pike	3.6	2.8	3.4	3.3	4.6	5.3	2.8	3.0	4.3
Walleye	2.3	2.6	2.8	3.2	3.6	2.0	1.2	0.9	1.9
Rock bass	7.6	5.4	4.2	3.2	3.6	2.3	2.1	2.1	4.3
Smelt	...	...	10.4	1.8	1.8	1.5	0.2	6.3	0.7
Largemouth bass	2.1	2.5	2.2	2.5	2.6	2.6	1.0	1.2	2.2
Smallmouth bass	2.8	2.7	2.2	1.7	1.8	1.1	0.7	0.8	1.8
Total	89.9	94.7	97.3	94.5	93.9	94.0	95.6	93.7	96.1



The composition of the total non-trout catch has been determined by Conservation 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).

The bluegill was taken in greater numbers from non-trout waters than any other single species. More than 58 percent of all bluegills reported in the 1948 general creel census were taken in Region 3. The yellow perch was caught most frequently in Region 2 and next in Region 1, and lastly in Region 3. Nearly eight-tenths (78.22 percent) of all yellow perch recorded and over nine-tenths (94.97 percent) of all bluegills recorded in the 1948 general creel census were caught in the Lower Peninsula. Walleye was the species which was taken most often in Region 1. In Region 3 the bluegill was the species which was reported most often in the catch. The remaining species, yellow perch, black crappie, rock bass, northern pike, pumpkinseed sunfish, largemouth bass, smallmouth bass, and bullhead were caught most frequently in Region 2. In 1947 walleye were taken in greatest numbers in Region 1, and pumpkinseed sunfish were caught in greatest numbers in Region 3. These species were the only ones whose dominance in the catch was not followed by a similar dominance in the same region in succeeding years.

In all three regions the catch of bluegill and perch together constituted more than half of the total catch (56.5 percent in Region 1, 64.4 percent in Region 2, and 74.7 percent in Region 3). For the entire state these two species made up 67.4 percent of the total non-trout catch. The only other species which made up more than 10 percent of the total catch of any one region was the black crappie, which constituted 13.2 percent in Region 1.

Table 8

Number and percentage of the total catch for the whole state of each of 10 species tabulated by Conservation Regions--all non-trout waters, 1948

Species	REGION 1		REGION 2		REGION 3		Total fish	Total percentage
	Number	Percentage	Number	Percentage	Number	Percentage		
Bluegill	2,882	5.03	20,865	36.13	33,525	58.84	57,272	100.00
Yellow perch	6,502	21.78	19,543	65.16	3,810	12.76	29,855	100.00
Black crappie	2,226	18.52	5,290	44.02	4,502	37.46	12,018	100.00
Rock bass	262	4.66	3,855	68.61	1,502	26.73	5,619	100.00
Northern pike	1,433	26.03	3,412	61.98	660	11.99	5,505	100.00
Pumpkinseed	315	5.79	2,857	52.55	2,265	41.66	5,437	100.00
Largemouth bass	323	11.25	1,294	45.09	1,253	43.66	2,870	100.00
Walleye	1,189	48.49	937	38.21	326	13.30	2,452	100.00
Smallmouth bass	808	35.66	948	41.84	510	22.51	2,266	100.00
Bullhead	545	27.91	777	39.78	631	32.31	1,953	100.00
Totals or percentages	16,485	13.16	59,778	47.73	48,984	39.11	125,247	100.00

Table 9

Number and percentage of each species caught in the total catch in each of the three Conservation Regions--all non-trout waters, 1948

Species	REGION 1		REGION 2		REGION 3	
	Number	Percentage	Number	Percentage	Number	Percentage
Bluegill	2,882	17.36	20,865	33.25	33,525	67.07
Yellow perch	6,502	39.17	19,543	31.14	3,810	7.62
Black crappie	2,226	13.41	5,290	8.43	4,502	9.01
Rock bass	262	1.58	3,855	6.11	1,502	3.00
Northern pike	1,433	8.63	3,412	5.44	660	1.32
Pumpkinseed	315	1.90	2,857	4.55	2,265	4.53
Largemouth bass	323	1.95	1,294	2.06	1,253	2.51
Walleye	1,189	7.16	937	1.49	326	0.65
Smallmouth bass	808	4.87	948	1.51	510	1.02
Bullhead	545	3.28	777	1.24	631	1.26
Totals or percentages	16,485	99.31	59,778	95.25	48,984	97.99

Catch per Hour--Non-Trout Waters  
by Conservation Districts and Regions

For non-trout waters the highest catch per hour was recorded in District 10 with 1.7 fish per hour (Table 10). Districts 8, 4, 12, 3, 6, 11, and 9 had catches of better than 1.0 fish per hour. In 1948 the catch from non-trout waters for the entire state was 1.2 fish per hour, which is a drop of 0.2 fish per hour (1.4 fish per hour in 1947). The drop in catch per hour is due to the large number of yellow perch reported in the 1947 general creel census from non-trout streams emptying in Saginaw Bay. According to the catch per unit of effort, lake fishing was best in District 10, where the anglers caught 1.7 fish per hour, followed by Districts 12, 8, and 4 with 1.6, 1.6, and 1.5 fish per hour respectively. For non-trout streams District 2 yielded the highest catch per hour (1.3 fish per hour) followed by Districts 10, 9, and 8 with 1.2, 1.1, and 0.8 fish per hour respectively.

Composition of Catch--

Great Lakes Waters

A total of 22,311 fish were recorded from Great Lakes waters. The yellow perch made up the bulk of the total catch, 86.26 percent (Table 11). The following eight species are arranged according to their abundance in the catch: yellow perch, walleye, rock bass, rainbow trout, pumpkinseed sunfish, smallmouth bass, northern pike, and herring. These species constituted 98.4 percent of all fish taken from Great Lakes waters and 14 other species were included in the remaining 1.6 percent.

The other species of fish are listed as follows:

Table 10

General creel census data for non-trout lakes, non-trout streams, and all non-trout waters combined, by Conservation Districts and Regions, 1943

	NON-TROUT LAKES				NON-TROUT STREAMS				ALL NON-TROUT WATERS			
	Number of anglers	Total hours fished	Total legal fish caught	Catch per hour	Number of anglers	Total hours fished	Total legal fish caught	Catch per hour	Number of anglers	Total hours fished	Total legal fish caught	Catch per hour
District 1	686	1,895.5	1,587	0.84	115	241.0	131	0.54	801	2,136.5	1,718	0.80
District 2	1,507	5,450.2	3,810	0.70	1,053	3,198.5	4,029	1.26	2,560	8,648.7	7,839	0.91
District 3	1,352	3,484.5	4,335	1.24	134	333.0	210	0.63	1,486	3,817.5	4,545	1.19
District 4	665	1,629.0	2,427	1.49	46	128.0	69	0.54	711	1,757.0	2,496	1.42
Region 1	4,210	12,459.2	12,159	0.98	1,348	3,900.5	4,439	1.14	5,558	16,359.7	16,598	1.01
District 5	5,080	12,804.0	9,340	0.73	1,046	2,336.3	1,629	0.70	6,126	15,140.3	10,969	0.72
District 6	2,826	6,416.3	8,536	1.33	424	1,006.0	199	0.20	3,250	7,422.3	8,735	1.18
District 7	6,164	11,669.5	8,976	0.77	1,182	2,803.3	2,147	0.77	7,346	14,472.8	11,123	0.77
District 8	6,732	13,861.7	21,588	1.56	210	480.0	394	0.82	6,942	14,341.7	21,982	1.53
District 9	2,307	4,580.1	4,084	0.89	2,715	5,280.9	5,860	1.11	5,022	9,861.0	9,944	1.01
Region 2	23,109	49,331.6	52,524	1.06	5,577	11,906.5	10,229	0.86	28,686	61,238.1	62,753	1.02
District 10	6,577	15,050.6	25,809	1.71	484	1,119.5	1,387	1.24	7,061	16,170.1	27,196	1.68
District 11	4,449	9,658.6	11,669	1.21	912	2,548.4	1,628	0.64	5,361	12,207.0	13,297	1.09
District 12	2,592	5,537.0	8,653	1.56	563	1,272.0	840	0.66	3,155	6,809.0	9,493	1.39
Region 3	13,618	30,246.2	46,131	1.53	1,959	4,939.9	3,855	0.78	15,577	35,186.1	49,986	1.42
District total	40,937	92,037.0	110,814	1.20	8,884	20,746.9	18,523	0.89	49,821	112,783.9	129,337	1.15

Table 11

Percentage composition of the total catch for Great Lakes waters

(only the 8 most abundant species for 1948 are considered)

Species	1942	1943	1944	1945	1946	1947	1948
Yellow perch	84.23	76.67	72.16	86.46	65.73	82.48	86.26
Walleye	1.68	6.53	6.50	3.09	7.81	8.23	5.21
Northern pike	1.17	1.74	2.12	2.51	2.33	3.02	0.93
Herring	0.09	0.12	1.52	3.28	12.47	2.07	0.75
Smallmouth bass	2.10	6.29	3.81	1.72	3.15	1.40	1.18
Rock bass	3.80	2.95	3.82	0.60	3.19	1.31	1.56
Pumpkinseed	0.12	0.40	1.01	0.05	0.43	0.25	1.21
Rainbow trout	0.03	...	0.02	...	0.02	tr.	1.30
Total	95.22	94.70	90.96	97.71	95.13	98.76	98.40

Black crappie	126	Brown trout	6
Bullhead	71	Catfish	6
Sucker	42	Dogfish	3
Largemouth bass	32	Muskellunge	3
Brock trout	31	Bluegill	1
Lake trout	25	Carp	1
White bass	9	Whitefish	<u>1</u>
		Total	357

Catch per Hour--Great Lakes Waters  
by Conservation Districts and Regions

Records of fishing in the Great Lakes and their connecting waters were submitted by 9 districts in 1948. District 11 is the only Conservation 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 6 (12.2 fish per hour), but this phenomenal catch is attributed to 1,027 yellow perch taken in 84 hours of fishing by 32 anglers (Table 12). In four of the districts the anglers experienced a catch of better than 2.5 fish per hour and the average for all Great Lakes waters was 2.9 fish per hour. Fishing in the Great Lakes proper was considerably better than in the connecting waters (3.5 fish per hour and 1.6 fish per hour respectively).

Residence of Anglers

All Waters

During 1948, of the 67,327 anglers recorded in the general creel census, there were 56,820 (84.4 percent) who resided in Michigan and the

Table 12

General creel census data for Great Lakes, connecting waters, and all Great Lakes waters combined, by Conservation Districts and Regions, 1948

	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	11	28.0	25	0.89	...	...	...	...	11	28.0	25	0.89
District 2	12	18.5	54	2.92	...	...	...	...	12	18.5	54	2.92
District 3	454	1,481.5	1,440	0.97	...	...	...	...	454	1,481.5	1,440	0.97
District 4	209	659.0	809	1.23	401	1,122.5	1,213	1.08	610	1,781.5	2,022	1.13
Region 1	686	2,187.0	2,328	1.06	401	1,122.5	1,213	1.08	1,087	3,309.5	3,541	1.07
District 5	125	216.5	373	1.72	...	...	...	...	125	216.5	373	1.72
District 6	32	84.0	1,027	12.23	...	...	...	...	32	84.0	1,027	12.23
District 7	2	4.0	1	0.25	...	...	...	...	2	4.0	1	0.25
District 8	...	...	...	...	...	...	...	...	...	...	...	...
District 9	285	916.5	5,329	5.81	...	...	...	...	285	916.5	5,329	5.81
Region 2	444	1,221.0	6,730	5.51	...	...	...	...	444	1,221.0	6,730	5.51
District 10	...	...	...	...	...	...	...	...	...	...	...	...
District 11	...	...	...	...	...	...	...	...	...	...	...	...
District 12	821	1,979.5	9,572	4.84	414	1,140.0	2,468	2.16	1,235	3,119.5	12,040	3.86
Region 3	821	1,979.5	9,572	4.84	414	1,140.0	2,468	2.16	1,235	3,119.5	12,040	3.86
District total	1,951	5,387.5	18,630	3.46	815	2,262.5	3,681	1.63	2,766	7,650.0	22,311	2.92

remaining 10,507 (15.6 percent) lived outside the state (Table 13).

The greatest number of non-resident anglers were contacted by conservation officers in District 10. In this district 31.6 percent of all fishermen interviewed were from outside the state. The officers in District 12 interviewed the fewest non-residents (54) and these anglers comprised only 1.2 percent of all fishermen recorded in that district.

Residents of Wayne County constituted 10.79 percent of all anglers contacted in 1948. Other counties from which anglers were recorded in great numbers were Kent County (5.24 percent), Genesee County (3.69 percent), Saginaw County (3.17 percent), and Ingham County (2.87 percent). Residents from the above-mentioned counties accounted for 24.76 percent of all anglers contacted.

Out-of-state fishermen came from 35 states in the Union, Washington, D. C., and provinces of Ontario and Manitoba. The four states bordering Michigan furnished 96.28 percent of all the non-resident anglers. Fishermen from Ohio made up 40.77 percent, from Indiana 34.78 percent, from Illinois 15.90 percent, and from Wisconsin 4.83 percent. The county of residence for Michigan anglers and state of residence for non-residents are given in Table 14.

Catch per Hour--Resident  
and Non-resident Anglers

Resident and non-resident anglers had about the same success in 1948 (Table 15). The average catch per hour for all residents was 1.15 fish and for all non-residents was 1.09 fish. The difference in the catch per hour of the two groups is probably not significant.



Table 13

Number of fishermen, resident and non-resident, and percentages of non-resident fishermen in each Conservation District, all waters, 1948

	Total number anglers	Resident anglers	Non- resident anglers	Percentage non- residents
District 1	2,487	2,073	414	16.65
District 2	4,023	3,226	797	19.81
District 3	3,665	2,832	833	22.73
District 4	1,756	1,370	386	21.98
Region 1	11,931	9,501	2,430	20.37
District 5	8,749	7,484	1,265	14.46
District 6	4,992	4,379	613	12.28
District 7	9,580	8,422	1,158	12.09
District 8	8,502	6,967	1,535	18.05
District 9	6,564	6,347	217	3.31
Region 2	38,387	33,599	4,788	12.47
District 10	7,250	4,960	2,290	31.59
District 11	5,369	4,424	945	17.60
District 12	4,390	4,336	54	1.23
Region 3	17,009	13,720	3,289	19.34
District total	67,327	56,820	10,507	15.61

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*	508	83	591	Keweenaw	38	1	39
Alcona	196	33	229	Lake	152	44	196
Alger	387	47	434	Lapeer	523	111	634
Allegan	629	129	1,192	Leelanau	138	15	153
Alpena	353	71	424	Lenawee	716	220	936
Antrim	300	55	355	Livingston	227	74	301
Arenac	176	10	186	Luce	127	3	130
Baraga	221	2	223	Mackinac	66	7	73
Barry	174	60	234	Macomb	412	74	486
Bay	1,154	269	1,423	Manistee	366	63	429
Benzie	172	37	209	Marquette	1,243	125	1,368
Berrien	693	154	847	Mason	366	68	434
Branch	125	40	165	Mecosta	465	68	533
Calhoun	278	97	375	Menominee	501	45	546
Cass	488	73	561	Midland	1,089	300	1,389
Charlevoix	340	43	383	Missaukee	357	75	432
Cheboygan	634	67	701	Monroe	154	43	197
Chippewa	141	34	175	Montcalm	255	77	332
Clare	598	144	742	Montmorency	434	93	527
Clinton	322	105	427	Muskegon	1,180	306	1,486
Crawford	281	30	311	Newaygo	638	127	765
Delta	553	38	591	Oakland	945	233	1,178
Dickinson	934	85	1,019	Oceana	239	49	288
Eaton	126	40	166	Ogemaw	256	53	309
Emmett	455	48	503	Ontonagon	472	12	484
Genesee	1,937	550	2,487	Osceola	680	86	766
Gladwin	354	76	430	Oscoda	433	77	510
Gogebic	614	76	690	Otsego	283	33	316
Grand Traverse	354	58	412	Ottawa	193	68	261
Gratiot	529	158	687	Presque Isle	572	76	648
Hillsdale	146	42	188	Roseconnon	352	103	455
Houghton	571	49	620	Saginaw	1,583	552	2,135
Huron	102	28	130	St. Clair	239	52	291
Ingham	1,430	502	1,932	St. Joseph	235	70	305
Ionia	203	59	262	Sanilac	80	19	99
Iosco	482	76	558	Schoolcraft	299	38	337
Iron	1,348	170	1,518	Shiawassee	370	142	512
Isabelle	651	121	772	Tuscola	338	66	404
Jackson	439	127	566	Van Buren	233	53	286
Kalamazoo	476	115	591	Washtenaw	276	72	348
Kalkaska	249	51	300	Wayne	5,804	1,462	7,266
Kent	2,783	746	3,529	Wexford	432	100	532
				Total	46,667	10,153	56,820
				Grand total (Resident and non-resident)	54,755	12,572	67,327

\* Conservation officer did not record the county of residence.

Table 14 (continued)

Residence of Fishermen

NON-RESIDENT ANGLERS							
State of residence	Number of ♂	Number of ♀	Number of anglers	State of residence	Number of ♂	Number of ♀	Number of anglers
Alabama	1	...	1	Nebraska	7	...	7
Arkansas	3	1	4	Nevada	2	...	2
California	29	6	35	New Hampshire	2	...	2
Colorado	4	2	6	New Jersey	10	2	12
Connecticut	1	...	1	New York	16	6	22
Florida	43	2	45	North Carolina	2	...	2
Georgia	1	...	1	Ohio	3,191	1,093	4,284
Illinois	1,311	360	1,671	Oklahoma	10	2	12
Indiana	2,825	829	3,654	Oregon	2	1	3
Iowa	4	1	5	Pennsylvania	35	13	48
Kansas	8	...	8	Tennessee	14	4	18
Kentucky	32	9	41	Texas	18	11	29
Maine	6	2	8	Virginia	6	3	9
Maryland	3	1	4	Washington	2	...	2
Massachusetts	3	...	3	West Virginia	6	1	7
Minnesota	8	2	10	Wisconsin	450	58	508
Mississippi	10	3	13	Washington, D.C.	2	2	4
Missouri	8	5	13	Ontario	7	...	7
Montana	4	...	4	Manitoba	2	...	2
				Total	8,088	2,419	10,507

Table 15

Number of resident and non-resident anglers, number of hours spent fishing, number of legal-sized fish caught, and the catch per hour for each group--all waters, by Conservation Districts, 1948

	RESIDENT ANGLERS				NON-RESIDENT ANGLERS				ALL ANGLERS			
	Total anglers	Total hours fished	Number legal fish	Catch per hour	Total anglers	Total hours fished	Number legal fish	Catch per hour	Total anglers	Total hours fished	Number legal fish	Catch per hour
District 1	2,073	5,400.4	4,117	0.76	414	1,184.5	909	0.77	2,487	6,584.9	5,026	0.76
District 2	3,226	9,760.4	8,044	0.82	797	2,650.2	2,603	0.98	4,023	12,410.6	10,647	0.86
District 3	2,832	7,537.6	8,118	1.08	833	2,046.0	2,684	1.31	3,665	9,583.6	10,802	1.13
District 4	1,370	3,841.5	4,903	1.28	386	1,065.5	1,291	1.21	1,756	4,907.0	6,194	1.26
Region 1	9,501	26,539.9	25,182	0.95	2,430	6,946.2	7,487	1.08	11,931	33,486.1	32,669	0.98
District 5	7,484	18,924.8	14,031	0.74	1,265	2,661.3	2,131	0.80	8,749	21,586.1	16,162	0.75
District 6	4,379	11,387.8	12,799	1.12	613	1,315.0	1,759	1.34	4,992	12,702.8	14,558	1.15
District 7	8,422	18,353.1	14,076	0.77	1,158	2,287.0	1,663	0.73	9,580	20,640.1	15,739	0.76
District 8	6,967	15,821.7	21,111	1.33	1,535	3,068.0	3,876	1.26	8,502	18,889.7	24,987	1.32
District 9	6,347	13,827.2	16,769	1.21	217	466.3	474	1.02	6,564	14,293.5	17,243	1.21
Region 2	33,599	78,314.6	78,786	1.01	4,788	9,797.6	9,903	1.01	38,387	88,112.2	88,689	1.01
District 10	4,960	11,878.8	21,469	1.81	2,290	4,872.8	6,045	1.24	7,250	16,751.6	27,514	1.64
District 11	4,424	10,477.0	11,378	1.09	945	1,754.0	1,931	1.10	5,369	12,231.0	13,309	1.09
District 12	4,336	9,786.5	21,319	2.18	54	142.0	214	1.51	4,390	9,928.5	21,533	2.17
Region 3	13,720	32,142.3	54,166	1.69	3,289	6,768.8	8,190	1.21	17,009	38,911.1	62,356	1.60
District total	56,820	136,996.8	158,134	1.15	10,507	23,512.6	25,580	1.09	67,327	160,509.4	183,714	1.14

Sex of Anglers--

All Waters

There were 12,572 female anglers, who were interviewed by conservation officers in 1948. Of all the fishermen contacted, 18.7 percent were made up of female anglers, a difference of 4.8 percent from that of 1947 (13.9 percent in 1947).

Comparison of 1948 General Creel Census

Data with that of Other Years

General creel census data for the past seven 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. In 1948 the catch was 1.14 fish per hour.

During the past seven years 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 1942 and 1943 (0.9 fish per hour) and in the past five 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 seven years these waters have been tabulated separately. In 1948 the difference in the catch per hour for Great Lakes waters (2.92 fish) and non-trout waters (1.15 fish) was more marked than in the past. In the Great Lakes waters the anglers averaged 2.1 fish per hour for the 7-year period as compared

Table 16

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

	1942	1943	1944	1945	1946	1947	1948	Simple average
<b>CATCH PER HOUR:</b>								
All waters	1.1	1.2	1.2	1.1	1.3	1.4	1.1	1.2
Resident	1.2	1.2	1.2	1.1	1.4	1.5	1.2	1.3
Non-resident	0.8	1.1	1.1	0.9	0.8	1.1	1.1	1.0
Trout waters	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Resident	0.9	1.0	0.8	0.8	0.8	0.8	0.8	0.8
Non-resident	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7
Non-trout waters	1.1	1.2	1.2	1.1	1.4	1.4	1.2	1.2
Resident	1.2	1.2	1.1	1.1	1.4	1.5	1.2	1.2
Non-resident	0.9	1.0	1.0	0.8	0.8	1.1	1.1	1.0
Great Lakes waters	1.7	1.6	1.8	2.2	1.6	2.7	2.9	2.1
Resident	2.0	1.5	1.8	2.2	1.6	2.7	3.1	2.1
Non-resident	0.9	1.8	2.1	1.4	0.6	1.9	1.6	1.5
<b>PERCENTAGE OF ALL ANGLERS REPRESENTED BY:</b>								
Non-residents	15.7	11.2	11.3	10.1	11.1	9.7	15.6	12.1
Female anglers	17.1	16.3	15.1	16.9	19.4	13.9	18.7	16.8
<b>PERCENTAGE OF TROUT ANGLERS REPRESENTED BY:</b>								
Non-residents	11.0	4.0	4.5	4.9	7.7	6.6	6.1	6.4
Female anglers	10.2	7.6	7.1	8.3	7.4	9.0	10.1	8.5
<b>PERCENTAGE OF NON-TROUT ANGLERS REPRESENTED BY:</b>								
Non-residents	17.3	12.5	13.8	11.7	12.5	11.5	18.6	14.0
Female anglers	19.1	17.8	16.3	18.4	21.9	15.9	21.3	18.7
<b>PERCENTAGE OF GREAT LAKES ANGLERS REPRESENTED BY:</b>								
Non-residents	9.7	13.3	4.9	6.7	6.1	2.9	12.7	8.0
Female anglers	11.6	13.1	19.3	16.5	18.2	9.4	17.0	15.0

Table 17

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

	ALL WATERS								TROUT WATERS								NON-TROUT WATERS								GREAT LAKES WATERS							
	1942	1943	1944	1945	1946	1947	1948	Simple average	1942	1943	1944	1945	1946	1947	1948	Simple average	1942	1943	1944	1945	1946	1947	1948	Simple average	1942	1943	1944	1945	1946	1947	1948	Simple average
District 1	0.6	0.7	0.6	0.8	0.7	0.6	0.8	0.7	1.0	0.7	0.8	0.9	0.8	0.7	0.7	0.8	0.5	0.7	0.5	0.7	0.8	0.4	0.8	0.6	0.2	0.4	0.2	0.1	0.1	0.5	0.9	0.3
District 2	0.8	1.2	0.6	0.6	0.7	0.5	0.9	0.8	1.3	1.0	0.6	0.9	0.6	0.5	0.7	0.8	0.6	1.3	0.5	0.5	0.6	0.5	0.9	0.7	...	...	1.5	2.3	3.4	1.8	2.9	2.4
District 3	0.8	0.7	0.9	1.6	0.9	0.9	1.1	1.0	0.9	0.7	0.8	0.9	0.8	0.9	1.1	0.9	0.7	0.7	0.8	0.9	0.9	0.6	1.2	0.8	0.3	1.0	1.0	4.1	1.2	1.0	1.0	1.4
District 4	1.9	1.2	1.2	0.9	0.8	1.0	1.3	1.2	1.1	1.3	0.9	0.8	1.0	1.1	1.2	1.1	1.5	0.9	1.4	0.8	0.7	0.8	1.4	1.1	3.1	2.3	1.2	1.5	0.7	1.1	1.1	1.6
Region 1	0.9	1.0	0.8	0.8	0.8	0.8	1.0	0.9	1.1	0.9	0.8	0.9	0.8	0.8	0.9	0.9	0.7	0.9	0.7	0.6	0.7	0.6	1.0	0.7	1.5	2.2	1.1	2.7	0.6	1.0	1.1	1.5
District 5	0.6	0.9	1.1	0.7	0.8	1.1	0.7	0.8	0.6	0.7	0.8	0.9	0.9	0.8	0.8	0.8	0.6	1.0	1.1	0.6	0.7	1.2	0.7	0.8	1.3	3.0	2.7	1.6	1.0	4.2	1.7	2.2
District 6	1.9	1.5	1.3	1.1	1.0	1.5	1.1	1.3	0.6	1.3	1.0	1.0	0.7	1.0	0.9	0.9	1.9	1.4	1.2	1.1	0.8	1.4	1.2	1.3	0.5	5.9	4.8	0.8	4.6	8.2	12.2	5.3
District 7	0.7	0.6	0.6	0.6	0.6	0.7	0.8	0.7	0.6	0.6	0.8	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.8	0.7	...	...	0.8	4.2	...	0.9	0.3	1.6
District 8	1.5	1.2	1.1	1.4	1.4	1.6	1.3	1.4	1.0	0.8	0.7	0.8	1.0	0.8	0.7	0.8	1.7	1.2	1.3	1.7	1.4	1.8	1.5	1.5	...	...	...	...	...	...	...	...
District 9	1.2	1.4	1.6	1.2	2.9	3.0	1.2	1.8	1.0	1.0	1.0	0.7	0.7	0.7	0.6	0.8	1.2	1.5	1.5	1.3	3.2	3.5	1.0	1.9	...	...	3.8	2.2	2.0	5.7	5.8	3.9
Region 2	1.1	1.0	1.0	0.9	1.5	1.5	1.0	1.1	0.7	0.8	0.9	0.8	0.8	0.8	0.7	0.8	1.1	1.0	0.9	0.9	1.6	1.7	1.0	1.2	0.5	5.7	3.3	2.5	2.4	7.1	5.5	3.9
District 10	1.3	1.4	1.6	1.6	1.2	1.6	1.6	1.5	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.6	1.3	1.4	1.7	1.6	1.2	1.6	1.7	1.5	...	2.9	9.0	...	2.8	...	...	4.9
District 11	1.3	1.1	1.3	1.1	1.2	1.0	1.1	1.2	1.2	1.6	0.6	0.5	0.6	...	0.5	0.7	1.3	1.1	1.3	1.1	1.2	1.0	1.1	1.2	...	...	...	...	...	...	...	...
District 12	1.4	1.4	1.7	1.6	1.6	2.5	2.2	1.8	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	1.4	1.3	1.6	1.4	1.9	2.0	2.0	4.0	3.9	2.4
Region 3	1.3	1.3	1.5	1.4	1.4	1.7	1.6	1.5	0.7	1.0	0.6	0.6	0.6	0.5	0.5	0.6	1.3	1.3	1.5	1.3	1.2	1.4	1.4	1.3	1.6	1.4	1.9	2.0	2.0	4.0	3.9	2.4
Entire state	1.1	1.2	1.2	1.1	1.3	1.4	1.1	1.2	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	1.1	1.2	1.1	1.1	1.4	1.4	1.1	1.2	1.7	1.6	1.8	2.2	1.6	2.7	2.9	2.1

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
1948	1.14	0.80	1.15	2.92
Simple average	1.19	0.87	1.25	2.06



with an average of 1.2 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 1941-1947. The detailed tables for the data herein presented are on file at the Institute for Fisheries Research, University Museums Annex, Ann Arbor.

INSTITUTE FOR FISHERIES RESEARCH

K. G. Fukano

Approved by A. S. Hazzard

Typed by M. J. Lambert