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REPORT OF THE GENERAL CREEL CENSUS FOR 1953

By K. G. Fukano

This report covers the twenty-seventh year of the General Creel Census in Michigan. Conservation officers obtained the data as a part of their regular duties and usually incidental to patrol activities. The writer wishes to express his thanks to the conservation officers of the Division of Field Administration who collected the records, to Dr. James W. Moffett of the U. S. Fish and Wildlife Service for the use of the IBM key-punch machine, and to Mr. John J. Freysinger of the University of Michigan School of Public Health for the use of IBM sorting and tabulating machines.

The aim of the census is to obtain a sample of the sport fishing in all parts of the state. During 1953, the officers obtained records on 62,289 angler trips. These records have been divided into three major categories--trout, non-trout, and Great Lakes waters--and each category has been subdivided into lakes and streams. This division of the data, it is believed, 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 numbers of anglers interviewed were as follows: (1) trout waters, 10,286 anglers (16 percent of all anglers contacted) of whom 775 fished on designated trout lakes and the remaining 9,511 fished on streams; (2) non-trout waters, 49,576 fishermen (80 percent) of whom 43,145 fished on lakes and 6,431 fished

on streams; (3) Great Lakes waters, 2,427 anglers (4 percent) of whom 1,586 fished in the Great Lakes and 841 fished in the connecting waters.

Of the 62,289 anglers interviewed by officers, 9,421 (15 percent) were non-residents; female anglers constituted 16 percent (10,066) of all those interviewed.

According to the June 1954 tabulation of fishing licenses sold in 1953, of a total of 1,159,925 licenses 307,137 (26 percent) were non-resident. Of these, 142,342 (12 percent of all fishing 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 officers are less likely to interview the 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 day of the trout season.

As stated above, of the 62,289 anglers contacted by officers, 10,286 (16.5 percent) were trout fishermen. For this same year, 1,159,925 anglers bought licenses and 208,597 (18.0 percent) of them bought trout stamps. The closeness of these percentages lends assurance to the belief that the officers obtain a fairly representative sample of Michigan angling.

Intensive stream and lake census records (from special research projects) 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. The number of anglers as used in this report is the number of fisherman-days and not separate individuals. Only legal-size fish caught by sport fishermen have been considered.

Detailed Analysis

During 1953, conservation officers interviewed 62,289 anglers, an increase of 11,893 (23.6 percent) over the 50,396 anglers contacted in 1952. The records

for 1953 represent 148,108.1 hours of fishing--an increase of 25,293.9 hours (20.6 percent) from the 122,841.2 hours recorded the previous year. The number of fish caught in 1953 was 191,486 fish--an increase of 20,506 (12.0 percent) above the previous year (170,980 fish). In 1953 the catch per hour for all fishing was 1.3 which is 0.1 fish per hour below that recorded in 1952.

No records of fishing were submitted in 1953 from four counties: Genesee, Isabella, Monroe and St. Clair; the first two counties have mainly non-trout waters within their boundaries and the latter two counties have mainly Great Lakes waters. The lack of fishing records from these counties, and the paucity of records from a few other counties, tend to bias the statewide sample of fishing. The numbers of anglers contacted by counties are given in Table 2.

In this report the various types of waters are separated into Conservation Districts. Data from Alger County (which is in both Districts 3 and 4) have been separated according to the district to which the reporting officer has been assigned.

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

The data for 1953 on the number and percentage of anglers using the various waters are given in Table 3.

The greatest percentage of trout anglers in any district was in District 1 where 59.0 percent of the 2,079 anglers were contacted while fishing in trout waters. Districts 4 and 3 followed with 57.4 percent of 2,892 angling-days and 47.1 percent of 1,494 angling-days, respectively. The nine districts which make up Regions I and II furnished 90.4 percent of all the trout fishing. The trout fishing in these two regions constituted 26.5 percent of all the

Table 1--Total number of fishermen, total hours fished, total number of fish taken, and catch per hour for each conservation district and region, all waters, 1953

	Number of male anglers	Number of female anglers	Total anglers	Total hours fished	Total fish caught	Catch per hour	$\frac{\sum X}{N}$
District 1	1,905	174	2,079	4,991.0	3,898	0.78	0.87
District 2	2,287	227	2,514	6,313.2	6,235	0.99	1.12
District 3	1,372	122	1,494	4,299.0	3,241	0.75	0.73
District 4	2,549	343	2,892	8,956.0	10,170	1.14	1.38
Region 1	8,113	866	8,979	24,564.2	23,544	0.96	1.08
District 5	5,911	1,318	7,229	18,891.6	13,574	0.72	0.81
District 6	2,843	755	3,598	7,724.0	11,349	1.47	1.61
District 7	5,238	1,151	6,389	13,339.5	11,219	0.84	1.00
District 8	4,819	1,002	5,821	11,953.5	21,012	1.76	1.93
District 9	2,519	582	3,101	5,684.9	16,039	2.82	2.94
Region 2	21,330	4,808	26,138	57,593.5	73,193	1.27	1.47
District 10	7,142	1,374	8,516	24,930.3	34,576	1.39	1.69
District 11	12,787	2,516	15,303	33,154.4	45,003	1.36	1.37
District 12	2,851	502	3,353	7,865.7	15,170	1.93	1.97
Region 3	22,780	4,392	27,172	65,950.4	94,749	1.44	1.54
State total	52,223	10,066	62,289	148,108.1	191,486	1.29	1.45

Table 2.--Number of anglers interviewed by conservation officers during 1953, and 1952 by counties

	Number of anglers in 1953	Number of anglers in 1952		Number of anglers in 1953	Number of anglers in 1952
Alcona	780	810	Lake	653	532
Alger	490	182	Lapeer	553	3,050
Allegan	512	863	Leelanau	224	203
Alpena	999	521	Lenawee	882	...
Antrim	564	387	Livingston	2,106	1,124
Arenac	1,030	1,432	Luce	1,136	1,256
Baraga	389	378	Mackinac	149	496
Barry	1,808	920	Macomb	877	167
Bay	210	189	Manistee	272	277
Benzie	277	356	Marquette	1,079	1,648
Berrien	8	...	Mason	485	277
Branch	1,924	1	Mecosta	1,322	910
Calhoun	2,037	319	Menominee	136	210
Cass	1,624	113	Midland	344	607
Charlevoix	1,429	648	Missaukee	549	463
Cheboygan	1,904	1,213	Monroe	...	...
Chippewa	621	790	Montcalm	1,103	456
Clare	926	845	Montmorency	768	1,589
Clinton	486	415	Muskegon	1,460	1,206
Crawford	509	721	Newaygo	691	288
Delta	68	316	Oakland	829	1,297
Dickinson	864	795	Oceana	534	913
Eaton	978	...	Ogemaw	738	1,077
Emmet	614	390	Ontonagon	492	61
Genesee	...	60	Osceola	676	546
Gladwin	591	556	Oscoda	1,016	1,246
Gogebic	776	385	Otsego	377	505
Grand Traverse	1,457	433	Ottawa	1,089	766
Gratiot	534	...	Presque Isle	574	554
Hillsdale	1,106	178	Roscommon	1,891	1,637
Houghton	261	348	Saginaw	324	20
Huron	269	407	St. Clair	...	214
Ingham	925	506	St. Joseph	1,291	1,580
Ionia	74	208	Sanilac	591	716
Iosco	1,455	921	Schoolcraft	843	1,297
Iron	1,514	1,315	Shiawassee	838	359
Isabella	...	217	Tuscola	77	...
Jackson	1,360	252	Van Buren	301	209
Kalamazoo	228	55	Washtenaw	1,803	1,021
Kalkaska	340	625	Wayne	157	1,408
Kent	478	439	Wexford	479	588
Keweenaw	161	114			
			Total	62,289	50,396

Table 3.--Number and percentage of fishermen interviewed on trout, non-trout, and Great Lakes waters by conservation districts and regions, 1953

	Trout waters		Non-trout waters		Great Lakes waters		Total anglers
	Number anglers	Percentage of anglers	Number anglers	Percentage of anglers	Number anglers	Percentage of anglers	
District 1	1,226	58.97	853	41.03	...	...	2,079
District 2	753	29.95	1,761	70.05	...	...	2,514
District 3	703	47.05	685	45.85	106	7.10	1,494
District 4	1,659	57.37	957	33.09	276	9.54	2,892
Region 1	4,341	48.35	4,256	47.40	382	4.25	8,979
District 5	1,803	24.94	5,362	74.17	64	0.89	7,229
District 6	746	20.74	2,840	78.93	12	0.33	3,598
District 7	1,678	26.27	4,691	73.42	20	0.31	6,389
District 8	550	9.45	5,271	90.55	...	...	5,821
District 9	181	5.84	2,358	76.04	562	18.12	3,101
Region 2	4,958	18.97	20,522	78.51	658	2.52	26,138
District 10	591	6.94	7,904	92.81	21	0.25	8,516
District 11	343	2.24	14,960	97.76	...	...	15,303
District 12	53	1.58	1,934	57.68	1,366	40.74	3,353
Region 3	987	3.63	24,798	91.26	1,387	5.11	27,172
State total	10,236	16.51	49,576	79.59	2,427	3.90	62,289

fishing there. Trout anglers in Region III made up the remaining 9.6 percent of all trout fishing and these anglers constituted only 3.6 percent of all fishing recorded in this region.

District 11 had 97.8 percent non-trout anglers based on 14,960 fisherman-days. District 10 followed with 92.8 percent based on 7,904 anglers, and District 8 with 90.6 percent of 5,821 fisherman-days.

Of the twelve districts, only District 11 does not border one of the Great Lakes or their connecting waters. Eight of the remaining eleven districts submitted some records on Great Lakes sport fishing. Officers obtain relatively few records of Great Lakes fishing because it is restricted somewhat to sheltered bays, island areas, and certain docking areas, and because anglers are not required to buy a fishing license to take many kinds of fish sought in the Great Lakes. Nearly half of the anglers recorded in District 12 were fishing Great Lakes waters (40.7 percent of 3,353 fisherman-days); District 9 had 18.1 percent based on 3,101 anglers; and District 4 had 9.5 percent of 2,892 fisherman-days.

Number of Trout Caught in Trout Waters, by Conservation Regions

Brook trout constituted the bulk of the total trout catch (62.1 percent). Rainbow trout (24.7 percent) and brown trout (13.2 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 an increase in the percentage of rainbow trout (19.5 percent in 1952) and of brown trout (12.1 percent in 1952) and a decrease in the percentage of brook trout (68.4 percent in 1952).

Of the 11,241 brook trout recorded in the 1953 general creel census, 6,317 or 56.2 percent were caught in Region I. A total of 4,190 or 37.3 percent was taken in Region II. The remaining 734 or 6.5 percent were caught in Region III.

Table 4.--Number and percentage of total trout catch made up by each of the three species of trout--all trout waters, by conservation districts and regions, 1953

	<u>Brook trout</u>		<u>Brown trout</u>		<u>Rainbow trout</u>		Total trout
	Number	Percentage	Number	Percentage	Number	Percentage	
District 1	1,431	73.05	104	5.31	424	21.64	1,959
District 2	1,484	83.61	117	6.59	174	9.80	1,775
District 3	711	75.32	42	4.45	191	20.23	944
District 4	2,691	71.59	154	4.10	914	24.31	3,759
Region 1	6,317	74.87	417	4.94	1,703	20.19	8,437
District 5	2,284	55.00	386	9.29	1,483	35.71	4,153
District 6	245	22.66	305	28.22	531	49.12	1,081
District 7	1,184	66.44	462	25.93	136	7.63	1,782
District 8	433	46.96	358	38.83	131	14.21	922
District 9	44	17.19	210	82.03	2	0.78	256
Region 2	4,190	51.14	1,721	21.00	2,283	27.86	8,194
District 10	477	48.47	183	18.60	324	32.93	984
District 11	149	38.60	63	16.32	174	45.08	386
District 12	108	100.00	...	...	...	...	108
Region 3	734	49.66	246	16.64	498	33.70	1,478
State total	11,241	62.07	2,384	13.17	4,484	24.76	18,109

A total of 4,484 rainbow trout were recorded caught. Of this total, 2,283 or 50.9 percent were taken in Region II, 1,703 or 38.0 percent in Region I, and 498 or 11.1 percent in Region III.

In 1953 the 2,384 brown trout taken were divided in the following manner: Region II--1,721 or 72.2 percent, Region I--417 or 17.5 percent, and Region III--246 or 10.3 percent. Of the 18,109 trout reported from trout waters 91.8 percent were caught in Regions I and II combined.

Other Species Caught in Trout Waters

The three species of trout--brook, brown, rainbow--constituted 97.9 percent of all fish taken in trout waters. Sixteen other species of fish were reported as taken from trout waters and are listed in order of abundance as follows:

Suckers	130	Smallmouth bass	5
Round whitefish	82	Sturgeon	5
Yellow perch	54	Black crappie	4
Rock bass	34	Chubs	2
Walleye	28	Largemouth bass	1
Bluegill	26	Muskellunge	1
Northern pike	13	Pumpkinseed	1
Redhorse	9	Whitefish	1
		Total	396

Catch per Hour--Trout Waters,

by Conservation Districts

Trout anglers were recorded in all 12 districts. Trout fishermen, 16.5 percent of all anglers contacted in 1953, had poorer fishing success (0.64 fish per hour and 0.63 trout per hour) than they did in 1952 when the catch was 0.71 fish per hour and 0.69 trout per hour. Using the catch per hour as an index for fishing quality, trout fishing was best in District 2 (Table 5). The fishing quality was better for trout streams than for the designated trout lakes, when the data for trout waters were separated into lakes and

Table 5.--General creel census data for trout lakes, trout streams,
and all trout waters combined by conservation districts and regions,
1953

	Trout lakes							Trout Streams							Trout waters						
	Number anglers	Hours fished	Total fish caught	Catch per hour	Total trout caught	Trout catch per hour	$\frac{\Sigma X}{N}$	Number anglers	Hours fished	Total fish caught	Catch per hour	Total trout caught	Trout catch per hour	$\frac{\Sigma X}{N}$	Number anglers	Hours fished	Total fish caught	Catch per hour	Total trout caught	Trout catch per hour	$\frac{\Sigma X}{N}$
District 1	...	...	...	...	...	...	...	1,226	2,951.0	1,962	0.66	1,959	0.66	0.74	1,226	2,951.0	1,962	0.66	1,959	0.66	0.74
District 2	13	35.0	24	0.69	24	0.69	0.74	740	1,611.7	1,813	1.12	1,751	1.09	1.08	753	1,646.7	1,837	1.12	1,775	1.08	1.08
District 3	139	233.0	154	0.66	154	0.66	0.79	564	1,569.5	794	0.51	790	0.50	0.48	703	1,802.5	948	0.53	944	0.52	0.54
District 4	316	841.0	495	0.59	495	0.59	0.68	1,343	4,719.0	3,369	0.71	3,264	0.69	0.86	1,659	5,560.0	3,864	0.69	3,759	0.68	0.83
Region 1	468	1,109.0	673	0.61	673	0.61	0.72	3,873	10,851.2	7,938	0.73	7,764	0.72	0.81	4,341	11,960.2	8,611	0.72	8,437	0.71	0.80
District 5	219	488.0	197	0.40	187	0.38	0.42	1,584	6,123.3	4,037	0.66	3,966	0.65	0.66	1,803	6,611.3	4,234	0.64	4,153	0.63	0.63
District 6	...	...	...	...	...	...	...	746	1,807.5	1,089	0.60	1,081	0.60	0.63	746	1,807.5	1,089	0.60	1,081	0.60	0.62
District 7	47	122.0	67	0.55	65	0.53	0.62	1,631	4,171.5	1,782	0.43	1,717	0.41	0.50	1,678	4,293.5	1,849	0.43	1,782	0.42	0.50
District 8	8	13.0	3	0.23	3	0.23	0.25	542	1,371.5	927	0.68	919	0.67	0.70	550	1,384.5	930	0.67	922	0.67	0.69
District 9	33	105.0	32	0.30	19	0.18	0.29	148	377.0	265	0.70	237	0.63	0.69	181	482.0	297	0.62	256	0.53	0.62
Region 2	307	728.0	299	0.41	274	0.38	0.43	4,651	13,850.8	8,100	0.58	7,920	0.57	0.60	4,958	14,578.8	8,399	0.58	8,194	0.56	0.59
District 10	...	...	...	...	...	...	...	591	1,410.5	996	0.71	984	0.70	0.66	591	1,410.5	996	0.71	984	0.70	0.66
District 11	...	...	...	...	...	...	...	343	817.5	391	0.48	386	0.47	0.41	343	817.5	391	0.48	386	0.47	0.41
District 12	...	...	...	...	...	...	...	53	129.0	108	0.84	108	0.84	0.76	53	129.0	108	0.84	108	0.84	0.76
Region 3	...	...	...	...	...	...	...	987	2,357.0	1,495	0.63	1,478	0.63	0.58	987	2,357.0	1,495	0.63	1,478	0.63	0.58
State total	775	1,837.0	972	0.53	947	0.52	0.60	9,511	27,059.0	17,533	0.65	17,162	0.63	0.68	10,286	28,896.0	18,505	0.64	18,109	0.63	0.68

streams. Majority of the trout fishermen (92.5 percent) fished in streams. The highest catch per hour for trout lakes (0.69 trout) was recorded in District 2. District 2 also had the highest catch per hour (1.09) for trout streams.

Composition of Catch--Non-trout Waters,
by Conservation Districts and Regions

During 1953 the officers recorded 30 different kinds of fish in the non-trout anglers' catch. Bluegills and yellow perch combined constituted 70.2 percent of the total non-trout catch. Other important species recorded were: black crappie, pumpkinseed, northern pike, rock bass, largemouth bass, walleye, and smallmouth bass. The nine species named above comprised 95.7 percent of the total catch from non-trout waters and the remaining 21 species made up 4.3 percent. The species not listed in Table 6, in order of abundance, are as follows:

Suckers	2,441	Warmouth	27
Smelt	1,546	Gar	16
Bullheads	1,055	White bass	14
Rainbow trout	530	Cisco	12
Carp	350	Freshwater drum	11
Brook trout	246	Shiners	11
Catfish	99	Redhorse	10
Bowfin	86	Sturgeon	4
Sauger	60	Burbot	1
Brown trout	53	Muskellunge	<u>1</u>
Lake trout	35		
		Total	304

The three species of trout--brook, brown and rainbow--made up only 0.5 percent of the total catch from non-trout waters.

The nine important species most frequently caught in non-trout waters and their percentage abundance in the total catch for each conservation district are given in Table 6. In each district these fish made up at least 83.2 percent of the total catch. Furthermore, they constituted more than 95 percent in nine of the districts.

Table 6.--Percentage catch of the most important species from non-trout waters,
by conservation districts and regions, 1953

	Bluegill	Yellow perch	Black crappie	Pumpkinseed	Northern pike	Rock bass	Largemouth bass	Walleye	Smallmouth bass	Total fish
District 1	24.74	33.52	9.61	3.46	9.30	2.38	1.91	8.32	3.51	1,936
District 2	6.87	45.50	10.98	1.27	22.51	1.34	1.14	5.93	2.12	4,398
District 3	16.13	55.43	...	0.72	9.44	0.84	1.85	9.86	1.37	1,674
District 4	13.43	69.27	0.32	1.77	5.62	3.28	0.40	4.00	1.04	5,301
Region 1	13.25	54.47	5.16	1.72	12.22	2.20	1.04	6.00	1.80	13,309
District 5	13.93	39.91	0.70	9.71	16.42	8.73	2.64	1.51	3.25	9,094
District 6	33.37	32.87	0.47	2.20	4.34	4.37	2.55	1.54	1.47	10,098
District 7	32.80	35.48	3.52	7.33	4.49	11.10	0.94	1.09	1.75	9,346
District 8	41.02	34.11	9.11	5.27	2.77	3.38	1.78	1.39	0.38	20,082
District 9	12.95	50.43	23.99	2.75	2.80	1.51	0.44	0.03	0.27	9,834
Region 2	29.45	37.76	7.92	5.33	5.44	5.30	1.69	1.16	1.22	58,454
District 10	65.73	12.65	10.14	3.96	1.10	1.94	2.19	0.01	0.11	33,463
District 11	55.05	13.76	10.28	7.40	1.67	3.64	2.01	0.07	0.64	44,612
District 12	39.26	31.54	10.29	6.40	0.75	3.53	0.97	0.15	...	5,469
Region 3	58.30	14.48	10.23	5.95	1.38	2.95	2.02	0.05	0.38	83,544
State total	43.58	26.67	8.92	5.36	3.84	3.77	1.81	0.98	0.82	155,307

The composition of the total non-trout catch has been tabulated 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 caught tabulated by regions (Table 8), and (2) the percentage of each species in the total catch tabulated for each of the three regions (Table 9).

From non-trout waters the bluegill was caught in greater numbers than any other single species. Of the 67,680 bluegills taken, 72 percent were caught in Region III. More than half of the yellow perch were taken in Region II. Over nine-tenths (97.4 percent) of all bluegills recorded, and over eight-tenths (82.5 percent) of all yellow perch recorded were caught in the Lower Peninsula. The greatest number of walleye was taken in Region I. More yellow perch, northern pike, rock bass, and smallmouth bass were caught in Region II than in the other regions. In Region III the bluegill, black crappie, and largemouth bass were caught in largest numbers.

In each of the three regions the combined catch of bluegills and yellow perch made up more than six-tenths of the total catch (67.7 percent in Region I, 67.2 percent in Region II, and 72.8 percent in Region III). For non-trout waters of the entire state these two species constituted 70.2 percent. Northern pike (12.2 percent in Region I) and black crappie (10.2 percent in Region III) were the only other species which made up more than 10 percent of the total catch of any one region.

Catch per Hour--Non-trout Waters,
by Conservation Districts

For non-trout waters the highest catch per hour was recorded in District 9 with 2.39 fish per hour (Table 10). All districts had catches of better than 1.0 fish per hour except District 1, 2, 3, and 5. According to the catch per hour, lake fishing was best in District 4 where the anglers caught 2.08 fish per hour, followed by Districts 8, 6, and 11 with 1.91, 1.73, and

Table 7.--Percentage composition of the total catch for non-trout waters
(Most abundant game and pan fish only)

Species	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
Bluegill	37.4	48.3	44.2	48.0	27.2	30.2	44.3	47.6	43.5	41.6	40.0	43.6
Yellow perch	23.8	17.8	21.1	18.4	53.7	40.0	23.1	24.4	29.1	33.5	33.1	26.7
Black crappie	5.8	8.3	5.8	9.2	4.3	6.8	9.3	8.5	7.6	6.4	8.0	8.9
Pumpkinseed	5.1	4.4	4.8	3.6	2.4	2.4	4.2	3.8	3.8	4.1	5.1	5.4
Rock bass	4.2	3.2	3.6	2.3	2.1	2.1	4.3	3.2	3.1	3.3	3.5	3.8
Northern pike	3.4	3.3	4.6	5.3	2.8	3.0	4.3	4.8	2.9	3.3	3.4	3.8
Walleye	2.8	3.2	3.6	2.0	1.2	0.9	1.9	1.2	1.2	1.5	1.7	1.0
Largemouth bass	2.2	2.5	2.6	2.6	1.0	1.2	2.2	1.5	1.5	1.6	1.6	1.8
Smallmouth bass	2.2	1.7	1.8	1.1	0.7	0.8	1.8	1.1	1.0	1.1	1.0	0.8
Total	86.9	92.7	92.1	92.5	95.4	87.4	95.4	96.1	93.7	96.4	97.4	95.8

Table 8.--Number and percentage of the total catch for the whole state of each of the species tabulated by conservation regions--all non-trout water, 1953

Species	Region 1		Region 2		Region 3		Total fish
	Number	Percentage	Number	Percentage	Number	Percentage	
Bluegill	1,763	2.61	17,213	25.43	48,704	71.96	67,680
Yellow perch	7,250	17.51	22,073	53.29	12,096	29.20	41,419
Black crappie	686	4.95	4,630	33.41	8,544	61.64	13,860
Pumpkinseed	229	2.75	3,118	37.48	4,972	59.77	8,319
Northern pike	1,626	27.27	3,182	53.36	1,155	19.37	5,963
Rock bass	293	5.00	3,100	52.91	2,466	42.09	5,859
Largemouth bass	139	4.95	986	35.10	1,684	59.95	2,809
Walleye	799	52.63	677	44.60	42	2.77	1,518
Smallmouth bass	239	18.79	712	55.97	321	25.24	1,272
Totals or percentages	13,024	8.76	55,691	37.45	79,984	53.79	148,699

Table 9.--Number and percentage of each species caught in the total catch in each of the three conservation regions--all non-trout waters, 1953

Species	Region 1		Region 2		Region 3	
	Number	Percentage	Number	Percentage	Number	Percentage
Bluegill	1,763	13.25	17,213	29.45	48,704	58.30
Yellow perch	7,250	54.47	22,073	37.76	12,096	14.48
Black crappie	686	5.16	4,630	7.92	8,544	10.23
Pumpkinseed	229	1.72	3,118	5.33	4,972	5.95
Northern pike	1,626	12.22	3,182	5.44	1,155	1.38
Rock bass	293	2.20	3,100	5.30	2,466	2.95
Largemouth bass	139	1.04	986	1.69	1,684	2.02
Walleye	799	6.00	677	1.16	42	0.05
Smallmouth bass	239	1.80	712	1.22	321	0.38
Totals or percentages	13,024	97.86	55,691	95.27	79,984	95.74

Table 10.--General creel census data for non-trout lakes, non-trout streams, and all non-trout waters combined, by conservation districts and regions, 1953

	Non-trout lakes					Non-trout streams					All non-trout waters				
	Number anglers	Hours fished	Fish caught	Catch per hour	$\frac{\Sigma X}{N}$	Number anglers	Hours fished	Fish caught	Catch per hour	$\frac{\Sigma X}{N}$	Number anglers	Hours fished	Fish caught	Catch per hour	$\frac{\Sigma X}{N}$
District 1	773	1,883.5	1,841	0.98	1.08	80	156.5	95	0.61	0.80	853	2,040.0	1,936	0.95	1.06
District 2	1,475	3,795.5	3,859	1.02	1.23	286	876.0	539	0.62	0.66	1,761	4,671.5	4,398	0.94	1.14
District 3	565	1,832.5	1,544	0.84	0.88	120	270.5	130	0.48	0.58	685	2,103.0	1,674	0.80	0.83
District 4	945	2,518.0	5,244	2.08	2.38	12	34.0	57	1.68	1.44	957	2,552.0	5,301	2.08	2.36
Region 1	3,758	10,029.5	12,488	1.25	1.44	498	1,337.0	821	0.61	0.68	4,256	11,366.5	13,309	1.17	1.35
District 5	4,952	11,379.5	8,448	0.74	0.86	410	782.8	646	0.83	0.80	5,362	12,162.3	9,094	0.75	0.86
District 6	2,759	5,728.5	9,899	1.73	1.86	81	165.0	199	1.21	1.28	2,840	5,893.5	10,098	1.71	1.84
District 7	4,655	8,911.0	9,280	1.04	1.19	36	83.0	66	0.80	0.83	4,691	8,994.0	9,346	1.04	1.18
District 8	5,224	10,442.0	19,993	1.91	2.07	47	127.0	89	0.70	0.84	5,271	10,569.0	20,082	1.90	2.06
District 9	1,075	2,088.9	2,980	1.43	1.62	1,283	2,025.0	6,854	3.38	3.50	2,358	4,113.9	9,834	2.39	2.64
Region 2	18,665	38,549.9	50,600	1.31	1.47	1,857	3,182.8	7,854	2.47	2.69	20,522	41,732.7	58,454	1.40	1.58
District 10	7,659	22,953.3	32,768	1.43	1.77	245	537.5	695	1.29	1.43	7,904	23,490.8	33,463	1.42	1.76
District 11	11,667	25,927.6	39,145	1.51	1.52	3,293	6,409.3	5,467	0.85	0.93	14,960	32,336.9	44,612	1.38	1.39
District 12	1,396	3,347.7	4,123	1.23	1.26	538	1,046.5	1,346	1.29	1.18	1,934	4,394.2	5,469	1.24	1.24
Region 3	20,722	52,228.6	76,036	1.46	1.59	4,076	7,993.3	7,508	0.94	0.99	24,798	60,221.9	83,544	1.39	1.49
State total	43,145	100,808.0	139,124	1.38	1.53	6,431	12,513.1	16,183	1.29	1.46	49,576	113,321.1	155,307	1.37	1.52

1.51 fish per hour, respectively. For non-trout streams District 9 yielded the highest catch per hour (3.38 fish), followed by Districts 4, 10, and 12 with 1.68, 1.29, and 1.29 fish per hour, respectively. In 1953 the catch from non-trout waters for the entire state was 1.37 fish per hour, which is a drop of 0.06 fish per hour (1.43 fish per hour in 1952).

Composition of Catch--Great Lakes Waters

A total of 17,674 fish was recorded from Great Lakes waters. The yellow perch made up the bulk of the total catch --85.1 percent (Table 11). The following seven species are arranged according to their abundance in the catch: yellow perch, rock bass, northern pike, pumpkinseed, walleye, white bass, and smallmouth bass. These species constituted 96.6 percent of all fish caught from Great Lakes waters and 15 other species of fish were included in the remaining 3.4 percent.

The other species of fish are as follows:

Black crappie	141	Freshwater drum	10
Bluegill	86	Brook trout	5
Cisco	80	Rainbow trout	5
Largemouth bass	71	Carp	2
Bullheads	64	Mooneye	1
Smelt	57	Muskellunge	1
Round whitefish	58	Sauger	1
Catfish	12	Total	<u>593</u>

Catch per Hour--Great Lakes Waters,
by Conservation Districts

In 1953 fishing records from the Great Lakes and their connecting waters were submitted by officers in eight districts. District 11 does not border on the Great Lakes and Districts 1, 2, and 8 did not submit any catch records from the Great Lakes waters. The greatest success for Great Lakes waters was reported from District 6 (7.04 fish per hour). This high catch per hour is attributed to 162 yellow perch taken in 23 hours by 12 anglers in Manistee County (Table 12). In five of the districts the anglers experienced a catch of better than 2.0 fish

Table 11.--Percentage composition of the total catch for Great Lakes waters
(Only the 7 most abundant species for 1953 are given)

	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
Yellow perch	84.21	76.67	72.16	86.46	65.73	82.48	86.26	90.64	96.17	94.29	84.11	85.13
Rock bass	3.80	2.95	3.82	0.60	3.19	1.31	1.56	0.47	0.20	0.84	5.86	4.19
Northern pike	1.17	1.74	2.12	2.51	2.33	3.02	0.93	0.79	0.26	0.62	0.32	1.86
Pumpkinseed	0.12	0.40	1.01	0.05	0.43	0.25	1.21	0.94	0.14	0.26	0.43	1.75
White bass	0.90	1.21	1.80	0.80	2.12	...	0.04	...	...	...	1.68	1.31
Walleye	1.68	6.53	6.50	3.09	7.81	8.23	5.21	3.91	1.36	1.48	3.68	1.30
Smallmouth bass	2.10	6.29	3.81	1.72	3.15	1.40	1.18	0.24	0.38	0.54	1.75	1.10
Totals	93.98	95.79	91.22	95.23	84.76	96.69	96.39	96.99	98.51	98.03	97.83	96.64

Table 12.--General creel census data for Great Lakes and connecting waters, and such waters combined by conservation districts and regions, 1953

	Great Lakes					Connecting waters					All Great Lakes waters				
	Number anglers	Hours fished	Fish caught	Catch per hour	$\frac{\Sigma X}{N}$	Number anglers	Hours fished	Fish caught	Catch per hour	$\frac{\Sigma X}{N}$	Number anglers	Hours fished	Fish caught	Catch per hour	$\frac{\Sigma X}{N}$
District 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
District 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
District 3	106	393.5	619	1.57	1.31	...	...	...	...	...	106	393.5	619	1.57	1.31
District 4	134	377.0	456	1.21	1.12	142	467.0	549	1.18	1.46	276	844.0	1,005	1.19	1.29
Region 1	240	770.5	1,075	1.40	1.20	142	467.0	549	1.18	1.46	382	1,237.5	1,624	1.31	1.30
District 5	64	118.0	246	2.08	2.09	...	...	...	...	...	64	118.0	246	2.08	2.09
District 6	12	23.0	162	7.04	6.96	...	...	...	...	...	12	23.0	162	7.04	6.96
District 7	20	52.0	24	0.46	0.50	...	...	...	...	...	20	52.0	24	0.46	0.50
District 8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
District 9	562	1,089.0	5,908	5.43	4.93	...	...	...	...	...	562	1,089.0	5,908	5.43	4.93
Region 2	658	1,282.0	6,340	4.95	4.63	...	...	...	...	...	658	1,282.0	6,340	4.95	4.63
District 10	21	29.0	117	4.03	4.40	...	...	...	...	...	21	29.0	117	4.03	4.40
District 11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
District 12	667	1,767.5	6,916	3.91	4.41	699	1,575.0	2,677	1.70	1.77	1,366	3,342.5	9,593	2.87	3.06
Region 3	688	1,796.5	7,033	3.91	4.41	699	1,575.0	2,677	1.70	1.77	1,387	3,371.5	9,710	2.88	3.08
State total	1,586	3,849.0	14,448	3.75	3.98	841	2,042.0	3,226	1.58	1.72	2,427	5,891.0	17,674	3.00	3.20

per hour and the average for all Great Lakes waters was 3.00 fish per hour. Fishing in the Great Lakes proper was better than in the connecting waters (3.75 fish per hour and 1.58 fish per hour, respectively).

Quality of Fishing--All Waters,
by Conservation Districts and Regions

The fishing quality is usually expressed in terms of the number of fish caught per hour of fishing. Districts 9, 12, and 8 had catches per hour of 2.82, 1.93, and 1.76 fish, respectively. The high figure in District 9 was due mainly to the huge number of yellow perch taken in non-trout streams (4,064) and in Great Lakes waters (5,786). The high catch per hour in District 12 was caused by the great percentage of fishermen angling in Great Lakes waters with good success and in District 8 by the great percentage of fishermen angling in non-trout lakes with good success.

The best fishing was in Region III with a catch of 1.44 fish per hour, whereas Regions II and I had catches per hour of 1.27 and 0.96 fish, respectively. Furthermore 94,749 fish or 49.5 percent of the total 191,486 recorded in the census were caught in Region III, 73,193 or 38.2 percent were taken in Region II; and the remaining 23,544 or 12.3 percent were caught in Region I.

Residence of Anglers--All Waters

Of the 62,289 anglers recorded in the 1953 general creel census, 52,868 (84.9 percent) were residents of Michigan and the remaining 9,421 (15.1 percent) were non-residents (Table 13). Conservation officers in District 10 interviewed the greatest number of non-resident anglers. In this district 2,196 anglers (25.8 percent of all anglers contacted in the district) were from outside the state. However, District 6 had a higher percentage (28.8) of non-resident anglers to total anglers. Officers in District 12 interviewed the fewest non-residents (15) and these anglers constituted only 0.4 percent of all anglers recorded in the district.

Table 13.--Number of fishermen, resident and non-resident, and percentage of non-resident fishermen in each conservation district, all waters, 1953

	Total anglers	Resident anglers	Non-resident anglers	Percentage non-resident
District 1	2,079	1,636	443	21.31
District 2	2,514	2,042	472	18.77
District 3	1,494	1,239	255	17.07
District 4	2,892	2,489	403	13.93
Region 1	8,979	7,406	1,573	17.52
District 5	7,229	5,874	1,355	18.74
District 6	3,598	2,562	1,036	28.79
District 7	6,389	5,773	616	9.64
District 8	5,821	5,158	663	11.39
District 9	3,101	3,038	63	2.03
Region 2	26,138	22,405	3,733	14.28
District 10	8,516	6,320	2,196	25.79
District 11	15,303	13,399	1,904	12.44
District 12	3,353	3,338	15	0.45
Region 3	27,172	23,057	4,115	15.14
State total	62,289	52,868	9,421	15.12

Anglers residing in all 83 counties of Michigan were recorded in the 1953 general creel census. Residents of Wayne County constituted 10.8 percent of all anglers interviewed in 1953. Great numbers of anglers residing in Ingham County (4.7 percent), Kent County (4.7 percent), and Calhoun County (3.6 percent) were recorded. Residents from the above mentioned counties accounted for 23.8 percent of all anglers contacted.

Non-resident fishermen came from 34 states, the province of Ontario, and Sweden. The four states bordering Michigan furnished 96.0 percent of all non-resident anglers. Fishermen from Ohio made up 41.2 percent; from Indiana, 36.6 percent; from Illinois, 12.3 percent; and from Wisconsin, 5.9 percent. Table 14 gives the number of anglers by county or state of residence.

Catch per Hour--Resident and
Non-resident Anglers--All Waters

Resident anglers had a higher catch per hour (1.34 fish) than did the non-resident anglers (1.00 fish). Comparison of resident and non-resident anglers is given in Table 15.

Sex of Anglers--All Waters

A total of 10,066 female anglers was interviewed in 1953. Of the total 62,289 anglers contacted, 16.2 percent were female anglers.

Comparison of 1953 General Creel Census

Data with that of Other Years

Tables 16 to 21 summarize the general creel census data for the past 12 years. The catch per hour for all waters has ranged from 1.1 fish in 1942, 1945, and 1948 to 1.6 in 1950. For 1953 the catch for all waters was 1.3 fish per hour which is the simple average for the 12-year period.

During the past 12 years the catch per hour of trout in trout waters has varied 0.3 trout per hour. The high catch during this period was in 1942,

Table 14.--Residence of fishermen interviewed in the general creel census, 1953

County of residence	Male anglers	Female anglers	Total anglers	County of residence	Male anglers	Female anglers	Total anglers
Alcona	133	23	156	Macomb	390	69	459
Alger	218	10	228	Manistee	144	21	165
Allegan	440	80	520	Marquette	895	74	969
Alpena	443	57	500	Mason	269	44	313
Antrim	401	80	481	Mecosta	513	119	632
Arenac	121	22	143	Menominee	126	10	136
Baraga	163	8	171	Midland	656	167	823
Barry	794	171	965	Missaukee	199	37	236
Bay	853	169	1,022	Monroe	97	32	129
Benzie	148	12	160	Montcalm	655	102	757
Berrien	292	38	330	Montmorency	127	30	157
Branch	776	131	907	Muskegon	1,230	245	1,475
Calhoun	1,865	352	2,217	Newaygo	175	18	193
Cass	186	21	207	Oakland	1,461	295	1,756
Charlevoix	392	60	452	Oceana	221	28	249
Cheboygan	341	55	396	Ogemaw	159	21	170
Chippewa	192	39	231	Ontonagon	305	15	320
Clare	360	62	422	Osceola	397	52	449
Clinton	408	100	508	Oscoda	118	21	139
Crawford	71	9	80	Otsego	177	26	203
Delta	146	5	151	Ottawa	435	69	504
Dickinson	810	78	888	Presque Isle	357	62	419
Eaton	529	96	625	Roscommon	99	16	115
Emmet	247	53	300	Saginaw	1,563	326	1,889
Genesee	1,458	346	1,804	St. Clair	106	19	125
Gladwin	168	13	181	St. Joseph	692	74	766
Gogebic	469	34	503	Sanilac	172	13	185
Grand Traverse	347	63	410	Schoolcraft	490	37	527
Gratiot	589	132	721	Shiawassee	485	86	571
Hillsdale	774	81	855	Tuscola	132	36	168
Houghton	335	21	356	Van Buren	119	14	133
Huron	157	47	204	Washtenaw	954	202	1,156
Ingham	2,392	551	2,943	Wayne	5,494	1,258	6,752
Ionia	230	39	269	Wexford	373	49	422
Iosco	226	26	252				
Iron	952	82	1,034	Total	44,819	8,049	52,868
Isabella	175	31	206				
Jackson	1,217	236	1,453	Grand total	52,223	10,066	62,289
Kalamazoo	598	106	704	(Resident and non-resident)			
Kalkaska	236	57	293				
Kent	2,389	532	2,921				
Keweenaw	68	...	68				
Lake	37	7	44				
Lapeer	301	42	343				
Leelanau	104	13	117				
Lenawee	563	93	656				
Livingston	295	47	342				
Luce	541	23	564				
Mackinac	84	9	93				

Table 14 (continued)

Residence of fishermen interviewed in the
general creel census, 1953

State of residence	Male anglers	Female anglers	Total anglers
Alabama	7	5	12
Arkansas	3	1	4
California	14	7	21
Connecticut	2	...	2
Florida	24	5	29
Georgia	4	1	5
Idaho	1	...	1
Illinois	943	219	1,162
Indiana	2,761	689	3,450
Iowa	11	2	13
Kansas	4	1	5
Kentucky	26	8	34
Maryland	1	1	2
Massachusetts	2	...	2
Minnesota	3	...	3
Mississippi	1	...	1
Missouri	33	6	39
Montana	1	...	1
Nebraska	3	...	3
New Jersey	1	...	1
New York	24	7	31
Ohio	2,903	976	3,879
Oklahoma	16	2	18
Oregon	2	...	2
Pennsylvania	27	7	34
South Carolina	3	3	6
South Dakota	2	...	2
Tennessee	13	3	16
Texas	20	2	22
Virginia	4	...	4
Washington	1	2	3
West Virginia	41	11	52
Wisconsin	494	59	553
Wyoming	5	...	5
Ontario	3	...	3
Sweden	1	...	1
	7,404	2,017	9,421

Table 15.--Number of resident and non-resident anglers, number of hours spent fishing, number of fish caught, and the catch per hour for each group--all waters, by conservation districts, 1953

	Resident anglers					Non-resident anglers				
	Number anglers	Hours fished	Fish caught	Catch per hour	$\frac{\sum X}{N}$	Number anglers	Hours fished	Fish caught	Catch per hour	$\frac{\sum X}{N}$
District 1	1,636	3,770.0	3,000	0.80	0.87	443	1,221.0	898	0.74	0.88
District 2	2,042	5,199.4	4,991	0.96	1.11	472	1,118.8	1,244	1.11	1.16
District 3	1,239	3,549.0	2,454	0.69	0.66	255	750.0	787	1.05	1.08
District 4	2,489	7,689.0	8,993	1.17	1.42	403	1,267.0	1,177	0.93	1.14
Region 1	7,406	20,207.4	19,438	0.96	1.09	1,573	4,356.8	4,106	0.94	1.06
District 5	5,874	16,317.6	11,513	0.71	0.77	1,355	2,574.0	2,061	0.80	0.99
District 6	2,562	5,730.0	9,051	1.58	1.79	1,036	1,994.0	2,298	1.15	1.15
District 7	5,773	12,201.5	9,961	0.82	0.98	616	1,138.0	1,258	1.11	1.19
District 8	5,158	10,757.2	19,373	1.80	1.99	663	1,196.3	1,639	1.37	1.47
District 9	3,038	5,590.9	15,893	2.84	2.98	63	94.0	146	1.55	1.09
Region 2	22,405	50,597.2	65,791	1.30	1.52	3,733	6,996.3	7,402	1.06	1.15
District 10	6,320	17,477.1	27,841	1.59	1.88	2,196	7,453.2	6,735	0.90	1.15
District 11	13,399	29,657.9	40,915	1.38	1.39	1,904	3,496.5	4,088	1.17	1.23
District 12	3,338	7,822.7	15,076	1.93	1.97	15	43.0	94	2.19	1.67
Region 3	23,057	54,957.7	83,832	1.53	1.61	4,115	10,992.7	10,917	0.99	1.19
State total	52,868	125,762.3	169,061	1.34	1.50	9,421	22,345.8	22,425	1.00	1.15

Table 16.--Comparison of data from the general creel census for the past 12 years

	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	Simple Average
CATCH PER HOUR:													
All waters	1.1	1.2	1.2	1.1	1.3	1.4	1.1	1.3	1.6	1.4	1.4	1.3	1.3
Resident	1.2	1.2	1.2	1.1	1.4	1.5	1.2	1.3	1.7	1.4	1.4	1.3	1.3
Non-resident	0.8	1.1	1.1	0.9	0.8	1.1	1.1	1.1	1.1	1.0	1.1	1.0	1.0
Trout waters	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.8	0.7	0.6	0.8
Resident	0.9	1.0	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.8	0.7	0.7	0.8
Non-resident	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.8	0.6	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	1.3	1.6	1.5	1.4	1.4	1.3
Resident	1.2	1.2	1.1	1.1	1.4	1.5	1.2	1.3	1.7	1.6	1.5	1.4	1.4
Non-resident	0.9	1.0	1.0	0.8	0.8	1.1	1.1	1.2	1.2	1.0	1.1	1.1	1.0
Great Lakes waters	1.7	1.6	1.8	2.2	1.6	2.7	2.9	3.1	4.8	3.2	2.6	3.0	2.6
Resident	2.0	1.5	1.8	2.2	1.6	2.7	3.1	3.2	4.9	3.4	2.6	3.1	2.7
Non-resident	0.9	1.3	2.1	1.4	0.6	1.9	1.6	1.2	2.7	1.3	2.8	1.3	1.6
PERCENTAGE OF ALL ANGLERS REPRESENTED BY:													
Non-residents	15.7	11.2	11.3	10.1	11.1	9.7	15.6	9.8	10.4	10.9	10.3	15.1	11.8
Female anglers	17.1	16.3	15.1	16.5	19.4	13.9	18.7	16.5	16.5	16.8	16.4	16.2	16.6
PERCENTAGE OF TROUT ANGLERS REPRESENTED BY:													
Non-residents	11.0	4.0	4.5	4.9	7.7	6.6	6.1	6.4	6.9	5.7	5.4	8.1	6.4
Female anglers	10.2	7.6	7.1	8.3	7.4	9.3	10.1	11.6	9.9	10.0	10.4	9.4	9.3
PERCENTAGE OF NON-TROUT ANGLERS REPRESENTED BY:													
Non-residents	17.3	12.5	13.8	11.7	12.5	11.5	18.6	10.9	11.7	12.7	12.0	17.1	13.5
Female anglers	19.1	17.8	16.3	18.4	21.9	15.9	21.3	17.7	18.4	18.9	18.1	17.6	18.4
PERCENTAGE OF GREAT LAKES ANGLERS REPRESENTED BY:													
Non-residents	9.7	13.3	4.9	6.7	6.1	2.9	12.7	6.3	4.1	8.0	4.9	5.2	7.1
Female anglers	11.6	13.1	19.3	16.5	18.2	9.6	17.0	16.1	12.9	17.9	14.1	16.2	15.2

Table 17.--Catch per hour for all waters by conservation districts and regions since 1942

	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	Simple average
District 1	0.6	0.7	0.6	0.8	0.7	0.6	0.8	0.8	0.9	0.8	0.8	0.8	0.7
District 2	0.8	1.2	0.6	0.6	0.7	0.5	0.9	0.7	1.1	0.7	0.9	1.0	0.8
District 3	0.8	0.7	0.9	1.6	0.9	0.9	1.1	0.9	0.7	0.9	0.9	0.8	0.9
District 4	1.9	1.2	1.2	0.9	0.8	1.0	1.3	1.5	1.6	1.4	1.4	1.1	1.3
Region 1	0.9	1.0	0.8	0.8	0.8	0.8	1.0	0.9	1.1	1.0	1.1	1.0	0.9
District 5	0.6	0.9	1.1	0.7	0.8	1.1	0.7	0.7	0.8	0.7	0.7	0.7	0.8
District 6	1.9	1.5	1.3	1.1	1.0	1.5	1.1	1.2	1.9	1.3	1.2	1.5	1.4
District 7	0.7	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.9	0.8	0.7
District 8	1.5	1.2	1.1	1.4	1.4	1.6	1.3	1.4	1.9	1.8	2.1	1.8	1.5
District 9	1.2	1.4	1.6	1.2	2.9	3.0	1.2	1.9	2.6	3.3	2.8	2.8	2.2
Region 2	1.1	1.0	1.0	0.9	1.5	1.5	1.0	1.1	1.5	1.4	1.3	1.3	1.2
District 10	1.3	1.4	1.6	1.6	1.2	1.6	1.6	1.8	2.0	1.8	2.0	1.4	1.6
District 11	1.3	1.1	1.3	1.1	1.2	1.0	1.1	1.4	1.7	1.8	1.3	1.4	1.3
District 12	1.4	1.4	1.7	1.6	1.6	2.5	2.2	1.9	2.4	1.4	1.7	1.9	1.8
Region 3	1.3	1.3	1.5	1.4	1.4	1.7	1.6	1.7	2.1	1.6	1.7	1.4	1.6
Entire state	1.1	1.2	1.2	1.1	1.3	1.4	1.1	1.3	1.6	1.4	1.4	1.3	1.3

Table 18.--Catch per hour for trout waters by conservation districts and regions since 1942 (Trout only)

	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	Simple average
District 1	1.0	0.7	0.6	0.9	0.8	0.7	0.7	0.6	0.9	0.7	0.7	0.7	0.8
District 2	1.2	0.7	0.6	0.8	0.6	0.5	0.7	0.8	0.8	0.7	1.0	1.9	0.9
District 3	0.8	0.6	0.8	0.8	0.8	0.8	1.1	1.0	0.6	1.1	0.5	0.5	0.8
District 4	0.7	1.2	0.8	0.7	1.0	1.0	1.2	1.0	1.1	1.3	1.0	0.7	1.0
Region 1	0.9	0.7	0.7	0.8	0.8	0.7	0.9	0.8	0.8	1.0	0.8	0.7	0.8
District 5	0.4	0.4	0.8	0.9	0.8	0.7	0.7	0.6	0.6	0.7	0.6	0.6	0.6
District 6	0.8	0.6	1.0	0.9	0.6	1.0	0.9	0.9	0.7	0.7	0.9	0.6	0.8
District 7	0.5	0.5	0.7	0.6	0.7	0.7	0.7	0.5	0.4	0.5	0.5	0.4	0.6
District 8	0.9	0.7	0.7	0.7	1.0	0.8	0.6	0.7	0.6	0.7	0.7	0.7	0.7
District 9	0.2	0.8	0.7	0.6	0.6	0.6	0.5	0.4	0.1	0.3	0.3	0.5	0.5
Region 2	0.6	0.5	0.8	0.8	0.7	0.8	0.7	0.6	0.5	0.6	0.6	0.6	0.6
District 10	0.6	0.5	0.5	0.6	0.6	0.5	0.5	0.4	0.6	0.5	0.5	0.7	0.5
District 11	1.0	1.6	0.1	0.4	0.5	...	0.5	0.4	0.6	0.4	0.5	0.5	0.5
District 12	0.6	1.7	0.6	0.4	0.4	0.6	...	0.6	0.6	0.3	0.5	0.8	0.6
Region 3	0.7	0.9	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.5	0.6	0.6
Entire state	0.8	0.7	0.7	0.8	0.8	0.7	0.8	0.7	0.6	0.7	0.7	0.6	0.7

Table 19.--Catch per hour for non-trout waters by conservation districts and regions since 1942

	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	Simple average
District 1	0.5	0.7	0.5	0.7	0.8	0.4	0.8	0.9	1.0	0.9	0.8	0.9	0.7
District 2	0.6	1.3	0.5	0.5	0.6	0.5	0.9	0.7	1.1	0.7	0.8	0.9	0.8
District 3	0.7	0.7	0.8	0.9	0.9	0.6	1.2	0.8	0.9	0.8	1.0	0.8	0.8
District 4	1.5	0.9	1.4	0.8	0.7	0.8	1.4	1.7	1.8	1.5	1.6	2.1	1.4
Region 1	0.7	0.9	0.7	0.6	0.7	0.6	1.0	0.9	1.2	0.9	1.2	1.2	0.9
District 5	0.6	1.0	1.1	0.6	0.7	1.2	0.7	0.7	0.9	0.6	0.7	0.7	0.8
District 6	1.9	1.4	1.2	1.1	0.8	1.4	1.2	1.5	2.4	1.5	1.3	1.7	1.4
District 7	0.7	0.7	0.6	0.6	0.6	0.6	0.8	0.9	1.2	1.1	1.1	1.0	0.8
District 8	1.7	1.2	1.3	1.7	1.4	1.8	1.5	1.5	2.1	2.0	2.3	1.9	1.7
District 9	1.2	1.5	1.5	1.3	3.2	3.5	1.0	1.8	2.3	3.3	2.4	2.4	2.1
Region 2	1.1	1.0	0.9	0.9	1.6	1.7	1.0	1.1	1.7	1.5	1.4	1.4	1.3
District 10	1.3	1.4	1.7	1.6	1.2	1.6	1.7	1.8	2.1	1.9	2.0	1.4	1.6
District 11	1.3	1.1	1.3	1.1	1.2	1.0	1.1	1.4	1.7	1.8	1.3	1.4	1.3
District 12	1.2	1.4	1.4	1.2	1.1	1.3	1.4	1.2	1.1	1.3	1.3	1.2	1.3
Region 3	1.3	1.3	1.5	1.3	1.2	1.4	1.4	1.5	1.7	1.7	1.5	1.4	1.4
Entire state	1.1	1.2	1.1	1.1	1.4	1.4	1.1	1.3	1.6	1.5	1.4	1.4	1.3

Table 20.--Catch per hour for Great Lakes waters by conservation districts and regions since 1942

	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	Simple average
District 1	0.2	0.4	0.2	0.1	0.1	0.5	0.9	0.3	...	...	0.9	...	0.3
District 2	...	...	1.5	2.3	3.4	1.8	2.9	4.8	...	...	...	...	1.4
District 3	0.3	1.0	1.0	4.1	1.2	1.0	1.0	0.9	2.5	0.4	2.0	1.6	1.4
District 4	3.1	2.3	1.2	1.5	0.7	1.1	1.1	2.9	4.9	1.6	2.8	1.2	2.0
Region 1	1.5	2.2	1.1	2.7	0.6	1.0	1.1	1.1	4.2	0.9	2.3	1.3	1.7
District 5	1.3	3.0	2.7	1.6	1.0	4.2	1.7	0.4	0.5	0.7	0.5	2.1	1.6
District 6	0.5	5.9	4.8	0.8	4.6	8.2	12.2	3.6	2.9	5.0	4.3	7.0	5.0
District 7	...	...	0.8	4.2	...	0.9	0.3	5.9	...	5.0	...	0.5	1.5
District 8	...	...	...	...	...	...	...	...	2.8	...	...	...	0.2
District 9	...	...	3.8	2.2	2.0	5.7	5.8	5.4	5.7	4.9	4.4	5.4	3.8
Region 2	0.5	5.7	3.3	2.5	2.4	7.1	5.5	4.9	5.1	4.7	3.7	4.9	4.2
District 10	...	2.9	9.0	...	2.8	...	...	6.4	6.6	...	10.2	4.0	3.5
District 11	...	...	...	...	...	...	...	...	...	...	...	...	...
District 12	1.6	1.4	1.9	2.0	2.0	4.0	3.9	3.3	4.7	2.3	2.2	2.9	2.7
Region 3	1.6	1.4	1.9	2.0	2.0	4.0	3.9	3.4	4.8	2.3	2.4	2.9	2.7
Entire state	1.7	1.6	1.8	2.2	1.6	2.7	2.9	3.1	4.8	3.2	2.6	3.0	2.6

Table 21.--Catch per hour for various waters 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
1949	1.29	0.72	1.28	3.06
1950	1.61	0.63	1.65	4.84
1951	1.37	0.76	1.50	3.21
1952	1.39	0.71	1.43	2.62
1953	1.29	0.64	1.37	3.00
Simple Average	1.23	0.84	1.29	2.60

1945, 1946, and 1948 with 0.8 trout per hour and the low of 0.6 trout per hour was recorded in 1950 and 1953. The simple average for the 12-year period is 0.7 trout per hour which is 0.1 trout per hour better than the catch per hour recorded in 1953.

The catch per hour for non-trout waters is very similar to the catch per hour for all waters, because the bulk of the fishing is done on non-trout waters. The highest was recorded in 1950 with 1.65 fish per hour and the lowest, in 1945 with 1.05 fish per hour. The simple average for the 12-year period is 1.3 fish per hour which is 0.1 fish per hour lower than the catch per hour for 1953.

For the Great Lakes waters the catch per hour has been consistently higher than that for trout or non-trout (inland) waters for the 12 years these waters have been tabulated separately. During this period the anglers fishing the Great Lakes waters have averaged 2.6 fish per hour as compared to an average of 1.3 fish per hour in non-trout waters. The catch from Great Lakes waters has ranged from 1.6 fish per hour in 1943 and 1947 to 4.8 fish per hour in 1950. The 1953 catch per hour was 0.4 fish better than the simple average for the 12-year period.

The appendix to this report, in the form of detailed tables, has been omitted as in recent years. The detailed tables are on file at the Institute for Fisheries Research, University Museums Annex.

INSTITUTE FOR FISHERIES RESEARCH

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