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

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UNIVERSITY MUSEUMS ANNEX
ANN ARBOR, MICHIGAN

April 24, 1952

Report No. 1329

REPORT OF THE GENERAL CREEL CENSUS FOR 1951

by

K. G. Fukano

Abstract

This report includes the data for the twenty-fifth year of the general creel census in Michigan. Conservation officers obtained these catch records as a part of their duties. As usual they were compiled and analyzed by the Institute. The number of anglers interviewed on the different types of waters were as follows: (1) Trout waters--11,749 anglers or 23.1 percent of all anglers contacted; (2) Non-trout waters--37,274 fishermen or 73.3 percent; and (3) Great Lakes waters--1,822 anglers or 3.6 percent. Of 50,845 anglers interviewed 5,530 fishermen or 10.9 percent were non-residents and 8,540 or 16.8 percent were female anglers.

Brook trout continued to make up the bulk (69.74 percent) of the total trout catch from trout waters. The three species of trout--brook, brown, and rainbow--constituted 97.52 percent of all fish caught in trout waters. Thirteen other species of fish were reported taken from trout waters. The catch per hour for all trout waters was 0.76 fish and 0.74 trout which is an increase from the 1950 catch of 0.63 fish and 0.61 trout per hour.

Conservation officers saw 28 different kinds of fish in the non-trout anglers' catch. Bluegill was the species caught in greatest numbers. The combined catch of bluegill and yellow perch made up 75.09 percent of the total catch from non-trout waters. For the entire state the catch per hour from non-trout waters was 1.50 fish, which is a drop of 0.15 fish per hour (1.65 fish per hour in 1950).

Yellow perch made up 94.29 percent of the total catch from Great Lakes waters and 13 other kinds of fish made up the remaining 5.71 percent. Fishermen angling in the Great Lakes and their connecting waters had a catch of 3.21 fish per hour. Fishing in the Great Lakes proper was better than in the connecting waters (3.50 fish per hour and 1.15 fish per hour respectively).

During the past ten years the catch per hour of all fish in trout waters has varied 0.4 fish per hour. The highest catch per hour during this period was in 1942 and 1943 with 0.9 fish per hour and in the next five years the catch per hour was 0.8 fish. In 1949 and 1950 the catch slipped 0.1 fish each year and in 1951 rose 0.2 fish per hour from the low of 0.6 fish per hour. The catch per hour of trout in trout waters has varied from 0.8 to 0.6 trout.

The catch per unit of effort in non-trout waters has remained greater than 1.1 fish during the past ten years. The catch of 1.5 fish per hour recorded in 1951 is the second highest for the ten year period. The highest was recorded in 1950 with 1.6 fish per hour.

The catch per hour for Great Lakes waters has remained consistently higher than that for trout and non-trout waters for the ten years these waters have been tabulated separately. Except for

1943 the catch per hour increased during the period between 1942 and 1945, but slipped to 1.6 fish per hour in 1946, and again increased each year to a new high in 1950. In 1951 the catch per hour dropped to 3.2 fish, which is the second highest recorded during the ten year period.

Anglers residing in all of the 83 counties of Michigan, 32 states in the Union, District of Columbia, province of Ontario, and Switzerland were recorded in the 1951 general creel census. Residents of Wayne County constituted 11.25 percent of all anglers interviewed in 1951. Other counties from which anglers were recorded in great numbers were Genesee, Kent, Muskegon, Ingham, Saginaw, and Bay counties. The four states bordering Michigan furnished 94.05 percent of all non-resident anglers.

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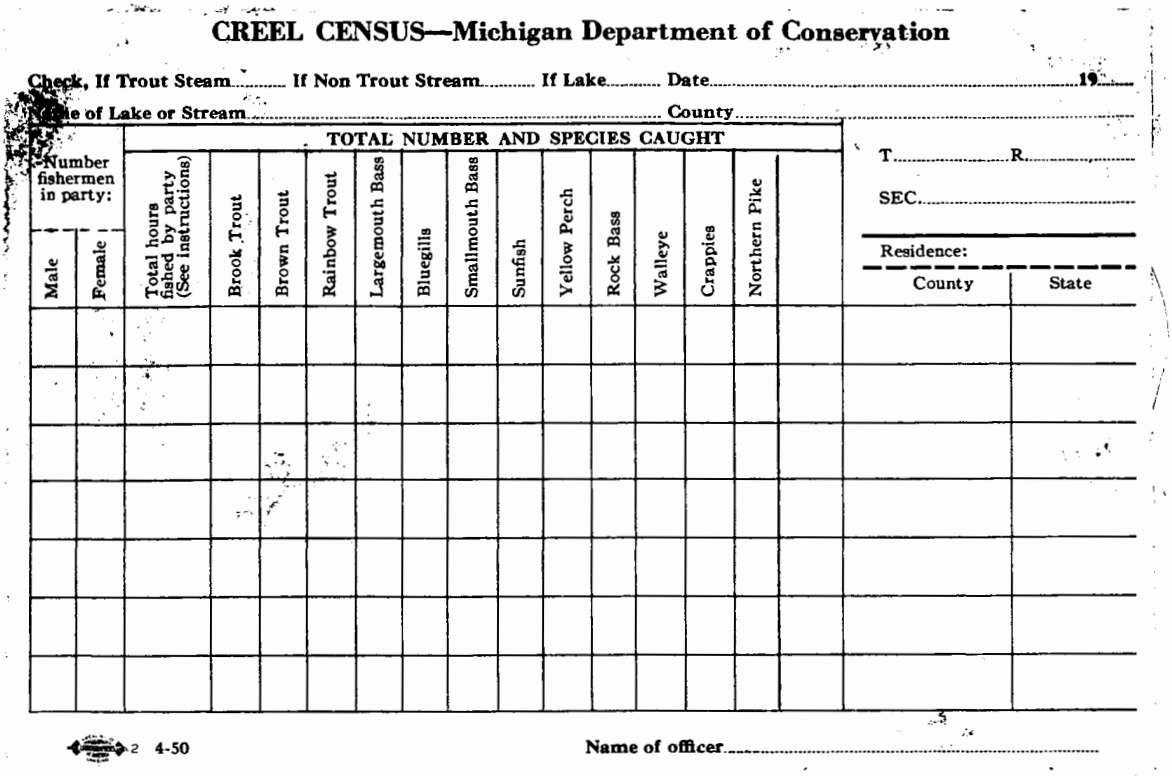
REPORT OF THE GENERAL CREEL CENSUS FOR 1951

by

K. G. Fukano

The report of the general creel census for 1951, the twenty-fifth year in which such data have been gathered by conservation officers, includes information on the quality of fishing in the various types of lakes and streams throughout the state. As in past years conservation officers recorded the data on general creel census forms (see sample) as a part of their regular duties and usually incidental to patrol activities. The fine cooperation by the Division of Field Administration and the Game Division of the Conservation Department and the U. S. Fish and Wildlife Service at Ann Arbor is greatly appreciated. The writer wishes especially to express his thanks to the conservation officers who collected the records, the Game Division for the use of the IBM sorting and tabulating machines, and Dr. James W. Moffett of the U. S. Fish and Wildlife Service for the use of the IBM key-punch machine.

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



CREEL CENSUS—Michigan Department of Conservation

Check, If Trout Steam..... If Non Trout Stream..... If Lake..... Date..... 19....

Name of Lake or Stream..... County.....

Number fishermen in party:		TOTAL NUMBER AND SPECIES CAUGHT														T.....R..... SEC..... Residence:
Male	Female	Total hours fished by party (See instructions)	Brook Trout	Brown Trout	Rainbow Trout	Largemouth Bass	Bluegills	Smallmouth Bass	Sunfish	Yellow Perch	Rock Bass	Walleye	Crappies	Northern Pike		County / State

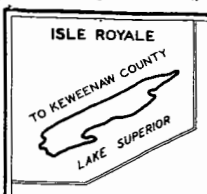
2 4-50

Name of officer.....

Table I

Total number of fishermen, total hours fished, total number of fish taken, and catch per hour for each conservation district and region, all waters, 1951

	Number of male anglers	Number of female anglers	Total anglers	Total hours fished	Total fish caught	Catch per hour	$\frac{\Sigma x}{n}$
District 1	1,731	202	1,933	4,772.8	3,753	0.79	0.89
District 2	2,894	411	3,305	8,777.5	6,434	0.73	0.79
District 3	1,239	150	1,389	3,294.5	2,886	0.88	1.04
District 4	2,407	338	2,745	8,326.2	11,404	1.37	1.54
Region 1	8,271	1,101	9,372	25,171.0	24,477	0.97	1.07
District 5	5,732	1,186	6,918	17,150.3	11,766	0.69	0.72
District 6	2,641	581	3,222	7,875.0	10,255	1.30	1.40
District 7	6,092	1,310	7,402	16,780.7	15,220	0.91	0.97
District 8	5,088	1,013	6,101	14,332.8	25,797	1.80	1.89
District 9	2,840	722	3,562	7,532.7	25,229	3.35	3.57
Region 2	22,393	4,812	27,205	63,671.5	88,267	1.39	1.50
District 10	4,331	1,082	5,413	12,843.1	22,904	1.78	1.95
District 11	3,238	808	4,046	10,532.0	18,679	1.77	1.76
District 12	4,072	737	4,809	10,785.8	14,586	1.35	1.27
Region 3	11,641	2,627	14,268	34,160.9	56,169	1.64	1.67
State total	42,305	8,540	50.845	123,003.4	168,913	1.37	1.47



MICHIGAN
DEPARTMENT OF CONSERVATION
FIELD ADMINISTRATION DIVISION

SCALE OF MILES
0 5 10 15 20 25 30

REGIONAL AND DISTRICT MAP

LAKE SUPERIOR
KEWEENAW
CALUMET
HOUGHTON
KEWEENAW BAY
BARAGA
MASS CITY
ONTONAGON
IRONWOOD
EWEN
GOGEBIC
WISCONSIN
IRON
CRYSTAL FALLS
DICKINSON
NORWAY
MARQUETTE
GWINN
ESCANABA RIVER
ALGER
SENEY
SCHOOLCRAFT
MANISTIQUE
DELTA
ESCANABA
MENOMINEE
STEPHENSON
GREEN BAY
LUCE
NEWBERRY
PARADISE
WHITEFISH BAY
CHIPPEWA
SAULT STE MARIE
TROUT LAKE
MACKINAC
DOMINION OF CANADA
NORTH CHANNEL
TO MACKINAC COUNTY
BOIS BLANC ISLAND
LAKE HURON
BEAVER ISLAND
TO CHARLEVOIX COUNTY
TO LEELANAU COUNTY
GRAND TRAVERSE BAY
EMMET
PELLSTON
CHEBOYGAN
INDIAN RIVER
PRESQUE ISLE
BOYNE CITY
CHARLEVOIX
ANTRIM
OTSEGO
GAYLORD
MONTMORENCY
ATLANTA
ALPENA
LEELANAU
TRAVERSE CITY
GRAND TRAVERSE
KALKASKA
CRAWFORD
OSCODA
MIO
LINCOLN
ALCONA
BENZIE
MANISTEE
MANTON
WEXFORD
MISSAUKEE
ROSCOMMON
OGEMAW
WEST BRANCH
IOSCO
LAKE MICHIGAN
HARRISON
CLARE
GLADWIN
ARENAC
STANDISH
SAGINAW BAY
CASEVILLE
HURON
MASON
LAKE
BALDWIN
OSCEOLA
BAY
OCEANA
NEWAYGO
MECOSTA
ISABELLA
MIDLAND
CARO
TUSCOLA
SANILAC
MUSKEGON
MONTCALM
GRATIOT
SAGINAW
ALLENDALE
OTTAWA
KENT
GRAND RAPIDS
IONIA
CLINTON
SHIAWASSEE
GENESEE
LAPEER
IMLAY CITY
SAINT CLAIR
ALLEGAN
PLAINWELL
YANKEE SPRINGS
BARRY
EATON
INGHAM
LIVINGSTON
OAKLAND
HIGHLAND
MACOMB
LAKE ST. CLAIR
VAN BUREN
KALAMAZOO
CALHOUN
JACKSON
WATERLOO
WASHTENAW
DETROIT
WAYNE
CANADA
BERRIEN
CASS
ST. JOSEPH
BRANCH
HILLSDALE
LENAWEE
MONROE
LAKE ERIE
INDIANA
OHIO

LEGEND
- REGIONAL HEADQUARTERS
- DISTRICT HEADQUARTERS
- AUXILIARY EQUIPMENT BUILDING
- BRANCH OFFICE
- FOREST FIRE EXPERIMENT STATION
- CENTRAL REPAIR SHOP

1-23-46

Table 2

Number of anglers interviewed by conservation officers during 1951, and 1950 by counties

County	Number of anglers in 1951	Number of anglers in 1950	County	Number of anglers in 1951	Number of anglers in 1950
Alcona	778	1,136	Lake	912	750
Alger	398	361	Lapeer	2,787	3,319
Allegan	835	617	Leelanau	278	286
Alpena	992	697	Lenawee	...	...
Antrim	217	798	Livingston	733	827
Arenac	1,505	924	Luce	422	429
Baraga	264	388	Mackinac	309	79
Barry	624	466	Macomb	320	91
Bay	642	358	Manistee	527	458
Benzie	300	533	Marquette	894	1,622
Berrien	...	106	Mason	465	432
Branch	453	495	Mecosta	1,239	1,221
Calhoun	270	285	Menominee	634	238
Cass	49	179	Midland	...	591
Charlevoix	683	448	Missaukee	670	935
Cheboygan	2,402	1,259	Monroe	32	89
Chippewa	911	180	Montcalm	1,554	1,536
Clare	776	781	Montmorency	1,323	1,013
Clinton	181	180	Muskegon	2,098	1,060
Crawford	1,240	680	Newaygo	432	665
Delta	188	206	Oakland	232	...
Dickinson	514	519	Oceana	346	798
Eaton	819	750	Ogemaw	1,391	1,356
Emmet	374	636	Ontonagon	517	847
Genesee	81	...	Osceola	609	674
Gladwin	383	435	Oscoda	1,194	1,634
Gogebic	626	824	Otsego	524	580
Grand Traverse	648	785	Ottawa	385	1,227
Gratiot	170	267	Presque Isle	403	558
Hillsdale	221	173	Roscommon	1,433	1,399
Houghton	402	285	Saginaw	96	94
Huron	69	600	St. Clair	...	835
Ingham	372	269	St. Joseph	1,349	2,027
Ionia	175	158	Sanilac	837	564
Iosco	1,366	1,204	Schoolcraft	1,012	776
Iron	2,157	1,306	Shiawassee	90	240
Isabella	256	645	Tuscola	...	387
Jackson	86	134	Van Buren	74	458
Kalamazoo	...	139	Washtenaw	555	1,011
Kalkaska	119	391	Wayne	451	432
Kent	368	797	Wexford	680	784
			Total	50,845	53,844

indication of the fishing quality and to some degree fishing intensity in the six types of water administered by the state. The number of anglers interviewed on the different types of waters were as follows: (1) Trout waters, 11,749 anglers (23.1 percent of all anglers contacted) of whom 1,824 fished on designated trout lakes and the remaining 9,925 fished on streams; (2) non-trout waters, 37,274 fishermen (73.3 percent) of whom 32,333 fished on lakes and 4,941 fished on streams; (3) Great Lakes waters, 1,822 anglers (3.6 percent) of whom 1,674 fished in the Great Lakes and the other 148 fished in the connecting waters.

During 1951 the officers interviewed 50,845 anglers of whom 5,530 fishermen (10.9 percent of all anglers contacted) were non-residents; female anglers constituted 16.8 percent (8,540) of all those interviewed.

According to the March 31, 1952, tabulation of fishing licenses sold in 1951, of a total of 1,119,791 licenses 280,929 were non-resident (25.1 percent). Of these 140,798 (12.6 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 officer is 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 of the trout season. Based on the percentage of trout fishermen contacted (23.1 percent) in the general creel census and the total number of licenses sold (1,119,791) it may be estimated that approximately 258,672 anglers did some trout fishing. About 2.1 percent of all fishermen were resident female anglers fishing trout waters. Assuming that most of these were married and therefore not required to purchase a trout stamp, it can be estimated that about

Table 3

Number and percentage of fishermen interviewed on trout, non-trout, and Great Lakes waters by conservation districts and regions, 1951

District or region	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	1,090	56.39	843	43.61	...	...	1,933
District 2	1,044	31.59	2,261	68.41	...	...	3,305
District 3	764	55.00	506	36.43	119	8.57	1,389
District 4	1,666	60.69	985	35.88	94	3.43	2,745
Region 1	4,564	48.70	4,595	49.03	213	2.27	9,372
District 5	1,993	28.81	4,879	70.53	46	0.66	6,918
District 6	1,083	33.61	2,053	63.72	86	2.67	3,222
District 7	2,031	27.44	5,342	72.17	29	0.39	7,402
District 8	833	13.65	5,268	86.35	...	...	6,101
District 9	363	10.19	2,435	68.36	764	21.45	3,562
Region 2	6,303	23.17	19,977	73.43	925	3.40	27,205
District 10	351	6.48	5,062	93.52	...	...	5,413
District 11	123	3.04	3,923	96.96	...	...	4,046
District 12	408	8.49	3,717	77.29	684	14.22	4,809
Region 3	882	6.18	12,702	89.03	684	4.79	14,268
State total	11,749	23.11	37,274	73.31	1,822	3.58	50,845

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, 1951

District or region	Brook trout		Brown trout		Rainbow trout		Total trout
	Number	Percentage	Number	Percentage	Number	Percentage	
District 1	1,368	77.03	89	5.01	319	17.96	1,776
District 2	1,324	79.76	231	13.92	105	6.32	1,660
District 3	1,466	82.82	43	2.43	261	14.75	1,770
District 4	6,137	96.86	58	0.91	141	2.23	6,336
Region 1	10,295	89.19	421	3.65	826	7.16	11,542
District 5	2,448	61.90	411	10.39	1,096	27.71	3,955
District 6	791	39.22	412	20.42	814	40.36	2,017
District 7	1,270	46.28	1,135	41.36	339	12.36	2,744
District 8	733	41.06	634	35.52	418	23.42	1,785
District 9	122	42.07	144	49.65	24	8.28	290
Region 2	5,364	49.71	2,736	25.35	2,691	24.94	10,791
District 10	194	45.97	138	32.70	90	21.33	422
District 11	87	57.62	37	24.50	27	17.88	151
District 12	268	80.24	5	1.50	61	18.26	334
Region 3	549	60.53	180	19.85	178	19.62	907
State total	16,208	69.74	3,337	14.36	3,695	15.90	23,240

Table 5

General creel census data for trout lakes, trout streams, and all trout waters combined, by conservation districts and regions, 1951

	Trout lakes									
	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
District 1	12	34.0	68	2.00	4	0.12	1.73	1,078	2,534.6	1,788
District 2	153	539.0	188	0.35	165	0.31	0.50	891	1,897.0	1,517
District 3	393	766.5	798	1.04	798	1.04	1.36	371	882.0	978
District 4	501	1,210.3	1,622	1.34	1,622	1.34	1.56	1,165	3,759.2	4,727
Region 1	1,059	2,549.8	2,676	1.05	2,589	1.02	1.33	3,505	9,072.8	9,004
District 5	566	1,522.8	1,145	0.75	998	0.66	1.00	1,427	3,902.8	3,030
District 6	...	...	...	...	...	...	...	1,083	3,066.0	2,091
District 7	50	128.0	177	1.38	177	1.38	1.66	1,981	5,595.4	2,628
District 8	17	55.0	6	0.11	6	0.11	0.14	816	2,502.0	1,783
District 9	132	297.0	132	0.44	56	0.19	0.41	231	556.0	242
Region 2	765	2,002.8	1,460	0.73	1,237	0.62	0.92	5,538	15,622.2	9,774
District 10	...	...	...	...	...	...	...	351	859.5	427
District 11	...	...	...	...	...	...	...	123	347.0	153
District 12	...	...	...	...	...	...	...	408	1,062.8	337
Region 3	...	...	...	...	...	...	...	882	2,269.3	917
State total	1,824	4,552.6	4,136	0.91	3,826	0.84	1.16	9,925	26,964.3	19,695

Trout Streams				All trout waters						
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	$\frac{\Sigma x}{n}$
0.71	1,772	0.70	0.80	1,090	2,568.6	1,856	0.72	1,776	0.69	0.81
0.80	1,495	0.79	0.73	1,044	2,436.0	1,705	0.70	1,660	0.68	0.69
1.10	972	1.10	1.23	764	1,648.5	1,770	1.07	1,770	1.07	1.30
1.26	4,714	1.25	1.34	1,666	4,969.5	6,349	1.28	6,336	1.27	1.40
0.99	8,953	0.99	1.01	4,564	11,622.6	11,680	1.00	11,542	0.99	1.08
0.78	2,957	0.76	0.75	1,993	5,425.6	4,175	0.77	3,955	0.73	0.82
0.68	2,017	0.66	0.73	1,083	3,066.0	2,091	0.68	2,017	0.66	0.73
0.47	2,567	0.46	0.47	2,031	5,723.4	2,805	0.49	2,744	0.48	0.50
0.71	1,779	0.71	0.80	833	2,557.0	1,789	0.70	1,785	0.70	0.79
0.44	234	0.42	0.39	363	853.0	374	0.44	290	0.34	0.39
0.63	9,554	0.61	0.64	6,303	17,625.0	11,234	0.64	10,791	0.61	0.67
0.50	422	0.49	0.43	351	859.5	427	0.50	422	0.49	0.43
0.44	151	0.44	0.40	123	347.0	153	0.44	151	0.44	0.40
0.32	334	0.31	0.30	408	1,062.8	337	0.32	334	0.31	0.30
0.40	907	0.40	0.37	882	2,269.3	917	0.40	907	0.40	0.37
0.73	19,414	0.72	0.75	11,749	31,516.9	23,831	0.76	23,240	0.74	0.81

235,156 should have been sold in 1951. However, 184,199 trout stamps were sold; this number constitutes 16.4 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 trout waters than the others and secured more records of this type of fishing. Also minors under 17 years of age are not required to purchase either fishing licenses or trout stamps.

Intensive stream and lake census records such as secured at the Hunt Creek and Pigeon River Research Areas, the Rifle River Area, and experimental lakes with liberalized fishing regulations 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 or fishermen as used in this report should be understood to mean the number of fisherman-days, and not separate individuals. Only legal-size fish caught by sport anglers have been considered.

Detailed Analysis

During 1951 conservation officers interviewed 50,845 anglers, a decrease of 2,999 (5.6 percent) under the records (53,844) collected in 1950. The 1951 records represent 123,003.4 hours of fishing, a decrease of 7,295.2 hours (5.6 percent) from the 130,298.6 hours recorded the previous year. The number of fish caught in 1951 was 168,913 fish, a decrease of 40,748 (19.4 percent) below the previous year (209,661 fish). The catch per hour for all fishing was 1.4 in 1951 as compared to 1.6 fish per hour in 1950.

Table 6

Percentage catch of the most important species from non-trout waters, by conservation districts and regions, 1951

	Bluegill	Perch	Crappie	P'seed	Rock bass	Pike	L.M. bass	Walleye	Sucker	S.M. bass
District 1	11.54	31.89	4.69	4.16	3.74	7.06	1.42	9.17	...	2.79
District 2	22.90	22.92	15.37	2.64	1.16	14.80	2.41	11.00	0.34	5.75
District 3	12.37	39.83	0.21	2.62	1.05	17.19	8.18	11.95	0.21	5.56
District 4	9.13	63.40	...	3.74	5.05	8.88	0.11	2.35	0.04	2.26
Region 1	15.15	40.77	6.76	3.29	3.01	11.57	1.85	7.56	0.17	3.97
District 5	15.50	34.35	1.35	3.69	9.46	12.53	3.51	2.36	0.84	3.85
District 6	40.57	29.17	1.64	2.45	10.09	2.28	2.53	4.22	0.61	3.35
District 7	33.47	35.21	4.01	7.26	7.18	5.67	2.00	1.52	0.84	1.74
District 8	35.33	40.49	10.22	3.80	2.32	1.68	0.88	1.22	3.15	0.23
District 9	7.92	79.84	7.99	0.35	1.44	0.88	0.34	...	0.12	0.01
Region 2	26.71	47.14	6.66	3.44	4.61	3.49	1.42	1.42	1.48	1.19
District 10	72.93	10.90	6.74	4.12	1.04	1.27	1.05	0.10	0.04	0.15
District 11	75.20	10.37	2.93	5.40	1.34	0.73	2.86	0.08	0.23	0.48
District 12	39.67	28.22	9.77	6.54	3.52	0.86	1.54	0.03	5.39	0.16
Region 3	66.97	14.24	5.98	5.07	1.65	0.99	1.80	0.08	1.20	0.27
State total	41.55	33.54	6.40	4.07	3.29	3.26	1.61	1.46	1.25	1.08

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
Bluegill	37.4	48.3	44.2	48.0	27.2	30.2	44.3	47.6	43.5	41.6
Yellow perch	23.8	17.8	21.1	18.4	53.7	40.0	23.1	24.4	29.1	33.5
Black crappie	5.8	8.3	5.8	9.2	4.3	6.8	9.3	8.5	7.6	6.4
Pumpkinseed	5.1	4.4	4.8	3.6	2.4	2.4	4.2	3.8	3.8	4.1
Rock bass	4.2	3.2	3.6	2.3	2.1	2.1	4.3	3.2	3.1	3.3
Pike	3.4	3.3	4.6	5.3	2.8	3.0	4.3	4.8	2.9	3.3
Largemouth black bass	2.2	2.5	2.6	2.6	1.0	1.2	2.2	1.5	1.5	1.6
Walleye	2.8	3.2	3.6	2.0	1.2	0.9	1.9	1.2	1.2	1.5
Smallmouth black bass	2.2	1.7	1.8	1.1	0.7	0.8	1.8	1.1	1.0	1.1
Total	86.9	92.7	92.1	92.5	95.4	87.4	95.4	96.1	93.7	96.4

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, 1951

Species	Region 1		Region 2		Region 3		Total fish	Total percentage
	Number	Percentage	Number	Percentage	Number	Percentage		
Bluegill	1,832	3.38	17,797	32.89	34,487	63.73	54,116	100.00
Yellow perch	4,931	11.29	31,413	71.92	7,332	16.79	43,676	100.00
Black crappie	818	9.81	4,437	53.23	3,081	36.96	8,336	100.00
Pumpkinseed	398	7.50	2,294	43.26	2,611	49.24	5,303	100.00
Rock bass	364	8.49	3,072	71.66	851	19.85	4,287	100.00
Pike	1,399	33.00	2,329	54.94	511	12.06	4,239	100.00
Largemouth black bass	224	10.68	948	45.18	926	44.14	2,098	100.00
Walleye	914	48.05	949	49.90	39	2.05	1,902	100.00
Sucker	20	1.24	984	60.70	617	38.06	1,621	100.00
Smallmouth black bass	480	34.02	791	56.06	140	9.92	1,411	100.00
Totals or percentages	11,380	8.96	65,014	51.20	50,595	39.84	126,989	100.00

No records of fishing were submitted in 1951 from six counties, Berrien, Kalamazoo, Lenawee, Midland, St. Clair, and Tuscola, which have mainly non-trout lakes and non-trout streams within their boundaries. A lack of fishing records from these counties and other counties from which there are only a few records tend to prejudice the state-wide sample of fishing. The number of records submitted by counties are given in Table 2.

In this report the various types of waters are separated into Conservation Districts which were formerly called Field Administration Districts (see map). Data from Alger County (which lies in District 3 and 4) have been separated according to the district to which the officer has been assigned.

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

The data for 1951 on the number and percentage of anglers using the various waters are given in Table 3.

The greatest percentage of records for trout fishing in any district was taken in District 4 where 60.69 percent of the 2,745 anglers were contacted while fishing in trout waters. Districts 1 and 3 followed with 56.39 percent based on 1,933 angling-days and 55.00 percent based on 1,389 anglers respectively. The nine districts which make up Regions I and II furnished 92.49 percent of all the trout fishing. Also, the trout fishing in these two regions constituted 29.71 percent of all the fishing in that area. Trout anglers in Region III contributed the remaining 7.51 percent of all trout fishing records and these made up only 6.18 percent of all fishing recorded in this region.

Table 9

Number and percentage of each species caught in the total catch in each of the three conservation regions--all non-trout waters, 1951

Species	Region 1		Region 2		Region 3	
	Number	Percentage	Number	Percentage	Number	Percentage
Bluegill	1,832	15.15	17,797	26.71	34,487	66.97
Yellow perch	4,931	40.77	31,413	47.14	7,332	14.24
Black crappie	818	6.76	4,437	6.66	3,081	5.98
Pumpkinseed	398	3.29	2,294	3.44	2,611	5.07
Rock bass	364	3.01	3,072	4.61	851	1.65
Pike	1,399	11.57	2,329	3.49	511	0.99
Largemouth black bass	224	1.85	948	1.42	926	1.80
Walleye	914	7.56	949	1.42	39	0.08
Sucker	20	0.17	984	1.48	617	1.20
Smallmouth black bass	480	3.97	791	1.19	140	0.27
Totals or percentages	11,380	94.10	65,014	97.56	50,595	98.25

Table 10

General creel census data for non-trout lakes, non-trout streams, and all non-trout waters combined, by conservation districts and regions, 1951

	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	763	2,077.2	1,833	0.88	1.04	80	127.0	64	0.50	0.47	843	2,204.2	1,897	0.86	0.99
District 2	1,610	4,670.0	3,696	0.79	0.90	651	1,671.5	1,033	0.62	0.69	2,261	6,341.5	4,729	0.75	0.84
District 3	456	1,123.0	910	0.81	0.85	50	102.5	44	0.43	0.43	506	1,225.5	954	0.78	0.80
District 4	926	2,867.5	4,485	1.56	1.79	59	143.2	29	0.20	0.28	985	3,010.7	4,514	1.50	1.70
Region 1	3,755	10,737.7	10,924	1.02	1.14	840	2,044.2	1,170	0.57	0.62	4,595	12,781.9	12,094	0.95	1.05
District 5	4,419	10,758.0	6,231	0.58	0.62	460	837.7	1,266	1.51	1.26	4,879	11,595.7	7,497	0.65	0.68
District 6	1,886	4,278.0	6,922	1.62	1.73	167	299.0	85	0.28	0.22	2,053	4,577.0	7,007	1.53	1.61
District 7	5,133	10,549.3	10,692	1.01	1.02	209	439.0	1,376	3.13	3.80	5,342	10,988.3	12,068	1.10	1.13
District 8	5,026	11,189.8	22,433	2.00	2.04	242	586.0	1,575	2.69	2.59	5,268	11,775.8	24,008	2.04	2.06
District 9	787	1,656.5	2,079	1.26	1.33	1,648	3,232.2	13,982	4.33	4.57	2,435	4,888.7	16,061	3.29	3.52
Region 2	17,251	38,431.6	48,357	1.26	1.30	2,726	5,393.9	18,284	3.39	3.51	19,977	43,825.5	66,641	1.52	1.61
District 10	4,986	11,724.1	22,351	1.91	2.07	76	259.5	126	0.49	0.79	5,062	11,983.6	22,477	1.88	2.05
District 11	3,664	9,619.0	18,183	1.89	1.88	259	566.0	343	0.61	0.65	3,923	10,185.0	18,526	1.82	1.80
District 12	2,677	5,892.5	7,568	1.28	1.25	1,040	2,186.0	2,926	1.34	1.13	3,717	8,078.5	10,494	1.30	1.22
Region 3	11,327	27,235.6	48,102	1.77	1.82	1,375	3,011.5	3,395	1.13	1.02	12,702	30,247.1	51,497	1.70	1.73
State total	32,333	76,404.9	107,383	1.41	1.46	4,941	10,449.6	22,849	2.19	2.33	37,274	86,854.5	130,232	1.50	1.58

Table 11

Percentage composition of the total catch for Great Lakes waters

(only the 6 most abundant species for 1951 are given)

Species	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
Yellow perch	84.23	76.67	72.16	86.46	65.73	82.48	86.26	90.64	96.17	94.29
Cisco	0.09	0.12	1.52	3.28	12.47	2.07	0.75	0.09	1.22	1.61
Walleye	1.68	6.53	6.50	3.09	7.81	8.23	5.21	3.91	1.36	1.48
Rock bass	3.80	2.95	3.82	0.60	3.19	1.31	1.56	0.47	0.20	0.84
Pike	1.17	1.74	2.12	2.51	2.33	3.02	0.93	0.79	0.26	0.62
Smallmouth black bass	2.10	6.29	3.81	1.72	3.15	1.40	1.18	0.24	0.38	0.54
Totals	93.07	94.30	89.93	97.66	94.68	98.51	95.89	96.14	99.59	99.38

District 11 had 96.96 percent non-trout reports based on 4,046 fisherman-days. District 10 followed with 93.52 percent based on 5,413 records and District 8 with 86.35 percent based on 6,101 fisherman-days.

Of the twelve districts only one, District 11, does not border one of the Great Lakes or their connecting waters. Seven of the remaining eleven districts submitted some records on Great Lakes sport fishing. Officers obtain relatively few records on Great Lakes sport fishing which is restricted somewhat to sheltered bays, island areas, and certain docking areas. District 9 furnished the highest percentage with 21.45 percent based on 3,562 fisherman-days; District 12 had 14.22 percent based on 4,809 anglers and District 3 had 8.57 percent based on 1,389 fisherman-days.

Number of Trout Caught in Trout Waters by Conservation Regions

As in the past brook trout made up the bulk of the total trout catch (69.74 percent). Rainbow trout (15.90 percent) and brown trout (14.36 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 brook trout (64.75 percent in 1950) and a decrease in the percentage of brown trout (15.94 percent in 1950) and rainbow trout (19.31 percent in 1950).

Of the 16,208 brook trout recorded by officers in the 1951 general creel census 10,295 or 63.52 percent were reported caught in Region I. A total of 5,364 brook trout or 33.09 percent was taken in Region 2. The remaining 549 or 3.39 percent were caught in Region 3.

In 1951 a total of 3,695 rainbow trout were recorded caught. Of this total 2,691 or 72.83 percent were taken in Region II, 826 or 22.35 percent in Region I, and 178 or 4.82 percent in Region III.

The greatest percentage of brown trout (81.99 percent) were taken in Region II, Regions I and III followed with 12.62 and 5.39 percent respectively. Of the 23,240 trout reported, 96.10 percent were caught in Regions I and II.

Other Species Caught in Trout Waters

The three species of trout constituted 97.52 percent of all fish caught in trout waters. Thirteen other species of fish were reported as taken from trout waters and are listed in order of abundance as follows:

Suckers	193	Black crappie	15
Bluegill	161	Pike	15
Pumpkinseed	81	Lake trout	7
Yellow perch	48	Redhorse	7
Largemouth black bass	24	Smallmouth black bass	2
Rock bass	19	Menominee whitefish	1
Walleye	18	Total	591

Catch per hour--Trout Waters
by Conservation Districts

Trout anglers were recorded in all twelve districts. Trout fishermen, 23.1 percent of all anglers contacted in 1951, had better fishing success (0.76 fish per hour and 0.74 trout per hour) than they did in 1950 when the catch per hour was 0.63 fish per hour and 0.61 trout per hour. As shown by the catch per hour, trout fishing was best in District 4 (See Table 5). Separating trout waters into lakes and streams revealed that

Table 12

General creel census data for Great Lakes and connecting waters, and such waters combined by conservation districts and regions, 1951

	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 3	119	420.5	162	0.39	0.38	...	...	...	...	...	119	420.5	162	0.39	0.38
District 4	54	152.0	464	3.05	3.59	40	194.0	77	0.40	0.43	94	346.0	541	1.56	2.24
Region 1	173	572.5	626	1.09	1.38	40	194.0	77	0.40	0.43	213	766.5	703	0.92	1.21
District 5	46	129.0	94	0.73	0.87	...	...	...	...	...	46	129.0	94	0.73	0.87
District 6	86	232.0	1,157	4.99	4.94	...	...	...	...	...	86	232.0	1,157	4.99	4.94
District 7	29	69.0	347	5.03	4.45	...	...	...	...	...	29	69.0	347	5.03	4.45
District 9	764	1,791.0	8,794	4.91	5.23	...	...	...	...	...	764	1,791.0	8,794	4.91	5.23
Region 2	925	2,221.0	10,392	4.68	4.96	...	...	...	...	...	925	2,221.0	10,392	4.68	4.96
District 12	576	1,262.0	3,167	2.51	2.22	108	382.5	588	1.54	1.83	684	1,644.5	3,755	2.28	2.16
Region 3	576	1,262.0	3,167	2.51	2.22	108	382.5	588	1.54	1.83	684	1,644.5	3,755	2.28	2.16
State total	1,674	4,055.5	14,185	3.50	3.65	148	576.5	665	1.15	1.45	1,822	4,632.0	14,850	3.21	3.47

Table 13

Number of fishermen, resident and non-resident, and percentage of non-resident fishermen in each conservation district, all waters, 1951

	Total anglers	Resident anglers	Non-resident anglers	Percentage non-residents
District 1	1,933	1,615	318	16.45
District 2	3,305	2,380	925	27.99
District 3	1,389	1,117	272	19.58
District 4	2,745	2,313	432	15.74
Region 1	9,372	7,425	1,947	20.77
District 5	6,918	5,810	1,108	16.02
District 6	3,222	2,829	393	12.20
District 7	7,402	6,654	748	10.11
District 8	6,101	5,613	488	8.00
District 9	3,562	3,511	51	1.43
Region 2	27,205	24,417	2,788	10.25
District 10	5,413	4,810	603	11.14
District 11	4,046	3,922	124	3.06
District 12	4,809	4,741	68	1.41
Region 3	14,268	13,473	795	5.57
State total	50,845	45,315	5,530	10.88

the catch per hour in trout lakes was better than in the streams. However, the majority (84.48 percent) of trout fishermen fished in streams. The highest catch per hour for both designated trout lakes (1.34 trout) and trout streams (1.25 trout) was recorded in District 4.

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

During 1951 the officers recorded 28 different kinds of fish in the non-trout angler' catch. Bluegills were caught in greatest numbers. Other important species recorded were: yellow perch, black crappie, pumpkinseed, rock bass, pike, largemouth black bass, walleye, suckers, and smallmouth black bass. These ten species comprised 97.51 percent of the total catch from non-trout waters and the remaining 18 species constituted 2.49 percent. The remaining species not listed in Table 6 in order of abundance are as follows:

Bullheads	1,067	Brown trout	21
Brook trout	459	Warmouth bass	12
Rainbow trout	430	Garpike	12
Carp	425	Dogfish	11
Smelt	380	Muskellunge	6
Cisco	304	Sturgeon	4
Chub	42	Sauger	4
White bass	38	Sheepshead	2
Lake trout	25	Burbot	1
		Total	3,243

The three species of stream trout--brook, brown, and rainbow--made up only 0.70 percent of the total catch from non-trout waters.

The ten 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 76.5 percent of the total catch. Furthermore, they constituted more than 95 percent in nine of the districts.

Table 14

Residence of fishermen interviewed in the general creel census, 1951

County of residence	Male anglers	Female anglers	Total anglers
Michigan*	108	...	108
Alcona	103	22	125
Alger	170	17	187
Allegan	328	50	378
Alpena	436	61	497
Antrim	114	25	139
Arenac	176	45	221
Baraga	180	20	200
Barry	126	39	165
Bay	1,016	222	1,238
Benzie	143	4	147
Berrien	57	13	70
Branch	419	36	455
Calhoun	419	90	509
Cass	47	15	62
Charlevoix	210	30	240
Cheboygan	569	43	612
Chippewa	283	34	317
Clare	401	40	441
Clinton	237	85	322
Crawford	304	42	346
Delta	153	18	171
Dickinson	665	53	718
Eaton	539	238	777
Emmet	234	35	269
Genesee	2,409	590	2,999
Gladwin	126	20	146
Gogebic	271	34	305
Grand Traverse	309	56	365
Gratiot	349	89	438
Hillsdale	175	21	196
Houghton	390	27	417
Huron	53	12	65
Ingham	1,394	452	1,846
Ionia	266	66	332
Iosco	289	73	362
Iron	1,001	127	1,128
Isabella	326	74	400
Jackson	274	69	343
Kalamazoo	443	104	547
Kalkaska	61	15	76
Kent	1,858	504	2,362
Keweenaw	52	2	54
Lake	168	30	198
Lapeer	829	156	985
Leelanau	96	9	105
Lenawee	90	18	108
Livingston	128	38	166
Luce	479	26	505
Mackinac	59	12	71
Macomb	282	60	342
Manistee	171	20	191
Marquette	728	63	791
Mason	371	45	416
Mecosta	653	140	793
Menominee	373	32	405
Midland	434	116	550
Missaukee	170	28	198
Monroe	103	27	130
Montcalm	676	132	808
Montmorency	312	75	387
Muskegon	1,686	278	1,964
Newaygo	298	20	318
Oakland	988	204	1,192
Oceana	242	25	267
Ogemaw	336	43	379
Ontonagon	426	30	456
Osceola	329	59	388
Oscoda	269	35	304
Otsego	236	28	264
Ottawa	150	29	179
Presque Isle	324	46	370
Roscommon	157	27	184
Saginaw	1,370	296	1,666
St. Clair	116	19	135
St. Joseph	856	129	985
Sanilac	322	42	364
Schoolcraft	452	44	496
Shiawassee	211	58	269
Tuscola	118	24	142
Van Buren	113	12	125
Washtenaw	309	71	380
Wayne	4,704	1,017	5,721
Wexford	443	80	523
Total	38,060	7,255	45,315
Grand total (Resident and non-resident)	42,305	8,540	50,845

State of residence	Male anglers	Female anglers	Total anglers
Alabama	6	4	10
Arizona	1	1	2
California	21	7	28
Connecticut	1	...	1
Florida	14	5	19
Idaho	6	...	6
Illinois	831	225	1,056
Indiana	1,087	343	1,430
Iowa	23	5	28
Kansas	11	3	14
Kentucky	16	5	21
Louisiana	1	1	2
Maryland	5	...	5
Massachusetts	3	1	4
Minnesota	3	...	3
Missouri	15	8	23
Nebraska	2	...	2
New Jersey	2	2	4
New Mexico	1	...	1
New York	18	8	26
North Carolina	1	...	1
Ohio	1,787	581	2,368
Oklahoma	4	2	6
Pennsylvania	37	11	48
South Dakota	1	...	1
Tennessee	14	3	17
Texas	11	3	14
Virginia	2	1	3
Washington	5	1	6
West Virginia	22	3	25
Wisconsin	288	59	347
Wyoming	1	1	2
Washington D. C.	1	...	1
Ontario	3	1	4
Switzerland	1	1	2
Total	4,245	1,285	5,530

* Conservation officer did not record county of residence.

Table 15

Number of resident and non-resident anglers, number of hours spent fishing, number fish caught, and the catch per hour for each group--all waters, by conservation districts, 1951

	Resident anglers					Non-resident anglers					All anglers				
	Number anglers	Hours fished	Number fish	Catch per hour	$\frac{\Sigma x}{n}$	Number anglers	Hours fished	Number fish	Catch per hour	$\frac{\Sigma x}{n}$	Total anglers	Hours fished	Number fish	Catch per hour	$\frac{\Sigma x}{n}$
District 1	1,615	3,888.0	3,242	0.83	0.93	318	884.8	511	0.58	0.65	1,933	4,772.8	3,753	0.79	0.89
District 2	2,380	6,302.5	4,254	0.67	0.72	925	2,475.0	2,180	0.88	0.97	3,305	8,777.5	6,434	0.73	0.79
District 3	1,117	2,631.0	2,291	0.87	1.04	272	663.5	595	0.90	1.05	1,389	3,294.5	2,886	0.88	1.04
District 4	2,313	6,867.2	9,885	1.44	1.59	432	1,459.0	1,519	1.04	1.27	2,745	8,326.2	11,404	1.37	1.54
Region 1	7,425	19,688.7	19,672	1.00	1.09	1,947	5,482.3	4,805	0.88	0.99	9,372	25,171.0	24,477	0.97	1.07
District 5	5,810	14,723.1	10,511	0.71	0.76	1,108	2,427.2	1,255	0.52	0.54	6,918	17,150.3	11,766	0.69	0.72
District 6	2,829	6,994.0	8,941	1.28	1.38	393	881.0	1,314	1.49	1.58	3,222	7,875.0	10,255	1.30	1.40
District 7	6,654	15,198.7	13,555	0.89	0.97	748	1,582.0	1,665	1.05	0.99	7,402	16,780.7	15,220	0.91	0.97
District 8	5,613	13,185.2	23,865	1.81	1.90	488	1,147.6	1,932	1.68	1.77	6,101	14,332.8	25,797	1.80	1.89
District 9	3,511	7,433.2	25,045	3.37	3.60	51	99.5	184	1.85	1.75	3,562	7,532.7	25,229	3.35	3.57
Region 2	24,417	57,534.2	81,917	1.42	1.56	2,788	6,137.3	6,350	1.03	1.04	27,205	63,671.5	88,267	1.39	1.50
District 10	4,810	11,283.6	21,077	1.87	2.04	603	1,559.5	1,827	1.17	1.19	5,413	12,843.1	22,904	1.78	1.95
District 11	3,922	10,111.0	18,252	1.81	1.78	124	421.0	427	1.01	1.11	4,046	10,532.0	18,679	1.77	1.76
District 12	4,741	10,641.8	14,391	1.35	1.28	68	144.0	195	1.35	1.17	4,809	10,785.8	14,586	1.35	1.27
Region 3	13,473	32,036.4	53,720	1.68	1.70	795	2,124.5	2,449	1.15	1.17	14,268	34,160.9	56,169	1.64	1.67
State totals	45,315	109,259.3	155,309	1.42	1.52	5,530	13,744.1	13,604	0.99	1.04	50,845	123,003.4	168,913	1.37	1.47

Table 16

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

	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	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	1.3
Resident	1.2	1.2	1.2	1.1	1.4	1.5	1.2	1.3	1.7	1.4	1.3
Non-resident	0.8	1.1	1.1	0.9	0.8	1.1	1.1	1.1	1.1	1.0	1.0
Trout waters	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.8	0.8
Resident	0.9	1.0	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.8	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
Non-trout waters	1.1	1.2	1.2	1.1	1.4	1.4	1.2	1.3	1.6	1.5	1.3
Resident	1.2	1.2	1.1	1.1	1.4	1.5	1.2	1.3	1.7	1.6	1.3
Non-resident	0.9	1.0	1.0	0.8	0.8	1.1	1.1	1.2	1.2	1.0	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
Resident	2.0	1.5	1.8	2.2	1.6	2.7	3.1	3.2	4.9	3.4	2.6
Non-resident	0.9	1.8	2.1	1.4	0.6	1.9	1.6	1.2	2.7	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	11.6
Female anglers	17.1	16.3	15.1	16.9	19.4	13.9	18.7	16.5	16.5	16.8	16.7
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	6.4
Female anglers	10.2	7.6	7.1	8.3	7.4	9.0	10.1	11.6	9.9	10.0	9.1
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	13.3
Female anglers	19.1	17.8	16.3	18.4	21.9	15.9	21.3	17.7	18.4	18.9	18.6
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	7.5
Female anglers	11.6	13.1	19.3	16.5	18.2	9.4	17.0	16.1	12.9	17.9	15.2

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 made: (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 for each of the three regions (Table 9).

The bluegill was caught in greater numbers from non-trout waters than any other single species. More than 63 percent of all bluegills reported in the 1951 general creel census were taken in Region III. The yellow perch was caught most frequently in Region II and next in Region III, and lastly in Region I. Over nine-tenths (96.62 percent) of all bluegills recorded and over eight-tenths (88.71 percent) of all yellow perch recorded in the 1951 general creel census were caught in the Lower Peninsula. The walleye was the species which was reported most often in Region I. Yellow perch, black crappie, rock bass, pike, largemouth black bass, sucker, and smallmouth black bass were caught most frequently in Region II. In Region III the bluegill and pumpkinseed were the species which were reported most often in the catch.

In all three regions the combined catch of bluegills and yellow perch constituted more than half of the total catch (55.92 percent in Region I, 73.85 percent in Region II, and 81.21 percent in Region III). For the entire state these two species made up 75.09 percent of the total non-trout catch. Pike was the only other species which made up more than 10 percent of the total catch of any one region (11.57 percent in Region I).

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	Simple average
District 1	0.6	0.7	0.6	0.8	0.7	0.6	0.8	0.8	0.9	0.8	0.7
District 2	0.8	1.2	0.6	0.6	0.7	0.5	0.9	0.7	1.1	0.7	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
District 4	1.9	1.2	1.2	0.9	0.8	1.0	1.3	1.5	1.6	1.4	1.3
Region 1	0.9	1.0	0.8	0.8	0.8	0.8	1.0	0.9	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	0.8
District 6	1.9	1.5	1.3	1.1	1.0	1.5	1.1	1.2	1.9	1.3	1.4
District 7	0.7	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.7
District 8	1.5	1.2	1.1	1.4	1.4	1.6	1.3	1.4	1.9	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	2.0
Region 2	1.1	1.0	1.0	0.9	1.5	1.5	1.0	1.1	1.5	1.4	1.2
District 10	1.3	1.4	1.6	1.6	1.2	1.6	1.6	1.8	2.0	1.8	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
District 12	1.4	1.4	1.7	1.6	1.6	2.5	2.2	1.9	2.4	1.4	1.8
Region 3	1.3	1.3	1.5	1.4	1.4	1.7	1.6	1.7	2.1	1.6	1.6
Entire state	1.1	1.2	1.2	1.1	1.3	1.4	1.1	1.3	1.6	1.4	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	Simple average
District 1	1.0	0.7	0.6	0.9	0.8	0.7	0.7	0.6	0.9	0.7	0.8
District 2	1.2	0.7	0.6	0.8	0.6	0.5	0.7	0.8	0.8	0.7	0.7
District 3	0.8	0.6	0.8	0.8	0.8	0.8	1.1	1.0	0.6	1.1	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
Region 1	0.9	0.7	0.7	0.8	0.8	0.7	0.9	0.8	0.8	1.0	0.8
District 5	0.4	0.4	0.8	0.9	0.8	0.7	0.7	0.6	0.6	0.7	0.7
District 6	0.8	0.6	1.0	0.9	0.6	1.0	0.9	0.9	0.7	0.7	0.8
District 7	0.5	0.5	0.7	0.6	0.7	0.7	0.7	0.5	0.4	0.5	0.6
District 8	0.9	0.7	0.7	0.7	1.0	0.8	0.6	0.7	0.6	0.7	0.7
District 9	0.2	0.8	0.7	0.6	0.6	0.6	0.5	0.4	0.1	0.3	0.5
Region 2	0.6	0.5	0.8	0.8	0.7	0.8	0.7	0.6	0.5	0.6	0.7
District 10	0.6	0.5	0.5	0.6	0.6	0.5	0.5	0.4	0.6	0.5	0.5
District 11	1.0	1.6	0.1	0.4	0.5	...	0.5	0.4	0.6	0.4	0.6
District 12	0.6	1.7	0.6	0.4	0.4	0.6	...	0.6	0.6	0.3	0.6
Region 3	0.7	0.9	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.6
Entire state	0.8	0.7	0.7	0.8	0.8	0.7	0.8	0.7	0.6	0.7	0.7

Catch per hour--Non-trout Waters

by Conservation Districts

For non-trout waters the highest catch per hour was recorded in District 9 with 3.3 fish per hour (Table 10). All districts had catches of better than 1.0 fish per hour except Districts 1, 2, 3, and 5. According to the catch per hour, lake fishing was best in District 8 where the anglers caught 2.0 fish per hour, followed by Districts 10, 11, and 6 with 1.9, 1.9, and 1.6 fish per hour respectively. For non-trout streams District 9 yielded the highest catch per unit of effort (4.3 fish) followed by Districts 7, 8, and 5 with 3.1, 2.7, 1.5 fish per hour respectively. In 1951 the catch from non-trout waters for the entire state was 1.50 fish per hour, which is a drop of 0.15 fish per hour (1.65 fish per hour in 1950).

Composition of Catch--Great Lakes Waters

A total of 14,850 fish were recorded from Great Lakes waters. The yellow perch made up the bulk of the total catch, 94.29 percent (Table 11). The following six species are arranged according to their abundance in the catch: yellow perch, cisco, walleye, rock bass, pike, and smallmouth black bass. These species constituted 99.4 percent of all fish caught from Great Lakes waters and 8 other species of fish were included in the remaining 0.6 percent.

The other species of fish are listed as follows:

Pumpkinseed	38	Largemouth black bass	3
Black crappie	20	Bluegill	3
Bullheads	14	Catfish	3
Rainbow trout	6	Total	93
Smelt	6		

Catch per Hour--Great Lakes Waters
by Conservation Districts

In 1951 fishing records from the Great Lakes and their connecting waters were submitted by officers in seven districts. District 11 does not border on the Great Lakes or their connecting waters and Districts 1, 2, 8, and 10 did not submit any catch records from the Great Lakes waters. The greatest success in fishing Great Lakes waters was reported from District 9 (5.23 fish per hour). This high catch per hour is attributed to 8,694 yellow perch taken in 1,785 hours by 760 anglers in Arenac and Bay counties (Table 12). In four of the districts the anglers experienced a catch of better than 2.0 fish per hour and the average for all Great Lakes waters was 3.21 fish per hour. Fishing in the Great Lakes proper was better than in the connecting waters (3.50 fish per hour an 1.15 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 and this varies considerably with the method of angling used by the fishermen as well as with the skill of the angler. Districts 9, 8, and 10 had catches per hour of 3.35, 1.80, and 1.78 fish respectively. In District 9 the high figure was due to the huge number of yellow perch taken in non-trout streams (12,598) and in Great Lakes waters (8,745). The high catch per hour was caused in District 8 by the great percentage of fishermen angling in non-trout waters with good success and in District 10 by the great percentage of fishermen angling in non-trout lakes with good success.

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

In terms of fish caught per hour the best fishing was in Region III with a catch of 1.64 fish per hour, whereas Regions II and I had catches per hour of 1.39 and 0.97 fish respectively. Furthermore 88,267 fish (52.26 percent) of the total 168,913 recorded in the census were caught in Region 2, 56,169 fish (33.25 percent) were taken in Region III, and the remaining 24,477 (14.49 percent) were caught in Region I.

Residence of Anglers--All Waters

Of the 50,845 anglers recorded in the 1951 general creel census, there were 45,315 (89.12 percent) who resided in Michigan and the remaining 5,530 (10.88 percent) lived outside the state (Table 13). Conservation officers in District 5 contacted the greatest number of non-resident anglers. In this district 1,108 anglers (16.02 percent of all fishermen interviewed in the district) were from outside the state. However, District 2 had the highest percentage of non-resident anglers to total anglers with 27.99 percent. Officers in District 9 interviewed the fewest non-residents (51) and these anglers comprised only 1.43 percent of all fishermen recorded in the district. The lowest percentage of non-resident anglers was recorded in District 12.

Anglers residing in all of the 83 counties of Michigan were recorded in the 1951 general creel census. Residents of Wayne County constituted 11.25 percent of all anglers interviewed in 1951. Other counties from which anglers were recorded in great numbers were Genesee County (5.90 percent), Kent County (4.65 percent), Muskegon County (3.86 percent), Ingham County (3.63 percent), Saginaw County (3.28 percent), and Bay County (2.43 percent). Residents from the above mentioned counties accounted for 35.00 percent of all anglers contacted.

Table 21

Catch per hour for all waters, trout, 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
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
Simple average	1.22	0.85	1.28	2.56

Out-of-state fishermen came from 32 states in the Union, District of Columbia, province of Ontario, and Switzerland. The four states bordering Michigan furnished 94.05 percent of all non-resident anglers. Fishermen from Ohio made up 42.82 percent; from Indiana, 25.86 percent; from Illinois, 19.10 percent; and from Wisconsin, 6.27 percent. The county of resident for Michigan fishermen and the state of residence for non-residents are given in Table 14.

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

Resident had a higher catch per hour (1.52 fish) than did the non-resident anglers (1.04 fish). Comparison of resident and non-resident anglers is given in Table 15.

Sex of Anglers--All Waters

A total of 8,540 female anglers was interviewed in 1951. Of all anglers contacted 16.8 percent were female anglers.

Comparison of 1951 General Creel Census Data with that of Other Years

Tables 16 to 21 summarize the general creel census data for the past ten years. There was 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 slipped to 1.12 fish in 1945, and rose in 1946 and 1947 (1.31 fish and 1.42 fish respectively). In 1948 the catch dropped to 1.14 fish per hour and climbed to 1.29 fish per hour in 1949 and to 1.61 fish per hour in 1950 and dropped to 1.37 fish per hour in 1951.

During the past nine years the catch per hour of all fish in trout waters has varied 8.4 fish per hour. The highest catch per hour during this period was in 1942 and 1943 (0.9 fish per hour) and in the next five years the catch per hour was 0.8 fish. In 1949 the catch slipped to 0.7 fish per hour, in 1950 the catch dropped to a new low of 0.6 fish per hour, and in 1951 the catch rose to 0.8 fish per hour. The catch per hour of trout in trout waters has varied from 0.8 to 0.6 trout. In 1942 the catch per hour was 0.8 trout, in 1943 and 1944 it was 0.7 trout, in 1945 and 1946 it was 0.8 trout, in 1947 it was 0.7 trout, in 1948 it was 0.8 trout, in 1949 it was 0.7 trout, in 1950 it was 0.6 trout, and in 1951 it was 0.7 trout.

The catch per unit of effort in non-trout waters has remained more than 1.1 fish during the last ten years. The catch per hour for non-trout waters is very similar to the catch per hour for all waters, because the number of records from non-trout waters is so great.

The catch per hour for Great Lakes waters has remained consistently higher than that for trout and non-trout waters for the ten years these waters have been tabulated separately. In the Great Lakes waters the anglers averaged 2.6 fish per hour as compared to an average of 1.3 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 recent years. The detailed tables for the data herein presented are on file at the Institute for Fisheries Research, University Museums Annex, Ann Arbor, Michigan.

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