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DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
UNIVERSITY OF MICHIGAN

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REPORT NO. 879

THE RESULTS OF THE COOPERATIVE CREEL CENSUS ON THE CONNECTING
WATERS BETWEEN LAKE HURON AND LAKE ERIE IN 1942

by

Louis A. Krumholz and W. F. Carbine

Organization of Census

In an effort to obtain more definite information as a basis for future management policies for the connecting waters between Lake Huron and Lake Erie, a cooperative creel census was organized in May, 1942. Operators of boat liveries between Port Huron and Wyandotte were interviewed and requested to cooperate with the Department of Conservation in securing creel census data. Suitable blanks (Fig. 1) were provided and the livery operators instructed to enter the date, number of fishermen, time spent fishing, kind, number and average size of all fish caught, kind of bait used, and the residence of all anglers using their boats. Of the 84 livery men who were interviewed, 5 expressed unwillingness to cooperate and 2 flatly refused to have anything to do with such work. The liveries were visited again on July 6 and 7 by the writers. On this trip 77 liverymen

∇ The Organization of the Creel Census on Lake St. Clair, the St. Clair and Detroit Rivers. Institute Report No. 794, by W. F. Carbine

were interviewed and 7 were recorded as out of business. Only 17 of the operators, who had been previously interviewed, showed good cooperation so far during the season, based on the number of reports filled out. There is reason to believe that 8 of these men turned in complete reports of the fishing done from their boats.

At the close of the season (September 20 on the St. Clair and Detroit Rivers due to U. S. Coast Guard regulations, and November 1, arbitrarily chosen for the St. Clair Flats and Lake St. Clair) there were 8 liveries that were fully cooperative, 9 which gave good cooperation, 22 which showed poor cooperation and the rest gave no cooperation at all or had gone out of business.

The creel census data collected by the boat liverymen was checked against and augmented by the general creel census data taken by the Conservation Officers in the course of their regular duties. In addition, the writers worked with the Conservation Officers for one or two days at regular intervals of 10 days. These visits were rotated between the St. Clair River, the St. Clair Flats, Lake St. Clair and the Detroit River. On each trip intensive creel census data were secured from all or nearly all anglers on the part of the connecting waters under observation. Thanks are due to District Supervisor E. E. Tucker and Officers H. E. Fredmore, Jack Bowman, Earl Goff, Fred A. Eckhout, Isaac Peabody, Howard Johnson and George Thompson of the Division of Field Administration for their excellent cooperation.

The livery operators who gave full cooperation were:

Jess Hall	4018 Military Road, Port Huron
George Rose	2611 River Road, St. Clair
Adam Otrompke	6551 St. Clair River Drive, Marine City
Mrs. Lemire	6169 South River Drive, Pearl Beach
Anchorville Boat Livery	M.C. Joswick 9691 Dixie Hy., Anchorville
Chester Bowers	10329 Bowers Court, Anchorville
Harry's Boat Livery	State Highway 29 at River Vans
Thomas Barney	6881 South River Road, Mt. Clemens.

The livery operators who gave good cooperation were:

Brass Button Boat Livery	N. River Road, St. Clair
George Douglas	2008 St. Clair River Drive, Algonac
Hank Walters	Guide at Decker's Landing, Algonac
Klein's Boat Livery	8350 Dixie Highway, Fair Haven
Abe Goulette Boat Livery	New Baltimore
Lakeside Boathouse	R.F.D. #6, Mt. Clemens
Klenk Boat Livery	14674 Klenk Ave., Detroit
Albert S. Palmer	4437 W. Jefferson, Ecorse
Spade's Boat Livery	4633 W. Jefferson, Ecorse

To these livery operators grateful acknowledgement is given for their assistance in collecting data. Several boat liveries in addition to these expressed their willingness to cooperate, but were unable to do so because of a critical shortage of help.

In this report, the connecting waters between Lake Huron and Lake Erie have been arbitrarily divided into four parts:

1) The St. Clair River: The waters between the Bluewater Bridge at Port Huron and the north end of Russell Island near

Algonac; 2) The St. Clair River Flats: The waters of the North, Middle and South Channels and connecting channels and includes the waters of Big Muscamoot, Little Muscamoot, Goose, Fisher and Pollett Bays; 3) Lake St. Clair: Those waters between the various outlets of the St. Clair River and the north end of Pecke Island; 4) The Detroit River: The water from the north end of Pecke Island to the foot of Oak Street in Wyandotte.

These four divisions furnish a variety of different kinds of fishing. In the St. Clair River most of the fishing is done by special trolling methods for walleyed pike and very few fish of other species are taken. The St. Clair River Flats affords a greater variety of fishing than does the St. Clair River but not as great a variety as that of Lake St. Clair. Relatively few walleyes are taken in the Flats and perch, smallmouth black bass, northern pike and muskellunge make up the majority of the catch. In Lake St. Clair the perch is by far the most abundant fish in the anglers' creel although there is excellent smallmouth bass fishing, and this area is considered one of the finest muskellunge grounds in the United States. The Detroit River affords good fishing for smallmouth bass, and in addition the anglers take many walleyed pike and some saugers and sheepshead.

Number of Records

During the period of operation of the intensified creel census on the connecting waters between Lake Huron and Lake Erie (May 17 - November 1, 1942) data was secured on the fishing of 12,844 anglers who fished 74,576.00 hours and caught 50,879

TABLE I

Combined Creel Census Data Taken By Boat Livery Operators,
Conservation Officers and Members of the Institute Staff,
For the Connecting Waters Between Lake Huron and Lake Erie,
May 17 - November 1, 1942

Area	Number of Anglers	Number of Boats	Total Hours Spent Fishing	Hours Per Fisherman Day	Total Legal Fish Taken	Catch Per Hour	Pounds Legal Fish Taken	Pounds Per Hour	Anglers Per Boat
St. Clair River	3,577	1,622	24,074.75	6.73	8,648	0.36	12,611	0.52	2.2
St. Clair Flats	1,707	640	7,289.00	4.27	3,657	0.50	1,781	0.24	2.7
Lake St. Clair	6,744	2,934	39,298.50	5.83	36,838	0.94	7,949	0.20	2.3
Detroit River	816	415	3,913.75	4.80	1,736	0.44	1,844	0.47	2.0
Total or Average	12,844	5,611	74,576.00	5.81	50,879	0.68	24,185	0.32	2.3

Fish at a rate of 0.68 fish per hour (Table I).

TABLE II

Creel Census Data Taken By Boat Livery Operators For The Connecting Waters Between Lake Huron and Lake Erie, May 17 - November 1, 1943

Area	Number of Anglers	Number of Boats	Total Hours Spent Fishing	Hours Per Fisherman Day	Total Legal Fish Taken	Catch Per Hour	Pounds Legal Fish Taken	Pounds Per Hour	Anglers Per Boat
St. Clair River	2,802	1,282	21,153.00	7.55	7,642	0.36	11,457	0.54	2.2
St. Clair Flats	481	218	3,505.50	7.29	1,458	0.42	1,020	0.29	2.2
Lake St. Clair	5,710	2,519	34,191.00	5.99	33,125	0.97	6,184	0.18	2.3
Detroit River	437	251	2,818.50	6.45	1,312	0.46	1,579	0.56	1.7
Total or Average	9,430	4,270	61,688.00	6.54	43,537	0.71	20,240	0.33	2.2

TABLE III

Creel Census Data Taken By Conservation Officers and Members of the Institute Staff For the Connecting Waters Between Lake Huron and Lake Erie, May 17-November 1, 1943

Area	Number of Anglers	Number of Boats	Total Hours Spent Fishing	Hours Per Fisherman Day	Total Legal Fish Taken	Catch Per Hour	Pounds Legal Fish Taken	Pounds Per Hour	Anglers Per Boat
St. Clair River	775	340	2,921.75	3.77	1,006	0.34	1,154	0.39	2.3
St. Clair Flats	1,226	422	3,783.50	3.09	2,199	0.58	761	0.20	2.9
Lake St. Clair	1,034	415	5,107.50	4.94	3,713	0.73	1,765	0.35	2.5
Detroit River	379	164	1,095.25	2.89	424	0.39	265	0.24	2.3
Total or Average	3,414	1,341	12,908.00	3.78	7,342	0.56	3,945	0.31	2.5

Officers and members of the Institute Staff (Table III).
boat liveries (Table II) and 3,414 records were taken by Conservation

Of these records, 9,430 were gathered by the operators of

The sample of creel census records taken on trips by the Conservation Officers and staff members probably was not as representative of the fishing as that collected by the boat livery operators. During the period of the census, 12 trips were made by staff members who worked with the officers. This does not mean that each division of the connecting waters was visited 12 times during the census but rather that 12 trips were made from Ann Arbor. The area under census is so large (100 miles of shoreline between Port Huron and Wyandotte) that it was impossible to cover it all in one or two days. On some trips two of the divisions were visited. The number of trips to each division were: St. Clair River - 7; St. Clair Flats - 10; Lake St. Clair - 10; Detroit River - 6. More complete coverage of the area was attained on holiday week-ends and the opening week-end of the season for bass and bluegills by using two parties of officers and staff members. In spite of some differences, the data of both censused have been utilized to estimate the total yield.

Residence of Fishermen

It is significant that 11,163 (86.9 per cent) of the 12,814 fishermen interviewed during the census were residents of Wayne County which is made up largely of Detroit and its environs. The other two counties which border on the connecting waters, viz. Macomb and St. Clair contributed 867 (6.8 per cent) and 658 (5.1 per cent) fishermen respectively. Table IV shows the residence (by number and percentage) of all anglers interviewed for the four divisions of the waters under consideration. This

table indicated that there were fishermen from nine counties in Michigan as well as anglers from Ohio, Florida and Canada. In all probability there were anglers from other counties in Michigan who fished the connecting waters between Lakes Huron and Erie. It is likely that only a few out-of-state anglers fished these waters because the U. S. Coast Guard regulations required the presentation of a birth certificate before a fishing permit could be issued. The writers are aware of several instances in which parties came from out-of-state only to find that they could not fish because they had no Coast Guard permit.

Quality of Fishing in the Different Parts of the Connecting Waters

There is considerable variation in the kind of fishing and the kinds of fish taken in each of the four divisions of the connecting waters between Lake Huron and Lake Erie. The catch in numbers and pounds of fish per hour is given for the individual waters in Tables I, II and III.

In the St. Clair River, where the walleyed pike made up 98.9 per cent of the total number of fish taken, the catch per hour was 0.37 fish (Table I). An intensive census on Lake Gogebic, ^W in Michigan's Upper Peninsula, showed that the "walleye" made up 80.1 per cent of all fish recorded in 1940 and the catch per hour was 0.36 fish. In 1941, walleyes constituted 89.3 per cent of the fish recorded and the catch was 0.32 fish per hour. Lake Gogebic has a very good reputation for walleye fishing.

^W A Summary of an Intensive Creel Census on Lake Gogebic, Ontonagon and Gogebic Counties, 1940-1941. Institute Report No. 844 by Paul Eschmeyer.

From these data it is evident that the results of fishing for walleyed pike are much the same in the St. Clair River and Lake Gogebic.

The majority of fishermen on the St. Clair River troll for the walleyed pike. A long copper wire on a large spool (usually operated as an automatic reel powered by a Victrola spring) is used and the most common lure was a "Mc Ginty" with worms or minnows attached. The Mc Ginty is a modified pencil-type plug. The fishing is always done with the boat, powered by an outboard or in some cases an inboard motor, moving slowly upstream. After a run upstream the boat is usually run back downstream rather rapidly, the lines being taken in, and then the lines let out and the upstream or fishing run is begun again. Sometimes the anglers would fish all night or factory workers would spend eight or ten hours, during their time off, on the river as a means of relaxation from the strain of the day's work. This is noticeable in the average time spent fishing (6.73 hours) by each party interviewed, as compared with an average of 3.5 hours recorded in an intensive census of 8 lakes in southern Michigan.✓

The fishing on Lake St. Clair is markedly different from that of the St. Clair River. In the lake perch made up 89.1 per cent of the recorded catch, followed by rock bass (5.1 per cent) and smallmouth black bass (2.8 per cent).

✓ An Analysis of the Annual Fish Catch on Several Southern Michigan Lakes Winter of 1938-1939 and Summer of 1939
Institute Report No. 588 by O. H. Clark

All other fish made up the remaining 3 per cent. The catch per hour for all fish recorded from Lake St. Clair was 0.94 fish (Tables I, II and III). This catch per hour closely approximates that of the state as a whole for 1941 (1.0 fish per hour~~v~~). There is no other water in the state, on which an intensified census has been undertaken, which is directly comparable to Lake St. Clair. Probably the most nearly comparable are the waters of the Potagamissing Bay region on which an intensified general census has been in operation since 1937.~~**~~ On these waters perch made up 62.0 per cent of the total catch followed by northern pike (21.6 per cent), smallmouth black bass (8.8 per cent) and rock bass (7.6 per cent). The average catch per hour for the 5-year period was 1.57 fish.

Most of the fishing done in Lake St. Clair is still-fishing with minnows or worms. Large numbers of perch and bass are taken in this manner. There is also some trolling done for bass. Although Lake St. Clair is considered to be one of the finest grounds in the country for muskellunge fishing, these fish do not compete numerically with the smaller fishes in the total catch. Fishing for muskellunge is a time-consuming procedure. Oftentimes, an angler will fish for many hours without a "strike" and catches

~~v~~ Report on the General Creel Census for 1941. Institute Report No. 795 by Louis A. Krumholz

~~**~~ Report on the Creel Census in the Connecting Waters Between Lake Superior and Lake Huron and Some Adjoining waters in Lake Huron, 1937-1941. Institute Report No. 743 by E. W. Roelofs.

of more than two muskellunge in an entire day are rare. Most of the muskellunge fishing is done by trolling with a large spoon or other lure. At times these fish are taken while casting.

The fishing in the St. Clair River Flats might be considered as transitional between that of the St. Clair River and Lake St. Clair and the catch per hour should be somewhere between that of the river and lake. However, observations during the summer of 1942 indicated that the fishing was more nearly like that of the St. Clair River. There is more moving water similar to that of the St. Clair River in the North, Middle and South Channels and the many connecting passes and cuts between these channels and the fishing for walleyes is considerably better than in Lake St. Clair. At the upper ends of these main channels the type of fishing is similar to that of the St. Clair River. Most of the fishing in the lower part of the "Flats" is still-fishing although there is some trolling for muskellunge and northern pike. The catch per hour for the St. Clair Flats was 0.50 fish.

The fishing in the Detroit River is in some ways comparable to that of the St. Clair River. However, the current is much slower in the Detroit River and there is considerably more fishing from docks. The catch per hour in the Detroit River was 0.44 fish per hour, fairly comparable to that of the St. Clair River. It is strange that no smallmouth black bass were reported in the records taken by the boat livery operators along the Detroit River. The Conservation Officers and writers recorded this

species and the local officers stated that at times the fishing for "smallmouth" was very productive.

The reason why the catch per hour in Lake St. Clair is higher than any of the other divisions is probably that still-fishing with worms or minnows is predominant and this type of fishing is usually very productive in numbers of fish caught. This evidently holds true for the other three divisions: the St. Clair Flats, the Detroit River and the St. Clair River respectively where there is progressively less still-fishing done. Conversely, still-fishing may not be so productive as specialized trolling if pounds of fish per hour is used as the basis as is shown by the fact that anglers in the St. Clair River caught 0.52 pounds of fish per hour as compared with the 0.20 pounds per hour taken from Lake St. Clair.

Composition Of The Total Catch

The percentage composition of the total catch by number and weight for each species of fish is given in Table V. The weights of the different fishes have been estimated from the total lengths. Each division has been considered separately and the percentage of each species has been determined for the entire area. All creel census data were combined to obtain the figures.

In the St. Clair River, 8,555 walleyes made up 98.9 per cent of the total number of fish recorded and these constituted 99.9 per cent of the total weight. Only 93 fish of all other species which weighed 51.7 pounds were recorded.

In Lake St. Clair, 31,948 perch made up 86.7 per cent of the total number of fish caught but these constituted only 57.0 per cent of the total weight. Perch, together with rock bass and smallmouth black bass, made up 96.5 per cent of the total number of fish recorded and 81.3 per cent of the total weight. Although walleyes, northern pike and muskellunge each contributed less than 1 per cent to the total number of fish recorded they made up 13.2 per cent of the total weight.

Perch were most abundant in the recorded catch in the St. Clair Flats and were followed in order by smallmouth black bass, rock bass and walleyes. These four species made up 96.3 per cent of the total number of fish recorded but only made up 69.0 per cent of the total weight. It should be pointed out that although perch, smallmouth bass and walleyes each made up about 21 per cent of the total weight they constituted 66.4 per cent, 10.8 per cent and 7.7 per cent respectively of the total number of fish recorded. Also the "musky" and northern pike each made up about 14.5 per cent of the total weight, they contributed only 2.9 per cent and 10.4 per cent respectively of the total number. The composition of the total catch in the St. Clair Flats illustrates that the fishing there is transitional between that of the St. Clair River and Lake St. Clair.

In the Detroit River the number of fish recorded was more or less evenly divided between walleyes and perch (44.6 per cent and 34.7 per cent respectively). Conversely the walleyes weighed more than twice the total weight of the perch. Sheepshead, saugers and suckers made up relatively greater percentages

of the total number and weight of fish recorded than in any of the other divisions.

For the entire area, yellow perch made up 68.8 per cent of the number of fish recorded and was followed in order by walleyes (19.4 per cent), rock bass (5.9 per cent) and smallmouth bass (2.9 per cent). However, walleyes constituted 59.1 per cent of the total weight of fish reported and was followed in order by perch (22.2 per cent) smallmouth bass (5.7 per cent) and rock bass (4.5 per cent). Northern pike and muskellunge together made up less than 1 per cent of the number of fish recorded but made up 2.6 per cent and 2.7 per cent of the total weight respectively.

Individual divisions made up the following percentages of numbers and weights of all kinds of fish recorded:

	Number of Fish	Percentage of Total	Weight of Fish in Pounds	Percentage of Total
St. Clair River	8,648	17.0	12,611.4	52.1
St. Clair Flats	3,657	7.2	1,781.4	7.4
Lake St. Clair	36,838	72.4	7,948.9	32.9
Detroit River	1,736	3.4	1,844.2	7.6

Estimate of Total Yield

The data collected by the boat livery operators (Table II) has been used as the basis for making an estimate of the total number of anglers, total hours fished, total numbers of fish taken and the total pounds of fish taken. The data gathered by the Conservation Officers and staff members has not been used as such due to the duplication of data but has been used to ascertain the ratio of livery boats to privately-owned boats for the various

divisions. All boats interviewed by the officers and writers were not entered into the data as livery-owned or private but enough were noted to assure a good estimate. Table VI gives the data as the number of livery boats which were owned by the livery operators in each of the four divisions. These boat liveries have been classed in three groups: fully cooperative (100%), partly cooperative (25%) and not cooperative. Observations in the field have been used as a basis for assigning these different degrees of cooperation to the boat liveries. The factors were arrived at by considering the percentage cooperation as a fraction of 100.

Table VII gives the data on the ratio of livery boats to private boats interviewed by the officers and writers. The factors were obtained as in Table VI.

Table VIII indicates the total number of anglers, total hours spent fishing, total number of fish recorded and total weight of fish recorded. The figures for each of the divisions in Table II were multiplied by the corresponding factor in Table VI and this product multiplied by the corresponding factor in Table VII. The total figures for the entire area were obtained by addition and not by the use of the factors for the totals.

These figures in Table VIII are known to be conservative because there is little or no account taken of the great numbers of dock and bank fishermen who utilize the many breakwaters, piers and dredge cuts along the waterfront for fishing purposes.

As the data in Table VIII indicate, there were more than 750,000 fish which weighed over 400,000 pounds taken by hook-and-line fishermen from the waters between Port Huron and Wyandotte. Nearly half of this weight of fish was taken from the St. Clair River (199,926 pounds). If an estimate could be made of the bank and dock fishermen not included in the census, the amount of food produced by angling would probably be well over half a million pounds. The connecting waters between Lake Huron and Lake Erie afforded fishing for nearly 200,000 anglers. This estimate, also, does not include the bank and dock fishermen, who, if included would enhance the figure considerably. This amount of recreation to so many people near such a large center of population is quite important during these times when travel is so restricted.

It is recommended that the intensified creel census on the connecting waters be continued during the summer of 1943 provided that the St. Clair and Detroit Rivers are opened to angling as they were previous to September, 1942. If, however, these waters are not reopened a census should be conducted on Lake St. Clair and the areas in the St. Clair River Flats not affected by the government order.

INSTITUTE FOR FISHERIES RESEARCH

By Louis A. Krumholz and W. F. Carbine

Report approved by: A. S. Hazzard

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TABLE IV

Residence of All Resident Anglers Interviewed May 17 - November 1, 1942 on the
Connecting Waters Between Lake Huron and Lake Erie With Reference to the Number and
Percentage of Anglers of Different Localities

County of Residence	Wayne		Macomb		St. Clair		Oakland		Livingston		Genesee		Washtenaw		Monroe		Bay		Canada		Florida		Ohio			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Data Collected By Boat Livery Operators																										
St. Clair River	2521	90.0	30	1.1	213	7.6	34	1.2			3	0.1												1	Tr.	
St. Clair Flats	436	90.6	1	0.2	22	4.6	20	4.2															2	0.4		
Lake St. Clair	5218	91.4	400	7.0	43	0.8	49	0.9																		
Detroit River	437	100.0																								
Total or Average	8612	91.3	431	4.6	278	3.0	103	1.1			3	Tr.											2	Tr.	1	Tr.
Data Collected by Conservation Officers and Staff Members																										
St. Clair River	530	68.3	25	3.2	184	23.7	8	1.0	7	0.9	6	0.8	3	0.4	2	0.3					4	0.5			6	0.8
St. Clair Flats	883	72.0	184	15.0	155	12.6	3	0.2							1	0.1							2	0.2		
Lake St. Clair	759	73.4	227	22.0	41	4.0	5	0.5																	2	0.2
Detroit River	379	100.0																								
Total or Average	2551	74.7	436	12.8	380	11.1	16	0.5	7	0.2	6	0.2	3	0.1	2	Tr.	1	Tr.			4	0.1	2	Tr.	8	0.2
All Data Combined																										
St. Clair River	3051	85.3	55	1.5	397	11.1	42	1.2	7	0.2	9	0.3	3	0.1	2	0.1					4	0.1			7	0.2
St. Clair Flats	1319	77.3	185	10.8	177	10.4	23	1.3							1	Tr.							4	0.2		
Lake St. Clair	5977	88.6	627	9.3	84	1.2	54	0.8																		
Detroit River	816	100.0																								
Total or Average	11,163	86.9	867	6.8	658	5.1	119	0.9	7	0.1	9	0.1	3	Tr.	2	Tr.	1	Tr.			4	Tr.	4	Tr.	7	0.1

TABLE V

Percentage Composition of the Total Catch By Numbers and Weights
As Reported By Boat Livery Operators, Conservation Officers and
Members of the Institute Staff, For Each Area, All Data Combined, May 17 - November 1, 1943

Species	ST. CLAIR RIVER					ST. CLAIR FLATS					LAKE ST. CLAIR					DETROIT RIVER					ALL WATERS COMBINED				
	Number Of Fish	Average Length	Percentage Composition Numbers	Total Weight	Percentage Composition Weight	Number Of Fish	Average Length	Percentage Composition Numbers	Total Weight	Percentage Composition Weight	Number Of Fish	Average Length	Percentage Composition Numbers	Total Weight	Percentage Composition Weight	Number Of Fish	Average Length	Percentage Composition Numbers	Total Weight	Percentage Composition Weight	Number Of Fish	Average Length	Percentage Composition Numbers	Total Weight	Percentage Composition Weight
Walleye	8555	16.6	98.9	12,559.2	99.9	260	16.2	7.7	372.8	20.9	277	15.8	-	342.8	4.3	774	16.0	44.6	1,025.6	55.6	9,886	16.7	19.4	11,300.9	59.1
Smallmouth Bass	13	13.3	-	14.3	-	395	12.3	10.8	366.6	20.6	1,057	12.4	2.9	987.6	12.4	7	10.7	-	4.3	-	1,472	12.4	2.9	1,372.8	5.7
Yellow Perch	32	6.3	-	3.4	-	2127	7.3	66.1	373.2	20.9	21,948	7.1	86.7	4,532.6	57.0	602	12.3	34.7	470.3	25.5	35,009	7.2	68.8	5,379.5	22.2
Rock Bass	9	7.1	-	2.5	-	381	7.4	10.4	116.7	6.6	2,546	7.9	6.9	842.0	11.9	79	8.1	4.6	31.4	1.8	3,015	7.8	5.9	1,092.6	1.5
Northern Pike	...	...	...	...	...	107	22.8	2.9	262.6	14.6	134	23.2	-	355.9	4.5	3	18.0	-	3.6	-	244	23.0	-	622.3	2.6
Bluegill	...	...	...	...	...	23	27.0	-	253.0	14.2	30	37.8	-	352.5	4.4	13	43.0	-	59.0	3.2	56	37.6	-	664.5	2.7
White Bass	2	8.0	-	0.5	-	19	10.6	-	8.3	-	129	8.4	-	40.0	-	46	10.2	2.6	23.0	1.2	196	9.0	-	71.8	-
Largemouth Bass	2	12.0	-	1.5	-	...	...	...	...	...	101	12.5	-	91.3	1.1	...	...	...	...	...	103	12.5	-	92.8	-
Crappie	...	...	...	...	...	...	...	...	...	...	236	8.2	-	81.6	1.1	1	10.0	-	0.8	-	237	8.2	-	85.6	-
Pumpkinseed	...	...	...	...	...	3	8.0	-	1.3	-	213	7.0	-	59.6	-	3	6.0	-	0.8	-	219	7.0	-	61.7	-
Channel Catfish	1	14.0	-	1.0	-	...	...	...	...	...	22	16.2	-	44.0	-	...	...	...	...	...	23	16.0	-	45.0	-
Sauger	3	12.0	-	2.0	-	2	12.0	-	1.2	-	5	12.0	-	3.4	-	13	12.2	2.5	27.5	1.5	53	12.2	-	34.1	-
Suckers	9	13.4	-	11.0	-	-	-	-	...	...	25	12.0	-	18.8	-	91	16.1	5.2	100.0	5.4	125	15.4	-	125.8	-
Fullheads	4	8.0	-	1.0	-	-	-	-	...	...	50	7.7	-	14.1	-	...	...	...	...	...	54	7.7	-	15.1	-
Sheepshead	4	16.0	-	4.0	-	6	16.8	-	7.1	-	56	14.4	-	56.0	-	74	17.2	4.3	92.5	3.0	140	16.0	-	159.6	-
Rainbow Trout	1	18.0	-	2.0	-	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	18.0	-	2.0	-
Carp	...	...	...	...	...	9	15.8	-	12.0	-	2	31.5	-	16.0	-	...	...	...	...	...	11	13.7	-	28.0	-
Mooneye	5	10.0	-	2.0	-	1	10.0	-	0.4	-	...	...	...	...	...	1	14.0	-	0.6	-	7	10.6	-	3.0	-
Redhorse	8	13.3	-	6.5	-	4	18.2	-	6.0	-	4	16.5	-	6.0	-	3	15.3	-	2.8	-	19	15.4	-	21.3	-
Bluegill	...	...	...	...	...	...	...	...	...	...	2	7.0	-	0.5	-	2	7.0	-	2.0	-	6	7.0	-	2.5	-
Shortnosed Gar	...	...	...	...	...	...	...	...	...	...	1	17.0	-	1.0	-	...	...	...	...	...	1	17.0	-	1.0	-
Total	8648		98.9	12,611.4	99.9	3557		98.2	1,781.4	98.0	36,838		96.5	7,948.9	96.7	1,736		98.5	1844.2	99.2	50,879		97.0	21,185.9	96.8

NOTE: - means less than 1 per cent

TABLE VI

Number and Percentage of Livery-owned Boats and the Degree of Cooperation for Each of the Four Divisions of the Connecting Waters Between Lake Huron and Lake Erie, 1942

	Total Number of Livery- owned Boats	Number and Degree of Cooperation of Livery Boats						Total Number of Boats		Factor
		Wholly Cooperative		Partly Cooperative		Not Cooperative		Cooperating		
		No.	%	No.	%	No.	%	No.	%	
St. Clair River	478	58	12.1	76	15.9	344	72.0	77	16.1	6.21
St. Clair Flats	95	15	15.8	32	33.7	48	50.5	23	24.2	4.13
Lake St. Clair	611	96	15.7	80	13.1	435	71.2	116	19.0	5.27
Detroit River	190			93	49.0	97	51.0	23	12.1	8.26
Total or Average	1,374	169	12.3	281	20.5	924	67.2	239	17.4	5.75

TABLE VII

Percentage of Livery-owned Boats on Boats Interviewed By Conservation Officers and Staff Members on the Connecting Waters Between Lake Huron and Lake Erie, 1942

	All Boats	Livery Boats	Per cent Livery Boats	Factor
St. Clair River	239	85	35.56	2.81
St. Clair Flats	207	32	15.46	6.47
Lake St. Clair	200	63	31.50	3.17
Detroit River	87	15	17.24	5.80
Total or Average	733	195	26.60	3.76

TABLE VIII

Estimate of Total Anglers, Total Hours, Total Numbers of
Fish Taken and Total Weight of Fish Taken From the
Connecting Waters Between Lake Huron and Lake Erie May 17-November 1, 1942

	Number of Anglers	Number of Boats	Total Hours Spent Fishing	Number of Legal Fish Taken	Weight of Legal Fish Taken
St. Clair River	48,895	22,371	369,122	133,354	199,926
St. Clair Flats	12,852	5,825	93,671	38,959	27,256
Lake St. Clair	95,391	42,082	571,191	553,383	103,309
Detroit River	20,936	12,025	135,029	62,855	75,467
Totals	178,074	82,303	1,169,013	788,551	406,138