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SECOND REPORT OF CREEL CENSUS IN THE CONNECTING WATERS
BETWEEN LAKE SUPERIOR AND LAKE HURON (FOR SEASON OF 1938)

In order to secure actual records of the sport fishing in the Potagannissing Bay area and to determine indirectly the effect of commercial fishing upon sport fishing in this area, a creel census was conducted in 1937 in parts of the connecting waters which were closed and parts which were open to commercial fishing. Institute Report No. 443 summarized the results of the census taken by the conservation officers of this area. Records were secured for only 240 fisherman days, a number considered too small to be properly representative. However, the average catch per hour for Potagannissing Bay alone was identical with the general average for the state for the previous year (1.4 legal fish per hour). The catch for Potagannissing Bay was slightly below the average for all the connecting waters sampled (1.7) and considerably below that for Waiska Bay (2.6), the only area closed to commercial fishing in which a fair number of fishing records were secured.

During the season of 1938 an attempt was made to secure a larger number of fishing records. This year officers F. W. Nelson, O. G. Dietz, L. E. Jankowski, R. W. Haken, J. D. Stephansky, Irving Ladd, Walker, and Clark O'Brien submitted a total of 629 reports, more than twice the number collected the previous year. Fourteen different regions were sampled this season as compared with five last, and for seven of these 21 or more fisherman days were recorded. The officers secured a census from 361 fishermen in

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areas closed to commercial fishing and 268 records in bays open to commercial fishing.

Catch per hour. The average (weighted) catch per hour for the entire area was 1.8 legal-sized game fish; for waters closed to commercial fishing 1.9, and for waters open to commercial fishing 1.6 fish per hour. The higher figure for waters closed to commercial fishermen was due to the unusually good sport fishing in Waiska Bay (2.9 fish per hour) and to the large number of records from that bay. Yellow perch dominate the catch in this bay and are mainly responsible for the high per-hour yield reported. Fishing was evidently somewhat better in 1938 than in 1937 both in areas closed and open to commercial fishing.

The following figures compare the catch per hour for the principal game fish taken in Potagannissing Bay with the catch per hour for these same species in the eastern half of the Upper Peninsula and in the state as a whole.¹

<u>Species</u>	<u>Potagannissing Bay</u>	<u>Eastern Half of U.P.</u>	<u>Whole State</u>
Small-mouth bass	0.04	0.03	0.03
Yellow perch	1.25	0.52	0.37
Walleyed pike	0.05	0.04	0.03
Northern pike	0.09	0.07	0.05

Evidently fishing for perch in Potagannissing Bay is considerably better than the general average for the rest of the state. Fishing for the other species is also slightly better in Potagannissing Bay, though probably not significantly so except in the case of northern pike. These figures are of especial interest since yellow perch, walleyed pike and

¹ From general census for 1937. Figures for 1938 not yet available. No marked difference in the catch per hour for large districts or for the state as a whole have occurred in the past ten years.

northern pike are also taken by commercial fishing.

Small-mouthed bass fishing appears to be fully as good in Potagannissing Bay as for the average locality in the eastern half of the Upper Peninsula or for the state as a whole. No comparison of bass fishing in closed and open waters in this region is possible for the reason shown below.

Species taken. Small-mouthed bass (with the exception of a single fish) were reported only from waters open to commercial fishing (Potagannissing Bay, Scamon Cove and Reynolds Bay). Yellow perch were the most important fish in nearly all the areas covered by census and made up 71 per cent of the total catch. Northern pike were reported in fair numbers in both open and closed areas. Waiska Bay furnished the greatest variety of fishing as well as the second highest catch per hour. (Johnswood Bay yielded a higher catch per hour, but this was based on only 9 fisherman days.) Trout were recorded only from the St. Marys River (brook and rainbow) and from Waiska Bay (lake trout). Herring came into the catch in St. Marys River and Hay Lake. The species taken and their relative importance in the catch in each area correspond very closely with similar data taken during 1937.

Residence of fishermen (Table 4). As in the previous year's census, Potagannissing Bay and Waiska Bay seemed to attract fishermen from the largest number of counties. Of the total number of fishermen recorded, 507 (80%) were residents of the state; 86 (14%) were non-residents, and 36 failed to give their residence. More than half (366) were from Chippewa County, although Wayne County contributed the second largest number (78).

Conclusions

Creel census reports secured at random by conservation officers during the past two years present no evidence of depleted sport fishing in Potagannissing Bay and other connecting waters between Lake Superior and

Lake Huron. The catch per hour in these waters was as high or higher than the average for the eastern half of the Upper Peninsula and for the state as a whole. The average catch per hour for open and closed waters is almost identical if the exceptional fishing in Waiska Bay is not permitted to overweight the average. Even considering the weighted average, it is doubtful if the difference (0.3) is highly significant.

Based on the data furnished through creel census, it seems highly questionable whether closing Potagannissing Bay to commercial fishing would result in any significant difference in the catch per hour of the sport fisherman. If action is taken to close these waters, it is urged that a similar census be conducted for at least five years following, in order to determine the effect of such closure.

INSTITUTE FOR FISHERIES RESEARCH

A. S. Hazzard
Director

TABLE 1. GENERAL CREEL CENSUS DATA ON CONNECTING WATERS BETWEEN
LAKE SUPERIOR AND LAKE HURON, 1938

Name of water	No. of fishermen	No. of fishermen taking no fish		Total No. of Hours Fished	No. of legal fish caught	Catch per fisherman	Catch per hour	Ave. size of all fish caught (inches)	No. of under-sized fish caught	No. of hours per fisherman day
		No.	%							
Waiska Bay	137	16	12	469.50	1,354	9.9	2.9	8.6	788	3.4
Potagannissing Bay	165	57	35	482.50	772	4.7	1.6	8.8	385	2.9
St. Marys River	97	47	48	294.75	365	3.8	1.2	12.0	...	3.0
Below Power House	59	25	42	196.75	74	1.3	0.4	20.1	...	3.3
Whitney Bay	63	14	22	191.50	355	5.6	1.9	9.7	164	3.0
Sturgeon Bay	30	3	10	125.25	203	6.8	1.6	7.0	172	4.2
Seamon Cove	32	15	47	72.50	77	2.4	1.1	9.9	22	2.3
Reynolds Bay	18	2	11	45.50	66	3.7	1.5	11.8	22	2.5
Pike Bay	8	...	...	28.00	60	7.5	2.1	9.1	24	3.5
Hay Lake	5	...	...	18.00	21	4.2	1.2	9.2	...	3.6
Johnswood Bay	9	...	...	28.00	96	10.7	3.4	10.4	...	3.1
Maxton Bay	2	...	...	6.00	7	3.5	1.2	7.9	7	3.0
Bay Mills	2	2	100	8.00	...	...	...	...	...	4.0
Huron Bay	2	1	50	3.00	1	0.5	0.3	20.0	...	1.5
Total or average	629	182	29	1,969.25	3,451	5.5	1.8	9.2	1,584	3.1

TABLE 2. COMPARISON OF CREEL CENSUS DATA FOR AREAS CLOSED
AND THOSE OPEN TO COMMERCIAL FISHING IN CONNECTING WATERS
BETWEEN LAKE SUPERIOR AND LAKE HURON, 1938

Closed to Commercial Fishing

Name of water	No. of fishermen	No. of fishermen taking no fish		Total No. of hours fished	No. of legal fish caught	Catch per fisherman	Catch per hour	Ave. size of all fish caught (inches)	No. of under-sized fish caught	No. of hours per fisherman day
		No.	%							
Waiska Bay	137	16	12	469.50	1,354	9.9	2.9	8.6	788	3.4
St. Marys River	97	47	48	294.75	365	3.8	1.2	12.0	...	3.0
Below Power House	59	25	42	196.75	74	1.3	0.4	20.1	...	3.3
Whitney Bay	63	14	22	191.50	355	5.6	1.9	9.7	164	3.0
Hay Lake	5	...	...	18.00	21	4.2	1.2	9.2	...	3.6
Total or average	361	102	29	1,170.50	2,169	6.0	1.9	9.6	952	3.2
Simple average						5.0	1.5	11.9		3.3

Open to Commercial Fishing

Name of water	No. of fishermen	No. of fishermen taking no fish		Total No. of hours fished	No. of legal fish caught	Catch per fisherman	Catch per hour	Ave. size of all fish caught (inches)	No. of under-sized fish caught	No. of hours per fisherman day
		No.	%							
Potagamissing Bay	165	57	35	482.50	772	4.7	1.6	8.8	385	2.9
Sturgeon Bay	30	3	10	125.25	203	6.8	1.6	7.0	172	4.2
Seamon Cove	32	15	47	72.50	77	2.4	1.1	9.9	22	2.3
Reynolds Bay	18	2	11	45.50	66	3.7	1.5	11.8	22	2.5
Pike Bay	8	...	...	28.00	60	7.5	2.1	9.1	24	3.5
Johnswood Bay	9	...	...	28.00	96	10.7	3.4	10.4	...	3.1
Maxton Bay	2	...	...	6.00	7	3.5	1.2	7.9	7	3.0
Bay Mills	2	2	100	8.00	...	...	...	...	...	4.0
Huron Bay	2	1	50	3.00	1	0.5	0.3	20.0	...	1.5
Total or average	268	80	31	798.75	1,282	4.8	1.6	8.8	632	3.0
Simple average						5.0	1.6	10.6		3.0

TABLE 3. NUMBER AND AVERAGE SIZE OF FISH CAUGHT, BY SPECIES, ON THE NUMBER OF FISHERMAN DAYS INDICATED IN TABLE 1

Species	Waika Bay		Potagannissing Bay		St. Marys River		Below Power House		Whitney Bay		Sturgeon Bay		Scamon Cove		Reynolds Bay		Pike Bay		Hay Lake		Johnswood Bay		Maxton Bay		Bay Mills		Huron Bay		Total				
	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	No.	Ave. Size	Number	Catch per hr.	Ave. Size		
Brook Trout	...	...	...	...	3	14.7	4	16.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	.004	15.9
Rainbow Trout	...	...	...	...	9	21.4	4	17.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	.007	20.3
Largemouth Bass	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	14.0	2	10.0	...	...	...	...	...	...	3	.002	11.3
Smallmouth Bass	...	...	27	11.7	...	...	...	...	1	14.0	...	...	7	12.6	48	12.2	...	...	...	...	1	13.0	...	...	...	...	...	...	...	84	.04	12.1	
Bluegill	1	7.0	...	...	...	...	...	...	9	7.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	.005	7.0	
Sunfish	6	7.0	...	...	...	...	...	...	6	7.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	.006	7.0	
Yellow Perch	1230	8.3	637	7.9	...	...	...	...	194	7.9	202	6.9	65	9.0	14	9.0	38	7.3	...	...	80	9.0	5	7.0	...	...	...	...	...	2,465	1.25	8.1	
Rock Bass	7	8.0	53	7.2	11	7.0	...	...	82	7.2	...	...	...	...	...	...	13	7.0	...	...	...	...	...	...	...	...	...	...	...	166	.08	7.2	
Walleye	1	20.0	12	22.7	23	16.8	66	20.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	102	.05	19.9	
Northern Pike	36	19.6	43	17.4	11	16.9	...	...	61	19.0	1	18.0	5	18.5	3	16.3	9	19.8	1	34.0	14	18.1	...	...	...	...	...	...	...	184	.09	18.6	
Bullhead	71	8.6	...	...	...	...	...	...	1	11.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	72	.04	8.6	
Lake Trout	2	23.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	20.0	3	.002	22.0
Suckers	...	...	...	...	23	16.4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	.01	16.4
Herring	...	...	...	...	269	8.0	...	...	...	...	...	...	...	...	...	...	...	20	8.0	...	...	...	...	...	...	...	...	...	...	...	289	.15	8.0
Whitefish	...	...	...	...	16	12.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	.008	12.0
Dogfish	...	...	...	...	...	...	...	...	1	21.0	...	...	...	...	1	20.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	.001	20.5
Total and average size	1354	8.6	772	8.8	365	12.0	74	20.1	355	9.7	203	7.0	77	9.9	66	11.8	60	9.1	21	9.2	96	10.4	7	8.1	...	...	1	20.0	3,451	1.8	9.2		

On quite a few fish...

TABLE 4. RESIDENCE OF FISHERMEN BY COUNTY AND STATE

County	Waika Bay	Potagan-nissing Bay	St. Marys River	Below Power House	Whitney Bay	Sturgeon Bay	Scamon Cove	Reynolds Bay	Pike Bay	Hay Lake	Johnswood Bay	Maxton Bay	Bay Mills	Huron Bay	Total *
Allegan	...	3	...	...	...	...	...	...	...	...	...	...	...	...	3
Benzie	...	4	...	...	...	...	...	...	...	...	...	...	...	...	4
Berrien	...	3	...	...	...	...	...	...	...	...	...	...	...	...	3
Calhoun	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Cheboygan	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2
Chippewa	98	62	86	51	7	30	12	8	2	5	2	...	1	2	366
Delta	...	...	...	4	...	...	...	...	...	...	...	...	...	...	4
Dickinson	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Emmet	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2
Genesee	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2
Ingham	...	6	...	...	...	...	...	...	...	...	...	...	...	...	6
Isabella	...	8	...	...	...	...	...	...	...	...	...	...	...	...	8
Jackson	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Kent	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2
Livingston	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2
Luce	7	...	...	...	...	...	...	...	...	...	...	1	1	...	8
Macomb	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Mackinac	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Missaukee	...	...	...	...	4	...	...	...	...	...	...	...	...	...	4
Tuscola	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2
Wayne	23	23	...	...	15	...	5	5	3	...	4	...	...	...	78
Saginaw	...	6	...	...	...	...	...	...	...	...	...	...	...	...	6
Total	131	121	89	57	27	30	19	13	5	5	6	...	2	2	507 (80%)
Unknown	...	23	1	...	6	...	6	...	...	...	...	...	...	...	36 (6%)
States															
Florida	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Illinois	1	3	2	2	...	...	...	...	1	...	...	...	...	...	9
Indiana	2	1	2	...	...	...	...	...	...	...	...	...	...	...	5
New York	...	...	...	...	...	...	...	5	...	...	...	...	...	...	5
Ohio	3	17	1	...	30	...	7	...	2	...	3	2	...	...	65
Wisconsin	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Total	6	21	7	2	30	...	7	5	3	...	3	2	...	...	86 (14%)
Grand Total	137	165	97	59	63	30	32	18	8	5	9	2	2	2	629

* 80% of the anglers were residents; 14% were non-residents.