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SUCKER REMOVAL AND DEMONSTRATION NETTING, 1947-1948

By

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The experimental sucker removal program recently initiated was continued and somewhat expanded during the fall, winter and spring of 1947-48.

In recent years the Fish Division of the Michigan Department of Conservation has received frequent requests that suckers be removed from certain inland lakes. Generally, these requests indicate that suckers have increased disproportionately to the game species present, and perhaps at the expense of the game species. Consequently, the Institute for Fisheries Research has conducted a long term investigation of the problem on a lake where the common sucker (C. commersonii) was extremely abundant (Big Bear Lake, Otsego County). This investigation while not as yet complete, has adequately demonstrated that the suckers can be profitably harvested with no ill effects on the game fish crop present. In fact, all evidence to date suggests that the removal of the suckers from this lake has been beneficial to the game species and has brought about a more favorable balance.

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Before reporting in detail the results of the netting done in 1947-48 it might be well to bring the reader up to date on past results. The first commercial harvesting of suckers from inland lakes of which we have records was done at East Twin Lake, Montmorency County, in the winter of 1936-37. At that time 2,041 adult suckers having a weight of 4,338 pounds were removed. Local fishermen contend that fishing in East Twin Lake was improved thereby. East Twin Lake was originally selected for an intensive study of the sucker, but investigation in 1939 indicated that the walleye and not the sucker was then the most abundant species. In the winter of 1939-40 suckers and other rough fish were harvested commercially from Black Lake, Cheboygan County. At this time 7,225 suckers weighing 16,256 pounds, and 668 mullet weighing 4,091 pounds were harvested. In 1940 an intensive study of the importance of the sucker in inland lakes in Michigan was initiated at Big Bear Lake, Otsego County. This investigation has consisted of population analyses, creel census, food and growth studies to provide comparative data to judge the effect of sucker removal. In the spring of 1943 the planned reduction of the sucker population was completed. At this time the sucker population was reduced to a very low level by the removal of 5,778 suckers, or 10,400 pounds. Since the spring of 1943 the sucker population in Big Bear Lake has been allowed to replace itself, but to date the replacement has been fairly slow. In brief, results at Big Bear Lake have indicated that suckers can be profitably harvested from selected inland lakes, and that all evidence to date indicates that the effects on the game fish crop are beneficial. The necessary experimental evidence for harvesting suckers was gathered at Big Bear Lake, and since that time the program has been somewhat expanded.

In 1945-46 suckers were harvested from Grand Lake, Presque Isle County. At this time 6,645 suckers having an approximate weight of 13,290 pounds were removed by commercial fishermen operating under permit with close supervision by the Department. In the spring of 1947 certain other lakes were selected for experimental sucker fishing. Results are listed below:

<u>Lake</u>	<u>County</u>	<u>Number of suckers</u>	<u>Weight in pounds</u>
Burt	Cheboygan	7,367	19,154
Carp	Emmet and Cheboygan	8,991	22,477
Hubbard	Alcona	5,468	14,217
Mullett	Cheboygan	675	1,755

In the summer of 1947 a small amount of demonstration netting was done, and a few more suckers were harvested. Results are briefly outlined below:

<u>Lake</u>	<u>County</u>	<u>Number of suckers</u>	<u>Weight in pounds</u>
Black	Cheboygan	187	467
Burt	Cheboygan	106	276
Mullett	Cheboygan	54	140

Up to the winter of 1947-48 some 95,000 suckers have been harvested from certain inland lakes. This represents 47.4 tons having a value of not less than \$4,740. Actually the value is probably somewhat higher. Generally, suckers in lakes are more or less unavailable to sport fishermen, and the potential crop is not fully utilized. Information to date indicates that in those lakes where the sucker has become a dominant species it can and probably should be harvested. Also, in certain selected large lakes such as Burt and Hubbard lakes the sucker probably can be profitably harvested, even though it does not occupy a dominant position in the population.

A second result of the commercial netting in these lakes has been to demonstrate the presence of large numbers of game fish. In all instances the public has been made welcome, and even encouraged to watch the operations.

More detailed information on past results from commercial fishing is available in various Institute reports from which the foregoing has been summarized. (See I.F.R. Reports Nos. 590, 595, 651, 653, 653A, 918, 1045, 1119, 1130, 1157.)

During 1947-48 netting was done in the following lakes:

Burt Lake - Cheboygan Co. - 11/7/47 to 5/10/48. 144 lifts.
Mullett Lake - Cheboygan Co. - 11/7/47 to 1/17/48; 3/26/48 to 4/13/48. 20 lifts.
Black Lake - Cheboygan & Presque Isle Cos. - 11/7/47 to 4/23/48. 87 lifts.
Hubbard Lake - Alcona Co. - 11/19/47 to 12/30/47; 4/5/48 to 4/29/48. 58 lifts.
VanEtten Lake - Iosco Co. - 3/26/48 to 4/28/48. 39 lifts.

It can be seen above that the amount of netting in each lake varied, and that it was not continuous in all lakes. In Burt and Black lakes nets remained in the water continuously throughout the period.

Results of the netting are summarized in the following table (Table 1).

In all lakes the fishing was done by commercial fishermen under permit from the Conservation Department. They were permitted to sell suckers and certain other species on the open market. All or nearly all¹ game fish were returned to the water alive and unharmed. Naturally, the major effort was devoted to the capture of suckers, and not much effort was made to move nets about so that fish from all habitats could be sampled.

¹ Very few game fish were injured or killed in the netting operation. Occasionally small northern pike gill in the leads but careful inspection of the lifts by Department personnel has proven that such mortality is so small that it can be disregarded.

Table 1.--Netting summary for certain Michigan lakes, 1947-1948.

Lake	Date	Number of lifts	Suckers	Crappies ¹	Walleye	Rock bass	Bull-head	Sheeps-head	Perch	Northern pike	Red-horse ²	Lawyer	Bowfin	Small-mouth bass	Pumpkin-seed	Large-mouth bass	Carp	White-fish	Cisco	Rain-bow trout	Rock sturgeon	Muskel-lunge	Catfish	Lampreys ³	Brown trout	Brook trout	Sea lamprey	Total
Burt	11/7/47- 5/10/48	144	11,795	...	5,084	1,768	1,770	...	27	478	...	395	259	145	36	182	11	4	37	11	2	1	...	3	1	1	2	22,012
Mullett	11/1/47- 1/17/48 3/26/48- 4/29/48	20	164	...	127	184	274	...	1	15	...	...	62	42	5	...	...	1	...	26	1	...	...	...	...	1	...	903
Black	11/7/47- 4/23/48	87	831	...	1,967	1,313	406	...	1	223	282	9	18	23	105	3	...	...	...	...	4	4	...	2	...	...	...	5,191
Hubbard	11/19/47- 12/30/47 4/5/48- 4/29/48	58	5,347	...	38	120	224	...	1,670	621	...	3	...	15	42	...	...	126	34	31	...	...	...	...	...	...	...	8,271
VanEtten	3/26/48- 4/28/48	39	661	16,725	731	1	182	2,686	31	94	667	2	8	29	39	...	129	...	13	15	...	...	6	...	2	...	...	22,021
Totals		348	18,798	16,725	7,947	3,386	2,856	2,686	1,730	1,431	949	409	347	254	227	185	140	131	84	83	7	5	6	5	3	2	2	58,398

¹ Probably includes both black and white crappies.
² Includes rubreques and anisurum.
³ Native species.

It can be noted from an examination of the table (Table 1) that the amount of netting varied from one lake to another, and that the time at which the netting was done also varied. In Burt and Black lakes the period extended through the winter. It is of considerable interest to note the fluctuation of the catch through this period. The composition of the catch is illustrated by histograms (Figs. 1-6).² Each column represents 10 lifts and approximately the same length of time. In all instances the poorest fishing occurred in mid-winter under heavy ice cover. In general, there was fairly good fishing for all species prior to the formation of the ice cover, followed by very poor fishing and a second production peak after the break-up. There is some indication that the best period had already passed when netting was resumed in the spring.

In the following table (Table 2) results of 1947 are compared with those in 1948. For the other lakes we do not have data which are directly comparable.

In Burt Lake in 1948 the catch of game fish was significantly larger. This may in part be explained by the nets set in Maple Bay, but also there was a larger catch of game fish in the vicinity of the mouth of the Sturgeon River. There is some indication perhaps that the removal of 22 1/2 tons of suckers from Burt Lake may have had some beneficial effect. In 1948 suckers represented 66 percent of the catch, as compared with 83 percent in 1947. I think these data suggest that although the available sucker crop has not been greatly reduced the relative position of the sucker population has been changed by the two years of netting.

² Figures are on file with the Institute copy of this report.

Table 2

Comparison between netting in 1947 and 1948.

Burt Lake - 1947 - 3/21/47 - 5/13/47

Burt Lake - 1948 - 3/22/48 - 5/10/48

	Total catch		Catch per lift		Percent		1947	1948
	1947	1948	1947	1948	1947	1948		
Sucker	7,367	9,958	134	172	82.6	65.8	16.9%	30.7%
Walleye	1,121	3,259	20	56	12.6	21.5	game	game
Largemouth bass	164	177	3	3	1.8	1.2	fish	fish
Northern pike	78	149	1	3	1.0	1.0		
Rock bass	70	867	1	15	1.0	5.7	26	80
Smallmouth bass	53	120	1	2	0.5	0.8	game	game
Bowfin	22	115	...	2	...	0.8	fish	fish
Rainbow trout	18	23	...	...	...	...	per	per
Lawyer	16	89	...	2	...	0.6	lift	lift
Pumpkinseed	3	28	...	...	...	...
Sturgeon	2	...	...	...	...	...
Perch	1	12	...	...	...	...
Redhorse	1	...	...	...	...	...
Cisco	1	...	...	...	...	...
Bullhead	...	306	...	5	...	2.0		
Other	...	21	...	...	...	...
Totals	8,917	15,125	161	261	100.0	100.0		

Comparison between netting in 1947 and 1948.

Hubbard Lake - 1947 - 4/18/47 - 5/22/47

Hubbard Lake - 1948 - 4/5/48 - 4/29/48

	Total catch		Catch per lift		Percent		1947	1948
	1947	1948	1947	1948	1947	1948		
Sucker	5,468	5,233	114	194	89.3	87.1	10.7%	9.4%
Perch	311	436	7	16	5.1	7.3	game	game
Northern pike	90	60	2	2	1.5	1.0	fish	fish
Walleye	66	38	1	...	1.1	...		
Bullhead	55	168	1	6	1.0	2.8	14	21
Rock bass	52	7	1	...	1.0	0.1	game	game
Whitefish	50	43	1	2	1.0	0.7	fish	fish
Smallmouth bass	17	4	...	...	...	...	per	per
Rainbow trout	9	13	...	...	...	0.2	lift	lift
Pumpkinseed	2	8	...	...	...	...
Brook trout	1	...	...	...	...	...
Catfish	1	...	...	...	...	...
Gar	1	...	...	...	...	...
Totals	6,123	6,010	128	223	100.0	100.0		

While netting was in progress local residents were encouraged to watch the operations, and in general, the program was well received. At Black Lake there was some opposition, for apparently some folks felt that the nets interfered with the run of large common suckers (locally called "mullet") up the Black River. Consequently, nets were removed from Black Lake before the period of best fishing had been reached.

It is recommended that suckers be harvested from inland lakes where investigation indicates that conditions warrant the effort and where the local fishing is not adequate to utilize the crop.

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