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ACTIVITIES OF FISHERIES BIOLOGIST, 1947, DISTRICT NO. III

by

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The activities of the biologist in District No. III during 1947 can be roughly divided into four phases:

I. Rough fish removal and demonstration netting

II. Big Bear Lake investigation

III. Investigations of a general nature on waters within the district

IV. Public relations

I. Rough Fish Removal and Demonstration Netting

The netting program was of perhaps greatest general interest. The work was done by commercial fishermen, under direct supervision of Fish Division personnel. Certain commercial fishermen were issued permits allowing them to market rough fish (suckers, carp, lawyers, dogfish, gar pike) caught in specified inland lakes. The money obtained by selling these rough fish was the only compensation they received. The nets used were trap nets (so-called "small subs"). Along with the rough fish, large numbers of adult game fish were caught. These were returned to the water. Nets were lifted as often as necessary to prevent any loss

of fish through injury in the nets. Mortality in all instances was negligible. The program was given publicity, and the public was encouraged to watch the operations.

The work was started in March, and discontinued temporarily about May 20. The late winter and early spring netting was done in Burt, Mullet, and Carp lakes in Cheboygan County, and in Hubbard Lake, Alcona County. Results are summarized in detail in Institute Report No. 1119.

Investigations at Big Bear Lake, Otsego County, have shown that suckers may be harvested from inland lakes with no ill effects on the game fish population. (The Big Bear Lake investigation is continuing and more complete information on the effect of sucker removal will be available later). However, inasmuch as it has been demonstrated that suckers can be removed with no harmful results, it was decided to expand the program somewhat on a more or less experimental basis. The Fish Division has received numerous requests for removal of suckers and other rough fish and it now appears that the removal of suckers[1] at least, is good fisheries management. The sucker crop has a considerable, and perhaps increasing, commercial value and its removal is probably beneficial to the game fish in the lake. There were about 28 or 29 tons of suckers removed from the four lakes. This harvest had a value of not less than $2,800 or $2,900, and represented wages of about $700 per fisherman.

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[1] The removal of predatory species, such as lawyers, dogfish, and gar pike is perhaps not so desirable, especially in lakes with large pan fish populations. However, since in this particular operation dogfish and lawyers were caught in only limited numbers, and since the public was completely in favor of their removal, it was thought wise to include other rough fish besides suckers on the permit.

The second purpose of the netting was to demonstrate to fishermen that adult game fish were present in the lakes in good numbers. From this point of view results were generally very satisfactory. (See I.F.R. Report No. 1119). In all four lakes the catch of game fish was good, even though most of the effort was directed towards the capture of suckers. Certain results of especial interest might be mentioned:

1. In Hubbard Lake whitefish were found to be quite numerous, and also the largest pikeperch ever recorded for the state were caught.

2. In Mullet Lake a single net set overnight caught more pikeperch than were transferred over the dam at Cheboygan during the entire five-week period of that operation. Also, the Mullet Lake pikeperch averaged much larger in size than those transferred.

3. At Carp Lake the population of game fish was found to be very large. Largemouth bass, bluegills, northern pike, and pikeperch were all found to be abundant.

As a continuation of the same project some netting was done for a week in mid-summer.[1] The netting during this brief period was primarily for demonstration purposes. The work was done on Burt, Mullet and Black lakes between July 25 and August 2. It has been the belief of fisheries workers that spring and fall are the most productive fishing seasons. However, most of the fishing in Michigan is done in mid-summer and we wanted to raise some nets when summer visitors could be present. Results

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[1] During this period the fishermen were compensated for the use of nets, trucks, boats, and motors at the rate of $10.00 per day. They were also permitted to market any rough fish caught.

were good, and the program was for the most part well received. Fairly large numbers of game fish were caught in all lakes. However, it was evident that fish could be more readily captured in spring and fall, at least in so far as trap nets were concerned. The same is probably true of sport fishing. Results of this demonstration are summarized in I.F.R. Report No. 1130. Briefly, in the three lakes 1,868 fish were caught in a week's time, of which 1,437 or 77 percent were game fish. Bullheads, herring, and sturgeon were not considered as game fish.

Netting of a similar nature to that mentioned in the first part of this report is now in progress on some of the same lakes, and one additional one, Van Etten Lake, in Iosco County.

II. Big Bear Lake Investigation – Otsego Co.?

The Big Bear Lake investigation was continued in 1947. Creel census was continued. Sucker spawning was observed and it is evident that the population of adults is at present small, probably less than 500 individuals. However, the few spawners present are reproducing successfully. A few adults were removed in the fall of 1946, but since that time the population has not been disturbed. It is our intention to allow the sucker population to build up again to approximately its former numbers. This may happen quickly, or may take some years. However, in order to evaluate the economic position of suckers in our inland lakes it will be necessary to follow through the cycle at Big Bear Lake; first, to determine how the return of the suckers will affect the game fish; and second, to give us a guide in setting up a management program for harvesting the suckers from other inland lakes, either commercially or as a sport.

In May 1947, it was noted that small perch (of scarcely legal size) were again becoming very abundant in the lake. This was a disappointment for during 1946 perch fishing was excellent. That year something over 12,000 perch were removed from the lake, and they had a good average size. In 1947, only 8,000 perch were kept, and these averaged smaller than those caught in 1946. Even 8,000 is more than were caught any previous year, except 1946, but the drop was not anticipated so quickly. It is just another indication that many pan fish suffer more through under fishing than from over fishing. I am sure that the smaller harvest was caused not by fewer perch, but by fewer desirable perch. In other words, the production of perch in the lake has already outstripped the fishermen's ability to keep their numbers low enough to permit rapid growth. As soon as the average size drops off, fishermen are no longer interested in devoting major effort to their capture. It is hoped to follow fishing trends in the lake for at least two or three more years. Changes in the quality of fishing for other species besides perch have been noted, but the trend of the perch fishing is perhaps of most immediate concern.

III. General Investigations

General investigations in the district were of several types:

1. Six lakes were checked for their possibilities as potential trout lakes.

Three lakes on the Black River Ranch property (T33N, R1E, Sec. 33) Cheboygan County, were examined to determine their potential use as trout water. The maps and earlier surveys of Silver and Bush lakes indicated that they might be suitable for trout. Both lakes were found to be unstratified, and warm from bottom to top in early August. Therefore,

it was recommended that the tentative plan for poisoning and restocking with trout be abandoned. A third lake on the property, Robarge Lake, was found to be quite shallow, and warm, and therefore unsuited to trout.

Pettifor Lake (T31N, R4W, Sec. 22) Otsego County, was checked in July. The owner had asked for trout from the Fish and Wildlife Service, and the request had been forwarded to Lansing for approval. Before refusing the request it was thought that we should have more accurate information, and consequently the investigation was made at the request of Mr. Cook. The lake was found to be shallow and weed filled. The water was warm and unstratified. No fish of any kind were seen, and the owner reported that so far as he knew no fish other than bullheads were present in the lake. Quite possibly there had been a winterkill sometime in the past three or four years. The lake was completely unsuited to trout.

O'Rourke Lake, Otsego County, (T30N, R3W, Sec. 11, 12) was visited twice during the summer. At present fishing is not good. It is a semi-private lake, but since no attempt is made to exclude the public it was suggested that the lake be stocked with trout. A water analysis in 1946 showed the lake to be well suited for trout. I have visited the lake two or three times since the analysis in the hope of being able to verify the presence of lake trout. However, Conservation Officer Marlatt says that they are present, and that he has seen them in recent years. Brook trout appear to offer the most attractive possibilities. It was recommended that the lake be stocked with trout, their success checked, and that public access be assured, through purchase if necessary.

The inventory on Ocqueoc Lake, Presque Isle County, was made with Mr. Applegate. This survey was made in part to determine the lake's suitability for trout, and as a part of the lamprey investigation. It

was found to be poorly suited to trout in mid-summer, though trout are known to be present in the lake in the spring. The lake does not offer very attractive possibilities as a trout lake.

2. In other instances lakes which were already under a management program were rechecked to test and evaluate existing management. For the most part this consisted of checking on the success of trout introductions in various lakes, but in other instances other programs were rechecked. Lakes investigated and results are briefly listed below:

Antrim County

Green Lake - The lake was visited only once. I was unable to obtain any trout, nor could I get any reports of their presence. Apparently, they have not been successful, and it has been suggested that further introductions be discontinued until the success of earlier plantings can be determined.

Lake Bellaire - Rainbows have done well in this lake, but in common with many of the larger lakes, not many are caught in comparison with the numbers available, However, the introduction of rainbows has made a worthwhile contribution to the fishing in this lake.

Central (Intermediate) Lake - Not checked and until very recently I have received no reports concerning the success of the rainbows planted in this lake. It now appears that a few rainbows have been caught from this lake, and the continued planting of trout is probably worthwhile.

Charlevoix County

Two lakes (Barney's and Fox) on Beaver Island were re-examined. Results indicated that management recommended in I.F.R. Report No. 878 was sound.

Lake Louise - Rainbow trout have been more successful than brook trout. To the best of my knowledge no brook trout have been caught for a couple of years, and I have been unable to recover any. Rainbows continue to be harvested in fair numbers. I have been unable to recover any of the marked smallmouth bass fingerlings planted in this lake. It is suggested that further attempts to plant brook trout along with the rainbows in this lake be discontinued.

Hoffman Lake - Not checked in 1947. Netting in 1946 failed to recover any trout. Conservation Officer Starback reports that few trout have been taken from the lake. It does not appear to be fished very heavily. Until the lake can be checked more thoroughly, the management program now set up should be continued.

Cheboygan County

Silver Lake (T33N, R3W, Secs. 11, 12)- The introduction of trout into this lake has been very successful. Fingerlings planted in 1946 have made excellent growth, and there has been a high rate of survival. Fish from the initial planting have reached a weight of over 10 pounds. Large rainbows were observed spawning in the spring of 1947, but so far as is known no fry were produced. Redds, or the remains of redds, were checked for eggs but none were found. The fishing season was open while the fish were attempting to spawn, and fishermen were wading about, more or less continuously over the gravel where the eggs were being deposited.

Weber Lake - The fingerling brook trout planted in the fall of 1946 have made practically no growth. Survival has been high. They were checked twice in 1947, just after the opening of trout season and just after the close. Of 20 trout caught after a full growing season in the lake, none was of legal size. All were thin and poorly conditioned. Consequently, it has been recommended that stocking be discontinued until the lake can be poisoned.

South Twin Lake (T35N, R2W, Sec. 28) - A voluntary creel census was conducted on this lake. Fishing at present is fairly good for large-mouth bass, bluegills, perch and sunfish. Fish have been collected on two or three occasions, and the lake has been followed fairly close so as to be able to evaluate the effects of the dam to be installed in the outlet in 1948.

Emmet County

Walloon Lake - The inventory was completed in the summer of 1947. The 2-year-old lake trout introduced have made good growth and at present are yielding some return to ice fishermen. It has been recommended, on the basis of the excellent growth made by the first planting, that the rate of introduction be increased somewhat.

Otsego County

Only one of the pothole lakes in the Pigeon River State Forest was checked in any detail. Ford Lake was poisoned in the fall of 1946. During 1947 it came to light that the kill was not complete, although it was first thought to be so. The trout planted in the fall of 1946 have done very well, and it is expected that the lake will furnish good trout fishing until such time as the bluegills again become abundant.

From observations made during the summer, it appears that the pothole lakes are fished very little except early in the season.

3. Complete lake surveys were made on two lakes, and partial fisheries surveys were made on two other lakes and one impoundment. The lakes inventoried were Walloon Lake, Emmet County and Ocqueoc Lake, Presque Isle County. Partial fisheries surveys were made on Carp Lake and Clear Lake, Presque Isle County, and on the impoundment at the outlet of Long Lake, Alpena County. Results of the inventory on Walloon Lake can be summarized briefly by saying that the lake is a more or less typical

cold water lake. Lake trout, herring and smelt are present. The smallmouth bass, while apparently not especially abundant, reach good size. The other warm-water species present are only moderately successful. The other lakes, Ocqueoc, Clear and Carp are more or less typical warm-water lakes. No particular management suggestions are offered, other than that the lakes must be considered as more or less self supporting units. The impoundment at the outlet of Long Lake was examined in some detail. A brief report (I.F.R. Report No. 1137) has been submitted. It was recommended that largemouth bass and bluegills be introduced, and the impoundment be used as a fishing area, rather than as a rearing pond.

4. Reported fish mortality was checked at several lakes in the early spring. These lakes were Douglas Lake, Lake 27 and Otsego Lake in Otsego County, and Lake Louise in Charlevoix County. In all instances the mortality was relatively small, consisting mainly of small perch, with some bluegills, sunfish and suckers. At Lake Louise three largemouth bass of large size were picked up. All were covered with "fungus," possibly a result of spawning activities. Loss could be attributed to nothing other than normal spring mortality which seems to occur frequently with the first warm weather.

5. Approximately a month was devoted to the investigation of spawning runs of the sea lamprey. All reports were checked and two or three new runs were verified. These are listed below very briefly. The information has been relayed to Mr. Applegate.

Antrim Creek, Antrim County T32N, R9W, Sec. 14	Specimen
Mitchell Creek, Antrim County T30N, R9W, Sec. 22	Specimen
McGeach Creek, Charlevoix County T33N, R8W, Sec. 33	Specimen

(Thanks are due to Conservation Officer Miles for the above specimens. He also secured some very interesting specimens from whitefish and herring in Grand Traverse Bay. Those from Grand Traverse Bay were small, some of them being only 6 inches in length, but fully matured, and feeding parasitically).

Loeb Creek, Charlevoix County T33N, R8W, Sec. 1	Specimen
Green Creek, Cheboygan County T38N, R2E, Sec. 31	Personally observed, but no specimen
Sturgeon River, Cheboygan County T33N, R3W, Sec. 6	One specimen seen by me at dam below rearing ponds
Mud Creek, Cheboygan County T38N, R3W, Sec. 20	Specimen

Specimens have been seen this winter (1948) from fish caught in both Burt and Mullet Lakes, so it is apparent that there is a resident population in both of these lakes. It seems probable that several runs have not yet been actually observed, for example, in Strover Creek, Charlevoix County.

6. The effectiveness of "spot" versus boat plantings of adult rainbow trout was tested through a marking experiment conducted on the Sturgeon River. It was carried out in conjunction with similar experiments conducted on other waters. The results of these experiments are at present being summarized by Dr. Shetter. Results on the Sturgeon River were not particularly conclusive, but in general they were slightly in favor of the boat plantings.

7. Another item of some interest was the development of a small portable trap-net having a total weight of 60 or 70 pounds, including anchors and lines. It was designed to supplement the experimental gill nets and large trap nets currently being used by the Institute for fish

collection and population studies. The net has been in use since August, and has given satisfactory results. It has limitations, but some of the faults of the gear we have been using have been eliminated, and I think it will prove to be a very useful tool in collection of fish, and in making population studies. It is presently planned to have five additional small trap nets constructed. These will have certain improvements over the original model.

8. Assistance was given on various projects being conducted by members of the Institute staff, such as population studies, lamprey investigation, fertilization program.

IV. Public Relations

It has been necessary to spend some time on public relations. In the case of the rather extensive netting program which we undertook, the time spent with individual sportsmen, and organized groups was well worthwhile, for it enabled us to do the work with a minimum of opposition or criticism. The biologist attended sportsmen's meetings when asked to do so. It is felt that a certain amount of time must be devoted to activities of this sort so that local sportsmen can be informed accurately and completely of the Fish Division program, its objects and results. For the most part, the time spent is well repaid by the resulting lack of adverse criticism.

INSTITUTE FOR FISHERIES RESEARCH

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