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A PARTIAL SURVEY OF LAKE MARY, DICKINSON COUNTY

by

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While in Norway, Michigan, during the summer of 1945, Mr. William Cristanelli and the writer were urged by Mr. William Asselin of the Norway Restoration Association to make a partial survey of Lake Mary of the Hamilton Lakes chain.

The Hamilton Lakes are the most popular and most important fishing lakes in the vicinity of Norway. According to reports, fishing has been getting poorer each year until 1945 when it was practically impossible to catch a fish in Lake Mary. Apparently (from reports) fishing started to fall off as soon as plantings of walleyed pike fry and smallmouth bass fingerlings and adults were discontinued. Since it takes from three to four years to produce a legal bass or walleye in the average Michigan lake, there could hardly be any connection between the cessation of stocking and immediate poorer fishing. During the 10 year period between 1934 to 1943 the following fish were planted in Lake Mary:

Smallmouth bass 1,200 fingerlings

Smallmouth bass 100 adults

Largemouth bass 5,350 fingerlings

Walleyed pike	2,640,000 fry
Perch	5,000 fingerlings
Bluegills	71,100 fingerlings
Bluegills	200 adults

Many sportsmen believed that a screen and/or a fish ladder should be installed in the outlet of Lake Mary to prevent the migration of fish out of the lake or to facilitate movement of fish into the lake. This particular problem was discussed in a memorandum of August 30, 1944 by Dr. A. S. Hazzard. Nothing had been done up until the first of August 1945 to carry out the recommendations that were made by Dr. Hazzard.

On the afternoon of July 31, Mr. Cristanelli and the writer met with a group of between 15 and 20 interested sportsmen at Lake Mary. Several hours were spent discussing the current fish management policies of the Fish Division and in answering questions brought up by individual members.

The partial survey of Lake Mary was made on August 3 and 4, 1945.

We wish to express our appreciation for the cooperation and assistance extended by members of the Norway Restoration Association and by Conservation Officer John Andrews.

Lake Mary (T. 39N., R. 28,29W., Sec. 19,30,24,25) has an estimated area of 73 acres and a maximum depth of at least 80 feet. A channel that is deep enough and wide enough to afford passage for small boats, connects Lakes Mary and Louise. The outlet, Hamilton Creek, empties into the Sturgeon River just above its point of entrance with the Menominee River.

The water in Lake Mary is extremely clear. The lake bottom in shallow water is composed mainly of sand. A great deal of this shallow water area

is almost entirely devoid of aquatic vegetation although several excellent weed beds are to be found in the lake.

The surface water temperature of Lake Mary on August 3 was 75°F., while the temperature at 80 feet was 45°F. A thermocline (a zone in which there is a rapid change in temperature) was present between the depths of 10 and 20 feet. Dissolved oxygen varied from 9.7 parts per million at the surface to 2.1 parts at a depth of 70 feet. Sufficient oxygen to support fish life was present to a depth of over 40 feet. The water was hard (methyl orange alkalinity varied from 162 to 184 parts per million). Hard water lakes are usually more productive than are soft water lakes.

Seining on July 31, yielded numerous young-of-the-year perch, smallmouth and largemouth bass indicating that natural reproduction for these species was successful in Lake Mary. Over 100 bluegill and sunfish spawning beds were observed about the lake, showing that these species do spawn in Lake Mary. No minnows were taken by seining and none were observed about the shore.

Four experimental gill nets were set in Lake Mary on the afternoon of August 3 and were lifted on the morning of August 4. Because we were interested in obtaining a good sample of ciscoes which were reported to be present in Lake Mary, only one net was set in shallow water (5 to 7 feet). The other three nets were set at depths ranging from 10 to 25 feet (2 nets) and 25 to 40 feet. The following fish were taken in the four nets:

1 northern pike - 20.6 inches

9 perch - 6.3 to 12.4 inches

1 smallmouth bass - 13.3 inches

2 largemouth bass - 5.3 to 5.9 inches

2 bluegills - 4.6 to 4.7 inches

2 sunfish - 3.6 to 4.0 inches

1 common sucker - 18.5 inches

10 cisco - 14 to 16 inches (average weight about 1 1/2 pounds)

Not too many warm-water fish such as bass and bluegills were taken in our nets because these species are not generally found in deep water. Many more fish would have been taken if all nets had been set in shallow water. It was interesting to us and to the many sportsmen who were on hand to witness our netting, that most of the big (jumbo) perch were taken in deep water. I believe that as a result of our netting, more anglers will fish in deeper water in the future. Apparently plug and fly casting in shallow water near shore has not been very productive. This is partly due, no doubt, to the lack of food and cover in most of the shallow water areas of the lake.

Lake Mary has sufficient deep water containing oxygen, to support trout. A planting of 2,000 legal rainbow trout was recommended for the fall of 1945 and has been made. Similar plantings of legal rainbow trout are to be made in 1946 and 1947. If the rainbow trout plantings are successful in Lake Mary, the legislature should be requested to place this lake on the list of those open to fall rainbow trout fishing.

A recommendation was submitted to Lansing in August of 1945 to open the Hamilton Lakes to fall cisco spearing. The Norway sportsmen were urged to take advantage of this opportunity to "harvest" the ciscoes in these lakes. Methods of catching ciscoes on hook and line were also explained to the sportsmen.

It is also recommended that the Hamilton Lakes be mapped and inventoried as soon as help is again available.

Aside from trout, no other species of fish should be planted in Lake Mary. Natural reproduction for all species is successful and adequate to maintain the population.

Lake Mary is not a very productive lake because of its great depth, clear cold water, and barren shoal areas. Fishing for warm-water fish has been poor because of the lack of suitable habitat for these species. Some form of habitat improvement (such as brush shelters) will probably be recommended when this lake is inventoried.

INSTITUTE FOR FISHERIES RESEARCH

Report approved by A. S. Hazzard

Report typed by E. F. Livingston