Original: Fish Division
cc: Education-Game
Mr. Stanley Shust
Institute for Fisheries Research
R. W. Nebel, Munising, Michigan

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DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
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PARTIAL FISHERIES SURVEY OF PERCH LAKE, ALGER COUNTY

by

A. S. Hazzard

In response to a request by Mr. R. W. Nebel of Munising, Mr. Stanley Shust, Regional Fisheries Supervisor, asked that a check for trout possibilities be made of Perch Lake, Alger County. On September 5, 1944 Mr. Fred Owens of the Marquette Hatchery accompanied me to Perch Lake for this investigation.

Perch Lake is located in T. 46 N., R. 19 W., Sections 8 and 17. It can be reached by a poor, dry-weather dirt road by driving south about 3 miles from M-28. The road would be difficult for a heavy planting unit according to Mr. Owens, but could be negotiated by a pickup truck.

The lake was partially cruised by boat and some soundings were taken. Temperature and chemical analyses were made in the depression between the middle of the east shore and the larger island. An experimental gill net was set upon our arrival at the lake (about 2:00 p.m.) and lifted about 6:00 p.m., when we left. It was located in water from about 15 to 30 feet in depth between the east shore and the island. We examined the catch of two fishermen and talked with Conservation Officer Thorson and two parties of fishermen (one was on the way in as we went out and had a boat on the lake and had fished there often the past summer).

A rather poor U. S. Forest Service outline-bottom contour map of the lake is available. The area of the lake was shown as 12.1 acres, obviously an error since the lake is shown on the county maps as approximately one mile long and of fair width. The Land Economic Survey's estimate was 120 acres and this appeared to be about right. Only one island is shown on Forest Service map but there are at least two.

The lake is in a beautiful setting of rather high wooded hills on the west. The shore is swampy on the southwest with a narrow margin of bog elsewhere along the rather high shores. The timber around the lake is mixed second growth hardwood and conifer of almost merchantable size. No cottages were visible but considerable use of the lake by fishermen was indicated. We do not know the present ownership but public use is permitted.

The drop-off appeared to be rather abrupt along most of the shore. A maximum depth of thirty-one feet was recorded which agrees quite well with the map. The bottom was pulpy peat in deep water and sand or fibrous peat where examined along the shore. There are a number of points and bays so that the shoreline is somewhat irregular. No inlets or outlet are shown on the map but the lake is close to the Anna River. The water is light brown with a Secchi disk reading of only 3 feet.

The surface temperature was 67°F. with an air temperature of 67° also. In the depression between the east shore and the larger island the temperature at 30 feet was 48.9°. The water sample taken from this depth (one foot above the bottom) smelled of hydrogen sulphide and contained no oxygen. Temperatures taken with the reversible thermometer showed a zone of rapid drop (thermocline) between 20 and 30 feet. A test for oxygen at 25 feet (presumably about the middle of this zone) yielded less than one part per million (0.48).

In the depression in the south arm of the lake a maximum depth of 28 feet was found. Here the thermocline was not quite so deep probably because this part of the lake is better protected against wind action. The temperature drop began at about 18 feet and extended to the bottom. A slight odor of hydrogen sulphide was noted and there was no oxygen present at a depth of 25 feet (3 feet above bottom). At 20 feet (in the upper part of the thermocline) the temperature was 52.5° and only a trace of oxygen (not enough to test) was present.

The above tests are sufficient to prove that Perch Lake is not capable of supporting trout. The water to a depth of about fifteen feet is mixed by the wind and would contain plenty of oxygen at least when ice free, but this part of the lake would become too warm for trout during mid-summer. Below about fifteen feet the water would be cold enough for trout but would not contain enough oxygen.

The water is very soft (M.O. reading 19.0 p.p.m.) and acid, at least at 30 feet, where the pH reading was 6.2. Acid waters low in carbonates are generally not very productive of fish food and fish. A heavy water bloom was observed which accounted for the low transparency reading. This bloom was mainly caused by phytoplankton (tiny plants which may be periodically abundant). No examination was made for bottom foods but the low alkalinity, peat bottom and oxygen deficiency indicate that this type of food supply would be poor.

As one might suspect from the nature of the water and the character of the bottom, there are few aquatic plants in Perch Lake. Sparse growths of yellow water lily were seen along the shore in some of the bays and some clumps of horsetail rush here and there along the shores. Some shelter is afforded fish by the bog mat in places and by deadheads which were rather numerous along shore, particularly in the southend of the lake.

The gill net set produced no fish of any kind due perhaps to the short period fished and to the fact that most of the water in which it was set was later found to contain no oxygen. Several bank fishermen had taken a number of small perch and several of fair size. The fisherman who was met on the road on our way out said he had fished the lake considerably this past year and that it contained many perch from 8 to 10 inches in length and many small largemouth bass with an occasional 2 or 3 pound fish. He rated the lake as fair fishing for bass and perch.

A review of the stocking records since 1933 showed that there has been no planting by the state from 1938 to 1943. In 1933 this agency planted 200 largemouth bass (4 months old) and it is this one small planting which apparently established bass in the lake. In 1935 there were 90,000 pike-perch fry planted and in 1937 an additional 150,000 fry of this species, but none have been reported caught. In 1936 there were 10,000 bluegills (5 months old) stocked but apparently this planting also failed.

Recommendations

Another attempt might be made to establish bluegills in Perch Lake since conditions there seem suitable for this species. Generally where the largemouth bass thrives the bluegill will also do well. A planting of 10,000 (5 months) or 2,000 (17 months) bluegills is recommended for 1945. The results should be checked in subsequent years.

No other plantings of fish should be made in Perch Lake at least until further investigations disclose a need. Bass and perch are reproducing successfully and are apparently providing fair fishing, probably as good as can be expected considering the low food production.

Public access should be guaranteed by the purchase of a public fishing site if investigation shows that there is no federal or state ownership

on the lake. No development of the site would be necessary unless the use greatly increases. Although the fishing is not exceptional and probably will never be outstanding, the wild beauty of the lake makes it unusually attractive.

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Report typed by V. M. Andres