

Original: Fish Division ✓
cc: Education-Game
Dr. C. J. D. Brown
Floyd W. Potts
R. H. Rayburn - 3-11-43
Inst. for Fisheries Res.

INSTITUTE FOR FISHERIES RESEARCH
DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
UNIVERSITY OF MICHIGAN

ALBERT S. HAZZARD, PH.D.
DIRECTOR

ADDRESS
UNIVERSITY MUSEUMS ANNEX
ANN ARBOR, MICHIGAN

March 5, 1943

REPORT NO. 851

PARTIAL FISHERIES SURVEY OF A SMALL LAKE (SINK HOLE)
IN SECTION 36 OF PRESQUE ISLE TWP. PRESQUE ISLE CO.

by

C. J. D. Brown and Hugo Kilpela

At the request of Conservation Commissioner R. H. Rayburn of Alpena an Institute for Fisheries Research survey party made a partial survey on a small sink hole lake located in T. 33N., 8 E., Sec. 36 of Presque Isle Co. on Aug. 12, 1942.

The lake was reached by driving north of Alpena on U. S. 23 for about 12 miles, then turning east on County Road 405. A "Kelley Island Lime and Transport Company, Cleveland, Ohio" trespass sign marks this road junction, and it is presumed that this company owns both the lake and the property around it. A rocky road, almost a trail, and passable by car for only a mile, follows the county line and then edges northeastward. The sink hole is between a mile and a half to a mile and three quarters from the junction mentioned above, and a shore path to the left from the main trail leads to it. The party saw two or three holes, some with water and some without, while the actual pond worked by the party was the only one that could be reached by foot. The others were surrounded by precipitous cliffs from 100 to 125 feet high, and they were nothing more than immense holes in the limestone rock. The party carried what equipment they could and hiked in about 3/4 of a mile.

So far as is known, no previous investigations have been made on this lake. Reports indicate that it has no game fish at present and that nothing but forage fish have ever existed there. This lake is reported to be on private property. There is no assurance that the public would be allowed access if fish are planted by the state.

Physical characteristics

This lake or pond is almost circular with a diameter of approximately 300 feet and an area of about one acre. The surrounding country is rugged

✓The personnel of the party was as follows: Hugo Kilpela, leader;
R. D. Van Deusen, Pat Galvin and Stanley Lievensen, assistants.

to rolling, overlying a limestone formation. It is covered with second growth woodland which is quite scrubby in character.

The basin of this lake is almost cone shape increasing in depth from a very narrow shoal to about 50 feet at a distance of 75-100 ft. from shore. The maximum depth is not known since no careful soundings could be made without a boat. This sink hole was literally filled with logs.

Water fluctuation

This lake has no visible inlets or outlets and is presumably fed by springs or seepage. There seemed to be only slight water fluctuation.

The bottom of the shallow areas in the lake was composed of eroded limestone covered in places by a thin layer of organic detritus. No bottom samples were secured from the deeper parts of the lake.

The water was colorless and clear. Objects were visible to a depth of about 20 feet.

Temperature and chemical characteristics

Temperature

The surface water temperature was 72° F. on Aug. 12, 1942. This decreased slowly to a depth of 8 ft. (70° F.) and then very rapidly to a depth of 27 feet (47° F.). Because of the difficulties encountered without a boat, temperatures below this point could not be determined. This is sufficient information to establish the presence of a thermocline.

Oxygen

There was 7.9 ppm of oxygen at the surface. This decreased to 7.2 ppm at 14 feet and to 4.3 ppm at 29 feet. It is evident from these data that cold water fish would find the conditions of temperature and oxygen satisfactory.

The water in this lake is alkaline and distinctly hard (Methyl Orange alkalinity 185-190 ppm).

Biological characteristics

Vegetation

Water milfoil was the most abundant species of the higher aquatic plants. It was limited to regular patches along the shoal. Patches of smartweed, cattails and bulrushes were present in the very shallow water near shore.

Plankton

From very inadequate samples the plankton appeared to be limited in species and numbers.

Bottom food organisms

The only organisms noted were water bugs, water beetles, leeches, and some mayfly nymphs. No special food samples were taken.

Forage fish

Quite a few minnows were seen. The species could not be determined since without nets the party was unable to make collections. No game fish were seen or reported.

Management suggestions

If this lake is open to public fishing the following is recommended.

As soon as convenient, plant the lake with 400-500 fingerling brook trout. Adult trout are not necessary since no large fish are present in the lake. Subsequent plantings may be made as the need arises.

The partial survey gives ample evidence of the suitability of this lake for trout and if trout are successful the lake should be given the trout lake designation.

INSTITUTE FOR FISHERIES RESEARCH

by C. J. D. Brown and
Hugo Kilpela

Report approved by: A. S. Hazzard

Report typed by: T. Maki