Brook Trout Stocking Assessment of Sausage Lake using Brook Trout Index Netting, 2007

File Report

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Sausage Lake is a small (97 ha), moderately deep (Zmax:17 m) lake located in the Laurier Township. From Trout Creek go east on Tower Rd, take the second right turn onto Bruno's Rd, take first left onto private road to access the lake next to the Hydro Dam. This was a follow up assessment to the investigation occurring in the fall of 2004 (Bracebridge area lake file). This investigation was initiated due to concerns expressed through the Water Management Plan (WMP) process concerning change in water levels possibly affecting brook trout (*Salvelinus fontinalis*) spawning habitat in the lower reaches of inflow streams.

A one day netting assessment was done in 2007 to determine presence, abundance and population characteristics of natural brook trout.

Methods

The gill nets prescribed for Brook Trout Index Netting (BTIN) were used (Monroe 2005). Sites were randomly selected and nets were set for 30 minutes as to minimize brook trout mortality. The protocol suggests two mesh sizes for this type of survey, 51mm and 64mm stretched mesh. We also used a third net with a 38mm mesh size in this lake in hopes to catch juvenile fish that might not get caught in larger mesh sizes. Panel length is a standard of 15.2m long and 2.4m high. Each gang of net consisting of three panels of a single mesh size tied together has a total fishing length of 45.6m. A crew size of two people was used, and captured sport fish were weighed, measured and structures were taken for age determination. A temperature and dissolved oxygen (D.O.) profile was recorded to ensure the nets were placed in suitable trout habitat. Minnow traps were also placed in several locations around the lake to assess the forage fish abundance and composition or possibly catch any young-of-the-year (YOY) brook trout.

Results and Discussion

Sampling occurred on August 24th 2007. The surface temperature was approximately 20.5° C. The temperature and D.O. profile was recorded in the deepest section of the lake and shows how temperature and amount of available oxygen decrease as depth increases (Table 1).

Table 1 Temperature-dissolved oxygen profile for Sausage Lake, Aug 24, 2007.

Depth (m)	D.O. (mg/l)	Temp (˚C)
0.1	8.6	20.6
1	8.6	20.5
2	8.6	20.4
3	8.6	20.4
4	8.4	20.1
5	7.3	18.7
6	3.4	14.5
7	2.6	11.8
8	2.4	10
9	2.3	9.3
10	2.1	7.7

Nine net sets and 2 minnow trap sets were completed (Figure 1) on this day, consisting of 3 sets with 64mm mesh, 3 with 51mm mesh, and 3 with the 38mm mesh size. Total net catch over the survey included as follows:

30 smallmouth bass *Micropterus dolomieu*
2 northern pike *Esox lucius*
5 pumpkinseed *Lepomis gibbosus*

The minnow traps did not produce any YOY trout at all. The trap catch was as follows:

12 pumpkinseed *Lepomis gibbosus*

This survey confirms a previous public report from 1992 that smallmouth bass have become established in the lake. They have obviously established a reproducing population and appear to be abundant. The northern pike caught were the first observations of this species in Sausage Lake as well. A 7400 gram northern pike was caught indicating that pike have been present for somewhere in the order of ten years. Like bass, they were undoubtedly stocked intentionally, without authorization. Together, these species are now the dominant predators in the lake and have relegated brook trout to being a marginal species, if not extirpated.

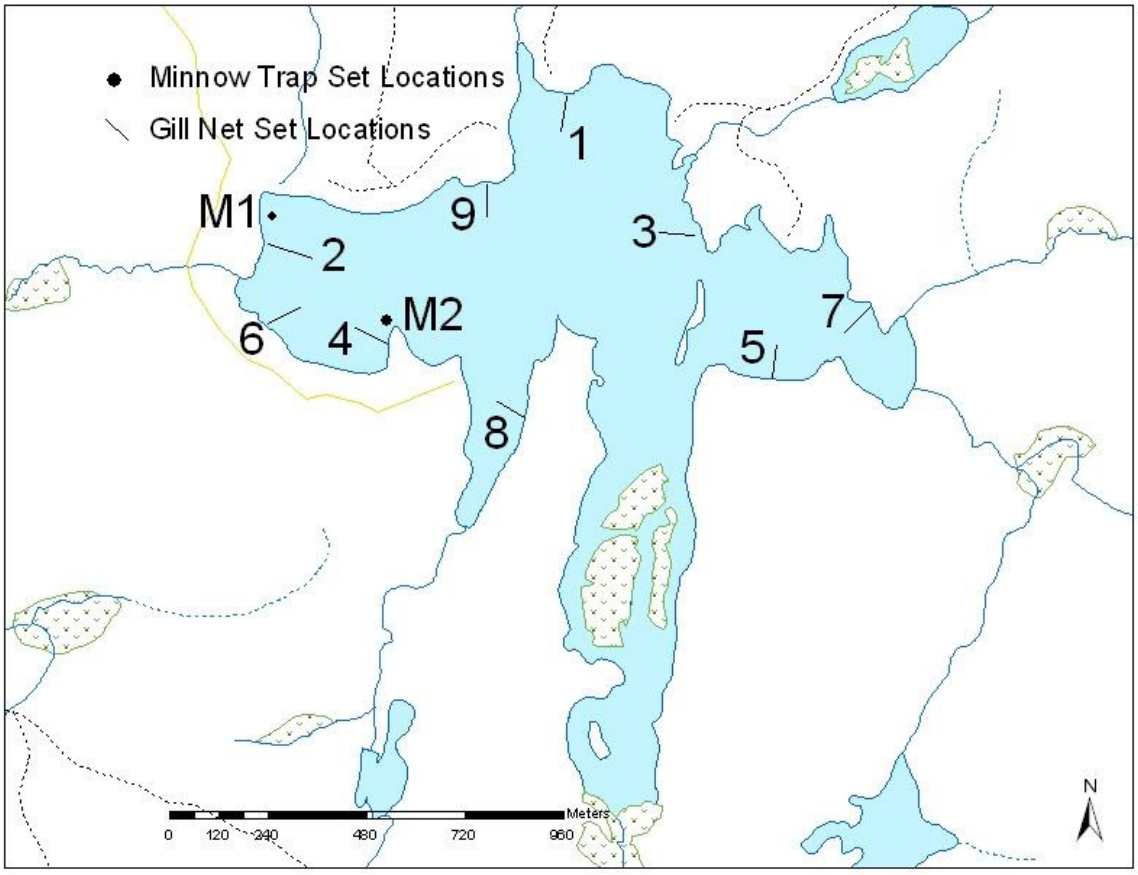


Figure 1 Net set locations for Sausage Lake, Aug 24, 2007.

The absence of any trout in the net catch and failure in 2004 to observe any signs of spawning activity at previous documented sites, confirms that brook trout are no longer present in significant numbers. It is possible that a small population persists and/or that trout enter the lake incidentally from tributary streams. Electro-fishing of dip netting of tributary stream could be done to confirm the presence or absence of YOY or even older brook trout.

No active management for brook trout is recommended because of the hostile fish community and resultant marginal status of the brook trout population.

References

Monroe, B. 2005. Manual of instructions - Draft: Brook Trout Index Netting (BTIN). Ontario Ministry of Natural Resources, Algonquin Fisheries Assessment Unit, Whitney, ON.

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