Blue Paint Lake Post-stocking Assessment

July 2004

File Report

Ministry of Natural Resources,
Bracebridge, Ontario
2008

Blue Paint Lake is located within Livingstone Township. There is no direct access road; access was acquired by turning onto Bear Lake Rd from County Road 12, then portaging 150m from the end of Bear Lake Rd. An alternate access route would be a 183m portage from Kimball Lake.

Blue Paint is a rather small and moderately shallow, spring fed lake with a total surface area of 6.9 ha, maximum depth of 12.2 m, average depth of 7.9m and secchi depth of 4.6 m. The fish community of this lake is largely pumpkinseed sunfish and stocked brook trout. Minnow species present include golden shiners, northern redbelly dace, and creek chub. Brook trout have been stocked at varying intervals since 1980. In the two previous stocking periods significantly fewer fish were introduced than in the past. On May 1st, 2003, 225 fish were stocked (32.7 fish/ha).

Winter creels have been performed on this lake during 1990 and 1993; the 1990 study revealed very little angling effort while the 1993 study revealed no angling effort at all, indicating that there is barely any winter angling pressure on this lake; although both surveys were voluntary in nature. Also, a previous stocking assessment was completed in 1992 as part of a five lake study. The current bathymetric map was sounded in 1967, and the current temperature and dissolved oxygen measurements were last taken in 1989.

During October, 1979, the lake was treated with Warbicide 5 (rotenone) in order to prepare the lake for brook trout planting in 1980. At the time of the application of the piscicide, there were no sport fish present. The fish biomass consisted of yellow perch, common white suckers and the still present minnows. The lake was considered ideal for a brook trout fishery at the time, with surface temperature (10°C in October) and bottom temperature (9.5°C) varied only 0.5°C and there were no natural outlets. Since then an outlet has formed draining though the southern tip of Bear Lake and eventually into Kawagama Lake.

This survey was completed to assess the success of the current stocking schedule and to monitor species composition within the lake.

Methods

The lake was divided into thirteen sections, seven of which were selected at random for netting. The study used 2.0, 2.5 and a single 1.0 inch mesh gillnets, set in half hour durations. Due to unforeseen circumstances, two nets were left in overnight, for a total of 20 hours of fishing time on these nets. Six minnow traps were also set; habitat observations were recorded for each trap station.

Results and Discussion

Over the course of the study, only one brook trout was caught and only then in one of the nets which was left overnight. Four golden shiners were found in the gillnets as well as 52 pumpkinseed sunfish; 51 of the pumpkinseeds were found in the one inch mesh net.

While the lake has been stocked since the 1980's, the number of caught brook trout was minimal. The single individual caught was of expected size for fish stocked the previous year. It is impossible to determine the state of the brook trout fishery with one recorded catch, but this also suggests that the population depends on stocked individuals with little natural recruitment.

A major factor limiting the population would be the lack of available spawning sites; there are no recorded shoals and there is only one stream, which may possibly be intermittent.

The minnow traps set revealed that the northern red-bellied dace is the dominant minnow species, with fewer golden shiners and creek chub. Habitat measurements reflect what appears to be a healthy lake. Very few surface temperature readings were taken near the minnow traps, but the measurements taken are approximately 23°C

There is insufficient data to comment on the current brook trout fishery in this lake. There are various factors, other than a low number of fish, which may result in so few fish caught; for one the water clarity is superb in this lake. This lake should be re-assessed with gillnets set for longer periods of time, as well as temperature and dissolved oxygen readings taken; an investigation into fishing pressure, following the previously mentioned study will also be needed to determine whether continued stocking of this lake is prudent.

Blue Paint Lake supplies suitable brook trout habitat with an absence of serious competitor species. The lake should continue to be managed as a put-grow-take brook trout fishery; stocked on an alternate year basis.

Appendices:

Table 1: Gillnet catch data

Set #	Site ID	Set Date	Gear ID	Minimum Depth (m)	Maximum Depth (m)	Set Time	Lift Time	Effort Status	Pumpkinseed	Golden Shiner	Brook Trout
n	2	27/07/2004	GL10	2.0	4.0	11:32	13:17		51	4	0
1	3	26/07/2004	GL25	2.0	7.0	13:00	13:30	1	0	0	0
2	12	26/07/2004	GL20	3.0	8.0	13:20	13:50	1	0	0	0
3	10	26/07/2004	GL25	7.0	7.0	13:45	14:15	1	0	0	0
4	6	26/07/2004	GL20	6.0	10.0	14:00	14:30	1	0	0	0
5	7	26/07/2004	GL25	5.0	6.0	14:25	10:45		0	0	0
6	2	26/07/2004	GL20	2.0	8.0	14:40	11:00		1	0	1

Species	Fish #	Fork Length (mm)	Round Weight (g)	Age Structure	Marks at Capture	Marks Applied	Fish Fate
Pumpkinseed		80					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		80					
Pumpkinseed		70					
Pumpkinseed		80					
Pumpkinseed		70					
Pumpkinseed		60					
Pumpkinseed		70					
Pumpkinseed		90					
Pumpkinseed		80					
Pumpkinseed		60					
Pumpkinseed		80					
Pumpkinseed		80					
Pumpkinseed		60					
Pumpkinseed		60					
Pumpkinseed		80					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		80					
Pumpkinseed		80					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		80					
Pumpkinseed		76					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		60					
Pumpkinseed		80					
Pumpkinseed		60					
Pumpkinseed		80					
Pumpkinseed		80					
Pumpkinseed		90					

Table 1 continued

Pumpkinseed		80					
Pumpkinseed		60					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		80					
Pumpkinseed		60					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		80					
Pumpkinseed		80					
Pumpkinseed		70					
Pumpkinseed		70					
Pumpkinseed		80					
Pumpkinseed		80					
Pumpkinseed		80					
Pumpkinseed		80					
Pumpkinseed							
Golden Shiner		100					
Golden Shiner		100					
Golden Shiner		110					
Golden Shiner		120					
Brook Trout	1	399	1100		AD		R

Table 2 Temperature and dissolved oxygen, Aug 29,1984

Depth (m)	Temperature (°C)	D.O.
0	22.1	
1	22.1	
2	22.1	9.2
3	22.1	
4	22.0	
5	22.0	
6	21.6	
7	17.5	9.4
8	15.2	
9	13.5	
10	11.6	9.6
11	10.0	
12	9.5	

Table 3: Temperature and dissolved oxygen, Aug 24, 1989

Depth (m)	Temperature (°C)	D.O.
0	21.2	8.3
1	21.2	8.3
2	21.2	8.3
3	21.2	8.3
4	21.1	8.3
5	21.1	8.3
6	21.0	8.3
7	17.4	11.6
8	15.5	11.7
9	14.2	11.9
10	13.3	12.0
11	11.2	1.5
12	9.8	0.3

Table 4: Habitat observations

Station #	Water Temperature (°C)	Air Temperature (°C)	Distance Offshore (m)	Depth (m)	Plant Type	Bottom Type	Current	Water Colour	Cover (Shore)	Cover (Submerged)	Gear	Date
1	23.4		3	0.7	None	Sand, Silt and Gravel	Still	Blue/Green	Moderate	Moderate	Minnow Trap	26/07/2004
2			1	0.4	None	Sand, Silt and Gravel	Still	Blue/Green	Dense	Moderate	Minnow Trap	26/07/2004
3			1	0.4	None	Sand and silt	Still	Blue/Green	Dense	Moderate	Minnow Trap	26/07/2004
4			2	0.6	None	Sand, Silt and Gravel	Still	Blue/Green	Moderate	Moderate	Minnow Trap	26/07/2004
5		23.6	0.5	0.3	None	Sand and silt	Still	Blue/Green	Moderate	Sparse	Minnow Trap	26/07/2004
6			2		0.6	Sand and silt	Still	Blue/Green	Moderate	Moderate	Minnow Trap	26/07/2004

Table 5: Minnow trap catch data

Station	Golden Shiner	Northern Redbelly Dace	Pumpkinseed	Creek Chub
1	23	35	0	
2	17	38	2	0
3	4	22	6	0
4	3	11	4	0
5	0	19	4	1
6	0	16	3	0

Table 6: Five year stocking record

Date	Species	Age	Number of Fish
May 1/03	Brook Trout	17m	225
April 20/00	Brook Trout	M15	352
May 17/96	Brook Trout	M17	1000
April 25/91	Brook Trout		1000
May 17/88	Brook Trout	M16	1095