

*Natural. Valued. Protected.*

## Lake Fact Sheet – Parry Sound District Horn Lake

Location	
<i>Official Name:</i> .....Horn Lake	<i>Local Names:</i> .....Sollman Lake
<i>County/District:</i> ..... Parry Sound	<i>Geographic Twp:</i> ..... Chapman, Ryerson
<i>Municipality:</i> .....Municipality of Magnetawan ..... Township of Ryerson	<i>MNR Admin. Area:</i> ..... Parry Sound
<i>Lat./Long:</i> ..... 45.668 N 79.489 W	<i>UTM (NAD83):</i> ..... 17 617715 5058241
<i>Topographic Map (1:50,000):</i> .....31E11	<i>Drainage Basin:</i> .....Stirling Creek

Physical Features		
<i>Surface Area (ha):</i> ..... 497	<i>Maximum Depth (m):</i> ..... 35	<i>Mean Depth (m):</i> ..... 11
<i>Elevation (m asl):</i> ..... 333	<i>Perimeter (km):</i> ..... 22.9	<i>Island Shoreline (km):</i> ..... 4.1
<i>Volume (10<sup>4</sup> m<sup>3</sup>):</i> .....5500	<i>Watershed (km<sup>2</sup>):</i> ..... 14.2 (excludes area of lake)	<i>Water Clarity (m):</i> ..... 7

Land Use and Development	
<i>Crown Land (%):</i> .....20	<i>Provincial Parks:</i> ..... None
<i>Shoreline Development:</i> .....	High; commercial, shoreline residential
<i>Access:</i> .....	Public; boat launch, South Horn Lake Road
<i>Water Level Management:</i> .....	Not regulated

Fish Species	
<i>Major Fish Species:</i> .....	Lake Trout, Lake Whitefish, Burbot ..... Smallmouth Bass (I 1940s), Walleye ( I 1999), Northern Pike (? I 2010)
<i>Other Fish Species:</i> .....	Yellow Perch, Cisco, Creek Chub, Rainbow Smelt (I 2003), Brown Bullhead, Burbot ..... White Sucker, Rock Bass (I 1999)
<i>Other Species:</i> .....	

Notes: E: extirpated, I: introduced – intentional or accidental, O: occasional, R: remnant, S: currently stocked, ?: status uncertain, 2009: year of first record or introduction if known, blank: presumed native

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## Fisheries Management

<i>Fisheries Management Zone:</i> .....	15
<i>Designation for Lake Trout Management:</i> .....	designated; natural reproduction, at development capacity
<i>Fishing Regulation Exceptions</i> .....	Lake Trout open from 3 <sup>rd</sup> Sat. in May – Sept. 30 ..... Lake Trout – none between 40-55 cm (15.7-21.7 in.)
<i>Current Stocking:</i> .....	none
<i>Historic Stocking (last year stocked):</i> .....	Brook Trout (1945-1975), Lake Trout (1949-2000), Rainbow Trout (1966-1969)
<i>Contaminants (species tested):</i> .....	no testing done

## Summary of Fisheries Studies / Reports

McIntyre, E. 2006. Sollman Lake – Chapman Twp. 2005 **Spring Littoral Index Netting (SLIN)** Survey Report. 14 p.

### Executive Summary:

In 2005, a *Spring Littoral Index Netting* (SLIN) survey was conducted on Sollman Lake to ascertain the status of the lake trout population, especially in light of stringent sport fishing regulations implement in 2000. A SLIN survey had previously been conducted on Sollman Lake in 1998, affording us a fortuitous opportunity to assess the lake trout population ‘before and after’ regulation implementation.

The over-all *Catch-Per-Unit-Effort-by-weight* (CPUE-wt) for all species combined was 1.30 kg per set. This was equivalent to that observed in the 1998 survey, but below average relative to our reference Parry Sound SLIN dataset.

Lake trout abundance, as measured by *Catch-Per-Unit-Effort-by-number* (CPUE-no) was  $0.4 \pm 0.3$  ( $p < 0.05$ ) lake trout per net set. This was slightly improved from that observed in the 1998 survey (0.3), but the two were not significantly different ( $p < 0.05$ ). This value was below the average (0.8) for our reference Parry Sound SLIN dataset. Because it ranked in the lower 25% of values in the reference Provincial SLIN dataset it is accorded a “low abundance” rating. Coregonid (lake whitefish and cisco) abundance was significantly lower in 2005 relative to the 1998 survey.

We detected a shift to smaller size classes as well as decreasing mean size of lake trout sampled in this survey relative to the 1998 survey. We believe these are possibly indicators of improved reproduction and recruitment in recent years. This is a tentative conclusion due to the small number of lake trout sampled in each survey.

We detected no significant increase in lake trout abundance correlated with new fishing regulations implemented in 2000. This is probably due to insufficient time lag for the population to increase in response to these regulations. Nonetheless, we are guardedly encouraged by evidence of successful recruitment and some improvement in lake trout CPUE-no relative to the previous survey.

McIntyre, E. 2001 **Lake Trout Egg Collection Project** Fall, 2001

- The single lake trout captured had a total length of 59 cm.
- The single walleye also reported captured had a total length of 59 cm.
- Netting results were poor in 2001 and 2000, relative to the inaugural year of the project. In 1999, 21 lake trout were captured but only two in 2000 and one in 2001

McIntyre, E. 2001 **Lake Trout Egg Collection Report**, Fall 2000

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- Only 2 lake trout were captured at the Birch Crest site and no lake trout were captured at the Twin Island site. Both fish were male and were released. No lake trout eggs were collected.
- The catch of lake trout at the Birch Crest site was much reduced from the previous year when 21 lake trout were captured. Likewise, 155 lake whitefish and 61 common white suckers were captured in 1999, but only 11 and 71 respectively in 2000. Fishing effort was slightly greater in 1999 with a total of 8 nights of netting effort versus 6 netting nights in 2000.
- We are unable to speculate on the cause of the poor catch results in 2000 especially lake trout. However, these results do lend additional credibility to speculation expressed in the previous year's report that lake trout are not spawning at the Birch Crest site.
- The catch of brown bullhead was up considerably: 23 in 2000 versus only 1 in 1999.
- Seven walleye were caught in 1999, none in 2000.
- Concurrent with the netting project being conducted by Mr. Stewart, Ministry of Natural Resources staff conducted spawning site evaluation at all locations reported lake trout spawning sites (Blythe, 1989). Sites were visually inspected for lake trout eggs deposited on these sites using a remote viewing underwater camera. Not a single lake trout egg was observed at any of the sites.
- Spawning locations for lake trout in Sollman Lake remains unknown at this time.

### McIntyre, E. 2000 **Lake Trout Egg Incubation Study**, Fall 1999 to Spring 2000

- The lake trout catch from a total of nine net nights of fishing effort was a meager 21 fish or 2.3 lake trout per net night. Other species caught included: 155 common white suckers, 61 lake whitefish, 7 walleye, 2 rock bass and 1 brown bullhead.
- The low catch rate of lake trout (2.3 per net night) suggests either a very small spawning population or that our trapnet was not in the vicinity of where lake trout actually spawn.
- Thirteen (13) male lake trout were biosampled having a mean total length of 65.3 cm and mean weight of 2815 grams. Only two (2) female lake trout were sampled both of very similar size with mean total length of 66.9 cm and each weighing 2600 grams.
- The capture of 7 walleye is the first evidence that walleye are present in this lake.
- It is unknown if these are native fish from a natural range expansion (possibly via Sterling and Sollman Creek), or are these remnants of an unauthorized introduction by a member of the public within the past decade or so.
- Despite a fair number of lake whitefish captured (6.8 per net night), as of October 29<sup>th</sup> we saw no evidence – in the form of egg deposition, that lake whitefish were using this area for spawning. From 38 lake whitefish sampled, mean size was 45.2 cm. total length.
- Approximately 2600 artificially fertilized lake trout eggs were loaded into three separate *Scotty-Jordan* incubators on October 24, 1999. All eggs were obtained from a single gravid female and fertilized with milt from several males. Dave Stewart reports hatching success rates of 79%, 69% and 64% for each of the incubators.
- We conclude that water quality conditions on Sollman Lake are satisfactory for successful lake trout egg incubation and that *Scotty-Jordan* egg incubators can effectively be used to incubate lake trout eggs and enhance hatching rates by eliminating mortality associated with egg predators.
- Intensive underwater (SCUBA) observation of lake trout spawning shoals was conducted along the shoreline of Birch Crest Resort on October 29, 1999. Spawning shoals that had been enhanced with rock deposition in 1998 were found to be heavily silted with absolutely no indication of any cleaning related to lake trout pre-spawning, milling-about activities.
- We conclude that lake trout did not spawn in any of the area searched.

### McIntyre, E. 1998 **Spring littoral index netting** report for Sollman (Horn) Lake, 1998 Chapman Twp.

- 9 lake trout caught for a CUE of 0.3 (very poor; low lake trout abundance)
- Large bodied lake trout - mean total length 55.4 cm. mean wt. 1.8 kg. (N = 9)
- Poor levels of recruitment and reproduction - but all lake trout sampled were naturals
- Harvest controls are needed to allow the spawning population to rebuild and establish the lake trout as the dominant predator

McIntyre, E. 1997 Results of a **non-intensive roving creel survey** conducted on Sollman Lake during the summer of 1996.

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- Nine sample days only; only 34.25 angler hours sampled.
- Low fishing pressure: 1.7 boats per mid-day activity count.
- Smallmouth bass E.U.C. and E.U.H. were 4.9 and 5.7 hours respectively
- No lake trout were caught

Janoki, K. 1993. Sollman Lake **creel census, winter 1992 - 1993.**

- Volunteer Creel format
- 'Reported' fishing effort: 1,111 angler hours
- 49% of effort targeted lake trout; 35% whitefish and 16% ling
- 22 lake trout and 37 whitefish observed
- Lake trout mean total length: 46.7 cm.
- Observed lake trout catch & harvest: 82 and 48 respectively
- Observed whitefish catch & harvest: 49 and 46 respectively
- Observed ling catch & harvest: 91 and 89 respectively
- Lake trout EUC and EUH: 12.0 and 20.5 hours respectively
- Whitefish EUC and EUH: 13.5 and 14.4 hours respectively

Deary Env. Consultants, 1990 Summary report for **lake trout** (*Salvelinus namaycush*) **assessment of thirteen lakes** in Parry Sound District. Parry Sound District fisheries report. 26 p.

- Lake trout CUE - 0.67 lake trout per net night (4 caught in 6 sets); lower to mid range of 13 lakes surveyed.
- All lake trout natural.
- Large cisco and moderate whitefish populations - 189 and 46 respectively caught in 6 gill net sets.
- Dissolved oxygen levels – excellent.

Blythe, C. 1989 **Raw data** relating to **lake trout spawning assessment** project conducted during the fall of 1989.

- Fine gill nets set on potential spawning areas during the night - Oct. 17 - 19; short term - 1 hr. sets.
- Set No. 1 - (Birch Crest Resort): 11 lake trout caught; all males; 1 RP clip
- Set No. 2 - (North Shore Access): 0 lake trout; 4 cisco
- Set No. 3 - (Birch Crest Resort): 3 lake trout; 1 natural female; 2 RP males
- Set No. 4 - (Pine Island): 2 lake trout; 1 female natural; 1 male natural
- Set No. 5 - (Duck Island): 0 lake trout
- Set No. 6 - (Birch Crest Resort): 0 lake trout
- Set No. 7 - (Pine Island): 0 lake trout

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Refer to Lake Fact Background Information document for explanation of content.

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