



# A Description of Redstone Lake

By Shal Gewurtz

President of Redstone Lake Cottagers' Association (RLCA)  
(With contributions from John Anderson and David Flowers)

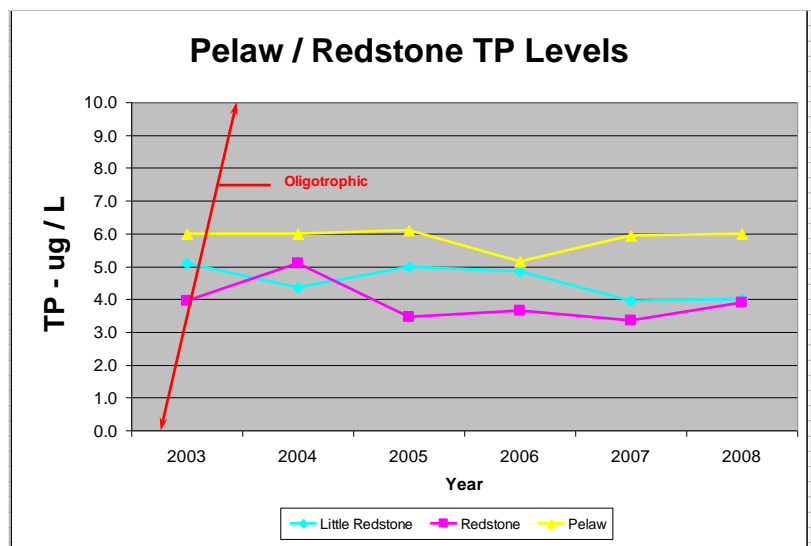
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Redstone Lake is situated in the Canadian Shield and is surrounded by rolling hills typical of the geology of the Shield. The water in the lake is fed from the watershed to the north and the organics in the runoff from the upstream woodlands contribute to the colour of the water, hence the name Redstone Lake.



Redstone Lake has a large surface area of 1194 hectares, maximum depth of 82.4 metres, and a mean depth of 21.9 metres. Its waters have alkalinity and hardness values characteristic of a soft-water, poorly buffered, Precambrian Shield Lake.

The RLCA's Lake Steward samples phosphorus levels each spring and monitors secchi disc depths and pH throughout the summer as part of the Ontario Ministry of the Environment's "Lake Partnership" program in which RLCA has long participated. The results of these measurements show that our lake is in excellent condition with phosphorus levels typically ranging between 3.5 and 6, placing the lake in the Oligotrophic category. This has been confirmed by a series of water quality reports over the years conducted by the Ontario Ministry of Natural Resources (MNR). The RLCA



is very protective of this status and membership education relating to protection of our lake environment is a high priority. As an Oligotrophic or unenriched lake, Redstone provides excellent deep-water habitat for cold water fish species. At all depths, the lake water is well oxygenated all year round and this has contributed to optimal conditions for growth and recruitment of its highly valued lake trout population.

Redstone Lake is one of only four lake systems in Ontario that has its own native strain of Lake Trout. Known as the "Haliburton Gold", this prehistoric strain of lake trout was stranded in a few of the lakes formed in the Haliburton Highlands when the last ice age receded more than 10,000 years ago, and as a result it evolved with unique, genetically-distinct characteristics. They are a small-bodied lake trout feeding primarily on aquatic insects and thus, slow growing. For Redstone Lake, a 1.5 pound, 16 inch lake trout, could be 16 years old. They look different from other lake trout stocks, possessing a smaller, torpedo-shaped body, and have a strong fighting ability and delicious salmon-coloured flesh. Monitoring of the fish continues by the MNR, and they advise that the fish population is healthy with a good range of fish age and an even distribution of male to female ratio. In the early 1990's, RLCA assisted the MNR with their lake trout spawning bed rehabilitation program in Redstone Lake.

The fish species present in Redstone Lake are – Lake Trout, Lake Whitefish, Round Whitefish, Lake Herring (possibly), Brown Bullhead, Burbot, Yellow Perch, Smallmouth Bass, Largemouth Bass, Rock Bass, Longnose Sucker, Common White Sucker, and a wide variety of minnow species.

Redstone Lake is one of the upper most feeder lakes for the Trent Severn Canal waterway. As such, the water level variation is extensive over the summer season with a planned high to low water level variation of 1.535 metres or approximately 7 feet. This wide variation inflicts serious erosion damage to the shoreline, especially at the high level in spring, and wave action from winds and boat traffic impinges on the sensitive shoreline. Given these circumstances, the RLCA is an active participant in the "Coalition for Equitable Water Flow" (CEWF) which is a coalition of lake associations in the Haliburton sector of the watershed feeding the Trent Severn Waterway (TSW). The CEWF's mission can be summarized as seeking the implementation of an equitable water management policy for the entire Trent-Severn Waterway (TSW) that gives equal consideration, along with fair and just treatment, to everyone in the entire Trent River watershed, with all communities considered equally, and where the policy applies to safe navigation, access to waterfront property, economic sustainability, and the avoidance of negative environmental and economic impacts.

With respect to invasive species impacting Redstone Lake, the RLCA participated in the Anglers and Hunters Association "Invasive Species" monitoring program since 2004. Until very recently, we were proud to report that neither the Spiny Water Flea, nor the Zebra Mussel was found in Redstone Lake. Unfortunately, recent results from MNR's netting survey in September 2009 indicated the presence of Spiny Water Flea in fish stomachs, so it is now a major concern

and not just an incidental happening. We continue to educate our members on these invasive species and signage is posted at boat launching stations warning of the dangers and the need to clean boats that have been in other waters.

Shoreline protection is a critical issue for Redstone Lake as our lake system experiences major stress each year with the extreme variation of water levels and resulting erosion of the natural shoreline. We have a very healthy lake system and our primary goal is the protection of our lake environment. The Redstone Lake community has developed with cottages blending and working in harmony with the natural environment. Boathouses are prohibited and natural buffer zones along the shoreline are strongly encouraged. Large scale development such as marinas and resorts are unwanted. We need to protect our shoreline from erosion in a manner that maintains and enhances the health of our lake.

Accordingly, the RLCA is in the midst of the preparation of a "Lake Plan" for our community. The RLCA was an active participant with the Federation of Cottage Associations (FOCA), the Haliburton Highlands Stewardship Council, and the Municipality of Dysart et al in the development of the "Lake Planning Handbook for Community Groups", intended as a lake planning tool to help associations such as ours in the Lake Planning development. We hope this experience will prove to be an advantage as we move forward in our lake planning efforts for the benefit of all Redstone Lake residents. We have undertaken a survey of our membership, and the results indicate that the vast majority of our lake community enjoy the natural beauty of the lake environment and want to see it maintained in its natural state as much as possible.

**The following is adapted from a fact sheet on Redstone Lake fishery prepared by David Flowers, Ontario Ministry of Natural Resources, Minden Office**

### **MNR File Records**

Original lake survey work was conducted in 1967, and in 1977 the Ministry's of the Environment and Natural Resources (MNR) collaborated on a detailed water quality survey for the lake. Over the past two decades, numerous water quality profiles have been collected on Redstone as part of MNR's regular fisheries assessment program. In addition:

- MNR staff completed netting surveys on Redstone Lake in 1967, 1970, 1980 (fish collected for contaminant sampling), 1986, 1987 and from 1994 to 1996.
- Critical habitat mapping was completed in 1991.
- Creel census reports were documented periodically during the 60's, 70's and 80's. The last recorded winter creel was completed in 1989.

- Extensive lake trout spawning surveys have been carried out over the years beginning with Lewies and Simpson (1968– 1972). Staff from the Minden MNR office recorded many spawning observations from 1983 to 2003. Detailed file reports were written in 1989, 1998, and 2003, documenting work completed in these years.
- Through MNR’s Community Fisheries Involvement Program, there have been a number of cooperative habitat and monitoring projects with the Redstone Lake Cottagers’ Association. In particular, association members have been instrumental in the successful rehabilitation of a number of lake trout spawning shoals on the lake from 1988 to 1990.
- Since 2003, research work on Redstone Lake has been coordinated through a team of folks affiliated with the Haliburton Lake Trout Project (HLTP). This is a community-based partnership program involving volunteers and professionals from MNR, Haliburton Highlands Outdoors Association (HHOA), and the Ontario Federation of Anglers and Hunters. Field studies have involved egg collections, tagging, fall spawning assessment, and collection of lake trout tissues for genetic analyses.

## **Stocking History**

In most lakes in Haliburton County, lake trout stocking was suspended in 1996. This was due to initiatives by the province to protect natural reproducing lake trout lakes from over harvest and from the potential negative impacts of stocking non-indigenous lake trout strains on top of natural/native populations. The present genetic profile of lake trout in Redstone Lake shows that there has been virtually no contribution of hatchery-reared genes to the existing population. In fact, the thousands of lake trout stocked in Redstone over the years have not survived very well or contributed significantly to the fishery. Poor survival of stocked non-native lake trout strains have been experienced on other Haliburton County lakes. This is particularly evident on lakes where the natural population is strong and where juvenile recruitment is greatly enhanced by high quality deep water refuge areas. Under these conditions, introduced non-native strains do not compete well with the natural population.

In 2007 and 2009, lake trout were once again stocked in Redstone Lake as part of a research study to document the contribution native fish will make when stocked back into their home water body. Redstone progeny from prior egg collections in 2005 and 2007 were used for these stockings. These are considered to be special stocking events, and the return of these fish back to the parent lake will be monitored closely with the cooperation of dedicated anglers from across the region.

The Redstone Lake Cottagers’ Association is encouraged to become directly involved in fisheries work planned by the MNR for the lake. There will be excellent opportunities in future netting and creel studies to follow the growth and survival of these clipped fish in the natural population, along with previously marked fish that were tagged during recent egg collection efforts.

### *Redstone Lake*

	<b>Year</b>	<b>Species</b>	<b>*Age</b>	<b>Number</b>	<b>**Clip</b>
	1921	Brook Trout	F	5000	
	1924	Lake Trout	F	10,000	
	1932	Brook Trout	Fg	10,000	
	1936-1960	Lake Trout	Fg, Y	167,500	
	1961	Lake Trout	Fg	2000	
	1961	Lake Trout	Y	1800	
	1962	Lake Trout	Y	2000	
	1963	Lake Trout	Y	1600	
	1964	Lake Trout	Y	1375	
	1966	Lake Trout	Y	2100	
	1968	Lake Trout	Y	3500	AD
<b>Stock Origin</b>					
Redstone	2007	Lake Trout	SA	1068	RV
Redstone	2009	Lake Trout	Y	2500	LV

### *Little Redstone Lake*

	<b>Year</b>	<b>Species</b>	<b>*Age</b>	<b>Number</b>	<b>**Clip</b>
	1949	Lake Trout	Fg	1000	
	1950	Lake Trout	Fg	1000	
	1957	Brook Trout	Y	2000	
	1958	Brook Trout	Y	2500	
	1976	Lake Trout	Y	2400	RP
	1981	Lake Trout	Y	2000	RP

\*...SA (sub-adult), Y (yearlings), Fg (fingerlings), F (fry)

\*\*...AD (adipose), RV (right ventral), LV (left ventral) and RP (right pectoral)

## **Summary and Management Recommendations**

Redstone Lake supports a genetically unique, wild, self sustaining lake trout population which should be afforded a high degree of protection. Based on past creel information, it is apparent that harvest levels for this species, particularly in the winter, are not indicative of overexploitation. However, an open water creel has not been done on this lake for some time. Up-to-date fisheries information on the state of the entire fish community is needed along with future options to monitor, regulate, and ultimately protect the fishery.

Over the past ten years, the Haliburton Lake Trout Project has designed and implemented many studies in Haliburton County. For example, extensive spawning observations on Redstone Lake and Halls Lake (Stanhope Twp.) have shown that these two water bodies exhibit healthy lake trout spawning populations, many year classes represented, with large numbers of fish. These two natural populations "Haliburton Gold" are paramount to our understanding of lake trout

genetics and life history characteristics for all native populations across South-central Ontario. For local restoration and rehabilitation efforts, we are very fortunate to have good populations in these waters that can be used as donors for our research lakes. The objectives of the science and research work and associated fish culture and stocking priorities, are outlined in detail in HLTP strategy documents (2005-2010).

**Future Studies** - The Ministry of Natural Resources will begin implementing a broadscale fisheries monitoring program across Ontario in the Spring of 2009 (**See Broad-scale monitoring fact sheet for more information**). Redstone Lake will be surveyed in 2009 and information will be collected on water quality, fishing activity and relative fish abundance and diversity. The overall status of the fisheries resource will be evaluated in comparison to hundreds of lakes across Ontario. This monitoring program will provide fisheries managers and local communities with updated information on the health of our fish communities. The preliminary findings associated with survey work on Redstone will be made available to Association members, seasonal and permanent residents of the lake and all anglers visiting these waters. Together, we will make more effective decisions on future management strategies for our lakes.

**Dedicated Angler Program** - Volunteer angler diary information and catch records are vital to our continued assessment and understanding of the present fishery i.e. relative lake trout abundance, angler directed effort and catch/harvest information for this species. Anglers are encouraged to keep a record of their catches and provide this information to MNR for further review and filing.

## **References**

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3. McLeish D.A. 1993. Status of Lake Trout Fisheries in the Haliburton Highlands and Minden South Areas. OMNR File Report.
4. Ministry of Natural Resources. Minden File Records for Redstone Lake, Guilford Twp. (fish stocking and assessment records, communications etc...various years)
5. MNR, OFAH, HHOA. Haliburton Lake Trout Project Strategy Document. 2005-2010. 26pp.

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Minden File Information prepared for Redstone Lake Cottagers' Association Annual General Meeting, July 11th, 2009. Stocking Dates corrected Sept 8, 2009. If you have any questions concerning the information provided or would like to discuss future fisheries management objectives for Redstone Lake please call:

David Flowers @ (705)286-5215 or e-mail david.flowers@ontario.ca

Fisheries Extension Biologist, Minden Area Office, Bancroft District, Ministry of Natural Resources