

BCLSS Newsletter

Volume 4, Issue 4

"Furthering Lake Stewardship Through Communication and Education"

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108 Lake's Natural Shoreline is a Community Treasure

Winter has moved over British Columbia. The lakes in the interior of the province have frozen over so they have a different look than the sparkling blue that we enjoy over the summer but still very enjoyable. The photo below is of 108 Mile Lake in the Cariboo and was provided by Mike Duffy who lives near this very special lake that you can read more about below.

At the tip of the northeast arm of 108 Mile Lake sits the most popular rest stop on Highway 97. The rest area is across the street from picturesque 19th century historical buildings complete with well kept lawns, picnic tables and our beautiful lake in the background. Close to 20,000 travelers visit the site every summer but few are aware that 108 Lake, 119 hectares in size, and it's smaller sister, Sepa Lake(12 ha), are at the centre of a subdivision with over 1000 homes, an airport, hotel, golf course, school, and a shopping mall.

Gazing out at the lake, visitors see little sign of the surrounding development. Between the lake and private property is a strip of public land varying in width from 30 to 100 feet that, for the most part, has been left in it's natural state. The vision of developer Henry Block was to create 'a community living in harmony with nature' and the legacy is a fringe of vegetation extending around the shores of the two lakes. Homes around the lake shores are hidden from view by this fringe of vegetation.

The community is steeped in Henry Block's vision and all of the approximately 3,000 residents are never very far away from natural wild habitat. As the community approached its 30th birthday, with close to 75% of residential property developed, longtime residents were reporting increased aquatic plant growth in the lakes. Some believe nutrients from the golf course are causing the growth and others are sure cattle grazing upstream from the lakes is the cause. In response to these concerns, the 108 Mile Ranch Community Association joined BCLSS and recruited lake monitors to participate in the Cariboo Volunteer Lake Monitoring Program with the Ministry of Water, Land & Air Protection..

Surprisingly, the results from spring overturn samples did not fit the residents' expectations. For 108 Lake, spring overturn samples from years 2000 and 2001 are virtually unchanged from samples taken in 1976, '84 and '87. Overturn data from Sepa Lake, show a dramatic decrease

in total phosphorous (TP) values (2.5 times) from samples taken in 1987. The most plausible cause of nutrient dilution in Sepa Lake is the 1989 dredging in the channel to 108 Lake which increased the flow between the two lakes. Water depth has also increased during this period according to long time residents. It appears that our two lakes have remained remarkably stable through this 25 year period of development.

I reported the good news at a meeting of the community association. "That's all well and good," said the residents, " but what about the increase in plants and algae in the lake?"

How do we answer these questions? Can we rely on anecdotal reports from long time residents? What is the role played by the greenbelt riparian areas in maintaining stable TP levels? Despite the historical stability of TP values, is the reported aquatic growth an early sign of another problem? Increased temperatures perhaps? Clearly, the issue is very complex but the good news is that the community is on watch.

We have two teams of lake monitors in our community, one for each of our 2 small lakes, and this past October, we completed year two in the Cariboo Volunteer Lake Monitoring Program. Neighbours Ann Swann and Keith Booth monitor Sepa Lake. They're both retired and have lived near the shores of the lake for more than 20 years. My neighbour Jane Duncan and I monitor 108 Lake and both of us have lived near our lake for about 5 years. I'm retired and Jane works part time. We are committed to keeping a watch on our lakes.

I doubt that any of us thought we'd enjoy this work as much as we do. Once a week, usually on Tuesdays around 10 am, we paddle canoes out to the deepest part of our respective lakes. We always set out with a curiosity about changes we'd find that day. I take Secchi disk measurements from the stern and Jane handles the anchor and the thermometer in the bow. Occasionally Jane has to make gentle paddle strokes to maintain our position on the shady side of the canoe.

It's a great excuse to get out on the lake. From May to October we managed to get out 17 times. It's also an opportunity to pay attention and increase our awareness about what is happening on the lake. We're committed to a third year in the monitoring program in order to establish a base line for future comparisons. The Ministry of Water, Land, and Air Protection supplements this work by taking water chemistry samples and other measurements at Spring overturn.

Bonnie Winter
108 Mile Ranch in the South Cariboo

Burns Lake Aquatic Weed Workshop

More than twenty-five lakes in the Skeena region are being overrun by a common aquatic plant. This is a recent phenomenon, which began just over a decade ago, and has spread from a few lakes to many over this time period. The culprit: Canada waterweed (*Elodea canadensis*). This plant, if left unchecked, will grow into dense mats, filling the water column in the 0.5 - 5 meter depth range, while being readily visible at the surface. *Elodea* infestations may block waterways and irrigation channels, decrease recreational and aesthetic values and affect drinking water quality. In severe cases, it may alter the fish species mix away from desirable sport fish species (salmonids) to course species (sculpin and squawfish). Since this a

regional problem, a regional response is needed. With this in mind, a symposium will be held in Burns Lake in mid-March. This symposium will allow lake residents, experts, resource managers, provincial and federal government representatives, and stewardship societies a chance to exchange ideas, create solutions and formulate management plans that will benefit all effected lakes in this region. For details please call Ian Wilson/A.J. Downie (250-847-7256) or Lisa Torunski (847-4040).

Contributor : Ian Wilson

2002 Conference

The BCLSS upcoming 2002 spring annual conference will be held in beautiful Smithers, BC in June. Watch for details in the next newsletter.

Cariboo VLMP

The Cariboo Volunteer Lake Monitoring Program (VLMP) has just completed it's sixth year of data collection. In this program, volunteer lake stewards and Ministry of Water, Land, & Air Protection staff compliment each other's activities and have collected water quality data on over 36 lakes. This has resulted in an improved understanding of the current water quality of these lakes and their sensitivity to future land development.

The data has been very valuable in assisting Ministry staff in determining which of the lake's watersheds require further study. The has result has been that two watersheds, encompassing four lakes, have had Non-Point Source pollution assessments done: the Chimney-Felker Basin near Williams Lake, and the Bouchie-Milburn watershed near Quesnel. A full report on the 2000 & 2001 results is expected in early 2002. For further information contact Norm Zirnhelt at (250) 398-4545.

2001 Secchi Disk Dip-In

In an effort to monitor changes in lakes, the BC Lake Stewardship Society has, for the past three years, sponsored what is called "The BC Secchi Disc Dip-in".

The Secchi disc is a 20 cm round disc with alternating black and white quadrants. It is lowered through the water to test the clarity of lake water by observing the depth at which it disappears from view. The idea was developed by an Italian scientist - Pietro Angelo Secchi in 1865 - hence the name.

Although the Secchi disc seems like a very simple device, it gives a very accurate quantitative method of evaluating water clarity in a lake. Water clarity is something most people living around a lake or fishing or swimming are very aware of. The clarity is a good indicator of the amount of algae in the water or the amount suspended material that might be increasing due to watershed development.

The efforts to gather the Secchi data is an effort by local citizens to monitor the lakes they live near and contribute to the emerging ethic of environmental stewardship where regular citizens become active managers of their environment through awareness and education and environmental activism. Many lake stewardship groups have moved from doing just Secchi monitoring to very technical sampling of water chemistry and microbiology with the help of the BCLSS.

Next year will be the fourth year that the BCLSS has been involved in the "Secchi Dip-In" which is part of an international effort to gather data and educate the public. In the past three years BCLSS members and/or volunteers representing 40-50 BC lakes participated in the Dip-In in British Columbia.

One of the highlights of the data gathered in BC is that one of our lakes (Gun Lake near Gold Bridge) reports one of the consistently highest transparencies from lakes all over the world at 20 metres! Gun Lake is a very clear lake!

When BCLSS first announced their involvement in this event the goal was, and remains, to have a significant contribution from BC to the Dip-In. Our goal is to have 100 lakes measured for Secchi disc transparency in any one year. The Secchi Dip-In has become an international volunteer monitoring event held the first two weeks of July each year. And while we are greatly appreciative of our volunteers and their participation we would still love to see more people representing more lakes added to the 2002 Secchi Dip-In.

If you would like to help with lake protection, you might consider establishing a volunteer monitoring program. If you would like further information on the event and previous dip-in results check out the "The Great North American Secchi Dip-In" web page at <http://dipin.kent.edu/> or e-mail your questions to bclss@hotmail.com

If you don't have a Secchi Disk, contact us and we will gladly sell you one of our BCLSS handcrafted disks for \$10 (with instructions). BCLSS members can request one free of charge. Phone Rick Nordin at 250-387-9517 or e-mail him at rick.nordin@gems2.gov.bc.ca or bclss@hotmail.com

Loosestrife Infestation Causes concern

There's an uninvited visitor in the Cariboo that has put down roots and harbours evil intentions.

Purple loosestrife, which has choked out wetlands and water channels in Eastern Canada, has invaded our province and was recently discovered to be thriving in Dragon Lake.

"I was contacted by a resident on Dragon Lake who recognized purple loosestrife as a noxious weed," said local environmentalist Dorie Havens. "She didn't know who to phone or how to handle it."

Havens immediately contacted the proper government authorities and began amassing information on the little-known invasive weed.

Purple loosestrife, a beautiful, but aggressive invader, arrived in eastern North America in the early 1800's on ships from Europe. Since then this weed has spread westward and can be found across much of Canada and the United States.

According to Ministry of Agriculture, Food and Fisheries weed specialist Roy Cranston purple loosestrife has invaded wetlands and waterways throughout the Fraser Valley, the Gulf Islands, Vancouver Island, the Okanagan and some isolated spots in the Kootenays, but this was the first he had heard about its invasion of the Cariboo.

CRD weed specialist Jeff Rahn accompanied Havens to inspect the reported area and confirm purple loosestrife presence on the lake.

In conversation with the homeowners, they admitted to knowing the plant was a noxious weed, but found the plant was attractive and seeing how well purple loosestrife secured their shoreline, were content to have it remain.

Rahn explained the invasive and predatory nature of the plant to these homeowners and they were very cooperative about the plant's removal.

"With the small infestations, we recommend hand pulling the plants, making sure the seed heads are bagged to prevent spreading," said Cranston. "Many local groups, naturalist groups for example, have helped with this. Most people are very cooperative once they learn the aggressive habits of this plant."

Havens feels the next step to do a sweep of the lake to eradicate any further plants.

"We need to make sure people don't innocently plant purple loosestrife in their garden," she said. "It is important to check with nurseries or other reputable sources about bringing in non-native plants and the risks they pose. There are many alternative to this plant" (Quesnel Cariboo Observer Oct 14 2001)

The BC Lake Stewardship Society: Stewards of Our Lakes

To read the information on this topic, please click [HERE](#).