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Neurotoxin producing algae found in Mattatall Lake



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People advised not to swim in lake

UPPER NAPPAN – Very high levels of a species of blue-green algae, which produces neurotoxins capable of killing humans, has been detected in Mattatall Lake.



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Sandy Welsh and Barb MacKinnon, members of the Mattatall Lake Community Group, presented alarming scientific findings to county council regarding neurotoxin-producing algae recently found in Mattatall Lake.*

“Anabaena planctonica is highly associated with anatoxin-a, a neurotoxin which can cause serious illness and can be fatal to humans and animals,” said Sandy Welsh, a member of the Mattatall Lake Community Group, which gave a presentation to county council during their bi-weekly meeting on Wednesday.

Half of Mattatall Lake is in Cumberland County and half in Colchester County.

There are about 80 homes and cottages around the lake, and many residents are asking if it is safe to swim in the lake this summer.

Welsh said people who do swim in the lake do so at their own risk.

“We have to say no, because if that antitoxin is present they should not swim,” said Welsh. “But

we cannot currently give them a definitive answer one way or another because we don’t know (if the toxin is present).”

A report, ‘Algal blooms in Mattatall Lake: Preliminary Results, April 2015,’ released by Dr. Tri Nguyen-Quang at the Department of Engineering, Dalhousie University of Agriculture, Truro, revealed over 424,000 cells per millilitre of anabaena planctonica in Mattatall Lake.

The report said the findings are “unusual and very concerning.”

Concerns include the following:

- This species of cyanobacteria is not commonly found in Canada.
- *Anabaena planctonica* is known to produce the toxin anatoxin-a, a potent neurotoxin, capable of causing fatalities in wildlife, livestock, pets and humans if ingested in sufficient quantities.
- The cell count of *Anabaena planctonica*, taken during the bloom period (summer), was extremely elevated – over four times the critical limit number of 100,000 cells per millilitre that designates an Alert Level 2 by the World Health Organization's drinking water standards guidelines.

Algae blooms have been increasing in the lake over the last 10 years, to where they now engulfed the entire lake.

“From 2005 to 2011 algae blooms started appearing in late August and started disappearing from mid-September, to late-September,” said Welsh. “From 2012 to 2013 there was increased algae occurring from late July until late September.”

In 2014 the bloom showed up in June and dispersed throughout the entire lake.

“All of the water was green and did not disappear until the lake froze over in January,” said Welsh.

The algae, which may have been introduced by boats from other lakes, feeds off of phosphorus, and phosphorus levels in the lake are very high, measuring 7.4 last fall.

The group has asked residents to take several measures to reduce levels of phosphorus, including: not to use any fertilizers on their lawns, limit the use of phosphates in their home, such as those found in cleaners and detergents, and to have their septic tanks tested with a dye product to see if there is leakage from the tank going into the lake.

They also issued a speed limit of 10 km/h near the shore of the lake and in shallow areas so the phosphorus continues to rest on the bottom instead of being stirred up.

The group requested funding of \$5,000 for 2015, and \$5,000 for 2016 to help continue testing of the water and to buy an algae control SS600 ultrasound device.

“It's an ultrasound device which has been used in Quebec and other areas and has been very successful,” said Welsh. “It disrupts the cells in the algae and they die off.”

The cost of the SS600 is \$7,000. The group will purchase one unit this summer and see how effective it is and, if successful, will buy five more, for a total cost of \$42,000.

“We hope to return the lake to a pristine state that can be enjoyed by all,” said Welsh.

The county said the financial request will be on the county agenda during their July 8 meeting and they will decide then whether or not to grant the funding.