



Association du bassin versant du lac
BLUE SEA Shorelines

En onde

**The Blue Sea Lake Watershed Association Bulletin
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Time to renew your membership for 2022!

Spring is here and the weather is warming. As you prepare for your summer activities on and around Blue Sea, please take a moment to renew your membership to the Blue Sea Lake Watershed. By doing so, you join an interesting and engaged community and you support the Association's efforts to keep this beautiful watershed pristine and healthy.

The annual membership is \$20 per person and is tax deductible, as well as any donation you wish to make. You may renew your membership or donate online or by mail. To complete your membership registration visit the Association website at: www.associationbluesealake.org/registration .

If you have friends or neighbours who live Blue Sea or frequently visit, please encourage them to do so as well.

Assessing the Environmental Health of the Blue Sea Watershed.

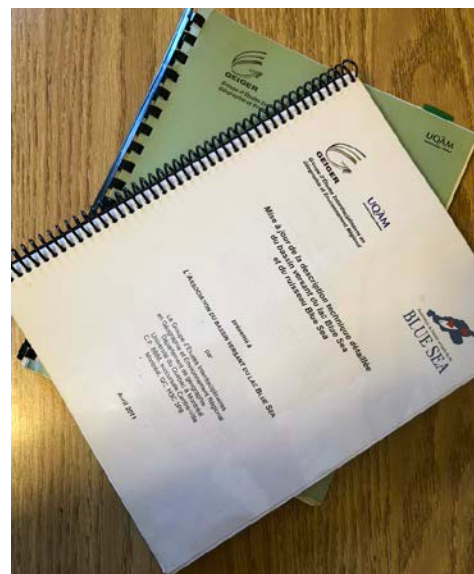
In this issue of *Shorelines*, we take stock of the efforts by the Association to assess the environmental health of the Blue Sea Lake Watershed.

Since its inception in 2009, the principal objective of the Blue Sea Lake Watershed Association has been the preservation and protection of the environmental health of the Blue Sea Lake and Blue Sea Stream watershed. The first step in meeting this objective was to establish a baseline of the condition of the watersheds, determine the factors that were or could undermine their health, and ascertain what action was required to mitigate or eliminate any threats to our lakes.

The Baseline Studies

We began in 2010 by having the *Groupe d'Études Interdisciplinaire en Géographie et Environnement Régional (GEIGER)* of the *University of Quebec at Montreal (UQAM)* conduct a detailed technical study of the Blue Sea Lake and Blue Sea Stream watersheds. In fact, this was an update of an earlier study by the same group carried out in 2000. Both [reports](#) (aka GEIGER Reports) and their recommendations are available on our website. They offer a wealth of information on both watersheds.

The Reports determined, among other things, that Blue Sea Lake and the other bodies of water in the watersheds were oligotrophic, which means the water is clear and has a relatively low level of plant nutrients, that the concentration of phosphorous remained stable and there was no sign of blue-green algae in the lake. This was generally good news.



However, there was an exception. Lac Laverdure, a small lake in the north end of the watershed, was found to be mesotrophic, with a much higher phosphorous concentration than in Blue Sea. As a result, the Association contracted the regional environmental agency, ABV des 7 to examine the causes of the high phosphorous readings more closely at Lac Laverdure. It so happens that the Club Algonquin golf course is situated nearby and it was thought that fertilizers used on the golf course might be part of the problem. But it was also thought the presence of beaver dams in the area might be factor.

Accordingly, a second, more focused, study was conducted by the consultancy Groupes Hemisphere, to guide possible remedial actions. Although the golf course was found to be managed in an environmentally responsible manner, the Groupe Hemisphere made suggestions for further improvements in fertilizing and vegetation practices. The study also proposed actions to control beaver activity, actions which were followed up by the Association and the local municipality. A summary of these studies can be found [here](#).

Monitoring Water Quality

The second step was to implement a program to monitor water quality. To do this, we applied protocols developed by the Quebec Government program called the Reseau de surveillance volontaire des lacs (RSVL). These protocols including the annual bimonthly measurement of our lakes' transparency; the taking of water samples to determine the level of phosphorous, chlorophyll a, and dissolved carbon on a three year on/off cycle; and the measurement of periphyton growth on rocks in every section of Blue Sea Lake. Local volunteers take the samples and submit them to the RSV, where they are analyzed and recorded. Each lake is given an RSVL number, and, with the number, the water quality results are readily accessible using the RSVL website.

Table 1 lists the bodies of water in the watershed, their RSVL number, the stations from which samples are taken, and year that monitoring began.

	Lac	Watershed*	RSVL N°	Stations	Since
1	Blue Sea	L	72	A, B, C, D	2004
2	Edja	L	189	A**, B	2007
3	Beaudry	L	712	A	2012
4	Grant	L	709	A	2012
5	Laverdure	L	710	A	2012
6	Profond	R	711	A	2012
7	Grenon	L	779	A	2015
8	Roberge	L	778	A	2015
9	Clément	L	801	A	2016
10	Castor Blanc	R	797	A	2018
11	Caya	G	856	A	2019

* L: Blue Sea Lake Watershed; R: Blue Sea Lake Stream Watershed; G: Gatineau River Watershed

** Station A not monitored since 2011

Combined, the results of these measurements and water samples indicate that our lakes have relatively acceptable and stable levels of nutrient inflow – major threat to the health of a lake. A detailed description of these processes and their results is now available on our [website](#) .

When it comes to assessing the health of a lake or body of water, these annual measurements, while valuable, constitute nevertheless a minimum. A more complete analysis of water quality is required, one that assesses a broader array of variables such as pH (acidity/alkalinity), conductivity, temperature,

oxygen levels, fish population and reproduction, aquatic plant growth (including that of invasive species), the presence of metals in the water, etc. Such a comprehensive assessment, carried out periodically, would enable decision-makers to assess the impact of demographic and land-use pressures on the health of the watershed.

Time for another assessment?

The last comprehensive assessment, the GEIGER study, referenced above, was conducted in 2010. Since then, the population of both Blue Sea and Messines has continued to increase, with a growing proportion of cottagers choosing to spend a larger portion of the year in the area. This trend has only increased with the pandemic. Moreover, Blue Sea Lake is popular with visiting boaters in the summer and fishers in the winter. All of this increases the pressure on the lakes.

There are many questions an updated watershed assessment might help address. For example:

- In 2009, the Vallée-de-la-Gatineau Municipal Regional Council (MRC) enacted regulations requiring that lakeside properties ensure a minimum band of shoreline vegetation to mitigate against the accumulation of plant nutrients into the lakes. These regulations have been administered by local municipalities. Are these guidelines being adequately followed? Are they sufficient?
- How robust and diverse is the fish population and the general diversity of the lakes in the watershed? Is the presence of Eurasian Milfoil having a harmful effect? Are there additional measures that might be considered?
- Spring runoff from highways on which salt and other roadside chemicals are used, can find their way into the watershed. Is that a problem in our lakes?

A comprehensive assessment of the watershed is, in our opinion, overdue. In addition to providing an-to-date picture of its environmental health of the watershed using update baseline standard metrics, such a study could be tailored to help address specific questions that would guide the work of Municipal Inspectors, foster best practices, and encourage environmental stewardship.

The Association is exploring the options for such a review. We are reaching out to consultancies and potential partners. We plan to discuss the mandate for such an exercise with the Blue Sea and Messines municipalities. These studies cost money, so financing will be a consideration.

Do you think an environmental review of the Blue Sea Lake Watershed is a good idea? What kinds of questions would you like such a study to address? Please send us your thoughts by writing info@associationblueseas.org.

Shorelines is a production of the Blue Sea Lake Watershed Association.

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