



**ACTIVITIES REPORT 2009**

**EXECUTIVE SUMMARY**

**Approved by the Board of Directors at its meeting of March 6, 2010**

## 1. INTRODUCTION

Renaissance Lac Brome is pleased to present the highlights of its 2009 activities to its members and partners as well as to the communities which make up the Brome Lake watershed. The present summary provides a global picture of the actions taken and the results and observations that follow, for the 2009 year.

This report is the result of a great deal of work by a considerable number of volunteers as well as being the fruit of various partnerships, all joining forces to fight against the deterioration of the quality of the water in Brome Lake and its feeder tributaries.

While the year 2009 was rich in activity this did not translate into consequential results. We have the impression that we advanced very little despite it being a fertile year in terms of citizen involvement. Unfortunately, all the key parameters, such as the total phosphorus and chlorophyll count and water transparency showed evidence of a net regression. In other words, we face some stiff challenges in 2010.

Renaissance would like to thank all of its members and donors. Without their support, what was achieved in 2009 would not have been possible. We would especially like to thank:

- West-Bolton
- Municipalité du Canton de Shefford
- South-Stukely
- Town of Brome-Lake
- MRC Brome-Missisquoi - MRC Memphrémagog
- The Cogeby (Yamaska basin watershed association)
- MDDEP (ministère de l'Environnement)
- MAPAQ (ministère de l'Agriculture)
- The company For-Eco (forestry experts)
- Trees-Canada
- The company, WINNERS who sponsored the tree planting program.

The complete activities report as well as other pertinent that are mentioned in this summary may be consulted on the association's Website at: [www.renaissancelbl.com](http://www.renaissancelbl.com) .

Enjoy your reading!

## 2. OUR ACHIEVEMENTS IN 2009

The 2009 season was marked by several achievements which involved as much governmental authorities, as municipalities across the watershed and Renaissance Lac Brome itself.

### **Work in collaboration with various government bodies:**

#### The ministries involved

Several provincial ministries play a primary role in our work including the MAPAQ (agriculture), the MRN (natural resources) and the health and social services ministry with whom Renaissance Lac Brome maintains close ties. Apart from the national awareness and public information campaigns which have a major impact, other actions of particular value to the Brome Lake watershed should be mentioned. They include:

- Modifications to the tracking and signalling procedures of contaminated bodies of water and the availability of local MDDEP resources (Quebec's sustainable development and parks ministry - Bromont office);
- Modifications to certain by-laws (related to septic tank facilities) and training programs for municipal inspectors;
- Attribution of a sum of \$100,000 to Ville de Lac-Brome as part of the pilot project on watershed interventions (management of runoff water and erosion control);
- Contribution to a stabilization project along the banks of the most important brook in the watershed (Quilliams) as part of the PRIME-VERT program (MAPAQ);
- Contribution of 4000 trees, via the Cogeby.

During the year 2009, the government of Quebec, more specifically the parliamentary commission on transportation and the environment, sought the advice of citizens about the situation of cyanobacteria in the province's lakes. Renaissance prepared and submitted a brief to the commission which described its orientations. The brief looks differently at several aspects of watershed management and the quality of lakes and other bodies of water and proposes numerous suggestions.

#### The municipalities that sit in the watershed

Throughout 2009, the representatives of Renaissance Lac Brome conducted numerous exchanges with officials from the various municipalities which make up the watershed (Ville de Lac-Brome, Bolton-Ouest, Stukely-Sud, Canton de Shefford). As part of these exchanges, the association made several recommendations relative to certain projects and files to the municipalities

(requests for derogations, river bank development projects, framework for boating activities, etc.).

Renaissance also prepared a document containing several recommendations as part of the urban renewal plan and the Ville de Brome Lake zoning regulations. In the fall of 2009, Renaissance participated in six public hearings organized by the town on this subject.

From their end of things, the municipalities also carried out several indispensable actions that sought to:

- Conduct a more vigorous follow-up of their by-laws and in some cases implement new regulations;
- Create citizen awareness and train the appropriate town personnel about the benefits of good environmental practices, notably in the area of shoreline protection, erosion control, etc.;
- Set aside more substantial budgets to fight cyanobacteria and develop conservation programs;
- Carry out tree planting programs on their respective territories, proceed with certain public works programs (ditches, water catchment basins, filtering marshes etc.) and adopting specific methods to maintain gravel roads to limit erosion;
- Support Renaissance Lac Brome by financially contributing to its diverse array of programs and participating in its pilot projects;
- Participate in the PAPA program to inspect septic installations.

### **Assuring a rigorous follow-up for water quality purposes (SQE)**

One of the major components in the Renaissance action plan consists of assuring the most rigorous follow-up possible in the area of evolution of water characteristics in the lake and its tributaries (pH, oxygen, water transparency, temperature, concentrations of phosphorous, algae, cyanobacteria, physical state of shorelines, etc.). In 2009, this program revised and extended. This was made possible thanks to the collaboration of the Cogeby and each of the participating municipalities (Bolton-Ouest, Stukely-Sud, Canton de Shefford, Ville de Lac-Brome). Financial help for this water quality follow-up work came from the MRC Brome-Missisquoi's "pacte rural" assistance program.

In the first instance, the sampling conducted in the lake's tributaries resulted in some 452 samples being taken to measure the content of oxygen, phosphorous and nitrogen. The various phases of the lake water sampling took place between May 25 and September 9. Renaissance volunteers made five separate outings to get the job done. Finally, about once every ten days and frequently more often, Renaissance conducted readings of the Secchi disk in the deepest part of the lake to evaluate the clarity of the water. 17 Secchi readings were recorded between April 29 and October 6, 2009.

As part of the water quality follow-up – the tributaries phase, Renaissance conducted special sampling to better identify and understand the situation that affects certain locations where anomalies were flagged.

In this way Renaissance was able to observe and report on the quality of water in detailed fashion to the municipalities in the watershed and on the specific tributaries that run through or around their towns.

### **Increasing the regulatory framework for boating activities**

In 2009, Renaissance Lac Brome multiplied its efforts to make known to federal, provincial and municipal authorities the importance of keeping a closer eye on boating activities in a body of water as fragile as Brome Lake. As early as 2007, Renaissance had established beyond any doubt the turbulence effects of motor boat traffic and the stirring of sediments when the water depth is less than 3 metres.

Unfortunately, in May 2009, the federal minister of transportation authorized the installation of two water ski zones of which one is 4 feet deep and near a wetlands area. Renaissance will continue to promote the norm of 150 metres from the shoreline and 3 metres depth as a more ideal navigation venue for not creating a wake. It will encourage pleasure boaters and municipal authorities to adopt reasonable behaviour.

### **Assuring the protection of the banks around Brome Lake**

Renaissance has always supported Ville de Lac Brome in the application of its by-laws to protect the lake's shorelines and banks. In this perspective, Renaissance Lac Brome organized two shrub distribution days in 2009, one in May, the other at the end of August in which some 3000 small shrubs were distributed to about 125 citizens. Elsewhere, several committed citizens gathered along the shoreline to participate in a symbolic activity to clean-up the banks and learn more about the health of the lake. In the space of a mere few minutes, several bags of aquatic plants and trash had been picked up.

Finally, the seasonal employee hired by Renaissance Lac Brome met with people living along the shoreline and provided general information and hands-on tips throughout the summer months.

### **Promoting reforestation along the banks of the tributaries**

For the last several years, Renaissance has been pursuing an ambitious reforestation project along the river banks of all the tributaries that flow into Brome Lake. This is a major effort which requires a great deal of funding. In 2009, we coordinated the planting of some 4000 trees, adding to the 23,000 trees already planted in 2008.

### **Getting a better grip on the problems of septic tank installations**

To better understand the situation and impact of installing septic tanks in the watershed, Renaissance Lac Brome conducted a detailed analysis of the septic installations and determined the level of risk in each sector. Concrete proposals were then drawn up for all citizens, encouraging them to maintain their tank in good order, avoid using products with phosphates (soaps, detergents, dishwasher soaps, etc.), and preventing the unnecessary overloading of their system by using too much water. This analysis helped us identify priority solutions for the town of Foster, Rock Island and Fisher Point – Lakeside Nord.

### **A repertory of the aquatic plants on Brome Lake**

In the fall of 2009, Renaissance Lac Brome hired the environmental consulting firm of Biofilia to carry out a study of the aquatic plants in Brome Lake, identify where they were, their density and sedimentation levels in the littoral, from 0 to 3 metres.

Their report, which was then made public, brings out the following points:

- The 35 species of aquatic plants present in Brome Lake cover about 15% of the surface of the lake;
- Several bays are unfortunately being invaded;
- The zones that are most degraded are the Bondville littoral, the marina bay, Elizabeth Bay and Fisher Point;
- Certain species reproduce themselves when their stalks are cut off by motorboat propellers and drift elsewhere.

### **Completing the watershed mapping project**

Since 2008, Renaissance has been systematically charting the various bodies of water. Despite its limited resources for such a large undertaking, Renaissance, in 2009, mapped a branch of Coldbrook stream. The new data gathered is now integrated into the MRC and applicable municipalities' mapping system. We hope that we have sufficient resources in 2010 to move further in this area.

### **Assuring the proper functioning of the Association**

Keeping a community association active and in good health requires a great deal of effort from many people. To this end, Renaissance has, over the course the past year:

- held 10 meetings of its board of directors and 16 work sessions;
- organised, coordinated or participated in 5 public activities (general assembly of members, shrub distribution days, film showings and shoreline clean-ups);
- informed its members through its Website and by the mailing of 12 cyber letters;
- met with the print and electronic press on 6 occasions;
- participated in 12 meetings with associations representing surrounding bodies of water, Cogeby, Rappel, etc.;
- revised its general by-laws;
- participated in the activities of RAPPEL (grouping of associations for the protection of lakes in the Eastern Townships) as a representative on its steering committee;
- been part of NALMS (North American Lake Management Society);
- managed projects and activities to the tune of some \$50,000;
- received at least 10 “heads-up signals” and did the follow-ups with the appropriate municipal authorities;
- prepared three grant applications.

### 3. **PRINCIPAL OBSERVATIONS**

There are still too many contaminants flowing into the lake, especially phosphorous. The sediments already present in the lake contain large quantities of phosphorous, the result of past neglect.

Each year, the tributaries also carry phosphorous to the lake, especially during the spring. This situation was particularly bad during the past year with an increase of 22.4% over the previous period. Only Coldbrook showed average readings, of 12,2 µg/l. All other waterways are greatly in excess of this reading.

The clarity of the water was unfortunately bad throughout the year. The average for the 2009 season was 2.3 metres, a net setback from the previous years.

In September, 2009 the samples taken from the lake revealed a very high rate of cyanobacteria with a very high toxic potential. For the first time, the levels of toxicity surpassed the norms for both drinking water and recreational use. The lake was therefore slapped with an interdiction notice.

We believe that the bad results from 2009 are due to work going on in the drain basin which had damaging effect by carrying very high loads of sediments into the lake. The sources of this pollution are:

- preparations in South Stukely to reopen a closed mine (Quilliams brook);
- the construction of a road near the Inverness brook;
- the stripping of 3 ha of land to build a nursery near the Inverness brook;

- reconstruction of the bridge on Maple street.

For the quantity of phosphorous to disappear, we must drastically reduce it at source, that is to say from the watershed, in particular within the last kilometre which surrounds the lake, an area that is constantly threatened by development. If we are to see notable and sustainable changes in the health of Brome Lake, the phosphorous load that is carried from the tributaries must not exceed 15 µg/l, which would represent a reduction of 50%. We cannot say it loud enough: to succeed we must experience radical change in behavioural patterns and in the way of generally doing things.

#### **4. CONCLUSION**

It is there for all of us to see. Brome Lake finds itself in a state of accelerated ageing. The situation is precarious. The status quo is not an option and it is essential that the entire community jump into this fray and mobilise to assure a better quality of water. Our daily life environment depends on it as does that of the future for our children and grand children. Renaissance Lac Brome is convinced that a more profound and on-going knowledge of scientific data about the lake and its tributary feeders represents an essential condition for any sustainable action if we are to restore and maintain the quality of the water throughout the watershed.

Restoring the lake involves a substantial community wide effort which will take several years before significant results are noted. We should therefore soldier on with the efforts that are underway which constitute, for Renaissance, our daily priorities:

- Correct the problems at source, that is to say eliminate or reduce all products containing phosphorous: detergents (clothes washing, dish washing, soaps, other personal items), fertilisers. This implies working right to the top of the watershed;
- Manage water run-off. Phosphorous is carried into the lake by water. It is essential therefore to adequately control water run-off: facilitate its infiltration into soil, diminish the speed of run-offs. Counteract erosion, assure filtration by vegetation, properly build ditches;
- Diminish the level of phosphorous present in the lake by the use of planned vegetation planting methods (plantations, shorelines and banks) and eventually change this phosphorous into positive uses. For example, filtering marshes somewhat play this role of retaining phosphorous in plants and sediments. Planting, harvesting and long term use of wood are also examples;
- Act on several variables. Contamination of water bodies is the result of a host of interrelated factors. Each small gesture counts. For example, a property owner must ensure the efficiency of his or her septic installations;

- Modify human behaviour in drastic fashion. A water body that is contaminated with cyanobacteria will not recover unless the contamination conditions are radically modified. We must remember that cyanobacteria are micro-organisms which dominate their environment the moment that conditions are in any way favourable. Getting rid of them demands behaviour that is fundamentally different;
- Keep the community well informed through such means as regular communications and public awareness activities. No beneficial results can be reached if the overall community doesn't feel to be an important part of meeting the challenge. All the players must get involved in their own particular way, and each and everyone must be conscious of his or her contribution whatever that might be in terms of its impact.