



Memphremagog Conservation inc

Newsletter - June 2009



A word from the president

We are very concerned about the health of Lake Memphremagog. The 36 periods of blue-green algae bloom in the summer of 2008 show that the lake continues to deteriorate. If we want to correct this situation and make some significant progress, it will take all the actors living in the watershed to get involved in the recovery effort. We hope for a greater effort from some of these stakeholders, notably the **municipalities**. They are the ones responsible for protecting water quality and they have the power to do so. Some concrete actions have already been taken. A case in point: the by-law to protect the shoreline and riparian areas. The Ville de Magog has taken the lead with two important by-laws, one on soil management and the other on the use of fertilizer and pesticides. We wish to congratulate the Ville de Magog for its leadership in helping to protect the lake. Now, we need to have the by-laws of all shoreline municipalities harmonized. We must do more than just protect the shorelines and riparian areas, which is a very important step, but which is only a small part of the solutions to halt the deterioration of the lake. The municipal elections that will be held in November 2009 will be an important occasion to elect men and women who care deeply about protecting the environment, and Lake Memphremagog in particular. We encourage you to make a wise and enlightened choice in these elections!

Another important event in 2009 is the amendment to the land use and development plan, the Schéma, by the MRC de Memphremagog. The Schéma will determine the development guidelines for our

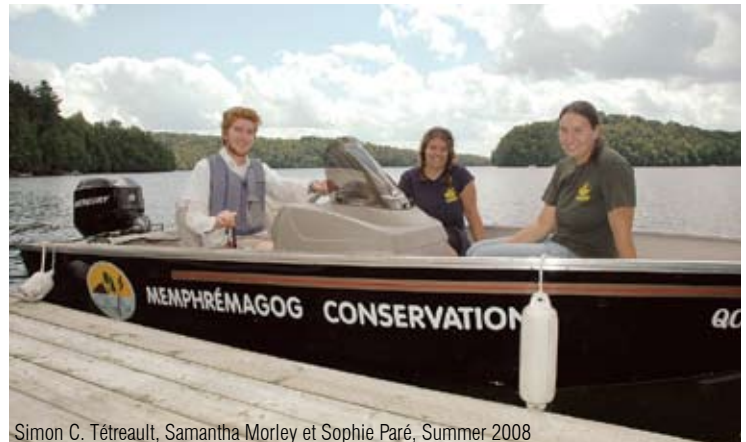
region. It is essential that the plan be more specific and more complete with regard to the conservation and protection of the territory of the MRC and not only its development. Public consultations are planned for the fall so citizens can be heard on this critical matter. It is important for people to turn out for this important exercise so the choices our elected officials make truly reflect what we the citizens want. The MCI will present a series of recommendations that will, we hope, be taken into account by those we have elected.

As you will see when you read this newsletter, MCI had a very active year in 2008. In addition to these actions, we note that MCI presented a brief on November 5, 2008, during the MRC's public consultations on major changes to the land use and development plan as it affects the western sector of Orford Mountain, situated in the zone labelled « paysages naturels d'intérêt supérieur » (the zone of natural landscapes of superior interest).

We have also revamped our internet site so it will be more complete and user-friendly.

One of the accomplishments we are most proud of is that MCI has been named an official member of the Québec-Vermont Committee. This nomination recognizes the expertise of MCI as a major partner in the efforts to save the lake.

We begin our activities for 2009 by taking part in the provincial reforestation effort by distributing more than 3000 trees, 300 shrubs and seeds of indigenous plants in Austin, Potton and Stanstead Township.



Simon C. Tétreault, Samantha Morley et Sophie Paré, Summer 2008

This summer, our three lake patrollers, Sophie, Simon and Samantha, will again be on the job, carrying out their different tasks related to lake surveillance, the water sampling campaign for the MDDEP, public awareness and education activities with young people, visits to waterfront property owners, etc.

In addition, we will continue the free consultations on renaturalizing the shorelines with specialists from Aménagement Natur'Eau-Lac. We will also be working closely with our neighbours from Vermont in a major shoreline replanting project organized by the *Memphremagog Watershed Association*. For the third year, we are setting up our own watchdog network to keep an eye on the blue-

green algae situation. We will also finance part of the water testing in the Johns River in Vermont in partnership with the *Vermont Department of Environmental Conservation - Water Quality Division*.

In conclusion, I would like to thank you very much for your moral and financial support and I would also like to thank the members of the board of directors of MCI for their dedication to defending and protecting this priceless heritage, our beautiful lake Memphremagog.

May I wish you all a wonderful summer,

Gisèle Lacasse Benoit
Volunteer president

The Annual General Meeting 2009

The AGM for members of MCI will be held on August 15, 2009 at 9:30 am at the Murray Memorial Centre in Georgeville. We look forward to seeing you all!





Lake Patrol



Sophie at work, June 2008

Enjoying the sunny days of summer on Lake Memphremagog while working to protect it was an exceptional experience in 2008. The three of us having taken our undergraduate training related to the environment had the opportunity to apply our knowledge while carrying out the tasks assigned to us. We were therefore very happy to agree to continue our involvement with MCI for the summer of 2009.

In 2008, we took part in many activities targeting the improvement of the health of the lake. We first contacted the various municipal inspectors to familiarize ourselves with the by-laws related to the protection of the shoreline. This information was very useful because many waterfront property owners appreciated our advice as they were preparing to replant part of their property. The patrol is also ready to offer recommendations and explanatory documents on how to maintain a natural shoreline.

We not only watched over water quality by taking water samples for the MDDEP, but since last summer, testing was carried out in tandem with Vermont. After the heavy rains in the summer of 2008, we reported on large quantities of sediments in the lake. The patrol then was able to fly over the area and take aerial photos which made it possible to better situate the sources of erosion problems. The patrol, with the help of a network of watchdogs, also kept a regular watch for the presence of cyanobacteria.

In addition to collaborating with different media, the patrol visited the majority of campgrounds and marinas to leave information leaflets for the visitors. The most rewarding activity of the summer, however, was visiting the summer day camps. The children we talked to will no doubt have something to say to their parents about their environmental choices and their own future activities. Following an invitation from the Memphremagog Watershed Association, we will also go to visit day camps on the other side of the border for the first time, this summer.

Starting in June, 2009, we will again tackle the various mandates with great enthusiasm. If the weather cooperates, we will be on the lake 7 days a week, for 16 weeks.

As you know, the involvement of waterfront property owners is essential in continuing the activities of the group, both in terms of voluntary surveillance and in terms of financing. As a result of your recommendations, new promotional articles will be available: caps, polo shirts, t-shirts, sweatshirts... A big thank you for your support.

We hope to meet as many waterfront dwellers as possible this summer. Please call us if you want more information about blue-green algae or if you have observations for us. We look forward to meeting you on the shores, and if by chance we don't meet, you can reach us every day, on land and on the water, at (819) 620-3939.

Sophie Paré, coordinator
Samantha Morley
Simon C. Tétreault,
patrollers

Memphremagog Watershed Association, Vermont



The second year of MWA has been active and productive. A Grant was received to enable us to hire "greeters" to be at the Strawberry Acres boat access to hand out literature and visually inspect boats entering and leaving the lake. This will be repeated in 2009.

We also received a grant to fund the cost of testing water samples from seven tributaries to Memphremagog and thirteen sites in the Johns River basin. The results found significant concerns for nitrogen, phosphorus, and turbidity in multiple locations. The economic status in Vermont may put the availability of a 2009 grant in jeopardy (possible closing of the testing lab).

In May, 2008, MWA co-sponsored a clean-up of the South Bay of Lake Memphremagog. In July we hosted a Vermont Invasive Patrollers (VIP) training session to teach volunteers how to survey for invasive aquatic species. It was through this increased vigilance that we were able to see, sample, and report multiple cyanobacteria blooms in late summer and fall. In 2009 several volunteers will learn how to test algae samples locally and we will create a system of rapid response.

In the spring of 2009 MWA will do two simultaneous restoration projects establishing riparian buffer zones along the Clyde River and at Prouty Beach. There will also be an informational display erected to educate the public to the value of vegetated buffer zones. The Association is also working with municipalities within the watershed to enact buffer ordinances and address storm water runoff. MWA is also leading a project with other lake associations to produce an informative handbook for waterfront property owners.

MWA was honored to be granted membership status along with MCI on the Quebec-Vermont Steering Committee. The dedication of our membership and the support of both Vermonter and Canadians has given MWA the visibility and status to be a significant entity in the efforts to protect and preserve the greater Memphremagog watershed.

Susan Watson, Administrator

Municipal Inspectors

Austin: 819-843-2388
M. Stephen Nicholson

Potton Canton: 450-292-3313
poste 224
Mme Marie-Claude Lamy

Stanstead Canton: 819-876-2948
poste 224
Mme Carter Diop

Magog: 819-843-3286 poste 53
Mme Nathalie Bournival

Ogden: 819-876-7117
Mme Dominique Gagnon

Useful Ressources

Patrouille du lac MCI: 819 620-3939
Sophie Paré, Simon C. Tétreault et Samantha Morley

Ministère de l'environnement de l'Estrie: 819 820-3882
Urgence : Yvan Tremblay, poste 248
Urgence environnement 24h. 1-866 694-5454
Urgence faune 1-800 463-2191

Patrouille nautique de la MRC Memphremagog: 819 620-7669 / 819 821-0435



Some of the projects undertaken by Memphremagog Conservation Inc.

There are many actions that can be taken to improve water quality in Lake Memphremagog. Aside from our involvement with the local municipal and governmental authorities, we believe that investing in planning and carrying out concrete projects can inspire all the residents and users of the Lake Memphremagog drainage basin to make a difference.

MCI therefore invested more than \$30,000 in a number of projects in 2008 and plans to continue these efforts in 2009. As you read this, you will be able to see that your valued and continuing financial support has allowed us to pursue a number of projects and to plan more for the coming years.

The health of our majestic lake depends, among other things, on respecting and returning to their natural state the shorelines and banks of all tributaries flowing into the lake, areas that were once wooded and rich with flowering plants. Whether these tributaries are ditches, streams, rivers or, of course, the lake itself, the trend to clearing the shoreline must be halted and the maintenance of finicky urban lawns reversed!

What better than a demonstration flower bed to show the beauty (and ecological effectiveness) of a natural shoreline with trees, shrubs and other plants? It is exactly to help redefine the misplaced urban vision of lawn and stone or concrete walls at the edges of the lake and its tributaries that the MCI took this firm action!

The renaturalization of the shoreline at Weir Beach in Odgen began in 2006, and was continued in 2008 by the landscaping of 110 metres of shoreline to a depth of some 7 metres. Six hundred shrubs and 130 perennials were planted by a team of around 30 volunteers. The project cost about \$20,000, and began with an investment of \$11,500 by MCI and a grant of \$ 8,500 by the Pacte Rural of the MRC Memphremagog.

MCI invites you to visit this new shoreline this summer! You will be able to learn more by consulting the interpretation panels installed at the site.

Another concrete action by MCI was to offer free consultations about re-landscaping the shoreline in the summer of 2008. We will repeat this experiment this summer with the same team of biologists from Aménagement Nature'eau-Lac.

Working with them in 2008 enabled more than 4600 metres of shoreline to be visited and more than 160 waterfront property owners met. Would you like an hour of free consultation this summer? Any member in good standing of MCI can register by email at info@memphremagog.org !

Is your property part of the immense drainage basin of Lake Memphremagog? Is there a ditch, a stream, a river along or on your land, or perhaps you are right on the Lake? Take concrete action yourself by planting trees, shrubs and plants along the water's edge or plant seeds of indigenous plants which we will be offering at the beginning of June! Three information booths will be developed in Georgeville, Austin and Mansonville: keep an eye on our website and subscribe to our infoletter to learn more!

We have some data on the health of the lake thanks to our Operation Healthy Lake studies in 2004-2005. We also know that some rivers are overloaded with phosphorus. We intend to invest in more specific studies of the rivers flowing into the lake to try to find the sources of nonpoint pollution and eliminate them. This year we will invest in a study of the most polluted river at the south end of the lake, the Johns River in Vermont. MCI will cover half the cost of this important work. Authorities in Vermont will cover the other half.

For more complete information about our other projects in the works, visit our web site!

Johanne Lavoie
Administrator/Board member and director general



Weir beach, Odgen, Juin 14th, 2008

Heritage Circle Members

MCI recognizes the generosity of those who enrolled in the Heritage Circle member category in the years 2008 and/or 2009.

Association des Propriétaires de
Southière-sur-le-lac
Michael H Belmer
Monique Benoit-Nadeau
Robert Benoit
J.R. André Bombardier
Michel Côté
Famille Martin et Julie Couture
Joanne Cyr
Howard & Guylaine Davidson
Jean Dumont
Gael Eakin
Alison Arbuckle Fisher

Fondation Howick
The J.W. McConnell Foundation
Gestion les ensembliers inc.
Joan F. Ivory
Sarah Ivory
André L'Espérance
Gisèle Lacasse Benoit
Jean-Luc Landry
Mary L. Landry
Pierre Loisselle
Loretta Marcon
Mary Louisa Miller
Catherine A. Milne

J. Robert et Myriam Ouimet
Réal Nadeau
Wendy Penfield
Alena Perout & Jonathan Peck
Bernard Poulin
Guy Saint-Pierre
Norman Spencer
Jean-Denis Talon

*In addition to the above names,
6 donors requested that their gift
remain anonymous.*

*«From Kohl to Fisher, (Honour
to whom honour is due!)*



The MCI Gordon Kohl commemorative prize will be awarded to Donald Fisher, MCI board member from 1998 to 2008 and president of MCI, 2005-2006, during the annual general meeting on Saturday, August 15, 2009.»

We also want to thank the municipalities of Austin, Canton de Stanstead, Magog, Ogden, Pottou and of St-Benoît-du-Lac for their financial contribution.



The land use and development plan (schéma d'aménagement)

For true sustainable development, we must protect natural environments!

The MRC de Memphremagog is in the process of revising its land use and development plan that will set the guidelines for development in the MRC. If we want to protect Lake Memphremagog, which plays a critical role as a reservoir of potable water in the Estrie region, we must first change the way land is used here, particularly in the drainage basin of the lake.

MCI is proposing that key elements be added to the revised land use plan. Among them:

Addition of a section dealing with conservation in the mrc

This new category would include all public and private land having a protected status. It is very important to identify all "Conservation" areas and to ensure that they are protected as part of the effort to preserve natural areas. The error made in 2002 must be corrected and the status of "Conservation and Recreation" returned to Mont-Orford park as provided for in the Parks Act. The designation "*zone de développement touristique à caractère particulier*" (the special development zone for tourism) must be withdrawn for this entire sector. In addition, the 459 hectares of land that were removed from the park under Act 23 must be returned. All ecologically sensitive areas including the summits of all mountains must be protected, and all construction above 350 metres should be banned, as recommended by the Bureau d'Audiences Publiques en Environnement, the BAPE.

It must also be recognized that certain lakes serve as regional reservoirs for potable water, and we must at all cost preserve the water quality. It is, therefore, necessary to recognize explicitly the important role that Lake Memphremagog plays in our region. A master Plan for water and a detailed action plan must be prepared to protect the lake. MCI proposes that before new building permits are issued, the developer should be required to assess the support capacity of ecosystems in each watershed area of each tributary of the lake, and this should become part of the permit process.

The MRC proposes to add to and make more specific the cartography of watercourses, wetlands, zones of erosion and flood plain zones. But we must not forget to make sure that their protection is assured. Wetlands must be protected, no matter what size they are.

Protection of the agricultural zone and the agro-forestry zone:

The Agricultural Zoning Act has made it possible to protect our beautiful region against untrammelled development and to preserve much of the region in its natural state. We must maintain the existing agricultural zoning and avoid de-zoning land, especially in the areas designated as agro-forestry zones because the forests play a vital role in maintaining the equilibrium of the ecosystem of Lake Memphremagog. One of the unstated goals of de-zoning is to open the territory to residential development and thereby increase revenues through municipal taxes. We must rethink this way of using land. Among the issues to consider: lot sizes, the maximum percentage of the forest cover that must be preserved, green construction practices (LEED), soil management, assessment of the capacity of ecosystems, etc. Before de-zoning, it is imperative to identify areas as conservation zones where the natural environment is to be kept as is.

Recognition of the role of forests and how to ensure they are protected:

It is essential to recognize the ecological role the forests play in maintaining the equilibrium of Lake Memphremagog. There is a point at which deforestation in the drainage basin will have a significant and irreversible impact on the lake

Forest clearing and urbanization are the major causes of the deterioration of the lake. Everything possible must be done to minimize the urbanization of the watershed area, and avoid subdivision of properties and opening of new roads. We must ensure that the forest cover is maintained. New and stricter regulations concerning clearing of wooded areas are needed. New by-laws covering lot size, setbacks in relation to the lake, the percentage of wood that may be cut, etc. are also needed. Residential development brings with it the permanent loss of trees as they are replaced with roads, ditches, houses, parking areas and accessory buildings, all of which are impermeable environments that promote the rapid transportation and overloading of nutrients right into the lake.

To learn more about our position on the regional land use and development plan, we encourage you to visit our website where you will be able to read our brief.

Membership

Have you renewed your MCI membership for 2009?

Since 1967, the MCI has been dedicated to the preservation and conservation of Lake Memphremagog and its surrounding country. While the success of this organisation is largely due to the work of its many volunteers, its success very much depends on the continuing financial support from its membership

Our mutual love of our beautiful lake means that we must continue in our efforts to protect its health. We ask you to renew your membership for 2009, if you have not already done so, using the membership form that is included in this newsletter.

If you wish, you may renew your membership on line by using the MCI web site at www.memphremagog.org

Official Members

On October 6, 2008 in Newport, Vermont, Premier Jean Charest and the Governor of Vermont M. James H. Douglas signed a decree stipulating that Memphremagog Conservation inc and its Vermont counterpart, the Memphremagog Watershed Association, become official members of the Quebec-Vermont Committee.

"MCI is proud that Premier Charest and Governor Douglas recognize the excellent work done by our volunteer organization over the course of its 41 years of protecting the environmental health of Lake Memphremagog and its watershed."

Noise pollution from boats

Put pressure on the police by **making an official complaint** every time you hear **loud noise from a boat // loud boat motors**, to make the police increase their presence on the lake.

Telephone:
Sûreté du Québec : 310-4141
Lake Patrol, MRC de Memphremagog
819 620-7669 or 819 821-0435

David Monty, Administrator

MCI Board Members (2007-2008)

Gisèle Lacasse Benoit,
President
Austin 819 868-1369

Pat Trudel,
Vice-president et Treasurer
Mansonville 450 292-3550

Claude Bernier,
Vice-Présidente
Magog 819 847-0845

Madeleine Saint-Pierre,
Secretary
Austin 819 843-6063

Johanne Lavoie,
General Manager
Austin 450 292-0864

Robert Benoit, Patrol
Austin 819 868-1369

Ann Boswall
Ogden 819 876-2838

Jean-Claude Duff
Austin 819 843-2131

Liz Goodwin
Magog 819 843-2498

Jan Lundgren
Austin 450 292-3964

Peter Lepine
Ogden 819 876-2838

David Monty
Austin 819 847-2600

Susan Watson
Newport 802 334-5173



Report on Cyanobacteria 2008

Members of our watchdog network reported 36 episodes of blue-green algae bloom between June 15 and November 11, 2008, in various sectors of the lake. In Fitch Bay, Sargent's Bay and Green Bay, on the west side of the lake: Plage Southière to Bryant's Landing; on the east side, Quinn's Bay to Drummond Point, and in the bays in the state of Vermont. On September 29, the entire central part of the lake, from the foot of Owl's Head to the American border, was covered with scum. The MDDEP took several tests that showed results of more than 2000 millions cells per litre, which is enormous. The quantity of toxin was lower than the public health norms, however, so no advisory was given. Among other things, on September 18, there were 7.8 ug/l of microcystin in the sample analyzed. This figure is a bit below the norm for swimming. It was somewhat surprising that the Ministry did not provide more information. Is the fact that no advisory was issued to be considered as good news? When the lake became a green soup in several areas, does this mean that it was healthy? Must we wait before taking action until the beach at Magog is closed, as was the case at Venise-en-Québec on Lake Champlain? MCI believes that the Minister of the Environment should provide more information about episodes of blue-green algae bloom. From now on, it is necessary to radically reduce all sources of phosphorus.



Baie Verte, Austin, November 8, 2008



Ogden, June 27, 2008

Please help us quantify our observations by becoming a member of our watchdog group! Register at info@memphremagog.org.

Sources Of Phosphorus /Land Use In The Region

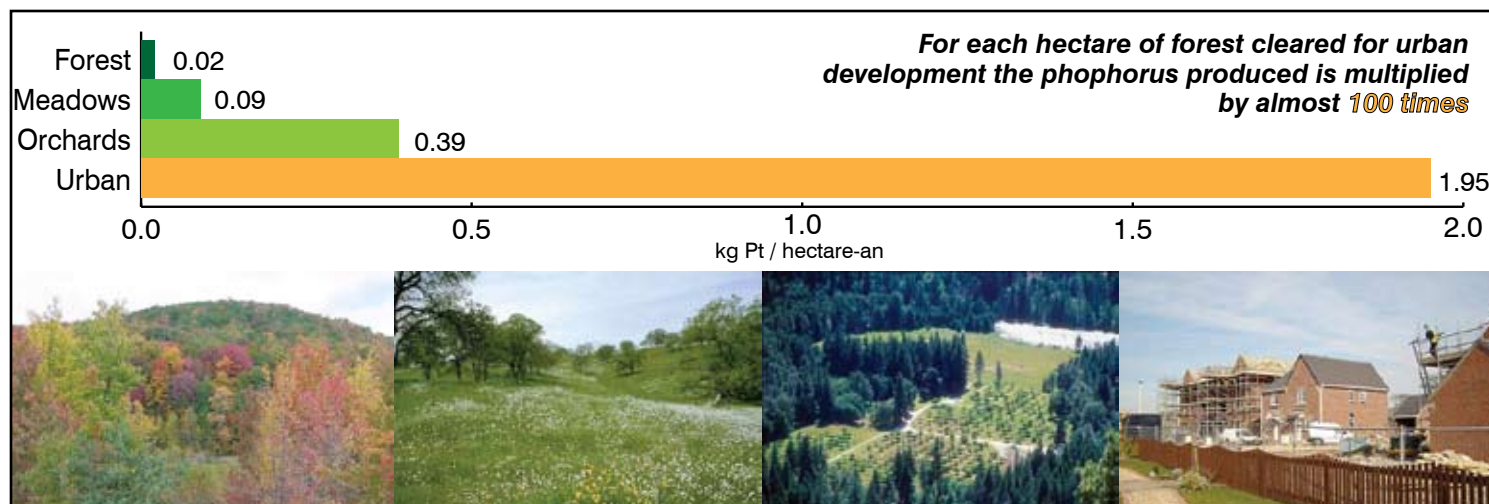
The Québec-Vermont Committee has prepared a report on the amount of phosphorus in the Lake Memphremagog drainage basin, with the goal of identifying the sources of phosphorus loading related to various land uses. The characterization for each sub-basin will make it possible to set objectives for phosphorus reduction in each sector of the lake. The percentage of phosphorus loading for each activity is already known, thanks to work carried out at Lake Champlain. Human activities are the main source of phosphorus and they can be quantified according to the land use: agricultural (growing corn, pasture, etc.), residential and forestry activities.

The most important source of phosphorus, ahead of urbanization (1.95 kg Pt/hect/yr), is without a doubt intensive agriculture (ex: corn 2.48 kg/hect./yr). And effort must be made to reduce phosphorus levels produced by all activities.

We can make choices about how we want to develop our region. We believe that protecting the forest is a top priority. When we compare the loading from

a natural forest (0.02 kg Pt/hectare/yr.) to that from residential development (1.95 kg Pt/hectare/yr), it is clear that there is every reason to choose to preserve the natural forests. We can continue to develop but we must find other ways. First, the capacity to support the ecosystems of rivers and lakes must be assessed before continuing runaway development. We must change the current development model to one that decreases its impact on the environment. We must re-evaluate the type of development in terms of the impacts of clearing land, drainage, supplying potable water, sewage services and the ability of the body of water to handle these. We need to promote "Growing green" development. We believe that conservation zones should be identified *before* development occurs to ensure that most of the drainage basin can be kept in its natural state. No technology can replace what nature does best!

We must preserve Lake Memphremagog, the regional drinking water reservoir. It is an irreplaceable reservoir for drinking water... For this reason alone, our elected officials should make the courageous – the right - environmental decisions.



PHOSPHORUS CONTRIBUTIONS BY LAND USE
Based on the Missisquoi Bay model



Control Of Soil Erosion: A Priority

A tonne of sediments carries 1 kg of phosphorus into the lake!



Photo MCI July 26, 2008

The presence of phosphorus is the main cause of the degradation of lakes. We must, therefore, work to eliminate all sources of phosphorus. Soil erosion is a major source of phosphorus. The scientific data are clear: the rate of suspended solids in water corresponds to the rate of phosphorus (see the illustration). When a river flows brown, we can

conclude that in this particle-filled water, there is an enormous quantity of phosphorus. Aerial photos taken by MCI in 2006 and 2008 are clear proof of erosion activity. It is therefore essential to put all our efforts into making sure that soil stays where it is. Any time soil is laid bare, it should quickly be covered, but first, before even beginning to

dig, sediment barriers should be installed to keep all the exposed soil in place on the site. MCI has asked municipalities to adopt a soil management by-law throughout the entire watershed area. It is a simple and effective way of eliminating part of the phosphorus that enters the lake from the shore and from all the tributaries as well. To be sure that

the by-law is respected, owners of excavators and their employees must be informed about different soil management techniques.

Ditching alongside roads is also a major source of sediments. The “lower third” method should be used along all public and private roads. We are also calling on municipalities to have a five-year plan to make more ecological ditches. Several techniques to slow the flow of water and hold back sediments exist, such as the use of bales of straw or boulders, or sedimentation basins. Municipalities must follow the lead of the Quebec Ministère des transports, which already uses these different methods. There are many roads on steep slopes around the lake because of the topography of the watershed, and they must be a priority.

The fight against erosion must, therefore, become a priority on roads and public lands – and also on private lands!

Soil Erosion

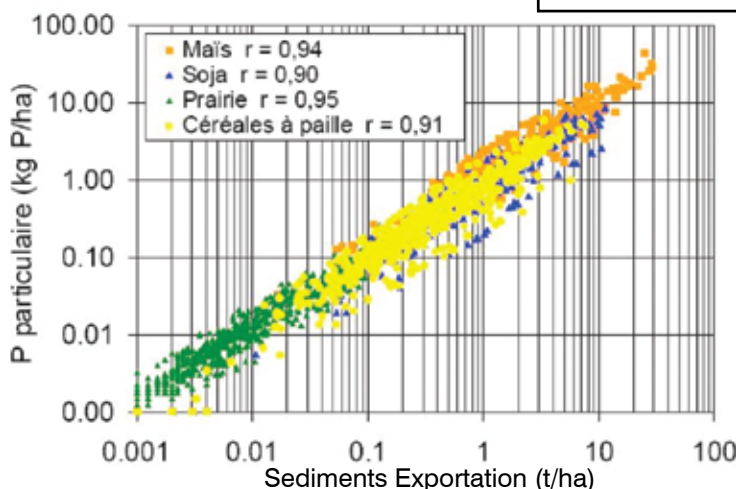
1 tonne of sediments carries about 1 kg of phosphorus

Fluctuation in space-time of sediments phosphorus exportation in the watershed of “Rivière aux Brochets” Champlain Lake Southwest of Quebec.

Partie 1

Paramétrage, calibrage et validation du modèle SWAT

J. Beaudin¹, J. Deslandes¹, A.R. Michaud¹, F. Bond², C. A. Madramootoo³



http://www.irda.qc.ca/_documents/_Results/90.pdf

