

REQUEST FOR A NEW BY-LAW TO ENSURE THE WASHING OF BOATS TO REDUCE THE PROPAGATION OF INVASIVE SPECIES SUCH AS EURASIAN MILFOIL

L'ASSOCIATION DU LAC SAM

AUGUST 7, 2018

PURPOSE

The Executive Committee of L'Association du Lac Sam, on behalf of its members, requests that the Denholm Council adopt a by-law to require the obligatory washing of boats accessing Lac Sam and all lakes in Denholm. We propose that the by-law be modelled upon By-law #2018-065 passed by the Blue Sea Municipal Council in 2018 (see *Annex A*). The goal of the proposed by-law is to protect the pristine lakes of Denholm, including Lac Sam, from the growing risk of invasive species, especially Eurasian milfoil. The consequences of the damage to these lakes poses an imminent and important risk to the environment, economy and quality of life of all Denholm residents.

WHAT IS EURASIAN WATER-MILFOIL?

Eurasian water-milfoil (*myriophyllum spicatum*) is an invasive aquatic plant native to Europe, Asia and northern Africa. Introduced to North America, it is now one of the most widely destructive invasive aquatic plants on our continent.¹ It is frequently referred to as the “Zombie Plant”² because of its prolific, almost unstoppable, ability to reproduce and spread rapidly. Eurasian milfoil prefers shallow water, one to three metres deep, but can root in up to ten metres of water. A fast-growing perennial, it forms dense underwater mats that shade other aquatic plants. When large stands begin to die off in the fall, the decaying plants reduce oxygen levels in the water.

The plant can interbreed with native milfoils, creating a more aggressive form of the invasive species. Because tiny plant pieces can develop into new plants, Eurasian water-milfoil is easily spread when

¹ See Annex B, “The Spread of Eurasian Milfoil Will Cost Cottagers Billions,”, White Paper published jointly by ABV des 7 and Block-Aid Inc. Permission to include in this submission provided by Mr. Robert Perrins, P.Eng of Block-Aid Inc. Also available at <https://drive.google.com/file/d/1jAYNWZhQRG9uyMff1In57JiwzKXE4C7y/view?usp=sharing>

² <https://www.cbc.ca/news/canada/montreal/zombie-plant-quebec-investment-1.4751909>

water currents, boat propellers, trailers or fishing gear carry plant fragments to new areas³. In addition, because Eurasian milfoil reproduces through fragmentation, it is extremely difficult to stop its spread once it has been introduced into a body of water.

The plant reduces biodiversity by competing aggressively with native plants. Reduced oxygen levels in the water caused by decomposing milfoil plants can seriously degrade and damage fish habitat, threatening important fish species, such as the Quebec Red Trout, *Salvelinus alpinus oquassa* — a geographically distinct and rare subspecies of Arctic char found in Lac Sam. Thick mats of Eurasian water-milfoil can also impede recreational activities such as swimming, boating and fishing.

The urgency of dealing with invasive species, and in particular Eurasian milfoil, was highlighted by the Government of Québec in their recent \$8 million-dollar funding announcement⁴. Of this amount, \$6.25 million will be given to the *Fondation de la faune du Québec* (\$1,25 million per year, over five years), which will be used to put in place and manage a program to fight the spread of invasive species. The remaining \$1.75 million will be used to fund research and awareness programs.⁵ Given the commitment of the provincial government and the urgency of the issue, there appears to be a unique opportunity to take local action that is aligned with this provincial government priority and perhaps to benefit from the new-found funding for this important and urgent problem facing our natural environment.

BACKGROUND FOR THIS REQUEST

Lac Sam is an oligotrophic, glacial lake with a single *mise à l'eau* located at the south end of the west arm of the lake. It is also the most westerly located headwater lake for the La Lièvre River watershed system. While its waters are still largely pristine and potable, Lac Sam has been identified as fragile and has been red-circled as a lake at risk of excessive phosphorus-loading in a 2007 study conducted by the Ministry of Energy and Natural Resources⁶. The reasoning for classifying Lac Sam as a lake at risk

³ <http://www.invadingspecies.com/eurasian-water-milfoil/>

⁴ Québec consacrera 8 M\$ à la lutte contre les plantes exotiques envahissantes, <http://www.mddelcc.gouv.qc.ca/Infuseur/communique.asp?no=4043>

⁵ Quebec launches \$8-million defence against 'zombie plant' invasion, <https://montrealgazette.com/news/local-news/quebec-launches-8-million-defence-against-zombie-plant-invasion>

⁶ See Annex G, État de certains lacs du sud de la MRC La Vallée- de-la-Gatineau par Henri Fournier, Ministère des Ressources naturelles et de la Faune, Direction de l'aménagement de la faune, Direction régionale de l'Outaouais, p. 9

was further elaborated in a broader study in 2012 of Gatineau lakes undertaken by Maurin Dabbadie and Stéphanie Ayotte.⁷

Lac Sam has also been designated by the Government of Quebec as a “Site Faunique d’Intérêt” due to the presence of the Quebec Red trout. The Quebec Red Trout is a geographically isolated subspecies of Arctic char that lives exclusively in fresh water. Its range is limited to deep, cold-water oligotrophic lakes, characterized by high dissolved oxygen content, in North-Eastern North America. The largest population of this rare subspecies is found in the south of Quebec, with much smaller populations scattered throughout New-Brunswick, Labrador and Maine, where it is considered especially rare. Once found in New Hampshire and Vermont, it is now extinct in those regions.

Due to its geographic isolation, the Quebec Red Trout is especially vulnerable to changes to its habitat. This vulnerability is exacerbated by its genetic isolation - there is little to no exchange of genetic information between localized populations - which limits their adaptive potential in the face of anthropogenic threats, habitat degradation, **or the introduction of invasive species**.

As concluded in a Quebec government report entitled “Rapport sur la situation de l’omble chevalier oquassa au Québec”:

L’omble chevalier d’eau douce du sud du Québec (sous-espèce « oquassa ») est sur la liste des espèces susceptibles d’être désignées menacées ou vulnérables. La disparition de l’espèce dans plusieurs lacs du sud du Québec au cours du dernier siècle a mené à ce verdict. La destruction de l’habitat (eutrophisation des plans d’eau surtout reliée au développement de la villégiature), l’introduction d’espèces compétitrices et l’acidification des lacs, causent en majeure partie ce déclin.⁸

These conclusions echoed the 2007 predictions by Henri Fournier, biologist in the Outaouais branch of Ministère des Ressources naturelles et de la Faune, when he warned that the spread of Eurasian milfoil would accelerate the eutrophication threat to freshwater fish habitat.⁹

⁷ Caractérisation des lacs de la MRC de La-Vallée-de-la-Gatineau, Mars 2012, p. 48, tableau 24, http://lacsam.info/wp-content/uploads/2017/07/E-CaraLacs_Vallée_vf.pdf.

⁸ Rivière, T., M. Arvisais, D. Banville et M-A. Couillard (2018), Rapport sur la situation de l’omble chevalier oquassa (*Salvelinus alpinus oquassa*) au Québec , ministère des Forêts, de la Faune et des Parcs du Québec, Direction générale de la gestion de la faune et des habitats .

⁹ See Annex G, op.cit.,p. 11.

Most disturbingly, the Quebec Red Trout has disappeared from all but seven lakes in the Outaouais region. As one of the seven lakes with a remaining population of Quebec Red, Lac Sam has been earmarked as a “Site Faunique d’Intérêt” by the Government of Quebec:

En 1979, Dumont et Monette recensaient 17 populations d’ombles chevalier oquassa en Outaouais. Ce nombre est maintenant réduit à tout au plus 7, et le statut de certaines de ces populations devra être réévalué. La perte des populations est probablement due aux destructions d’habitats liées aux activités humaines.

Le lac Sam abrite une des dernières populations de cette espèce en Outaouais, et elle y semble particulièrement abondante. Très profond, le volume d’habitat de vie est important et de bonne qualité malgré une concentration élevée de phosphore total. La communauté ichtyologique est diversifiée, mais aucune espèce ne compétition sérieusement l’omble chevalier dans sa niche écologique. Le maintien d’une habitat est essentiel pour assurer la pérennité de cette espèce.¹⁰

While Lac Sam is currently believed to be free of the invasive “Eurasian milfoil”, all cottagers on the lake have a strong desire to protect it for future generations, for current and future cottagers, as well as for the full-time residents of Denholm, and all other visitors who may wish to enjoy these precious lakes. As a result, L’Association du Lac Sam, through its renewed Lac Sam Environmental Stewardship Committee, is actively promoting ongoing environmental education and best practices to achieve sustainable stewardship of Lac Sam. A key priority over the past year has been to help inform all cottagers about the urgent need to protect the lake from invasive species, such as the Eurasian Milfoil, that has already had a detrimental impact on more than 17 lakes in the MRC de La Vallée-de-la-Gatineau (e.g. Blue Sea, Pémichangan, Saint-Pierre, etc.)¹¹. A short information package, prepared by the Environmental Stewardship Committee, was left at all cottages on Lac Sam in June 2018 (see Annex C). While proper stewardship by those cottagers already on the lake is a critical step, we believe that this needs to be complemented with further support and proactive leadership from the municipality,

¹⁰ MINISTÈRE DES RESSOURCES NATURELLES ET DE LA FAUNE. 2011. Les sites fauniques d’intérêt de l’Outaouais. MRNF. Direction générale de l’Outaouais. 119 pages, http://www.apls.ca/wp-content/uploads/2014/09/20110530_Sites-fauniques-dinteret_Approuve.pdf

¹¹ Lacs et cours d’eau où la présence du myriophylle à épi (*Myriophyllum spicatum*) a été rapportée – mars 2017, <http://www.mddelcc.gouv.qc.ca/biodiversite/especes-exotiques-envahissantes/myriophylle-epi/carte-repartition.pdf>

for instance, by providing access to well-known and well-accepted responsible watercraft practices that stop the spread of invasive species, such as boat washing¹²¹³.

Therefore, as an additional and critical step in ensuring that those moving boats between lakes actively participate in reducing the risks of propagating these invasive species, we urgently request that the Denholm Municipal Council adopt a by-law similar to 2018-065¹⁴, passed by the Blue Sea Municipal Council on April 3, 2018, to institute mandatory boat washing, for all watercraft and trailers prior to entering the lakes within the municipality of Denholm. In doing so, Denholm would be joining a growing network of Quebec municipalities that are taking proactive leadership to pass by-laws that are environmentally progressive and responsible. In contrast, a failure to be proactive now could have devastating and irreversible impacts on the local ecology and economy, including Denholm's tax base and the assessment value of lakefront properties in particular. Some studies, suggest that milfoil has a significant negative effect on property sales, corresponding to a 19% decline in mean property values.¹⁵

Such a decline in tax revenue could pose possibly insurmountable financial consequences in the future. Our preliminary assessment is that the tax loss on Lac Sam properties alone could exceed \$185,000.00 over five years¹⁶. It is no wonder that Olden and Tamayo concluded the following:

The knowledge that an invasion of milfoil can lead to a significant decline in property values provides the public an economic incentive to invest in prevention and/or control strategies. Moreover, reductions in property values also translate directly to substantially losses in property taxes garnered by local governments. Thus the economic impacts of milfoil invasions may extend well beyond the infested lakefront properties by reducing local government revenue

¹² <http://www.mddelcc.gouv.qc.ca/biodiversite/especes-exotiques-envahissantes/eviter-propagation-eee.pdf#page=4>

¹³ Vidéo - Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques : Espèces exotiques envahissantes : 5 étapes pour protéger son lac, <https://youtu.be/RC4qLKF6ofg>

¹⁴ http://www.blueseas.ca/images/reglements/reglement_2018-065_lavage_embarcations.pdf

¹⁵ Olden JD, Tamayo M (2014) Incentivizing the Public to Support Invasive Species Management: Eurasian Milfoil Reduces Lakefront Property Values. PLoS ONE 9(10): e110458. <https://doi.org/10.1371/journal.pone.0110458>

¹⁶ See Annex D, for tax loss calculation prepared by Richard Lamothe, BA (Hons), MA, MBA, July 26, 2018.

Lakefront property owners stand to benefit greatly (higher property values) from preventing milfoil invading their lake. In addition, it is necessary to engage recreational boaters in prevention efforts as well regardless whether or not they live on a lake, because they are an important dispersal vector of milfoil and other aquatic invasive species. When recreational boaters spread milfoil into a new lake they are inadvertently creating hidden costs (negative externalities) to other lake users of the newly invaded lake; these costs include lower property values, reduction of biodiversity, and diminished recreational experience, among others.¹⁷

Similar to the process implemented in many Quebec municipalities, including Blue Sea and Messines, a boat washing station could be installed at the Denholm Municipal Building and anyone wishing to launch a watercraft into a lake in Denholm would need to wash their boat and receive a wash confirmation certificate from the municipality prior to launching boats in a Denholm lake. Those found to not be following the by-law would be issued a fine, as outlined in the by-law. It is important to note that, just as in the Blue Sea/Messines by-laws, there are certain exceptions for watercraft that remain in a single lake at all times and do not pose a threat to spreading invasive species between lakes. Further, once implemented by Denholm, there may be opportunities to partner with other neighbouring municipalities, such as the Municipality of Bowman for those boats accessing Lac Poisson Blanc. Certain costs may be able to be shared and it could help protect other lakes in the area. In addition, as non-residents would pay a fee, this could also help off-set the total costs of this initiative.

L'Association du Lac Sam has an established history of responsible environmental stewardship. Here are some examples of **what the association and cottagers have done to date to protect the lake in recent years:**

1. **Water testing for TP (Total Phosphorus)** – for over 10 years, testing has been done on an annual basis and documented to compare against the data from previous years. The information is shared with the residents to promote best practices to decrease the level of phosphorus in the lake and to prevent eutrophication, in Lac Sam (see Annex E)¹⁸.
2. **Discussions on invasive species** – the dangers of invasive species and what we can do to minimize the risk of the contamination of our lake have been discussed at our two most recent Association Annual General meetings (AGMs), in summer 2017 and spring 2018; there has been overwhelming support to protect our lake.
3. **Environmental Stewardship Committee** – this committee, which includes a renowned biologist and Distinguished Professor of Biology from the University of Ottawa (Dr. John Thor Arnason), has launched an educational campaign with all cottagers. Information on Milfoil has been delivered to all cottages; and updated environmental information has been added to the Lac

¹⁷ Olden & Tamayo, 2014, op.cit.

¹⁸ See Annex E - 2018 TP Summary Table_MRF.xlsx

Sam website¹⁹ ; a renewed and dynamic information campaign for cottagers and renters promoting the latest best environmental stewardship practices will be launched in early August 2018.

4. **Invasive Species Signs** – the Lake association has purchased and ordered additional bilingual invasive species signs from ABv7 to be installed at the public water access point to remind people to wash their boats prior to launching.²⁰
5. **Straw poll** – An email-based “straw poll” was conducted of all cottagers to gauge their support to ask the Denholm Municipal Council to help us protect the lake. The question posed was : "Do you wish your Environmental Committee to pursue a Lake management effort to prevent milfoil and other invasive species from entering our lake through discussions with the Municipality and the Provincial government." In response, we received a strong show of support from 101 of the 102 respondents. We were unable to get in contact with 11 of the cottage owners.

Plan of Action

In summary, the Association is asking the municipality for their help in creating and enforcing a by-law that mandates responsible boat washing practices for watercraft to access Denholm lakes and to open a boat washing facility to this end at the municipal building. We are committed to engaging in a dialogue with Denholm Council and staff to find solutions including how to secure funding.

Some communities have demanded much stronger regulation and controls. In the neighbouring municipality of Val-des-Monts, the Council has gone so far as to pass by-law 777-16 that gates and closes off Lac St. Pierre and Lac McGregor. Boat access is restricted and a supervisor at the gate acts as an inspector to ensure all boats are clean. The inspector can refuse boat access and order the owner to wash the watercraft and show proof of such.

L'Association du Lac Sam is not asking the Municipality of Denholm for such action at this time. We believe that with a comprehensive programme of education and awareness, combined with the boat washing by-law and wash station, gates may not be needed at all. As an Association and a community in Denholm, our goal is to protect the lakes of Denholm for future generations to enjoy and access, through good stewardship practices. Our hope is that with the assistance and support of the municipality, we can achieve this goal. We look forward to future discussions and collaboration regarding our requests as soon as possible.

¹⁹ See www.lacsam.info

²⁰ <http://www.abv7.org/administration/content/UserFiles/Image/Liste%20de%20prix.png>

The information below is largely based on publicly available information related to the recent implementation experience at Blue Sea. The municipal officials can no doubt provide additional information, as required.

Costs and Funding for the Washing station

The use of public funds must always be done carefully and with the public interest in mind. The estimated costs of installing an automated, self-service boat washing station in Blue Sea was approximately \$17 005²¹; Blue Sea applied for funding through an existing grant programme through the Quebec Ministry of Forests, Fauna and Parks, via a program entitled “*Programme Accès aux plans d’eau pour la pêche récréative*”²², in which *Volet B* covers up to 75% of the costs, up to a maximum of 15 000\$, for the installation of a boat washing station. In the case of Blue Sea, the estimated cost to the municipality to install a washing station was \$4,251²³.

While it is the municipality that needs to make a submission, L’Association du Lac Sam would be pleased to assist the municipality of Denholm with the application. It is important to note that there are deadlines by which the work must be completed (see under: *Conditions d’admissibilité*). In addition, the program has established certain criteria²⁴. L’Association du Lac Sam would also be pleased to look for private donations to cover any shortfalls to help institute the washing station at the Denholm municipal building, if required.

Wash station at the Denholm Municipal Building

Like at Blue Sea, an automated wash station could be installed at the Denholm Municipal Building. When a user completes the wash cycle, the owner would be issued a certificate to confirm that the boat is washed.

Costs to users

As with Blue Sea, our recommendation is that the use of the washing station be free for Denholm residents/Cottagers on the various lakes (i.e. tax payers, but, in the case of Lac Sam, it would also be

²¹ http://www.blueseas.ca/images/proces-verbaux/PV_2018-04-03.pdf - page 21

²² <https://mffp.gouv.qc.ca/le-ministere/programmes/acces-plans-eau/>

²³ http://www.blueseas.ca/images/proces-verbaux/PV_2018-04-03.pdf - page 21

²⁴ <https://mffp.gouv.qc.ca/wp-content/uploads/Criteres-base-station.pdf>

free for those who are located in Lac Ste-Marie that have a cottage on Lac Sam) and that for non-residents, it should follow a similar tariff structure as outlined in the Blue Sea by-law.

Enforcement of the by-law

This by-law should be enforced in the usual manner. In addition, signs could be posted at the municipal building and all public boat launches. At the start, it may be helpful to have occasional “check-stop” style blitzes, on a limited number of days at the boat launches, to help promote the new by-law.

RISKS OF INVASIVE SPECIES: IMPACT ON THE ENVIRONMENT, ECONOMY AND SOCIETY

Along with all those that use the lakes in the municipality, the Denholm Municipal Council now has an important role to play in ensuring the ongoing protection and health of the lakes from the very real risks they are facing. These include risks to:

1. **Environment** – the arrival and wide-spread propagation of invasive species, such as Eurasian milfoil, can lead to²⁵:
 - Reduction in biodiversity by competing aggressively with native plants;
 - Reduced oxygen levels in the water caused by decomposing plants can degrade fish habitat and threaten fish, including the Quebec Red Trout;
 - Thick mats of Eurasian water-milfoil impeded recreational activities such as swimming, boating and fishing;
 - Increased stagnant water, which is ideal habitat for mosquitoes.
2. **Local Economy** –
 - Possible loss of property values on an impacted lake. Studies have shown that it can have an important negative impact on the value of lake front properties;²⁶
 - Anecdotally, cottagers on other nearby lakes infected with Eurasian milfoil have indicated their property values saw important and significant decreases;
 - A sudden decrease in property values could significantly impact the municipal tax base;
 - Higher vacancy rates would mean fewer cottagers frequenting and investing in Denholm businesses.
3. **Society** –
 - Opportunity to show Denholm as a leader in environmental stewardship, and aligned with the priorities and direction of the provincial government;

²⁵ <http://www.invadingspecies.com/eurasian-water-milfoil/>

²⁶ <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0110458>

- Potential opportunity to benefit from newly identified funding from the provincial government;
- Implementing an approved and agreed-to approach will reduce the increasing level of tension between neighbours concerned with protecting the lake;
- A level of support from the municipal government will demonstrate to cottagers and residents that their concerns about the environment are being heard and that win-win solutions can be found and implemented for the benefit of all users of the lake;
- Demonstrate the results that can be achieved when the public and private sectors work together towards a common goal;
- Loss of long-term enjoyment of and access to the lakes of Denholm for residents and cottagers.

NEXT STEPS

1. The Executive of L'Association du Lac Sam would like to meet with Denholm officials as soon as possible to discuss our request.
2. The Executive would be pleased to assist the Denholm Municipal Council in putting together the grant application for the boat wash station funding.
3. The Executive will be holding its regular summer meeting on August 18, 2018 and would be pleased to welcome any representatives of the Denholm Council should they wish to participate or provide additional information to residents.

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ADDITIONAL DOCUMENTATION:

There is a great deal of additional documentation available on Eurasian milfoil and other invasive species that is available. If it is helpful, additional information and links can be provided. For example, see Annex F.

FOR FURTHER INFORMATION PLEASE CONTACT

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1. Annex A: Blue Sea By-law 2018-065
2. Annex B: “The Spread of Eurasian Milfoil Will Cost Cottagers Billions”
3. Annex C: Lac Sam Eurasian Milfoil Information package (June 2018)
4. Annex D: Tax Calculations
5. Annex E: Cumulative Water Testing Results (Lac Sam)
6. Annex F: CRE Laurentides documentation on milfoil
7. Annex G: État de certains lacs du sud de la MRC La Vallée-de-la-Gatineau par Henri Fournier, Ministère des Ressources naturelles et de la Faune, Direction de l’aménagement de la faune, Direction régionale de l’Outaouais -- Sommet sur les lacs et les rivières, (Maniwaki), le 14 septembre 2007.