



The Lake Matters

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A Message from your President

As the summer season begins to heat up and we find ourselves finally having a chance to fully enjoy the joys of living on Lake St. Catherine, it is time to update you on the activities of the Lake St. Catherine Conservation Fund.

This spring, Bill Steinmetz, our longtime President, stepped down from the LSCCF Board of Directors, and I took over as acting President. The past 12 months have been challenging, but we continue to make significant progress towards our goal of restoring Lake Saint Catherine in all its glory. I look forward to telling you more at our Annual Meeting, but this note will provide a brief update on the challenges we face, the progress to date, and the next steps.

The Challenges

The Lake Saint Catherine chain of lakes continues to be stressed by a combination of factors. Invasive species, notably Eurasian watermilfoil (EWM), get the most attention, but it is clear that the overall quality of the lake environment and our ability to boat, swim and fish on it are threatened by a number of other factors including watershed runoff, depleted oxygen levels, sediment buildup, and excessive plant growth.

The shallow water conditions most notable in the Little Lake are a continuing concern. Little Lake formed during the glacial period and is over 40 feet deep (at its hard bottom) in much of the lake. For 10,000 years, Little Lake has been slowly filling in with silt and organic sediment, a completely natural process. However, as the lakeshore become developed in the 1960's, this process was greatly accelerated, fueled by an explosion of EWM growth and the addition of huge quantities of organic material at the bottom of the lake. The current shallow conditions promote plant growth from shore to shore, threatening to result in an even shallower lake.

Without question, controlling watershed runoff is vital. Heavy rains, flooded farmland, and questionable shoreland development are producing heavier and more nutrient-laden sediment flows into our lake from roads, building sites and beaches. Another concern is the extent that failing septic systems are adding unwelcome nutrients to the mix.

The Progress and Next Steps

Throughout the 2018 season, the LSCCF continued its aeration program for a sixth year on the east side of Little Lake and a third year on the west side. According to our diligent measurements (which are, unfortunately, disputed by state officials), the areas with aerating diffusers saw accelerated decomposition of organic sediment, resulting in a deepening of the aerated part of the lake at the rate of about eight inches per year. There are places on the east side that are now over ten feet deep to the top of the sediment, an improvement of over five feet! The lake is healthier as evidenced by the fact that there has not been a fish kill (even with occasional record heat) since aeration began.

As explained in detail in the next article, state officials have refused us permission to restart the system this year, but we are working with them to expand the system to all of Little Lake and introduce bioaugmentation to tackle the muck problem once and for all. We have recruited strong scientific and political allies and are pursuing new funding sources to make this a reality.

As many of you have seen, for the past two years, the LSCCF has carried out a harvesting operation to remove surface vegetation and cut plants below the surface. Last year, the LSCCF added a second harvester, bringing the total investment in weed removal to date to \$80,000. A team of volunteer and paid staff have conducted over 650 hours of harvesting time and

removed 2,400 cubic yards of weeds from Little Lake over the past two years. This year's plan calls for the removal of at least that much by the end of the season in October.

Harvesting helps, but it is a stopgap measure. We are working with the Poultney-Mettowee Conservation District to begin to address more effectively the core problem of watershed stormwater runoff around the lake. These efforts will take decades, however. We need a solution **now** to reverse some of the damage that has already been done. As noted above, we are pushing hard in Montpelier to win permission to carry out an extensive aeration program that will transform Little Lake. (For more information, please take a moment to review our website –www.lakematters.com, especially the presentation that I gave on May 1 this year to the Vermont House Natural Resources, Fish and Wildlife Committee.)

We hope that you will continue to support us, and if you are not a member, that you will join the LSCCF now. If we are to succeed, we need all of you to help out, wherever you can. We welcome your questions and suggestions. We look forward to seeing each of you soon, if not at the Annual Meeting, then out on the lake.

All the best,
David Emmons, President LSCCF

The State of Aeration

After years of research, followed by years of working to convince the State Department of Environmental Conservation (DEC), in July of 2012, the LSCCF was granted a permit to install a very limited aeration system in a small portion of Little Lake on the eastern side. The aeration system provides needed oxygen to allow bacteria to decompose the organic sediment which is making the lake shallower. Because of the success of the project, DEC permitted an expansion of the system from 9 to 13 diffusers in 2013. In 2016, admitting that there were no negative impacts and that the system was achieving a reduction in the muck, DEC approved our petition for a further expansion and allowed installation of 14 diffusers on the west side of the lake.

Through 2018, both systems continued to function as designed, increasing the level of dissolved oxygen at the water sediment interface and consequently increasing the rate of decomposition of the sediment. But then at the end of the summer of 2018, the DEC informed the LSCCF that they would not be renewing our permits for the aeration systems. This decision was based on many flawed assumptions too numerous and complicated for this article. Suffice it to say that the LSCCF did not take this decision lying down.

We mounted an immediate defense of the project and its clear improvements to our lake. Months of planning and political negotiations landed us meetings with the House Natural Resources, Fish & Wildlife Committee, and other senior government officials. Accompanied by Bob Short, LSCCF President David Emmons traveled to Montpelier and delivered testimony to the House Committee on May 1st. The testimony was very positively received, and the chairwoman of the committee asked; "Who can we speak to on your behalf to advance your worthy cause?" Please go to our website (www.lakematters.com) to view the full 30 minutes of testimony.

From the House Committee, it was on to the Governor's office to meet with the Governor's Assistant, the DEC Commissioner, and the Head of the Lakes and Ponds Department. In this meeting, we pushed for authorization for the LSCCF to do the right thing for Little Lake by letting the aeration project continue. This meeting was tense and challenging, but we held our ground, and fought for your lake!

On May 23rd, Emmons received a letter from the DEC Commissioner stating that she does indeed see an opportunity for an aeration project on Little Lake to be able to produce valuable data as to the effective usability of aeration for the reversal of eutrophication in Vermont lakes. Clearly, a door had been opened and the LSCCF is marching right through it.

Armed with this new information, the LSCCF leadership wasted no time assembling a superb team of experts to put together a full bioaugmentation project for Little Lake. The LSCCF is now working with Professor Wayne Carmichael, Wright University, OH; Lake Scientists Larry Eichler of the Darren Fresh Water Institute (part of Rensselaer Polytechnic) and Dr. Jennifer Jones of Michigan; Dr. Alex Horne, University of California, Berkeley; and the engineers from Clean-Flo International. The full lake restoration project will be designed and monitored by this team, and the results from this project will be published as a peer review paper on the effectiveness of bioaugmentation for reversing the effects of eutrophication....and the Little Lake project

results will be featured at the next international conference on toxic cyanobacteria (commonly called blue-green algae) in Toledo, Ohio in 2022.

The LSCCF is currently working with our state representatives to obtain funding for the project.

Meet Our New Candidates for Board of Directors

Rich Young



Rich and his wife Peg have loved summering on the lake from their place on Channel Drive for about 9 years, and love showing off the lake to their many visitors. They enjoy snowmobiling in winter with at least one week each year in northern Quebec. Retired now, Rich was an electrical engineer who worked in the aerospace businesses designing solutions for military radar systems and cockpit controls, and then later as a project engineer for high voltage transmission line installations both in the US and internationally. Nowadays, Rich keeps busy in retirement buying property and improving it for resale.

Susan Ritchie



Sue has loved Lake St. Catherine for many years, and even brought students to the lake to kayak when she was a teacher at Long Trail School. Sue bought a place on Channel Drive 5 years ago, and will retire and live there permanently next April or soon after. She's a born Vermonter, and after some travel west, has had a long career in Vermont as a Spanish teacher, sometimes taking students on trips to Spanish speaking countries. Now that Sue is a lake resident, she spends a lot of time here and is already a very active member of the LSCCF. Sue says, "I will keep on our journey to protect our lake and to make sure that it gets better. I am honored to work with your great board which is an amazing dedicated group!"

Rick Newell



Rick Newell, his wife Joanne and their twins hail from Connecticut, and since 2010 have come year round to their place on the east side of Little Lake. Rick's whole family loves the Little Lake for boating, swimming, skating, fishing, nature and wildlife. Rick has remarked about the beauty and serenity of the Little Lake. After a 35-year career in the insurance business, Rick will bring valuable business experience to the LSCCF Board of Directors. Rick says, "I care deeply about the health of the lake... and feel the ~~the~~-LSCCF is an essential leader to facilitate the recovery of the Little Lake. The LSCCF has been front and center in improving the quality of the Lake to allow for all of the traditional and accustomed activities that lake residents and the broader Wells community have enjoyed for generations. I would be honored to take a role on the LSCCF to help progress the agenda to support the end goal—to return the Little Lake and full lake system to complete health so generations ahead can enjoy the lake. The LSCCF's goal that wildlife can continue to thrive - the fish, birds, turtles, frogs, crawfish, plant life, etc... - is very meaningful to me."

TIME FOR ALL HANDS ON DECK!

These are perilous times for Lake St. Catherine, particularly in Little Lake. The health of the lake is under threat from invasive weeds, excess runoff, the introduction of high levels of phosphorus and nitrogen, and huge quantities of sediment. The LSCCF is fighting hard to address these problems, and we want to expand our aeration and weed harvesting programs, as well start up an experimental dredging effort. However, these programs cannot grow without more support from the State of Vermont and the local community. The plain fact is that we need the help of everyone living

on the lake and those who come to visit this beautiful place, if we are to succeed in restoring the lake to its full glory. So, throughout the first part of the summer, the LSCCF directors and other volunteers will be spreading the word and reaching out to everyone on the lake through various means to attract more members, more financial support and more in-kind donations. If you want to help, please contact Michael Marine at marinemw2@hotmail.com.

Wells Voters and the Agency of Natural Resources Support the LSCCF

The LSCCF is grateful once again as this year a huge majority of the people of Wells acknowledged the progress made and important work we do by providing \$20,000 to support the efforts to restore Lake St. Catherine. These funds from the town are a big part of the income that sustains our projects.

Another important source of funds comes from the Grant-in-aid program of the Vermont Agency of Natural Resources. This year, we will get \$9,718 to support harvesting activities in 2019. This grant comes through the Poultney-Mettowee Conservation District.

Come to the Annual Meeting

Mark your calendar! Our Annual Meeting will be held on July 27 at the Wells Village School at 10 AM. You've probably heard about the dangerous blue-green algae (cyanobacteria) that bloomed in a small part of Lake St. Catherine last year and has invaded some of the other lakes in Vermont. We'll be explaining what we're doing to prevent it from occurring again. Come hear all about our latest work with the Vermont Department of Environmental Conservation. Other hot topics once again will be aeration, harvesting, and the possibility of dredging. We'll be electing a new Board of Directors as well as the offices of President and Vice President. Here are the candidates for the board as proposed by the nominating committee: Robin Barley, David Emmons, Paul Labas, Tim Makepeace, Michael Marine, Rick Newell (new), Tina Peterson, Susan Ritchie (new), Bob Short, Dennis Stark, and Rich Young (new).

LSCCF By-Laws Updated

Approaching our tenth year provided a good opportunity to see how well our original by-laws have stood up to our regular functions and operations. What we found is that while we have been proceeding within the strictures of the by-laws, a considerable number of items had become obsolete either from disuse or just inapplicability. The result is a newly drafted document which has been approved by the Board of Directors. This new set of by-laws was recently sent out to members for their perusal. The older version was left on the web site for any who wished to compare the changes. At our Annual Meeting on July 27, we will ask the members to vote their approval of the new document.

Help Save The Lake with A Free Buffer Garden!

One of the things lakeshore owners can do protect the health of the lake is to provide a buffer garden along the shorefront to filter harmful runoff into the lake. And thanks to a program provided by the Poultney-Mettowee Conservation District, property owners can now have an attractive and functional buffer garden planted for free through a program called LEAP (Lake Education and Action Program)!

With the help of high school and college interns and local volunteers, the Conservation District will plant aesthetically pleasing native trees and/or shrubs on lakeside properties, creating a buffer zone or rain garden which will filter runoff. Household pesticides and fertilizers, along with other solutions used for lawn-care, can pollute local lakes. Sediment erosion from storms and excavation are lake pollutants, as well. Native plant buffers on lakeside properties protect Vermont's lakes and keep them healthier for all to enjoy, including wildlife. Here's a look at a buffer garden planted through this program by a LSCCF Director several years ago. It works to catch runoff, and has an added benefit: the Canada geese will not pass through it onto the property.



If you would like to take advantage of this opportunity, or wish to get further details, please contact either Ashley Leemans, LEAP Coordinator, by email at ashleemans@gmail.com or Hilary Solomon, District

Manager, by email at hilary@pmnrcd.org, or call (802) 287-6880. To schedule plantings, preferably contact the District by July 1, 2019.

LSCCF Reaches Out to Fishermen

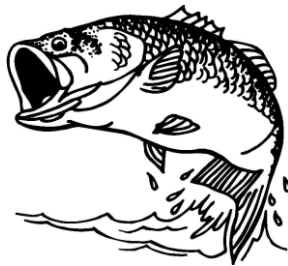
A current outreach to local fishermen's organizations is attempting to provide information about the LSCCF's efforts to preserve the lake and raise membership and funds at the same time. Led by Director Robin Barley, this effort will take place during eight scheduled fishing tournaments on the lake this season. She has reached out to the Adirondack Bass Club, the Rutland Bass Club, the North East Bass Anglers, the Night Stalkers, the Fish Wednesday Night club, the Southern Vermont Bass club, and the Richard Poalino club. Robin provided each of the leaders of those groups a document explaining how the LSCCF is using a chemical-free program in the lake to reverse the process of eutrophication and make the lake a most attractive spot for fishing.

Robin asked that these leaders...

- Share our information with their participants.
- Add our donation and membership information to their tournament entry form
- Provide feedback as to how we can work with them to improve the fishing on Lake St. Catherine.

On the dates of the actual tournaments, the participants receive a key chain with the LSCCF logo printed on the fob and will also receive printed information about the LSCCF's lake restoration efforts will be placed on their windshields.

As Robin said, she is hoping the program will demonstrate "our commitment to improving the ecosystem of Lake St. Catherine... Something you fishing sportsmen care about very much. Better ecosystem and water quality = better fish!"



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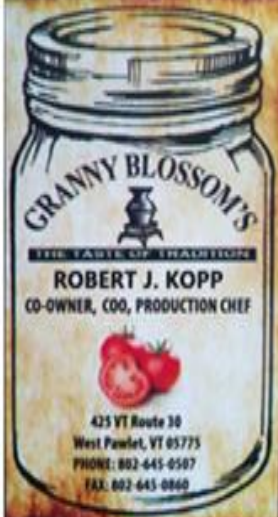
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Autumn on Little Lake 2017

