



BELGRADE REGIONAL CONSERVATION ALLIANCE



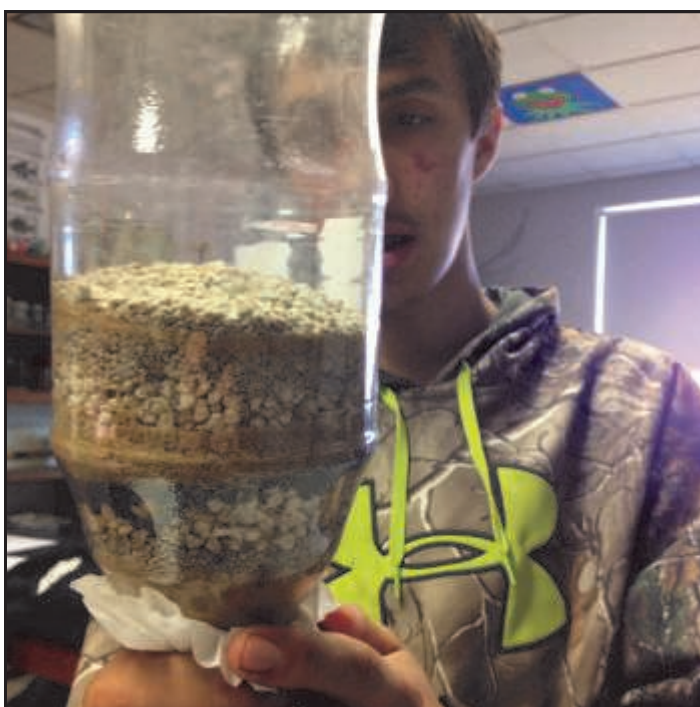
BRCA conserves the lands, water quality, and natural heritage of the Belgrade Lakes watershed.

Messalonskee High School Teams Up With BRCA

Students at Messalonskee High School had the unique opportunity this year to get hands-on science experience on some of our local lakes and streams this fall.

The course focused on limnology, the “study of inland waters” including lakes, streams, and ground water. Messalonskee High School’s teaching staff teamed up with BRCA to offer a six week course that has connections with the Belgrade Lakes watershed community. RSU18 and BRCA worked to connect with our community and get real life learning experience.

The seminar covered many topics related to limnology, starting with the properties of water that make life possible, followed by how much is actually available for us and other organisms to use. From there the students learned about the physical properties of lakes and streams, how bodies of water are formed (it’s more than glaciers), how they act (why and how streams meander), water quality and pollution, and local aquatic plants and macroinvertebrates.



In this course, students measured discharge of a tributary to Messalonskee Stream and studied how water bodies are formed and behave using a streamflow table. We also analyzed water quality in Messalonskee Lake, tested the effects of high levels of phosphorus on both invasive and native aquatic plants and algae, and collected, identified and used macroinvertebrates as indicators of stream health. The students also got a chance to explore the Maine Lakes Resource Center in Belgrade where they ran a water sample through a microscope FlowCam to take pictures of the phytoplankton populations from a stream.

The students benefited from expert guest speakers from BRCA on aquatic plants and macroinvertebrates, and a tour of Colby College’s water quality lab where they had a chance to see researchers in action. For a final project, students chose a topic and explored it further with an in depth research project. Each student was required to write and post a blog article about one of the topics for the community to read (see it here mhslimnology.wordpress.com/).

Most people living in the Belgrade watershed are aware of declining water quality in our Belgrade lakes, and support the efforts of the five lake associations, the BRCA, and other conservation groups to fight back. Through programs like LakeSmart and the Youth Conservation Corps, we have made significant improvements to the buffer areas along our lake shores which have reduced the amount of phosphorus entering our lakes. Roads leading down to our lakes have been beefed up to mitigate the amount of phosphorus that they contribute to our lakes. We have inspected thousands of boats entering and leaving our lakes to reduce the risk of invasive plant infestations. Unfortunately in spite of our best efforts, water quality continues to degrade. I often speak to people who want to do more, whatever it takes, to turn our situation around. But before we can do something, we need to clearly understand the cause and magnitude of the problem and, to do that, we need scientific data. Such efforts are expensive and require scientific expertise.

This summer, thanks to generous funding from Tom Klingenstein and the Elmina B. Sewall Foundation, and the work of Colby College and our local conservation organizations, we were able to implement a large scale data collection effort on all seven Belgrade lakes. Analysis of these data are presently being carried out by Colby students under the tutelage of several Colby professors. Staff from BRCA and Maine Lakes Resource Center (MLRC) contributed over 1800 hours in support of data collection while Colby students worked another 2100 hours. Not surprisingly, 14 volunteers from the five lake associations provided their private boats, and over 250 hours of their time, to make it easier for the staff and students get out on the lakes.

According to Professor Whitney King, project goals were to “document the current water quality status of each of the Belgrade Lakes.” Additionally an educational campaign was conducted to “make the Belgrade Lakes community aware of water quality issues and the plans to address them.” Many of you may have attended one of these many presentations held this summer at the

MLRC. Lastly, a committee will be convened “made up of representatives from all watershed constituencies to complete a comprehensive water quality improvement action plan.”

Colby students who worked on this very important project are Sergio Baez Madrigal, Francis Dunham, Kara Witherrill, Ellie Irish, Danqing Zhao, and Anne Schechner. Logan Parker with MLRC and Nathan Durant with BRCA also pitched in. The program was superbly managed by Colby professors Whitney King, Denise Bruesewitz, and Brenda Fekete of MLRC.

By the end of the winter, the data will have been analyzed and interpreted, giving us an understanding of our precious lakes that other lake associations around the country will be envious of. This sets us up to best determine the next steps to preserve our lakes for future generations.

I am very excited about our progress! I'm also grateful to Colby College, Tom Klingenstein, the Elmina B. Sewall Foundation, and everyone who pitched in to make this summer's efforts a tremendous success. Please join me in giving all of these folks a big pat on the back for their hard work.

- Mel Croft, President

Executive Director's Column: Highlights from 2015 - Plans for 2016

Harold Alfond Foundation Challenge Grant – Annual Appeal

BRCA was awarded a Challenge grant from the Harold Alfond Foundation which was launched at the bi-annual Harold Alfond Memorial Golf Tournament on August 9, 2015. All donations made by December 31, 2015 will be matched dollar for dollar, up to \$25,000 by the Harold Alfond Foundation. All funds provided by the Foundation will be used for BRCA's lake and water quality programs.

Land Programs – Kimball Pond/Kennebec Highlands

BRCA bought the 284-acre Kimball Pond property in July 2014 after being awarded a Land for Maine's Future (LMF) grant. BRCA expects to receive that funding by March 2016.

BRCA borrowed \$250,000 to buy the Kimball Pond property, has repaid \$80,000, and has a current loan balance of \$170,000. With LMF funds, BRCA will reduce its debt to \$80,000. Until now, BRCA has benefited from a 0% loan. That loan begins charging interest in January 2016. We are fundraising to pay off this loan ASAP!

BRCA has several conservation easement projects in the works that we hope to complete in 2016. These include lands that are important to habitat protection, water quality, and recreation. We hope to announce the completion of one of these projects early in 2016.

BRCA has embarked on Land Trust Alliance Accreditation which should be completed over the next two years. The benefit to BRCA is to ensure compliance with national standards and practices of excellence, and to provide assurance to land and financial donors that BRCA will be protecting land “in perpetuity.”

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Lake Trust Corner: Saving Our Lakes, One Shore At A Time

Stormwatch: Did you know that New England leads the country in the volume of rain we get from violent and frequent storms these past few years? It's true. In fact, 71% of the rain in Maine the past 10 years has arrived in these downpours. For those of us who love and enjoy Maine's freshwater lakes, this news doesn't bode well since the force and volume of these cloudbursts delivers increased phosphorus to our waters.

Risk Prevention: According to a three year study by Colby College Associate Professor Cathy Bevier and her students, LakeSmart properties are equivalent to undeveloped sites when it comes to water quality protection. LakeSmart, in other words, is an effective risk-management strategy all should employ.

Action: If you haven't yet invited a trained LakeSmart volunteer to visit your lakefront home, assess its lake-friendliness, and share LakeSmart tips for lake protection, please consider doing so now. Not only will it help protect the lake, its wildlife, recreational pleasures and your property value, it's also a good neighbor move.

LakeSmart Contacts:

Belgrade Lakes Association:

Logan Parker 495-3617

East Pond Association: Mel Croft 362-5340

Salmon Lake/McGrath Pond Association:

Kim Hallee 873-285

North Pond Association: Linda Rice 313-2494

PHOTO: Most recent LakeSmart Awardee is Rome resident Gail Rizzo, Designated Broker of Lakepoint Real Estate and past president of the Belgrade Lakes Association, pictured here at the Maine Real Estate and Developer's December Meeting with Maggie Shannon, Maine Lakes Society.



Executive Director's Column

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Water Quality Initiative

In 2015, BRCA partnered with Colby College, Maine Lakes Resource Center (MLRC), and watershed lake associations to launch the Water Quality Initiative. This Initiative is addressing long-term water quality declines in the Belgrade Lakes watershed. The goal is to develop a watershed management plan by March 2016 which will detail long-term solutions and costs to water quality and invasive plant problems. Water quality and sediment data is being analyzed and reviewed by Colby, UMaine, Maine DEP, and outside consultants.

Once the management plan is developed, the partners will launch a fundraising campaign. BRCA and MLRC received funding to launch this initiative, and Colby and the lake associations provided extensive support to get the work done. Public

meetings to discuss the results and recommendations will begin this winter and will be publicized on partner websites. We will provide a thorough update in our March 2016 newsletter.

Watershed (319) program

BRCA receives funding from Maine Department of Environmental Protection (DEP) to fix erosion problems on Great Pond and on Long Pond. We partner with road associations, towns, and homeowners to re-build roads to reduce erosion to the lakes. BRCA was just awarded a new 319 grant to continue this program in 2016 and 2017. If you have an erosion problem associated with your road or driveway, you may be eligible to receive funding. Contact BRCA for more information about the "319 grant" program.

In addition, BRCA is partnering with East Pond Association on a new planning grant and will work with the lake association, Colby, Maine DEP and

outside consultants on developing solutions for East Pond's water quality problems.

Youth Conservation Corps

YCC is partnering with the LakeSmart program which makes both programs more effective in getting projects done and in raising awareness about erosion control and water quality.

In 2015, BRCA partnered with other YCCs to bring the YCC program to the awareness of state legislators. Tom Saviello, our state senator, sponsored legislation that, for the first time, provides state funding to YCCs with the goal of improving lake water quality. Several youth testified that the program not only fixes erosion problems but teaches team building and leadership, and led them to pursue science or engineering degrees and to work in the Maine after college. Thank you Senator!

- Charlie Baeder, Executive Director

Youth Conservation Corps Program: UPDATE

BRCA is proud to celebrate 27 years of conservation efforts for the Belgrade Lakes. The Youth Conservation Corps (YCC) has just completed the 20th season of dedicated erosion control services. It is my pleasure to be the director of such a positive program. This is my second year as director of YCC and I have learned a lot about erosion control, employee management, and job safety.

The YCC works on all of the lakes in the region to install Best Management Practices. These structures are designed to mitigate erosion by infiltration, diversion, stabilization, and vegetation. Infiltration encourages the rain water to drain into the soil. The soil filters out contaminants and cleans the water before it enters the lake. Diversions move rain water off paths and roads, this increases the longevity of the path and reduces maintenance. Stabilization utilizes angular rock to fortify erosion sites. Stabilization BMPs commonly occur on shorelines, drainage ditches, and steep slopes. Rocks act as armor to absorb or deflect the velocity of water preventing the suspen-

sion of soil in stormwater, and preventing waves from eroding shoreline. Vegetation is a living, breathing, and growing BMP. Vegetation, and associated roots, work to filter rain water both chemically and physically. Smaller roots absorb contaminants from rain water and larger roots stabilize soil and prevent erosion. This is the only BMP that increases effectiveness after installation.

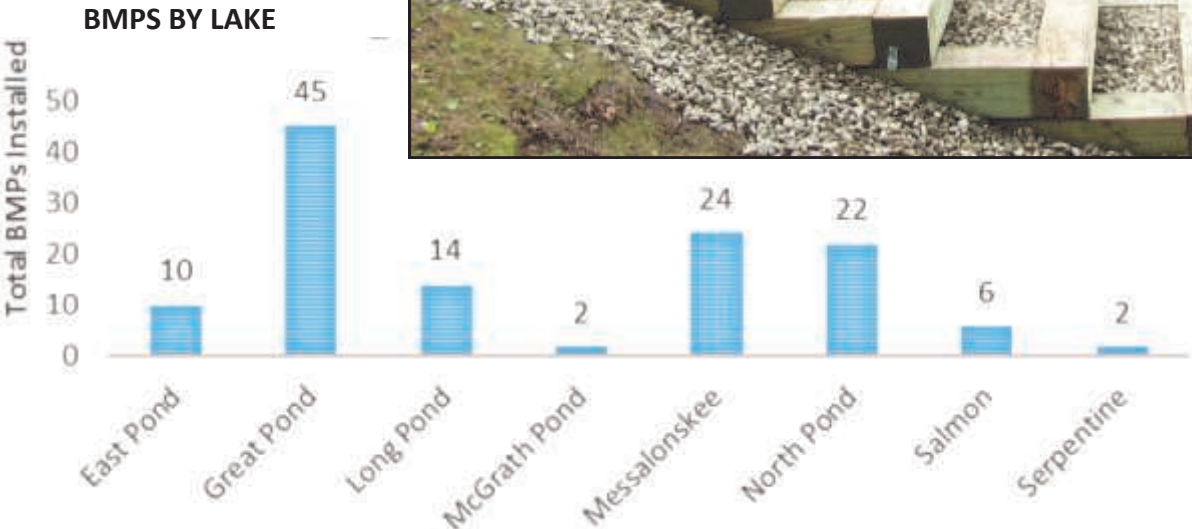
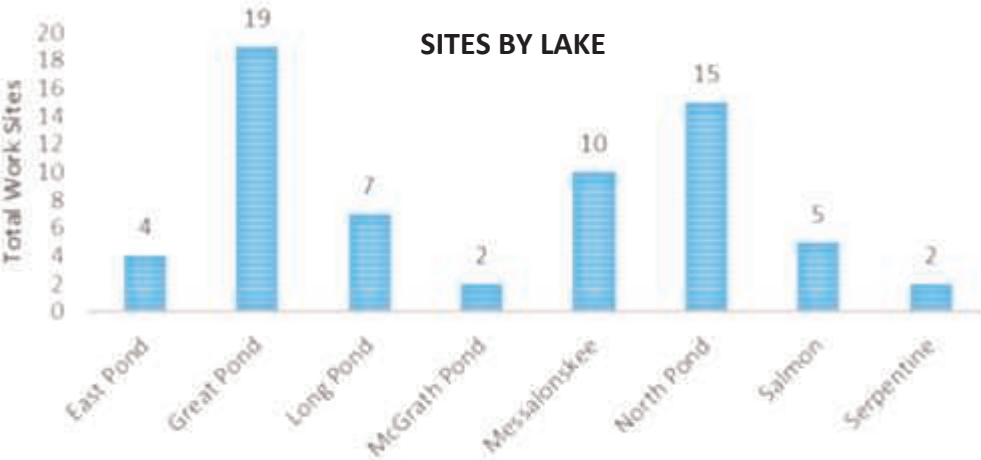
The 2015 season was a record breaking year for YCC. We demolished the old record of BMPs installed in one season. 106 BMPs were installed in 2013 and 125 BMPs have been installed in 2015. I must thank the crew members and es-

pecially the leaders, Chase Karter and James Cumming. If it wasn't for their mix of quick problem solving and technical knowledge of BMPs YCC wouldn't have broken the record.

On to 2016! The YCC project schedule is already filling up. Give me an e-mail or a call to set up a site visit before the snow comes or after it melts. BRCA has a first come first serve policy and only 8 weeks to work. Schedule early to ensure your projects get done.

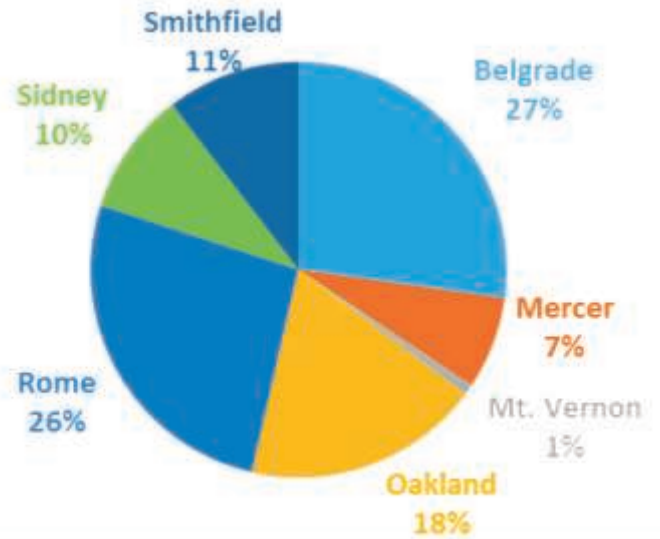
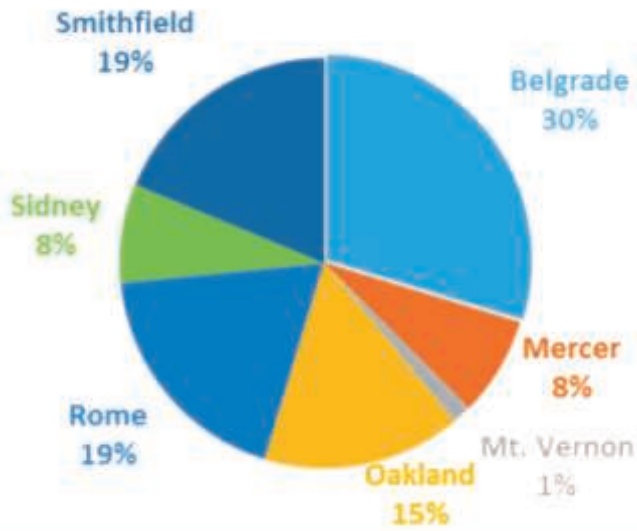
Call at 207-931-8791 or e-mail brcacc@belgradelakes.org.

- Nathan Durant, YCC Director



SITES BY TOWN

BMPS BY TOWN



Education Program: UPDATE

BRCA's new education program is off to a strong start. Over the past three months, BRCA's Educator, Matthew Leahey, has worked with 2 high schools and 1 middle school for a total of 91 students and 542 instructional hours.

Matthew teamed up with Aaron Poday of Messalonskee High School (RSU 18) to teach a 6-week Limnology (freshwater science) Seminar course that offered students the opportunity to do hands-on, place-based science experiments. The course went so well that RSU 18's superintendent Gary Smith invited BRCA, Aaron Poday and two of our students to the Kennebec Valley Superintendents Association Conference, where every school district in the Kennebec Valley showcased new and innovative things they are doing in education. Our hope is that this course will become a summer offering, allowing us longer class periods and a greater opportunity to explore the Belgrade Lakes watershed.

Matthew also has been working closely with Amanda Ripa and her class of 7th & 8th grade students (74) at Messalonskee Middle School. These students have investigated the effects of invasive species in an ecosystem through an interactive activity where they collected and graphed data, experienced life in the Belgrade Lakes aquatic food web and watched as pollutants accumulated into higher con-



centrations as they pass from one organism to another. They also learned how a turbine generates electricity, built their own hydropower turbines, tested the electrical output of their designs and discussed tradeoffs of renewable vs. non-renewable resources.

Lastly, we have partnered with Kents Hill School and Colby College for a research project on Long Pond. From September through November, 9 freshmen students from the Kents Hill School collected water samples, took stream discharge measurements, and gathered macroinvertebrates at one of Long Pond's major tributaries, Beaver Brook. The water

samples were analyzed by Colby College capstone students for phosphorus and nitrogen content for the purpose of measuring external loading of nutrients as a factor in decreased water quality. Each student created a poster outlining a

different aspect of this project and presented alongside Colby College capstone students at the science conference on held at the Maine Lakes Resource Center in December .

We are thrilled to announce that we have been awarded a \$10,000 grant from the Horizon Foundation. This resource will be used to further curriculum development, partner with the 30-Mile River Watershed Association and expand current programming to include more students from the Mt. Blue School District (RSU 9) in Franklin County, and work on statewide environmental education initiatives that promote lake and watershed science in Maine.

- Matthew Leahey,

Education Director



Milfoil Program: UPDATE

Thanks to a strong partnership between BRCA and Belgrade Lakes Association (BLA), invasive variable milfoil has been significantly reduced in Great Pond and the Great Meadow Stream. Although there is still variable milfoil present in the stream and lake, the volume is decreasing and headway is being made. Since the beginning of this project, over 95,000 gallons of milfoil has been removed from the lake and stream. Just under 5,000 gallons were removed this past summer. There is one important message to take away from the STOP Milfoil Project at this point in time. We need to stay VIGILANT. Vigilant in surveying for newly infested areas, vigilant in surveying known infested areas, and vigilant in removing any variable milfoil that is found. Efforts such as Adopt-A-Shoreline will help ensure that if other parts of the lake become infested, it will be caught early. Also, making sure that field operations adjust and adapt to the changing nature of this infestation will be important to success.

This past summer, we adjusted our surveying methods to utilize more divers, as well as a new night-



surveying light boat. We are happy to report that no new infestations were discovered this past summer and eight more miles of shoreline has been “adopted” on Great Pond & Long Pond. The surface use restriction was renewed by the Maine Department of Inland Fisheries and Wildlife and the Maine Department

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of Environmental Protection for 2015, to restrict motorized watercrafts from the milfoil area. Opening Great Meadow Stream to non-motorized watercrafts gave us the opportunity to show the public that the stream is starting to revert back to its natural state (lots of new native plants!).

Mitigating invasive aquatic plants once they become established, is the last resort to protect our lakes and streams. Prevention and Early Detection are strategies that save time, money, and environmental impact. This past summer, 15,967 boat inspections were conducted by Courtesy Boat Inspectors at seven public boat launches in the Belgrade Lakes watershed. This is a record number of inspections, partly due to an increase in coverage hours (+28 hours/week) and a hot, dry summer (lots of boating activity). The Courtesy Boat Inspection Program is the first line of defense against invasive aquatic species and, this summer, 31 invasive variable milfoil fragments were collected off boats leaving Messalonskee Lake (a highly infested lake). Those 31 fragments could have travelled to other waterbodies, creating new infestations, had they not been inter-

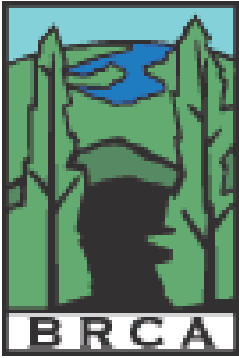
cepted by our CBI's. Early detection is also important when protecting our lakes and streams from invasive aquatic species. If an infestation is caught early, there is a higher likelihood that it can be eradicated. This past summer, surveys were done on each of the lakes in the Belgrade Lakes watershed to search for new infestations. I am happy to

report that NO new infestations were discovered. Thank you to all the volunteers that participate in this program, particularly North Pond Association, East Pond Association, and McGrath Pond/Salmon Lake Association for helping to coordinate volunteers on each of their lakes.

Whether you volunteer to “adopt” your shoreline, participate in an Invasive Plant Patrol, or volunteer your time inspecting boats at the boat launch, we are always in need of volunteers. We will continue our efforts in 2016 and look forward to reporting further successes. Please contact Toni Pied, Milfoil Director brcamf@belgradelakes.org, if you are interested in being a volunteer. Your support of BRCA's Milfoil Program is greatly appreciated!

- Toni Pied, Milfoil Program Director





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To view BRCA Newsletters
in full color with active
hyperlinks visit our website



Photos: Sandhill Cranes on Ingham Stream



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