

Bellaire, Central Lake, Kalkaska and Mancelona Schools

Science Education Outreach Program helps students learn the science of where they live

By Patricia Roush, Education Committee

The Three Lakes Association Science Education Outreach Program (SEOP) was started in 2008, when the TLA Board of Directors approved a proposal to provide supplemental assistance and mentoring to help local educators enrich their science curricula. Our goal was, and continues to be, to help develop future stewards of the waters of northwest Michigan.

SEOP provides our area science teachers an opportunity to give their students the materials, equipment and experiences that will enhance students' science education, beyond what can be provided by the school districts, due to budget constraints.

TLA partners with Bellaire, Central Lake, Kalkaska and Mancelona Schools for this program, as they are the districts that border on our three lakes. Each year, teachers apply for those items or experiences that they feel would enrich their students' science education and TLA grants as many of the applications as we can. TLA requires feedback from students and teachers during and at the end of the school year, informing us about what they did, how they did it,

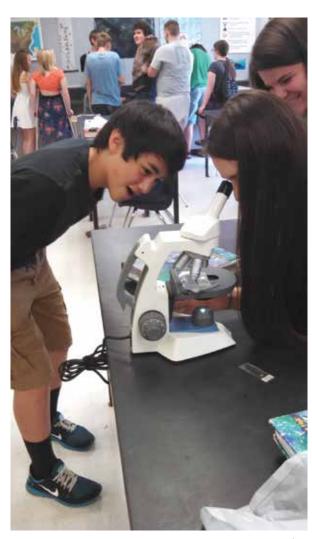
how and what the students learned, etc. Over the years, TLA has awarded over \$50,000 in grants to area teachers. We are proud of our partnership with the schools.

TLA recently announced this year's SEOP grants totaling \$6,047 for the 2014-2015 school year. Here is this year's list of what our area students will experience thanks to their teachers and TLA:

Bellaire Schools

Ms. Kim Clark, 7th grade science teacher, applied for tuition assistance for her students attending the overnight Hayo-Went-Ha spring field trip. This is the second year that TLA's SEOP has awarded partial tuition for Hayo-Went-Ha's program. Our award of \$425, along with scholarship aid from the camp and student contributions will make this experience possible.

Ms. Clark wrote, "This is a proposal for a grant of \$425 to help offset the price of the overnight field trip. Camp has been a wonderful middle school tradition but we continue to have difficulty with funding due to economic struggles of the community and our students' families, as well as the rising cost of the



See SEOP page 4 & 5

Sneak peek

PRESIDENT'S MESSAGE P2

TORCH LAKE WATER LEVELS P3

TCE PLUME P6

WATER AWARENESS DAY

The Mission of the Three Lakes Association is to provide leadership to preserve, protect, and improve the environmental quality of the Elk River Chain of Lakes, especially Torch Lake, Clam Lake, and Lake Bellaire, for all generations.





President's Message

Greetings to all,

Often, I speak to you about how much the success of TLA depends on our volunteers. This crucial fact becomes even more evident when we lose one of our region's brightest lights in environmental stewardship. On May 28, 2014, Dr. John Richter died, succumbing to the cancer that had invaded his body. At the time of his death, Dr. Richter was the president of the Friends of the Jordan River Watershed, an organization that he also helped to found. Among other things, he led the efforts to prevent cement kiln dust leachate from being injected into a deep well near Alba. He helped raise people's awareness about the need to truly consider the predictable consequences of our actions, and not to seek short-term solutions that engender long-term problems.

The Northern Michigan Environmental Action Council recognized Dr. Richter's lifelong love of all living creatures and his dedication to the health of our region's waters, by conferring on him the 2013 Clarence Kroupa Lifetime Achievement Award.

We always need volunteers, and every time we lose one of our dedicated volunteer environmental stewards, we are powerfully reminded of that need. Since none of us lives forever, we can never just leave the job to others. All of us are busy; all of us have other obligations: many of us are still raising families; many of us are still earning a living. Yes, that is so. But, this is our world, and it is likely the only world we are ever going to have. Each of us has a stake in keeping this world healthy, and in leaving it at least as beautiful as it was when we got here – if not more so. Therefore, each of us also has an obligation to help if we can.

You don't have to be a member of the TLA Board of Directors to be a volunteer. You just have to be willing to give some of your time.

- This year, the DEQ carried out a two-day awareness program, with volunteers stationed at boat launches all over the state, to visit with the boaters and share information about aquatic invasive species. Five TLA volunteers helped with that effort on Saturday, June 7, 2014.
- We have four high school interns this summer, who will be carrying out a program of study and ecological research field work – we have room for more adult volunteers to assist in this program.
- The fish shelter project continues with energy this year we have room for volunteers to assist in building shelters and deploying them.

I'll close with the same words I offered in April: If you have an interest in the health and beauty of our region's waters, and are willing to donate a few hours of your summer, please volunteer – as much or as little as you wish. Whatever you can do is appreciated.

WE NEED YOU!

Best to you all,

Tina



Did you know?

In 1969, the Three Lakes Association (TLA) sponsored a steering committee designed to preserve the Grass River. Conceived by, directed by, and financially supported by TLA, the project was undertaken in conjunction with the Antrim County Board of Commissioners, the Antrim Soil Conservation District, the Nature Conservancy, the Michigan DNR, the Michigan Natural Areas Council, the Elk River Watershed Council, the Antrim County Planning Commission, and the Antrim County Farm Bureau.

Over the years, approximately 1,400 acres have been acquired, compromising most of the Grass River's shoreline on both sides, part of the wetlands at the southeastern end of Clam Lake and portions of the north end of Lake Bellaire at the Intermediate River. Dedicated in 1976, the Grass River Natural Area is known today to be one of the finest nature sanctuaries in the State of Michigan.

New Faces at Grass River Natural Area

Haley Breniser is GRNA's new Executive Director. She is a proud native of Michigan and graduated from MSU's Department of Agriculture and Natural Resources. Her respect for conservation originated from an unforgettable 2 week backpacking trip on Isle Royale when she was 19. From that point forward, she has participated in a variety of conservation and research projects throughout North America. Prior to joining GRNA, she worked

for the Kalamazoo Nature Center as Director of Ecological Services. She recognizes the uniqueness of the plant and wildlife community within GRNA as well as the human community that so passionately supports it.

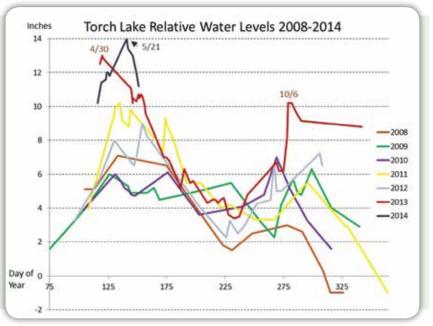


James Dake is GRNA's new Education director. He grew up in Flushing, MI and studied science education at CMU and WMU. Most recently he was the Environmental Studies Instructor at Kingsbury School in Oxford, MI. In addition to classroom teaching, James has taught in nature centers and museums in Michigan and New York as well as authoring a field guide of the flora and fauna of the region using his own photography.

Please take a minute to welcome Haley and James next time you visit GRNA or the Antrim County building.

Torch Lake water levels

Think the water level on Torch was really high this spring? This graph shows the fluctuation of the water levels of Torch Lake for the past 7 years. Each year, since 2008, Bill Frey has regularly measured the water level from a protected, fixed point on his permanent dock. It is interesting to note that the highest levels in 7 years have occurred during the past two springs.



Outdoors in Antrim! RECREATION IN YOUR BACKYARD

Tuesday, August 12, 2014 at 5 p.m., Alden Depot Park FREE admission, open to the public

Wine & hors d'oeuvres following the program

Recreation abounds in Antrim County! Join Mgan Olds and Brad Gerlach of Grand Traverse Regional Land Conservancy as they highlight two of the many new recreation opportunities in Antrim County: the Chain of Lakes and East Grand Traverse Bay Water Trail and the Glacial Hills Pathway & Natural Area A variety of local recreational resources will also be available.

Sponsored by Grass River Natural Area, Three Lakes Association, Torch Lake Protection Alliance, Friends of Clam Lake and Intermediate Leka Association. In partnership with the Grand Traverse Regional Land Conservancy, Antrim Conservation District, and Tip of the Mitt Watershed Council.

MORE INFORMATION: 231-533-8314 OR INFO@GRASSRIVER.ORG



SEOP

continued from page 1

trip. It is my hope that Three Lakes Association will consider this request so that we may once again offer this meaningful experience for our students. [While at Hayo-Went-Ha] students will learn first hand about river and forest ecosystems."

Sue Mills, Bellaire fourth grade teacher, requested aid with fees for two field trips. Her class will spend a day at Grass River Natural Area, which Ms. Mills refers to as, "well thought out and kid friendly,

SEOP is the acronym for Science Education Outreach Program. Seven years ago, the TLA Board of Directors approved a proposal to provide an opportunity for our area science teachers to give their students materials, equipment or experiences that would enhance students' science education but could not be provided by the school districts due to budget constraints. TLA partners with Bellaire, Central Lake, Kalkaska and Mancelona Schools for this program as they are the districts that border on our three lakes. Each year, the board decides on the amount of funding for SEOP, teachers apply for those items or experiences that they feel would enrich their students' science education and TLA grants as many of the applications as we can. TLA requires feedback from students and teacher during and at the end of the school year, informing us about what they did, how they did it, how and what the students learned, etc. Over the years, TLA has awarded over \$50,000 in grants to area teachers. We are proud of our partnership with the schools.

a valuable resource close to our school district." Her class will also visit the Impression Five Museum in Lansing, part of a trip to the capital. Impression Five is a hands on children's museum providing a strong learning environment in all areas of science. The museum staff leads science lessons that are connected to the fourth grade science curriculum. Ms. Mills states, "The center provides a strong learning environment in all areas of science and a positive experience for our students." TLA provided funds for fees for both experiences.

Ms. Mills also asked for a class subscription to Scholastic Science

Quoting Ms. Mills' application, "The monthly magazine targets age appropriate science topics. The topics are planned out prior to the school year, which will allow me to plan the best use of the magazine by coordinating the issues with our science curriculum pacing guide." Ms. Mills received \$922.

Central Lake

Lisa Hoogerhyde is the Central Lake Elementary teacher in charge of a school wide science fair. She requested funds for supplies for the fair (everything from balloons to dry yeast to headphones and more) to expose students to science that affects, and is part of, their everyday lives. Students will move from one science station to another where they will be encouraged to use the materials they find to "do science." Ms. Hoogerhyde received \$275 for supplies.

Kalkaska

Greg Beach, representing all four Kalkaska second grade classes at Birch Street Elementary, requested partial tuition fees for a day long field trip to the Au Sable Institute where the students will learn about habitats, the water cycle and the human effects upon those natural systems, as part of the state science standards. Students pay \$3 of the \$10 individual fee and TLA pays the \$7.

Mr. Beach also requested funds for a Water Cycle Model Activity Set, saying in his application, "This model of the water cycle will assist our students in further understanding the process of the water cycle, but also how pollutants can adversely affect the water quality of our surroundings." His grant totaled \$874.

Andrew McCarty, is a fourth grade teacher at Cherry Street Intermediate School and the sponsor of the afterschool Robotics Club. He requested and received funds of \$1,050 for three Mindstorm Robotics Kits. The kits encourage students to be creative while using scientific and analytical skills, including problem solving, inquiry, programming skills, hypothesizing, experiment design and data collection.

Lisa Savalli, twelfth grade AP biology teacher, requested five compound lighted microscopes, each with an oil immersion lens. Quoting Ms. Savalli, "Our AP biology students would thrive in the area of cell organelles and tissue differentiation if they had access to compound microscopes with oil immersion lens. Being able to study cells using a microscope is a pivotal aspect of biology, especially at the AP level. With access to new microscopes, I feel strongly that our AP students would get more out of the class and even achieve higher scores on the AP exam because they will have gained the hands on experience that is critical to success in a science classroom." Ms. Savalli was awarded \$3,026 for the five microscopes.

Since the announcement of awards, I have received phone calls from each teacher thanking TLA for its generous help. Ms. Savalli sent a thank you card signed by each student in the AP biology class. Her principal, Mr. Kasza, sent a letter of appreciation, as did Mr. Williams, superintendent of Central Lake Schools. As our teachers incorporate our awards into next year's curriculum, we will receive photos and explanations as to what was learned. We look forward to hearing of their adventures in science.

This year, the education committee revised its SEOP calendar to correspond with area school calendars, thus changing to a new timetable:

- Grant applications from January to the end of March
- · Selections and Announcement to applicants by the end of April This new calendar will allow recipient teachers to order or arrange for their grants to be in place for the start of the new school year, in this case, the 2014 – 2015 school year.

The grant application is also now at our website, <u>3lakes.com</u>. A link to the grant application is under education and SEOP. Changing to an online application streamlines the process. In future years, a few key strokes will update the grant process, making it easier for the education committee as well as our science teachers.

In the spring of 2013, Three Lakes Association's good friend and supporter, Gordy Shafer, owner of Dockside - Torch Lake, pledged \$3,000 per year for three years in support of TLA's Science Education Outreach Program. When our membership was informed of this generous gift, many donations were received to "match" Mr. Schafer's gift. By this spring, TLA has achieved a match enabling the SEOP to grant \$6,047 to applicant science teachers. Our sincere thanks go out to Mr. Schafer and to all who made donations. It is your support of this program that makes it possible.

A the time SEOP was launched, TLA also pledged to give one excursion aboard the Inland Seas Education Association (ISEA)

Schoolship per year to each of the four school districts. Classes aboard the ISEA Schoolship move through several different science stations where they learn firsthand about the ecology of the bay. The ISEA excursion is a favorite of science classes.

It is very satisfying to be a part of this program that gives so many rich learning experiences to the children of our three lakes. TLA's SEOP program is doing more than just filling a need in science classrooms; it is also planting seeds of awareness and of appreciation for the unique place that is our home.

Thank you one and all for your support of the Science Education Outreach Program.





Inland Seas Education Association (ISEA) Program

When TLA launched its SEOP, we also pledged to give one excursion aboard the ISEA schoolship per year to each of our four school districts; Bellaire, Central Lake, Kalkaska and Mancelona. This year will mark the seventh year of this program. For the first five years, TLA gifted the schoolship excursion fees of \$800 per class. Two years ago, ISEA offered to partner with us by offering to grant half of the tuition fees changing our gift to \$400. Classes aboard the schoolship move through several different science stations where they learn firsthand about the ecology of the bay - a mirror image of the ecology of our inland lakes.

This school year, Bellaire and Mancelona took their trips in May and Kalkaska traditionally take their trip in September. Central Lake is not sending a class this year but will next year.

The ISEA excursion is a favorite of science classes. We receive thanks, photos and dialog about the trips from participating classes.

How Cold Was It this Winter?

By Norton Bretz

There has been a lot of discussion this spring of the coldness and extent of the winter of 2013/14. Many long-time residents do not remember one so severe, or they have to resort to early memories of what life was like in their childhood. So the question is, "How cold and long was it?"

In fact there are relatively few objective measures of this sort of thing. Old timers remember cutting ice from Torch Lake for ice houses and using specialized saws to cut blocks from the lakes. Others remember seeing snow covering all but the tops of telephone poles on the road side. And others remember hearing about being able to cross from Northport to Petoskey on the winter ice. All these are important measures of the severity of winter. In the modern era we have come to expect more precise measures, such as those that come from satellite data, stating with some precision that Lake Michigan was 93.5% ice covered at some point this

last winter. But how can one compare this

winter to the winters of our parents' and grandparents' generations?

A few stalwart residents have kept a record of the number of days that West Bay has been covered with ice out to Power Island since 1853. Greg McMaster, when he was not our State Representative, but a local weatherman, compiled a comprehensive list of

ice-covered days going back to 1853. How does this year compare?

From my reading of the Record Eagle this winter, 2013/14, had about 84 ice covered days on the West Bay. One has to go back to 1904 (91 ice-covered days) to find another winter that exceeds this in the record. The accuracy of these records may not be as precise as those kept today, but when transportation and supplies depended on shipping traffic on the bay, the number of ice-covered days was something people knew about. They simply depended upon it more than we do. For the years in between, of course, the accuracy depends on the person keeping the data. However, there is very little other than anecdotal evidence that is



TCE Plume: community engagement process update

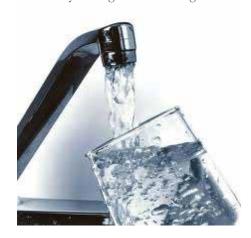
By Dean Branson, Gary Knapp and Steve Grill

Under the auspices of ACUTE (Antrim County United Through Ecology), TLA is coordinating the advocacy for a proactive funding package to pay for implementations of a short-term construction project as part of a long-term comprehensive plan to address the trichloroethylene (TCE) groundwater plume migrating from Mancelona toward the Cedar River Well Field. This advocacy is the most urgent activity of ACUTE. TLA is hosting, facilitating, and spearheading these ACUTE meetings to fully engage community stakeholder organizations as part of a grant from Freshwater Future. ACUTE is an informal group that is working directly with Michigan's Department of Environmental Quality's (MDEQ) and community stakeholder organizations to advocate a funding package to install the TCE-related improvements in the public drinking water system as soon as possible, and to explore the feasibility of remediating the TCE plume.

MDEQ's most recent interpretation of their monitoring data for the TCE plume was explained at ACUTE's February 7, 2014 meeting. Essentially DEQ's technical interpretation of the trajectory of the plume is that TCE is migrating in the shallow aquifer and is expected to encounter the Cedar River Well Field by 2017. Further, the TCE in the shallow aquifer is expected to migrate over the intake screens in the deeper aquifer. MDEQ does not believe that the lower well screens that draw water for the public drinking water system is

going to become contaminated with TCE by pulling in groundwater containing TCE, but MDEQ officials understand that the families who drink this water and who invest their life savings in property in the affected area urgently need tangible assurance that if DEQ's technical interpretation is not correct, that a viable back-up plan is in place. This can be accomplished through the implementation of the short-term project.

At a May 7th high-level meeting in



Lansing, ACUTE explained the sense of urgency for implementing a short-term project to various State officials. The explanation included a handout that described the details associated with the long-term comprehensive plan to implement the TCE-related upgrades in the public water system for an estimated cost of \$5.7 million. The handout also described the current & potential economic impact of the

TCE plume on Antrim County's biggest employer, and the fear impact on potential investors in property within the affected area. The potential impact on Antrim County's property tax revenue was also explained. A copy of this handout is posted on TLA's Website: http://3lakes.com/wp-content/uploads/2008/02/combinedpackage.pdf

The short-term project, as it is currently envisioned, represents an engineering and cost effective option that makes sense. It would: (1) install a 300,000 gallon storage tank at the Cedar River Well Field, (2) install a pressure booster station at Schuss Mountain, and (3) install a connecting water main; for an estimated cost of \$1.2 million. The storage tank will allow the Mancelona Area Water and Sewer Authority to reduce their rate of pumping water from the Cedar River Well Field, which would reduce the risk of the TCE being sucked into the public water system.

Although DEQ remains receptive to the idea of implementing a short-term project, their current ability to pay for cleaning up contaminated ground water sites around the State is extremely limited...insufficient to pay for 100% of the \$1.2 million of the proposed short-term project. ACUTE met with Antrim County Board of Commissioners on June 17th to review possible options for a matching-fund, challenge grant to pay for this short-term project. This short-term

See TCE PLUME page 7

Winter

continued from page 5

sensitive not just to temperature extremes or snowfall but to the average temperatures and length of the winter season.

According to this record since 1900, the average number of ice-covered days has been 32 (1900-1950) and 26 (1950-2000) with only 2 years of over 80 days (1923, 1904) and 5 years having between 70 and 80 days (1917, 1926, 1934, 1994, 1996). However, the number of ice-free winters has increased dramatically. There have been 13 between 1970 and 2000 and 11 between 1900 and 1970. Global warming appears to be a real phenomenon by this measure.

The epoch of really cold winters occurred

between 1853 and 1900. In this period there were 7 years with over 100 ice-covered days (1873, 1874, 1875, 1877, 1881, 1884, 1888) and in 1874 there were 115 days of ice cover, a month longer than 2013/14. There were 6 winters when the number of ice-covered days was between 80 and 100 and 6 more between 70 and 80 days. Only four years were ice-free and the average number of days was 58 for this period. So, the early settlers, despite having poor protection against cold, really had colder winters too. They had more than twice as many ice-covered winter days as we have experienced in our lifetime.

The author lives in Eastport and likes to

visit the fish shanties at the north end of Torch Lake. This winter the fishermen had to drill through 3 ½ feet of ice to drop their bait into the water. This is as thick as anyone or anyone's parents can remember for the Eastport area. Our oldest resident, Harold Kruse who occupied the Eastport Grocery in the 1950s does not remember ice leaving Torch Lake after April 19 since he has lived here. This year the ice remained until May 1. The country seems to be living through "once in a century" weather events in many areas. The winter of 2013/14 certainly qualifies as a "once in a century" event for us.

Meet the New Director at Antrim Conservation District



Kristy Mortham joined the Antrim Conservation District as the Executive Director in December of 2013. Growing up she spent her summers in northern Michigan on Lake Charlevoix and in the Jordan River Valley fishing, paddling, and camping with her family. In the late 1800's her family came to Antrim County as pioneer settlers. Her family established the Pinney homestead, located near the Pinney Bridge. Naturally, she has a deep connection to the land in Antrim County and a passion for conservation. She appreciates the importance of protecting such special places. Kristy hopes to further her impact in the conservation community through active leadership, education and volunteer efforts that better improve and impact the community's environment.

"There are 80 Conservation Districts in the state of Michigan charged with educating the public about the benefits of conservation practices. Conservation Districts work to convince resource users to protect the resource, maintain its productivity, and protect or improve its profitability. We serve as a 'gateway' for natural resource management to our local community," said Mortham.

On an ongoing basis, Antrim Conservation District assesses the resource needs of the District through a Resource Assessment. Mortham expressed that the District is currently assessing the conservation practices of the District. The next step is to start coordinating with federal and state agencies to address the specific conservation needs of Antrim County, secure the necessary funding, perform the needed work, and evaluate the success of work performed. Mortham is in the process of developing long-range and annual plans for District staff while evaluating the current effectiveness of the programs. The goal for the District is to continue to serve as a linkage between land users and conservation service providers. For more information about the Antrim Conservation District or if you are interested in volunteering at one of our conservation based events, please contact Kristy by calling 231-533-8363 or send her an e-mail at kristy.mortham@yahoo.com.

TCE Plume

continued from page 3

project would be the first phase of the comprehensive plan. At the time this article is being written, the sources for most of the funds have been tentatively identified, and with a lot of valuable assistance from MDEQ, the sources of remaining funds may be identified in a few weeks and hopefully construction could start this fall.

MDEQ's statewide plan to pay for cleanup of abandoned-contaminated sites in Michigan, including the remaining \$4.5 million to pay for implementing the remaining parts of this comprehensive long-term plan over the next 5 to 7 years, is to create a new special fund....a "Water Strategy" fund to pay for investigations and cleaning up of abandoned and contaminated sites. MDEQ requested ACUTE's assistance in advocating for the creation of this special fund. ACUTE's possible role could be to help explain the benefits of a community engagement process involving stakeholder groups, like ACUTE, to voters, tax payers, and to friends of clean water as part of Michigan's "Pure Michigan" campaign.

The next meeting of ACUTE is scheduled for 10 AM on Friday, July 11, 2014. Additional information about this TCE plume can be obtained on TLA's website: www.3lakes.com/projects & reports.

Bellaire, MI 49615

- Membership counts!

May we include your name in our newsletter donor list?

	\$100 STEWARD \$				Are you interested in the following areas?	olunteering in any of
Michigan Riparian Magaz			FIOR \$1,000 G	LIFE \$2,000 □	☐ Water Quality☐ Water Safety	☐ HS Intern Program☐ Education
TOTAL AMOUNT ENCLOSED: \$					☐ Invasive Species ☐ Membership	
NAME:					☐ Finance ☐ Service	
SUMMER POSTAL ADD	RESS: (Street, P.O. Box)_					
	TOWN:ZIP: DNE:				Three Lakes Association is a 501(c)(3) corpora- tion. Your dues and other contributions are tax deductible. Call for further information.	
WINTER POSTAL ADDRI					* * * * *	* * * * * *
						Lakes Association, website 3lakes.com
WINTER PHONE:						n with your check to: S ASSOCIATION
EMAIL:						Sox 689

invites you to HREE LAKES ASSOCIATION

Saturday, July 12, 2014 · 1 to 5 p.m. Joqad nisyT nablA

Such a fantastic area to live, play and visit! Displays and hands-on activities emphasizing the importance of protecting what makes "up north"

Proceeds support various TLA programs, including the TLA Science Education Outreach Program

Suggested Donation: \$25 per family

(includes door prizes and food)

Tickets will also be available at the door. Tickets available online at 3lakes.com or call 231.544.7221

Fun for the whole family!



This newsletter printed on recycled paper









RETURN SERVICE REQUESTED

Three Lakes Association P.O. Box 689 Bellaire, MI 49615 231-544-7221 www.3lakes.com



NON PROFIT ORG US POSTAGE PAID BELLAIRE, MICH PERMIT NO.5