TLA Quarterly

JULY 2010

President's Letter

Three Lakes Association's activities seem to divide into three categories…recent things, current things, and things in the planning stage.

We were very pleased with the exchange of inland lakes water quality information with experts and lake associations at a June 3rd Mini-Symposium facilitated by MSU's Center for Water Sciences. An article in this Newsletter summarizes some of the highlights from this symposium, which included a presentation by Elizabeth Homa, who recently received her PhD from Tufts University based on her study of the predominant process that maintains the clarity of Torch Lake. Three Lakes Association help collect and analyze samples for her study.

We are proud advisors and supporters of the 2010 Envirothon Team from Central Lake High School, who placed seventh in the mid-May State Competition. In addition to their competency in ecological sciences, each Envirothon Team's project was judged. Team Antrim's project involved energy conservation in their Central Lake High School building, which involved infrared images of the schools doors & windows to identify areas with poor or no insulation and then installing insulation.

This year's golf outing on June 13that Schuss Mountain Golf Course was another fun event and a successful fundraiser for Grass River Natural Area's and Three Lakes Association's education programs. These education programs supported the Outreach "Wish-List" program that provided equipment and field trips in response to science teachers' wishes from in the four school districts within the watersheds of Torch, Clam, and Bellaire Lakes. We are looking forward to the "Teachers' Remarks" during our Annual Meeting that will include a few highlights from a couple teachers whose students have benefited from the 2010 Outreach Wish-List Program

Since TLA's Annual Meeting is scheduled for June 21st, please take a few minutes to mail in your reservation before July 9th. If you did not receive a flyer/reservations form for this event in the mail (4th week of June), please call the office (231-533-4852) and request a copy of the flyer/reservation form. The Annual Meeting is a good time to say hello to friends, participate in a silent auction, and enjoy some good food & entertainment.

Currently we are preparing to kick off this year's high school summer internship program, which will be partially supported by several volunteers' time and funds from the golf outing, a grant from Grand Traverse Regional Community Foundation, and generous donations. Six summer interns will actively participate in a survey around the lakes looking for patches of green filamentous algae (Cladophora).

We are also currently preparing for this year's two Joint Education Events. The first event on June 23rd at the Alden Deport included an overview of the **Sheriff's Marine Patrol Official Observers Program. The second Joint Education Event,** *In the Drink VII: Lake Cycles,* **will be the Torch Lake Township Day Park at 4 PM Tuesday August 17th.**

Regards,
Dean Branson

In this issue

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

THREE LAKES ASSOCIATION

Founded 1966

The TLA Quarterly is published by the Three Lakes Association

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2010 TLA High School Internship Program

by Norton Bretz

TLA has started a new high school internship program this summer. You may see members of this team kayaking past your shoreline. They are looking for cladophora to identify potential locations that may be related to leaking septic systems. Please wave and let them know that you support their efforts.

This year we have a record number of interns and a record distribution of high schools. Since this is our seventh year with the internship program, we are somewhat well known to most of the schools in our area. However, two of the schools represented this year have never participated. We welcome Ellsworth and Mancelona High Schools to our program. The new interns are Emily Blaney (Ellsworth HS), Jake Crawford (Kalkaska HS), Marisa Kerr (Bellaire HS), Jessica Kubin (Mancelona HS), Natalie Ranger (Elk Rapids HS), and Sadie Small (Bellaire HS). And because this year's project will cover over 60 miles of shoreline, we have sizeable list of TLA volunteers as well: Melissa Makowski, Norton Bretz, Trisha Narwold, Art Hoadley, Skip McCully, Doug Morse, Gary and Sue Knapp. And again for the first year, TLA is being assisted by the Grand Traverse Regional Community Foundation through the Community Foundation Antrim County Endowment.

TLA Interns and Volunteers Norton Bretz, Sadie Small, Marisa Kerr, Trisha Narwold, Jessica Kubin, Emily Blaney, Doug Morse, Jake Crawford, Art Hoadley, and Melissa Makowski

The project that has been chosen for 2010 is another cladophora survey. The last one was done in 2004 by another group of TLA student interns, and of course we have done several such surveys before this. Cladophora is a bright green slimy algae that is very sensitive to phosphorus. So surveying it around the lake shore gives us a good idea of where phosphorus is entering the lakes. The source may be a scoured streambed, a failing septic, or the overuse of fertilizer. Having a map of these sources allows our water quality team to focus on important areas responsible for water pollution. This team can then work with homeowners to identify and repair leaking septic systems and homeowners can be advised on fertilizer overuse.

In addition to cladophora we will be doing some selective E.coli sampling near the larger cladophora sites. Studies in Grand Traverse Bay have shown that in some of the large cladophora beds there, E.coli has also been present. We will be looking to see if that is also true in our lakes. Of course, if the cladophora is caused by a leaking septic, one would expect E.coli. However, there may be a relationship between cladophora and E.coli that does not fit this pattern.

Central Lake High School's Envirothon Team:

A Legacy of Achievement

by Dean Branson and Norton Bretz

2010 Envirothon Team Antrim: Wilhelmina Witt, Matt Scott, Alisha Youmans, Elizabeth Evert, Mike Butler

Central Lake High School's "Team Antrim" was one of 22 high schools in the State of Michigan that participated in the State's District Conservation's Envirothon environmental science competition in Glen Arbor on May 13th and 14th. Team Antrim placed seventh out of twenty-two teams in the two-day State Competition.

Five-member Envirothon teams plus an alternative spent more than 20 weeks after school preparing for this competition. These preparations included studying aquatic ecology, forestry, wildlife, energy, soils/geology, and agriculture. In addition to studying for possible test questions in these areas of environmental science, each team also had to conduct a project in one of study areas. Team Antrim's project involved energy conservation opportunities in the Central Lake High School building. The Envirothon Competition also required that each team write an overview of their project, and then present a PowerPoint summary of their project at the State Competition.

The Team used Infrared Thermal Imaging to identify areas around the school where heat loss was most apparent, such as un-insulated panels around doors, worn-out weather stripping, and cracked caulking. Their project also required that they make an effort to fix the identified problems. Team Antrim raised about $300 to purchase and install insulation, weather stripping, and caulking. The most cost-effective outcome from this project was some suggested changes in school policies regarding thermostat time settings and turning off electrical equipment when it is not in use. The funds for the materials were a combination of personal donations and matching funds from the school

Additional funds to help pay for Team Antrim's meals and lodging at the State Competition were donated by ISLAND (Institute for Sustainable Living, Art & Natural Design), a non-profit arts and ecology center in Bellaire dedicated to connecting people with nature, art and community.

According to Wilhelmina Witt, the Leader of Team Antrim "This was a lot of hard work and we really wanted to win. We learned some very practical things about environmental science and how to manage and present a project. I would recommend the formation of Envirothon Teams to other students and in other high schools."

Participating in Envirothon was also a community effort. In addition to the Central Lake School Board who provided some financial assistance to help purchase materials for the student's energy conservation project, Team Antrim also received technical assistance, mentoring, and T-shirts from Three Lakes Association volunteers, including Dr. Marc Krakow (GBK Construction), a local builder of energy-efficient buildings; Dr. Melissa Makowski, a local dentist who helped mentor and chaperon the team; Christy Roman, Director of the Antrim County's District Conservation, Norton Bretz and Dean Branson who were the team's advisors.

Swimmers Itch

by Norton Bretz

Swimmer's Itch is a topic of discussion as summer arrives. In fact, it is one of TLA's top complaint issues and one that plagues all nearby lake associations. Walloon Lake, Lake Leelenau, Crystal and Glen Lakes have all spent considerable sums of money and resources to tackle this problem. Walloon Lake Association has hired hunters to harass near shore ducks and shoot their legal limit of mergansers, and has surveyed snails to determine the frequency of parasites. Crystal Lake has trapped, relocated, and inoculated mergansers. Douglas Lake Association has used copper sulfate to kill the snails associated with the swimmer's itch parasite. Many recommend sunscreen and/or insect repellants.

What is TLA doing about this? We are recommending a relatively conservative approach. We have too many mergansers (other ducks can also carry the parasite) and our lakes are too big to expect chemical treatment to be effective. Trapping and inoculating ducks is beyond our financial resources. Here is our best advice:

1. Don't feed ducks – any ducks. Both mallards, mergansers, and other ducks carry the parasite although mergansers are more likely to be the carriers.

2. Don't wallow in the water near the shore on the downwind side of the lake – the most likely location of the parasites. Swim away from the shoreline if possible.

3. Apply a good layer of insect repellant, oil, or suntan lotion before entering the water (recommendations on this are numerous but inconsistent).

4. Towel off quickly and vigorously after leaving the water, rinse your body with clean water, and change your swimsuit.

5. Chose good ancestry. Less than half the population is susceptible to this malady.

Swimmer's Itch does not usually require doctor's care and is not spread from person to person. Creams, compresses, anti-itch lotions or baking soda pastes help relieve the symptoms. Though difficult, try not to scratch. Scratching may cause the rash to become infected. If itching is severe, your health-care provider may suggest prescription-strength lotions or creams to lessen your symptoms.

Despite this advice we note that the Mayo Clinic website says that there is no evidence that lotions and creams prevent infection. We await a miracle cure.

Bottom Damage Caused by Boat Propellers

by Art Hoadley

In shallow water a boat's propeller can become a very effective dredge. This dredging is detrimental to our lakes in several ways:

1. Destroys bottom plants.
2. Cut plants rise to the surface and wash up on the shoreline and can foul jet drives.
3. Put sediment into the water, which includes the phosphorous and E.coli stored in the bottom of the lake.

Obviously, running the prop into the bottom removes a lot of bottom material but just running the prop close to the bottom does nearly as much damage. The higher the power setting, the boat is using, the greater the effect as well.

Friends of Clam Lake (FoCL) has been documenting the bottom conditions in Clam Lake and Grass River for several years. The best vantage point to make observations is from the air. Both waterways have shallow areas that many boaters ignore and operate as if they were in deep water. Figure 1 shows several, but not all, of these. Points (A) and (B) form a narrows. Point (B) is marked by buoys and shows very little, if any, prop damage. On the other hand Point (A) is not marked by buoys and shows significant abuse (see Figure 2). The entrance to the SE Arm is reference here as point (C) and shows considerable prop damage, as shown in Figure 3. Figure 4 shows several circles in the SE Arm, which is extremely shallow (Point D). As mentioned before, this dredging does not require direct contact of the prop with the bottom, just a close proximity. The same damage can also be inflicted by a PWC utilizing a jet drive. It is also not necessary to have a large boat to dig up the lake bottom, small fishing boats have been observed moving bottom material while moving very slowly.

In Figure 5 the prop dredging of Grass River is very apparent. The list of causes starts with the ignorance of the boat operators as to the location of the channel and includes the steady historical increase in boat size and the use of excess power.

How do we mitigate this problem? One solution is for all of us to become familiar with where the shallow areas are and to make sure all of our guest and renters also know the lake. We should also be aware of what is behind our boats; is there any bottom being stirred up and how is our wake affecting others? The shallow areas could also be marked with buoys.

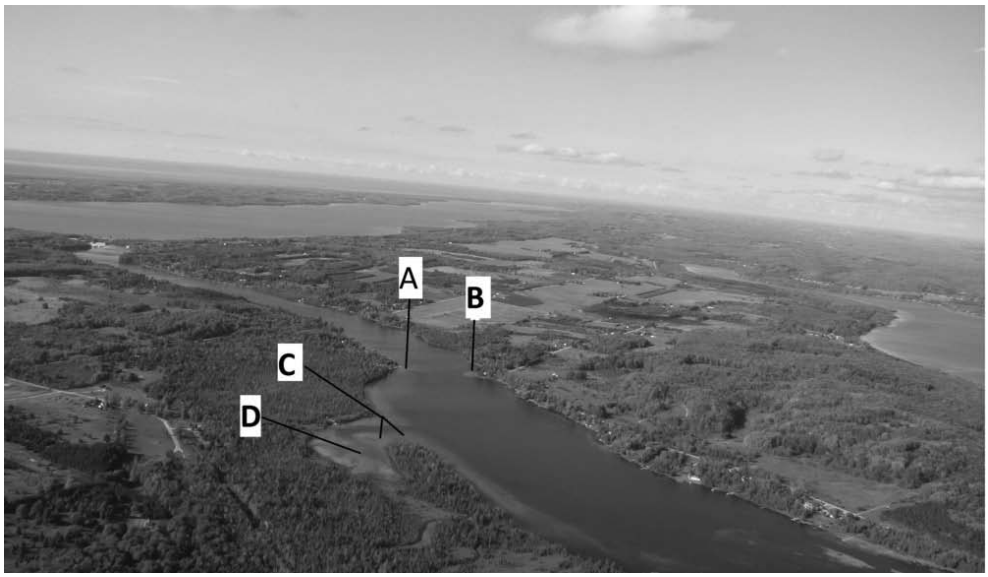

Figure 1: Clam Lake

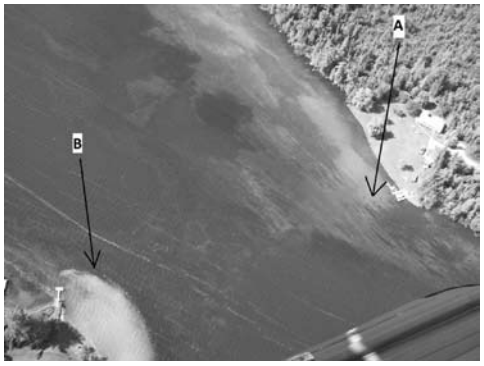

Figure 2: Narrows

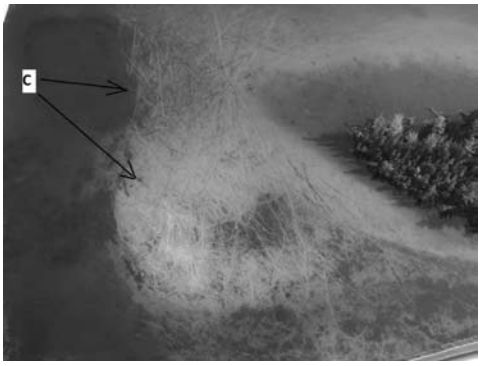

Figure 3: Point C

Figure 4: SE Arm of Clam

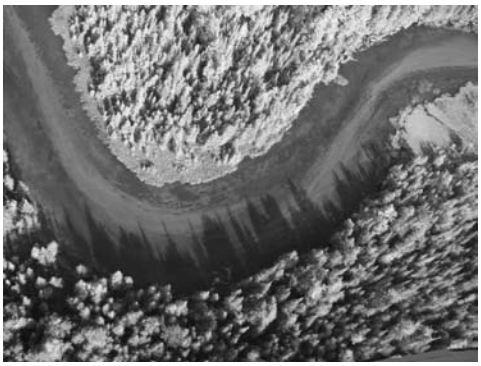
Figure 5: Grass River

Michigan State University Mini-Symposium

by Dean Branson and Norton Bretz

On June 3 a small delegation of area lake associations traveled to Lansing to take part in a mini-symposium with several biology and ecology professors from Michigan State University. TLA has done this periodically since developing our nutrient-based water quality model of our lakes. During this period we developed a relationship with several faculty members who are experts in lake biology and have active research programs that relate to problems of importance to us. Several lake associations, including TLA, gave presentations on topics of interest to us and we heard several presentations from them on issues that they felt connected to our needs. This interaction is always a fruitful one. Here are some highlights.

Prof. Joan Rose of MSU described efforts by her department to work with Michigan Regional Health Departments to procure, install, and use a new type of biological analysis device that uses the newest DNA technology to identify harmful micro-organisms. This analyzer uses PCR (Polymerase Chain Reaction) techniques to multiply the DNA of unknown organisms and match them to known harmful strains. For example this technique can quickly identify strains of E.coli, which are from humans versus those from other animals and which cause diseases in humans. E.coli comes in over a hundred different varieties, only a few of which are cause illness in people. The Northwest Michigan Health Department in Gaylord is slated to get one of these devices this coming year.

Dr. Elizabeth Homa of Tufts University in Boston, who has recently competed her PhD thesis explaining the seasonal cycles of water clarity in Torch Lake, gave a telephone talk from her home in Massachusetts. Using data collected by TLA in 2005 Dr. Homa explained that plankton are not responsible for the clarity cycle on Torch Lake unlike virtually all other lakes in the country. Instead calcium carbonate precipitates as the water temperature changes causing a cloudiness that mimics the plankton clarity cycle. This calcium carbonate then precipitates to the bottom of the lake carrying a significant amount of phosphorus along with it. As a result, this cycle cleans Torch Lake waters of its key nutrient. Similar "whitings" have been seen on Lake Michigan for many years, but were thought to be due to unusual conditions. In fact, they may be more common and be partly responsible for the clarity of other nearby lakes.

Prof. David Long of MSU showed data from core samples taken from Torch and Elk Lakes that showed changes in land use within our watershed. These cores date changes back over 300 years and show changes in impurities that accumulate on the lake bottom. Cores published in the past few years showed changes in lead, copper, aluminum, cadmium but recently phosphorus and mercury have been added to the list of core histories. These cores can supplement ongoing measurements of water quality that cover the last few decades. Prof. Long agreed to make this data available to TLA before its formal publication.

Prof. Dave Hyndman of MSU has developed a groundwater model for most of the state of Michigan and is in the process of integrating surface usage into a comprehensive model of the water quality in groundwater as well. He and colleages are working with local communities to model the effects of development on groundwater. There is interest in modeling well water in the greater Traverse City area as well as groundwater carrying cement kiln leachate in the Bay Harbor area.

Bob Kingon of the Elk-Skegemog Lakes Assoc. and Norton Bretz of TLA described how phosphorus loading on the Torch Lake watershed can be affected by septic systems. This loading can be substantially reduced over time by requiring septic inspection-on-sale of properties. In the communities that have already adopted this type of ordinance, failure rates of 10-20% of parcels inspected in the first years have been observed. The results of septic inspection ordinances in several Michigan communities were discussed.

Prof. Jan Stevenson of MSU discussed the use of LandSat information to study water quality in inland lakes. This data goes back to the 1970s and can be used to confirm some phosphorus and nitrogen impurity levels as well and historical records of water temperature and ice cover.

Betsy Lieberman and Mary Anne Newman of the Walloon Lake Association discussed environmental implications of new gas and oil explorations in the Walloon Lake region. They have concerns about wellhead leaks and spills as well as sources of large volumes of water used in these wells. At present there is no environmental review board to examine issues like this.

Update: Bay Harbor Cement Kiln Dust Leachate Cleanup

by Dean Branson

On April 28, 2010, the representatives of each of the 14 Regional Stakeholder Group (RSG) organizations that have been actively interacting with EPA, M-Dept. of Natural Resources & Environment (DNRE), CMS Energy, agreed to submit a consensus letter to these agencies, CMS, and the City of Petoskey, regarding the treatment and disposal of collected cement kiln dust leachate. This letter urged CMS and the City of Petoskey to creatively explore the possibility of forming some kind of a new partnership where the economic risks and benefits of treating and disposing of collected leachate would be shared in win-win manner. Control of a new partnership was not envisioned to be either the City or CMS, but rather the partnership itself.

This letter also requested additional information regarding a material balance for mercury…essentially a process-flow diagram showing the amounts of mercury entering and leaving the system, including the amount of mercury in the Petoskey Sewage treatment plant sludge.

The DNRE's proposed final remedies for this problem are expected by September 2010. Since these proposed final remedies are expected to reflect the RSG's perspectives, the RSG is developing responses to possible final-remedy scenarios. The Technical Work Group of the RSG is pleased with the current collaboration between MSU Professor David Hyndman (groundwater modeling expert) and CMS's groundwater modeling consultants. This collaboration is expected to forecast the volumes of collected and uncollected cement kiln dust leachate, with and without the use of upgradient diversion wells.

For aditional information see [www.littletraversebayrsg.com] orcontact TLA's representatives on the RSG, Gary Knapp or alternate Dean Branson.

E.coli Tributary Testing

by Becky Norris and Bob Oswald

Mike Knight and Becky Norris sampling E.coli on Eastport Creek

The 2010 stream monitoring program got off to a good start on June 10 with three teams of two volunteers collecting water samples from a total of 26 sites. Bob Oswald, Braden Ackerman, Bob McClelland, Paul Roush, Mike Knight, and Becky Norris collected samples from different portions of our watershed and met at Alden Harbor. After completion of chain of custody forms all the specimens were turned over to Bob Oswald and he conveyed them to the SOS laboratory in Traverse City. The whole effort took under 4 hours, well within the 6 hour limit advised by the DNRE. The data were in the safe and expected range with the exception of two "hot" spots and these were re-sampled to confirm elevated levels of E.coli. Additionally, another stream was discovered and sampled for the first time; this one also had elevated E. coli levels.

The Environmental Lake Watch team plans polite contact with property owners in the vicinity of the "hot" spots to attempt discovery of the sources of the E. coli.

E. coli Data				
Location	6/18/2010	6/10/2010	2009 Range	2008 Range
Spencer @ Alden Harbor	483	326	51-119	75-93
Torch Lake @ TRB DNR Launch		79	0-4	
Creek @ 10407 SWTLD		87	23-31	
Powell @ 7056 NWTLD	722	*1300	30-548	119-326
Under House @ 6543 NWTLD		73	35-96	24-1203
The Creek @ 6049 NWTLD		111	88-308	115-285
Creek @ 5843 NWTLD		58	35-179	138-192
Creek @ NWTLD & Campbell Rd		48	39-77	33-172
Creek @ 1165 NWTLD		56	46-411	36-788
Eastport @ M-88		214	210-1414	210-387
Wilkinson N of 4358 NETLD		135	77-147	73-947
Do-Di-Ah-Da @ 4054 NETLD		101	19-67	
Bennett @ 3487 NETLD		36	32-58	84-178
Wolgamott @ 3296 NETLD		195	38-91	75-326
Meggison S of 3028 NETLD		166	36-365	31-55
Hayo-Went-Ha @ 919 NETLD		30		
Krause @ 253 NETLD		49	23-38	19-53
Clam River @ Butch's		17		
Clam Lake @ Clam Lake Rd Launch		3		
W Butler @ Bellaire Hwy		66	11-70	11-148
Intermediate River @ Bellaire Hwy		32		
Cedar @Schuss Mt Rd		17	7-11	9-29
Shanty @ M-88		37	12-48	17-41
Maury Creek @ Fisherman's Paradise			150-166	
Grass River @ Grass River Rd		155		
Cold @ Tyler Rd		12	14-15	10-56
Finch @ Alden Hwy		10	7-10	6-13
Lake Bellaire @ Steiner Rd access			1	
Creek @ 6187 NWTLD	313			

New Members

Jonathan & Wendy DeWys
Douglas Morse
Matt Longjohn
Russ & Marsha Waara
Linda & Chris Robbins
Bill & Laura Christensen

Boat Burning on Torch Lake

by Norton Bretz

Burning boat off Kruger Rd. in Torch Lake Township on Torch Lake.

On May 30th, a 23 foot fiberglass inboard/outboard Chris Craft caught fire and burned for several hours just off Kruger Rd. on Torch Lake. The occupants of the boat jumped into the water after they observed smoke coming from the engine compartment. The boat had just been taken out of winter storage and had been well maintained. The gas tank had recently been filled and the boat had just been launched from the Torch Lake Township Day Park. Residents rescued the three occupants of the boat quickly and the boat, which was a quarter-mile from shore, was watched by many residents and Antrim County Sheriff boats and Torch Lake Township Fire Department until it was towed to shallow water. Ultimately, the burned carcass was winched onto a truck and taken away.

This incident raised some interesting questions for authorities and residents: Does Antrim County need capability of fighting a fire on the water? Are there absorbents or dispersants that would be appropriate to mitigate the oil and debris field around the boat? Who is responsible for cleaning up the pieces that wash up on the shoreline?

In this instance TLA and TLPA volunteers picked up charred pieces from the shoreline when riparians failed to get a response from the Sheriff, DNR, or EPA. However, our lake organizations have no special equipment or expertise in this area either.

Membership Report

by Todd Collins

Membership levels in 2010 are growing - we are at the highest level in the past decade. This is due to new folks who support our mission, old members that were inactive coming back and current members rejoining to continue their investment in a great organization. A number of younger members represent third and fourth generations in our association!

We have a lot of work to do and need more support. Every membership counts. We are actively seeking new partners. TLA will be out recruiting this summer and you may see us in a variety of places. We will be out canvassing, attending local events throughout Antrim County with information booths and hosting educational events. Look for us and say hello. We'll be happy to share our latest news. Invite your friends and relatives to join our ranks.

We look forward to seeing you at our annual meeting July 21st.

membership counts!

BASIC *$50* ❑ **DONOR** *$100* ❑ **STEWARD** *$500* ❑

BENEFACTOR *$1,000* ❑ **LIFE** *$2,000* ❑

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❑ Service ❑ Other

Three Lakes Association is a 501(c)(3) corporation. Your dues and other contributions are tax deductible. Gifts, memorials, and bequests can also be made to the Three Lakes watershed Conservation Foundation administered by the Grand Traverse Regional Community Foundation. Michigan residents receive a 50% state tax credit for contributions to this fund. Call for further information.

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To join Three Lakes Association please return this form with your check to:

THREE LAKES ASSOCIATION
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The Mission of the Three Lakes Association is to provide leadership to preserve, protect, and improve the environmental quality of the chain of lakes watershed for all generations.

July 2010 issue of the TLA Quarterly

THREE LAKES
ASSOCIATION