TLA Quarterly

JULY 2007

President's Message

Birth announcements! On Lake Bellaire at the north end we have a 3 week old baby loon. At the south end there are two babies less than a week old. No report from Clam Lake but hopefully they'll have success.

In April we were proud to learn that one of our interns, Rachel Proudfoot, was named NMEAC (Northern Michigan Environmental Council) Student Environmentalist of the Year. TLA nominated Rachel because of her leadership during our Predictive Water Quality Model project on Bellaire and Clam lakes. Our intern program with area high school students continues under the leadership of Norton Bretz this summer. See Rachel's own account of her experience in the next article.

Our volunteers along with our power washer assisted the Torch Lake Yacht Club at their big event last week, washing the sailboats to help reduce invasive species entering the lake.

TLA continues to make presentations to each of the townships surrounding our lakes about results of our three-year Water Quality Model study. So far they have been very well received.

We have formed a committee with GRNA to look at safety issues on the Grass River. The committee is made up of people who live on the river as well as Bellaire and Clam lakes. Board member Tom Turner heads the TLA contingent.

The annual TLA/GRNA Golf Tourney on June 10th was a huge success. Read more about it in this newsletter.

Our first education event of the summer was held June 27th at Craven Pond. "Up the Creek" attracted 75 people for the panel discussion on managing land along our rivers, streams and creeks. We heard positive comments about the panel, informational displays and the delicious refreshments. Our next event is August 22nd at the Summit Village Beach Club on Lake Bellaire from 4-6 p.m. Come enjoy a pontoon cruise, a wine and cheese reception and get updated on water quality issues at "In the Drink." These events are co-sponsored by TLA, Grass River Natural Area and Torch Lake Protection Alliance.

TLA's annual meeting is July 11th at 5 p.m. at the new Pelican Room on NE Torch Lake Drive just down from Old State Road. Be sure to get your dinner reservations to Sharon Branson at 544-2700. Norton Bretz, our new executive director, will present a brief program about our water quality model project following the business meeting. Hope to see you there.

Best regards, *Bob Bagley*

In this issue

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.

THREE LAKES ASSOCIATION

Founded 1966

OFFICERS

Bob Bagley, President
Dean Branson, Vice President
Becky Norris, Treasurer
Dorothy Clore, Secretary
Dick Garcia, Past President
Norton Bretz, Executive Director

ZONE DIRECTORS

A. Clearwater Township: George & Faith Bushnell, Tina Fields
B. Milton Township: Bob Oswald, Carl Schiele
C. Torch Lake Township: Arlene Westhoven, Becky Norris
D. Central Lake Township: Alan Hickman, Pat Roush
E. Forest Home Township: Al Gibbs, Art Hoadley
F. Helena Township: Trish Narwold, Judy Stuart
G. Custer Township: Tom Turner, Bob Probst
H. Kearney Township: Shirley Hetzel, Duane Drake

DIRECTORS AT LARGE

Chuck Drouilliard, Stan Dole, Dean Branson, Len Franseen, Bob McClelland, Dave Rowe, Bob Kollin

COMMITTEE CHAIRS

Bob Oswald, Water Quality
Unfilled, Water Safety
George Bushnell, Public Relations
Alan Hickman, Membership
Norton Bretz, Finance

The TLA Quarterly is published by the Three Lakes Association

Please direct comments or questions to Norton Bretz
Three Lakes Association
P.O. Box 689
Bellaire, MI 49615

Road-End Legislation:
Another Threat to inland Lakes

On June 27th the Michigan House of Representatives passed two bills, HB 4463 & HB 4464 that, if also passed by the Senate and signed by the Governor, could encourage entrepreneurs and negatively affect public safety, water quality, public access to lakes, and property rights. Representative Kevin Elsenheimer voted NO on this proposed legislation.

TLA's Executive Committee is working closely with the leadership of other lake associations and the Conservation Network of the Elk River Chain of Lakes to strongly register rationale arguments to oppose this proposed legislation. TLA believes in the equal, open, and unrestricted public access to the waters of our state, including boating access through licensed marinas, public access boat-launch sites, and public beaches, but we are not in favor of expanding the public's use of road ends for individual's boat lifts, docks, and boat slips, as would be enabled by the proposed legislation.

This legislation, if signed into law, would reverse 124 years of Michigan case law and public policy affecting the public's use of road ends. As proposed, this legislation is another form of riparian funneling, which has been addressed in the courts many times.

The next step in the legislative process is for the Senate to consider similar legislation in the Senate Committee on Government Operations and Reform. Senator Michael Bishop is the Chairperson of this Committee and Senator Jason Allen is the Senator representing this area.

Membership

Our membership is up to 370 as of mid June. Our goal is to reach at least 525. Please check to see if you have renewed your dues for 2007. If everyone renews, along with our new members so far, we will have over 500. Memberships not only allow TLA to continue with our water quality mission, but allows you a voice in that mission, a voice that gets louder with your membership.

We will be sending everyone who has given us an Email address a notice about being on a list for announcements and alerts. We hope that this will allow a more immediate communication to our membership for those that want it. Stay tuned.

Please visit our website www.3lakes.com. Our predictive model reports are there in addition to a number of other documents relating to our three lakes. We will be updating the calendar there and adding more historical and water quality information.

Thursdays with the TLA

Last summer I saved the world. Well, maybe not the entire thing, but I did help to save a small part of the environment, and that small piece seems like the most important because it's where I go to school, work, grew up and currently live.

Each Thursday I took a day off from my babysitting job to work with the gentlemen and the five volunteer interns of the Three Lakes Association. Each week we had a new adventure; drilling wells, measuring stream flow by sitting in a kayak with the measuring line between our teeth, or spending half the day on beautiful Torch Lake pulling up water samples and sieving out the tiny particles that keep the water so pure and, of course, lunch was always included.

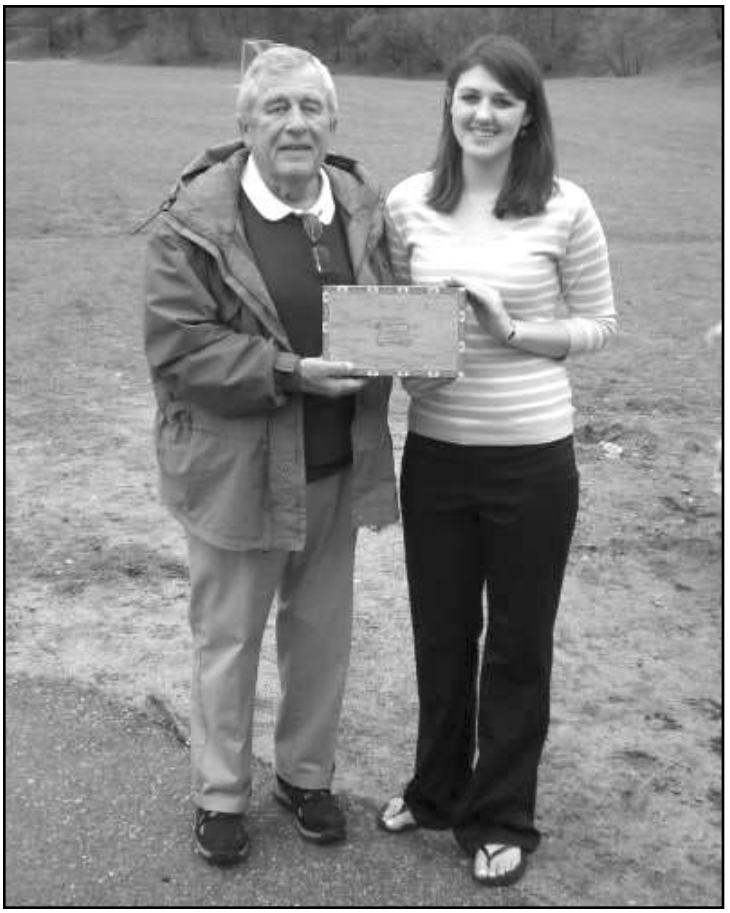
Hidden beneath the guise of free lunches and misadventures, we really did have a noble goal. It's no secret that Antrim County's population has been growing rapidly, or that it's economy relies on tourists drawn to the lakes. With increasing population comes an increased pressure on our environment and in order to keep the lakes so pristine we need a predictive water quality model. Our summer objective was to gather data for this nutrient based water quality model. And gather information we did, everyday of the project there were three sets of surveying data coming into the Three Lakes head quarters and we interns got to see it all when we wrote up our report.

After we had spent approximately eight weeks leisurely collecting data, we finally had to start the real work: a 26-page analysis of our summer's efforts. Our intern team divided into three groups each responsible for analyzing pH, specific conductivity, dissolved oxygen and temperature graphs for their assigned lake. In two weeks time we churned out a comprehensive analysis and comparison of our lakes' quality that could be used as a reference for years to come.

So after 10 weeks and 26 pages what is it that I learned besides the Dockside's full menu? For one thing, I now have "real world" experience in research; an opportunity that I didn't expect to have until college. I now know how to format a scientific paper and what to look for when analyzing important data. I count myself lucky to have had the chance to work with such passionate people on a project that has a very real impact. My Thursdays spent with the TLA turned out to be one of the most rewarding experiences I've had and it's certainly one that I will never forget.

2006 Bellaire High School Intern,
Rachel Proudfoot

Ed. Note: Rachel was valedictorian of the 2007 Bellaire High School class and will be attending the University of Michigan in Sept. 2007.



TLA President, Bob Bagley, and 06 Bellaire High School intern, Rachel Proudfoot, receiving her Environmentalist of the Year award from NMEAC

TLA/GRNA 4th Annual Charity Golf Tourney

On June 10th, a record 98 golfers teed off at our 4th annual scrambles golf tournament. Hawks Eye's staff did a super job of running the tournament plus serving a fine lunch and dinner. Our thanks to the Rowe family for hosting.

We had 55 sponsors, primarily businesses. We are fortunate to live in an area where the business community is so willing to help! The silent auction and raffle helped the bottom-line too. Our net income was $15,400. This money will benefit the education efforts of TLA and GRNA.

Our sincere thanks to all those who supported and attended this great function. Special thanks to Cindy Hickman, Pat Drake, Al Gibbs, Nancy Ludwa and Linda Bicum who helped with registration, raffle and silent auction.

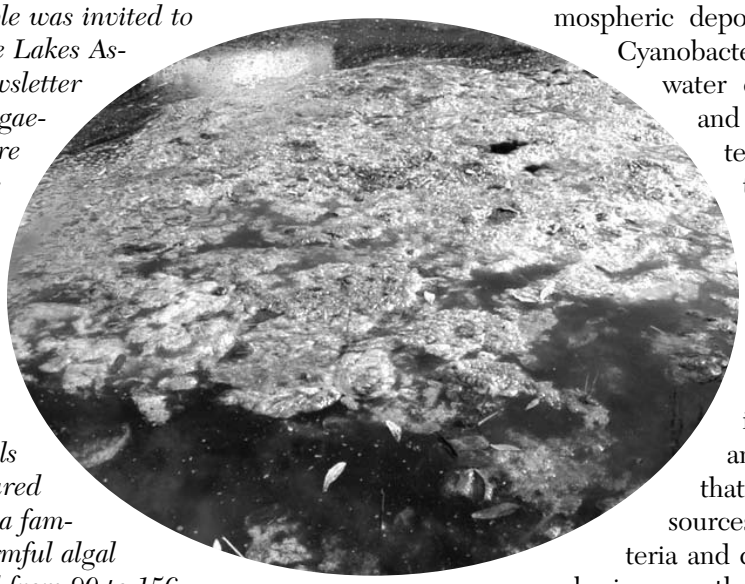
Thanks to the committee for a job well-done: Dale Hanson, Co-Chairman; Ken Salo, Treasurer; Chris Nightingale and John Edleman.

Bob Bagley
Co-Chairman

Myths and Facts about Harmful Algal Blooms

Dr. Juli Dyble, NOAA-Great Lakes Env. Res. Lab., Ann Arbor

Preamble: Dr. Juli Dyble is a research biologist with the National Oceanic and Atmospheric Administration's (NOAA) Great Lakes Environmental Research Laboratory in Ann Arbor, Michigan. In response to her outstanding Web Cast guest lecture about Harmful Algal Blooms at Michigan State University on March 2, 2007, Dr. Dyble was invited to prepare a brief article for Three Lakes Association's (TLA) quarterly newsletter to help put recent bluegreen algae-related findings for Lake Bellaire in perspective. As part of TLA's water quality modeling project in 2006, the predominate late summer phytoplankton species were blue-green algae (approximately 13,000 cells per milliliter, compared to the other species of phytoplankton that range for 1,000 to 2,000 cells per milliliter), and the measured concentrations of microcystins (a family of toxins associated with harmful algal blooms) in Lake Bellaire ranged from 90 to 156 nanogram per liter. The World Health Organization's water quality criterion for microcystins is 1,000 nanogram per liter.



Blue-green algae, also known as cyanobacteria, are present in lakes, reservoirs, and estuaries throughout the world. Some cyanobacteria are classified as Harmful Algal Bloom (HAB) species. "Harmful" refers to the ability of these algae to produce toxins that can have negative impacts on both the environment and humans. "Bloom" refers to the high density of cyanobacterial cells. Although the individual algal cells are microscopic, blooms can easily be seen with the naked eye on the water surface and can at time stretch over many miles.

Cyanobacteria blooms are a concern especially in waters used for recreation, fishing and drinking water supplies. Of particular concern in many Michigan lakes is the HAB genera Microcystis. Microcystis blooms degrade the aesthetic value of the water, are often associated with taste and odor problems in drinking water, may cause allergic reactions in swimmers and can produce toxins resulting in the death of pets, wildlife, and gastrointestinal illness in humans. The buoyancy of Microcystis allows it to accumulate on the water surface, forming visible blooms. Hard structures in the water, such as docks and piers also create good places to accumulate cells and these are often places with both the highest concentration of Microcystis cells on the surface and where people are most likely to come into contact with the water.

There are a number of environmental factors that promote the growth of cyanobacterial HABs. Phosphorus (P) is often the limiting nutrient in freshwater systems and enrichment of waters with P inputs from point and non-point sources of agricultural, industrial and urban origin have contributed to the proliferation of cyanobacterial HABs. These sources can include wastewater treatment facilities, septic tanks, sewer overflow, fertilizer and animal waste runoff from land and atmospheric deposition of aerosolized nutrients. Cyanobacterial HABs also prefer stable water columns with slow water flow and reduced mixing. Surface water temperatures above 68°F are optimal for cyanobacteria to grow, so blooms are more common in the late summer in the Great Lakes region. While there are cyanobacteria that grow in higher salinities, most cyanobacterial HABs grow optimally in fresh water. Zebra mussels and many zooplankton species that graze on algae prefer other food sources and their rejection of cyanobacteria and consumption of other algae may also increase the proportion of toxic cyanobacteria present.

Myths # 1: Toxic blooms are a new occurrence

Fact: Toxic cyanobacteria blooms have been recorded since biblical times. Cyanobacteria are not another invasive species. Cyanobacterial HABs have been documented in most of the US states, in habitats ranging from small, highly nutrient enriched ponds to large, lower nutrient regions of the Great Lakes. Blooms of Microcystis on the Potomac River in the early 1930s resulted in gastrointestinal illness of more than 5000 people.

Myth #2: All blooms produce toxins and you can tell what toxin is present by looking at the algae

Fact: Cyanobacterial HAB species can be toxic or non-toxic and it is impossible to tell whether you have toxic strains present by looking at a bloom, even if you look under a microscope. Also, the same toxin can be produced by many different genera and the same genera can produce different types of toxin. For example, the toxin microcystin was named based on Microcystis, the organism from which it was first isolated. However, microcystin can also be produced by the HAB cyanobacteria Anabaena and Planktothrix and while Microcysts most commonly produced microcystin, it has also been reported to produce the neurotoxin anatoxin-a. Cyanobacterial toxins vary widely in their chemical stability, persistence in the environment and the degree to which they are taken up by other organisms. Microcystins remain inside the cyanobacterial cells until the cells die, at which point they are released into the water column.

More Atlantic Salmon for Torch Lake

Since 1986 Michigan Department of Natural Resources (DNR) has planted more than a half million Atlantic salmon in Torch Lake. DNR has scheduled its eleventh planting of Atlantic salmon in Torch Lake for early September of this summer. Half of the 20,000 Atlantic salmon fingerlings will be planted at the Alden Harbor and half at DNR's Eastport boat launch site.

Torch Lake is the DNR's alternate brood-stock lake for Atlantic Salmon. Historically Gull Lake, near Kalamazoo, has been their brood-stock lake for Atlantic Salmon. One to four years after stocking yearlings or fingerlings, mature adults will seek gravel beds in flowing streams to spawn in the fall. If DNR decides to utilize Torch Lake as a brood-stock lake, then they would capture spawning Atlantic salmon in one or more of Torch Lake's tributary streams, such as Clam River, Rapid River, Finch Creek, Cold Creek, and Shanty Creek. Although DNR has no evidence that the Atlantic Salmon are currently spawning in these tributaries, this is a reasonable expectation that this occurs.

The resident population of lake herring and smelt represent the predominate food for Atlantic Salmon in Torch Lake that enables them to grow to 20 to 22 inches in two to three years and ultimately reach 12 to 15 pounds.

For more information about the planting of Atlantic salmon in Torch Lake, please contact Tom Rozich, DNR's Fisheries Biologist Supervisor located in Cadillac. (231) 775-9727 x-6070 or Todd Kalish, Fisheries habitat Biologist in Traverse City (231) 922-5280 x-6870

Joint TLA/TLPA/GRNA Educational Event: Up the Creek

The first Up the Creek Joint Educational event sponsored by TLA, TLPA, and GRNA was held June 27 at 4 PM at Craven Park where Cedar River enters Craven Pond. All things relating to Cedar River were presented and a panel discussion with Pepper Bromelmeier, Natural Resources Conservation Service, Eric Ellis, Conservation Resource Alliance, Wild Link Program Manager, Heidi Lang, Antrim Soil Conservation District, Stan Moore, MSU Extension, County Extension Director, Todd Vigland, Grand Traverse Regional Land Conservancy. In addition Dave Rowe and other representatives from Shanty Creek and the Chief golf course were there to answer questions about runoff. Posters on the Mancelona TCE plume and the Bellaire Village plans to dredge Craven Pond were shown.

George Bushnell and Leslie Burk of Tip of the Mitt Watershed Center discussing Cedar River at Up the Creek in Craven Park

Shoreline Survey

An M-DEQ grant to the Grand Traverse Bay Watershed Center has made possible a shoreline survey on Torch Lake. This survey is co-sponsored by TLPA and is being coordinated by White Pines Associates. The survey has already started with over 250 parcels located, photographed, and surveyed. However, there are approximately 1,500 parcels on the lake, so this activity will continue through the summer. The purpose is to identify greenbelt buffers and erosion sites. Peg Comfort is organizing the volunteers according to the following plan:

Survey Schedule
From 9:00-12:00 (Weather permitting.)

July 10- July 20	Forest Home Township
July 23- August 3	Helena Township
August 6- August 17	Milton Township
August 20- August 31	Clearwater Township
September 17- September 28	Torch Lake Township

Please call Peg (231-377-7512). We need boats for the survey, cars to help identify locations, photographers, and form fillers. If you see someone taking a picture of your property from a boat, its probably this team. If you want to know more about it, contact TLA or Peg.

Summer 2007 High School Intern project

Four high school students from Bellaire and Central Lake High Schools are participating in a research project sponsored by Three Lakes this summer. They will be doing a survey of "Glacial Relicts" in Torch Lake, Lake Bellaire, and Elk Lake. They will be joined by three Elk Rapids High School students sponsored by the Elk-Skegemog Lake Association. The students and TLA volunteers will be taking samples from the water and the sediment at the bottom of the lakes in order to determine the number density and distribution of macro-invertebrates (bugs) that live there. In our lakes these creatures have been left there since the retreat of the glacier over 10,000 years ago. This is the only cold, dark place that they can live now that the glaciers have gone. A survey was done by the University of Michigan in 1978 and Inland Seas Educational Center has been doing similar surveys on Grand Traverse Bay for over ten years. In fact, the first student outing consisted of a trip on the Inland Seas in Grand Traverse Bay to learn their sampling and identification techniques. The students will write a report comparing the new results to the older ones. The bugs that live in the lake bottoms are at the bottom of the food chain for all the other creatures that live there including our fish population. Each student will receive ½ credit hour in Independent Studies toward their graduation requirements.

New Membership Categories for 2007:

- **Basic ($50)** supports newsletters and administrative costs.
- **Donor ($100)** supports the above and ensures the continuation of basic water quality monitoring.
- **Steward ($500)** supports the above plus the high school summer intern program.
- **Benefactor ($1,000)** supports the above and predictive water quality modeling efforts.
- **Life ($2,000)** accomplishes all of the above while assuring future financial stability by growing our endowment, the Three Lakes Watershed Conservation Fund, administered by the Grand Traverse Regional Community Foundation.

Please use the form below to renew your Three Lakes Membership.

membership counts!

BASIC ❑ DONOR ❑ STEWARD ❑ BENEFACTOR ❑ LIFE ❑

Michigan Riparian Magazine Subscription ❑
(Please include an additional $10)

TOTAL AMOUNT ENCLOSED: $_____

* * * * * * * * * * *

NAME: _____

SUMMER POSTAL ADDRESS: (Street, P.O. Box)_____

_____

TOWNSHIP: _____

TOWN: _____ZIP:_____

SUMMER PHONE: _____

WINTER POSTAL ADDRESS: (Street, P.O. Box)_____

_____

CITY: _____

STATE: _____ ZIP:_____

WINTER PHONE: _____

EMAIL: _____

May we include your name in our newsletter donor list?

Yes ❑ No ❑

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.

* * * * * * * * * * *

To join Three Lakes Association please return this form with your check to:
THREE LAKES ASSOCIATION
P.O. Box 689
Bellaire, MI 49615

Dredging Craven Pond

The Village of Bellaire is planning to dredge Craven Pond to improve its recreational value and habitat for trout. In the past Craven Pond has been a better trout pond than it is today because it was deeper. Now the depth of the pond is no more than three feet and is generally shallower. The M-DEQ is reviewing the Village's permit application to dredge the present open water area to a total depth of about 10 feet and plans to begin in the fall of 2007, budget permitting.

Three Lakes has questions about how much phosphorus and sediment will flow into Intermediate River and Lake Bellaire as a result of this dredging. From our studies over the past few years we know that the sediment is rich in phosphorus, and we are concerned that this phosphorus will be released in large amounts into Lake Bellaire where it will promote plankton and algae growth. TLA has offered to run its predictive phosphorus model to determine the level and extent of this increase and the Village has encouraged us to go forward and advise them of our results. TLA volunteers, Norton Bretz, Corey Arsnoe, and Dean Branson have sampled the sediment on the bottom of Craven Pond and GLEC (Great Lakes Environmental Center) has analyzed the results and run the predictive code.

As a result of these analyses and modeling, TLA predicts that the level of phosphorus in Lake Bellaire will rise to approximately three times its current level immediately after the dredging but will return to within 20% of its current level by the following summer. Thus, the phosphorus increase will occur just as the water temperatures are decreasing toward their winter low and an algae bloom is very unlikely. By the time the water temperatures rise again next summer the lake will have cleaned itself both by natural flows and its own calcium carbonate cleaning mechanism. The plankton levels the following summer are predicted to be slightly elevated, but the water clarity is expected to be unaffected. These results, of course, are based on an over-simplified model of the Lake Bellaire, and there are uncertainties in our estimates. Furthermore, sediment will also increase for a time in Intermediate River during the dredging and that will probably be upsetting to its residents. However, as with Lake Bellaire, we expect that the changes will not extend through next summer.

We are continuing to work with the Village Council to minimize all these effects. In particular, there is some flexibility in raising and lowering the pond level to minimize both sediment and phosphorus loads during the dredging operation. TLA will present its results to the Bellaire Village Council July 18 and continue advising the Village on how to minimize downstream changes.

New Members

Mike and Nancy Contat
7099 Crystal Springs Rd., Bellaire

Arthur Hoadley
7538 Crystal Springs Rd., Bellaire

Leonard and Elaine Dawson
7389 Hwy M-88 S, Bellaire

Jim and Susan Abdnor
6417 Cottage Dr., Bellaire

Dolores Breidenbach
7205 Cottage Dr., Bellaire

Shelia Stevens
7553 Cottage Dr., Bellaire

TLA Calendar

Monday, July 9, 2007 (7 PM)
Three Lakes Predictive Water Quality Project presentation to Milton Twp. Board

Wednesday, July 11, 2007 (5 PM):
TLA Annual Meeting, Pelican Room, East Torch Lake Drive.

Thursday, July 12, 2007 (7 PM)
Three Lakes Predictive Water Quality Project presentation to Helena Twp. Board.

Wednesday, July 18, 2007 (7 PM)
Presentation to Bellaire Village Council of predictions of Craven Pond dredging impact on Lake Bellaire.

Monday, July 30, 2007 (2 to 4 PM)
Torch Shoreline Survey, Alden Harbor.

Wednesday, August 22, 2007 (4 to 6 PM):
Report Card and pontoon cruise at Shanty Creek Beach Club on Lake Bellaire.

Tuesday, September 4, 2007 (7 PM)
TLA Predictive Model Presentation to Antrim County Planning Board.

Three Lakes Association
P.O. Box 689
Bellaire, MI 49615
231-533-4852
www.3lakes.com

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 2007 issue of the TLA Quarterly

THREE LAKES
ASSOCIATION