

TLA Quarterly

APRIL 2011

President's Letter

Spring is rapidly arriving. Yesterday Torch Lake in front of our home was ice covered. Today (St. Patrick's Day) there are huge areas of open water similar to mid-February. This part of Torch Lake was ice covered for only about a month.

During the last few months TLA's Board has been developing plans to accomplish the following exiting projects in 2011:

- A special celebration of **TLA's 45th Anniversary, July 21st**, M-DNR's new Director Rodney Stokes to speak on DNR-lake associations partnerships
- TLA to investigate sources and accumulation of **sediment in Grass River**, in partnership with Grass River Natural Area, and in collaboration with Elk-Skegemog Lakes Association, who will be investigating sediment in Rapid River. Expertise, equipment, and assistance from Tip of the Mitt and the Watershed Center to be shared. **Needed: Volunteers** and summer interns.
- **Golf Outing**, Monday, June 27th, joint fund raiser with Grass River Nat'l Area
- **Advocating** with units of government for water quality protection initiatives
- Updating signage for **Star Buoy** program and protection of local loons
- Removal of **Eurasian watermilfoil** in Torch Lake

Thanks to the collaborating leadership at the Tip of the Mitt and the Watershed Center, a new group has been established to catalyze the implementation of those specific elements in the Grand Traverse Watershed Protection Plan that directly benefit the Elk River Chain of Lakes (ERCOL), such as the river sedimentation project. TLA has been actively participating in bimonthly meetings of this new group that is now called the ERCOL-Watershed Protection Implementation Team (WPIT). TLA's involvement in the river sediments project is a direct result of this Team's collaboration. Another working group under the auspices of this Team is developing action plans to improve the fisheries within the Chain of Lakes. If you are interested in volunteering, or supporting these projects in other ways, please let Norton Bretz or me know about your interest.

As a follow up of our recent survey of TLA member's opinions about our strategic direction, the Board hosted a small focus group of non-board members to informally provide community-based feedback about TLA's current and proposed new programs. A synopsis of this focus group session is an article in this Newsletter.

*Sincerely,
Dean Branson*



In this issue

Grass River Center Update
by Debra Hershey
Page 2

Uncharted Waters— An Analysis of Grass River and Its Tributaries
by Gary Knapp
Page 3

Joint TLPA, TLA, GRNA and FoCL Education Events
by Paul Roush
Page 3

TLA Board obtains feedback on strategic direction
by Dean Branson
Page 4

Bay Harbor CKD Leachate Problem: Update
by Gary Knapp and Dean Branson
Page 4

Rodney Stokes, MDNRE Director and TLA Annual Meeting Speaker
by Jack Norris
Page 5

Butch's Marina Cleanup Update
by Norton Bretz
Page 5

TLA/GRNA Golf Tournament
by Bob Bagley
Page 5

2010 Water Quality Monitoring Results
by Art Hoadley
Page 6

Mercury Levels in Local Loon Population
by Joe Kaplan
Page 7

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



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Association Cooperative Lake Monitoring Program

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Grass River Center Update . . .

by Debra Hershey, Executive Director Grass River Natural Area

Hopes are high that the long awaited Grass River Center could become a reality at the end of April. Nearly ten years in the making, Grass River Natural Area (GRNA) and Antrim County recently completed site testing, and an advertisement for bids has been published in local papers.

However, the fundraising work for the GRNA board of directors continues. An education center was anticipated for the Grass River Natural Area over 40 years ago. Even then, the plans were to have an outdoor learning pavilion with electricity, microscopes and lab equipment to be used for water quality studies. The current design for the new center includes such a learning pavilion.

Recent figures suggest that GRNA still needs to raise an additional \$125,000 to complete the campaign, build the center and the covered learning pavilion, and have a few dollars left over to furnish the building. If we do not raise the funds, it is unlikely that the pavilion will be built.

The learning pavilion satisfies so many needs for the Grass River Natural Area. We have long wanted to reach out to older students by designing water quality programs for high school and college students. This pavilion will help reach this goal.

Currently, GRNA serves over 1,000 local elementary students in May and September. And there is always a waiting list. Having a building and covered pavilion will allow Grass River Natural Area to offer classes in other months of the year enabling us to serve more schools and students.

Two concerns we often hear from elementary teachers who bring classes for full day instruction is that we don't have bathrooms or an adequate lunch space at Grass River Natural Area. The new center will contain restrooms, and the covered learning pavilion will satisfy lunch needs for students and visitors as well. At 1,000 square feet, the learning pavilion will also afford us much needed additional learning space.

Grass River Natural Area is known and loved by many for different reasons. Our education program is the hallmark of what we do. Anyone interested in the environment knows that training future stewards is the way to ensure that the area we love will be protected forever.

If you are interested in helping Grass River Natural Area reach our goal and shape our future, please contact us at (231) 533-8314. Or contact me at: debbie@grassriver.org

Donations can be made over the phone or mailed to: Campaign for Grass River PO Box 231 Bellaire, MI 49615. Please make checks payable to Campaign for Grass River. **Donations specifically for the learning pavilion must be received by April 18, 2011!**

New TLA Members

Three Lakes Association would like to welcome the following new members for 2011. Marsie Martien, Mr. and Mrs. Clifford Maine, Rob Nissly, Dr. and Mrs. James S. Craig, Fred Sittel, John Zoller, and Art and Cathy Breerton

Uncharted Waters– An Analysis of Grass River and Its Tributaries

by Gary Knapp

As this is being written I am looking out our window at Grass River. It is a sunny, blue-sky, clear day with snow carpeting the marsh on the other side of the river and reflecting the sun light. It has been said that Grass River is the heart and soul of the Lower Chain of Lakes. Few would disagree. On the desk in front of me is a draft of a Fresh Water Future grant application. The Project Title reads, “Coalition to Advocate for Restoration and Preservation of Grass and Rapid Rivers.” As is often true when embarking on a journey into uncharted waters, this project title might be considered a leap of faith. Said differently, some might ask protection and preservation from what? Certainly anyone navigating the length of Grass River can only marvel at its crystal clear, free flowing pristine and even primitive appearance. Few could argue that Grass River is one of the most beloved and protected rivers in the region. Others would go even further to say that nature has protected and preserved Grass River for centuries and she will continue, with or without human intervention. And, not unlike the Hippocratic Oath, we as the flawed humans we are, should be guided by a “first do no harm” principle. It might also be safe to say that few would disagree on *any* of these points.

That said, let’s explore a plan being formulated as a basis for moving forward with a process to objectively determine whether or not human practices (affecting the long term health of the river and its tributaries) warrants study and *corrective* prevention and intervention. In other words, what might be considered legitimate *threats* to this pristine river and its tributaries sufficient to justify the use of language like - “corrective action”?

The Grass River of today is much wider and shallower than the Grass River remembered by preceding generations. Today’s Grass River has less aquatic habitat for fish and fish spawning. Now much of the bottom of Grass River and its tributaries is covered with human caused sand and silt. The boaters, anglers and nature lovers of today find navigating, fishing and experiencing the natural beauty of Grass River and all that surrounds it feeling the effects of ever - increasing human interaction. Human interaction in the form of road-stream crossings, stream bank erosion, sand and silt caused by construction and poor management practices, boat traffic and excessive boating speeds, depletion of natural habitat and aquatic



Grass River from Gary and Sue Knapp’s bedroom window

life affecting fish spawning and wetland degradation.

An unfortunate reality is that to date no empirical studies and scant data or scientific evidence exists in order to facilitate an objective analytical dialogue concerning the long-term health, protection and preservation of this vital and precious ecosystem.

Consequently, whether you are merely concerned about your grandchildren’s ability to navigate the entire river with a boat; whether you envision your grandchildren catching fish spawned in the river; whether you are concerned about hydrology and stream flow; or whether your concerns drift toward sustaining aquatic habitat, wild life, flora and fauna, it is in nature’s and in our human interest to to develop a community driven advocacy plan *grounded in scientific principles and best practices*.

The formulation of such a plan will be a determining factor in answering the question: are there threats to the river and its tributaries sufficient to warrant **human** protection, preservation and intervention?

Joint TPLA, TLA, GRNA, and FoCL Education Events

by Paul Roush

Torch Lake Protection Alliance, Three Lakes Association, Grass River Natural Area and Friend of Clam Lake will present two education events this summer.

The first event will be on Wednesday, June 22nd from 4:00 p.m. to 6:00 p.m., at the Alden Depot. A panel representing all points of view will discuss gas well “fracking.” Deep gas well fracturing is a hot button issue on Antrim County right now. The event is an opportunity to get the known facts.

The second summer event also highlights an important component of responsible stewardship of our lakes. On Tuesday, August 26th, from 4:00 p.m. to 6:00 p.m., the topic will be hazardous

household waste disposal, particularly medications as well as all the other potentially hazardous materials we all seem to accumulate (oil, paint, insecticides, herbicides, etc.) The location of the August event TBD.

As always, both events will feature appetizers, wine and soft drinks. The events are free and we encourage you to bring along new neighbors. See you there. Check the organizations’ websites (<http://torchlakeprotectionalliance.org/>; www.3lakes.com; www.grassriver.org; www.focl.info/) for the August event location or call Grass River Natural Area at 231-533-8314.

TLA Board obtains feedback on strategic direction

by Dean Branson

On March 26th, TLA's Board convened the following panel of people from the area to provide some frank feedback on TLA's current programs:

Brent Nelson	Mark Stone
Melissa Makowski	Doug Morse
Dave Hill	Tom Baeckeroot
Mike Crawford	Bob Robbins
Bob Spencer	Debra Hershey

The purpose of this focus group session was to make recommendations for TLA's 2011 strategic direction. TLA's Board first established Goals for 2011, and then updated these Goals based on the results of a membership survey questionnaire last December.

The panel's valuable feedback was based on their understanding of TLA's legacy within this watershed and the following very brief overviews of current programs:

- Summer Internship Program, and other TLA activities: Norton Bretz
- Water Quality Programs: Becky Norris
- Environmental Education Programs: Patricia Roush
- New project to reduce sediment-based threats in Grass River: Gary Knapp
- Membership survey questionnaire findings: Tina Fields

The following points are a sampling of the feedback received:

- TLA's summer internship program, 40 students in the past 8 years, has been remarkably successful, and our recent support of the science teachers in area schools, and Grass River Natural Area is recognized within the community, but our Mission statement should be changed to clearly reflect our focus on water quality and environmental education.



TLA Education Committee Chair, Patricia Roush, describes the TLA Education Program to the Focus Group, Mar. 26

- TLA's ongoing monitoring of water quality in the lakes and streams is recognized as one of TLA's most creditable core programs, which could become a "hook" for enticing greater involvement of young people in TLA-related activities, perhaps through innovative events and social media.
- TLA has a distinctive logo, which we could use more effectively to further brand our activities in the watershed and promoting the responsible use of the waters. We need to engage in a positive public-awareness campaign that encourages all – riparians, non-riparians and visitors – to understand the nature of, and to share in the true stewardship of our common waters.
- The new project to address the sediment threats in Grass River and Rapid River fits TLA's Mission, especially the opportunities to enhance TLA collaborations with several other environmental organizations.
- Based on the membership survey findings, TLA may want to investigate projects to help improve local fisheries, including habitat improvements.

Bay Harbor CKD Leachate Problem: Update

by Gary Knapp and Dean Branson

On February 23, 2011 the Regional Stakeholders Group (RSG) submitted its 5th, and perhaps final, letter of recommendations to M-DNRE, EPA, and CMS Energy. The purpose of this letter was to provide the RSG's recommendations regarding their views of desirable elements in a negotiated final remedy for the long-term clean up of this site.

One of the special recommendations in this letter was a new emphasis on possible opportunities to reduce the volume of cement kiln dust leachate currently being generated in the Pine Court area. This is the location of the greatest amount of uncollected leachate and mercury currently migrating into Little Traverse Bay. Based on information in a ground water modeling study, lead by Professor David Hyndman, Michigan State University, redirecting the surface water from the golf course area away from an upgradient wetland, where the surface water percolates downward and recharges the ground water and then mixes with the buried cement kiln dust, may represent an opportunity to significantly reduce the volume of

cement kiln dust leachate generated. The study was sponsored by the same EPA grant that established the RSG, which was a grant for Technical Assistance in Support of Communities. CMS Energy collaborated in this study.

Another recommendation in the letter was the long-term role of DNRE and EPA to provide ongoing oversight for each aspect of the clean up and to conduct a comprehensive environmental evaluation every five years. The RSG also recommended the establishment of a publicly transparent performance bond to assure ongoing operations at the site for at least the next 30 years. The RSG may convene one more time after a draft negotiated final remedy is available for review, which is expected by July 2011.

For further information about recommended remedies for the Bay Harbor cement kiln dust leachate problem, TLA members are encouraged access critical documents on the RSG's Website (www.littletraversebayrsg.com) or to contact Gary Knapp, TLA's contact on the RSG.

Rodney Stokes, MDNRE Director and TLA Annual Meeting Speaker

by Jack Norris

Rodney Stokes is TLA's guest speaker at its 45th Annual Meeting on Wednesday, July 21, 2011, at Shanty Creek Resort. Please reserve by sending a check (\$23 per person) to Becky Norris, 4016 US 31, Kewadin, MI 49648

In December 2010, Michigan Governor-elect Rick Snyder, appointed Rodney Stokes to serve as Director of that state's Department of Natural Resources (DNR). Stokes began his professional career with DNR in 1977 and held leadership positions at the Michigan Natural Resources Trust Fund program, Grants Administration, and then as director of the Parks and Recreation Division from 1997 to 2002. Stokes also served as interim director and deputy director of the Detroit Recreation Department, and as director of the Gainesville, Fla., Recreation and Parks Department.

Stokes returned to the Michigan DNR in 2004 where he served as its legislative liaison, chief of staff and chief

of its office of science and policy. Stokes has a bachelor's degree in recreation administration from Tennessee State University and a master's degree in parks and recreation resources from Michigan State University.



Rodney Stokes,
Director of Michigan DNR

In TLA's backyard, the treasured and fragile Chain of Lakes, Chief and later Director Stokes has helped cut down on environmental abuses on Torch Lake's sand bar, lent support to our Star Buoy Program, ended the operation of an illegal slalom ski course on Lake Wilson, prevented the establishment of others on Lake Bellaire and Intermediate Lake, helped with defense of fish spawning beds and loon nesting and breeding areas, and maintains an open offer of help and information at any time.

Rodney's view of things seems to run in the family - his daughter Rhonda Vassar is Director of Operations for The Nature Conservancy in Georgia.

TLA/GRNA Golf Tournament

by Bob Bagley

The 8th annual Three Lakes Association/Grass River Natural Area charity golf tournament is scheduled for Monday, June 27, 2011. Golf will be played at Schuss Mountain Golf Course with a shotgun start at 1:00 p.m. Drinks and dinner will follow at Cedar River Golf Club. Your \$100 per person fee includes golf and dinner. There will be three flights (women, men, co-ed) with prizes for low gross and low net. There will be hole-in-one prizes on all the Par 3's with a special \$5,000 cash prize on one of them. There will be senior tees and the Peoria handicap will be used.

If you are not a golfer, we encourage you to come to the dinner at 6:30 p.m. on the beautiful Cedar River patio. The price is just \$30 per person.

So put together a foursome for golf or dinner and join us in supporting two wonderful organizations. For more information call Bob Bagley, 377-7125 or the Grass River office, 533-8314.

Butch's Marina Cleanup Update

by Norton Bretz

The excavation of contaminated soil from the area in front of Butch's Marina in Clam River has been going on most of the winter. As you may remember this area was contaminated by leaks from an old gasoline storage tank that was removed about 1990 and that some contaminated soil was removed in the 1990s. TLA's January 2011 Newsletter showed a rather large hole with earth moving equipment removing and taking away contaminated soil under the guidance of a team of remediation experts from M-DNRE. By the end of March, the cement dike cutting off the flow of groundwater to the south was completed and the hole filled. In addition, the DNRE installed and operated a dewatering facility that pumped groundwater from the site and ran it through a carbon filter to remove toxic materials as well as phosphorus. Between December 16, 2010 and February 7, 2011 this filter processed 2 billion gallons of water before discharging it into Clam River. The input and output stream was monitored to assess its effectiveness and TLA is satisfied from the results that the environmental impact of the effluent has been minor. However, a number of test wells on the impacted property remain and will continue to be



Butch's Marina on March 29, 2011

tested for high levels of gasoline related toxic materials in the years to come.

So, what happens next? Butch Bartz, the owner, expects to open his doors to regular business in May, and M-DNRE has promised to finish its work by then too. However, in the next month the area will have to be graded, more gravel brought in, and the road, parking area, and launch ramp will have to be repaved. Everyone is hoping for an early thaw so that this work can be done quickly and efficiently. No one wants to have to do this all over again.

TLA wishes Butch the best and is looking forward to a cleaner and safer future for Clam River and Butch's neighbors.

2010 Water Quality Monitoring Results

by Art Hoadley

Since 2004, Three Lakes Association has participated in the Cooperative Lakes Monitoring Program (CLMP), which is a collaborative program between Michigan Lakes and Streams Association (MLSA) and the Michigan Department of Environmental Quality (MDEQ). TLA's participation requires an annual fee of \$500 for equipment and supplies plus the time and effort of four volunteers. Each volunteer collects and processes a water sample each month for Chlorophyll. They also make weekly measurements of the water transparency by lowering an 8" black and white disk (Secchi disk) into the water and recording the maximum depth at which the disk can be seen. Each collection site also has two Phosphorus water samples taken, one in the early spring and one in early September.

The TLA volunteers last year were:

- Duane Drake sampled Lake Bellaire and is TLA's CLMP coordinator
- Art Hoadley sampled Clam Lake
- John Kreag sampled the southern end of Torch Lake
- Jack Mayer & Kathleen Anne Peterson sampled the northern end of Torch Lake

The most important conclusion from these data is that all three lakes continue to show unchanging and very high water quality, i.e. pristine water quality. Water clarity, as measured with the Secchi Disk approximately 16 times each year, continues to show the same seasonal cycle as found year after year. Detecting this cycle is good news because it confirms that our basic understanding of the way these lakes have operated for many, many years. This cycle shows a maximum value in May, before the period of algal growth and before the onset of calcium carbonate precipitation. As the water warms, the water clarity naturally becomes less and less. It

is reassuring to confirm that the natural biological and chemical processes are working as expected. Warm water causes algae and phytoplankton organisms to grow and small particles of insoluble calcium carbonate to precipitate. Calcium carbonate in the water column reduces water clarity. As the particles become larger and larger, they sink to the bottom of the lake and stay there forever. This water purification process removes 90% of the phosphorus that enters Torch Lake and 75% from Lake Bellaire. The measured levels of chlorophyll-a (1.1 to 7 ug/l or micrograms per liter) compared to 0.5 ug/l in Torch Lake indicates that algal growth in Lake Bellaire and Clam Lake is also affecting water clarity to a small degree.

The measured phosphorus data may appear reassuring, in terms of the lack of a clear increasing trend over the last few years, but DEQ's "reporting level" for these measurements (3 ppb or parts per billion by weight) is too high to reliably measure the concentration of total phosphorus in Torch Lake. Based on several hundred samples measured in 2006, the average concentration of phosphorus was 2.6 ppb in Torch Lake using an analytical method that accurately measured total phosphorus at the 1 ppb level. The wide range of values reported may be the result of minor contamination of a single water sample.

TLA truly appreciates to efforts of the four volunteers who systematically collect the water samples and record the water clarity data. These data provide an early warning of the health of the lakes in a manner similar to abnormal blood pressure and temperature provides an early warning of human health problems. If this cost-effective screening of the lake water quality were to show unexpected findings, then follow up, more comprehensive testing would be triggered.

Water Quality Monitoring Result Summary

	BELLAIRE		CLAM		SOUTH TORCH		NORTH TORCH	
	Min	Max	Min	Max	Min	Max	Min	Max
Secchi Depth (ft)								
2004-2007	UA	20-22	UA	2-22.5	16-28	35	14-18	40-44.5
2008	9	20	13	26	13	42	16	42
2009	5	22	9	23	17	45	14.5	41.5
2010	8	20.5	12	22	15	46	none	none
Total Phos. (ppb)								
2004-2007	<4 to 9		3 to 12		~1 to 10		~2 to 14	
2008	4		8		<3		<3	
2009	<3		6 to 7		<2 to 5		<1 to 5	
2010	<3 to 7		<3 to 5		<2 to 8		<3	
Chlorophyll a (ug/l)								
2004-2007	1.3 to 1.7		1.1 to 2.0		0.5 to <1		0.5 to <1	
2008	1.5		1.3		0.5		0.5	
2009	2.5		1.4		0.5		0.5	
2010	1.5		1.3		0.5		<1	

Historical summary of water quality data for Bellaire, Clam, and Torch Lakes

Mercury Levels in Local Loon Population

by Joe Kaplan

In 2010, TLA provided financial support to Common Coast Research & Conservation to initiate a loon research program along with area loon enthusiasts on Intermediate, Bellaire, and Calm Lake within the Elk River Chain of Lakes Watershed, which is a focus area for the Three Lakes Association. These research efforts were focused on learning how events, such as the Deepwater Horizon Oil Spill in the Gulf of Mexico, recent botulism outbreaks on the Great Lakes, and mercury in fish eaten by loons may negatively impact the viability of Michigan's breeding loon population including loons nesting on the Chain of Lakes. During the summer a total of 15 adult and juvenile loons were safely captured, color-banded, and sampled for contaminants through collection of blood and feathers.

Among the known threats to loon viability, one of the most detrimental is methylmercury, a powerful neurotoxin that biomagnifies and accumulates in the biota of aquatic systems, especially fish and fish-eating birds. Reduced productivity has been documented in loons exposed to elevated Hg levels. While Hg is an element that occurs in nature, studies indicate that most Hg in mid-western lakes originates from human activities with the leading source linked to coal burning power plants that discharge Hg to the atmosphere during the generation of electricity.

In order for Hg deposited in the environment to be available to biota it has to be converted by anaerobic organisms from the elemental form to methylmercury. As these organisms appear to thrive in acidic conditions, a lake's pH is often a good indicator of the bioavailability of Hg in aquatic ecosystems. With an abundance of calcium in the Chain of Lakes and corresponding pH levels in the range of 8.0 to 8.2, it was suspected that Hg levels in loons would be relatively low. In fact, this was the case as adult females that showed a mean of 0.96 ppm (parts per million) Hg in blood and 7.00 ppm in feathers. The mean Hg for male loons was 1.66 ppm in blood and 12.5 ppm in feathers. A total of four juvenile loons were captured during banding activities in July and August with younger loons (approximately 5 weeks) showing blood Hg levels of 0.09 ppm and older chicks of 0.18 ppm. To gain perspective, the average blood Hg levels for adult Great Lakes loons is 1.41 ppm for females, 1.78 ppm for males, and 0.14 ppm for juveniles prior to 9 weeks of age. Mean feather Hg values for female adult loons breeding in the Great Lakes are 9.6 ppm and 13.0 for males.

In loons, the level of Hg in blood and feather provides different information about loon health. In general, blood Hg represents recent dietary uptake and feather mercury represent overall body burdens. However, juvenile feather Hg reflects exposure on the natal

While overall Hg levels for loons on the Chain of Lakes are at an encouraging level for a breeding population there are a few observations worth noting. One large male loon nesting in the southern part of Intermediate Lake contained 19.8 ppm in his feathers, which puts him in the upper 10% for adult loon feather Hg levels. Another 19-year old male from the southern arm of Lake Bellaire contained 15.1 ppm Hg in his feathers and this places him in the top 20% of adults sampled. The loon from the southern arm of Lake Bellaire, hatched on Clam Lake in 1991, was one of five loons banded with a tiny archival tag to determine his migration routes and wintering areas, and hopefully this migration data will provide some insight of why his feather Hg was elevated.

membership counts!

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* * * * *

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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.

April 2011 issue of the TLA Quarterly

THREE LAKES
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