



QUARTERLY

THREE LAKES ASSOCIATION

SERVING LAKE BELLAIRE, CLAM LAKE AND TORCH LAKE IN ANTRIM COUNTY, MICHIGAN

JULY 2019

Measuring water levels on the Elk River Chain of Lakes

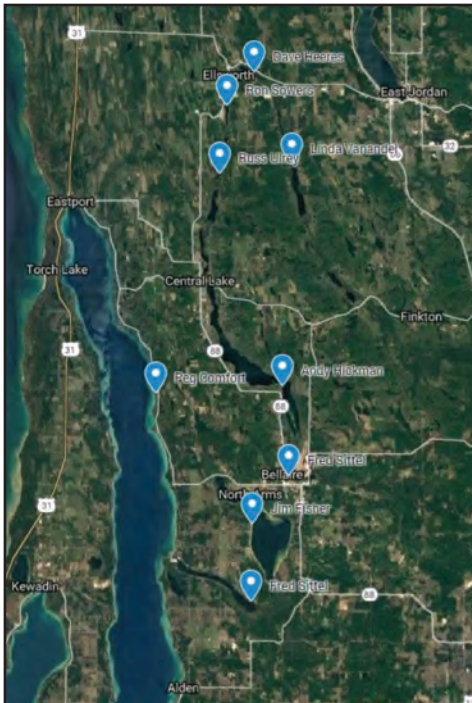
Over the last several seasons a number of residents on the upper chain voiced concerns about high water levels on their lakes. For extended periods of time Intermediate Lake has exceeded court ordered maximum levels as measured at the USGS gauge at the North end of the lake in the village of Central Lake. Residents suspect a variety of causes for high water including increased rainfall, limitations on the capacity of Bellaire dam and sediment in rivers slowing outflow rates after years of accumulation. Recently a lake

level committee was formed, with the support of Antrim County's board of commissioners, which is seeking funding and contractors to conduct a hydrological study of the entire chain. The study will attempt to establish how surface and groundwater move through the chain and will result in a computer model that can be used to determine which natural and man-made features influence water levels on individual lakes. This in turn may help identify management options to prevent future nuisance flooding.

Earlier this year a group of riparian residents began working with the lake level committee. The volunteers are measuring lake levels on individual lakes from Six Mile Lake to Torch Lake following a common measurement protocol. Over several seasons this water level data could be used to identify

unique characteristics of individual lakes' seasonal rise and fall. This kind of information would be valuable for building an accurate hydrological model. Volunteers are making measurements as often as possible and whenever sufficiently calm water conditions exist. Each measurement is made relative to a semi-permanent local datum established on the shoreline such as a mark on a building foundation or a marker driven into the lower bowl of a mature tree. Having this datum on the shoreline allows a metal post and datum in the lake where the measurement is made to be removed seasonally, moved to a different location for convenience or replaced if damaged, while continuing to provide comparable year to year data. Documenting the on-shore datum may also enable all

WATER LEVELS continued on page 3



Locations where volunteers are making measurements

Sneak peek

PRESIDENT'S MESSAGE	PAGE 2
CALENDAR	PAGE 3
IN MEMORIAM	PAGE 4
SEOP	PAGE 7



Setting up a lake level measuring location on Lake Bellaire



THREE LAKES ASSOCIATION

Officers

Mike Bertram, President
Fred Sittel, Vice President
Ed Gourley, Treasurer
Tina Norris Fields, Secretary and Past President
Len Franseen, Director Emeritus
Stan Dole, Director Emeritus

Zone Directors

A. Clearwater Township:
Cheryl Lynn Fields, Tina Norris Fields
B. Milton Township: Rick Doornbos, Vacant
C. Torch Lake Township:
Arlene Westhoven, Vacant
D. Central Lake Township:
Todd Collins, Steve Laurenz
E. Forest Home Township:
Fred Sittel, Phil Weiss
F. Helena Township: Robert Hockenberger,
Vacant
G. Custer Township: Mike Bertram, Vacant
H. Kearney Township:
Duane Drake, Ann McClelland

Directors at Large

Patricia Roush, Norton Bretz, Art Hoadley,
Becky Norris, Dean Branson, Gary Knapp

Committee Chairs

Becky Norris, Water Quality
Todd Collins, Membership
Tina Norris Fields, Education
Art Hoadley, Water Safety
Duane Drake, Lake Monitoring Program
Vacant, Publicity

Interim Executive Director

Leslie Meyers

Administrative Assistant

Lois MacLean

The TLA Quarterly is published by the
Three Lakes Association
Please direct comments or questions to:
231-544-7221
P.O. Box 689
Bellaire, MI 49615
info@3lakes.com

President's Message

Greeting! Summer has finally arrived. Three Lakes Volunteers have already started our spring and summer projects. In this newsletter you will be able to read about our summer programs. Many hours of preparation have been completed to start these summer projects. In this newsletter you will receive updates on current projects. We stand true to our mission.

As stated in our July 2018 newsletter:

"The Three Lakes Association, its leaders, its volunteers, and its members share a passion for preserving, protecting, and promoting the environmental quality of the waters of the Elk River Chain of Lakes, especially in Lake Bellaire, Clam Lake, Torch Lake and their tributaries. TLA has pursued this passion for fifty-three years, since its founding in July of 1966. There have been many a tumble, many occasions of failed effort, many achingly slow projects carried stubbornly on by a few dedicated volunteers unwilling to abandon an important enterprise in spite of setbacks and disappointing interim results. This is true passion and perseverance for long-term goals"

We have not lost our focus. This quote holds true today.

Our lakes have been considered the finest lakes in the country. It is not unusual to see articles and pictures on the

electronic media.

We continue to monitor our lakes. We need your help to monitor our lakes. You are our eyes, and it is very important that you contact us if you see changes in your waterfront.

You may see our volunteer teams and interns on the water collecting water samples. Wave say hi, and feel free to ask them any questions.

Your membership is crucial to our projects now and for the future. This newsletter will provide you with the latest updates and information.

Our annual meeting will be at the Beach Club on August 1st. Mark this on your calendar. I look forward to meeting all of you.

Please enjoy the lakes that we all cherish. Three Lakes Association Board of Directors, as well as our Interim Executive Director Leslie Meyers once again appreciate your continued support. Have a terrific summer.

- Mike



In Memoriam - Lynn Collins

Many families in our Three Lakes region have been coming to Torch Lake for years. Longtime Torch Lake summer resident Lynn Collins started coming up to Torch Lake in 1936. Lynn never missed a summer, staying in 'The Log House' that her parents built and later staying in the cottage next door, 'Woodwinds.' She loved sailing, boating, and swimming in the lake. She would can pickles, relish, marmalade and other seasonal items to give as presents over the winter.

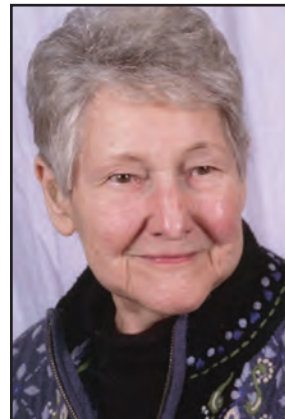
Lynn always wanted to be up at Torch as early in the season as possible and would

stay into the fall as weather permitted. She had a deep and abiding love for

northern Michigan and has passed this on to her children, grandchildren, and great grandchildren, many of whom still come to Torch Lake when they can.

Lynn passed away this spring, leaving a legacy for her family and generations to come. An early supporter of the Three Lakes Association and its mission, she hoped the lakes would always be preserved and protected. One

of her final requests was to have memorial donations made to the Three Lakes Association, which will help insure the lakes will be enjoyed by future generations.



Water Levels *Continued*

level measurements made in the past to be converted in the future to an absolute elevation reference such as an established sea level datum or a known floodplain elevation.

Springtime snow and ice melt, rainfall, evaporation and groundwater movement affect each lake differently for a number of reasons. The area of each lake's immediate watershed is different and each lake's surface area and nominal outflow rate are unique. Because the lakes are interconnected, persistent high water on one lake can impact outflow from lakes further upstream. For example, Clam's outflow to Torch is constricted by Clam River where the river becomes narrow and current is fastest. During periods when Clam is recovering from high water, this portion of the river acts like a dam. Torch Lake with its greater surface area and proportionally lower outflow rate likely rises and falls more slowly than Clam Lake. The persistence of elevated levels on Torch reduces the capacity of the river which in-turn influences levels on Clam. These dynamic relationships cannot be established just by measuring individual lakes, so an in-depth study of both surface and groundwater movement and the volume flow of connecting rivers and streams is required. However, the characteristics of individual lakes can be combined with these flow measurements, local weather records and established hydrological relationships to assist in creating a model of water movement throughout the chain. The model may identify if anything has changed over time which is currently influencing water levels. It can also provide a way of evaluating options for water level management at specific locations and the potential impact elsewhere along the chain.

Volunteers started making their measurements during the second half of April and early May with several hundred individual measurements reported across nine different lakes so far. Since the absolute relationship between water levels on different lakes has not been established, the information is being compared based on the change of each lake's level since the initial measurement was made on that lake. Eventually it may be possible to identify a characteristic summer level for each lake once snowmelt and rainfall are at a minimum and spring groundwater levels have receded. Each lake's characteristic summer level, rather than the first measurement recorded in the spring, will then be used to track and compare water level changes from

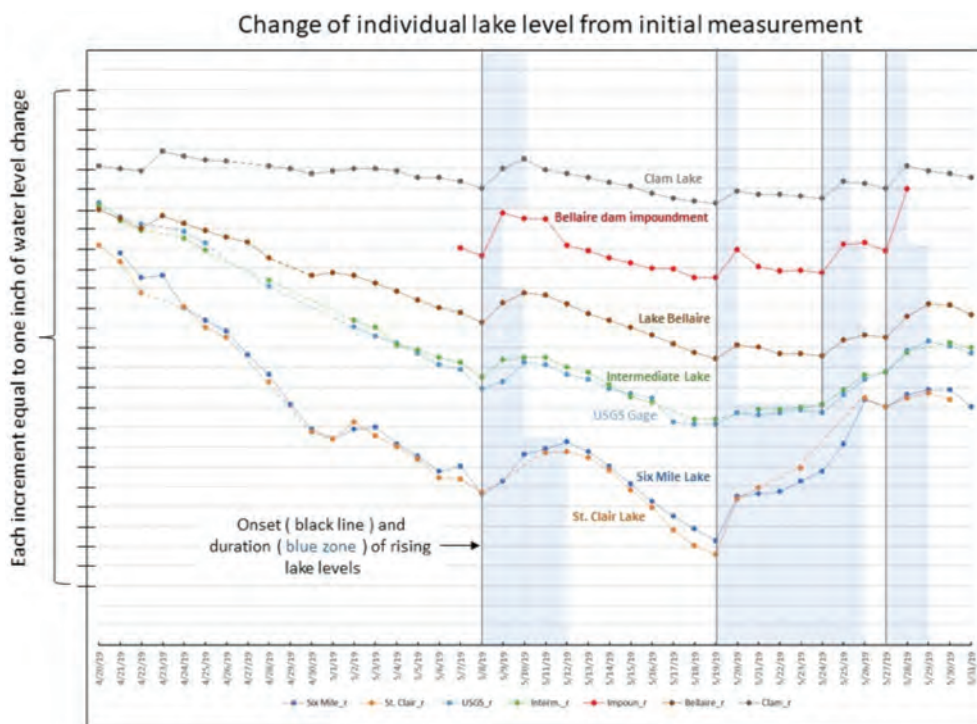


Chart showing the change in water level for five lakes on the chain this season

lake to lake throughout the year.

The data being collected may already be providing relevant information. Consider the chart shown above which tracks changes in water level on five lakes of the chain and the Bellaire dam impoundment under similar meteorological conditions from late April through the month of May. The vertical axis graduated in inches of water level change is the same for each lake but it is not an absolute scale, so lakes which experienced greater level changes can be plotted lower on the chart axis and those with less change can be plotted higher on the chart axis. Separating plots this way makes it easier to identify and compare the behavior of individual lakes over the period. Six Mile Lake and St. Clair Lake are plotted closely together on the chart to emphasize the similarity of their level change history. Ellsworth Lake, which is not shown, also groups very closely with these two lakes. Intermediate Lake and the USGS automated gauge on the same lake are also plotted closely together to document that the procedures being used by volunteers produce a nearly identical record of water level change. Measurements recorded by an automated TLA data logger which has been installed in a monitoring well of the Bellaire dam show that the impoundment reacts more like a river with very rapid level rises. Measurements are

also being made by volunteers on Wilson Lake and Torch Lake but they started later in the period and not enough data had been reported at the time of this writing to include in the chart. Generally, lakes further downstream along the chain experienced less of a rise and fall and many of those lakes have a greater surface area. One might expect larger lakes to rise and fall more slowly but Clam Lake, which exhibited the most stable water level of all, is only slightly larger than Six Mile Lake and considerably smaller than Intermediate Lake or Lake Bellaire. Clearly there are other factors involved beyond just the size of the lake.

Ultimately, the utility of the information coming from this volunteer effort rests upon the individuals who have taken on the task of making the measurements part of their daily routine over an extended period of time. While automated measuring devices may be able to record levels much more frequently, human volunteers have the ability to determine when those measurements most accurately reflect a lake's true level by observing when calm water conditions exist. Making measurements this way over an entire season, or over several seasons, will result in a valuable data set that can be used to calibrate the anticipated hydrological model of the Antrim County chain of lakes.

Paddle Antrim

There are many organizations like Three Lakes Association working hard to protect the Chain of Lakes. Paddle Antrim is one such organization who has a different twist on how to do that. Paddle Antrim is now in its fifth year working to protect our local waterways by connecting people through paddling. They firmly believe that when people are connected their surroundings, they better understand why they need to protect it and take personal responsibility to do so.

So, how do they do that?

Getting people out on the water

Paddle Antrim works to connect people out on the water. In the past four years, over 900 paddlers have joined Paddle Antrim on the water through a variety of classes and events.

Paddle Antrim Festival

The Paddle Antrim Festival is their signature event that brings over 150 paddlers from all over the state and country to experience the Chain of Lakes and surrounding communities. Always the second weekend after Labor Day, is a two-day, choose your own adventure paddling experience. Options include paddling one or both days, from 7 to all 42 miles. Local events begin Thursday evening with food, music, and great times and continue through Saturday where it ends with a bang at the Final Bash hosted by top sponsor Short's Brewing Company. This non-competitive paddle offers opportunities for all levels of paddlers and opportunities for kayaks, canoes, and paddleboards. This event is one of the premier paddling events in the state because of all of the generous support provided by the communities, sponsors, and over 80 dedicated volunteers each year!

Community Paddles

Paddle Antrim also hosts a community paddling series throughout the summer. These one-hour evening paddles occur at various spots along the Chain, providing opportunities to check out new places. These paddles are free and great for all ages to get out with Paddle Antrim and explore some of their favorite spots with a great group of other paddlers.



Skills Classes

With paddling, the right technique is not always intuitive and a little instruction goes a long way to increase fun out on the water. Therefore, Paddle Antrim offers a variety of paddling classes for those ages 7 and up. From kayaks to paddle boards, these classes are fun and great for new paddlers or even those who have never taken a formal class to get out have fun and learn some new skills.

Chain of Lakes Water Trail

Since 2016, Paddle Antrim has been working with a diverse group of stakeholders to develop the Chain of Lakes Water Trail so paddlers can have a fun and safe experience out on the water all season long.

A water trail is the aquatic equivalent of a hiking trail, identifying the trailheads, routes, and amenities along the way. While Paddle Antrim is leading the efforts, it depends on the 17 partners who have identified 81 access sites to include on the water trail. All of these partnerships are critical to creating a regional and connected experience.

The Chain of Lakes Water Trail is one of only eight state-designated water trails and the only water trail in Northern Michigan. This non-motorized water trail has over 80 miles of routes through 16 lakes/rivers and something for all types of paddlers.

While the planning for the water trail is complete, Paddle Antrim is leading the next phase to truly “open” the water trail. This includes installation of signs at access sites, development of a waterproof guide, and

website/marketing to share with local residents and visitors.

Paddle Antrim has worked with many stakeholders to develop a quality signage system for the trail and will include many additional topics in addition to the water trail information including information on preventing aquatic invasive species, loon protection, paddling safety, cultural/resource information.

Stewardship

Ripple Effect Mini-Grant Program

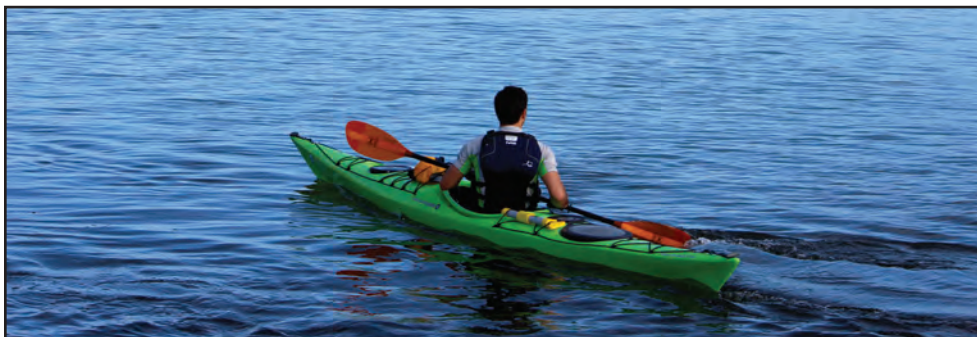
Stewardship is the main focus of Paddle Antrim's mission but as they were forming, they recognized there are a lot of great organizations and experts already working in the region to protect our waterways. Therefore, instead of duplicating efforts, they decided to use a portion of their earned revenue from the Paddle Antrim Festival to help support stewardship initiatives from other local organizations. In the past four years, Paddle Antrim has awarded over \$24,000 to support other local efforts.

Paddlers and Aquatic Invasive Species

Prevention

When they do notice a gap, they do take the lead if it is a good fit. One area is on aquatic invasive species prevention. To date, most education has been focused at motorized boats leaving many paddlers unaware that the Clean, Drain, Dry principle applies to them. Paddle Antrim has taken an active role in promoting Clean, Drain, Dry for paddlers, including bringing a mobile wash unit to the 2018 Paddle Antrim Festival to ensure all boats were properly cleaned before participating. This year they are hosting a workshop July 29th to educate paddlers on how to identify and report sightings of aquatic invasive species.

Paddle Antrim is always interested in hearing from you. Want to learn more or are interested in being a volunteer during the Paddle Antrim Festival? Contact Deana Jerdee, executive director at 231-492-0171 or deana@paddleantrim.com. To learn more about paddling events and the Chain of Lakes Water Trail, go to www.paddleantrim.com.



Where
are
they,
now



The interns of 2014 – Haley Dole, Kyle Russell, Caitlin Scroggin, Meike Stoldt

We love learning about our former interns as they pursue their personal, academic, and professional lives.

Caitlin Scroggins was a summer intern in 2014, for both the Three Lakes Association and the Elk-Skegemog Lakes Association. She graduated from Elk Rapids High School in 2015.

On May 4, 2019, she graduated

from the University of Michigan in Ann Arbor, with a Bachelor of Science degree, majoring in Ecology, Evolution, and Biodiversity, and minoring in Environment.

In June 2019, she begins an internship in a Bat Sanctuary in Gainesville, Florida.

She plans to apply to veterinary school later this summer.



Caitlin Scroggins, BS, 2019 U of M

Membership counts!

DONOR \$100 ☐ **STEWARD \$500** ☐ **BENEFACTOR \$1,000** ☐ **LIFE \$2,000** ☐ **BASIC \$60** ☐

Michigan Riparian Magazine Subscription add \$17 ☐

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 ☐

Are you interested in volunteering in any of the following areas?

- ☐ Water Quality
- ☐ HS Intern Program
- ☐ Water Safety
- ☐ Education
- ☐ Invasive Species
- ☐ Membership
- ☐ Finance
- ☐ Public Relations
- ☐ Service
- ☐ Other

Three Lakes Association is a 501(c)(3) corporation. Your dues and other contributions are tax deductible. Call for further information.

To join Three Lakes Association,
please visit our website 3lakes.com or return this form with your check to:
THREE LAKES ASSOCIATION, P.O. Box 689, Bellaire, MI 49615



Did You Know?

In the spring and summer of 2016 there were 24 territorial pairs of loons, collectively occupying 16 of the Elk River Chain of Lakes (ERCOL), and an estimated 25 additional unpaired adults throughout the chain. While these figures may sound modest, it is important to note that the common loon remains legally designated as Threatened

within Michigan, with only 800-900 total pairs inhabiting its thousands of inland waterbodies. Just as significantly, the 2016 ERCOL figures represent a marked increase over past decades; although the lack of comprehensive surveying in earlier years precludes precise comparisons, it is safe to conservatively conclude that the watershed's

population has at least doubled over the last twenty years.

Common Coast Research and Conservation 2016

Find out more on July 23 at the Alden Depot! See below. You can also read the full report at https://www.dropbox.com/s/5qcs5d5u40pd452/ERCOL_LOONS_2016.pdf

JULY EVENT

Join us Tuesday, July 23, 5:00 pm at Alden Depot Park for:

A WATER SAMPLER – AN UPDATE ON MOST THINGS WATER!

- How is the Fish Shelter Project Doing 5 years later?
- The Chain of Lakes Loon Population
- Relic Trout – What's next?
- Lake Levels in the Chain. 75 Days of monitoring.
- Eurasian Water Milfoil – Now What?

Spend an hour at the Historic Depot and get updated on most things water. A wine and cheese reception will follow the program.



Students gather at the nearby lake, to learn about what a watershed is, how water flows down from the nearby hill when it rains and drains into the lake. Students create a sand hill and as the colored water is sprayed upon the hill, students can see how its runoff flows down into lakes and rivers.

SEOP begins its eleventh year

By Tina Norris Fields
Secretary

The Three Lakes Association Science Education Outreach Program (SEOP), began with the 2008-2009 academic year. The program assists local teachers to enrich their science curriculum, providing learning experiences that would otherwise likely be unavailable due to the budgetary constraints that always burden our school systems. By helping our local science teachers with their science programs, TLA accomplishes two important goals. One is, of course, as indicated above, that our grants expand the potential for good science education in our schools. The other is encouragement of students' interest in knowing about their world – science in general – and, in particular, the science of their environment. With this outreach, TLA begins building the relationships with youngsters that gently guide them toward a sense of stewardship for the world in which they live. In our region, so richly endowed with lakes and

streams, that stewardship tends to center on water quality.

By the time these young school children reach high school, many of them are interested in furthering their understanding of the environment by participating in TLA's summer internship program. We are proud of the accomplishments of our interns, as they continue on in their academic and professional careers. [See article on Caitlin Scroggins, intern from 2014, in this newsletter.]

SEOP grants for the 2019-2020 Academic year:

Teachers were asked to rank their requests, with their top priority request listed first. With our budget of \$6,000 we were able to meet most of the top-ranked requests in full, or nearly so. The awards were distributed at the beginning of May 2019 for the upcoming academic year. Here are the results:

Bellaire District:

John R. Rodgers Elementary School: \$2,942, to fund requests from Rebecca

Benson, Mackenzie Feeley, Cindy Mason, and Susan Mills.

Bellaire Middle School: \$815, to fund requests from Karen Smolinski and Christopher Vandergriff.

Central Lake District:

Central Lake Elementary School: \$1,348.95, to fund requests from Sally Kinery and Michelle Perkins.

Kalkaska District:

Birch Street Elementary School: \$820, to fund request from Greg Beach.

The grant requests were varied. Two were for Full Option Science System (FOSS) Next Generation classroom science teaching modules, one was for a school-wide subscription to the Mystery Science curriculum connected with the Next Generation Science standards, two were for science learning classroom tools, and four were for educational field trips.

We look forward to hearing from our teachers and students how these grants advanced their learning and enjoyment of science.



Three Lakes Association

P.O. Box 689

Bellaire, MI 49615

3lakes.com

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



This newsletter printed on recycled paper

The mission of the Association is to provide leadership to preserve, protect, and improve the environmental quality of the Elk River Chain of Lakes Watershed for all generations with emphasis on Lake Bellaire, Clam Lake, Torch Lake and their tributaries.

Save The Date!

TLA's 53rd Annual Meeting

August 1, 2015

Summit Village Beach Club

- 5:00 p.m. Social Hour
- 6:00 p.m. Picnic Style Dinner
- 7:00 p.m. Presentation

Swimmer's Itch
What are we doing?
What's next?

Presented by Ron Reimink, Freshwater Solutions