

**GRAND TRAVERSE BAY WATERS**

**Christmas – East GT Bay Beach**



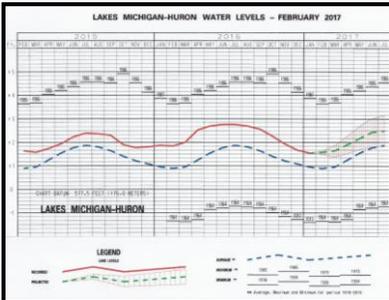
**TODAY'S WEATHER:**

[www.wunderground.com/us/mi/kewadin](http://www.wunderground.com/us/mi/kewadin)

**L. Michigan-Huron Water Level**

**7 in. over Ave – 15 in. below July**

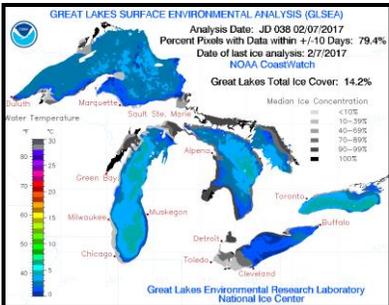
(US Army Corps of Engineers - Feb)



**Great Lakes Water Temp/Ice Cover**

**Water Temp. 33°F-Ice Cover 14.2 %**

(NOAA – Feb 7, 2017)



**WHERE TO HOMESTEAD  
To Cut Property Tax**

Estimate whether to Homestead - in Antrim County or a downstate County. Verify eligibility at:

[https://www.michigan.gov/documents/2856\\_11014\\_7.pdf](https://www.michigan.gov/documents/2856_11014_7.pdf)

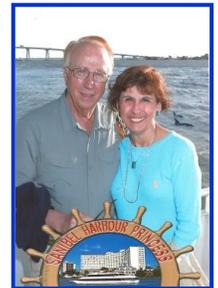
State of Michigan Tax Estimator

[https://treas-secure.state.mi.us/ptestimator/PT\\_Estimator.asp](https://treas-secure.state.mi.us/ptestimator/PT_Estimator.asp)

TNN President's message

I was invited to enlist as an officer in the U.S. Naval Reserve. The letter promised leadership development in aviation, engineering, intelligence gathering, and public affairs.

Clearly the letter was misdirected as I am of an age where naval officers have long retired. But the letter did lift my spirits because of my love of water and boats. So I will look to the sky for the U.S. Coast Guard patrol of shores waters.



This winter the Coast Guard would have seen Christmas sunbathers on East Bay beach - swimmers who braved a quick dip in 40° waters with much laughter. We Northerners are a hardy breed. But many snowbirds headed south a while ago. So will Paulette and me for an all too brief respite.

Our hearts and minds return often to family, friends and neighbors up north. Soon waters will warm alongshore; seabirds will rejoin the chickadees and eagles which stayed behind - snowbirds will return.

TNN's work continues year-round to keep human waste out of the environment. Your president serves on an Antrim Team to improve the Meta Septic System. Now there is a new term - it means all the elements from flush to removal and treatment of waste solids. GIS mapping will determine at risk areas, new basic science, streamlining rules and ending land disposal are under consideration. Please read the article below

**You are the customer** - Rules and regulations have become so complex that a guide booklet had been created to navigate red tape. Any plan should be vetted by Lake Association members who are represented on the Team – not politicians because many of you are seasonal and cannot vote locally. The initiative should be based on science not belief or assumptions, and have resident support.

**Maintain your Septic System** when spring returns, by flushing a measure of copper sulfate and a packet of enzymes. The first stops roots; the 2<sup>nd</sup> introduces 'bugs' to consume waste. And over the summer organize a '**lift the lid**' program in your neighborhood assisted by a Pumping Service which guarantees pumped waste will go to a treatment plant – not land disposed in our water-rich townships.

Looking forward to your return and wishing you a great 2017. *Keith Termaat*



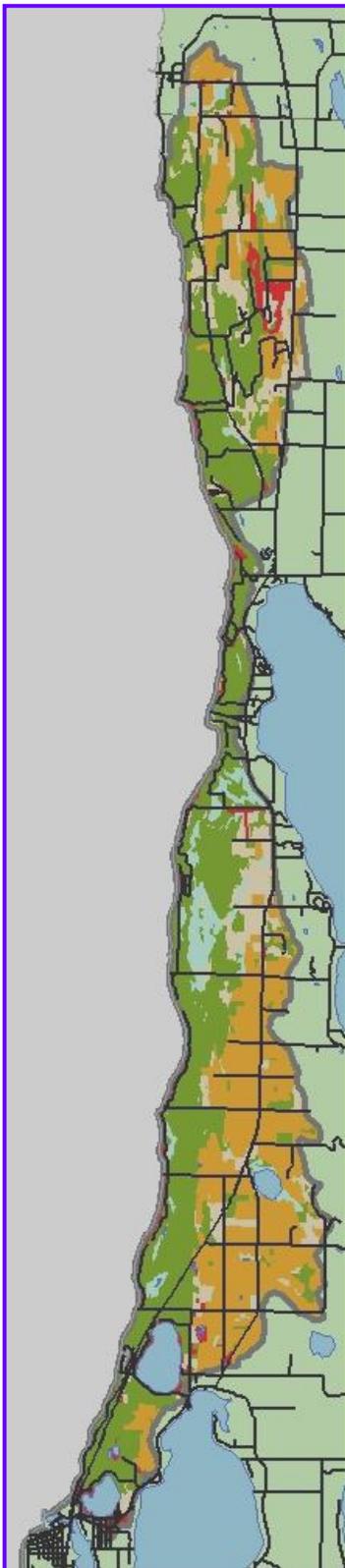
**BICYCLE TRAIL PLANNED IN LOCAL TOWNSHIPS**

The trail will run generally along the west side of the U.S. 31 corridor between Elk Rapids and Eastport. The Trail will depart from this route on Village streets in Elk Rapids and North Bay-shore Drive in Elk Rapids Township. The route in Milton and Torch Lake Townships will run along U.S.31 shifting to Old Dixie Highway in Banks Township, as a shared roadway. Needed approvals are in process with the Antrim County Board. Local segments are part of the Traverse City to Charlevoix non-motorized trail being developed by the Northwest Michigan Trail Network – please go to its website below for complete information.

<http://www.traverscitytocharlevoixtrail.org/project/about.html>

**E.A.S.T Sub-Watershed**

Between East Bay and Elk River  
Chain of Lakes Watershed



**SCIENCE - ABOVE AND BELOW YOUR SEPTIC TANK & FIELD**

Excerpted from Published Scientific Research (Please see links below).

**Introduction:** We all have one but pay it little mind except when family reunion hydraulic overload backs it up from too many laundry loads, showers and flushes. This is your septic system of course which treats human waste. It's worth your time and attention. Questions are being asked and answered on the ecological impact that will also impact your pocket book. The expense can be high – even as home values still have not recovered from recession

**SEPTIC SYSTEM FAILURE STATISTICS**

Antrim Septic system performance is being discussed by experts, regulators and Lake Associations. **You are the customer - TNN serves on the Team.** The human waste system in your yard is intensely regulated – there is not yet consensus on effectiveness of regulations; or even a definition of failure. TNN favors a definition of failure that is readily understood by you, the property owner and resident (Source: Health Dep't #10 for ten NW Mich. counties):

Failure = Wastewater discharges to Ground Surface or Backs-up into a Dwelling

**Only 0.3% to 1.0% Fail – Per data from a 10 county scientific study**

| Most Probable Causes – Failed Septic Systems – 1% Failed |                       |             |
|--|-----------------------|-------------|
| CAUSES   | Of All Septic Systems | of 1%       |
| Root Intrusion   | 0.22%                 | 22%         |
| Hydraulic overload-13%, high water table 5%              | 0.18%                 | 18%         |
| Lack of Maintenance                                      | 0.13%                 | 13%         |
| Soil Clogging  | 0.13%                 | 13%         |
| System undersized  | 0.13%                 | 13%         |
| Infrequent tank pumping                                  | 0.11%                 | 11%         |
| Other  | 0.10%                 | 10%         |
| <b>Sub-Total</b>   | <b>1.00 %</b>         | <b>100%</b> |

**Point of Sale Failure**  
Milton Twp. 0.67%  
Kalkaska Co. 1.0%

Government regulators commonly assume 20% fail, why? High guesses may be political to justify more regulations without scientific proof. Data by Health Dep. #10 Sanitarian Site review.

**NUTRIENT MIGRATION FROM A 'GOOD' SYSTEM – Summary of conclusions:**

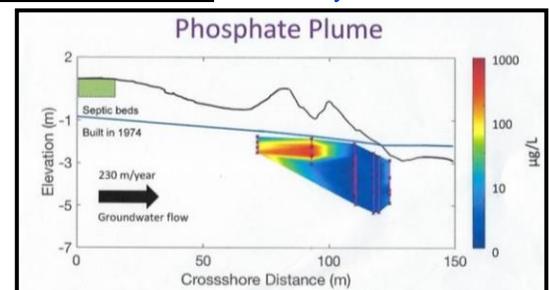
Phosphorus hot spot – in red did not reach a Great Lake in 40 years of seasonal use. How does seasonal residency affect septic?

“Elevated concentrations of nitrate & phosphate (seen) downgradient of septic system.”

“Phosphate migrates slowly towards the lake; transport is slowed by precipitation, adsorption and absorption reactions. Current migration rate from 1974, will take 13 (more) years to reach the shoreline (53 years total).”

“Nitrate is transported conservatively closer to septic system tile beds. Nitrate transforms in reaction zone near shoreline limiting discharge to the lake.”

“Wave induced groundwater flows are crucial to understand geochemical conditions governing nutrient transport.” Similar research is active in our area.





**Grace Herta.**

It is with sorrow that we received the news of Grace Herta passing. She truly is the Mother of the Joe Marks Trail Association and TNN–Township Neighbors Network.

Grace put waterfront owners on the map with Township officials by speaking up for our interests – including seasonal residents who for the most part cannot vote here. She led by example and earned the respect of everyone as a tough minded but fair advocate.

Her stamina and determination are legendary – she carried on with beach grooming even as her health began to decline. Her spirit will live on the beach forever.

We wish all the best to her family.

**PUBLISHED RESEARCH REFERENCES:**

[https://dhd10.org/files/final\\_om\\_report\\_FY2014.pdf](https://dhd10.org/files/final_om_report_FY2014.pdf) On-site Septic System Failure Report. BY: Tom Reichard, Director Environmental, District Health Dept. #10: Ten counties: Crawford, Kalkaska, Lake, Manistee, Mason, Mecosta, Missaukee, Newaygo, Oceana, and Wexford. Environmental Health Division estimated **160/170,000 on-site septic systems**. Of this, 43,000 septic systems are seasonal use. **356 failed systems - CY 2014.**

Transport of septic-derived nutrients to the Great Lakes through a beach aquifer. BY: Sabina Rakhimbekova, Denis O’Carroll, Clare Robinson.

[http://www.michigan.gov/documents/deq/deq-oea-tou-GLBA-nutrientTransport-Rakhimbekova\\_538687\\_7.pdf](http://www.michigan.gov/documents/deq/deq-oea-tou-GLBA-nutrientTransport-Rakhimbekova_538687_7.pdf)  
Great Lakes Beach Association Conference, Marquette MI - 6 Oct. 2016.

Mitchell Creek (Antrim) E. coli Monitoring. BY: Jamie Saxton, GLEC -Great Lakes Environmental Center. Sep. 6, 2007: Michigan Department of Environmental Quality – Water Bureau. Report provided the basis for the 303D listing of Mitchell Creek as it was not attaining Standards.

**SCIENCE - ABOVE AND BELOW YOUR SEPTIC TANK & FIELD** - Continued  
Excerpted from Published Scientific Research (Please see links below).

**LAND DISPOSED HUMAN WASTE**

**100% failure for land disposed septic waste in Milton Township (2007)**

E. coli: 11,200 Daily Mean - 1,016 for Thirty Day Mean (Ref.3). MSU Dr. Rose: “Currently, the report I examined shows that in some instances large concentrations of bacteria have been found in ditches and creek waters in the area where septage is applied to land. The water quality is such that it would not be safe for swimming or body contact recreation. Particularly, children should not play in these waters.” **The water quality standard is 300.**

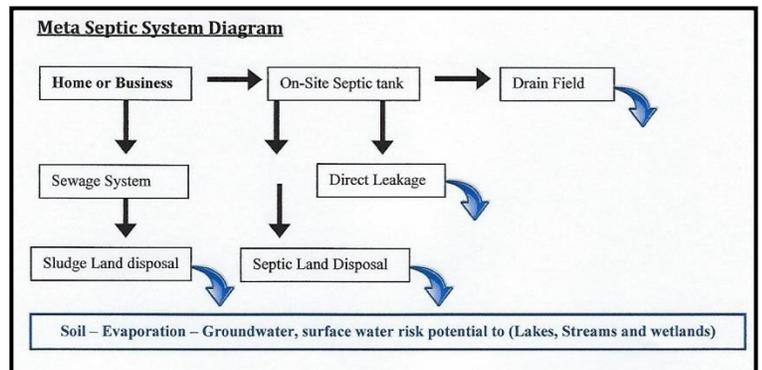
**High failure for land disposed sewer sludge in Milton & Torch Lake Twps.**

Led to an estimated football field sized Cladophora bloom which over time dispersed by wave action along miles of GT Bay shore beaches.

**META SEPTIC SYSTEM**

The Meta Septic System Diagram includes all the elements above as a ‘system of systems’. The curved blue arrows indicate where human waste could enter the environment without proper treatment.

**Data and real – life experience shows that it is better to leave human waste in a concrete tank on your property than land-dispose it in our water-rich townships.**



What is the treatment efficacy of systems that meet the Health Code - there is little data. Team discussion continues, TNN suggested next steps:

1. **Stipulate to a science based on-site septic system failure rate for Antrim County**
2. **Initiate 3 to 5 added septic maintenance projects – knowledgeable pumper to coach homeowners; flush root control and enzyme agents monthly.**
3. **Identify Antrim areas with high water table and hydraulic system overload.**
4. **Consider County wide ban on septic waste land disposal as does GT County.**

**2017 TNN ANNUAL FUND RAISING CAMPAIGN - 11<sup>th</sup> Year of Progress with your Donations**  
**Vigilance is the price of paying forward our heritage on East Bay & Elk River Chain of Lakes.**

**TNN is an active voice, publishes quarterly TNN News, and speaks up**

**Please stretch to donate \$20, \$35, \$50, \$75, form attached)**