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BEACH RETROSPECTIVE
East Bay Beaches Over Time



2003 Beach Walk
577.7 feet above sea level



2013 Lowest Water Ever
576.15 feet above sea level



2016 Beach Walk
579.5 feet above sea level



2019 Autumn
581.46 feet above sea level



2020 Spring
581.59 feet about sea level
Multiple New Sea walls!

TODAY'S WEATHER:

www.wunderground.com/us/mi/kewadin

STORM CENTRAL

www.gtlakes.com/storm-central/

WE LIVE IN A CHALLENGING TIME. As our economy begins to reopen, Covid 19 remains on our minds while sheltering away from friends and family. We look forward to seeing you when this is past. Until then, TNN is sending a good read with a difficult message. East Bay water level was up 14 inches from March last year. You have seen the effect walking on the beach. This edition of TNN News draws on several sources to explain higher water and what is being done locally alongshore.

NO AUTUMN DROP IN L. MICHIGAN-HURON WATERS - CONTRASTS OTHER LAKES

ADAPTED FROM: Georgian Bay Great Lakes Foundation (GBGLF)- Spring 2020 Newsletter - March 29, 2020

PLEASE READ THE ENTIRE ARTICLE AT THE LINK BELOW

<https://www.georgianbaygreatlakesfoundation.com/spring-2020-newsletter/>

LEVELS OF LAKE MICHIGAN-HURON HAVE NOT DECLINED IN AUTUMN for the last three years in contrast to other Great Lakes (NOAA Dashboard). This points to decreased conveyance capacity in the upper St. Clair River despite weather on all the Great Lakes having been similar (wet), concludes Dr. Rob Nairn.

The photos below, 2014 and 2019, show the increased amount of sand moving into the St. Clair River (Google Earth) near the Bluewater Bridge. The River is silting up.

2014 Aerial Photo – Free flowing

St. Clair River

2019 Aerial Photo - Silting up?



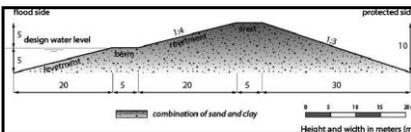
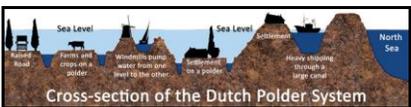
Higher sand supply into St. Clair River may have filled the deep areas just north of Bluewater Bridge to reduce the size of outflow at that critical spot. (TNN NOTE: Are L. Michigan-Huron beaches silting up the St. Clair River – not known) CONT'D ON PAGE 2

Three wet years led to record high water levels. Which could be partially offset by IJC technical measures in the Great Lakes System. Appeals for relief by US-Canadian shoreline groups are rebuffed. NY State has sued IJC on water levels. **Record high water is now! Shore erosion remedies are left to property owners.** Property owners in the TNN Community are doing just that with neighbors. Revetments and seawalls have been built with permits from US Army Corps of Engineers and Antrim Conservation District. UM Graham Institute supports community pilots: 'Adaptive Management is an iterative process for "learning while doing" and adjusting actions as necessary to address changing conditions.'

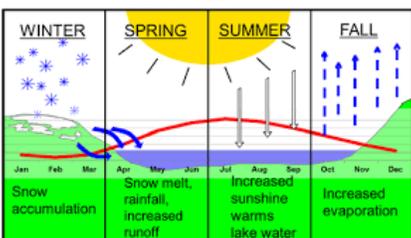


TNN President Keith Termaat was literally born below sea level in red area of Netherlands near Amsterdam.

In the low-lands, cities, people, homes and land have been protected by natural and engineered solutions for 500 years. Dike height will be raised as sea levels rise.



WHY ARE BEACHES ERODING?
TOO MUCH PRECIPITATION
EXCESS FLOW FROM L.SUPERIOR
TOO LITTLE SAND



Great Lakes water levels are result of natural forces and human intervention. Manmade flows into L. Superior were cut in 1952, 1973, 1985. It's time to do so again!

APRIL 15 STORM IN ER HARBOR

BY: Bill Wolfington

Took a drive through the Harbor April 15 during the windstorm, it was a crazy kind of windy. The waves were smashing over the break walls and the water levels are up. We could have put out a small craft advisory in the upper and lower harbors. Here is a photo I took, notice the water is over the slip 210.



NO AUTUMN DECLINE IN LAKE MICHIGAN

(CONTINUED FROM FRONT PAGE)

"EXTREME CRISIS" HIGH LEVELS OF WATER ON LAKE MICHIGAN – HURON including Grand Traverse Bay (Michigan) and Georgian Bay (Ontario). This extreme crisis condition is where IJC recommended in 1993 that the two federal governments should have already deployed measures to mitigate alongshore damage.

YET IJC & INTERNATIONAL L. SUPERIOR CONTROL BOARD RELEASE EXCESS WATER.

L. Superior levels are nowhere as high above long-term average as those of Lake Michigan – Huron. March M–H water level was 14 inches (now 9 inches) above March last year. Superior's water level the same as last year. Where is the equity in that?

WATER SIMPLY CANNOT GET OFF THE MIDDLE LAKES but can leave other lakes. The cause? Fifteen (15) years ago erosion in the St. Clair River was increasing the outflow from Lake Huron (Baird Report). This contributed to sustained low water in Lake M – H and its Bays from 1999 to 2013. Now the exact opposite has happened.

THE BOTTOM LINE: No government agency is "minding the store". All other Great Lakes IJC Control Boards monitor and measure the connecting channel flows on an HOURLY basis and set monthly discharge amounts. Nothing is in place to monitor or control the outflow from Lake - Michigan Huron through the St. Clair River.

The IJC is well aware by letters and a Press Release from Georgian Bay Great Lakes Foundation and Restore Our Waters International.

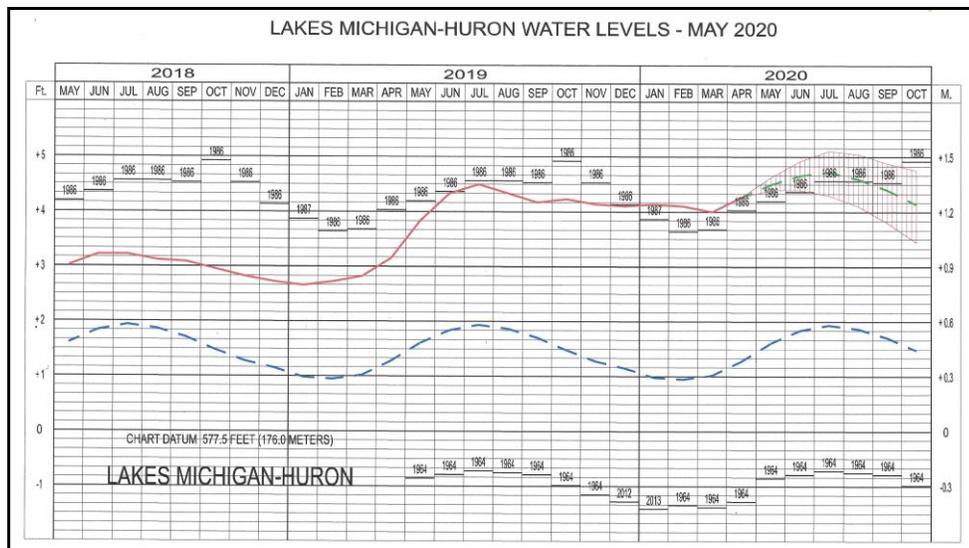
[Press release with some of the US organizations that can be found here.](#)

LAKES MICHIGAN-HURON WATER LEVELS REPORT – MAY 8

BY: US Army Corps of Engineers

Lakes Michigan-Huron are projected to be 9 inches above their level a year ago. Lake Superior water level is expected to be 3 inches below its level of a year ago. Also, Lakes Superior and Michigan-Huron are above what they were a month ago, 3 inches above their record high May monthly mean levels. In one month, Lakes Superior and Michigan-Huron are expected to be 2 to 3 inches above their projected May 8th levels.

NOTE: The May 8th Report covers monthly water levels through End - April



AIFF WELL LIVED ALONG THE SEA.

By: Keith Ternaat.

As a boy on the North Sea in the Netherlands, I visited Texel Island, where two seas meet at a narrow strait (As do L. Michigan-Huron). My Uncle and Aunt lived in a cold, gloomy house



with a hand water pump in the kitchen, and a privy. Hot water was boiled. My uncle was pastor of 'Seaman's Church' now a concert venue; it featured ship models by fishermen.

An old salt, took me under his wing at the wharf where inbound boats dumped their catch. He named fish varieties and told tales of men lost at sea. This writhing smelly pile of starfish, eels, herring, shrimp, crabs, weeds, flounder, small sharks and more was sorted. The by-catch dumped in the harbor. The smell has stayed with me to this day. Later, Texel later became a resort with trips to the beach.

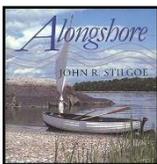
Access to Texel is by a slow, ferry (Not fast boats like Mackinac). In a blow, the captain steered her 'under the dike', the lee shore, out of fierce headwinds to make safe harbor.

After the move to America, my teen years were spent on West Michigan beaches. I am hooked by the sea to this day and sometimes fish with buddies.

College-Go Blue-Job-Ford-took me to Detroit. My heart drew me to



East Bay where I built our family home. My daughters summered there; one is still an ER resident. She gifted me the book 'Alongshore', a source of pleasure and insight as I work on East Bay Coast habitats, issues and lifestyle.



(Church Photo: By Agaath - <https://commons.wikimedia.org/w/index.php?curid=71144013>)
Alongshore Photo: <https://commons.wikimedia.org/w/index.php?curid=71144013>)

SHORE STRUCTURES IN THE EAST BAY COMMUNITY (EASTB-Coastal)

TNN is introducing a fresh way to think about reinforcing shorelines –Let's call it gray - green. No, this not a new interior décor; gray for rocks and green for plants & fibrous mats, for alongshore structures. Gray: works as vetted in the real world before and after erosion. Contractors know how to build gray. Green is not suitable for a high energy waves and winds like East Bay (per US Army Corps of Engineers).

Record high water is now! Shore erosion remedies are left to property owners.



Photos show the diversity of shore structures which exist along East Bay shore for three generic types.

Many shore owners preserve coastal plants like beach grass, shrubs, upland and understory trees.

Trees/plants keep wind resistance the same to cut beach erosion.

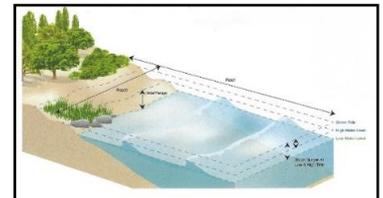
More photos will be featured in next TNN News if you agree to publishing a photo of your structure.

TNN will also propose a gray – green demo project along-shore our Community.



Sea like conditions apply to East Bay except there are no tides. Decisions start with specific conditions alongshore which vary from one property to the next.

- **Reach** – width of the property
- **Fetch** – open water to build wind & waves
- **Direction** – compass points of winds

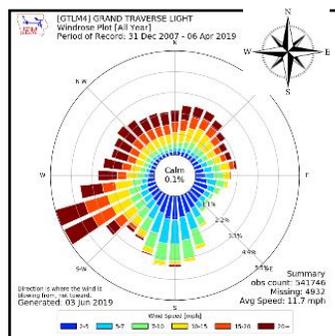


Once Reach, Fetch and Direction are understood, the make-up of soils, vegetation, mix of sand, cobble and clay and profile of the land can be considered.

The US Army Corps of Engineers and Antrim County offer ground proofed solutions. Other officials offer bromides. And, watershed centers seek EPA 319 mandates for taxpayer grants for staff, rent and utilities. This is a disincentive to fresh ideas.

CONCEPT TO THINK ABOUT:

WIND ROSE (color) - COMPASS ROSE (black/white).



This wind rose is for Grand Traverse Light at the tip of Leelanau Peninsula, north of the Village of Northport.

Brown is 20+ mph, **Orange** is 15-20 mph wind speed. **Blue** is 2 – 5 mph. Direction matches the Compass. Length of each bar is percent of time a wind direction occurs. The longest bar of SWW winds occurred 5.5% of the time; nearly one-half of the wind was 15 to 20+ mph.

Data: Dec.31, 2007 to Apr. 6, 2019. Reprinted by Permission.

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Iowa State University, College of Agriculture, Dep't of Agronomy.