



GREAT LAKES
COALITION

*Michigan/Lake Michigan Chapter
For Shoreline Preservation*

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Newsletter – Winter 2016

HOW MUCH DAMAGE -- SO FAR??

Lake levels have reached a peak for this year according to the U.S. Army Corps of Engineers Monthly Lake Level Bulletin. Lake Michigan-Huron level for October is 3" below September (a seasonal decrease) but 4" above last year. How has this affected your shoreline? Let us hear from you. Contact info@iglc.org.

In the meantime, you can view the monthly Lake Levels Bulletin online at:

<http://www.lre.usace.army.mil/Missions/Great-Lakes-Information/Great-Lakes-Water-Levels/Water-Levels-Forecast/Monthly-Bulletin-of-Great-Lakes-Water-Levels/>

or have the bulletin mailed to you each month. Write to Dept. of the Army, Detroit District Corps of Engineers, ATTN: CELRE-HH-W, 477 Michigan Ave., Detroit, MI 48226-2550.

Will the new administration be more favorable to shoreline property owners, small harbor maintenance and safety of nuclear power plants? Let us see.

ANNUAL MEMBERSHIP MEETING

The Great Lakes Coalition Annual Membership Meeting was held on Saturday, August 13, 2016 once again at the Haworth Inn and Conference Center on the campus of Hope College in Holland, Michigan. Coalition President, Dr. Larry Robson, welcomed those in attendance and then introduced Guy Meadows, Ph.D., Director of the Great Lakes Research Center at Michigan Technological University in Houghton, Michigan. After receiving his Ph.D. from Purdue University, Dr. Meadows joined the faculty at University of Michigan, College of Engineering, where he served as Professor of Physical Oceanography for 35 years and also as Director of the Ocean Engineering Laboratory. He joined Michigan Tech in 2012 to help establish the new Great Lakes Research Center as the Robbins Professor of Sustainable Marine Engineering.

Dr. Meadows began his presentation "Threats to Great Lakes Shorelines" outlining four areas of concern:

1. Waters Levels and FEMA
2. Plight of Small Boat Harbors
3. Dangerous Near-Shore Currents
4. Straits of Mackinac

Water Levels and FEMA

The average mean level of Lake Michigan-Huron is 578.8 feet. Record high was set in 1986 at 582.3 feet; new record low was set in January 2013 at 576 feet. This indicates an almost 6-1/2 foot difference

between high and low. Contributing factors to higher water levels are: frequency and intensity of storms; 20 to 90% ice covers depending on severity of winters. FEMA has reestablished their flood plain designations. Factors being considered are 1) water level; 2) storm surge; and 3) wave run-up. After record highs in 1986, permanent survey sites were established. The 1985 Ordinary High Water Mark (OHWM) is set at 580.5 feet. Permits from U.S. Army Corps of Engineers and Michigan DEQ are required for any shoreline protection structure being considered below that mark. Dr. Meadows showed an example of sites around Ludington where the Epworth and Pere Marquette Lake areas are in danger. A good example would be a comparison with 1988 to 2008. There has been an accretion of almost 200 feet of beach in some areas. A prospective home buyer looking at property in 2008 would be much surprised to find much of that sandy beachfront non-existent today. Dr. Meadows stressed the need to educate property owners and prospective buyers that things may not always be as they appear today.

Plight of Small Boat Harbors

Small boat harbors:

1. Support local economy
2. Are symbols of "Pure Michigan"
3. Provide safe refuge
4. Navigational jetties are short. Sand and sediment remain in the active surf zone - not washed out beyond the depth of closure (20-foot depth)
5. Have very active citizens groups

The State of Michigan and the USACOE are out of the dredging business therefore many harbors are unusable. Dr. Meadows suggested shared use, or coordinated commercial dredging. Put sand back into the near-shore system to provide beach nourishment.

Dangerous Near-Shore Currents

Dr. Meadows described how Great Lakes dynamics create dangerous "rip currents." On the Great Lakes there is a 5-second interval between waves whereas oceans have a 15-second or more interval. A significant fact is that 1 cubic meter of water = 1 ton. Locally generated seas accompanied by strong and rapidly evolving wind currents can produce rapid changes causing rip currents. Strong winds and atmospheric conditions can actually create "wind tides" or "seiches" where water is pushed toward one shore causing higher water and lower water on the other side of a Great Lake. Rip currents actually date back in history where the Ojibwe described them as the "underwater panther." Due to better surveillance by buoy monitoring and bathymetry studies along with educating the public, the level of fatalities has decreased in the past few years. All beaches have dangerous near-shore currents. They develop rapidly with increasing wave height and persist long after the waves subside.

Straits of Mackinac

Dr. Meadows reported that he has been appointed to the Pipeline Safety Advisory Board with the mission to develop advanced underwater sensing to monitor the Enbridge Pipeline system. Michigan Technological University is working with the University of Michigan to develop the "AUV" along with buoy monitoring. A website operated by Michigan Tech can be found at <http://greatlakesbuoys.org>. Buoy #41575 located in the Straits of Mackinac is the newest buoy.

President Larry Robson thanked Dr. Meadows for his informative presentation and a question and answer session followed.

Question: *Can outflow from Lake Superior into Lake Michigan-Huron be monitored?*

Answer: *Yes. The USACOE already does this.*

Question: *What are the primary drivers affecting elevation changes in water?*

Answer: *Wet with much precipitation (tropical) vs. cooler/drier conditions (Canadian). The Great Lakes has a small watershed.*

Question: What can we do?

Answer: The Great Lakes area does not get a fair share of research funding. Universities are competing. There is a need to organize and work together with citizens groups to get the word out. More education is needed. Tell the world what can happen (as we have already experienced on our own properties). Learn how to manage navigation structures. Coalition President Dr. Larry Robson added: Adaptive management.

Question: Where to get further information?

Answer: Online. There is need for a database to be established. Citizens need to speak up to congressmen.

Question: Background on Enbridge Pipeline?

Answer: Pipeline was installed in 1953. Mackinac Bridge was constructed in 1954. A submersible monitors the pipeline and a buoy measures the currents above the pipeline. Dr. Meadows showed how rapidly changing currents could affect any oil spill or leakage.

Question from a Port Sheldon property owner - family has lived there since 1916. What was a modest build-up of sand beach is now mostly gone. What to do now? What is water level prediction?

Answer: Lower lake levels are predicted along with a warmer climate vs. an increased intensity of storms. Dr. Meadows described the Great Lakes as "new" -- only 10,000 years old, and very steep. Due to normal erosion factors, approximately 1 foot of coastline is lost every year. A study of a jetty at Big Sable Point shows that jetty does cause downdrift erosion. Hard to get approval to install protection. Other factors are variability in nature, global warming, and lack of funding which would be a political solution.

HELP WANTED

In an effort to expand our membership, the Great Lakes Coalition is offering a temporary part-time position of Membership Coordinator. The person we are seeking should be a self-starter, knowledgeable in database set-up and research with the objective of identifying shoreline property owners throughout Michigan and setting up an effective membership enlargement campaign. College intern or research assistant specializing in Great Lakes research or retired person with computer knowledge and interest in lake levels would be a good fit. Position would require approximately 20 hours per week for 25 weeks. For more information, or to submit an application, contact the Coalition office at info@iglc.org.

HARBOR DREDGING

Coalition Board Member Ron Watson of New Buffalo recently attended a presentation on small harbor dredging presented by Chuck May, Chair of the Great Lakes Small Harbor Coalition (GLSHC). The Great Lakes have 112 small harbors with 56 being in Michigan. In 1986 the Harbor Maintenance Trust Fund (HMTF) was established to administer the Harbor Maintenance Tax (HMT) to fund harbor maintenance. Small harbors and low use harbors lost HMTF funding in 1998. The HMTF was never fully funded (only about 50%) and much of the \$9 Billion allocated since 1998 was misappropriated creating a massive backlog of dredging/infrastructure needs. The Water Resources Reform and Development Act (WRRDA) was passed in 2014 to ensure that the HMTF funding was used for the intended purpose and to ensure that the Great Lakes is properly funded. USACOE is to maintain all harbors and \$48 Million was budgeted for small and subsistence harbors. The Great Lakes Legislative Caucus (GLLC) requested \$20 million for Great Lakes small harbors. Michigan needs \$7 million for small harbor maintenance in 2016. The GLSHC is working with the GLLC for funding needs for 2017 small harbor maintenance. In Michigan, 9 commercial harbors and 13 recreational harbors have been slated for dredging this year; however 19 additional harbors need dredging but no more funds are

available. Chuck May stressed that harbors (commissions) must work together in order to receive the proper funding. The communities surrounding these harbors receive substantial financial benefit by keeping the harbors open and safe.

Why is small harbor dredging important to the Great Lakes Coalition? As the Coalition strives to keep the lake at moderate levels, it is important that all harbors stay open. When lake levels are lower than average, many shoreline owners benefit from additional beach. However, it is equally important to keep the small harbors open. The dredged material can be used to support the littoral drift amounts that are reduced by harbor breakwaters and to put sand back into the littoral system.

GRAHAM SUSTAINABILITY INSTITUTE WEBINAR SERIES

Current water levels on the Great Lakes are above historical averages, but only three years ago they were at record lows. These dramatic changes underscore the dynamic nature of the Great Lakes system. The University of Michigan's Graham Sustainability Institute's Great Lakes Water Levels Integrated Assessment aims to help shoreline property owners and managers and other decision makers meet the challenges and opportunities posed by current and future Great Lakes water level variability. As part of the project, four U.S. and Canadian research teams have been working closely with coastal communities to identify and analyze policies and adaptive actions. This four-part webinar series is your opportunity to learn more about the strategies identified for each community, ask questions, and share input. If you did not have an opportunity to register for this webinar series and since this webinar series is already in progress as this newsletter goes to press, you can view all of the sessions by following this link:

<http://graham.umich.edu/emopps/water-levels/webinar>

Sessions and dates are:

Thursday, Nov. 10, 2017 - Coastal Bluff Erosion - Milwaukee and Ozaukee Counties, Wisconsin

Thursday, Nov. 17, 2017 - Extreme Water Levels - Huron County, Ontario

Thursday, Dec. 1, 2017 - Climate Change, Water Levels, Tribal Fisheries and Culturally Important Sites - Northwest Lower Michigan

Thursday, Dec. 8, 2017 - Developing Land - Use Regulation and Infrastructure Policy - Southwest Michigan

USEFUL CONTACT INFORMATION

Now is the time to contact your U.S. Members of Congress, state and local senators and representatives, the International Joint Commission and others who should be aware of our rising water levels and shoreline conditions. You can write, or in many cases you can send an e-mail.

U.S. Senators and Representatives:

www.senate.gov

www.house.gov (Search by district)

State Senators and Representatives:

www.senate.michigan.gov (Search by district)

www.house.michigan.gov (Search by district)

Permit Application for Shoreline Protection:

The permit application is available online at www.mi.gov/jointpermit or at <https://miwaters.deq.state.mi.us>. Cost for a general permit is \$50, \$100 for minor projects, and from \$500 to \$2,000 for individual projects. The permit is processed at the local MDEQ district office.

International Joint Commission:

If you would care to send a letter to the IJC describing your current property conditions, send to: Chair, U.S. Section, International Joint Commission, 2000 "L" Street, N.W., Suite 615, Washington, D.C. 20440.

You can also view their many reports and activities at: <http://www.ijc.org>.

Great Lakes Environmental Research Laboratory:

The NOAA website covering our Great Lakes and providing lake level data.

<http://www.glerl.noaa.gov/data/wlevels/>



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RETURN SERVICE REQUESTED

MISSION STATEMENT

The Great Lakes Coalition (GLC) concentrates on water levels; natural sand supply to beaches, dunes, and bluffs; and coastal management. The objective is to promote environmentally sound management of the coastal zone. Natural conditions have been changed by sometimes flawed government intervention and judgment. The GLC is a respected advocate for shoreline property owners that challenges inappropriate regulations and encourages beneficial government decisions.