



Understanding and Maintaining the Lake Michigan Sand Supply

Description

Through an outreach program, LRE will educate professionals and non-professionals about the importance of maintaining the sand supply, create a map to identify where fluvial supplies to the littoral zone are high and create a coastal roundtable for promoting collaboration between coastal professionals around Lake Michigan.

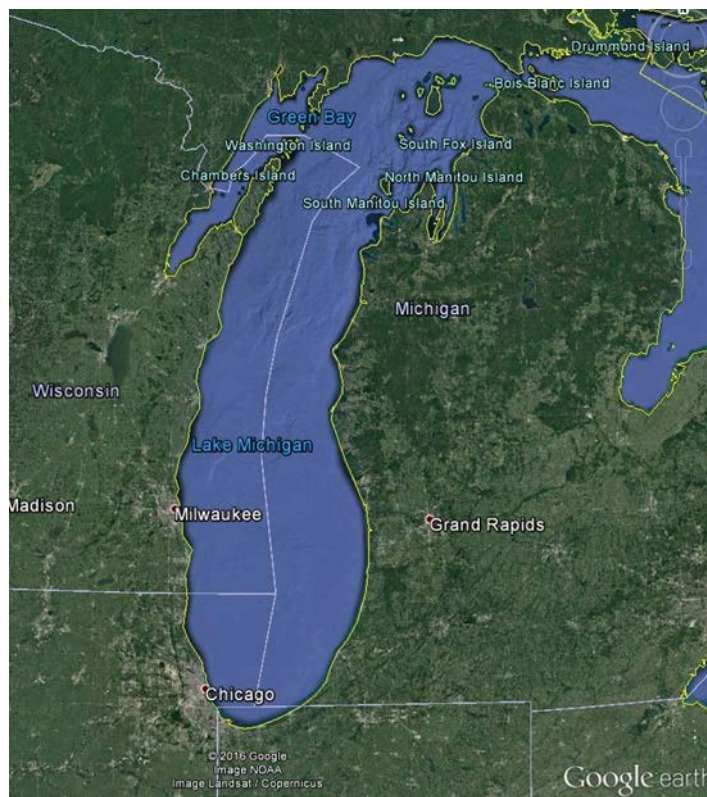


Figure 1. Lake Michigan

Issue/Challenge To Address

For the last 15 years the water levels on Lake Michigan has been below average, even breaking record low levels. Since those record lows, the lake is up approximately 4 feet, initiating erosion that hasn't been seen in 20 years. While this erosion is necessary to maintain the littoral sand supply, the public's perception is varied, with some blaming the federal harbors or neighboring shore protection, while others accept that erosion is a natural process. The intent of this proposal is to educate property owners and coastal professionals of the causes of coastal erosion on Lake Michigan and the importance of maintaining the sand supply to the littoral zone. Through the creation of a coastal roundtable, we will build and strengthen relationships with other coastal scientists and engineers in the Great Lakes, and lastly, we will create a sediment yield map of watersheds draining to Lake Michigan showing the quantity of beach suitable material delivered around the lake.

Successes Lessons Learned

Lessons learned will be compiled during the study.



Understanding and Maintaining the Lake Michigan Sand Supply

Expected Products

- Press Release for each beach walk with postings and summaries on the District's Facebook page as well as videos posted on the Detroit District web site
- Quarterly Coastal Roundtable meetings and minutes
- ERDC Tech Note with map of beach suitable sediment yield from Lake Michigan watersheds that will be presented at an appropriate coastal conference

Stakeholders/Users

Stakeholders include state regulatory agencies such as MDEQ and WI DNR, Office of Great Lakes, NOAA, Sea Grant offices from Michigan, Wisconsin, Illinois and Indiana, coastal property owners and littoral-shed organizations.

Projected Benefits Value Added

An often overlooked piece of a sediment budget is the fluvial component. While there are many areas around Lake Michigan where nearly all of the sand supplied to the littoral zone is from coastal erosion, there are areas where as much as 40% of the supply is from the watershed. This work will produce an estimate of the importance of fluvial sediment to the littoral sediment budget. Moreover, this work can help prioritize areas where sediment supply restoration activities will have a greater effect on the delivery of beach suitable material to the littoral zone.

Leveraging Opportunities

The Detroit District has agreed to provide matching funds up to \$20,000 under their adaptive management activities in support of the IJC Surveillance of Northern Boundary Waters work on Lake Michigan. This would allow the scope to be expanded to include a greater number of outreach and education activities.

Points of Contact

Josh Friend, CELRE-EHE
Hydraulic Engineer
586-428-8880
Joshua.R.Friend@usace.army.mil

Jim Selegean, CELRE-EHE
Hydraulic Engineer
313-226-6791
James.P.Selegean@usace.army.mil

Participating Partners

Michigan Department of Environmental Quality, Office of the Great Lakes, NOAA and Michigan Sea Grant