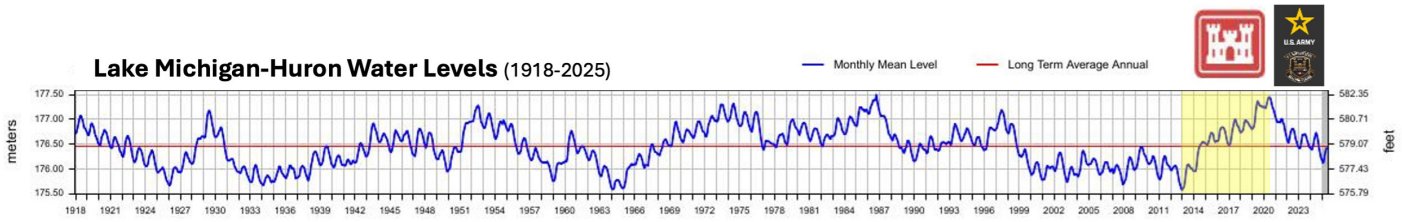
Illinois-Indiana Sea Grant: Addressing Southern Lake Michigan Water Level Variability

The Problem

Lake Michigan water levels are highly variable, fluctuating several feet over time. Between 2013 and 2020, water levels rapidly rose more than 6 feet (1.89 m), from record lows to near record highs. This dramatic increase—almost the full range observed since 1918 (1.93m)—forced communities along the southern coast of Lake Michigan to quickly respond. With far-reaching impacts, including coastal erosion, flooding, infrastructure damage, property loss, and ecosystem disruptions, these communities now face the complex challenge of planning and preparing for similar water level changes.



Building Capacity for Adaptation

IISG's Response

To support communities facing this challenge, Illinois–Indiana Sea Grant (IISG) hosted a series of four virtual workshops in October 2020. These workshops focused on improving communication about Lake Michigan's changing water levels along Illinois and Indiana coastlines. Scientists, planners, extension professionals, and community experts gathered to share knowledge, brainstorm solutions, and prioritize informational needs to support effective outreach.

Workshop 1	Workshop 2	Workshop 3	Workshop 4
Background information on Lake Michigan water levels, risks, and impacts	**Short-term** and **local impacts** of water level variability	**Long-term** and **regional impacts** of water level variability	**Summary of needs to improve communication** on water level variability

Workshop Goals

1. **Explain** how accurately researchers can currently predict water levels in southern Lake Michigan.
2. **Summarize the known and projected impacts** of extreme high and low water levels on Lake Michigan shorelines.
3. **Identify existing data sets and tools** that community leaders can use to communicate risks and potential impacts of changing water levels to shoreline residents and property owners.
4. **Identify missing data sets and tools** that could improve risk communication associated with water level variability.
5. **Prioritize development of new data products and outreach tools IISG can support** through research, partnerships, or extension programming.

Workshop Outcomes & Looking Ahead

An important outcome of these workshops was the collaboration among individuals working on or impacted by water level variability. Insights gained from the sessions enabled IISG to identify and incorporate priority outreach products and data needs into future research calls-for-proposals and programming.

Looking ahead, IISG has enhanced its outreach capacity to further support communities dealing with the impacts of fluctuating water levels along Southern Lake Michigan. IISG is committed to advancing this work and addressing the evolving needs of coastal communities.

Learn More

Virtual Lake Levels Workshop Report. Summarizes the workshops including prioritized needs and next steps:
https://iiseagrant.org/publications/virtual-lake-levels-workshop-report/

Ready for Lake Michigan Highs and Lows: Strategies and Case Studies. Highlights four community mitigation and adaptation strategies:
https://storymaps.arcgis.com/stories/356d9776b3db4dabb23d624d9e2b6837

Increasing Illinois and Indiana Shoreline Resilience: Information A to Z. Details how federal, state, and local entities can assist coastal communities:
https://iiseagrant.org/publications/increasing-illinois-and-indiana-shoreline-resilience-information-a-to-z/

Coastal Resilience at IISG. Highlights coastal resilience programs and initiatives: https://iiseagrant.org/work/coastal-resilience/programs-initiatives/

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