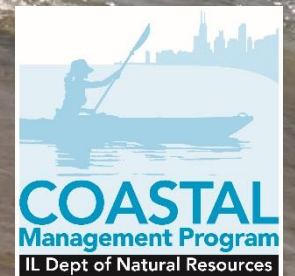
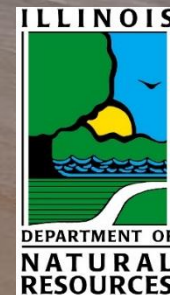


Mapping and research along the Illinois Lake Michigan Coast

Ethan J. Theuerkauf

Illinois State Geological Survey

Prairie Research Institute University of Illinois Urbana-Champaign



Illinois Coastal Change Monitoring



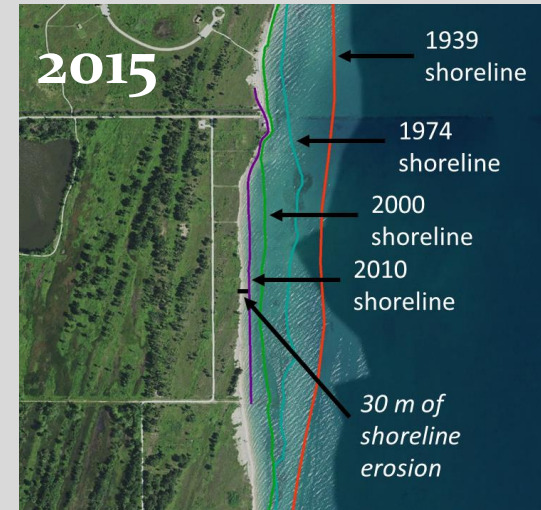
Ethan J. Theuerkauf
Illinois State Geological Survey



Goal of monitoring: How and why is the Illinois coast changing? How does current change compare to the past?

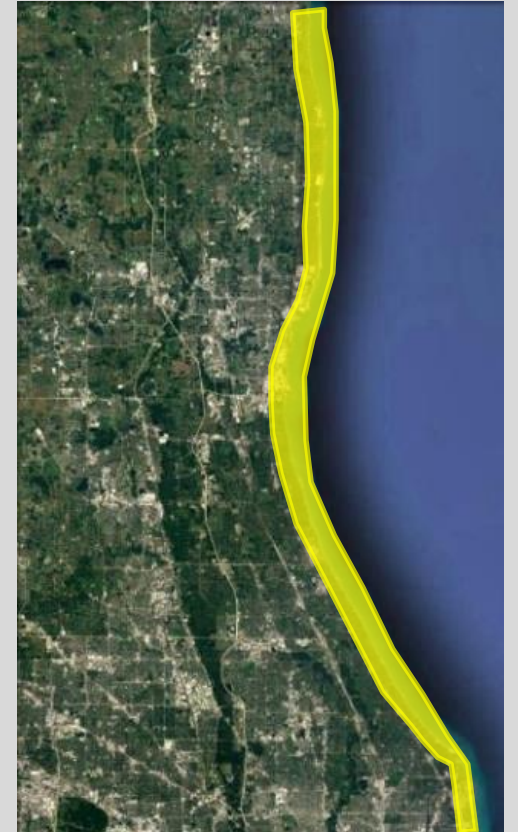
Beach and dune topographic mapping

- Rates and magnitude of topographic change
- Long-term and short-term monitoring geomorphic monitoring
 - Storm impacts
 - Habitat loss
 - Sediment budget
 - Post-nourishment/dredging/construction
 - Connect past and present change
- RTK-GPS, citizen science, photo monitoring, structure from motion surveys



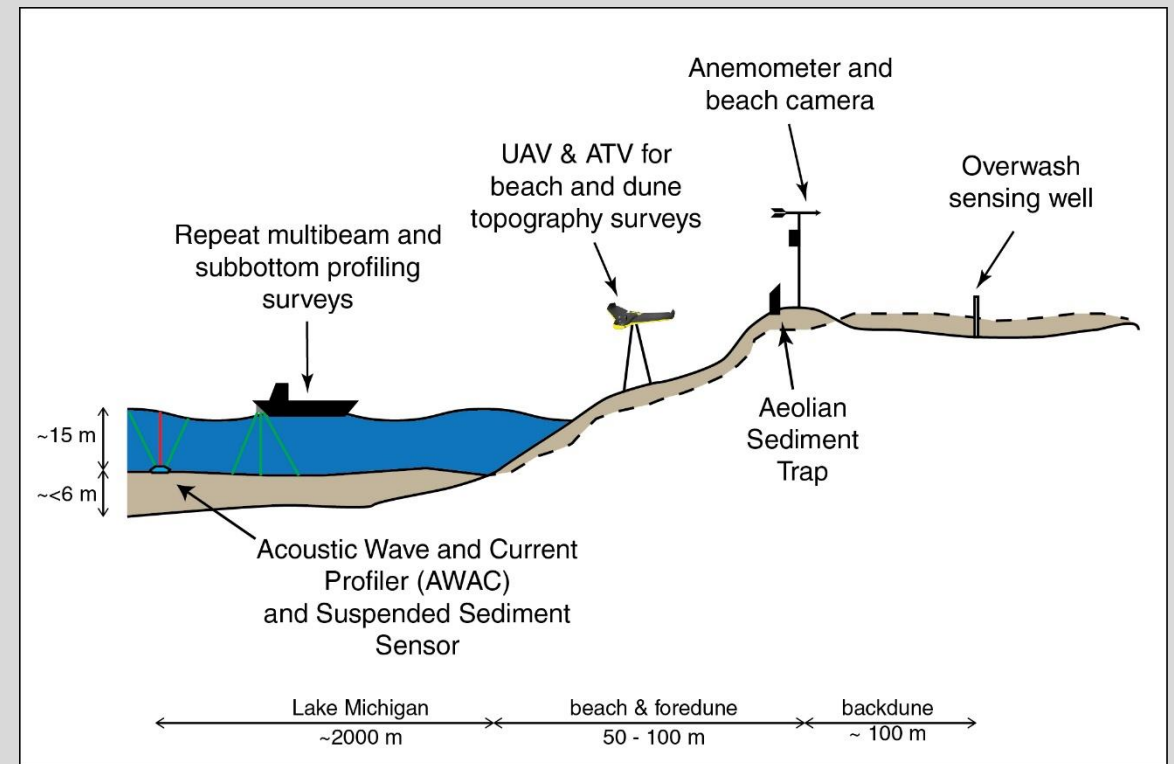
Nearshore sand mapping

- Helicopter Time-Domain Electromagnetic (HTEM) Surveys
- Identify priority areas for more routine mapping using MBES and sub-bottom profiler



Environmental processes

- Photo monitoring of waves and ice
- Overwash monitoring
- Wind speed and direction-connect to aeolian transport and waves
- Local wave and current measurements



Future monitoring in Illinois

- More frequent bathymetric and sand thickness measurements- YES
- More nearshore wave and current (i.e. sediment transport) measurements- YES

Future Monitoring Lake Michigan

- Coordinate more frequent JALBCTX topobathy and HTEM surveys throughout region
 - Regional sediment transport monitoring
- Citizen science throughout Lake Michigan basin
 - Anyone interested in this please reach out to me
 - <https://publish.illinois.edu/lakemichigancoasts/>