



Great Lakes 101: Lake Ontario

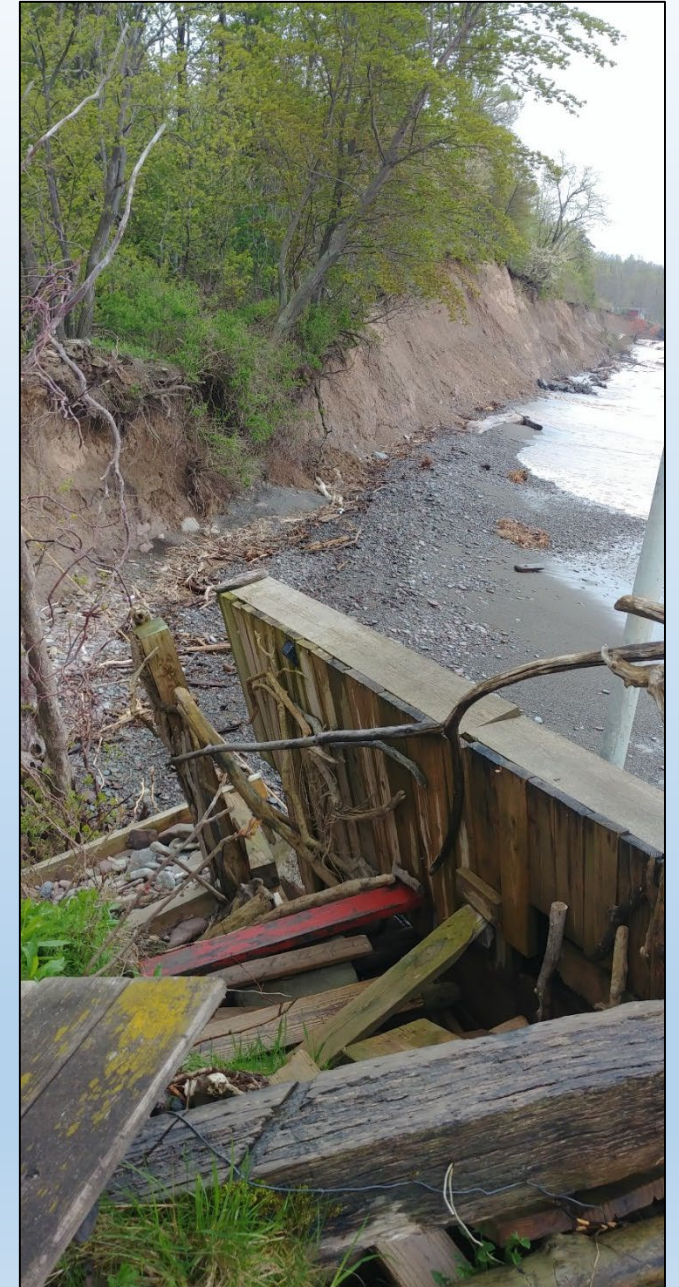
A Joint Effort Between New York Sea Grant, United States Army Corps of Engineers, New York State Department of Environmental Conservation, and New York State Department of State

Introduction / Housekeeping

- Meeting will be recorded for those that could not attend
 - Everyone will be muted except speakers, but feel free to use chat function to ask questions throughout
 - There will be a Q&A Panel at the end for further questions
 - Recording, presentations & resources published at nyseagrant.org after we conclude
- Agenda
 - Roy Widrig (NYSG)
 - Molly Farrell (NYSDEC)
 - Beth Geldard (NYSDEC)
 - Matt Maraglio & Peter Bayzon (NYSDOS)
 - Steven Metivier (USACE)
 - Q&A Panel (ALL)

Why we're here

- We want to make the permitting process easier, leading to more complete permit applications and stronger projects
- We will:
 - Detail why regulations are in place
 - Provide background on what considerations go into permitting decisions
 - Go through examples of a successful permit application
 - Consider local, state and federal perspectives
 - Answer your questions in regards to the coastal environment, regulations and the permitting process



Great Lakes Coastal Processes



Great Lakes 101: Coastal Processes

- The Great Lakes coastlines are dynamic places, and have formed and continue to change based on geological and climate processes
 - *Coastal Processes are the interactions between wind, waves, shoreline and sediment transport. Essentially: **erosion** and **accretion** of shoreline features.*
 - Shoreline structures, shoreline type, wind, waves, water levels all factor into these processes
 - These are natural processes, but human influences have many different affects

Processes & Concerns

- Mostly Dependent on Shoreline Type
- **Scour**
 - Vertical Walls
 - Erosion at base or toe of wall
- **Obstruction**
 - Structures built outward into the lake
- **Reflection**
 - Sending the waves somewhere else (such as neighboring properties)
 - Most common issue

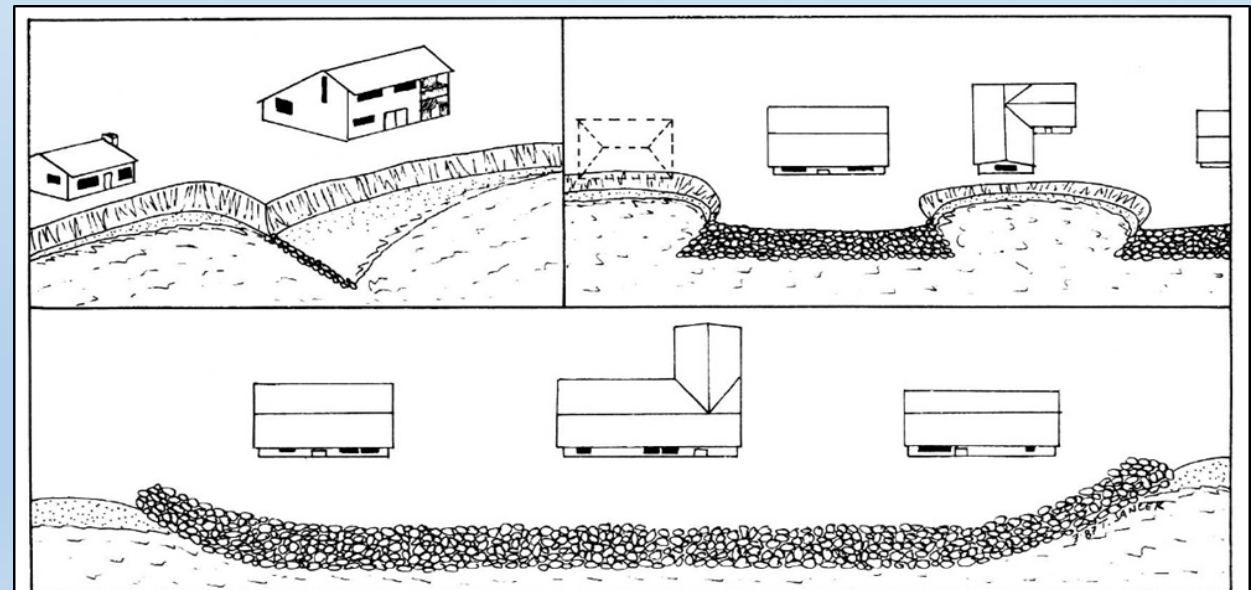


Figure 2. Attempts to control coastal erosion on a property-by-property piecemeal basis is often ineffective, with individual protective structures sometimes shifting erosion problems to adjacent properties or being damaged by continued erosion on adjacent properties. A proper erosion control approach is a unified, group project.



Shoreline Types

Shoreline Types - Bluffs

- Very Common
- Characteristics
 - Often composed of loose glacial sediments, easily erodible
 - Both lakeside and landside erosion issues (wave action, groundwater, soil creep)
- Concerns
 - Provide needed sediments to the lake for coastal processes
 - Structures must consider scour, slope, and upland environment



Shoreline Types – Sandy Beaches and Dunes

- Long stretches of shoreline
- Characteristics
 - Sand erodes and is moved very rapidly
 - Very susceptible to storm events
 - Variable forms – beaches, dunes
- Concerns
 - Difficult to work with and plan for
 - Extremely valuable ecologically
 - Easy to make mistakes



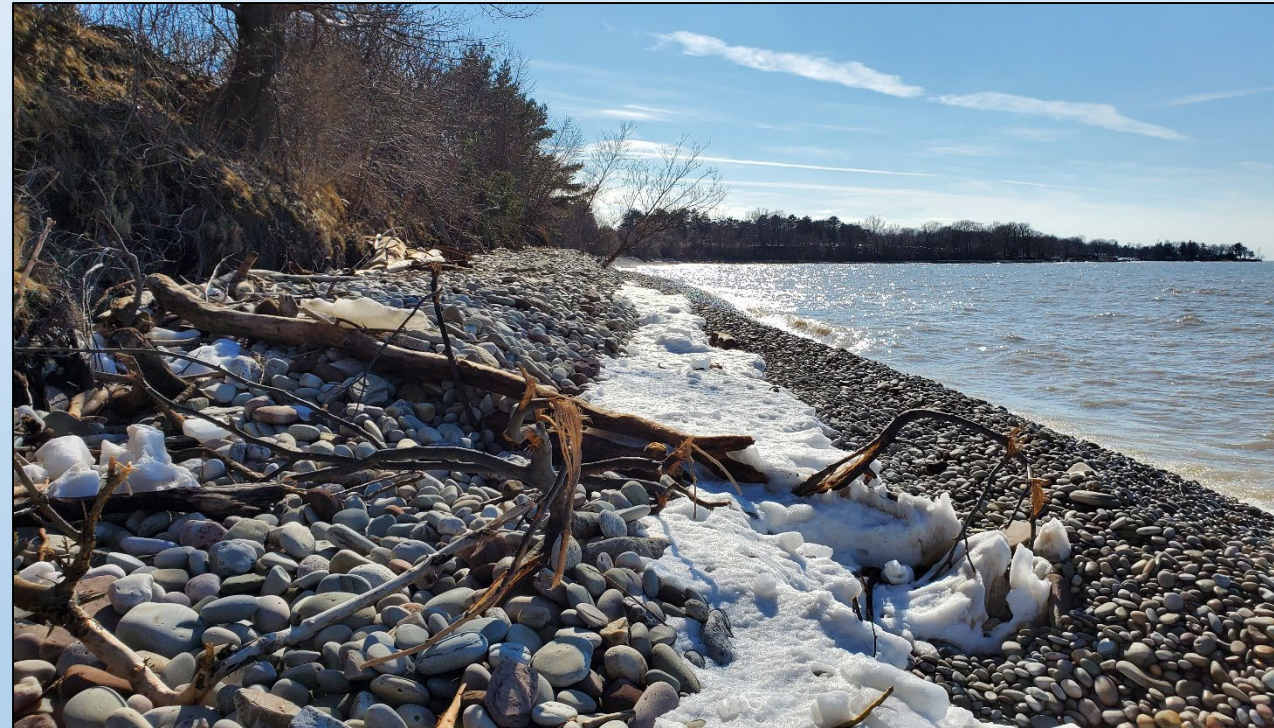
Shoreline Types – Rock & Bedrock

- Uncommon, but present
 - Oswego & Jefferson Counties
- Characteristics
 - Stable by itself, potentially unstable when coupled with bluffs
- Concerns
 - Upland erosion, such as with topping bluffs
 - Valuable ecological habitat



Shoreline Types – Cobble Beaches

- Very Common
 - At bluff toes, low beaches and barrier bars, found in every county
- Characteristics
 - Very changeable with wave action
 - Relatively stable
- Concerns
 - Upland erosion of bluffs during high water and wave events

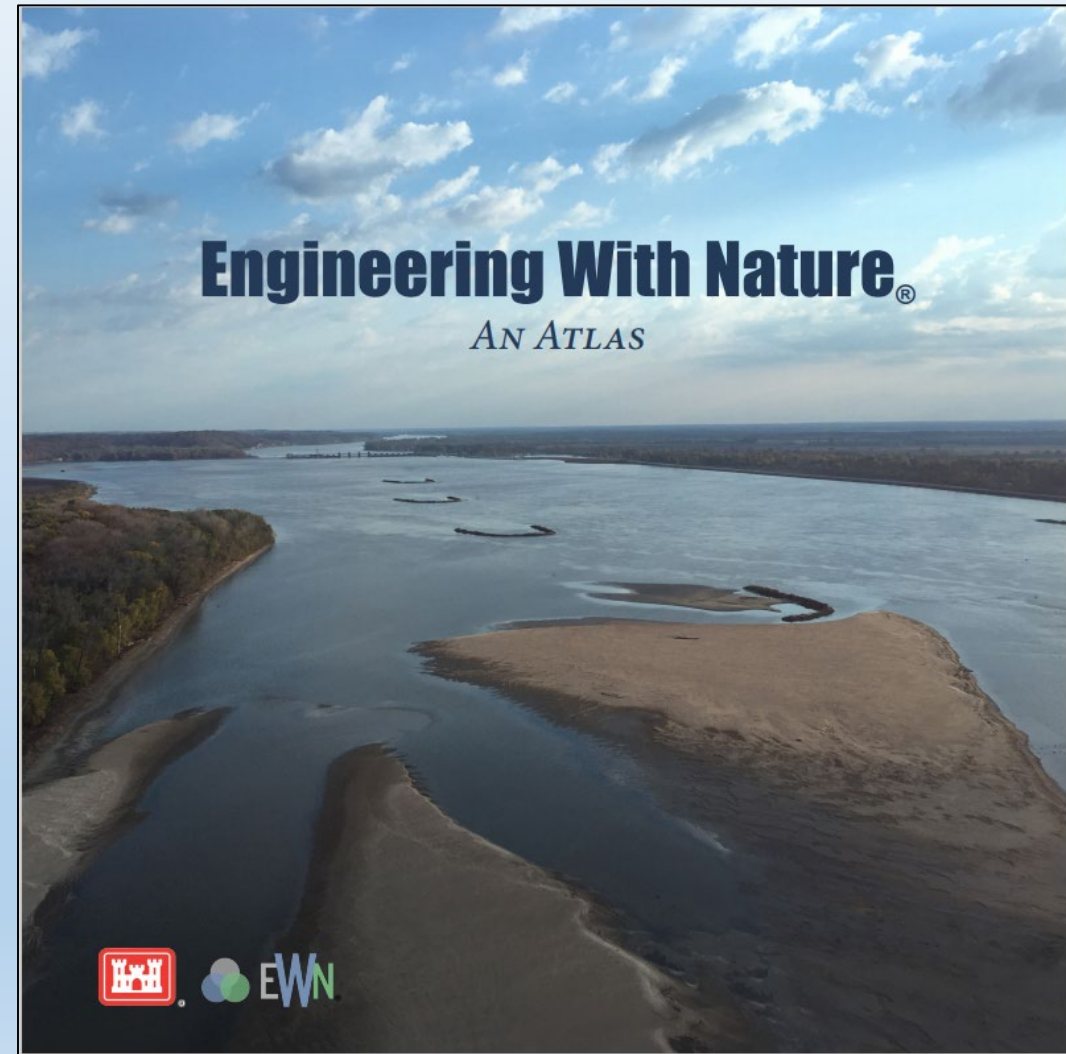






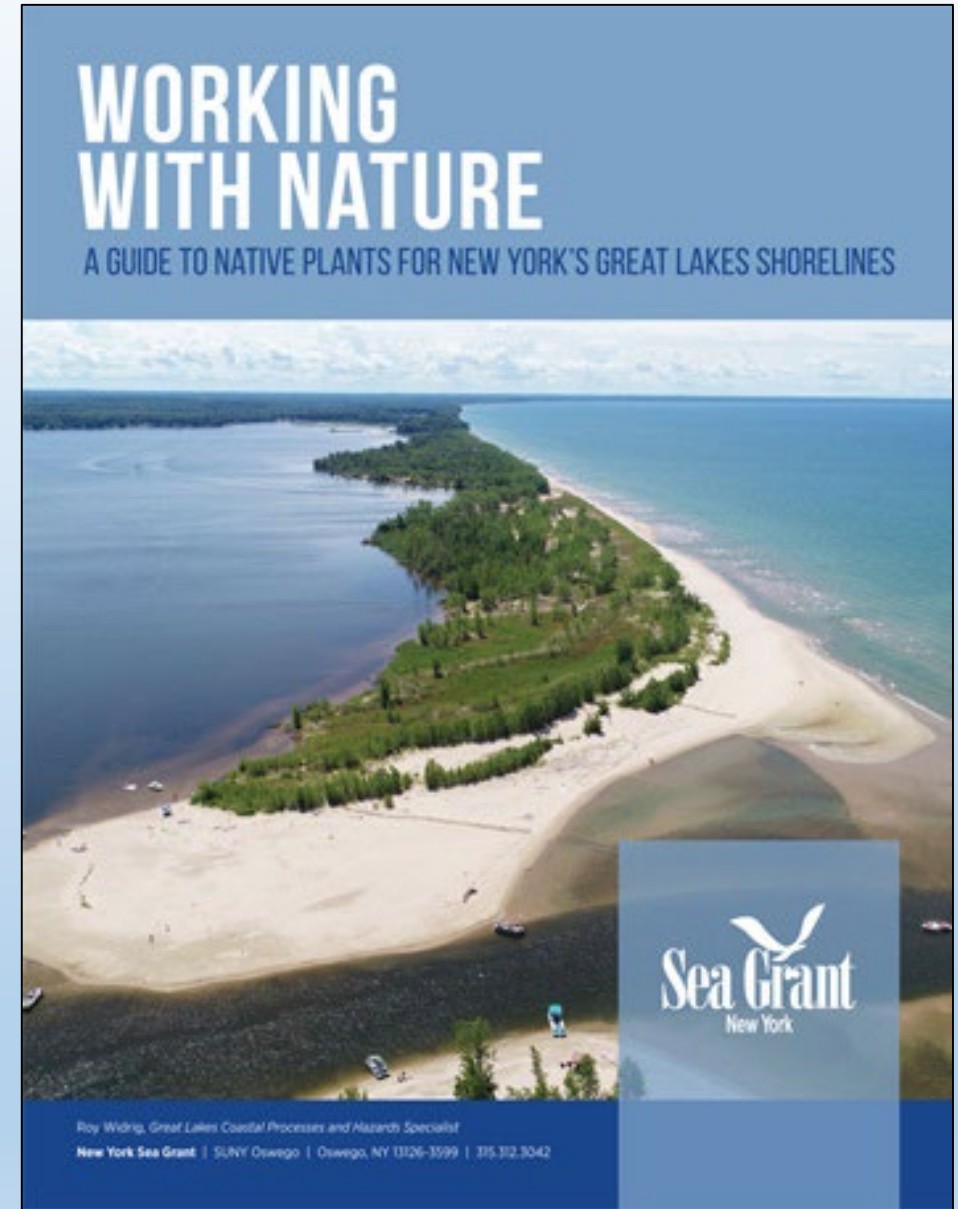
Resources for Contractors

Engineering and Design



From NY Sea Grant


- Shoreline Erosion Management
- Working with Nature
- Shoreline Contractor “List”
- Many resources available from the organization represented today
- Feel free to contact speakers with specific questions and requests for resources



<https://seagrantsunysb.edu/Images/Uploads/PDFs/GreatLakes-ShorelinePlantsGuide.pdf>



Future Plans

- 
- Looking to hold these meetings in-person, annually, throughout New York's Great Lakes Region
 - Potential sub-regions include:
 - Erie-Chautauqua
 - Niagara-Orleans
 - Monroe-Wayne-Cayuga
 - Finger Lakes
 - Eastern Lake Ontario
 - St. Lawrence River

Contact: rlw294@cornell.edu