The Great Lakes Coalition is an organization of shoreline property owners on the Great Lakes dedicated to improving the quality of life for both it's membership and the public at large.

Facts about Section 111 of the Rivers and Harbors Act of 1968

- Harbor structures impede the transport of littoral sediments (sand)
- Section 111 authorizes perpetual mitigation but does not appropriate the necessary funding
- The fifth amendment of the U.S. Constitution forbids takings without compensation or mitigation
- Removal of sediment from the littoral system is a documented and quantified taking
- Without federal funding Section 111 is at odds with the fifth amendment
- **We need your help to develop a plan for correcting this discrepancy!**

Section 111 Damages & Costs Quantified

Location of navigation work	Annual Quantity diverted
New Buffalo	32,800 cu. yds./year
St. Joseph	110,000
South Haven	47,000
Holland	61,000
Grand Haven	50,000
Muskegon	70,000
White Lake	38,000
Ludington	66,000
Harrisville	8,000
Port Sanilac	30,000
Lexington	35,000
Annual total	547,800 X $7.50/cu.yd. = $4,108,500

Manistee, MI – Diversion of Littoral Drift of Sand Supply by Federal Navigation Structure diverts Natural Littoral Drift far beyond depth of closure, which prevents it from ever returning to the Beach

Environment Canada Environnement Canada

Table 3. Historical Dredging Quantities (millions of m^3) in U.S. Waters of the Great Lakes

Lake	Period	Total by Lake for Period	Annual Average for Period
Superior	1937-72	68.7	2
Michigan	1918-72	**90.8**	1.7
Huron and St. Clair	1930-72	88.2	2
Erie	1951-72	102.8	4.9
Ontario	1951-72	6.7	0.3
Total all lakes	1918-72	357.2	

Source: Raphael et al. 1974.

90.8 million m^3 = 3 feet X 100 feet X 2024 miles of beach
1.7 million m^3 annual dredging Offsets Sec. 111 obligation by about 37.5 miles per year

Destruction in 1985 storm with near record high water levels

AMPLE BEACH CREATED BY THE NATURAL RIVER OF SAND (LITTORAL DRIFT)

DIVERSION OF SAND SUPPLY BY NAVIGATION STRUCTURES HAS DECIMATED THIS BEACH IN JUST ONE YEAR

International Upper Great Lakes Study

- **Physical changes in the St. Clair River** which forms part of the connecting channel between Lake Huron and Lake Erie will be investigated early in the study as one factor that might be affecting water levels and flows. Depending on the nature and extent of the physical changes, and their potential impact, **the study may also explore potential remediation options**.

Priorities need to be changed

- Current priorities are still navigation, hydro power, and sanitation even though they were established in 1909. The coast of the upper Great Lakes looks much different in 2007 in that private and public property has been developed far beyond the scope embraced over a century ago.

Erosion Key Points

- Federal navigation structures impede or divert the littoral flow of sediment to deep water
- Dune history suggests no erosion before the harbor piers were built
- Calculations show over 80% of loss due to Federal structures
- Rivers and streams provide enough sediment to stop erosion if it weren't for interference from Federal structures
- Section 111 mitigation is vital to the vision of enhancing the quality of life on the Great Lakes!

Down cutting and erosion - the real damage caused by Federal navigation structures along the coast of the State of Michigan

- The natural bottom of Lake Michigan is cohesive clay till covered by 3 to 6 feet of sand.
- The danger of continuing to ignore the damage to the river of sand is that the sand cover, which can be replenished, eventually will disappear and the clay material, which can not be replenished, will be exposed to erosion. This mechanism especially occurs during periods of low water.

Excerpts from “Living on the Coast”

Construction of any shore protection structure that impedes the longshore transport of sediment should be avoided, or approached with extreme caution.

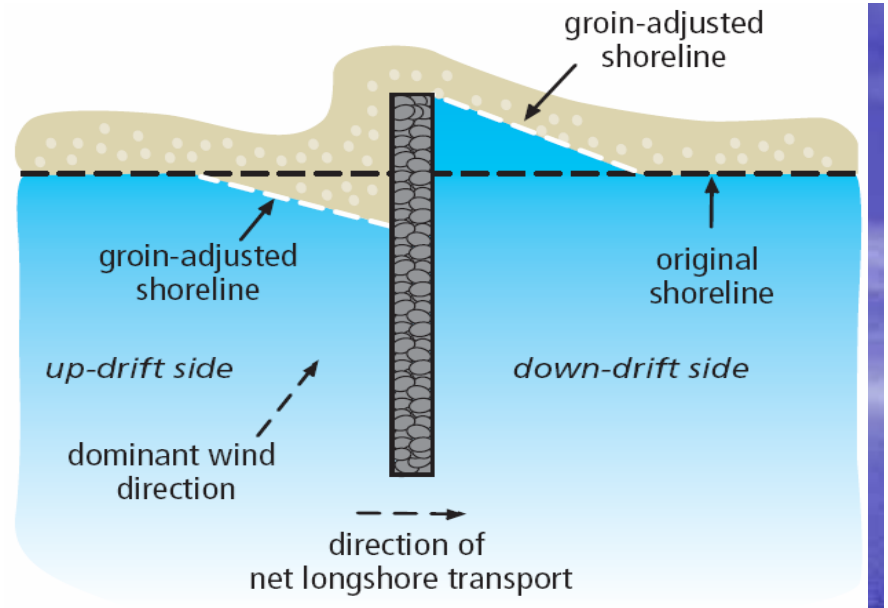
(GLC comment: Harbor structures severely impede longshore transport.)

Erosion of the lakebed is a common feature along cohesive shorelines of the Great Lakes.

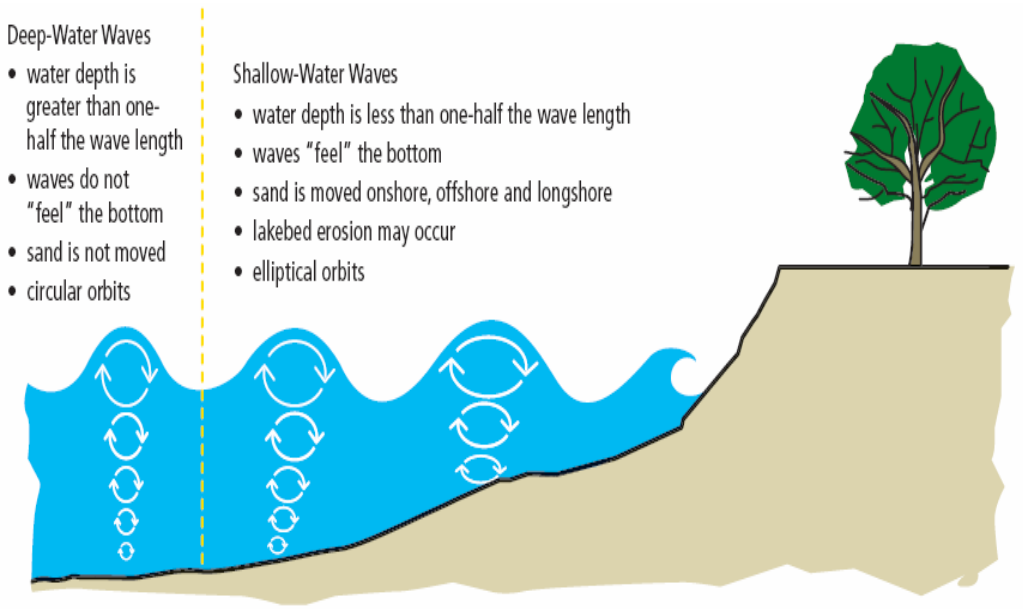
Beach nourishment is one way to introduce needed beach-building materials into the longshore sediment transport system.

Sea Grant
University of Wisconsin

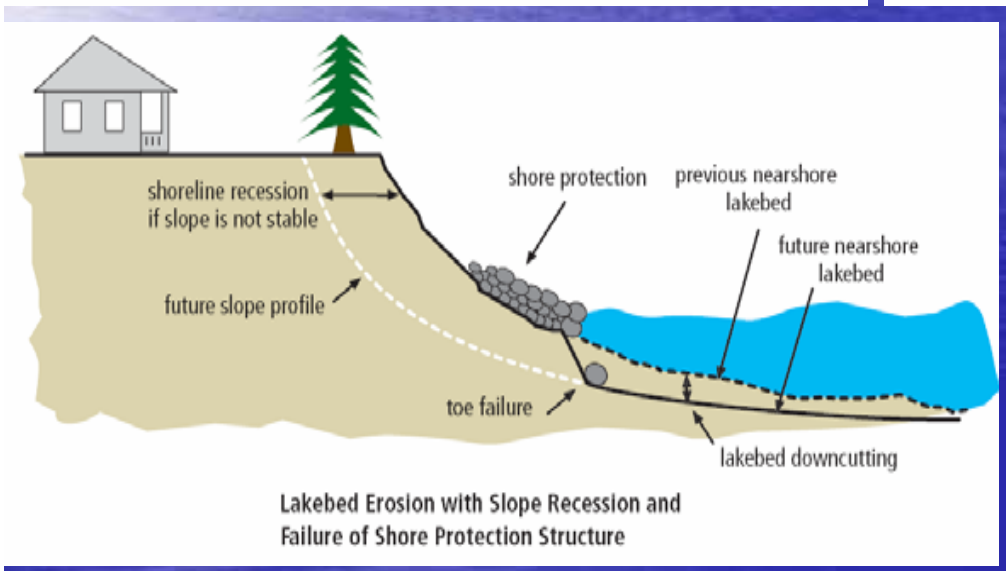
US Army Corps of Engineers



Beach Response to a Groin



Waves Feeling the Lake Bottom



Lakebed Erosion with Slope Recession and Failure of Shore Protection Structure

Excerpts taken from "Living on the Coast" show the erosion and down cutting processes which cry out for Section 111 mitigation to slow the takings along Michigan's Great Lakes coast!

Proposed Source of Funding

- Inland Waterways Trust Fund – 2006 balance $307 million
- Harbor Maintenance Trust Fund – 2006 balance $2.6 billion
- In maintaining Harbors, the dredged material provides a portion of the natural littoral drift diverted by Section 111 Federal navigation structures