

# GREAT LAKES SHORELINE EROSION

*Shorelands Protection and Management: High risk erosion areas on Lakes Huron, Michigan and Superior*

## WHAT CAUSES EROSION?

Erosion is the wearing away of the shoreline by forces moving sand and soil from one area to another. Waves, water levels, rain, wind, groundwater, frost and people all contribute to eroding shorelines.

## WHAT ARE HIGH RISK EROSION AREAS?

The Great Lakes shoreline is an actively eroding coast. Some shorelines erode more quickly than others. These are high risk erosion areas (HREAs). The HREAs are eroding at an average rate of one foot or greater per year over at least 15 years. The Michigan Department of Environmental Quality (MDEQ) studies the shoreline to identify HREAs. The law\* tells MDEQ how to conduct the studies of the shoreline.

Building a structure too close to the edge of the bluff puts it at risk of falling into the lake. Planned development and construction in a HREA helps to prevent the loss of structures. Locating structures safely back from the bluff may also reduce the need for engineered shore protection. Less shore protection promotes natural shorelines for you, your neighbors, and wildlife.

## HOW ARE HREAS DETERMINED?

The MDEQ compares the shorelines on historic and current aerial photos one county at a time. They measure the distance between the old shoreline and current shoreline. Then they calculate the rate (feet/year) the shoreline moved. Using this information, the MDEQ calculates the recession distances for the shoreline. Often the recession distances are also the setbacks for proposed buildings and septic systems. The MDEQ notifies those property owners with high rates of erosion on their property. Property owners may comment on the proposed recession distances before the HREA is designated.

## WHAT IF I WANT TO BUILD IN A HIGH RISK EROSION AREA?

You will need a permit for construction in an HREA depending on the project. Even if the building or septic system is behind the setbacks on your property, you will need a permit. Contact the MDEQ for more information. You may also need a permit from the United States Army Corps of Engineers (USACE).

## WHAT KINDS OF CONSTRUCTION PROJECTS REQUIRE A PERMIT?

- Construction of a house, addition, garage, outbuilding, or other structure.
- The installation or upgrade of a septic system or commercial building.
- Significant reconstruction or restoration of an existing home.

If there is a question about whether your project needs a permit, contact your local MDEQ office.

## FAST FACTS

- Erosion is a natural shoreline process
- Michigan has over 3,300 miles of Great Lakes coastline
- Shoreline erosion rates may be as high as 17 feet per year





*Cottage on Lake Michigan, Berrien County*



*Relocating a cabin on Lake Superior, Luce County*

## **THERE ARE TWO SETBACKS FOR MY PROPERTY! WHICH ONE DO I USE?**

It depends. Use the lower setback if the proposed structure is small, easily moved, and meets all the Rules\*. These movable structures include sheds and small buildings. The foundation is a basement, crawl space, or pilings. The above grade construction is stud-frame or whole logs. Small structures have a foundation size of 3,500 square feet or less. If erosion threatens, there must be enough access for a house mover to move the structure. Locate these buildings landward of the smaller, 30-year, setback. Septic systems and larger structures must be landward of the larger, 60-year, setback.

## **WHERE DO I MEASURE FROM?**

Measure the setback distances from the edge of the shoreline that is eroding. Most often this is the top of a bluff, not the water's edge or the ordinary high water mark. Bluffs over 25 feet high may change the setback distance. Your local MDEQ representative will review all the site information during the permitting process.

## **MY HOUSE IS TOO CLOSE TO THE SHORELINE. DO I HAVE TO MOVE IT?**

No. Moving existing buildings to meet the setbacks is not required. You will need a MDEQ permit for future additions or new structures on your property.

## **WHAT ARE MY OPTIONS?**

- Understand that erosion is part of living on a Great Lake. When planning your project, remember that erosion is always occurring on the Great Lakes' shorelines. Locate your structures a safe distance from the shoreline.
- Maintain the existing vegetation along the shoreline. When you cut or trim shrubs and trees, always leave the stump.
- Plant native trees, shrubs, or other plants, along the shoreline. Contact the local conservation district for more information.
- Shore protection is another solution, although it may be temporary due to the energy of the lake. Proper installation is important to prevent erosion to neighboring properties. Contact the MDEQ and USACE for permitting information.

\* Part 323, Shorelands Protection and Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the corresponding Administrative Rules.

For more information about the law, administrative rules, maps, and erosion, visit:

[www.michigan.gov/shorelands](http://www.michigan.gov/shorelands)



Shorelands Protection and Management, Water Resources Division  
Michigan Department of Environmental Quality  
PO Box 30457, Lansing, MI 48909-7957

800-662-9278

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