

A photograph of three children splashing in a lake. The children are in the foreground, with water splashing around them. The background shows a calm lake and a line of trees under a bright sky. The text is overlaid on the image.

PROTECTING MICHIGAN'S INLAND LAKES

**Lake & Wetland Protection Tools
for Local Governments**

Overview



- Why protect inland lakes and wetlands at the local level?
- Why are inland lakes important?
- What can we do to protect them?
 - Existing legal framework
 - Filling the Gaps: Local Protection and the Benefits
- How can local governments help?
 - Natural features setbacks
 - Local wetland ordinances
 - Other options
- How to get started in your community
- Local stories and case studies

Michigan Natural Shoreline Partnership (MNSP)

- Educator Network

- Conduct homeowner workshops on the benefits of natural shoreline landscaping, bioengineering, and erosion control on inland lakes.
- 49 Educators around the state (publicly listed)

- Certified Natural Shoreline Professionals

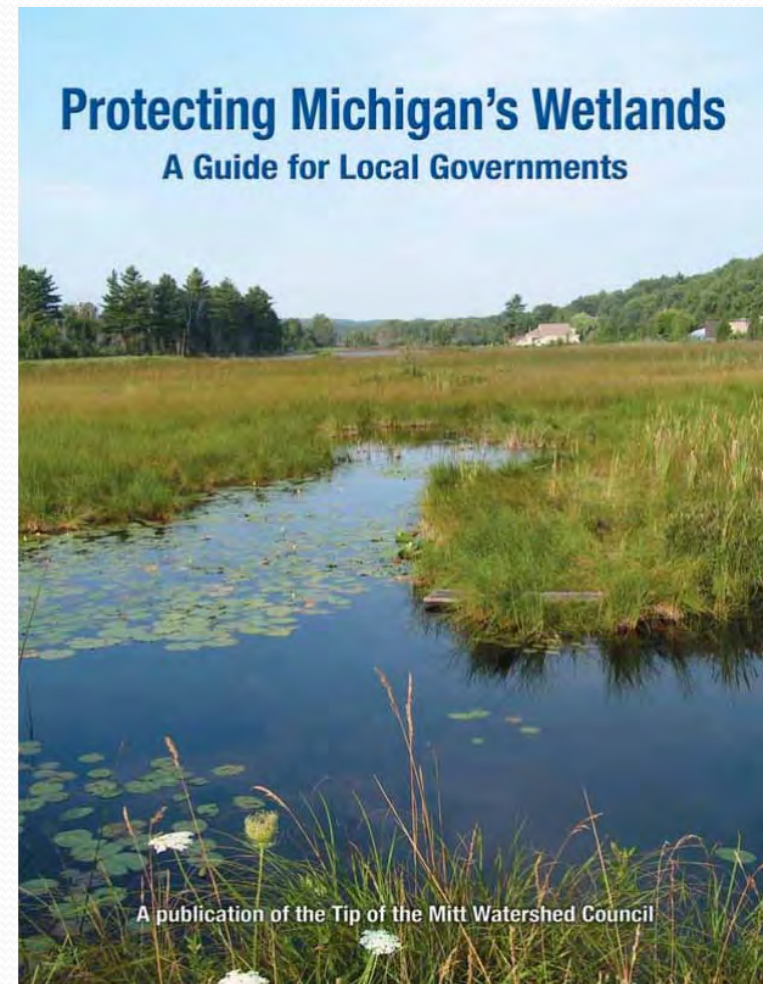
- Provide contractors and landscape professionals with information and skills to implement natural shoreline technologies and bioengineered erosion control
- 333 certified contractors around the state

- www.mishorelinepartnership.org



Resources

- Protecting Michigan's Inland Lakes: A Guide for Local Governments
- Inland Lake Protection Toolkit (coming soon!)
- Inland Lake Protection Webinar (coming soon!)



The Goal

- Provide local governments and community members with tools and resources they need to pursue local protection options for inland lakes and wetlands



An aerial photograph of a large body of water, likely a lake or reservoir, surrounded by a dense forest in autumn. The trees are in various shades of yellow, orange, and red. The water is dark blue, and there are patches of brownish vegetation along the shoreline. The sky is filled with soft, white and grey clouds, suggesting a hazy or overcast day. The text "Keep our lakes clean and healthy" is overlaid in the center of the image in a white, sans-serif font with a thin black outline.

Keep our lakes
clean and
healthy

Why protect inland lakes and wetlands at the local level?

- Address activities or features not regulated under state and federal law.
- Local governments are well suited to integrate wetland and inland lake protection into land use decisions and site planning.
- Local knowledge and support.



Why are inland lakes important?





Why are inland lakes important?

- Functions and Values
 - Swimming
 - Boating
 - Fishing and hunting
 - Habitat
 - Wildlife viewing
 - Aesthetics
 - Food webs
 - Groundwater recharge & water supplies
 - Flood protection

Inland lakes are valuable...and more so when they are clean



Inland lakes are valuable...and more so when they are clean

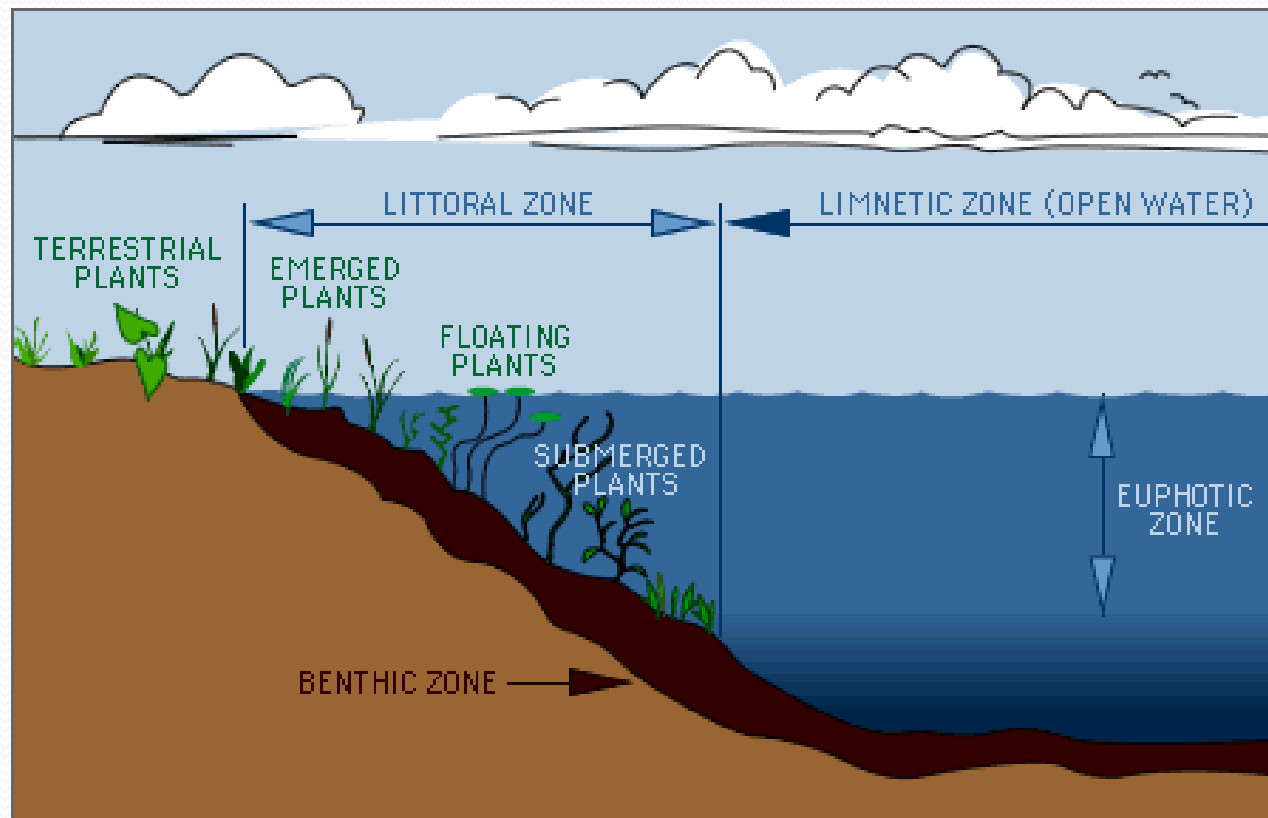


Inland lakes are valuable...and more so when they are clean



Photo: Michigan DNR

Littoral zone



Plants in the Littoral Zone

Absorb
excess
nutrients

*Provide
food and
cover for
wildlife*

*Stabilize
banks,
upland soils
and lake
bottom*

*Provide
shade –
keep water
cool*

**No plants to keep
shoreline from eroding**



Natural Shoreline Landscapes on MI Inland Lakes
Shoreline Educator Training

Lawn to the water's edge: Consequences on inland lakes



Loss of fish and wildlife habitat
Nuisance animal (goose!) habitat
Shoreline erosion
Loss of shade
Deadwood removal
Seawalls

Polluted runoff
Excessive plant growth
Algae blooms
Oxygen loss
Recreation impacts
Chemical treatment

Photo: Scott Brown

What is a “natural shoreline”?

“Development of 25% or less of the lake is recommended to provide ...owner access and recreational use, while preserving ecological integrity, sustaining natural resources for future generations, and protecting the public trust.”

-Conservation Guidelines for Michigan Lakes & Associated Natural Resources, Michigan DNR, March 2006



Sustainable shoreline landscaping

- Landscaping that mimics natural conditions
- Designed for how we use it (swimming, boating, etc.)





UPLAND



BUFFER



LAKE



Lake Habitat

- The Littoral Zone provides critical habitat for at least 65 native fish species.
 - Spawning
 - Nursery
 - Feeding
 - Avoiding predators
 - Entire life cycle or seasonal use





Reptiles and amphibians:

- Breeding, egg laying, and juvenile habitat for salamanders, frogs, toads, turtles.
- Connection with uplands is critical.



Birds & mammals

- Feeding and breeding grounds
- Emergent vegetation for nesting and cover
- Fish, insects and plants are a critical food source
- Migratory stopover



Lakeshore & Energy


The powerful forces of waves, currents, and ice move soil particles toward, away from, and along the shoreline.



Lakeshore & Energy: Aquatic Vegetation

- Emergent and floating vegetation along the shoreline limits erosion by diminishing wave energy. Native vegetation will also help keep out invasive species such as phragmites and purple loosestrife.





“ Pulling up shoreline ‘weeds’ and grasses or removing trees for the better view of the lake negatively impacts the living shoreline. A natural shoreline is hardworking. One of the best features of a lake is its areas of natural shoreline.”

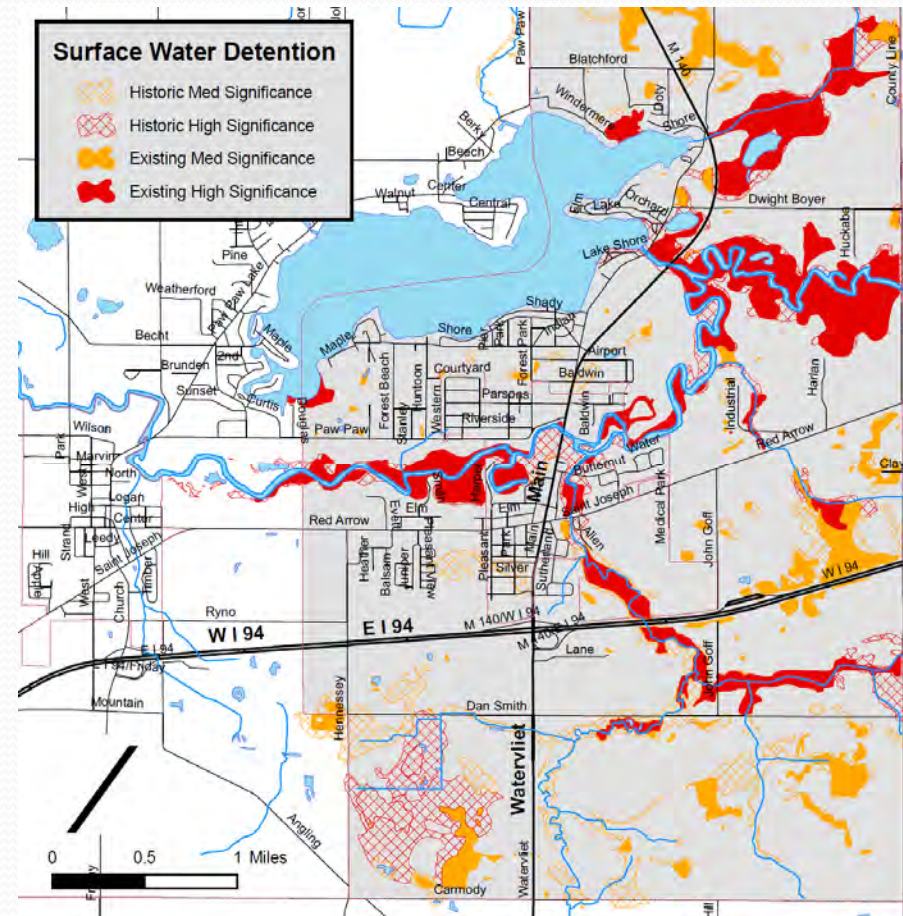
The Trout Lake Conservation Association, Naturalizing the Shoreline

Why are wetlands important?



Wetland loss

- Michigan has lost 50% of the wetlands that it had prior to European settlement
- Not all wetlands function the same
 - Flood storage
 - Shoreline stabilization
 - Habitat



Paw Paw Lake, Berrien County

WETLAND FUNCTION

August 05, 2015

VAN BUREN COUNTY

Lake Michigan



South Haven

Lake Michigan Frontal

196

ALLEGAN COUNTY

Bloomingdale

Kalamazoo River Watershed

Gobles

Breedsville

Bangor

Wetland Functional Assessment FLOOD WATER STORAGE

Existing Wetlands

- High Significance
- Medium Significance

Lost Wetlands

- High Significance
- Medium Significance

Watersheds

- Black River
- St. Joseph River

Current Wetland*

*Wetlands not shown in the Functional Assessment.

- Lake, River, Stream & Drain
- State Road
- Major Road
- Railroad
- County
- Tribal Land
- City & Village

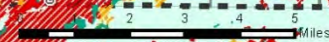
Minor roads are not shown

Data Sources

Base Layers: MFG Version 14a

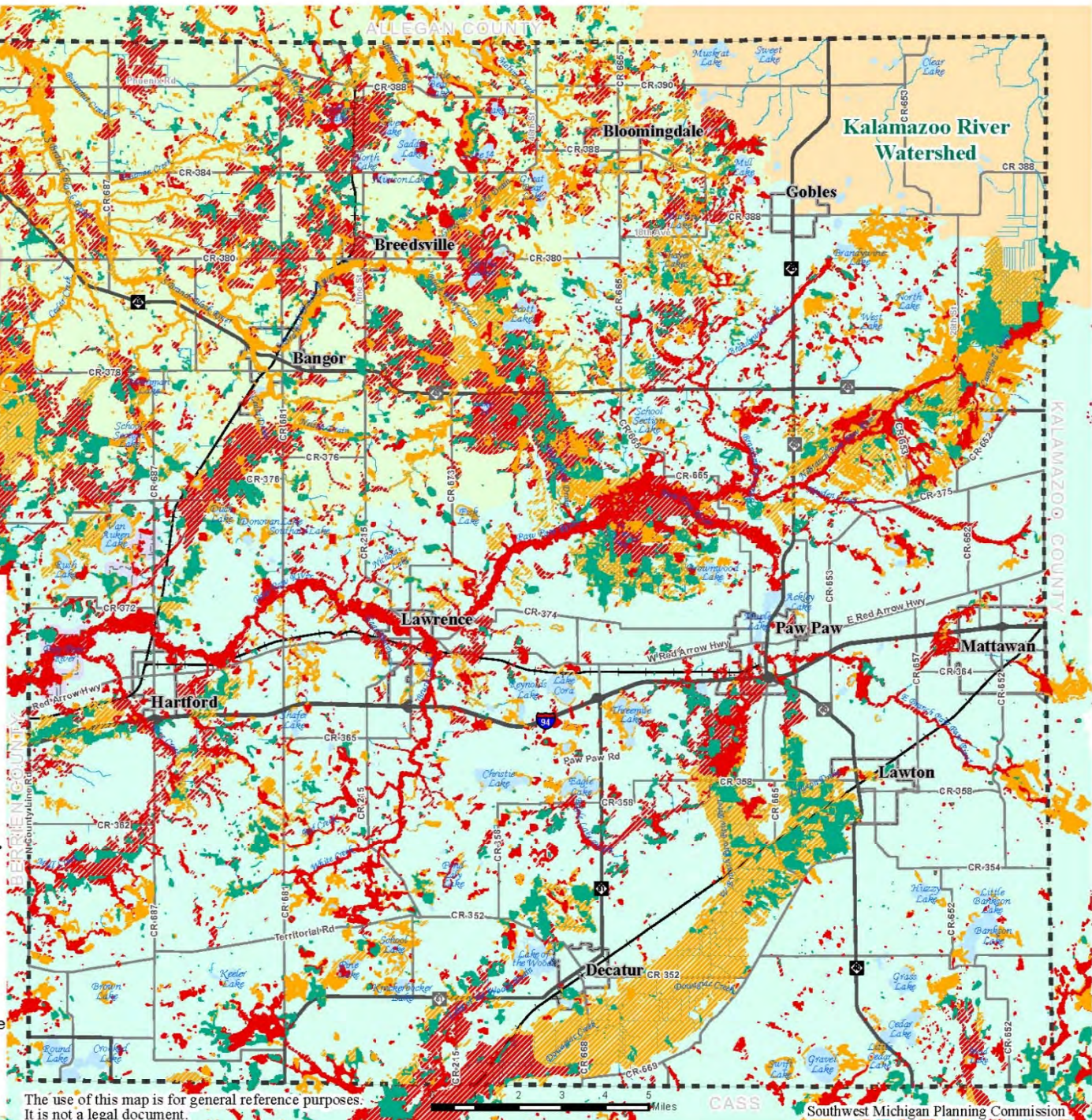
Wetlands and Watershed: MDEQ, 2007

The use of this map is for general reference purposes.
It is not a legal document.



CASS

Southwest Michigan Planning Commission



Resources

