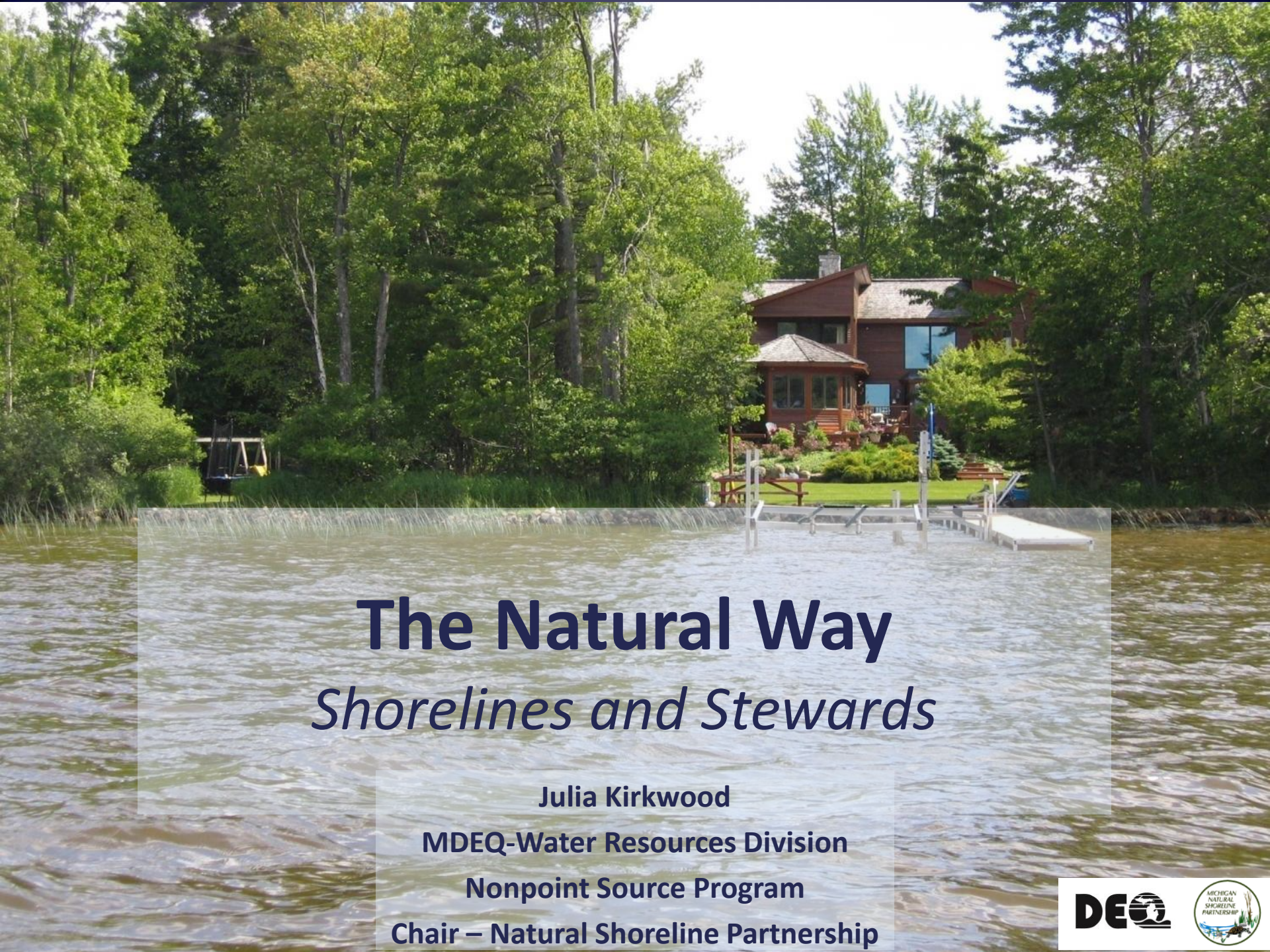




The Natural Way *Shorelines and Stewards*

Julia Kirkwood
MDEQ-Water Resources Division
Nonpoint Source Program
Chair – Natural Shoreline Partnership



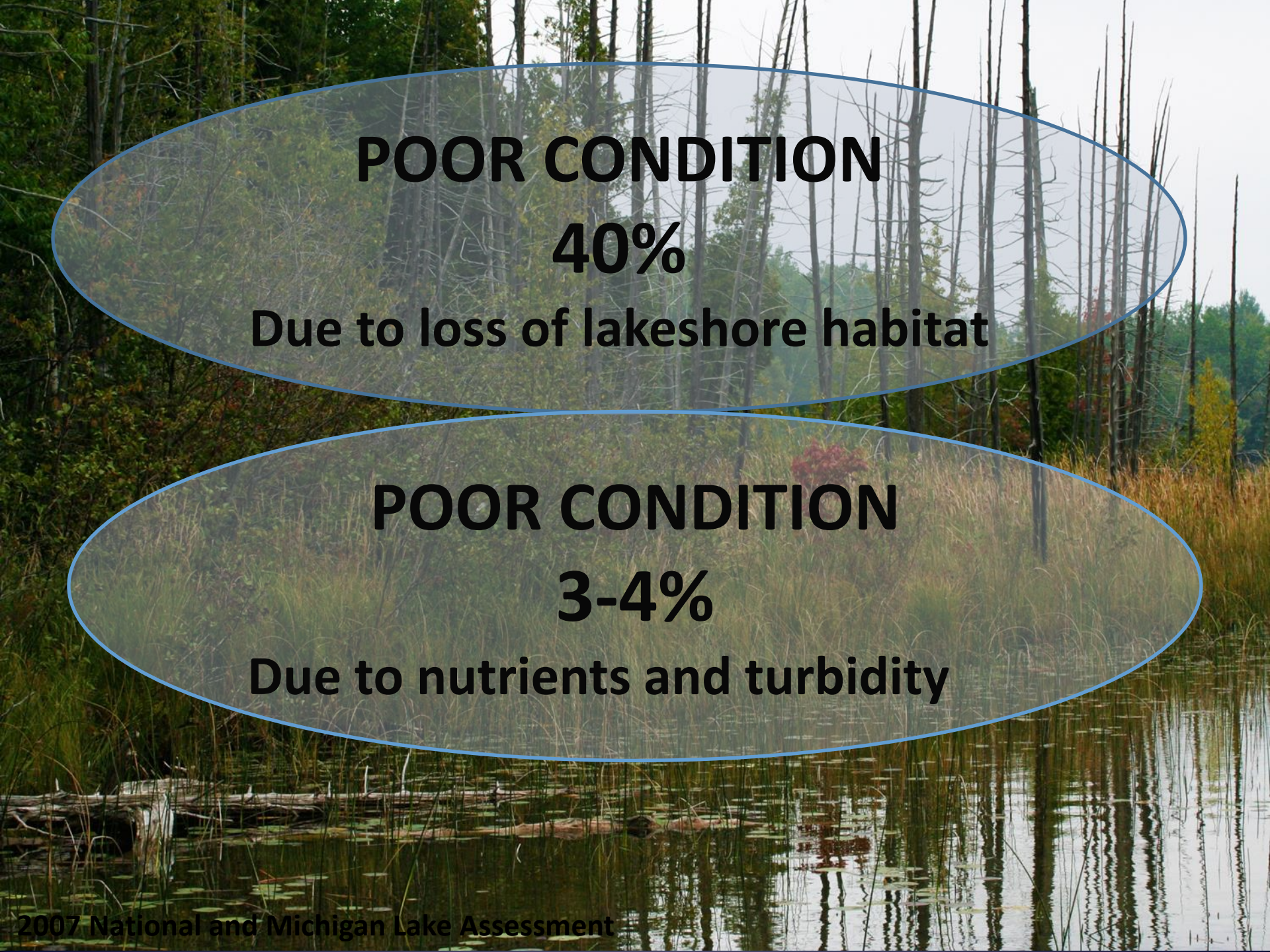


1 Threat to inland lakes is

A: Near shore habitat loss

B: Excessive nutrients

C: Excessive plant growth



POOR CONDITION

40%

Due to loss of lakeshore habitat

POOR CONDITION

3-4%

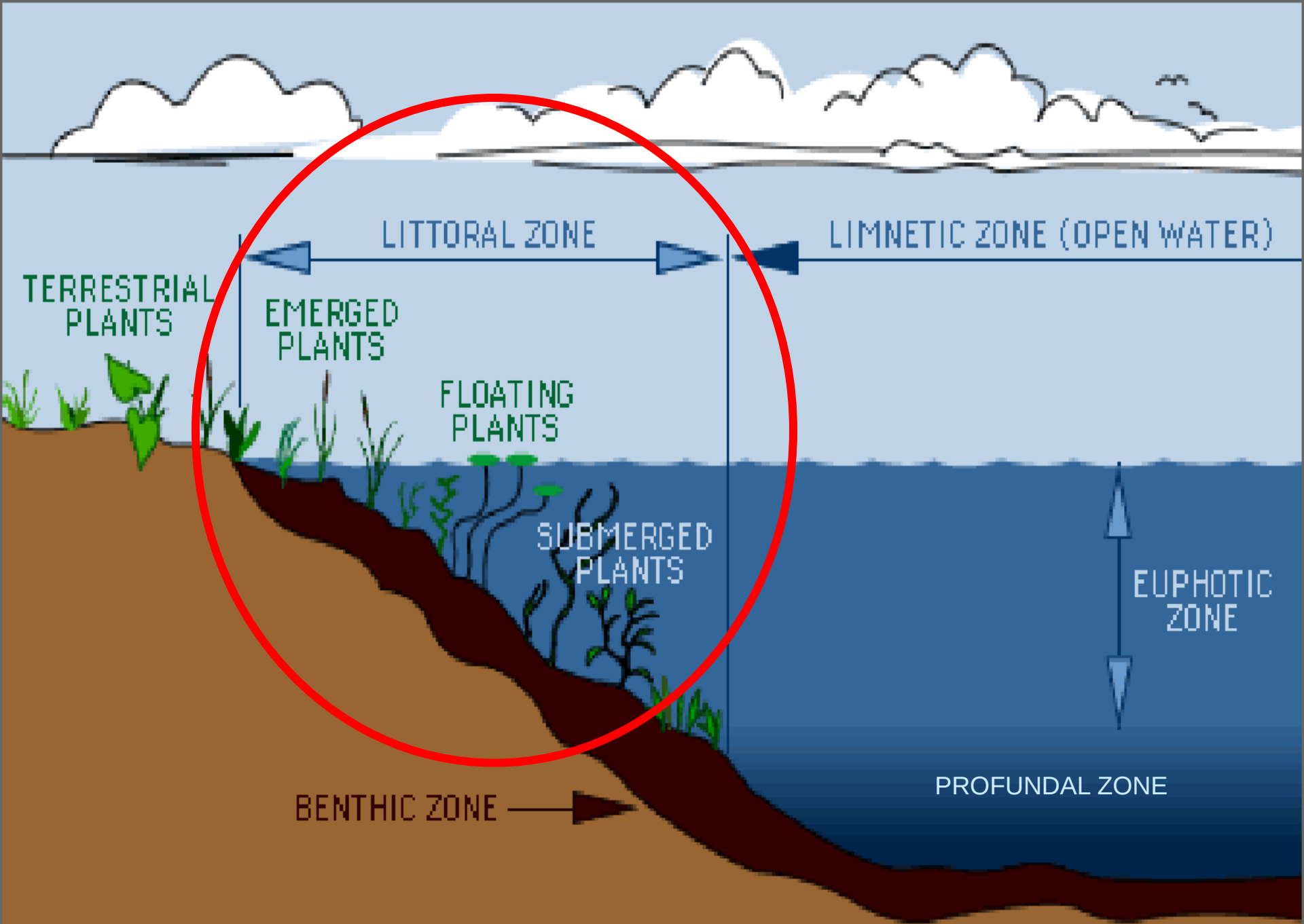
Due to nutrients and turbidity

Natural shoreline vegetation

Three 'tiers'

1. Tree canopy
2. Shrub understory
3. Herbaceous plants
 - Aquatic, wetland and upland







65

MI native
fish
species

18

*Fish species
of Greatest
Conservation
Need*



Species Supported

24 amphibian

25 reptile

87 bird

19 mammal





MICHIGAN NATURAL SHORELINE PARTNERSHIP

Promoting Natural Shoreline Landscaping to Protect Michigan's Inland Lakes

SUPPLY

- Train Shoreline Contractors and Landscape Professionals

DEMAND

- Educate Property Owners

PRODUCT DEVELOPMENT

- Demonstrate Natural Shoreline Techniques

REGULATION

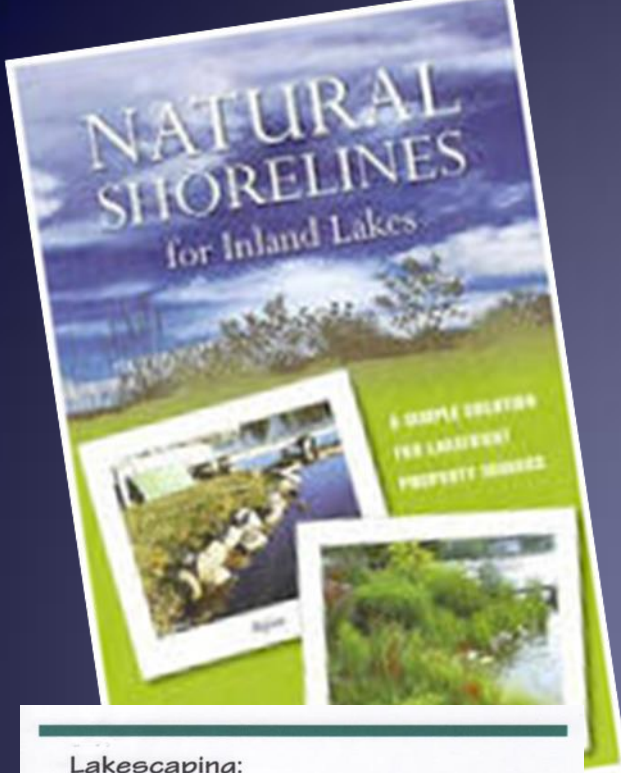
- State and Local Shoreline Policy

***200 Certified Natural Shoreline
Professionals***

***148 Participants
Shoreline Educator Training***

9 Demonstration Sites

Shoreline Permit Changes



Lakescaping:

Shoreline landscaping that restores and preserves natural shorelines for today and future generations.

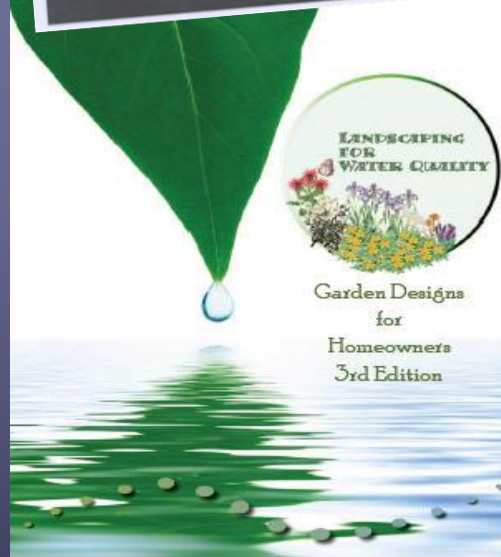
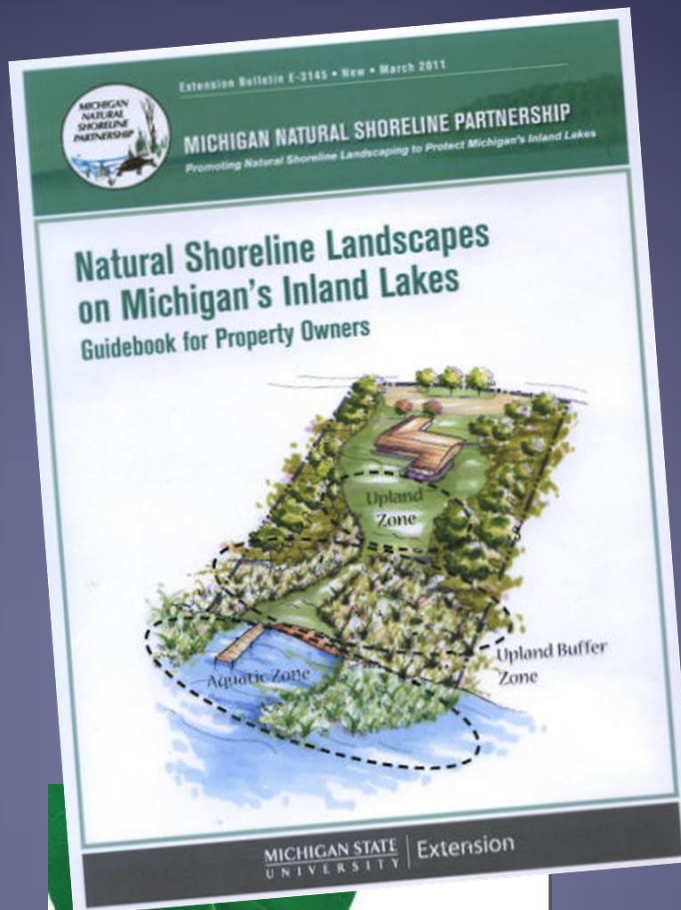


MICHIGAN STATE
UNIVERSITY
EXTENSION



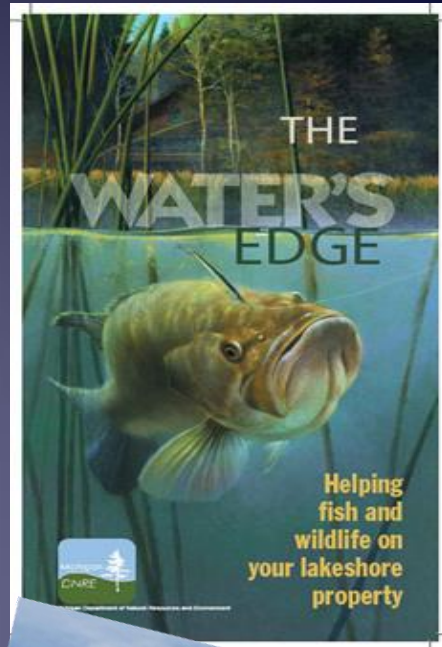
Answers to Homeowner Questions about Lakescaping

For more resources and information, please visit:
www.shoreline.msu.edu



LANDSCAPING
FOR
WATER QUALITY

Garden Designs
for
Homeowners
3rd Edition



NATURAL
SHORELINES

YOUR INLAND LAKE NATURAL SHORELINE:

- Protects your lake from erosion
- Provides habitat and protection for birds, butterflies, frogs, fish and other wildlife
- Discourages weeds
- Improves water quality

Natural shorelines do all this — and provide areas to relax, play and access the lake.

GO NATURAL!



www.mishorelinepartnership.org

MNSP Recommended Plant List

“Right Plant Right Place” Approach

3 categories: wet to moist areas

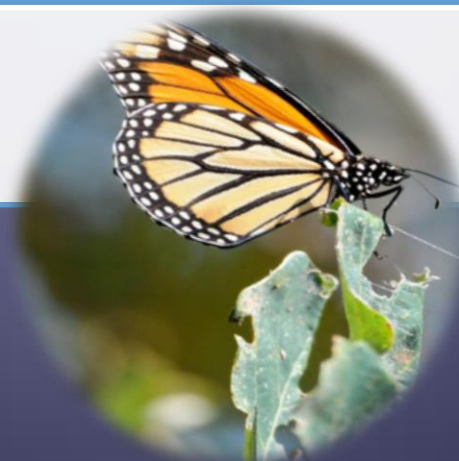
- Below the Water Level
- Between Water Level and Ordinary High Water Mark
- Above the Ordinary High Water Mark



1 E. New

1 category: dry areas away from the shoreline

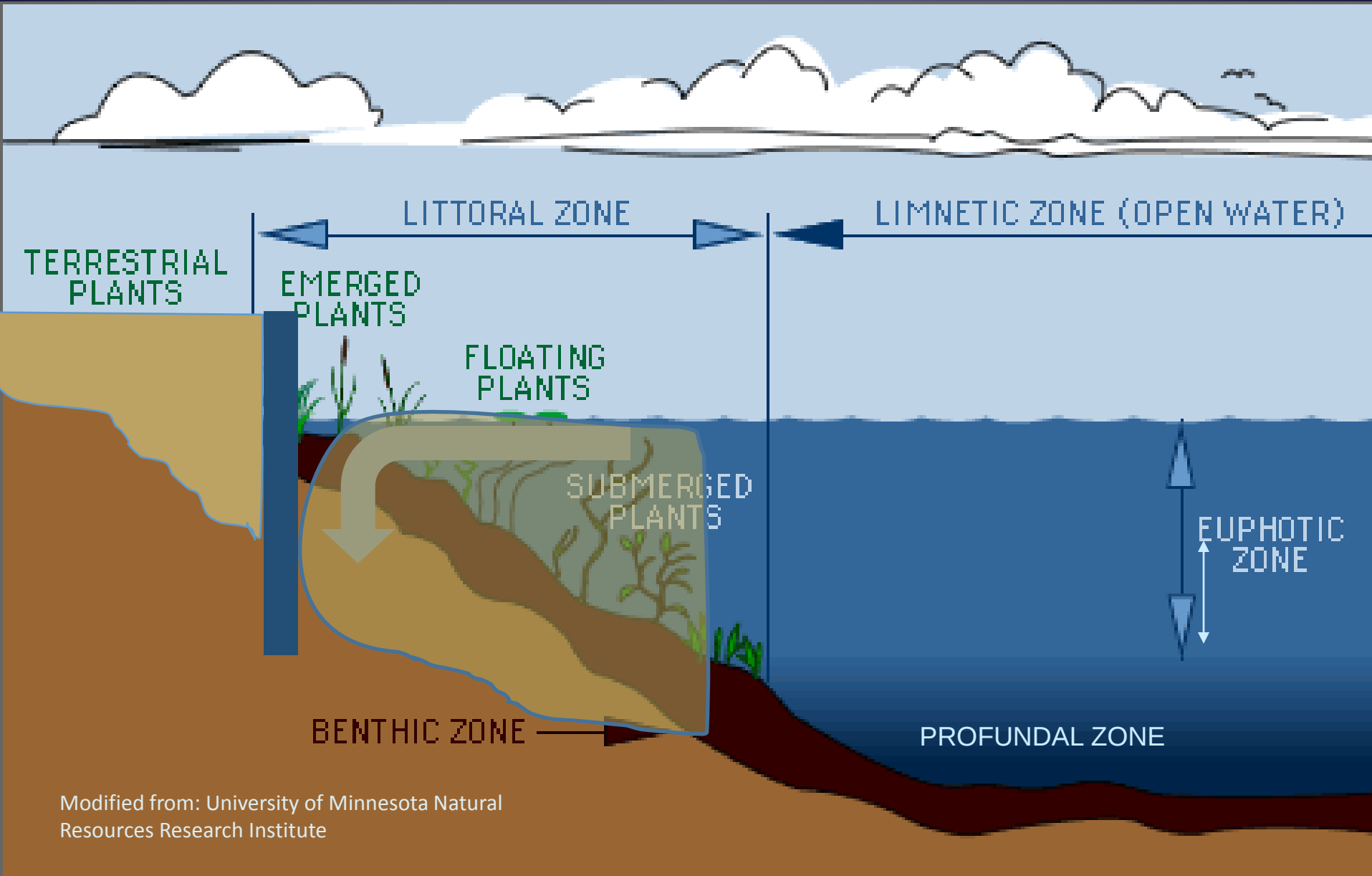
- Upland



Natural Resource Changes?



The system becomes broken





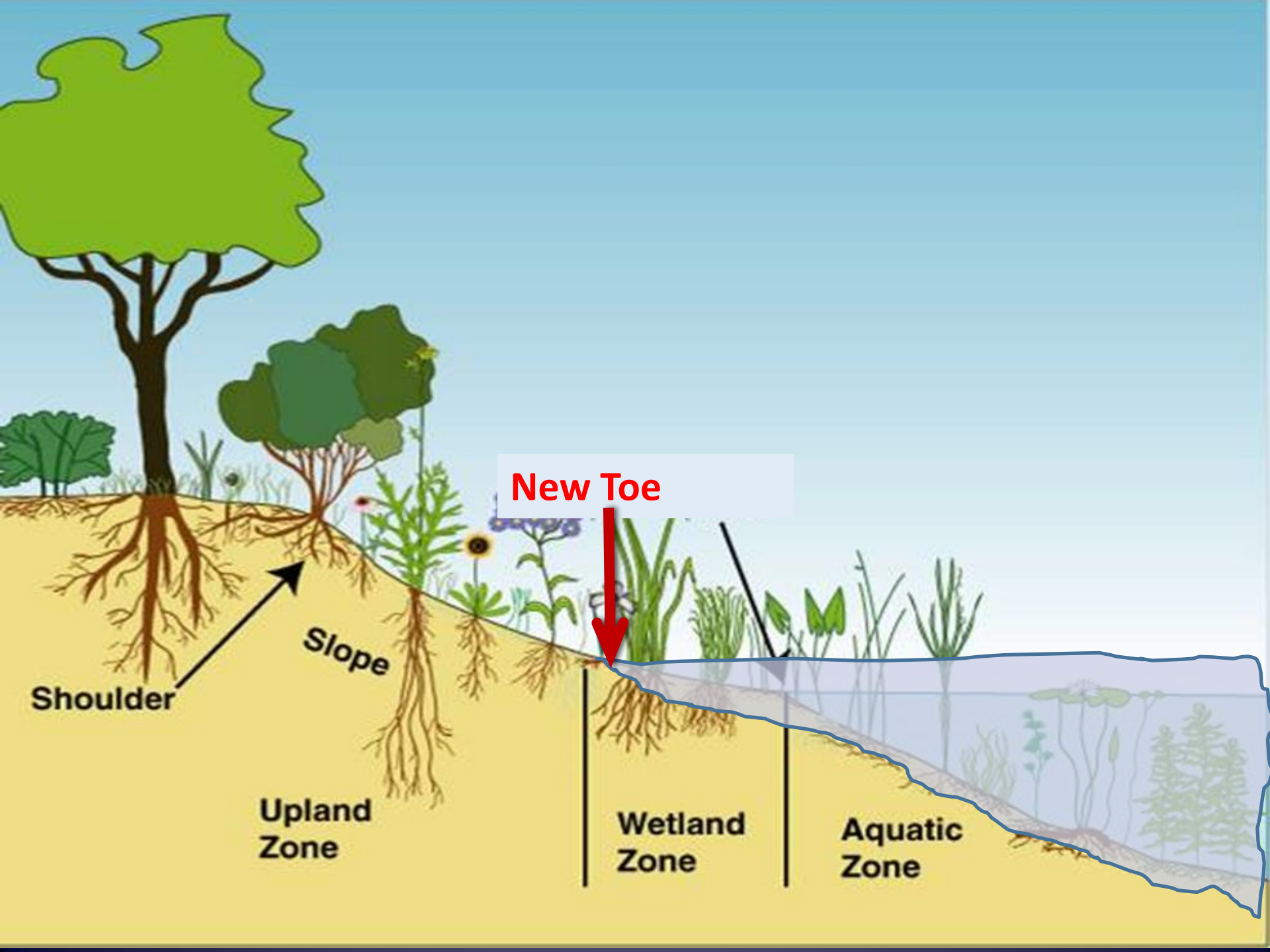
- Seawalls =**
- Barrier for animal movement
 - Creates scouring effect
 - Wave flanking



Turfgrass roots:

Too short

Not strong enough



New Toe

Shoulder

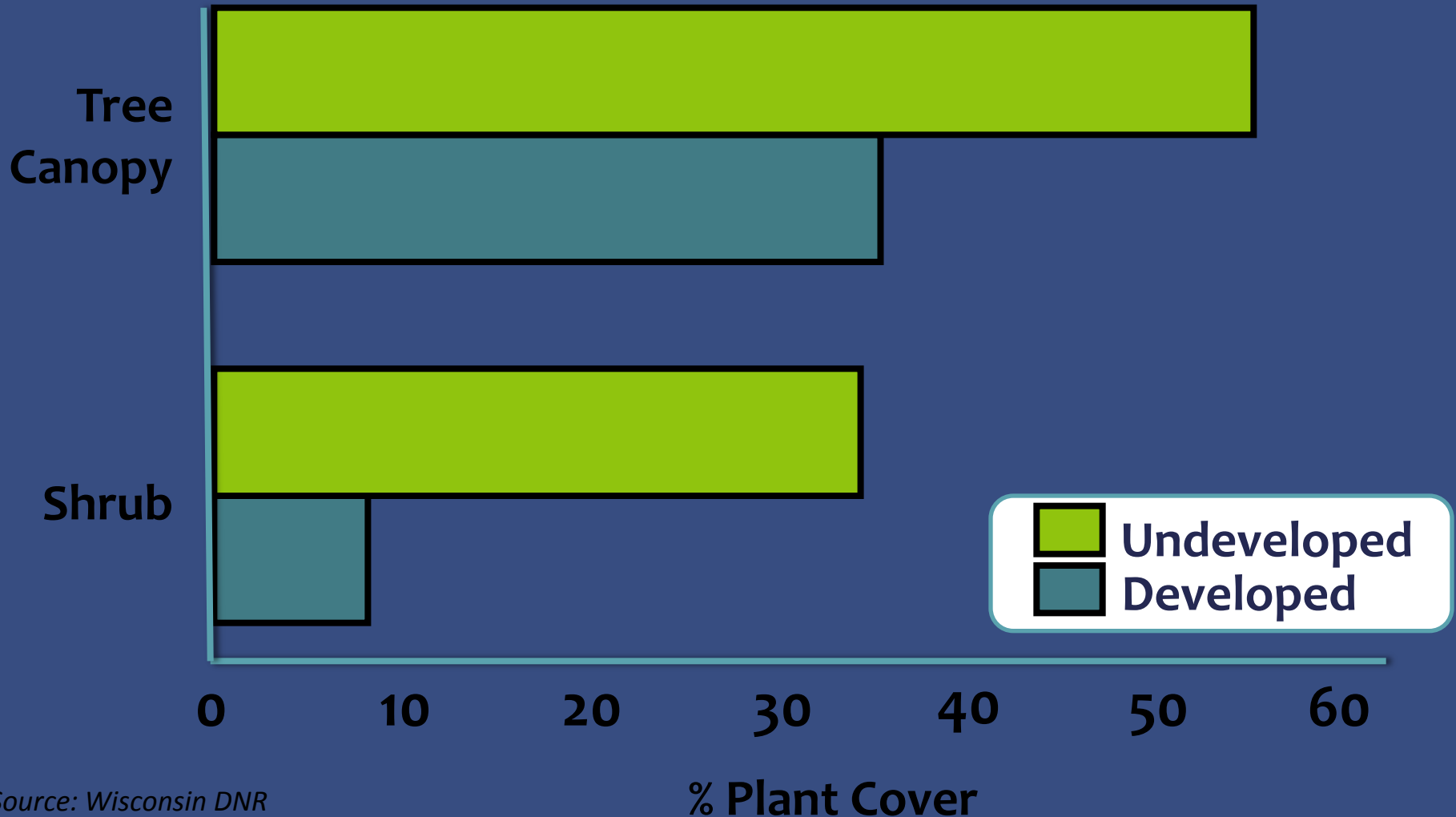
Slope

Upland
Zone

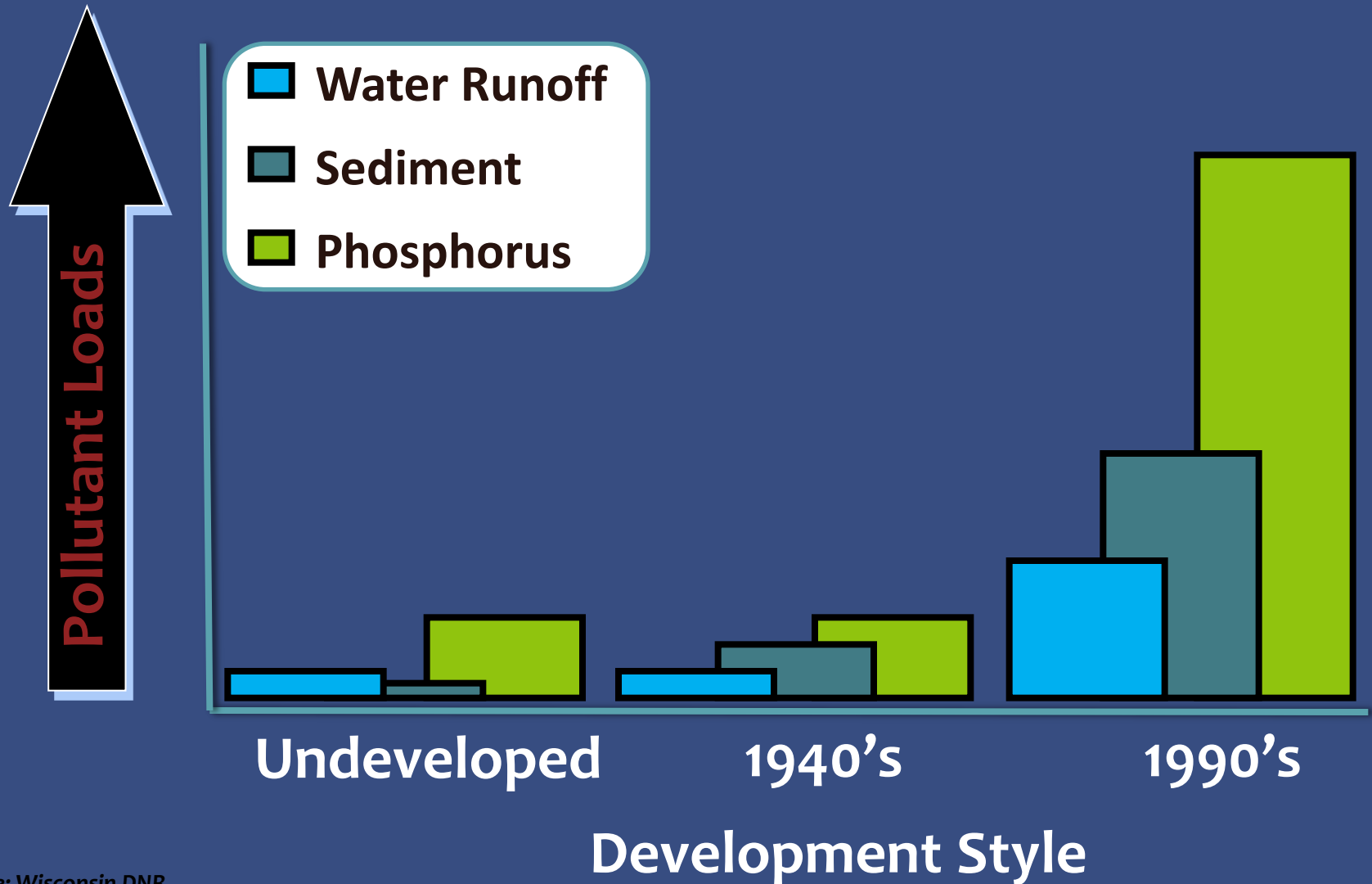
Wetland
Zone

Aquatic
Zone

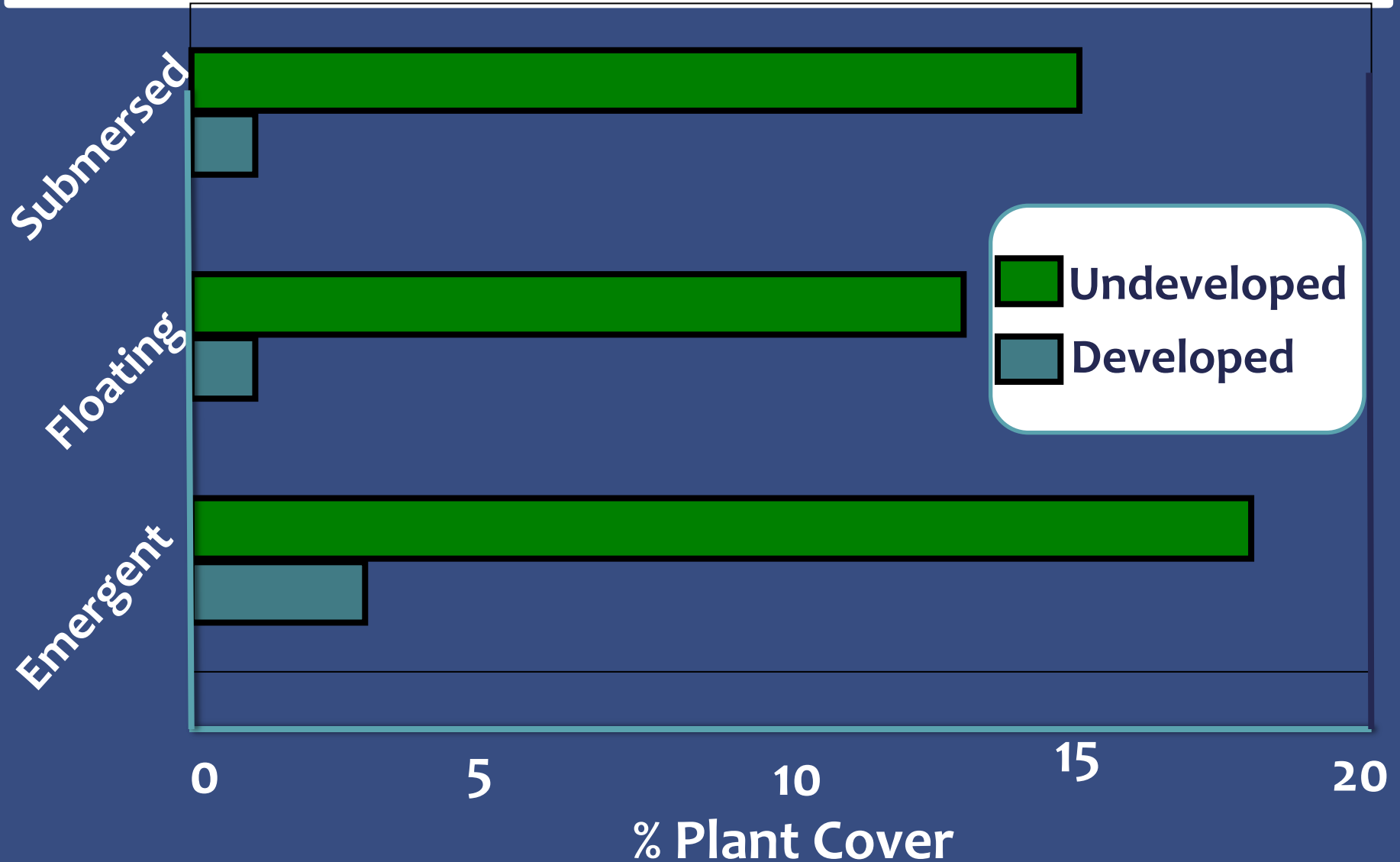
What's Happened to Shoreland Plants?



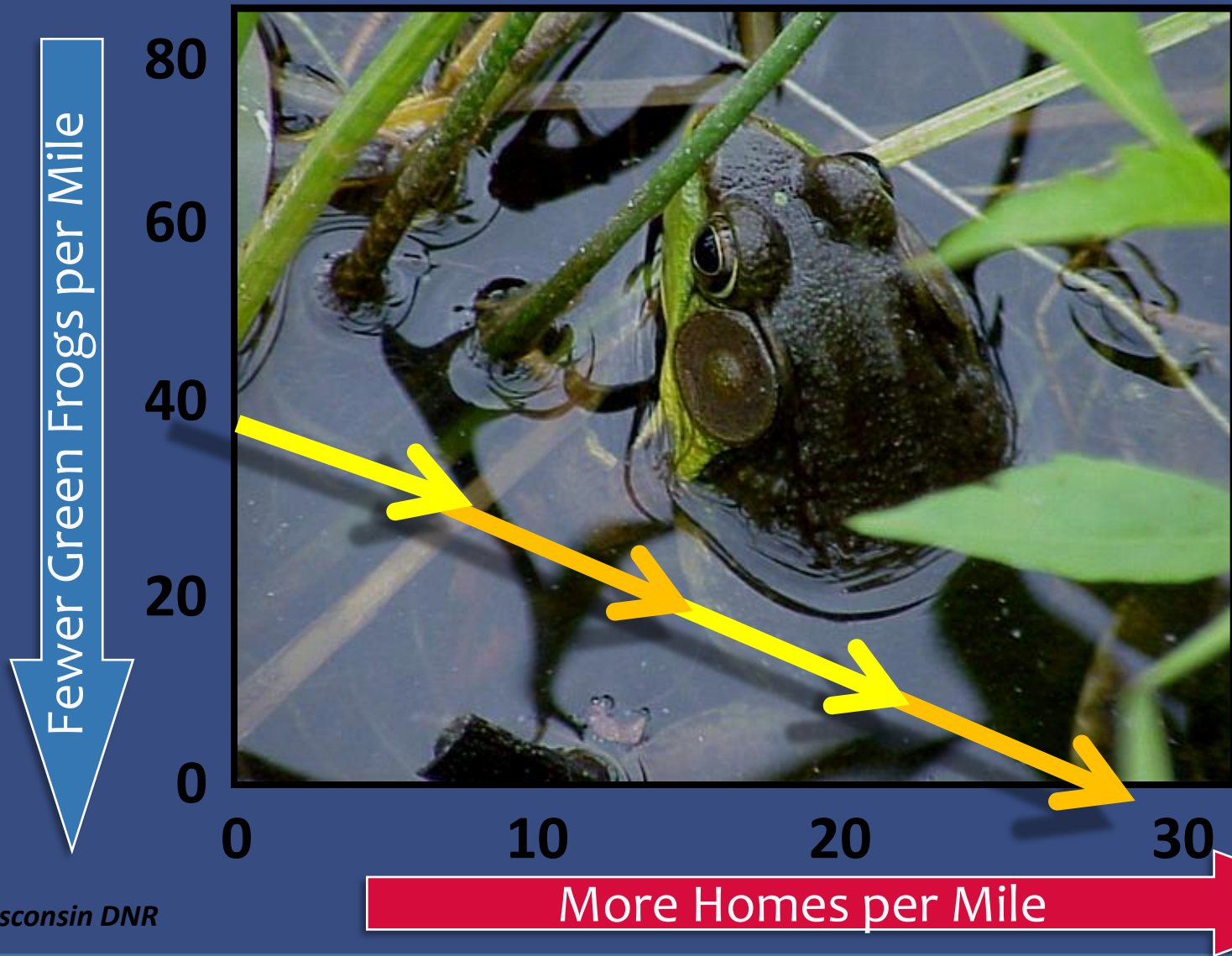
Impacts of Lake Development



What's Happened to Aquatic Plants?



What's Happened to Frogs?



Sebastian says “Thank you!”



**#1
nuisance
animal:**

- Are grazers
- love open expansive lawns up to edge of lake

Lawns Provide:

Constant
supply of
food

No
barriers

No hiding
places for
predators



SHORELAND



UPLAND

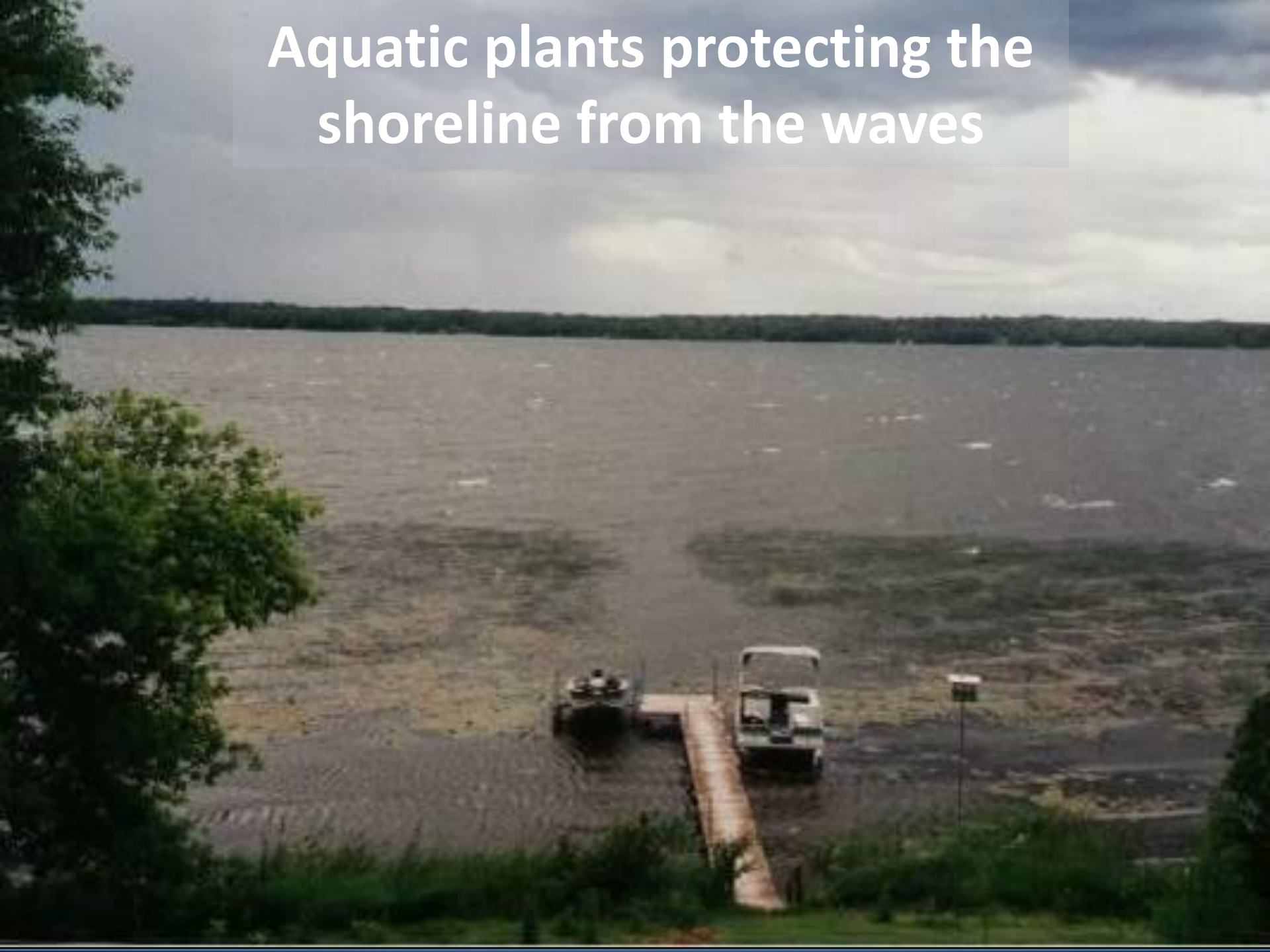


BUFFER



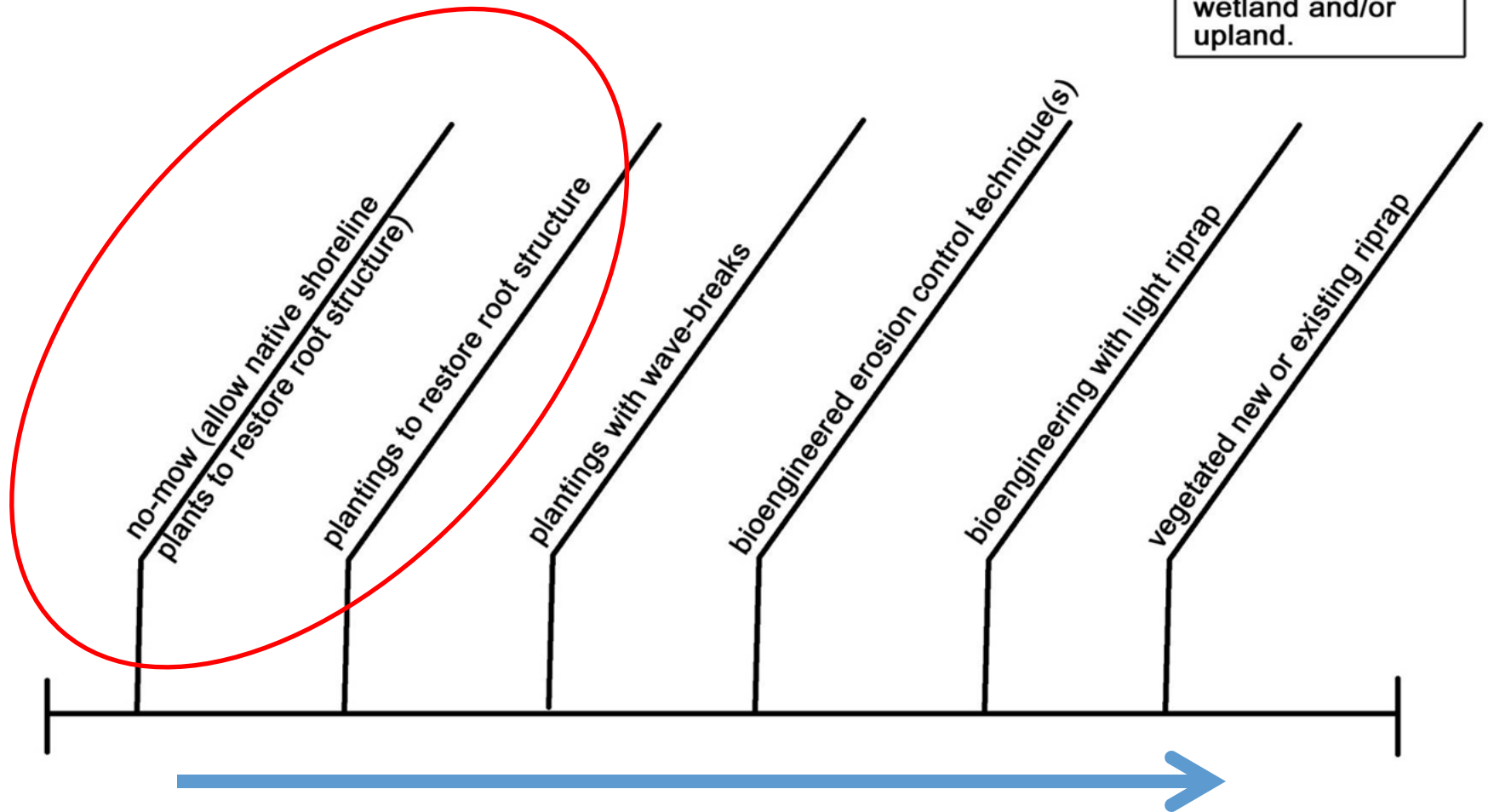
LAKE

Aquatic plants protecting the shoreline from the waves



Natural Shoreline Erosion Control Continuum

Plantings: aquatic, wetland and/or upland.



Increasing erosion problems and/or energy potential
Increasing complexity of solution



**Protection Technique:
Keep Natural Shoreline**



Simple Restoration Technique: Improve Shoreline

Before - 2001



Summer
2002



June
2009



Late Summer
2009

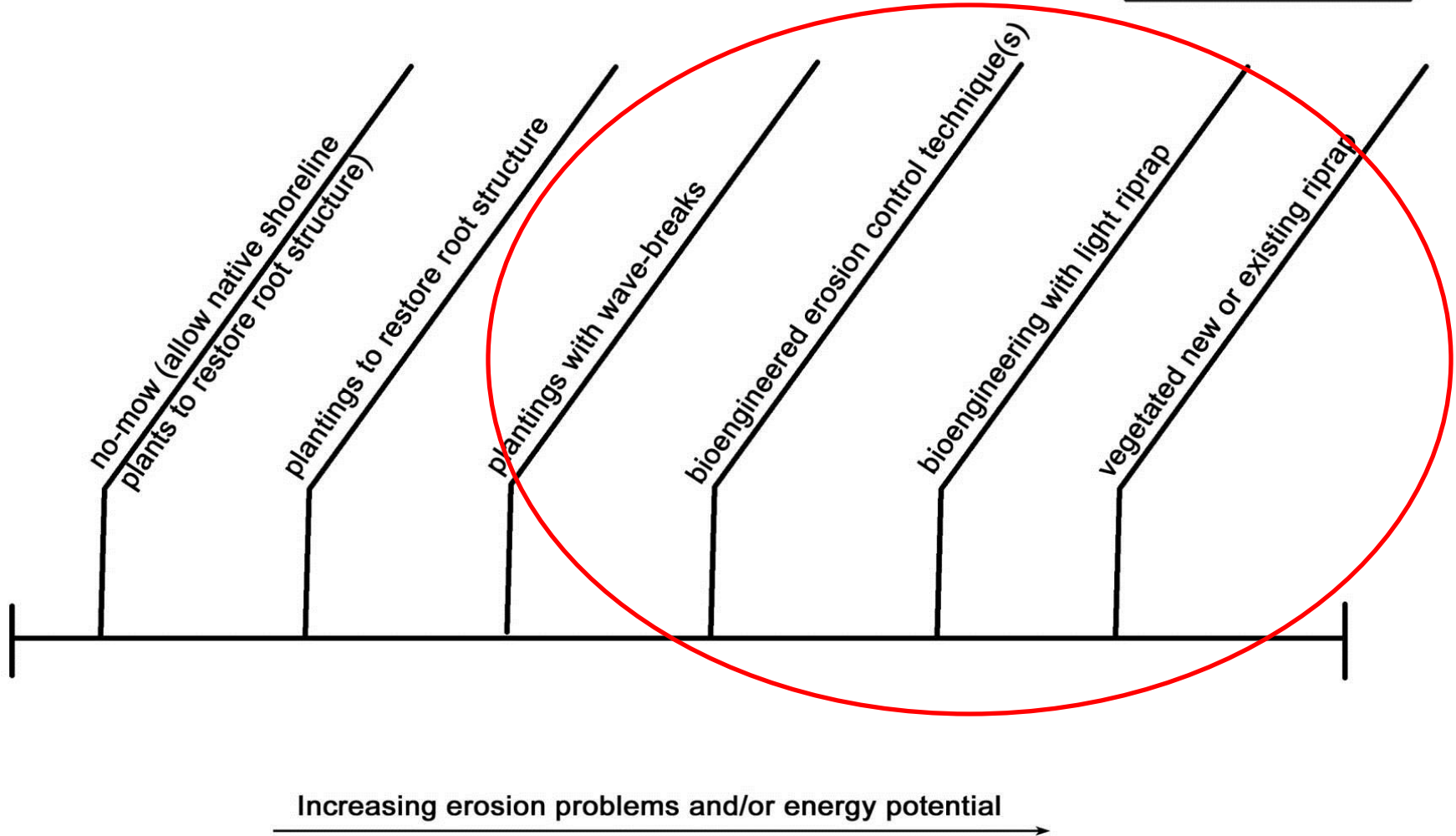
Summer
2010



07/30/10

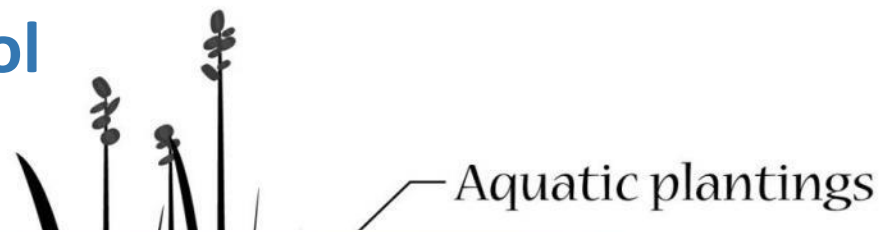
Natural Shoreline Erosion Control Continuum

Plantings: aquatic, wetland and/or upland.

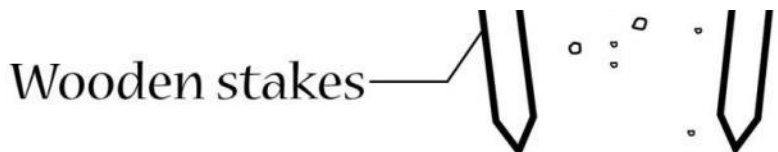


Soft Shoreline Erosion Control

Basic design



OH
1
2
3
4



Crash barrier
made from
native plant
material.

BIOLOG PLACEMENT AS WAVEBREAK



1 year later



06/18/2012



Pickrel Lake Site Before: 2013



Pickrel Lake Site Before: 2013



08/29/2013

2014: 1 week after planting



2014: 2 months after planting



08/21/2014

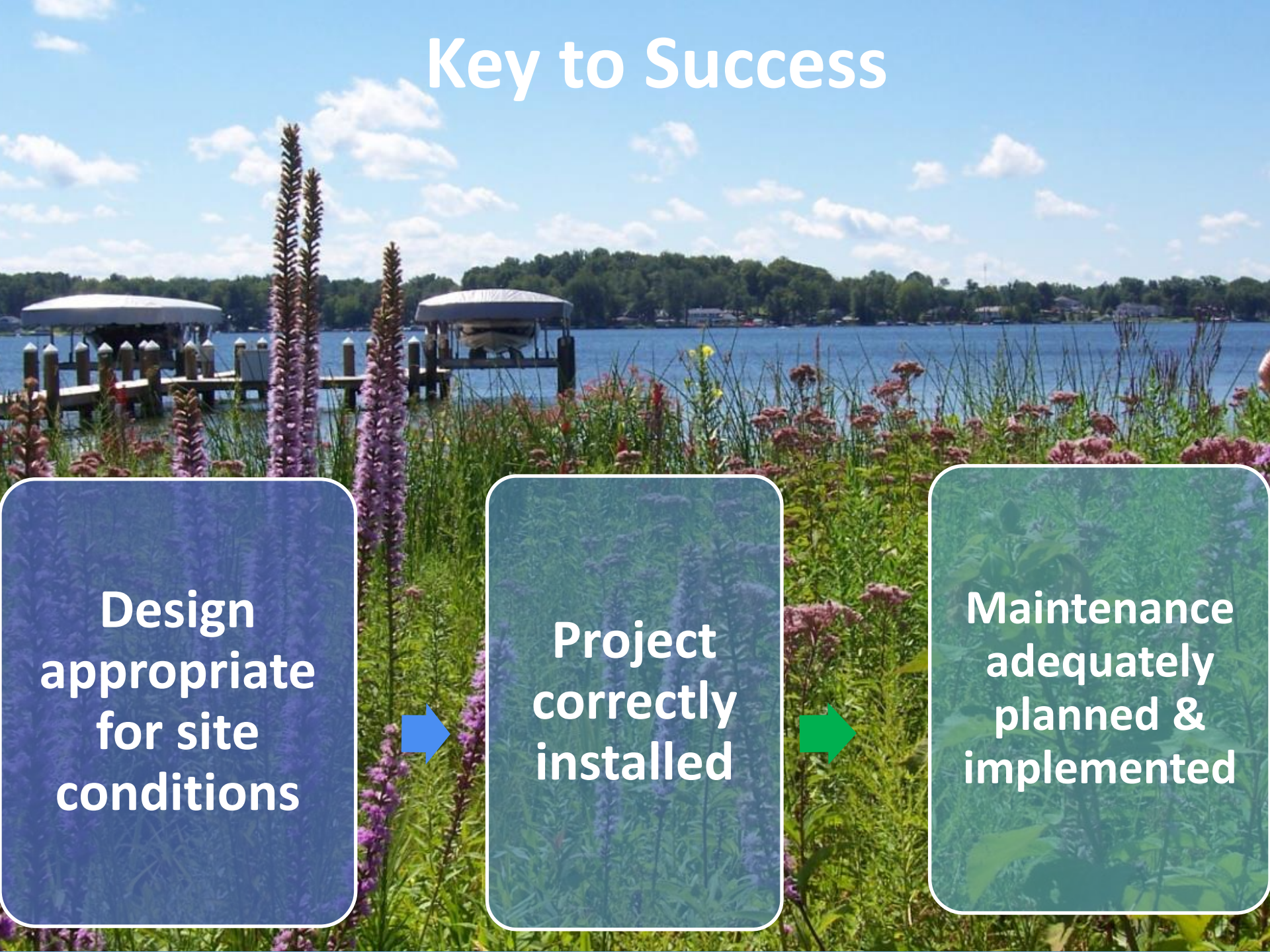


2015: Spring and Fall



10/01/2015

Key to Success

The background of the slide is a scenic photograph of a lake. In the foreground, there are several tall, purple, spiky flowers. In the middle ground, there are two wooden docks with white boat covers. The lake is blue, and the far shore is lined with green trees under a blue sky with scattered white clouds.

**Design
appropriate
for site
conditions**



**Project
correctly
installed**



**Maintenance
adequately
planned &
implemented**

Something
Wrong?



SCORE THE SHORE – Pilot Project

Data Form - 2015



Lake Name: _____ County: _____

Township: _____ Lake Sampling Site (Field ID) Number: _____

Volunteer Monitor Name(s): _____

Date(s) of Survey: _____



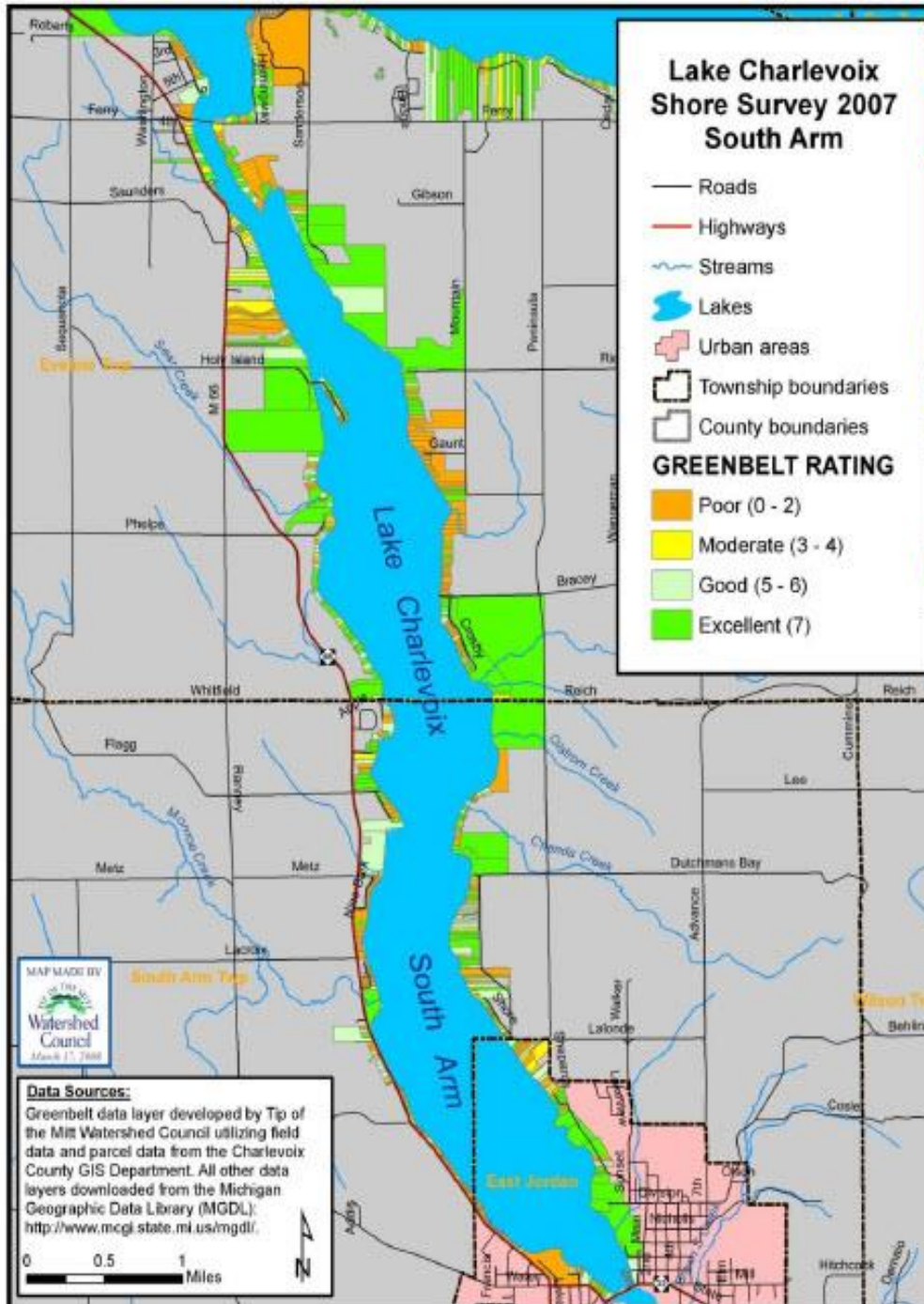
- Assesses health of the shoreline
- Identify priority areas

Lake Charlevoix Shore Survey 2007 South Arm

- Roads
- Highways
- Streams
- Lakes
- Urban areas
- Township boundaries
- County boundaries

GREENBELT RATING

- Poor (0 - 2)
- Moderate (3 - 4)
- Good (5 - 6)
- Excellent (7)

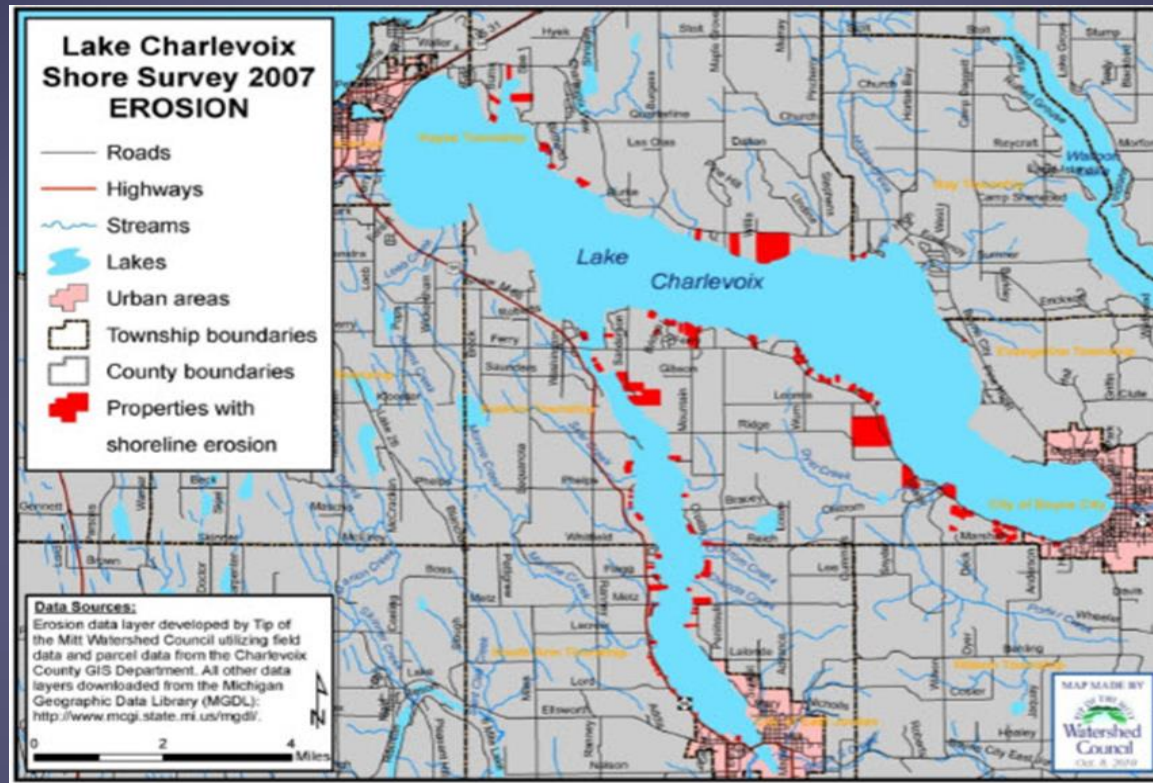


MAP MADE BY
The MTT
Watershed Council
March 17, 2008

Data Sources:
Greenbelt data layer developed by Tip of the Mitt Watershed Council utilizing field data and parcel data from the Charlevoix County GIS Department. All other data layers downloaded from the Michigan Geographic Data Library (MGDL): <http://www.mcgl.state.mi.us/mgdl/>.

0 0.5 1 Miles





- Share results
- Give tips on how the lake residents can improve scores.



MICHIGAN SHORELAND STEWARDS

[ABOUT](#) [SHORELAND GUIDE](#) [RATE YOUR SHORELAND](#) [LAKE ASSOCIATIONS](#) [MNSP](#)

UPLAND



The moist to dry area above the shoreline or the Ordinary High Water (OHW) mark. Grasses, sedges, rushes, ferns, wildflowers, shrubs, and trees may grow in both the transitional and upland zones.

BUFFER

SHORE

LAKE



RATE YOUR SHORELAND

Lakefront land owner?
Find out how well your shoreland is
protecting the health of your lake and find
out how you can make it better!

SHORELAND GUIDE

Discover the best practices used by shoreland
stewards (MNSP Website)



Having a dock surrounded by a
vegetated buffer is a great way to
gain access to the lake and maintain
a natural shoreline.

The Michigan Natural Shoreline Partnership (MNSP), a collaboration of state agencies, academia, nonprofit organizations and private industry, was formed in 2008 with the belief that a change was necessary in shoreline development practices in Michigan from high impacting methods that alter the natural riparian condition.



Michigan Natural
Shoreline Partnership
mishorlinepartnership.org

SEARCH



Questions?

