

# CLAA Natural shoreline project

CLAA is proposing to preserve and increase our natural shoreline and near shore areas through supporting individual owner projects and encouraging lake friendly behaviors.

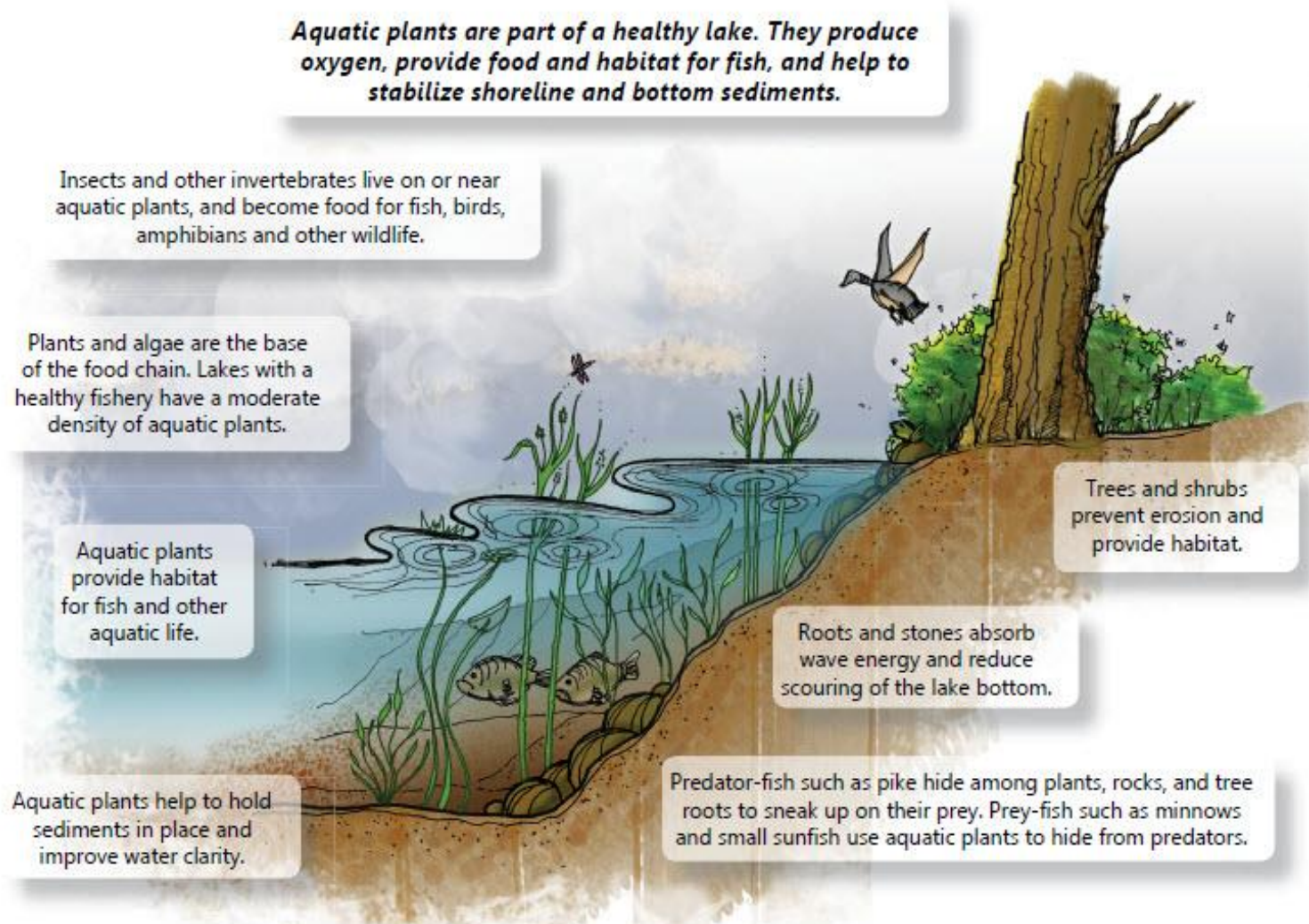
***Flourishing shorelands provide some of the most effective protection for the lakes and streams of Wisconsin.***

*When trees and branches fall in the water, they form critical habitat for tiny aquatic organisms that feed bluegills, turtles, crayfish and other critters. Additionally, a fallen tree is like a dock for ducks and turtles, as well as serving as a perch for kingfishers, osprey and songbirds.*



**The loss of shorelands is the number one threat to lake health**

# Why Protect, restore the shorelands



**Water Quality, Erosion control, Habitat preservation, Natural Beauty, Public Safety, Property Value**

Rule 1: Treat lake as an ecosystem  
Rule 2: Lakeshores are our rainforest



**We are all stewards of the shore**

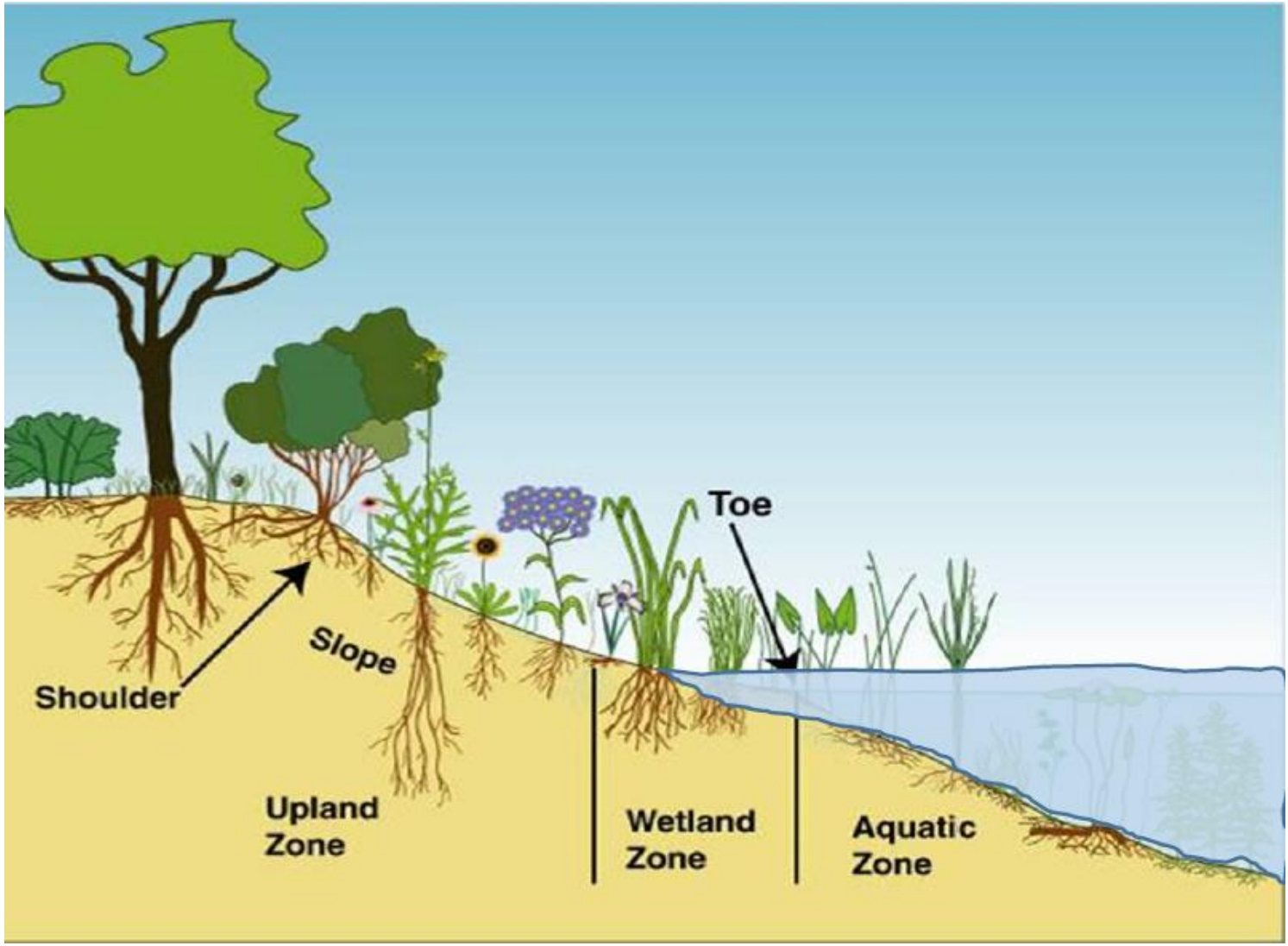
# We all have a role

**Rule 3:** Provide a new vision  
of lakeshore



**Every member should understand their place in this ecosystem and the opportunities they have to both maintain and improve Clark Lake**

# Components of the Shoreland



# Clark Lake

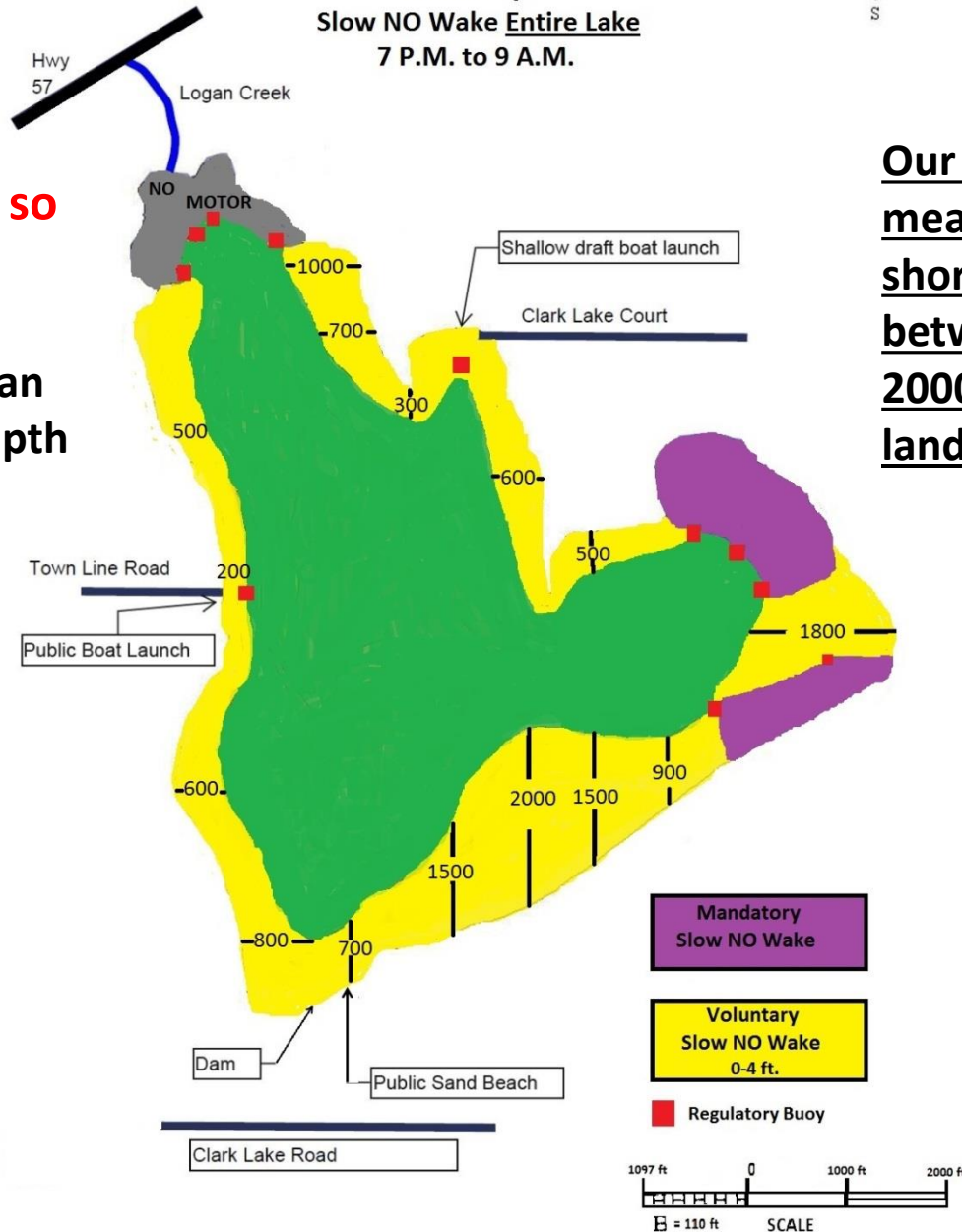
Voluntary  
Slow NO Wake Entire Lake  
7 P.M. to 9 A.M.



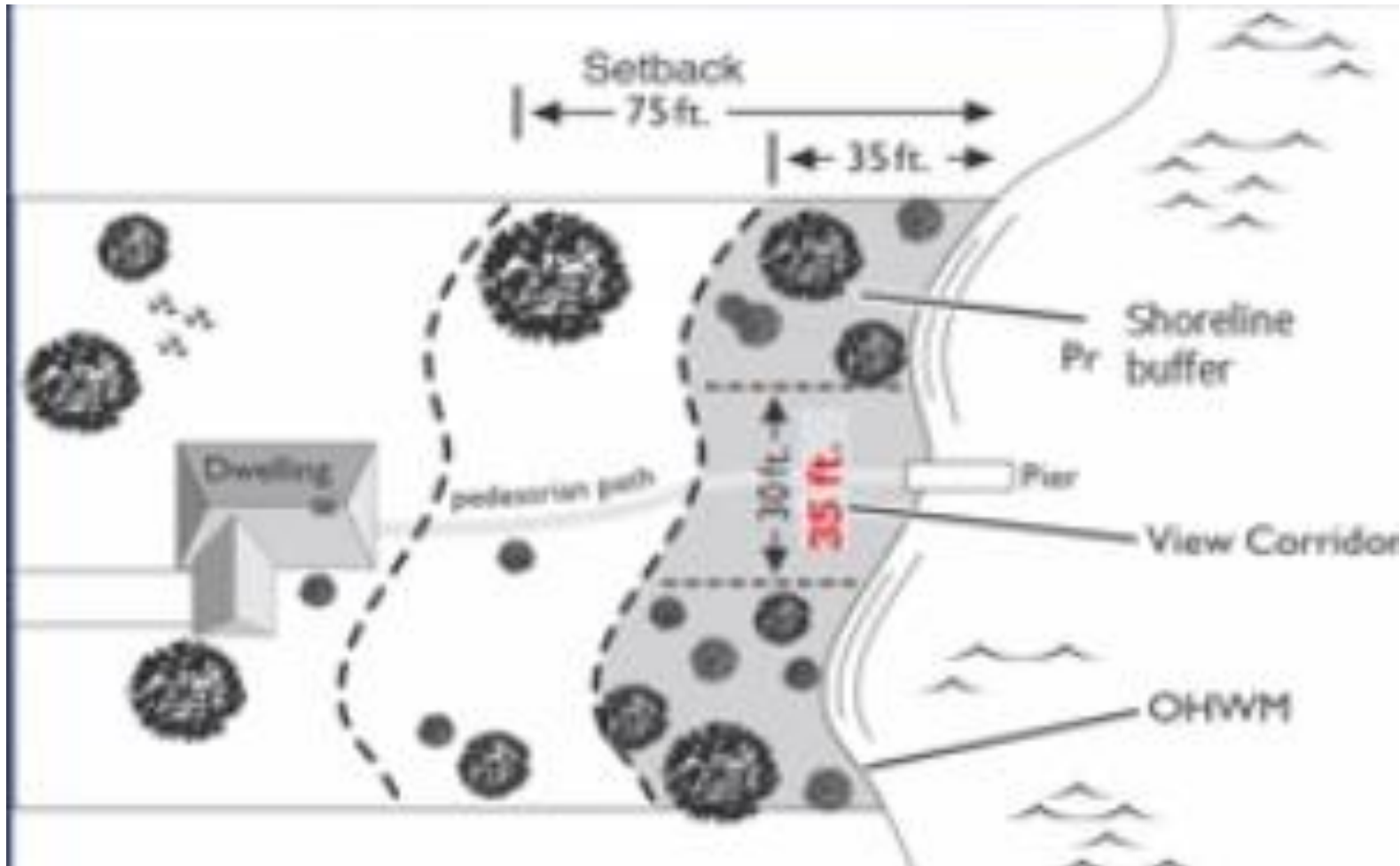
**Our “near shore” is not so near to shore**

**Our shallow lake means the “near shore” extends between 200 and 2000 feet beyond land**

The emergent plant zone can be up to about 5 feet of depth which corresponds to our voluntary no wake zone.



# Components of the shore



**Note the dwelling, pedestrian pathway, View corridor, shoreland vegetation buffer, location of the pier within the viewing corridor.**

**This example has a continuous view corridor and only a 35 foot buffer.**

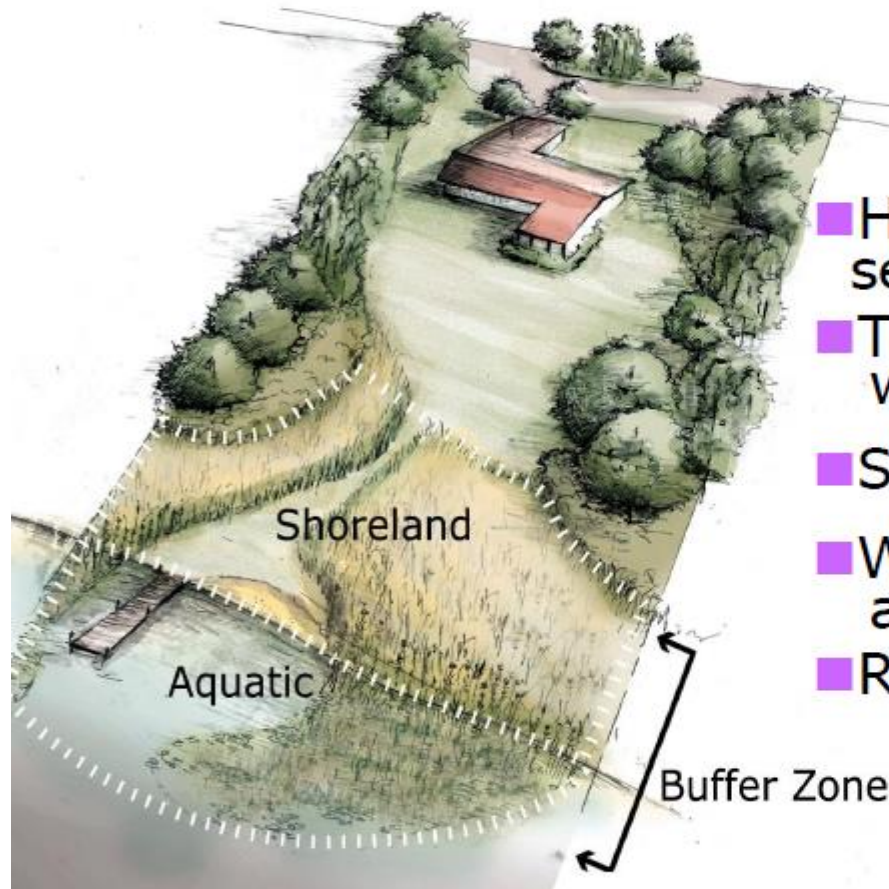


# Component of the shore: Buffer



# The buffer zone along the shoreline is the key.

## Rule 5: Importance of a buffer zone

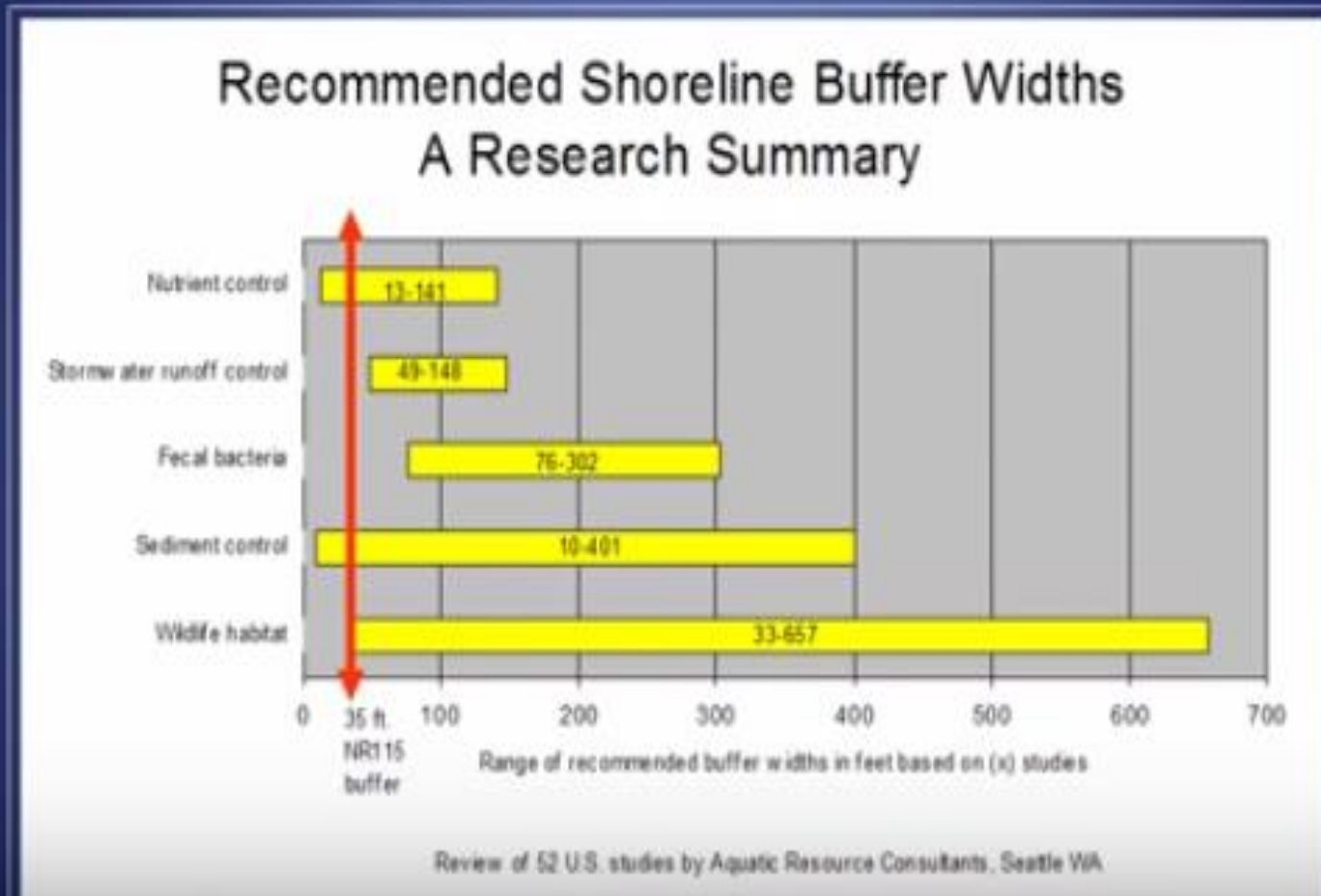


- Help clarity by holding sediment in place
- Take up nutrients that would be used by algae
- Shelter for wildlife
- Wildlife food and nesting areas
- Reduce erosion & runoff

The width of the buffer is determined by the slope, nearness of the impervious surfaces to the water, existing threats and expected benefits from the buffer, growing conditions and other intended uses within the transition zone and rest of the property.

# The current ordinance minimums are inadequate

## What can buffers do if they're big enough?



**Note that the 35 foot level is minimally effective for nutrient runoff and sediment control. Protection from fecal contamination would require 3-4 times this distance.**

# What is happening to the transition zone buffer?

Replacement of the natural vegetative buffer with lawn/ turf grass



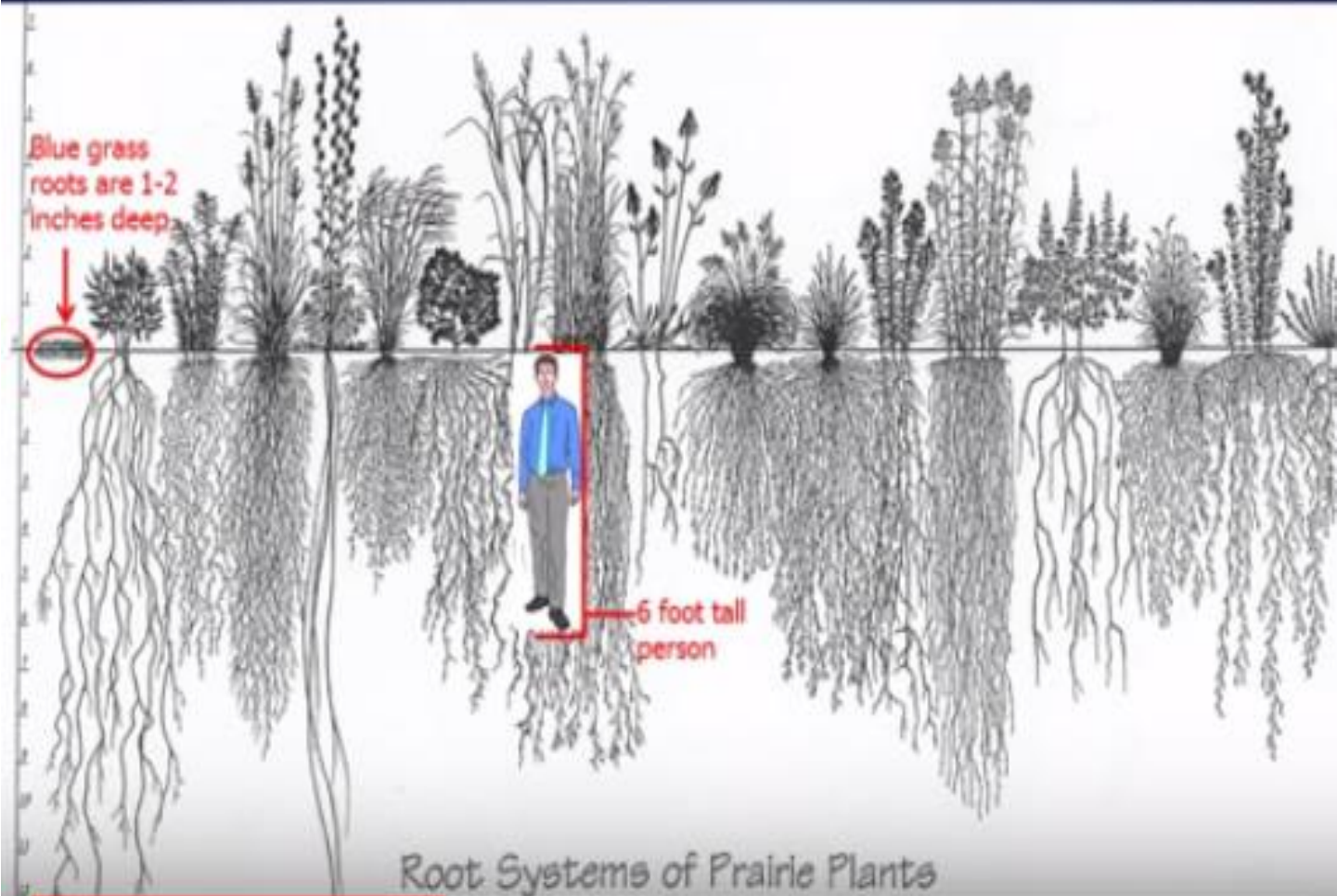
# Why Native Plants



- Conservation of local genetic diversity
- Ability to provide food & shelter for native wildlife
- Improved health & vigor
- Increased survival rates
- Reduced maintenance costs

**Native: variety, adapted, less maintenance, no fertilizer, secure bank, filter pollutants, cool water, support wildlife, provides privacy, noise, discourage geese .**

# Shoreline buffers



**Native: variety, adapted, less maintenance, no fertilizer, secure bank, filter pollutants, cool water, support wildlife, provides privacy, noise, discourage geese .**

Most gardens involve choosing plants that appeal to you, altering the soil, planting to highlight your choices with mulch, etc. then fertilizing, weeding and maintenance

## Rule 7: Restoration vs. Gardening



The natural buffer involves you choosing plants best adapted to the area, creating a dense mat of intertwined plants and deep roots.

# What about the Near shore area: Erosion

There are many causes of accelerated erosion but the two most destructive actions to the lake ecosystem are:

- 1) *Native vegetation removal - land and aquatic.*
- 2) *Hardening of the shoreline (example: seawalls).*

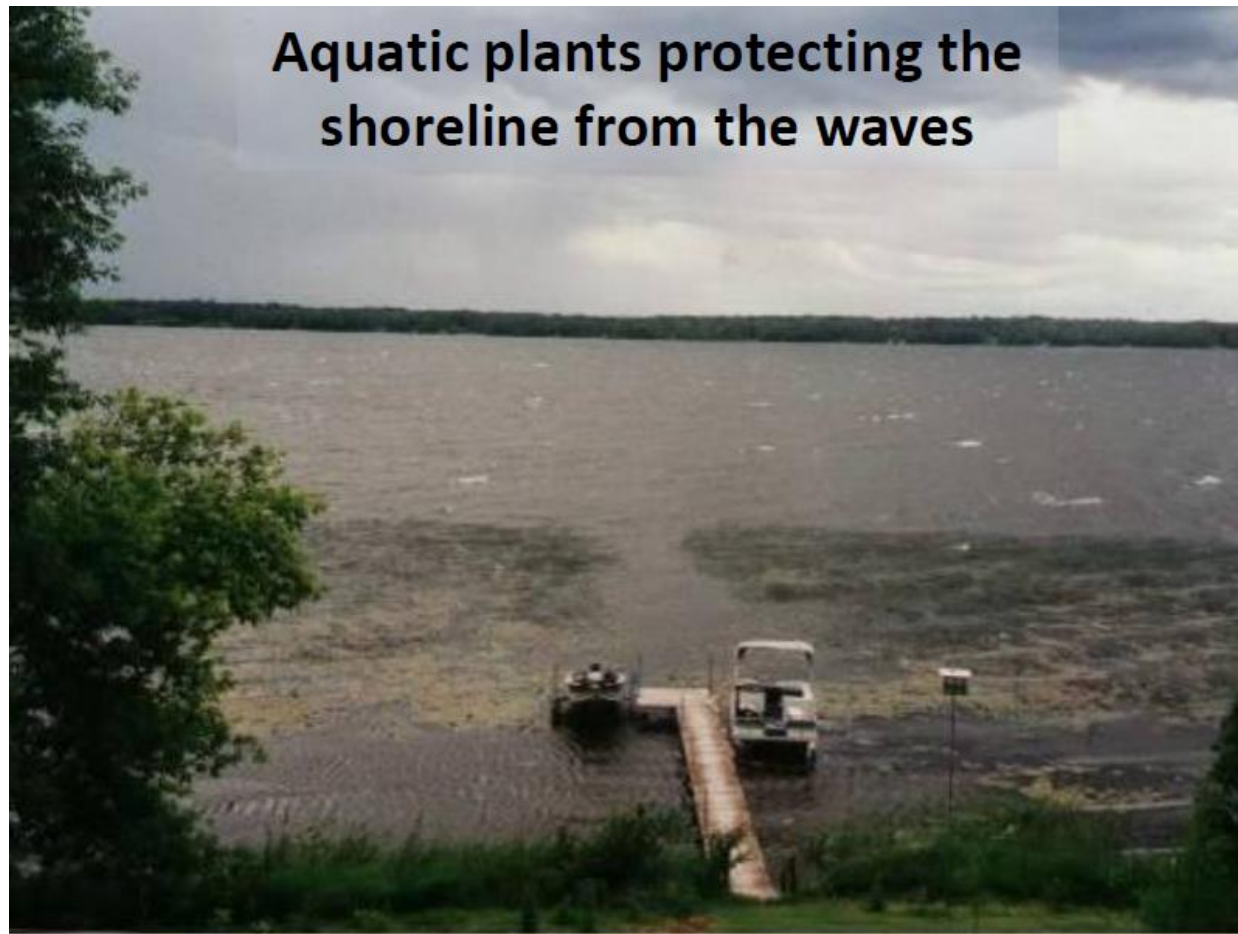






- Seawalls =**
- Barrier for animal movement
  - Creates scouring effect
  - Wave flanking

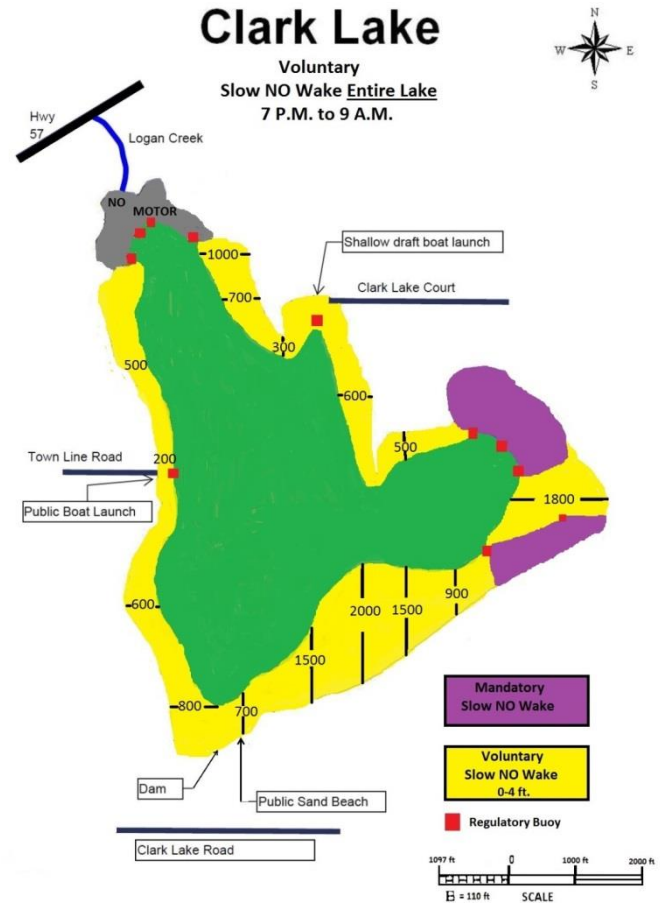
# Emergent aquatic plants stabilize bottom and mitigate waves and wind



**The location of docks, swim rafts, boat moorings, boat lifts and access pathways all can have an effect on near shore health**

# Boats can contribute to near shore problems

- Bottom disruption
- Destruction aquatic plants
- Erosion from wake; especially where poor vegetation
- Pollutants
- Invasive species introduction
- Spawning bed disruption
- Shore bird fright



# What about the upland

Still part of the shoreland within 1000 ft. of the lake

Front line in the battle to protect water quality and the lake

## **Runoff**

Impervious surfaces

Compacted soils

Grading during construction

Removal of trees and shrubs

Removal of natural plants and replacement with lawns

## **Pollutants**

Driveway treatment,

Fertilizer

Toxin disposal

## **Septic system maintenance**

**Healthy Lakes has projects for this area also.**

**Our natural defenses are declining as their need is increasing.**

## Cumulative Impacts:

**Death by a thousand cuts**



**More buildings, larger homes, more days of use, more visitors.**

# What can we do?

Reduce the workload of the buffer.

## *Curb Pollutants*

Curb pollutants at their source – fertilizers, household toxins, eroding soils, malfunctioning septic systems.

## *Cut Runoff*

Cut the amount of runoff that picks up pollutants and carries them to the waterway by minimizing the hard surfaces that create runoff.

## *Capture & Cleanse*

Capture and cleanse pollutant-carrying runoff before it reaches the waterway – with shoreland buffers, rain barrels or rain gardens.

**Many of these are part of Healthy Lakes but today we are focusing on vegetation: buffer, erosion, aquatic plants and bioengineering**

# The choices are all yours

Different techniques can accomplish more than one goal

A design should incorporate

Shoreline stabilization

Homeowner needs  
(swimming, boat access,  
relaxing areas, view)

Fish and wildlife habitat



The next several slides will show progressively more complicated problems and solutions

## Protection

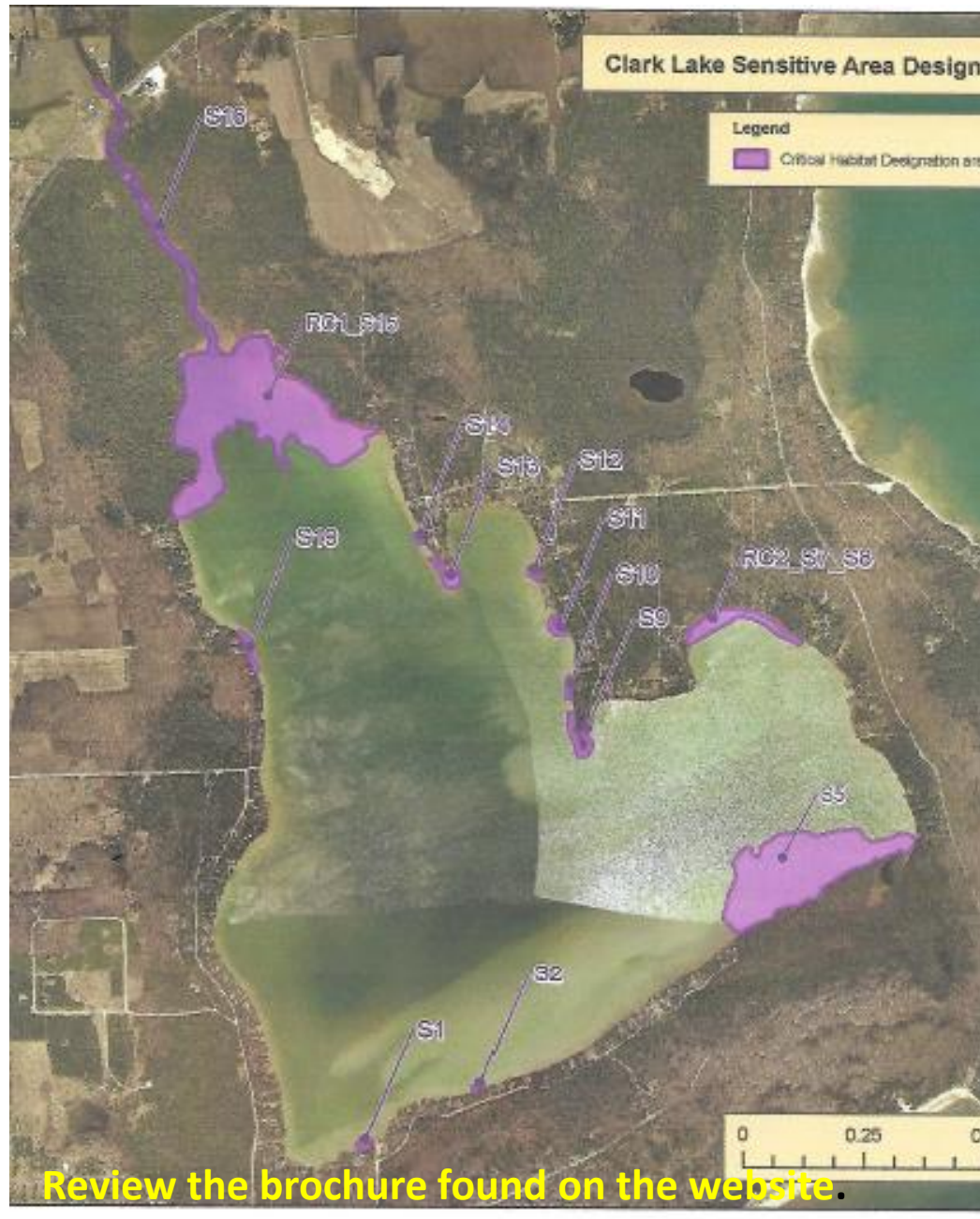
- No serious erosion problem
- Native vegetation present
- Diversity of structure
- Shoreland buffer requirement met



The simplest is just protecting what is already okay. This requires attention to behaviors.



**Most Clark lake sensitive/ critical areas fall into the protection category .**



# Natural Recovery

- Wet margins of lake drawdown zone
- Native elements present
- Turf grasses not well established
- Areas screened from view
- Discourage trampling
- Look for opportunities to see results and promote



Can recover with mostly support and allowing the native plants to fill in.

**No Mow: to allow natives to infiltrate and thrive.**

**Limit viewing corridor and provide protective pathways**

The restoration will depend on the owner's desires and the complexity of the problem, especially any erosion

## Accelerated Recovery

- Turf grass well established
- No natives present
- Exposed soil
- Lots of traffic
- Sand beach maintained
- Quick results wanted



**Remember: Conservative viewing corridor and land and water access corridors are an inexpensive and essential step for all of us.**

# Shoreline intact

## Simple Restoration Technique: Improve Shoreline

Before - 2001



Summer  
2002



Photos: Julia Kirkwood

**Establish a buffer of native vegetation.**

# Steeper slope than last slide: Shoreline threat or early disruption (rock wave breaks in place in this example)



## Bio-engineering Minor Project Category

Erosion but requires some shore support. Bioengineering using Coir logs for 3-4 years until vegetation adequate.

This buffer is using the coir blanket with plantings.

Ford Lake,  
Washtenaw County



# Soft Shoreline Erosion Control

## Basic design

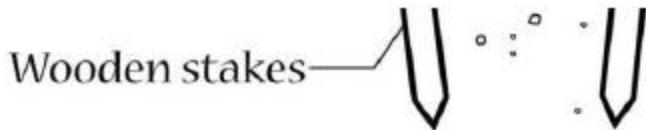


Aquatic plantings



Coir logs are a coconut product. They can be shipped direct to site or purchased at locally; they do have to be secured in a special manner. Usually degrade in 3 years.

OH  
r  
h  
a



Wooden stakes

Brush bundle  
made from  
native plant  
material.

## BIOLOG PLACEMENT AS WAVEBREAK

# Same site later in year





# Same site 1 year later.

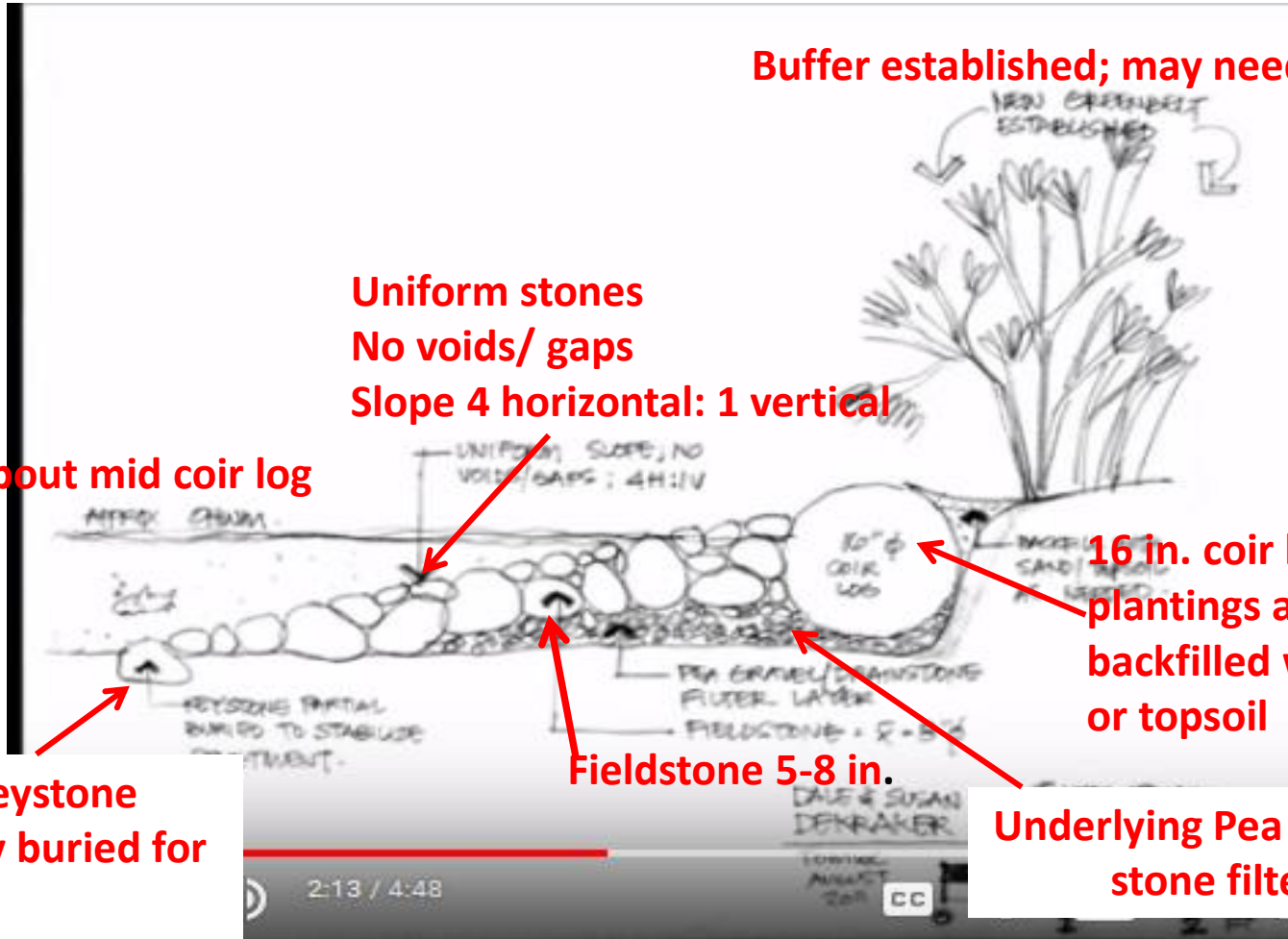


**Same site 2 years.**



Rip rap, properly installed, may be needed.

# Bioengineered with light rip rap



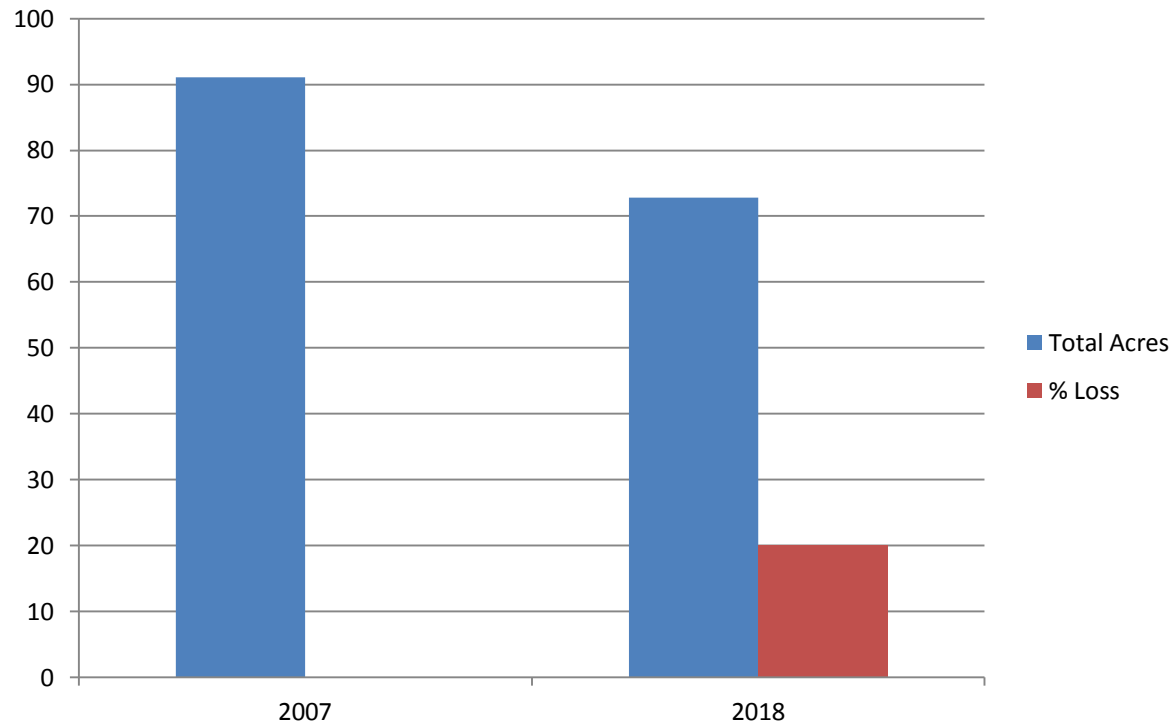


Vegetation in new or existing rip rap

**Consider this if you already have rip rap that has been properly installed.**

**This rip rap is installed on the southwest shore of Clark Lake; some bulrush is even growing between the stones**

# What to do for the near shore: Aquatic plants



Comparison of Clark Lake bulrush between 2007 and 2018

Overall a 20% loss of this near shore emergent

**The bulrush solution will require change in behavior and a combination of individual and public policy.**

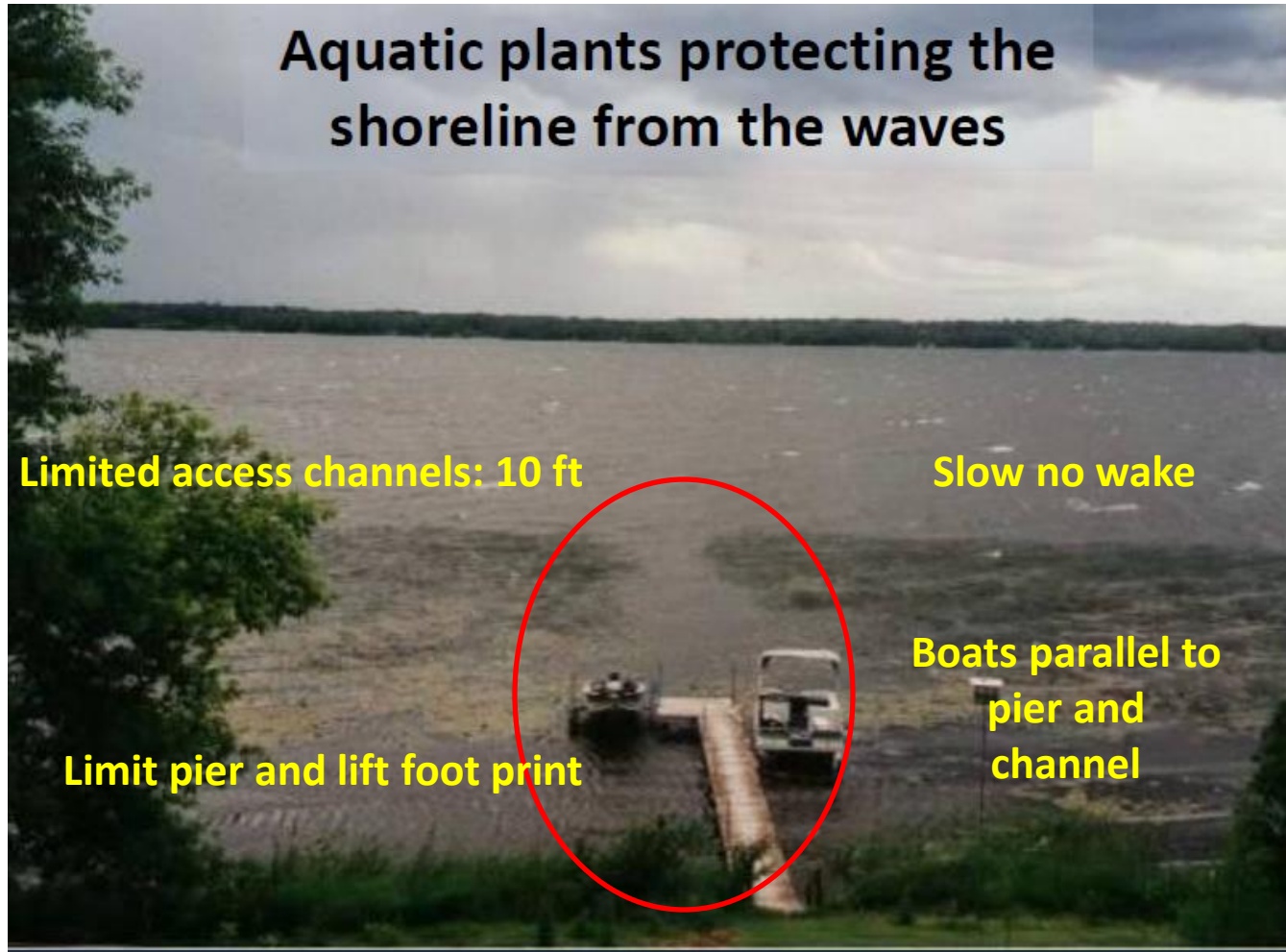
# Littoral Zone Restoration

- Change use patterns
- Plantings
  - Seed bank
  - Plants need to be weighted down
  - Protection - wave reduction structures
- Alternatives - Fish habitat structures



**Change use patterns:**  
**Reduce all near shore activity**  
**Slow no wake**  
**Single file**  
**Limited access channels: 10 ft.**  
**Reduce pier and lift foot print**

# Limiting damage to aquatic plants is the most effective restoration



**Minimize all near shore activity**

# DNR Healthy Lakes

## HOW WILL YOU IMPROVE YOUR LAKE?

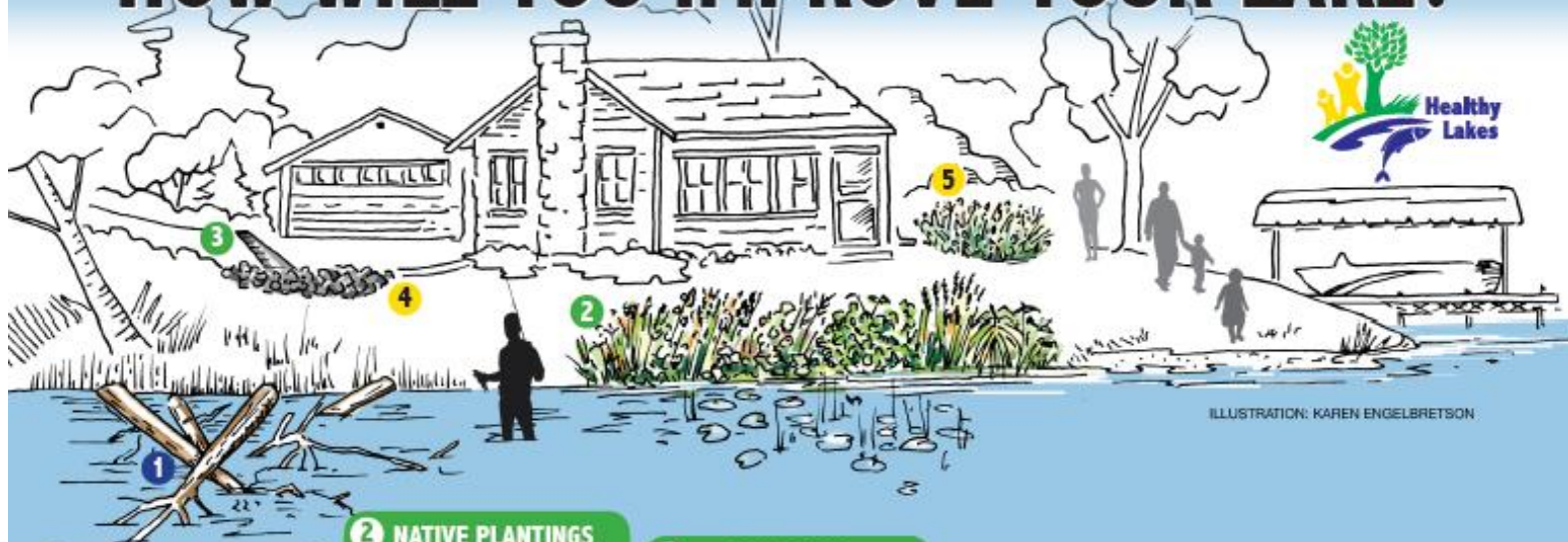


ILLUSTRATION: KAREN ENGELBRETSON



### 1 FISH STICKS

#### CREATE FISH AND WILDLIFE HABITAT.

Fish Sticks are feeding, breeding, and nesting areas for all sorts of critters – from fish to song birds. They can also prevent bank erosion – protecting lakeshore properties and your lake.



### 2 NATIVE PLANTINGS

#### IMPROVE WILDLIFE HABITAT, NATURAL BEAUTY AND PRIVACY, AND SLOW RUNOFF.

Native Plantings include grasses and wildflowers with shrubs and trees. Choose a template based on your property and interests – from bird/butterfly habitat to a low-growing garden showcasing your lake view.



### 3 DIVERSION

#### PREVENT RUNOFF FROM GETTING INTO YOUR LAKE.

Diversion Practices move water to areas where it can soak into the ground instead. Depending on your property, multiple diversions may be necessary.



### 4 ROCK INFILTRATION

#### CAPTURE AND CLEAN RUNOFF.

Rock Infiltration practices fit in nicely along roof drip lines and driveways and provide space for runoff to filter itself. They work best if your soil is sandy or loamy.



### 5 RAIN GARDEN

#### CREATE WILDLIFE HABITAT AND NATURAL BEAUTY WHILE CAPTURING AND CLEANING RUNOFF.

Rain Gardens multi-task - they improve habitat and filter runoff while providing a naturally beautiful view.



IMPROVE HABITAT AND NATURAL BEAUTY ~ SLOW, DIVERT, CLEAN AND FILTER RUNOFF

Templates to help you do it yourself .

Some financial support also available



# No Mow Zone

*Try a No Mow zone to see how the buffer will fit into your property and lifestyle.*

CLAA Can help with evaluation,  
planning, financing options, education,  
coordinate with neighbors, DNR  
liaison, public policy.

**Contact Mark Weisse for more  
information**

**[patty62weisse@gmail.com](mailto:patty62weisse@gmail.com)**

**608-334-9622**

# Start Today

Healthy Lakes: *if enough interest CLAA will apply for grant in 2020*

Visit our websites

[CLAA Website](#) you can find the WQVC link under “About Us”/”Committees”/ “Water Quality and Vegetation “/ link in third paragraph

[WQVC Website](#) You can follow this link directly and then navigate to the Natural Shores/Healthy Lakes pages.

The [DNR link](#) is on the Healthy Lakes page.

**Contact Mark Weisse for more information**

[\*\*patty62weisse@gmail.com\*\*](mailto:patty62weisse@gmail.com)

**608-334-9622**