

# Healthy Lakeshores for Better Lake Health



Based on Findings From the 2007 National Lakes Assessment  
Teri Holland, Illinois Environmental Protection Agency

## CLA Lagoon & Peninsula Restoration Project Benefits of Native Wetland Buffer Plants



Native wetland plants are very deep rooted plants that grow a bit upland from the water line to protect the vulnerable edge soils from washing away. One of the biggest problems with our current level of development and the resulting flash flooding is the huge amount of sediment that is being loaded into our waterways and wetlands. If all CLA shore owners provided a shoreline buffer of native plants like these it would help prevent further soil erosion and improve water quality. Grasses and forbs (flowers) balanced together make up the vital lakeshore buffer. Yellow coneflower, new england aster, purple coneflower, blackeyed susan, and coreopsis are some of the flowering species that were planted here.



Blackeyed susan

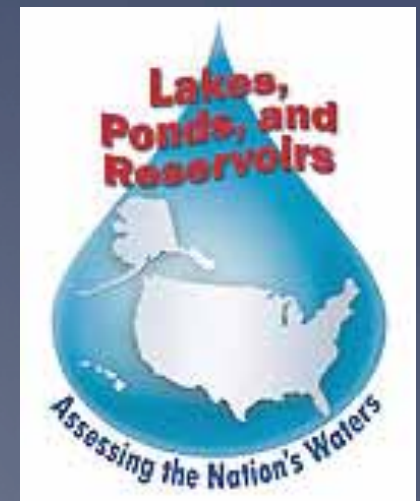


Purple coneflower

# 2007

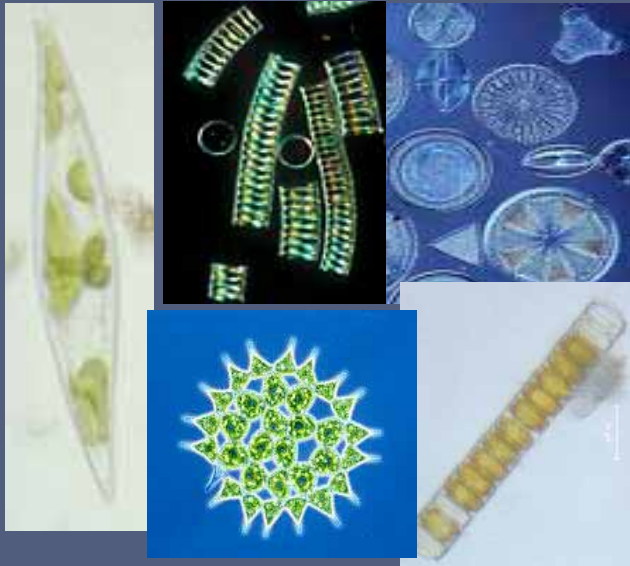
## National Lakes Assessment (NLA)

- ❖ First statistical survey of the condition of nation's lakes, ponds, and reservoirs.
- ❖ 1,028 randomly-selected lakes sampled; represent nearly 50,000 lakes nationwide (> 10 acres and > 1 meter deep).
- ❖ Sampled for:
  - ❖ Water Quality
  - ❖ Biological Condition
  - ❖ Habitat Condition
  - ❖ Recreational Suitability

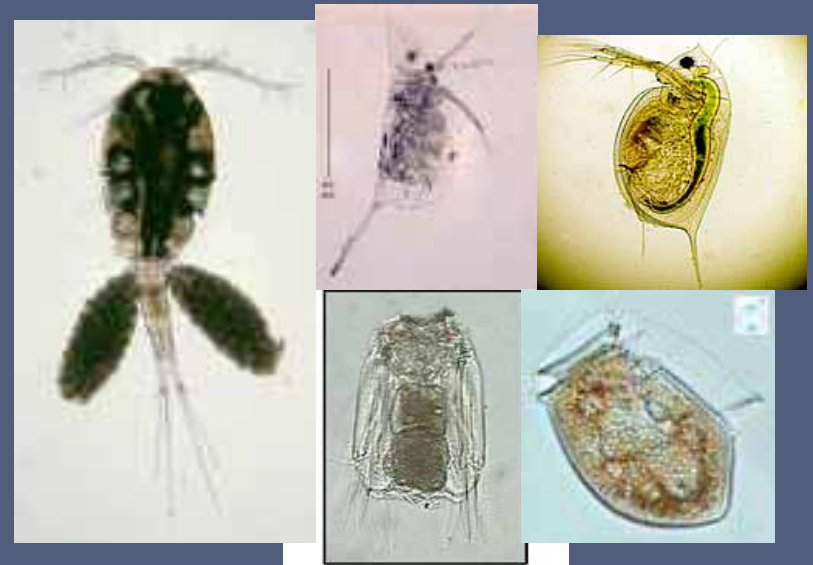


# Determining Biological Health

Phytoplankton (algae)

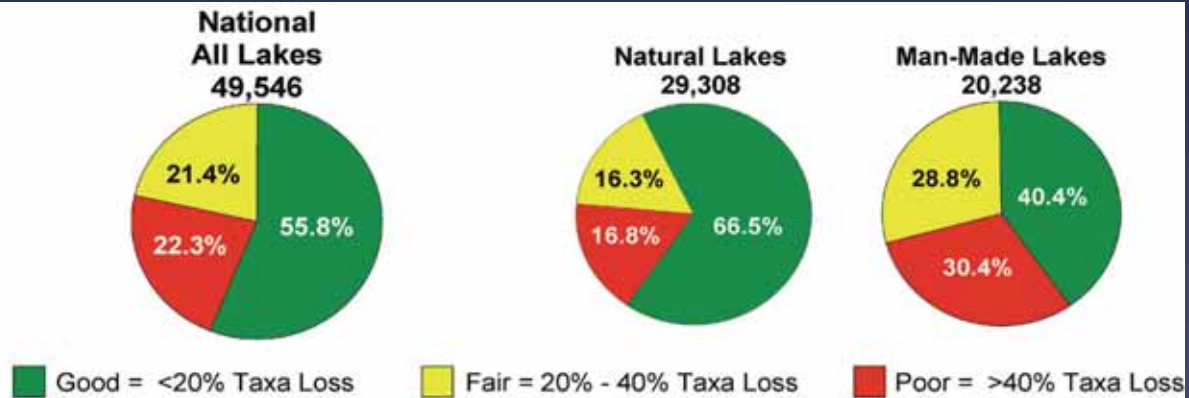


Zooplankton  
(microscopic animals)

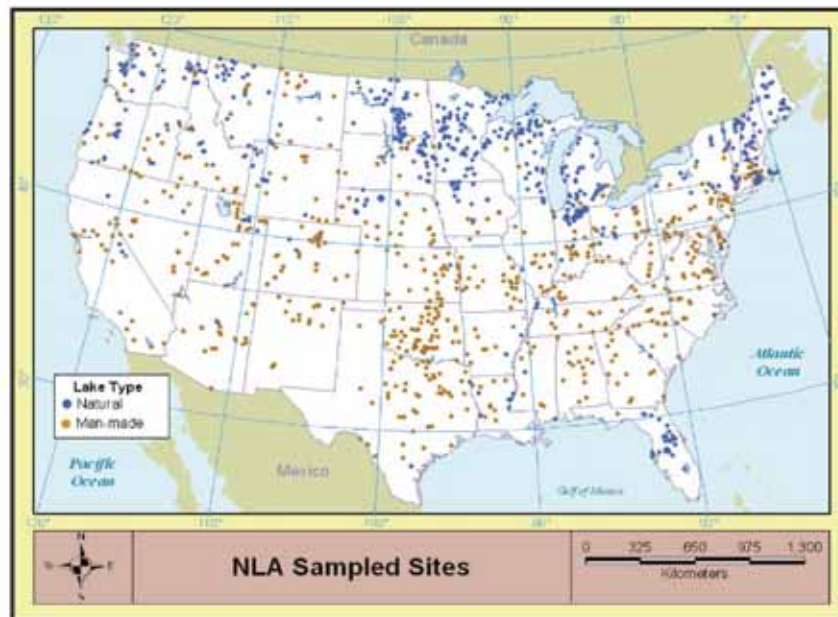


- ❖ Observed/Expected Ratio
- ❖ Compared to Reference Lakes
- ❖ Good < 20% loss, Fair 20 – 40 % loss, Poor >40% loss

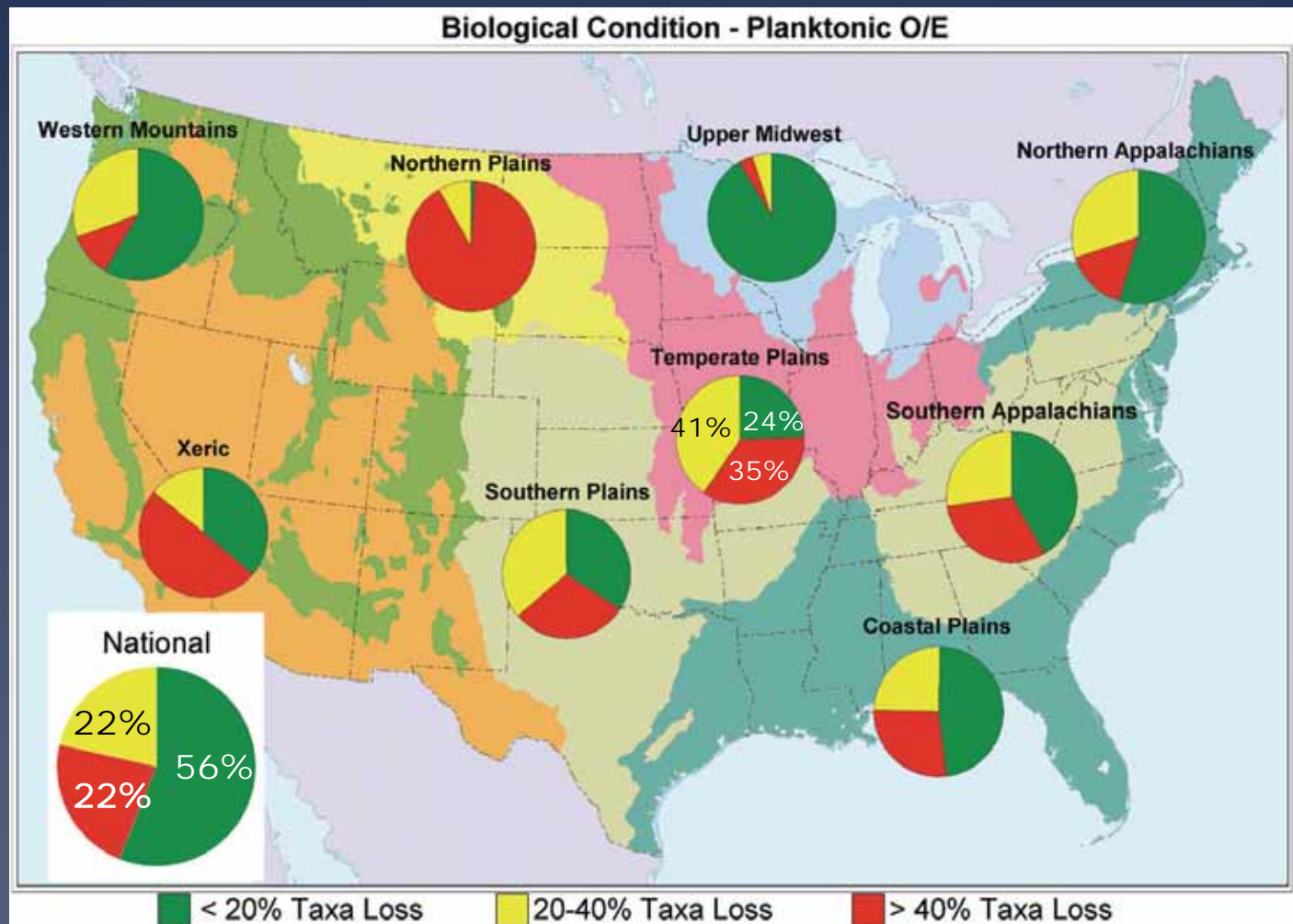
# National Summary of Biological Condition



**National Summary**  
**56% Good**  
**21% Fair**  
**22% Poor**



# Regional Comparisons of Biological Condition



# Key Stressors Identified

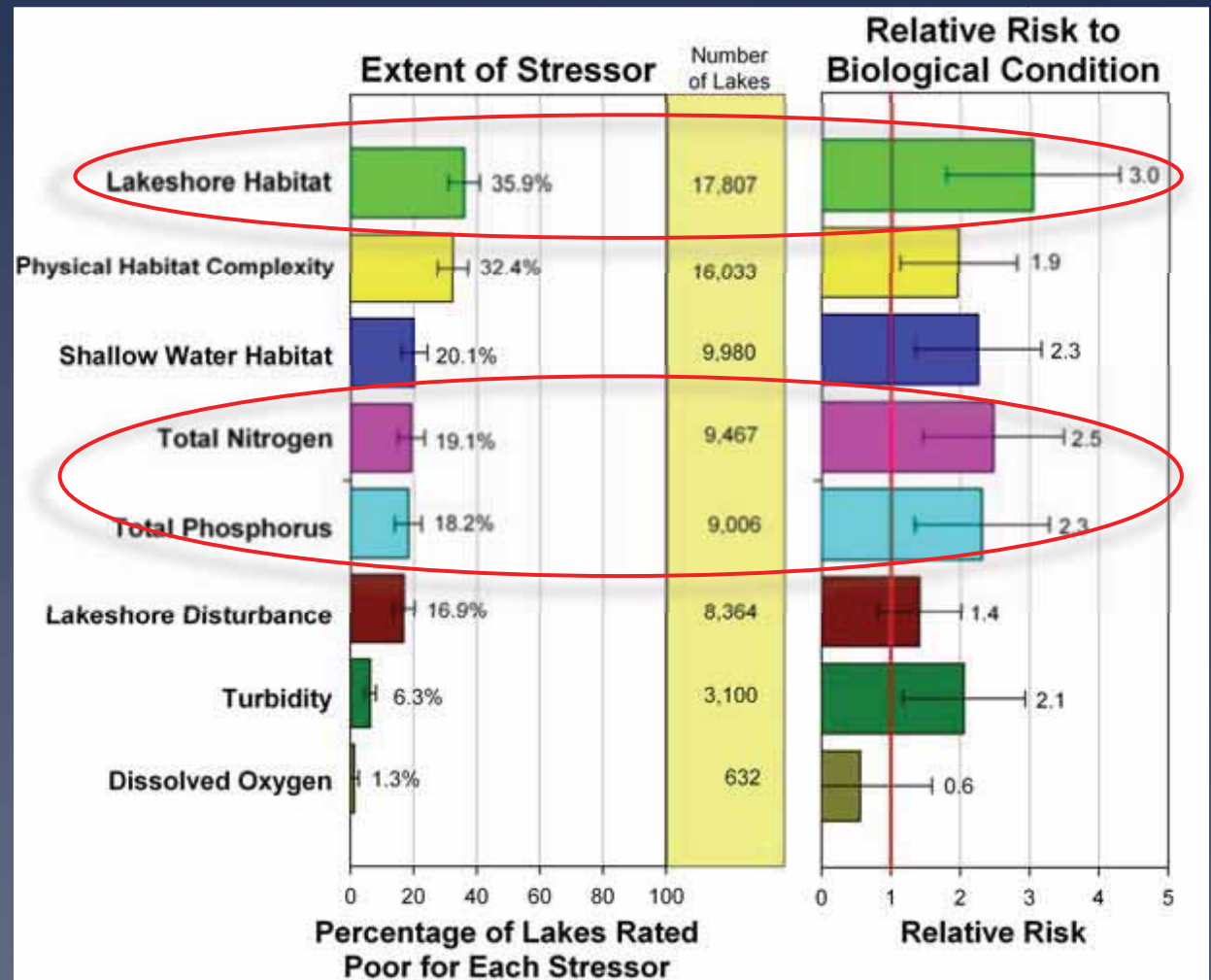
(Physical / Chemical Factors that Negatively Affect Biological Condition)

## #1 Problem = Poor Lakeshore Habitat

- > 1/3 lakes exhibit poor lakeshore habitat (36%)
- Poor biological condition 3X more likely

## #2 Problem = High Nutrient Levels

- ~ 20% of lakes have high nitrogen or phosphorus levels
- Poor biological condition 2 ½ X more likely



# CBS



....And in Top News,  
poor shoreline habitat and  
excess phosphorus major  
causes of lake problems

*Sage Stessel*

# Implications

Quantified the biological condition of lakes on national and ecoregion scales.

- ❖ Nationally, 56% of lakes in good biological condition
- ❖ In Ecoregion, only 24% of lakes in good biological condition

Quantified the extent of lake problems

- ❖ Less than half (45%) of the nation's lakes have good lakeshore habitat

Prioritized the problems – which in turn helps prioritize management efforts

Established a baseline for future monitoring comparisons

- ❖ Next NLA 2012 – see if lakes are getting better or worse



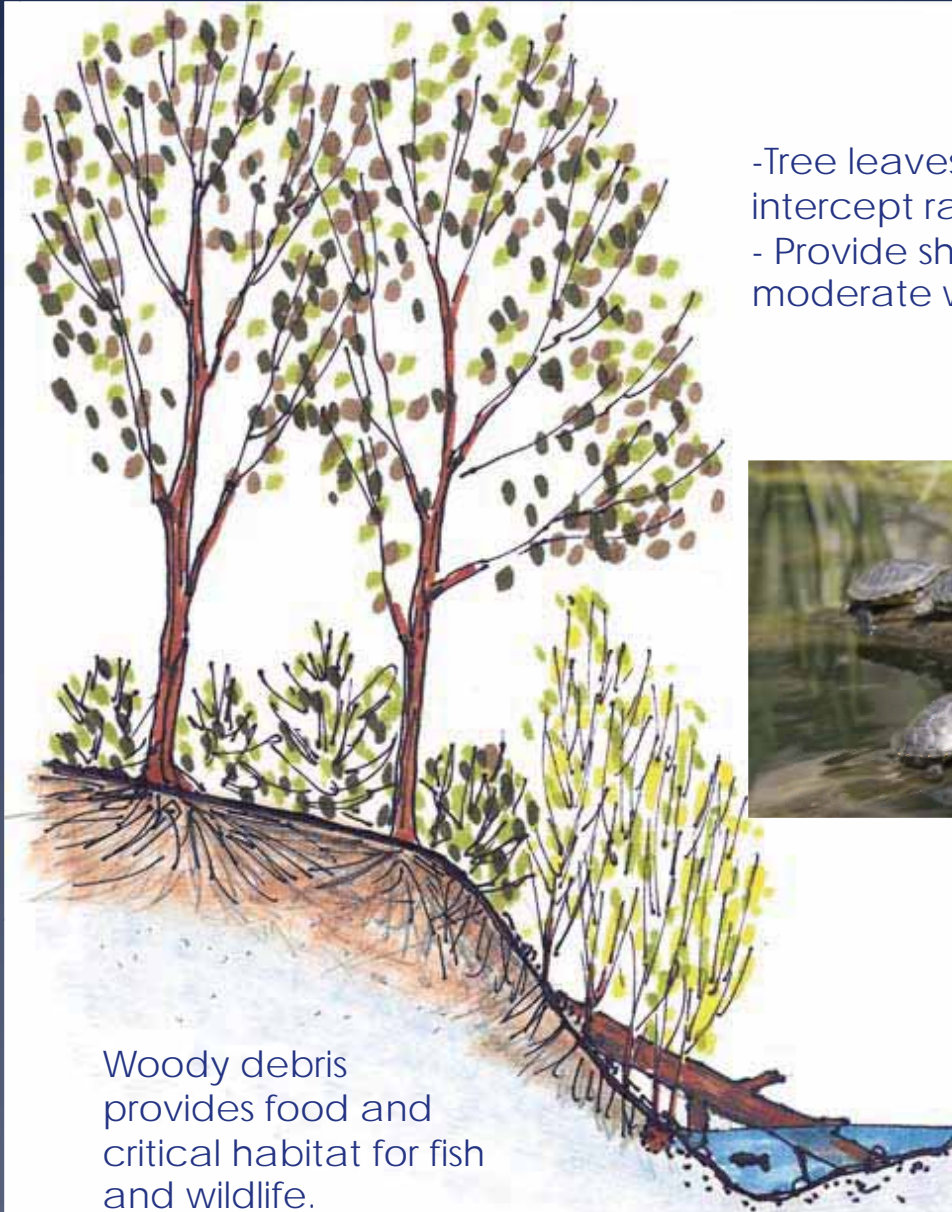
# What is Good Lakeshore Habitat?

also provide food and shelter for birds, amphibians, insects and mammals.

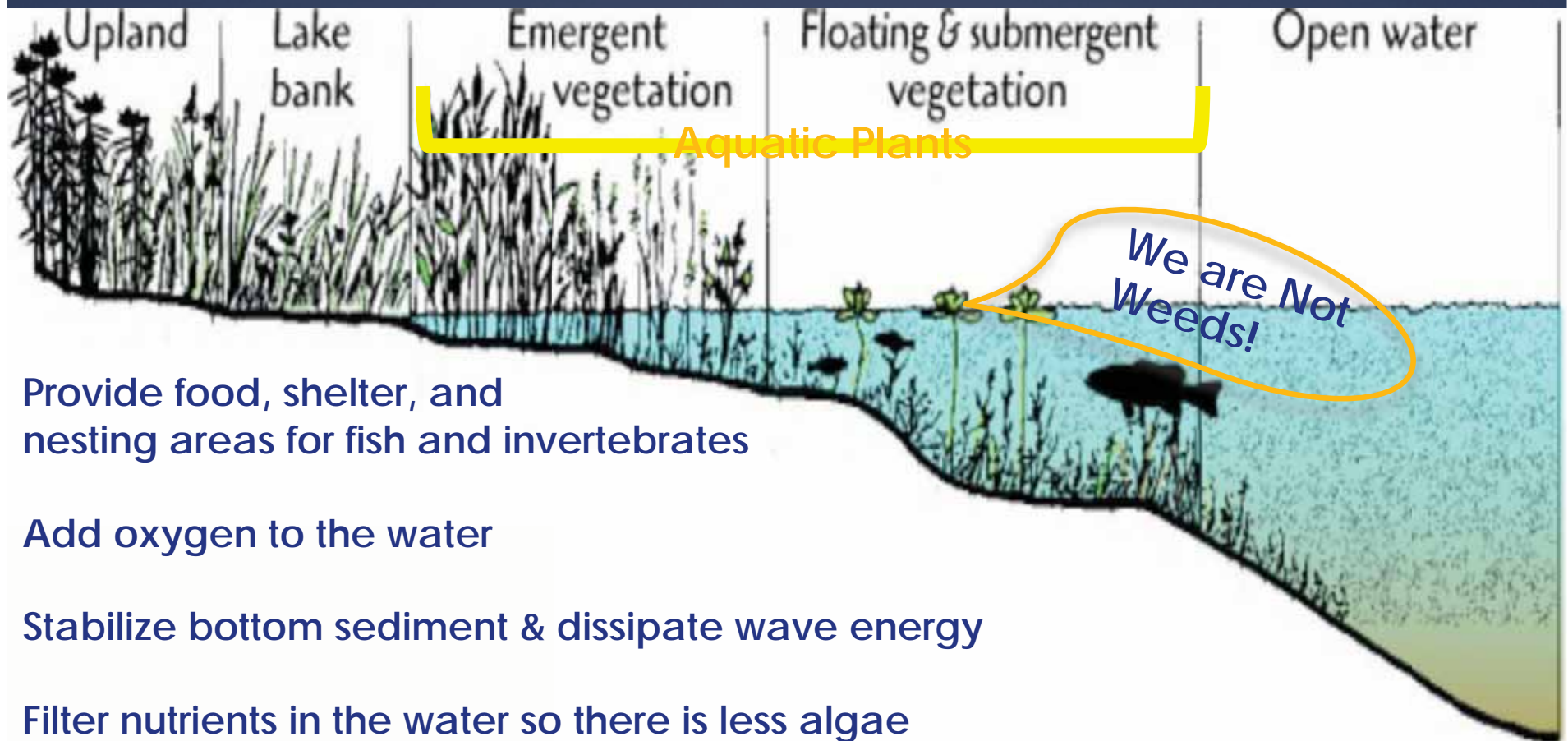
Roots bind soil to stabilize shorelines.

Woody debris provides food and critical habitat for fish and wildlife.

- Tree leaves and branches intercept rainfall.
- Provide shade that helps moderate water temperature.



# Good Buffers Extend Into the Water!



Provide food, shelter, and nesting areas for fish and invertebrates

Add oxygen to the water

Stabilize bottom sediment & dissipate wave energy

Filter nutrients in the water so there is less algae

# Not All Buffer Strips are Created Equal

- ❖ Current shoreline condition
- ❖ Water level
- ❖ Slope



- ❖ **Buffer Width:** 20-25' width recommended – Wider is better

# Plant Native

- ❖ Better adapted to area conditions
- ❖ Much deeper root systems to stabilize soil
- ❖ Attract birds, butterflies and beneficial insects
- ❖ May help keep geese away
- ❖ Requires less maintenance
- ❖ Much more available now





# Natural Shoreline Enhanced With Aquatic Plants

Lake Charles, DuPage Co.

Photo provided by Holly Hudson



# Natural Shoreline Enhanced by Cypress Trees

Kinkaid Lake, Jackson Co.

Photo by Mike Bundren



**Countryside Lake, Lake Co.**

Photo provided by Holly Hudson

# From Turf to Buffer

Waterford Lake,  
Lindenhurst



1. Original Shoreline



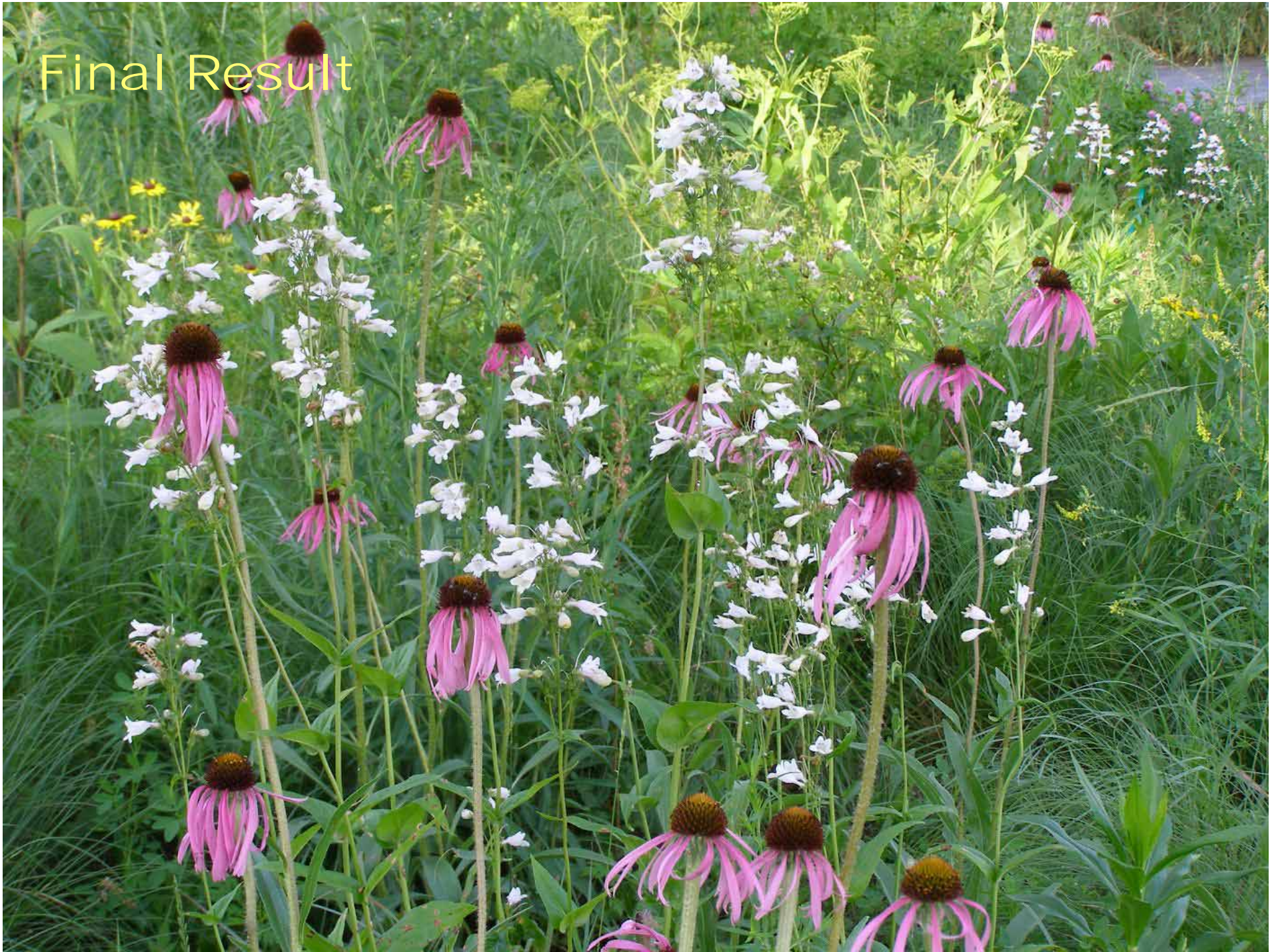
2. Shoreline  
Treated and left  
in place



3. Undesirable plants removed and replaced with 1000 native shrubs and wildflowers.



Final Result



# What is Poor Lakeshore Habitat?




## Turf grass:

- ❖ Shallow rooted
- ❖ Often over-fertilized
- ❖ Provide little habitat
- ❖ Need a lot of maintenance



# Why Should You Care Now?



**Notice**  
An algae bloom has made  
this area potentially  
unsafe for water contact.  
Avoid direct contact with  
visible surface scum.



- 
- Would a 40% loss of species in your lake be acceptable?
  - Would it be acceptable if your lake was closed to recreation during peak summer months because of a nuisance algal bloom?

# Bottom Line

Poor Lakeshore habitat and Excess Nutrients, while not new problems, continue to be the leading cause of poor lake health.

.....suggests a LOT of room for improvement!

# NLA Recommendations -

## Things WE can do:

- ❖ Put a buffer between you and the lake. Quit mowing.
- ❖ Mow tall and fertilize less. Phosphorus-free please!
- ❖ Maintain septic systems.
- ❖ Clean up after pets.
- ❖ Plant a rain garden to absorb rain water.
- ❖ Use permeable surfaces for driveways and paths.
- ❖ Leave fallen trees and logs in shallow waters—fish need them!



# Just Do It:



- ❖ Don't need to tackle it all at once, start a little at a time.
- ❖ It may increase your property values.
- ❖ You may actually surprise yourself and may influence others!
- ❖ Every little bit helps, together we CAN make a difference.



**For More Information:**

**[www.epa.gov/owow/lakes](http://www.epa.gov/owow/lakes)**

**NEXT NLA 2012**

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