

# WETPLAN

## Lightening Presentation

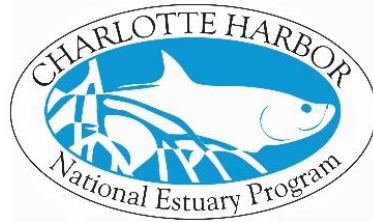


**WETPLAN**

Watershed Education Training  
Ponds Lakes and Neighborhoods

Charlotte Harbor Watershed Summit  
March 29, 2017  
Liz Donley, CHNEP

WETPLAN is an education program and resource for anyone interested in improving and caring for their neighborhood lakes and ponds.



The Back Ten Feet With Sue Scott  
Welcome Life Into Your Landscape

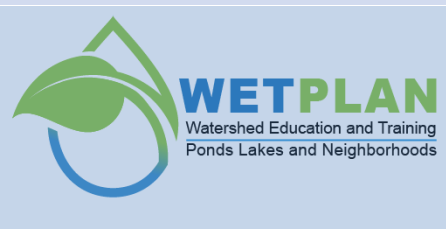


Southwest Florida  
Water Management District  
WATERMATTERS.ORG · 1-800-423-1476



# History

- 1<sup>st</sup> workshop – 2013
- 20 workshops and 550+ attendees
- Collaboration - a true public-private partnership
- Triggered by Friends of Lake Candlewood, WQ issues
- Inspired by Sarasota County's NEST (Neighborhood Environmental Stewardship Team) program
- Informed by Pondwatch results
- Evolved based on participant feedback
- Adapted for Polk County by Lakes Education/Action Drive



# WET PLAN

- Workshops - general and tailored
- Website [WET PLAN -- Your Resource for Pond Management Information](#)
  - Self evaluation tool
  - Videos
- Printed materials
- Native plant propagation
- Intent to develop at least 2 more modules



# Pond Problems?



## Neighborhood Ponds Management Class

### 2017 Dates

- ✓ **Tuesday, January 31, 1 pm**  
Lakes Regional Library  
15290 Bass Rd  
Fort Myers, FL 33919
- ✓ **Thursday, Feb. 16, 1 pm**  
Bonita Springs City Hall  
9101 Bonita Beach Rd  
Bonita Springs, FL 34135
- ✓ **Thursday, March 16, 1 pm**  
Holton Eco-Preserve at  
Unitarian Universalist Church  
13411 Shire Lane  
Fort Myers FL 33912

Visit [www.wetplan.org](http://www.wetplan.org) or  
call (239) 273-8945

- Learn ways to beautify and extend the life of your neighborhood pond
- Find answers to your concerns about the health of your pond, including algae
- Learn benefits of fountains, aerators, floating islands, and more
- Understand how plants improve pond function
- Ask specific questions about your situation

[www.WETPLAN.org](http://www.WETPLAN.org)

**FREE**



In accordance with the Americans with Disabilities Act, Lee County will not discriminate against qualified individuals with disabilities in its services, programs, or activities. To request an auxiliary aid or service for effective communication or a reasonable modification to participate, contact Lisa Kreiger, (239) 533-8706, or [lkreiger@leegov.com](mailto:lkreiger@leegov.com). Accommodation will be provided at no cost to the requestor. Requests should be made at least five business days in advance.

# The Workshops

- 4 modules ~ 10 minutes each, entire workshop ~2 hours (originally 3.5 hours)
  - intent to develop at least 2 more modules
- Ability to develop “tailored” presentation for HOAs
- Can provide CEUs for professionals
- Take home quiz



# Lessons Learned

- Pre and Post tests didn't reflect behavior changes
- Integrated living plants into presentation
- Algae!
- Costs!
- Attendees came to multiple workshops
- Source of native plants – FNPS Cocoloba created one





# WET PLAN : the workshop



# Understanding your Stormwater Pond

It has a job to do!



# Do I live on a lake?

- NO!
- Your “lake” is actually a stormwater management pond
- Stormwater management ponds are often mistaken for lakes. But, these ponds play a distinctive and important role in managing surface water quality and quantity

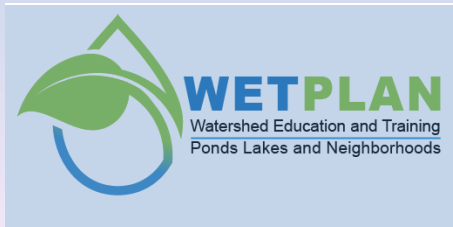


# What is a stormwater pond?

- Stormwater ponds are man-made, engineered devices
- Stormwater ponds are part of the neighborhood's stormwater management system that was designed, permitted and built during the planning and construction stages of your development to capture runoff

# Why are stormwater ponds important in Florida?

- Stormwater management is needed to protect Florida's unique ecosystems.
- Constructing ponds to simulate natural lakes is one method to accomplish the goal of stormwater management.
- Goal of pond: to mimic nature

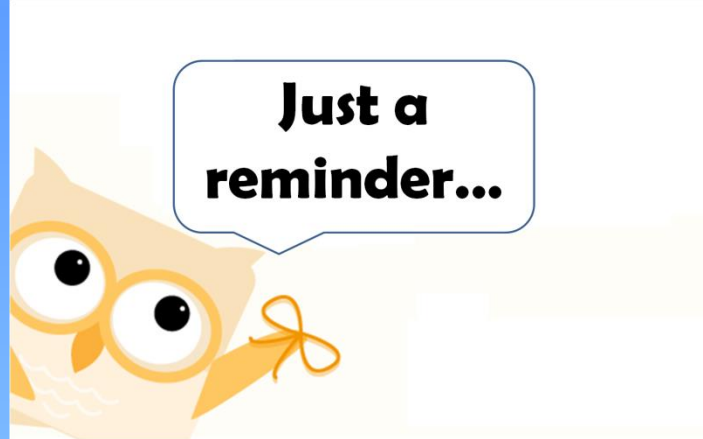


# What does my stormwater pond do for me and the environment?

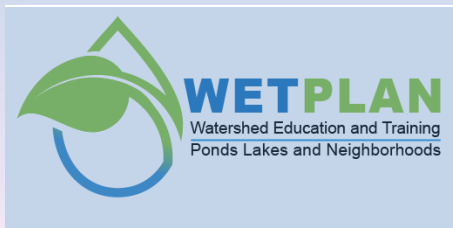
Ponds provide critical services:

1. Manage stormwater runoff from roofs, roads and parking lots, and reduction of flooding through a dispersed system
2. Protection of water quality and the health of our waterways by filtering pollutants from water before discharge to creeks, rivers, wetlands, or the Gulf



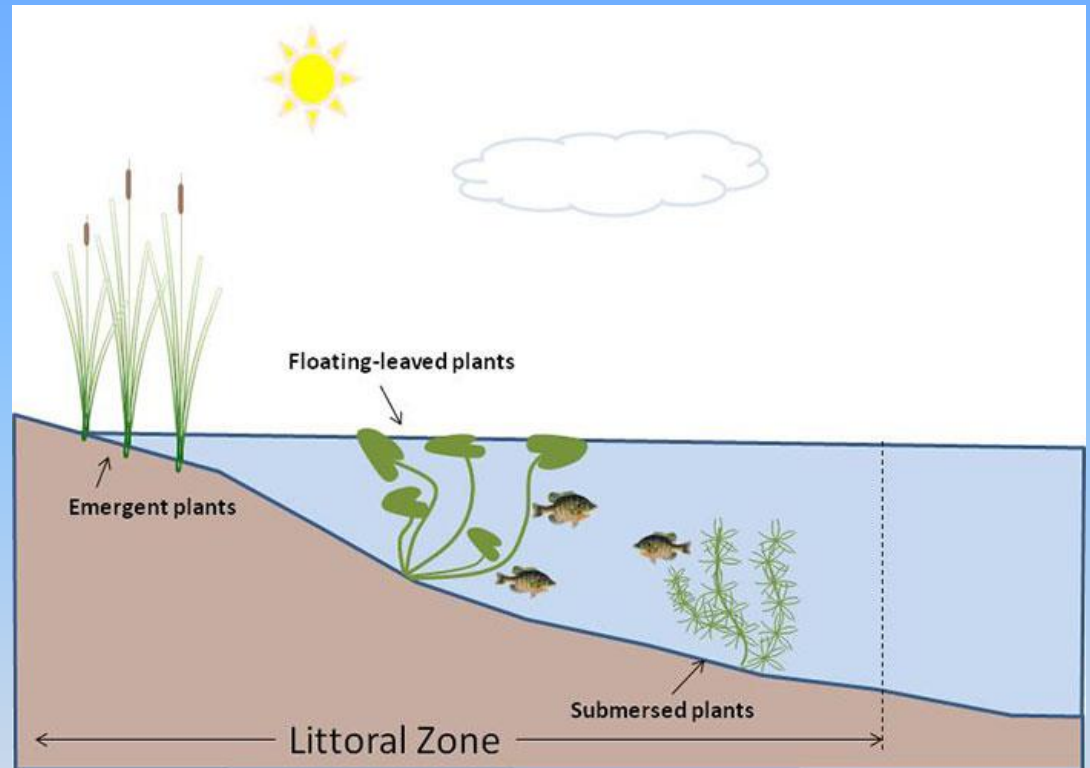


- Remember that one of the main purposes of the stormwater pond is to remove pollutants before they reach the natural waterways.
- The plants and algae that some home owners find intolerable are important because they provide this pollution removal function!



# Plants and algae are natural pollutant removal experts

The **littoral zone** is the near shore area where sunlight penetrates all the way to the sediment and allows aquatic plants to grow. Vegetation here provides a place for beneficial organisms to grow and takes up pollutants directly.





# Example of A Healthy and Attractive Littoral Zone



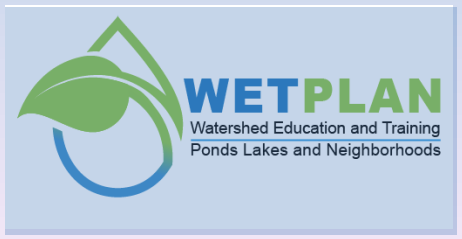
# What are some of the effects of stormwater runoff?

- Untreated stormwater runoff carries sediments, bacteria, oils, fertilizers, pesticides, and herbicides
- Storm drains in your neighborhood empty into the stormwater pond



# Responsible use and protection of your pond is important

- Good stewardship means learning how to keep your neighborhood stormwater pond healthy, functional, and attractive



# What are some additional benefits of a well-managed stormwater pond?

- A well-managed pond can be:
  - An aesthetic amenity
  - Habitat for fish and wildlife
    - Food, shelter, breeding purposes
- A pond holds water and provides it to recharge aquifers for groundwater supply
- Proper long-term management prevents costly restoration in the future



# Good Housekeeping

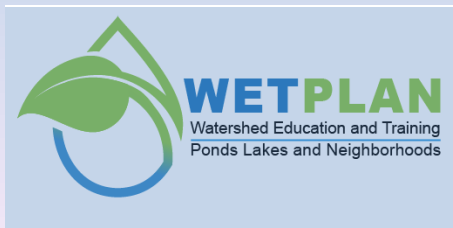


- Here are specific activities:
  - Don't mow grass to the edge of the pond
  - Adhere to fertilizer ordinance – keep nutrients on the lawn and out of the pond!
  - Maintain pond buffer zone
  - Avoid destroying natural vegetation in and near the water's edge
  - Control non-native invasive vegetation
  - Don't dump waste into storm drains
  - Keep storm drains free of debris and sediment



# Good housekeeping results in the following “Healthy Pond” characteristics...

- Low maintenance buffer zone
- Vigorous littoral zone vegetation coverage
- No bare soil or washouts along shoreline
- Absence of pet waste, yard debris, and trash
- Diversity of fish and wildlife present
- Minimal invasive or nuisance species



# Stormwater Pond Design

Where the Water Meets the  
Weeds



# Stormwater Pond Design

- Refresher
  - Must:
    - Decrease onsite and offsite flooding potential
    - Treat runoff to reduce pollutants in the water
  - May:
    - Provide fill material
    - Improve quality of life
      - Aesthetics
      - Bird watching
      - Property value





# Stormwater Pond Design

- There are local, State and federal guidelines
- Side slope
- Depth (minimum and maximum)
- Minimum Width
- Minimum Area
- Littoral Plantings



# Stormwater Pond Design

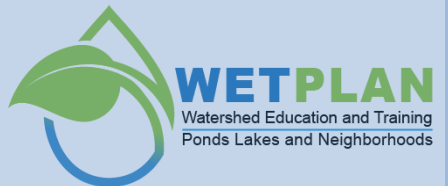
- How? (Really in the Weeds)
  - Design Storms
    - 2.5" for water quality
    - 5-year-1-day for parking lots and local roads\*
    - 25-year-3-day for design discharge\*
    - 100-year-3-day for finish floors
  - Treatment Types
    - Wet and dry detention
    - Wet and dry retention

\*May vary with jurisdiction or time of development.



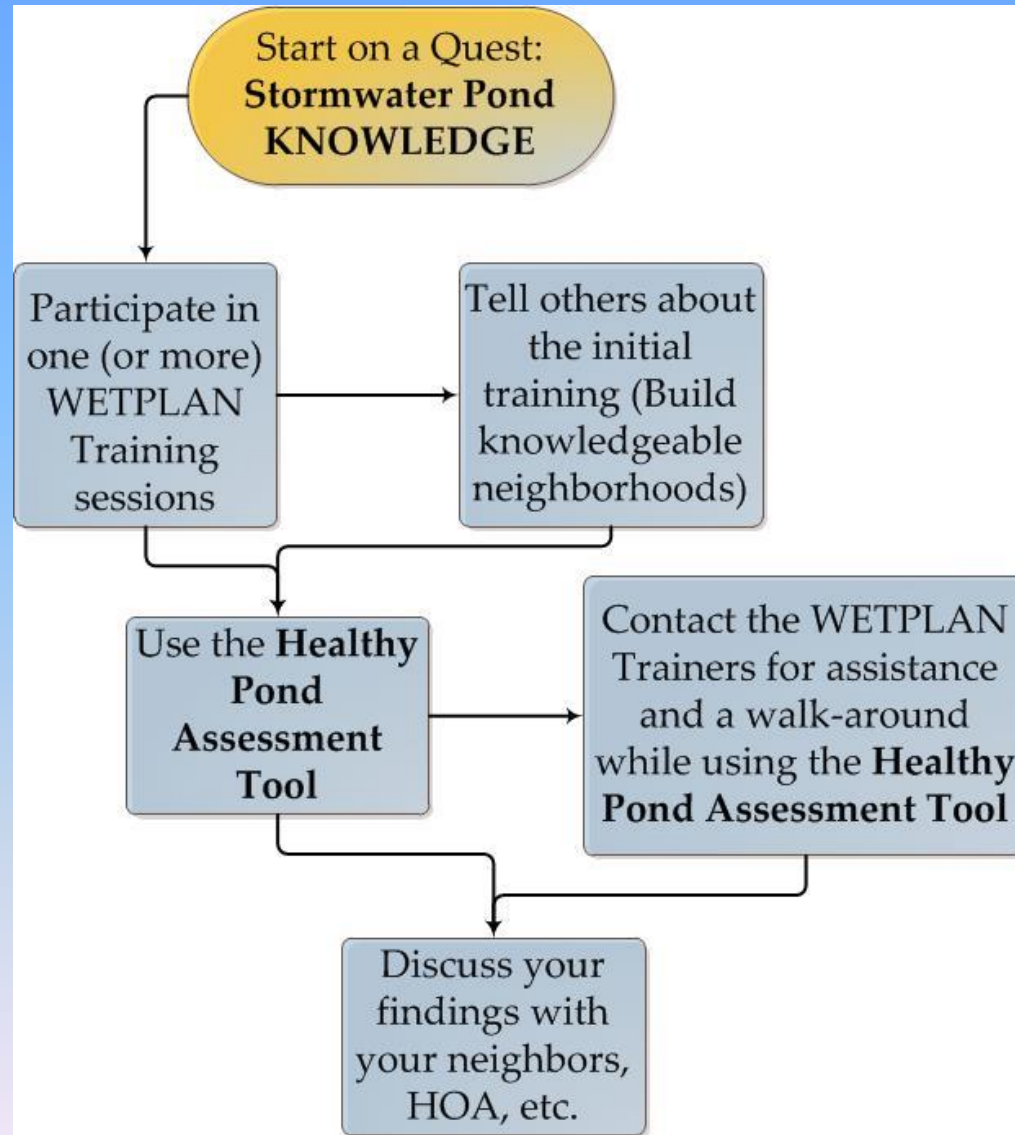
# Stormwater Pond Adjustments

- Most if not all adjustments will require permitting from local and State agencies. Some may require federal permitting also.
- Some maintenance will require permitting at one or more levels
- Most pond maintenance is the responsibility of:
  - Homeowner Association (HOA),
  - Property Owner Association (POA),
  - Community Development District (CDD) or
  - Independent Special District (ISD).

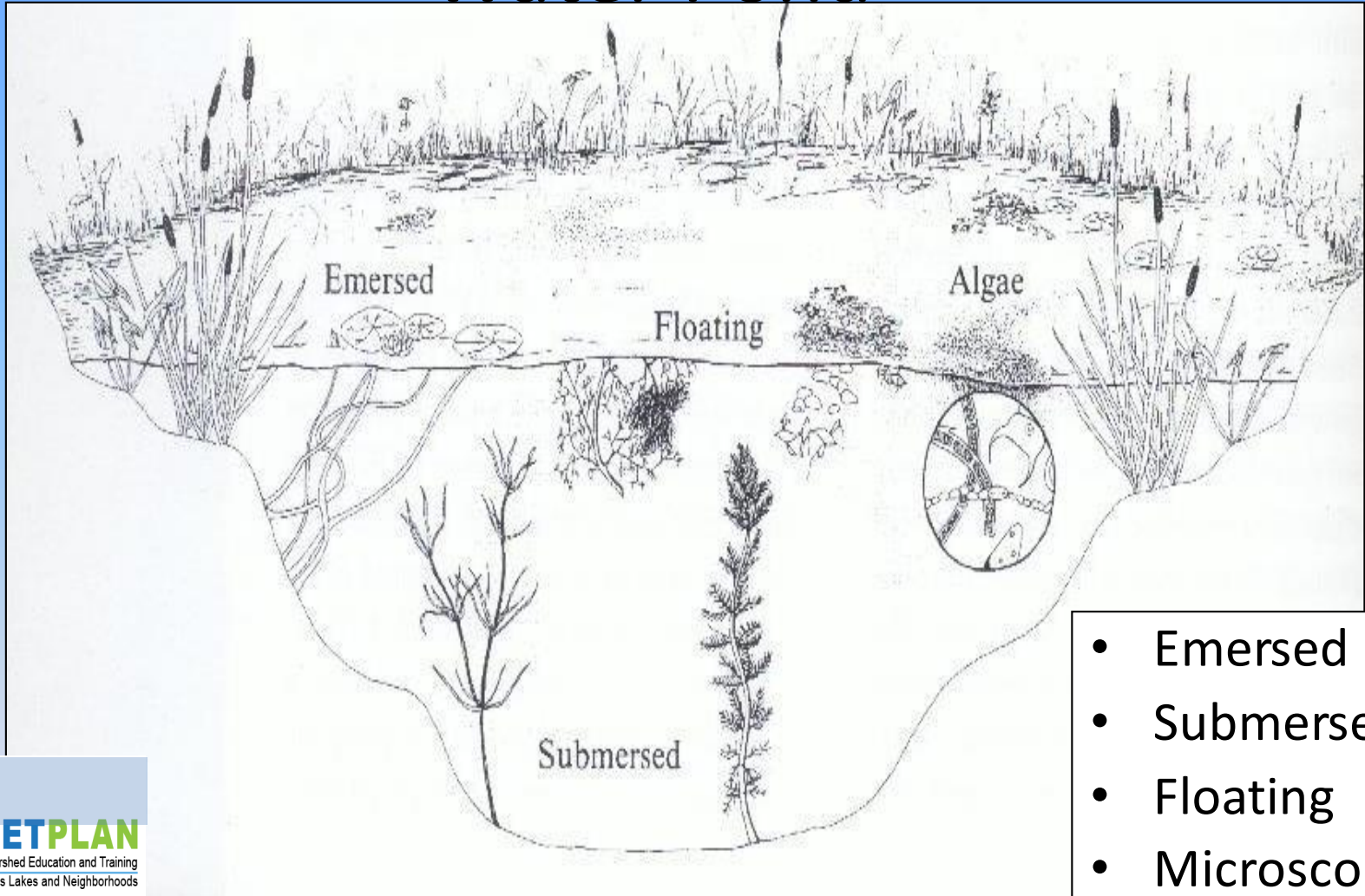


# What Can I Do?

## 1



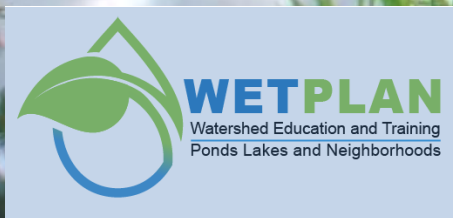
# Aquatic Plants in a Storm Water Pond



- Emersed
- Submersed
- Floating
- Microscopic Algae



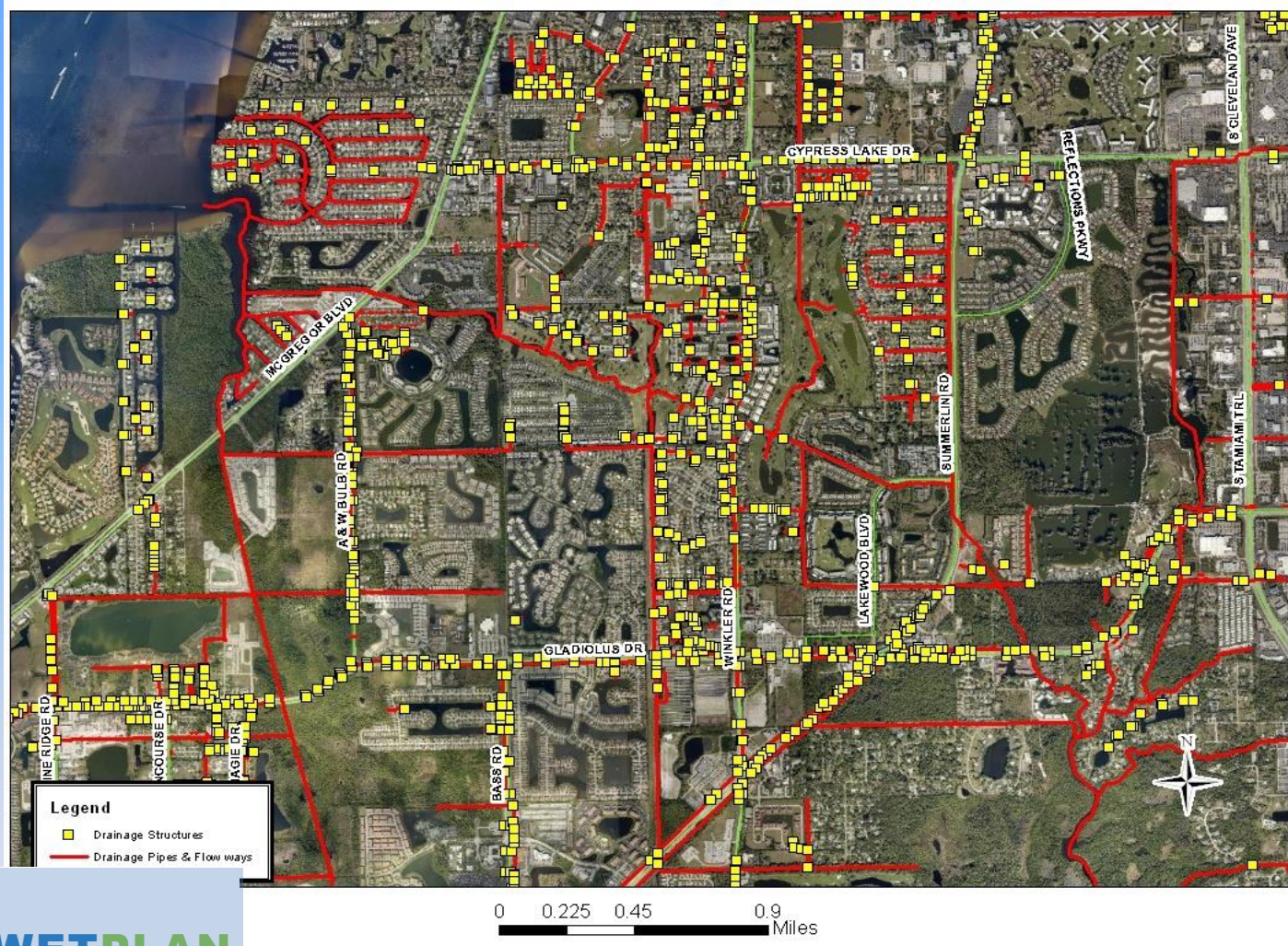
# WET PLAN: Human Impacts Module



# We have altered how Water Flows



# Dispersed Treatment of Stormwater





# Detrimental to a Well-functioning Stormwater Management Pond



# Costly Problems



09/18/2010 10:07

# Scenes from Well-functioning Ponds



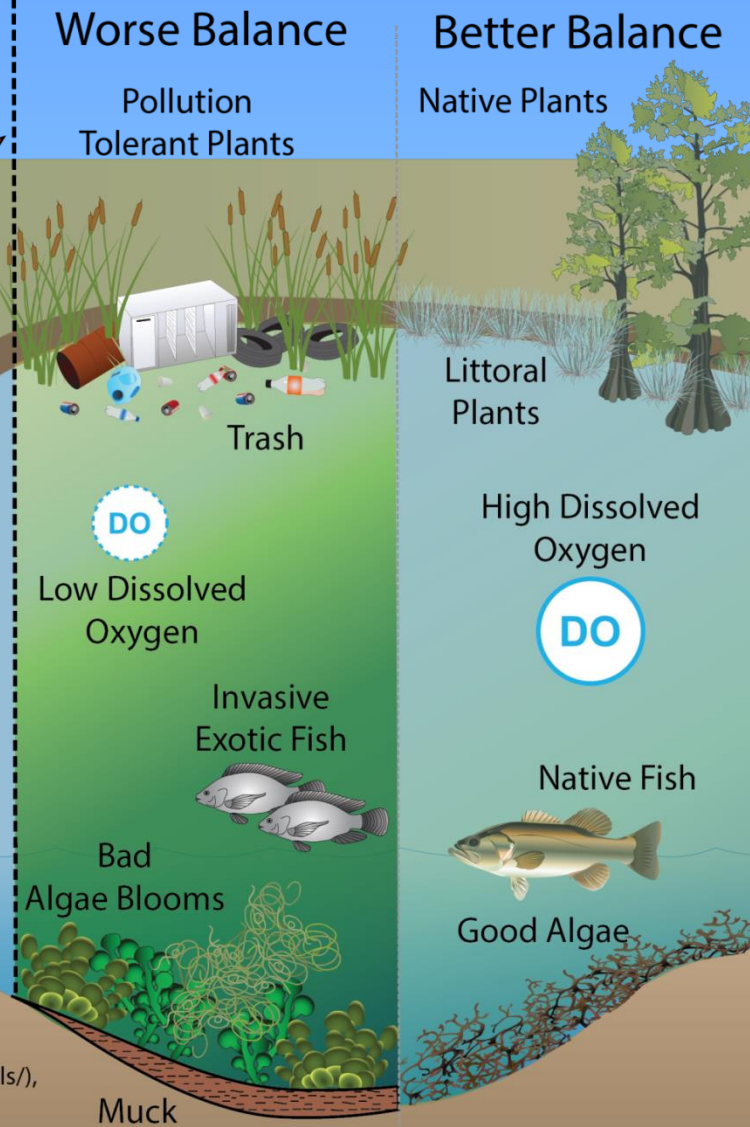
*Nuphar luteum*  
1996 Kerry Dressler



# Inputs



# Outputs



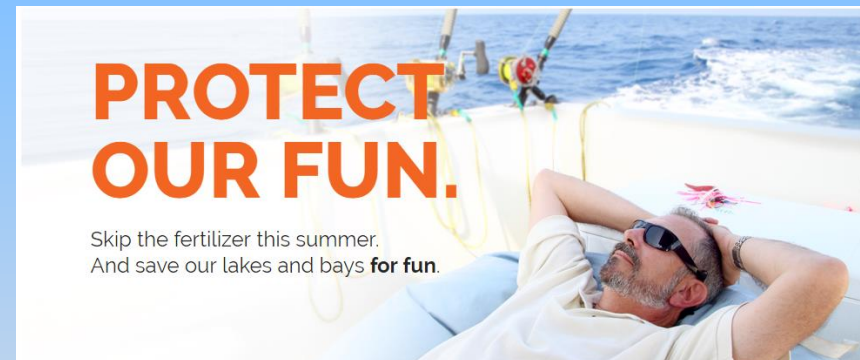
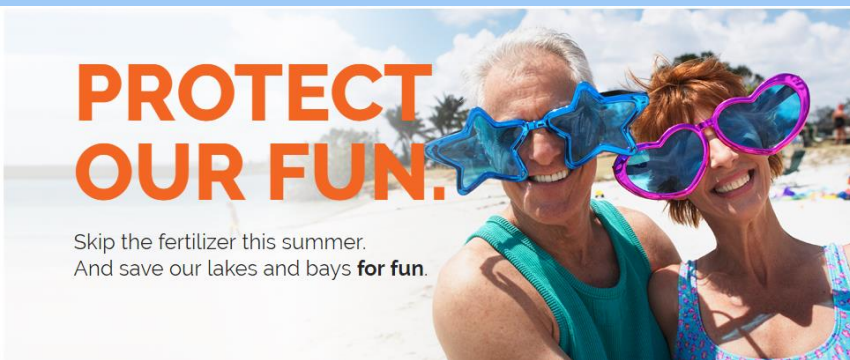
By: Lisa B. Beever, PhD, AICP  
with assistance from Karen Bickford, Lee County  
Date: 1/2/2014  
Charlotte Harbor National Estuary Program

Symbols courtesy of the Integration and Application Network ([ian.umces.edu/symbols/](http://ian.umces.edu/symbols/)), University of Maryland Center for Environmental Science.

# Increase your leisure time



- Plantings and buffer zones decrease maintenance time, decrease need for fertilizer and pesticides
- Decrease lawn = increase leisure time



# Reduce your costs

- Pond repairs can cost \$30 to \$100 per linear foot
  - Or up to \$600,000 to \$1.1 M for 20,000 linear feet
- Algaecides application - \$60 to \$200 /acre
- Pesticide application \$60 to \$200 /acre
- Buffer plantings \$4.70 to \$ 80/linear foot
- Mechanical removal of aquatic weeds \$1,500/day
- Aeration system \$3,500/acre – one time capital expense

Proper maintenance can extend the life of your pond – delaying the costs of dredging



# Problems?

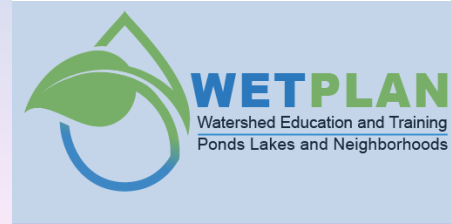
# Solutions!

Work with your lake management, property management, and landscaping companies

## Problem

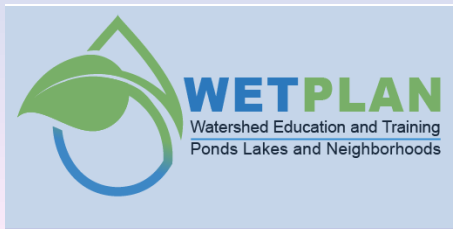
## Approach

- Nuisance waterfowl Do NOT Feed! Establish buffer zone with no turf
- Erosion – Siltation Stabilize bank with shoreline plants
- Invasive aquatic critters Remove critters, don't dump water into pond, don't release aquarium animals
- Pet poop Pick it up! Poop stations w/bags
- Algae blooms Aeration! Submerged and emergent plants, No: grass clippings, pet poop, feeding wildlife
- Structural problems Consult with County or City



# How To Prevent and Control Algal Blooms

1. Keep fertilizers off of roads and driveways after spreading to prevent it from washing into storm drains.
2. Decrease or eliminate the use of fertilizers on the bank slopes of ponds.
3. Properly dispose of grass clipping and yard waste.
4. Pick up pet waste and throw it in the trash.
5. Wash cars in on the lawn not in the driveway.
6. Allow fish, turtles, and waterfowl to find their own food. Plant shoreline wetland plants to filter runoff and absorb nutrients.
7. Install floating wetlands to utilize nutrients from the water.
8. Install aeration – bubblers
9. No copper sulfate in your stormwater pond.





# To Summarize - mimic nature

## Healthy Ponds Can Have Lawns

- Follow fertilizer ordinance “black out periods”
- Establish buffer of plants between turf and pond
  - 6 Feet minimum, 10 Feet is better
- No grass clippings in pond, storm drains or swales
- No feeding wildlife
- Limit chemical treatments
- Use aeration (bubblers)
- Periodically harvest submerged vegetation

# More Assistance

- Pond Watch: Lee County Hyacinth Control District
- WETPLAN.ORG
- Lee County Environmental Sciences/ Natural Resources
- Local Government
- Environmental Consultants
- Florida Native Plant Society (Coccoloba Chapter)
- UF-IFAS Extension Services
- Befloridian.org





[www.wetplan.org](http://www.wetplan.org)

## Healthy Pond Questionnaire

We are happy to help answer any concerns you may have about your neighborhood pond or lake. Filling out this questionnaire will help us to better serve your needs.

**Name \***

First

Last

**Address \***

Street Address

Address Line 2

City

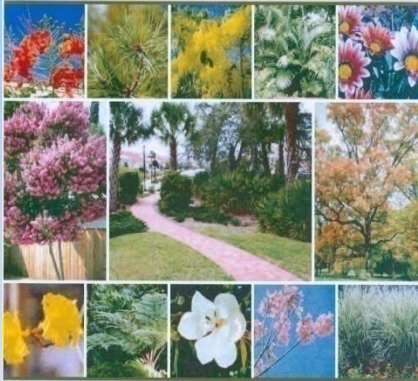
State / Province / Region

# More Actions You Can Take



- Minimize pollutants to control aquatic weeds & algae
  - Avoid over irrigating your yard.
  - Compost or properly dispose of yard waste.
- Plant natives or Florida Friendly vegetation in your yard to reduce the need for fertilizers & irrigation.
- Plant rain gardens & use rain barrels to minimize stormwater runoff from your yard.

The Florida-Friendly Landscaping® Guide to Plant Selection & Landscape Design



THANK YOU!

Questions?

