

Barriers to Reducing the Environmental Impact of Residential Landscapes

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World Social Marketing Conference

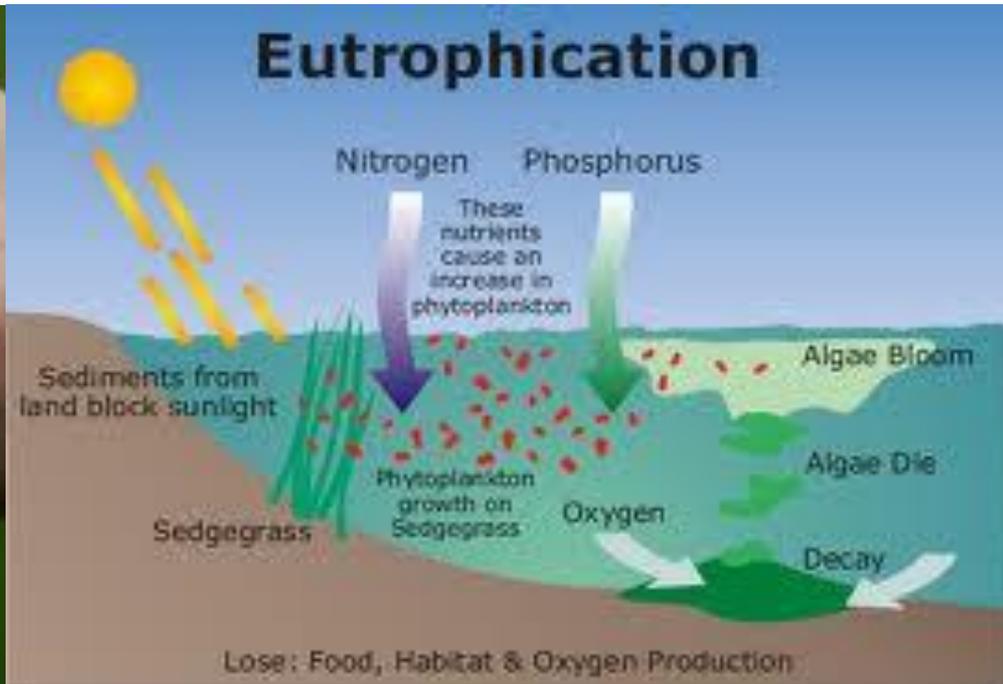
Outline

1. The issue of fertilizer use on lawns in Florida
2. Backyard stormwater ponds as locus of the problem
3. Homeowner issues with algae growth in stormwater ponds
4. Focus groups, surveys and key informant interviews
5. The barriers to changing behaviors
6. Potential solutions

Floridians apply 35 million pounds of nitrogen to their yards every year



The fertilizer/algae connection

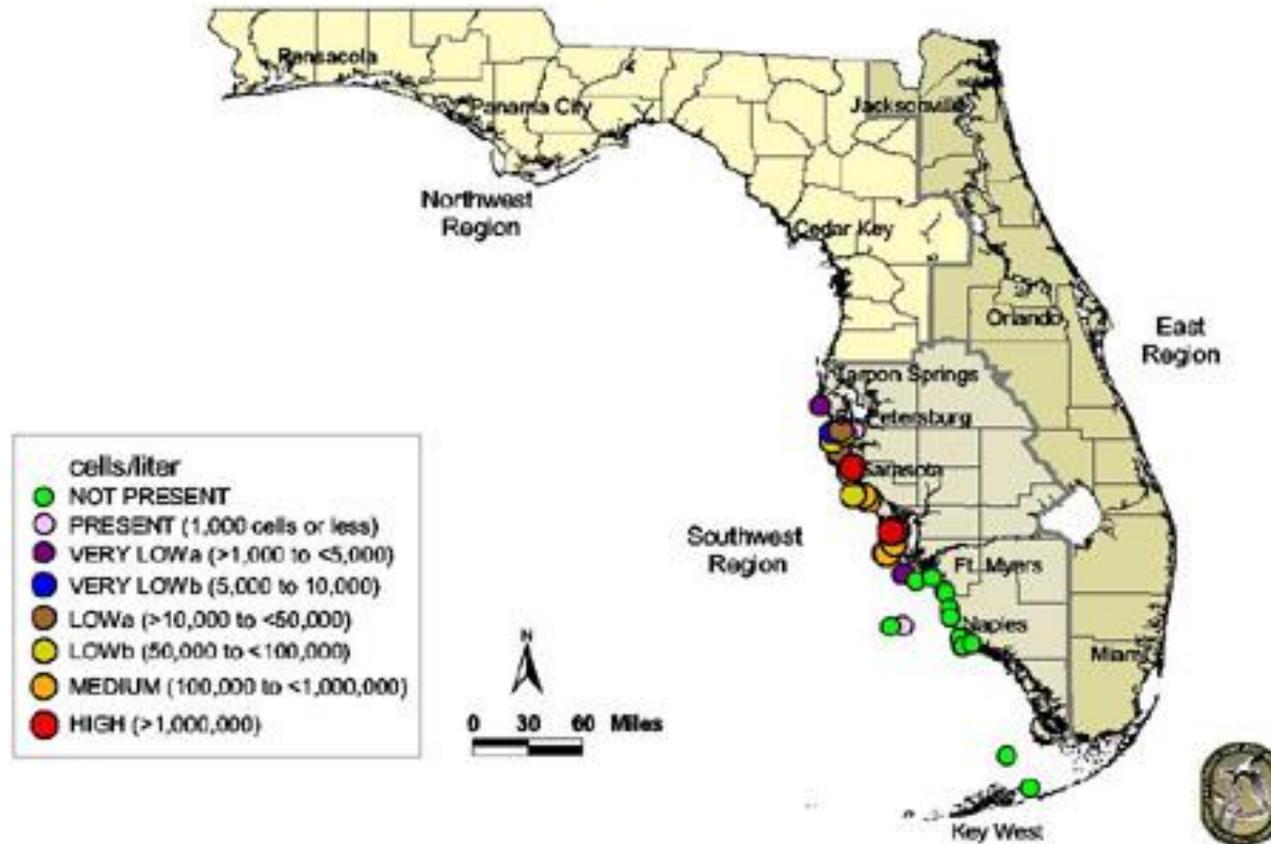


Nutrient pollution in Florida waterways



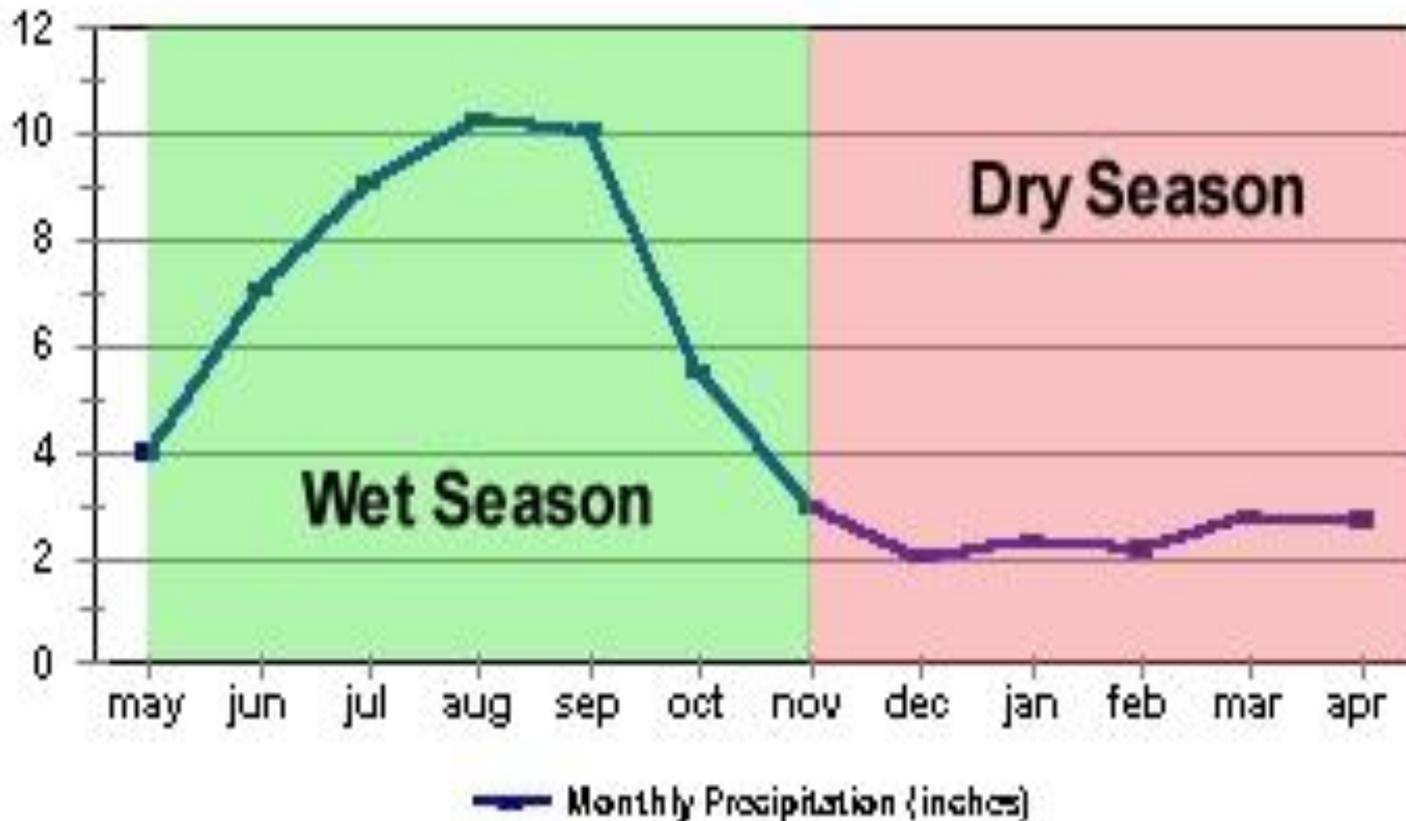
Can nutrient runoff feed red tide outbreaks?

Karenia brevis Counts, February 20-25, 2005



Fertilizer BMPS say don't fertilize before rain

Florida Grid Normal Monthly Rainfall



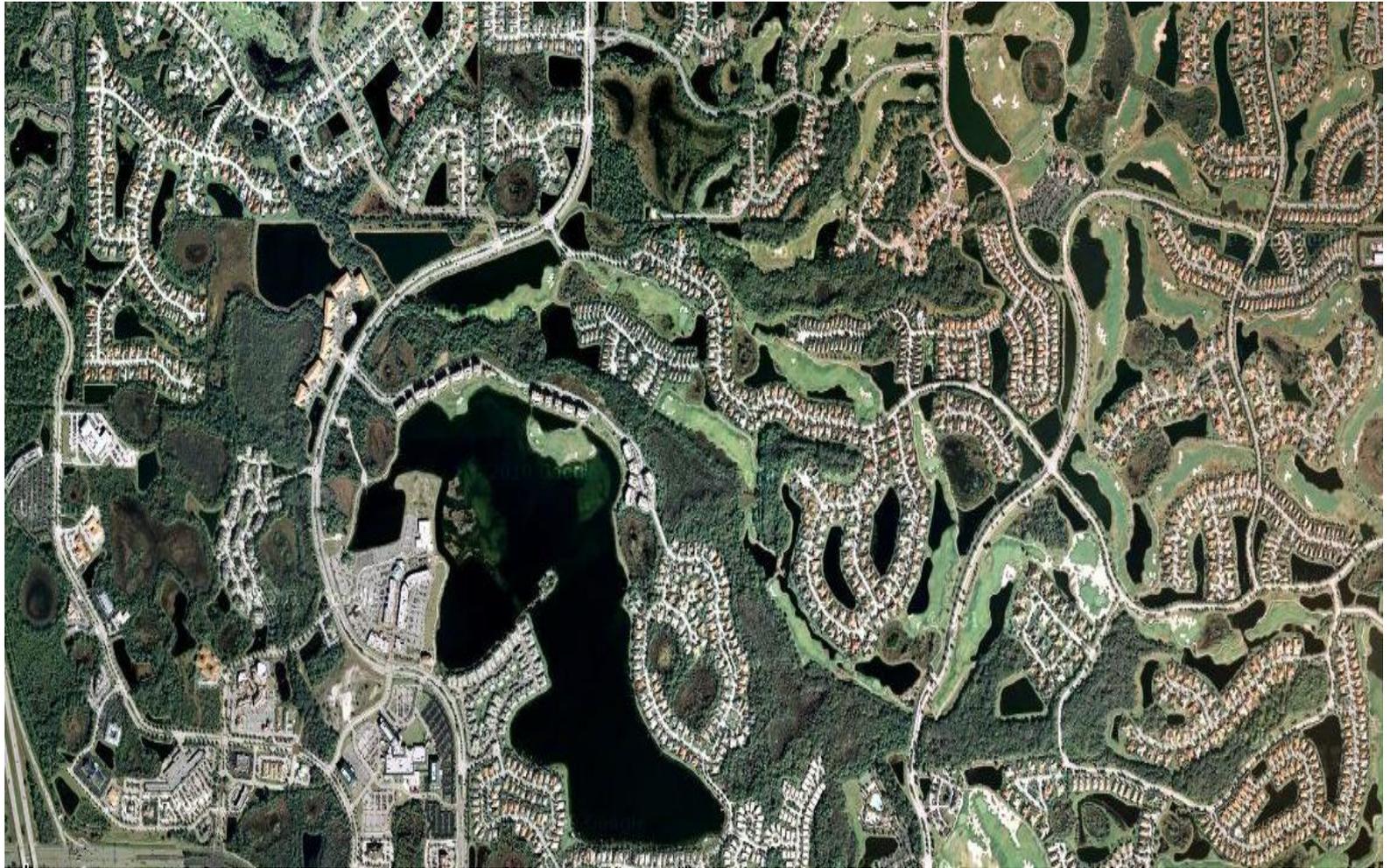
Summer fertilizer blackout periods



Summer Fertilizer Bans are Spreading

- In a victory luncheon following the council vote, Sierra Club Florida Senior Organizing Manager Frank Jackalone told supporters *"Tampa is now the largest city in the state of Florida with a strong summer fertilizer ban, which is why this is such an important victory."*
- The ban is expected to prevent eight tons of nitrogen from getting into Tampa's waterways, saving the city \$56 million in removal costs.

How big is the issue?



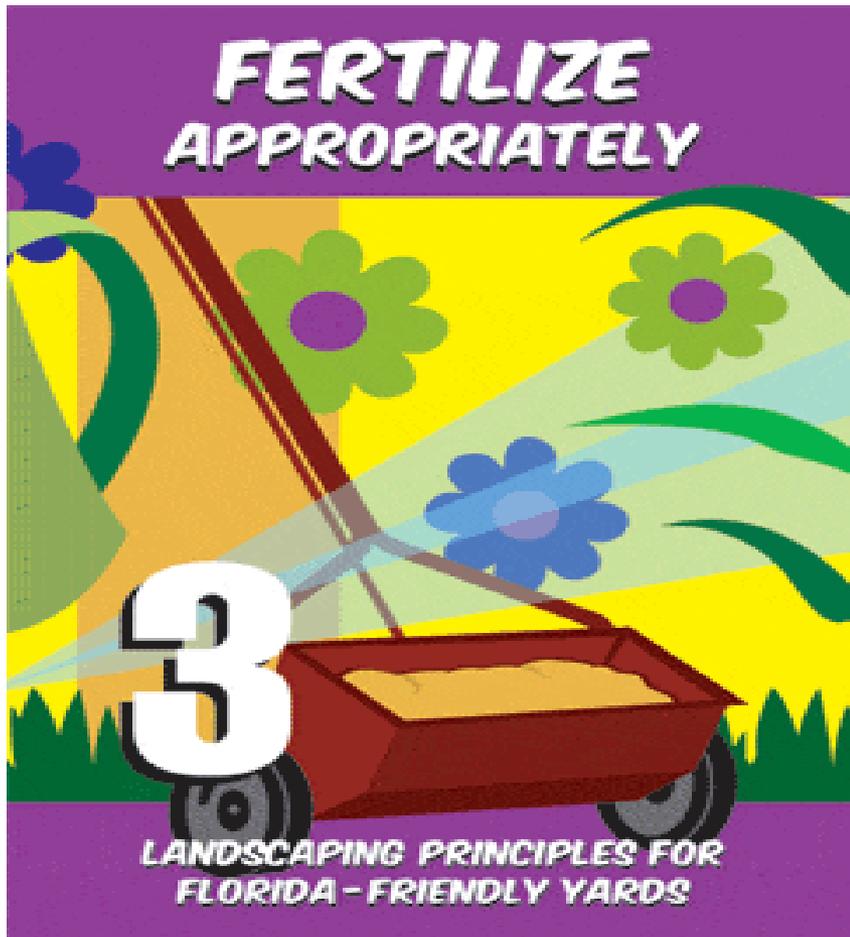
Closer to Home: Fertilizer and nuisance algae



What contributes to the problem?

- Design of stormwater systems (everyone connected)
- Landscaping dominated by turf
- HOA rules that encourage intensive watering and fertilizing of turf
- Landscaping on ponds that makes natural function difficult
- Homeowner preference for one kind of landscape
- Homeowner knowledge about the connection between fertilizer and algae growth is limited
- Maintenance practices cause additional problems

Educational approaches



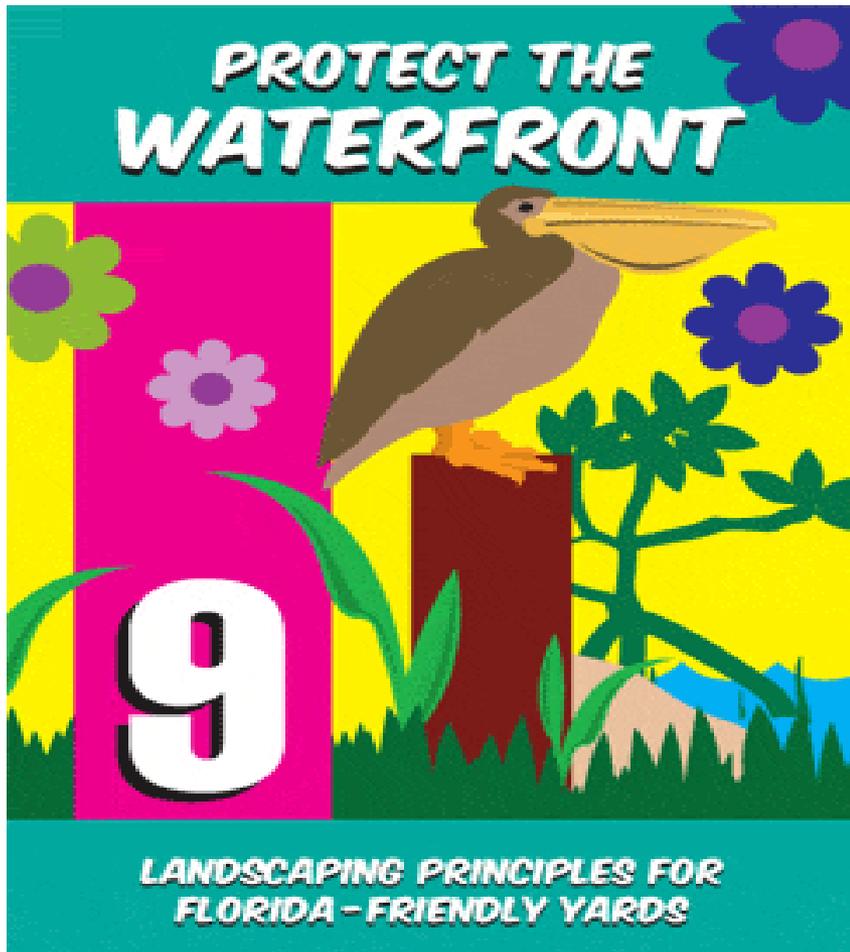
- Never fertilize within 10 feet of any water body.
- Don't fertilize before a heavy rain.
- If you spill fertilizer on the lawn or on a sidewalk or driveway, sweep it up and put it back in the bag.

Educational approaches



- Sweep grass clippings, fertilizer and soil onto the lawn so they don't get washed into storm drains.

Educational approaches



- Establish a maintenance-free zone of at least 10 feet between your landscape and a water body.
- Plant a buffer zone of low-maintenance plants between your lawn and shoreline to absorb nutrients and to provide wildlife habitat.

Formative research in two large master planned communities

- What do you like about your neighborhood and your landscape?
- What would you change? What prevents you?
- What do you enjoy about the “lakes”?
- What is your interaction with landscape contractor
- What is your reaction to different types of landscaping around ponds?







Participant characteristics of focus groups

- 26 men, 11 women
- Almost all lived on a “lake”
- Average time in home was 10 years
- Most had served in HOA governance
- None did their own landscaping
- Half in “maintenance free” neighborhoods

Cultural/Social Norms

- Value interaction with neighbors (care what the neighbors think)
 - Appreciation for HOA restrictions, the controlled/consistent environment fits in with neighborhood aesthetics
 - Pride of ownership- manicured look and good upkeep
 - Pride in neighborhood and community
 - Wildlife highly valued

What we learned: Lakes or stormwater ponds?



They understand the basics of their
stormwater system



Knowledge of fertilizer application on their yard is limited



They do recognize that grass clippings contribute to the problem



Perceptions of algae problem in their backyard ponds



- “Cruddy”, “swampish”, “scummy”, “ a health issue”
- “We’ve had social gatherings at the house and people have made comments... what’s up with your swamp out there”
- ..the smell off of those lakes will take your breath away.

What behaviors need to change?

1. Follow the summer fertilizer blackout to reduce runoff
2. Control grass clippings (in street and ponds)
3. Install buffer zone around ponds
4. Increase aquatic plants to uptake nutrients

A social marketing approach to reduce grass clippings in stormwater systems

Audience:

HOA leadership that hires contractors

Engage homeowners to help monitor behaviors

Landscape contractors & employees must comply

Behaviors (product):

Control grass clippings and debris and keep them out of curbs, drains and ponds (change maintenance practices)

Benefits:

Clean ponds, less algae

Barriers:

Requires change in established practices, more involvement by HOA and homeowners & surveillance

Benefits of planted buffer around ponds



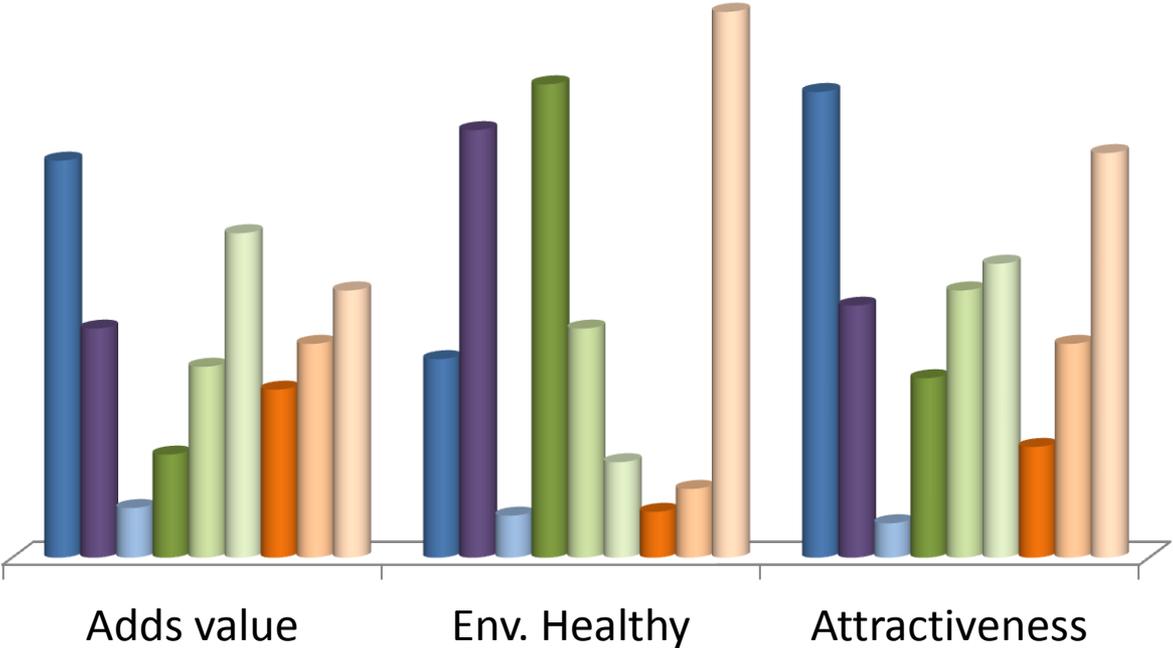
- Absorb nutrients
- Prevents fertilizer from directly entering the pond
- Littoral plants pump oxygen into water and create habitats
- Control nuisance vegetation
- Provide shoreline habitat

Barriers to shoreline buffers



- Neighbors won't like it
- Blocks view of the water
- Plants will get out of control
- Cost of maintenance
- Unwanted wildlife

Addressing the barriers: Opinions about landscapes

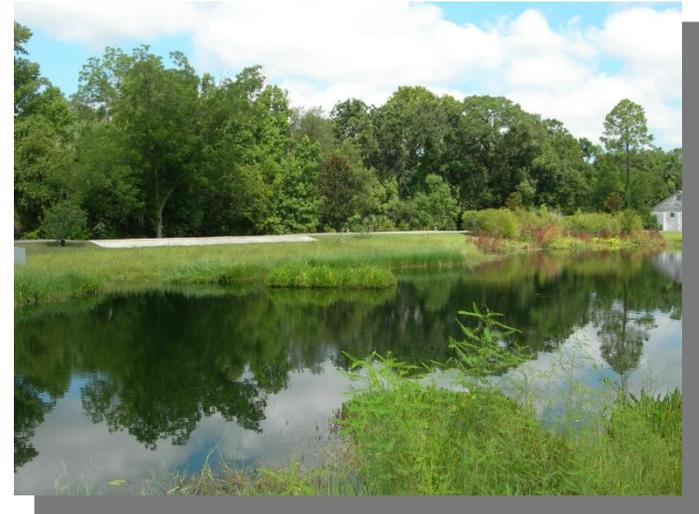


- Picture 1, most ■ Picture 1, 2nd ■ Picture 1, 3rd
- Picture 2, most ■ Picture 2, 2nd ■ Picture 2, 3rd
- Picture 3, most ■ Picture 3, 2nd ■ Picture 3, 3rd



Designing shoreline plantings for greater acceptance

- Make them colorful, use large flowers
- Open water/vistas- limit aquatic plants
- Limit shoreline plants (30% plants)
- Mature trees- on bank/evergreen
- Evergreen plants-look good in winter
- Complexity- Variety of color and texture
- Neat vs. messy- Shoreline with a designed look and controlled natural appearance
- Demonstrate human influence- wall, bench, path.
- Aesthetics primary factor for plants









Solutions must use a combination of approaches

1. Government mandates that target behavior
2. Education about stormwater and landscape connection
3. Technological solutions
4. Improving performance of ponds through landscaping (buffer planting, littoral and aquatic)
5. Controlling nutrients at the source
6. Recognize that the turf grass/fertilizer relationship presents the largest barrier to behavior change

Conclusions



The limits to changing landscaping preferences

