



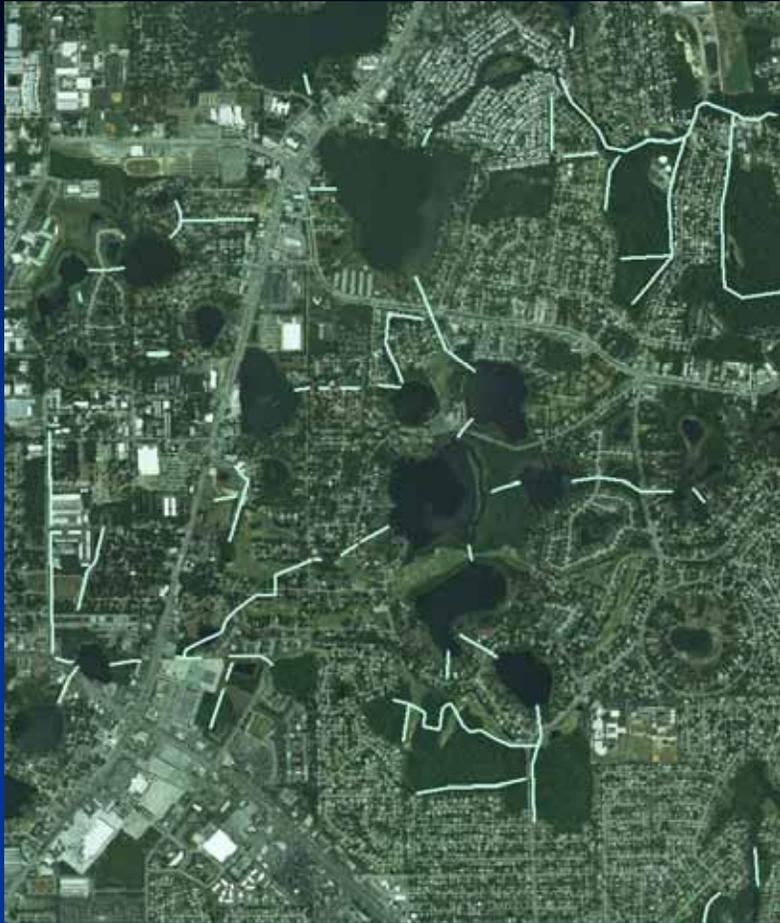
City of Casselberry & Florida Fish & Wildlife Conservation Commission



**Aquatic & Shoreline Plants, Lakeshore
Restoration, and Rain Gardens**

Workshop Goals

- Learn why are we talking about aquatic plants and lakes as part of Arbor Day, and why it matters regardless of where you live
- Learn about the benefits of healthy shorelines
- Learn about permitting requirements for shorelines
- Learn about the benefits of rain gardens and other “backyard” best management practices to help protect the lakes



- **Lakes provide essential habitats for native trees, plants, fish, birds, and other wildlife**
- **We all live in a watershed, and everything is connected**
- **Runoff enters lakes directly or through inlets on streets, outfalls from ponds, canals/ditches, etc.**
- **Runoff carries excess fertilizer, oils, sediment, and other pollutants that can harm lakes**



Features of Unhealthy Lakes

Absence of plants causes nutrients to accumulate in water...leads to algal bloom...



...algal bloom prevents light from reaching bottom

...Fish kill due to lack of oxygen



Lake Weir
Photo by Vic Ramey
Copyright 2003 Univ. Florida



Excess Algae in Casselberry Lakes (March 2009)

Features of Healthy Lakes and Shorelines



diverse assemblage of
native plants

shoreline stabilized
with vegetation

abundant species of
fish and wildlife



*Examples of Healthy Shorelines
(right here at Secret Lake Park!)*



*Featuring: spatterdock, giant bulrush, pickerelweed, cordgrass,
& red maple*



Featuring: giant bulrush, pickerelweed, cordgrass, & bald cypress with pine straw mulch

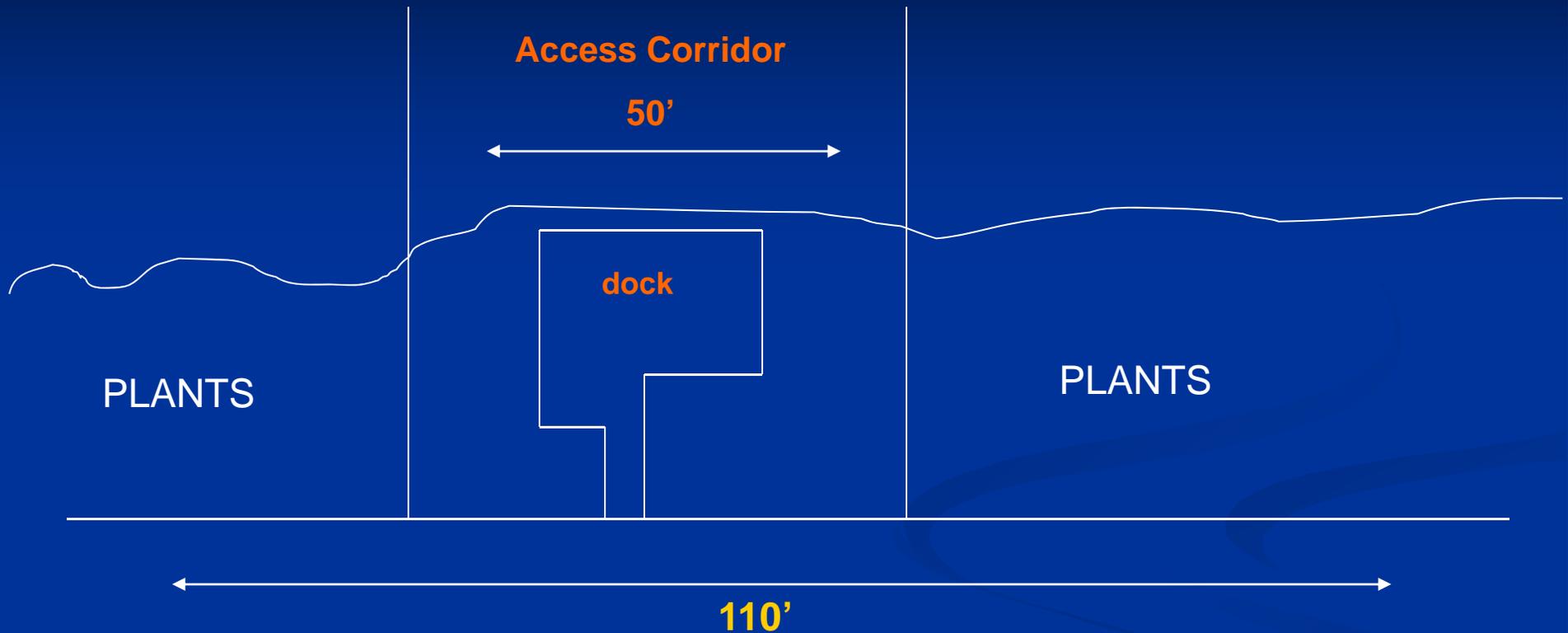


*Featuring: cordgrass, bald cypress, loblolly bay, red maple,
with swale and reverse berm*

FWC Aquatic Plant Management Permit

- No fee
- Lakes larger than 10 acres in size, multiple owners
- Required for:
 - use of **ANY** herbicide
 - removal of exotic plants outside access corridor
- Provides:
 - navigational/recreational access to open water
 - shoreline vegetation
 - appropriate removal methods
- Valid for 3 years

FWC Aquatic Plant Management Permit



- Can clear 50', or 50%, whichever is less
- Rest of lakefront **MUST** be vegetated with submersed and emergent plants
- Either plant native aquatic plants, or let what was there regrow ("something is better than nothing")

Other Permits

- Consult the City before:
 - Clearing
 - Filling (including sand)
 - Dock or seawall construction (also FDEP)
- Public Works
 - (407) 262-7725 x 1235
 - www.casselberry.org/lakes

Sample Good Revegetation Species
(among many, many others!)



Cordgrass



Golden Canna



Pickerelweed



Lance-leaved Arrowhead

Rain Gardens

- Use natural or man-made depressions in the landscape
- Intercept stormwater runoff, filter pollutants
- Conserve water (save \$\$!)
- Plants chosen based on ability to survive wet and dry cycles



- *Good choices: bald cypress, golden canna, cordgrass, blueberry flax lily, lily of the Nile, African iris, holly fern & many others*



*Lake Concord Park Rain Garden featuring:
bald cypress, golden canna, holly fern, & lily of the Nile*

Rain Barrels

- Collect roof runoff
- Use for irrigation when needed
- Conserve water (save \$\$!)
- Reduce runoff and pollutants to streets and lakes
- Can help with yard drainage issues
- Be sure screened/covered to prevent mosquitoes & protect children
- Allow for overflow and proper elevation
- Variety of styles and price points





*Coming soon to Lake Concord Park:
rain barrel and small rain garden demonstration project*

How can everyone help protect the lakes?

- Reduce fertilizer use; use phosphorus free fertilizers
 - *Nutrients already in reclaimed and lake water*
- Dispose of yard waste properly or reuse it in your landscape
 - *Don't sweep or pile into streets – this isn't what streetsweepers are for!*

How can everyone help protect the lakes?

- Participate in Florida Yards & Neighborhoods workshops for “greener”, Florida-friendly landscaping
 - *THIS WEDNESDAY, APRIL 21st, 6:30PM
CITY HALL - FREE!*
- Install rain gardens, rain barrels, and/or swales
 - *Many free or very inexpensive classes available through County Extension Office*
- Report suspected illicit discharge/dumping to Seminole Watershed Atlas (via www.casselberry.org/lakes)

What else can lakefront residents do to help protect the lakes?

- Re-vegetate shorelines with natives when needed
 - *Replace sod and “beaches” with natives instead*
- Provide a fertilizer free buffer near lake edge
 - *25 feet preferred*
- Inspect boat equipment for invasives
- Install swales and reverse berms

Florida Department of Environmental Protection
Bureau of Invasive Plant Management Circular 4

Plants For *Lakefront Revegetation*



By: John Rodgers
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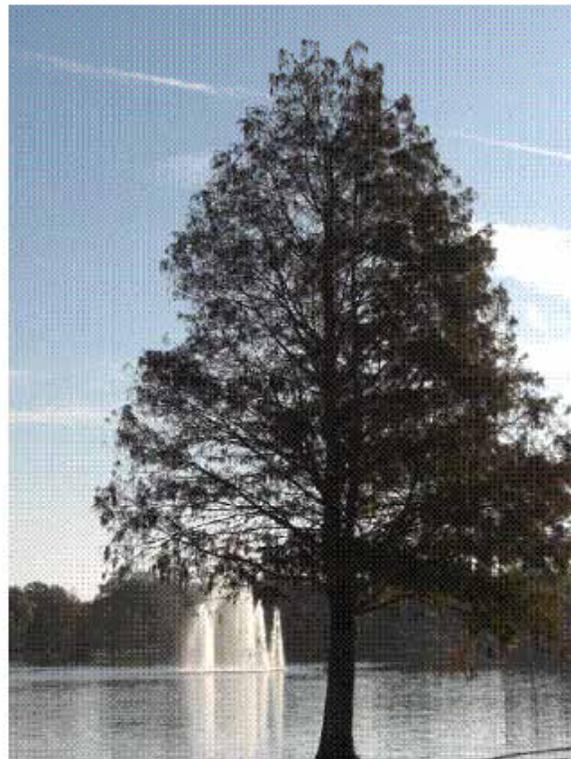


Download at
www.casselberry.org/lakes



Lake Management Guide

2009 Edition



City of Casselberry • 95 Triplet Lake Drive • Casselberry, FL 32707

Download at
www.casselberry.org/lakes

Many more resources at:
www.casselberry.org/lakes

*(will add this presentation
and planting tips under
“lakefront workshops” link)*

Thank you!

Reminder:

FREE! FYN Florida-friendly

Landscaping Workshop

Wed, April 21, 6:30PM

City Hall

(407) 665 5575

More info at www.casselberry.org/lakes