



# City of Casselberry & Florida Fish & Wildlife Conservation Commission



## North Lake Triplet & Secret Lake Workshop



*North Lake Triplet*



*Secret Lake*

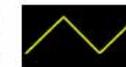
# Physical Characteristics

- North Lake Triplet
  - Approximately 21 acres
  - Depths up to 12 feet



# North Lake Triplet

Section - Township - Range  
9-21-30



Contour Lines  
Expressed in  
1-Foot Intervals



Estimated Lake  
Perimeter

## EXPLANATION:

Assessment Date: July 4, 2002.  
Lake water level was 48.76 ft above sea level when the lake was assessed. Contours are expressed in absolute depth below this level and may not exclude the presence of submersed aquatic vegetation.

## DATA SOURCES:

Seminole County 1999 color aeriels provided by Seminole County Public Works. All contours generated by Florida Center for Community Design and Research based on GPS/Sonar data provided by the Seminole County Stormwater Division.

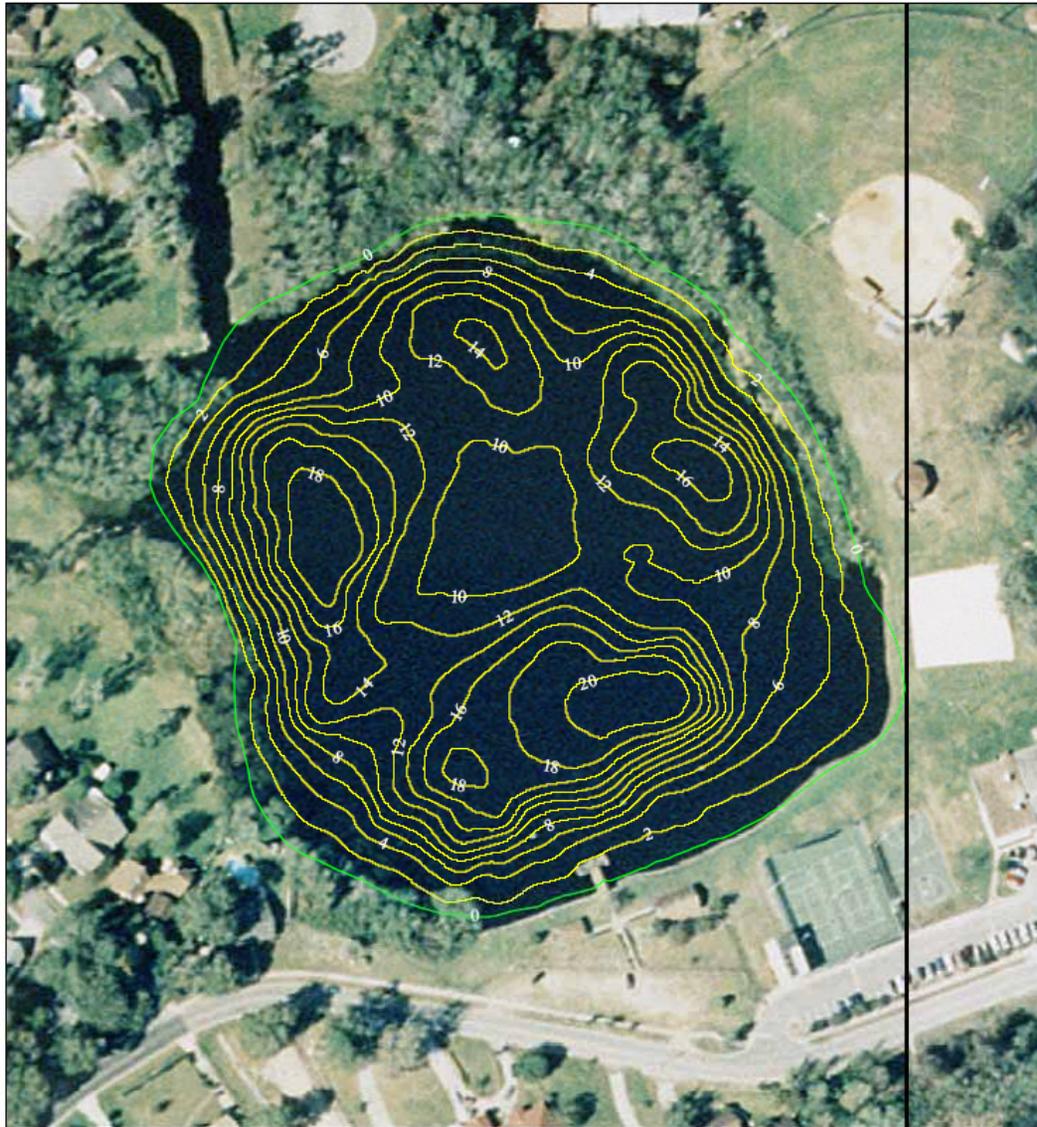


0 100 200 300 400 Feet



# Physical Characteristics

- North Lake Triplet
  - Approximately 21 acres
  - Depths up to 12 feet
- Secret Lake
  - Approximately 9 acres
  - Depths up to 20 feet



# Secret Lake

Section - Township - Range  
9-21-30

-  Contour Lines  
Expressed in  
2-Foot Intervals
-  Estimated Lake  
Perimeter

## EXPLANATION:

Assessment Date: August 7, 2000

Lake water level was 50.799 ft.  
above sea level when the lake was  
assessed. Contours are expressed in  
absolute depth below this level.

## DATA SOURCES:

Seminole County 1999 color aerials  
provided by Seminole County Public  
Works. All contours generated by  
Florida Center for Community Design  
and Research based on GPS/Sonar  
data provided by the Seminole County  
Stormwater Division.



0 75 150 225 300 Feet



# Physical Characteristics

- North Lake Triplet
  - Approximately 21 acres
  - Depths up to 12 feet
- Secret Lake
  - Approximately 9 acres
  - Depths up to 21 feet
- 100 year flood elevation: 55.4 ft

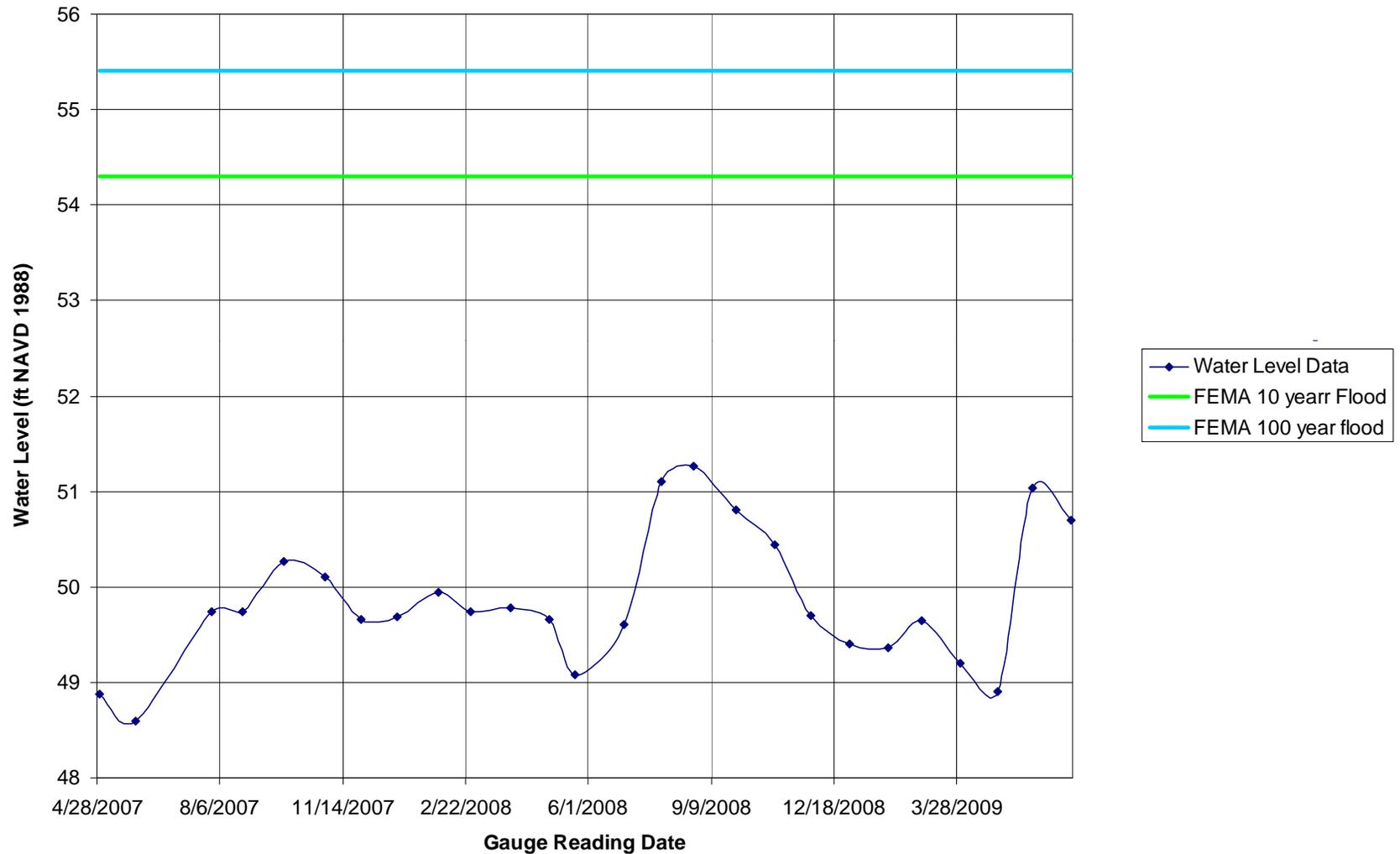


*100 year floodplain (light green)*

# Physical Characteristics

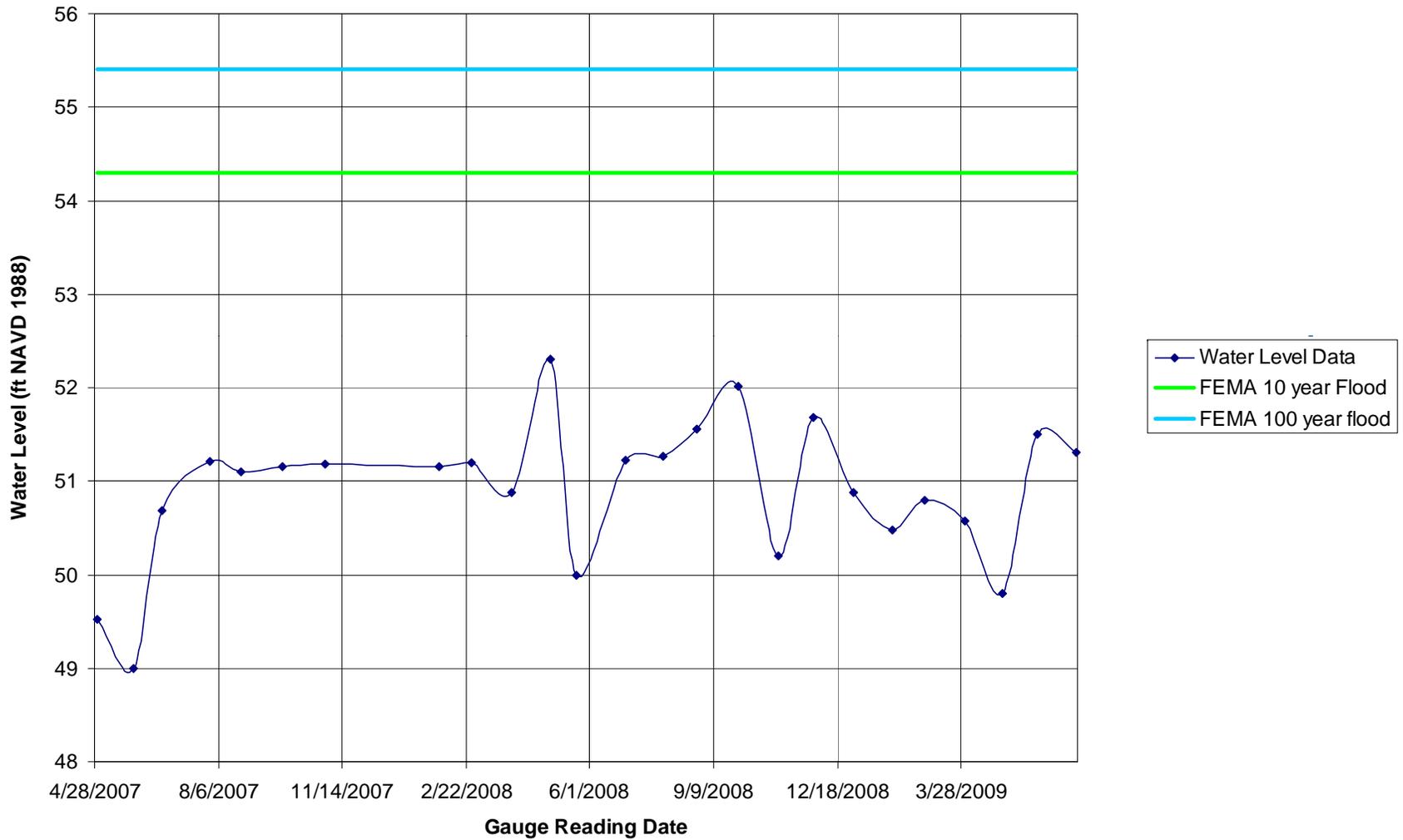
- North Lake Triplet
  - Approximately 21 acres
  - Depths up to 12 feet
- Secret Lake
  - Approximately 9 acres
  - Depths up to 21 feet
- 100 year flood elevation: 55.4 ft
- Water elevation typically 49-52 ft

### North Lake Triplet Water Levels



*Water surface elevation – North Lake Triplet*

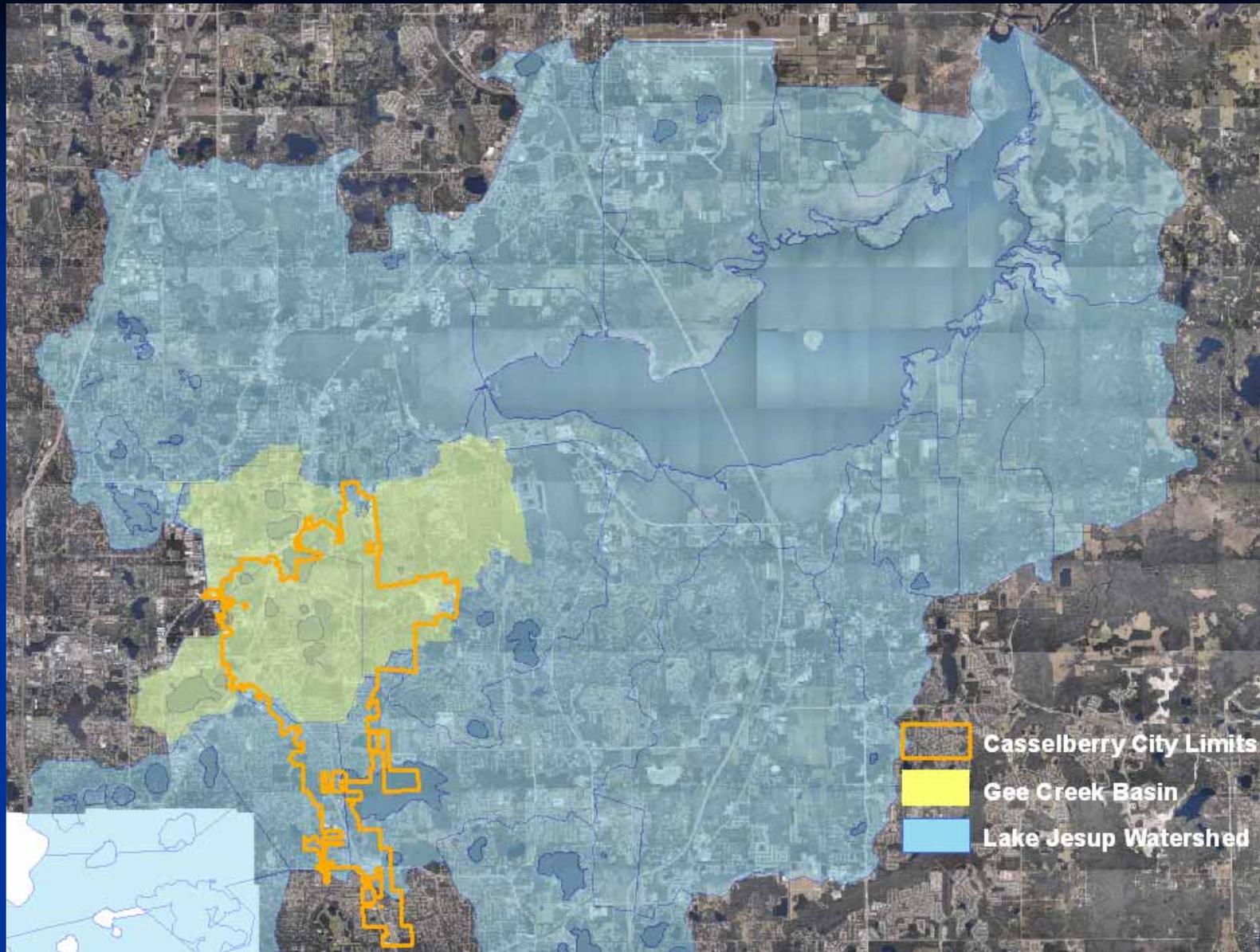
### Secret Lake Water Levels



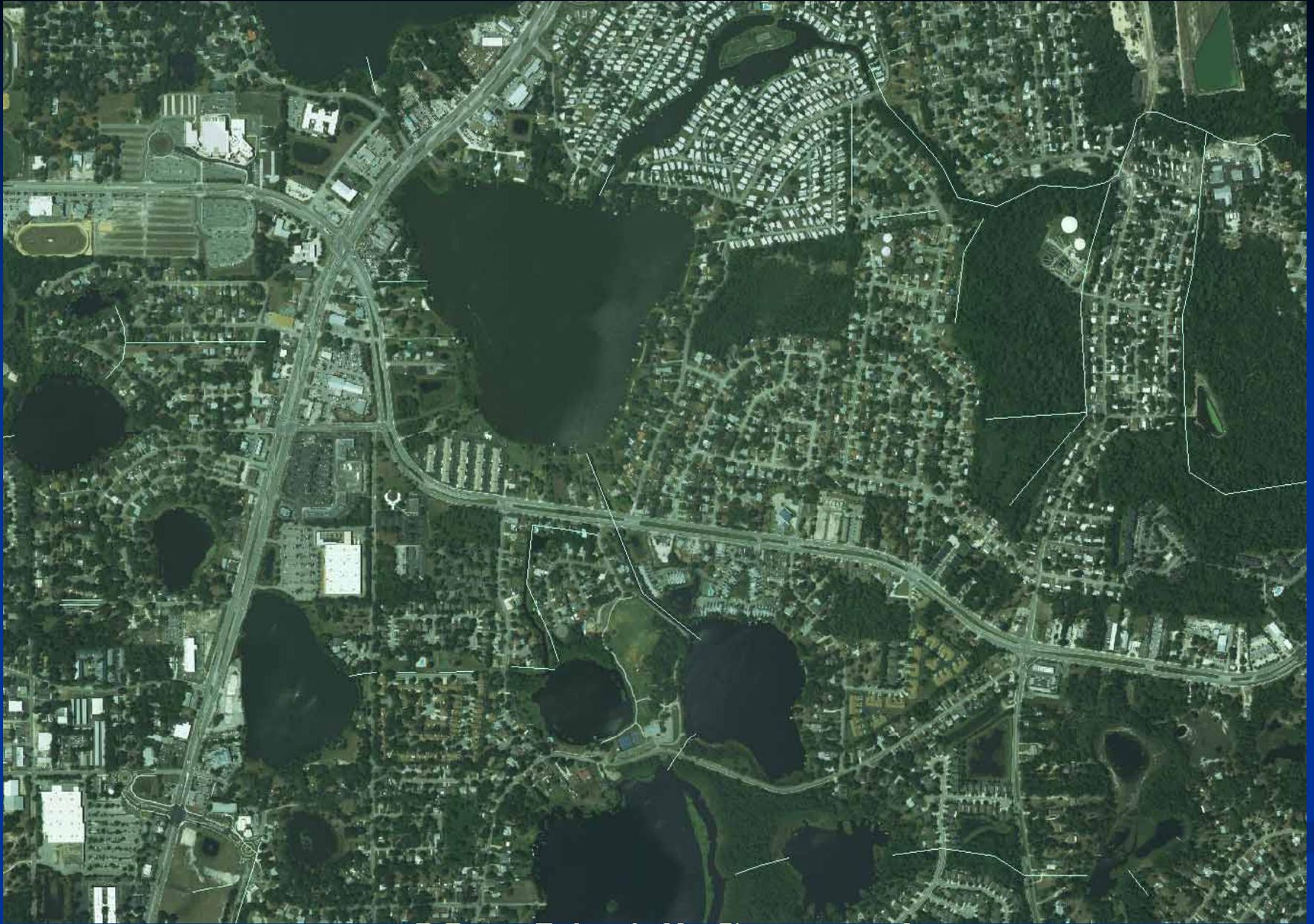
*Water surface elevation – Secret Lake*

# Physical Characteristics

- North Lake Triplet
  - Approximately 21 acres
  - Depths up to 12 feet
- Secret Lake
  - Approximately 9 acres
  - Depths up to 21 feet
- 100 year flood elevation: 55.4 ft
- Water elevation typically 49-52 ft
- Part of the Gee Creek Basin (Lake Jesup Watershed)



## *The Big Picture*



*How It's All Connected*

# Biological Characteristics

## ■ Sample Native species present in North Lake Triplet

- Bald Cypress
- Spatterdock
- Cattails\*
- Coontail
- Pickerelweed
- Giant bulrush
- Cordgrass
- Tape grass
- Arrowhead

## ■ Sample Non-native Invasives present in North Lake Triplet

- Hydrilla
- Parrotfeather
- Torpedograss
- Alligator weed
- Wild taro

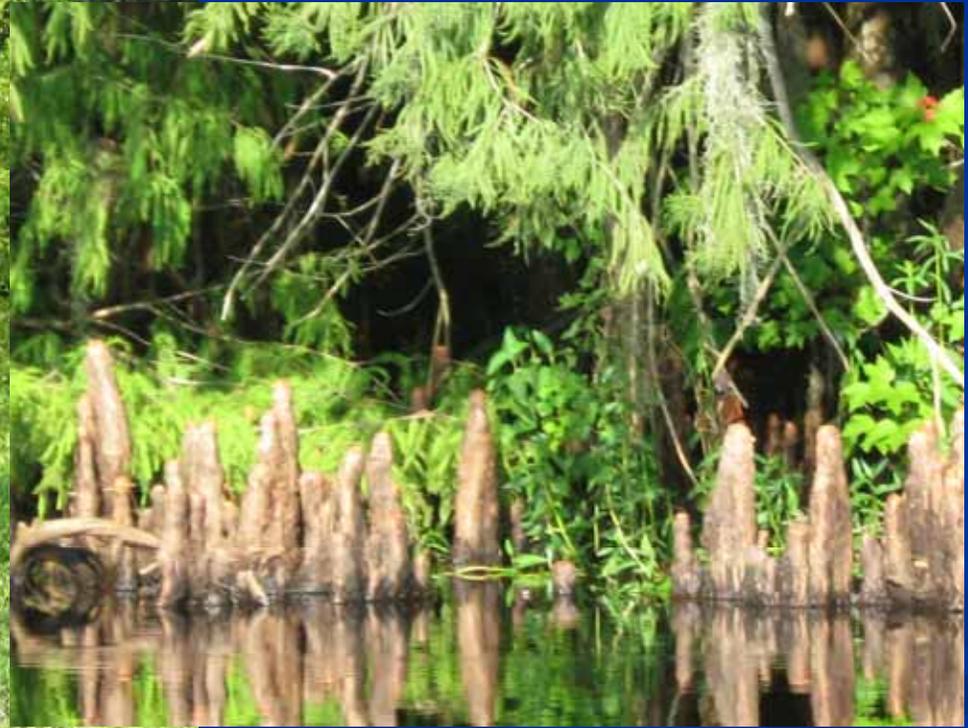
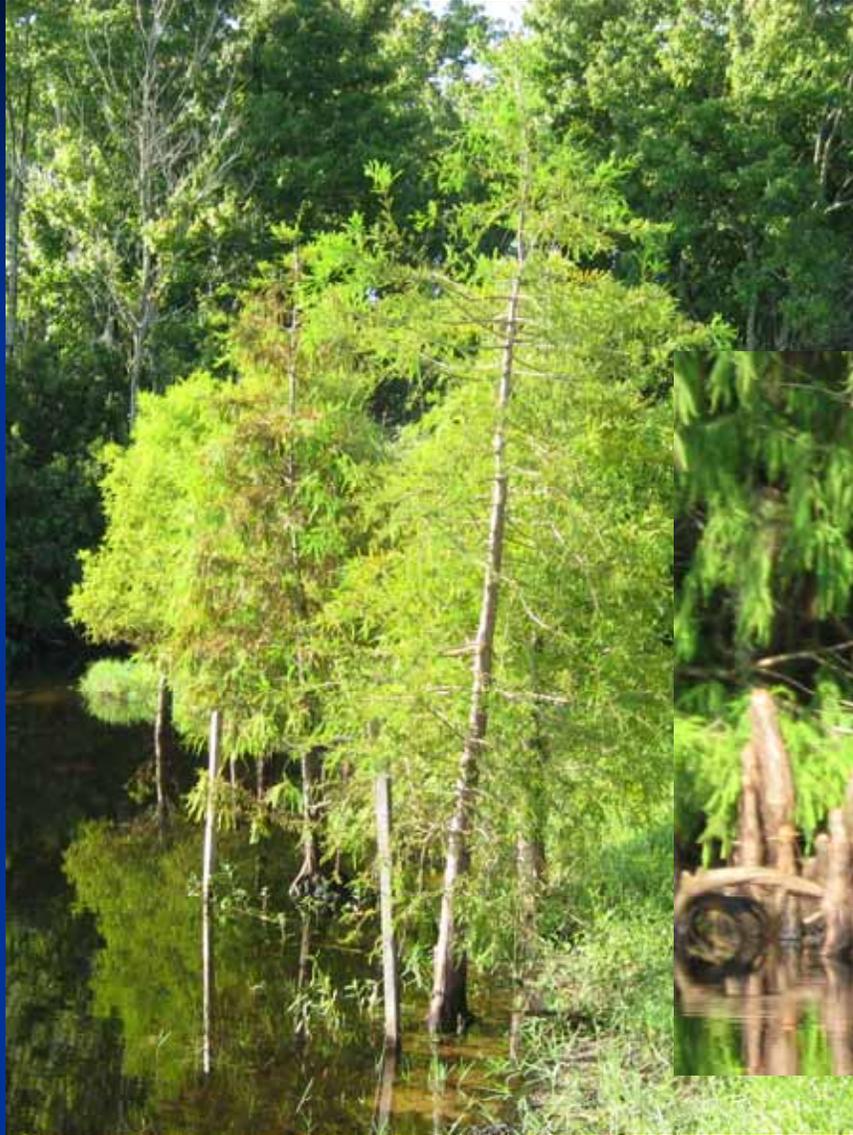
# Biological Characteristics

## ■ Sample Native species present in Secret Lake

- Bald Cypress
- Spatterdock
- Cattails\*
- Coontail
- Pickerelweed
- Giant bulrush
- Cordgrass
- Tape grass
- Chara (muskgrass)
- Eleocharis

## ■ Sample Non-native Invasives present in Secret Lake

- Hydrilla
- Torpedograss
- Alligator weed
- Wild taro
- Water hyacinth
- Cuban bulrush



*Bald cypress (good)*



*Cordgrass (good)*



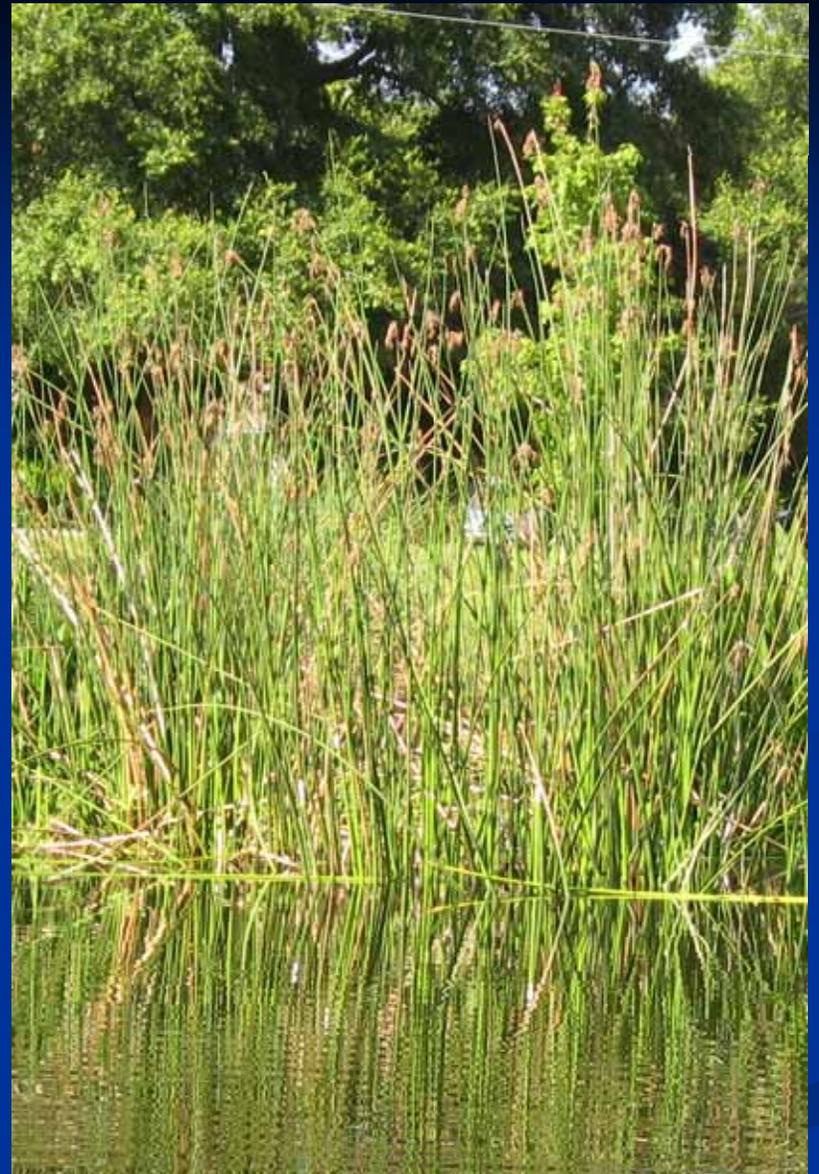
*Alligator weed (bad)*



*Torpedograss (bad)*



*Cattails (not so good)*



*Giant bulrush (good)*



*Cuban bulrush (bad)*



*Pickerelweed (good)*



*Arrowhead (good)*



*Wild taro (bad)*



*Spatterdock (good)*



*Water hyacinth (bad)*



*Coontail (good)*



*Hydrilla (bad)*



*Chara (good)*



*Hydrilla (bad)*



*Eleocharis (good)*



*Hydrilla (bad)*



*Parrotfeather (bad)*



*Tape grass/eel grass*

# Trophic States: Example Healthy Lakes



diverse assemblage of  
native plants

shoreline stabilized  
with vegetation

abundant species of  
fish and wildlife



# Eutrophic/Hypereutrophic Examples

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



...algal bloom prevents light from reaching bottom

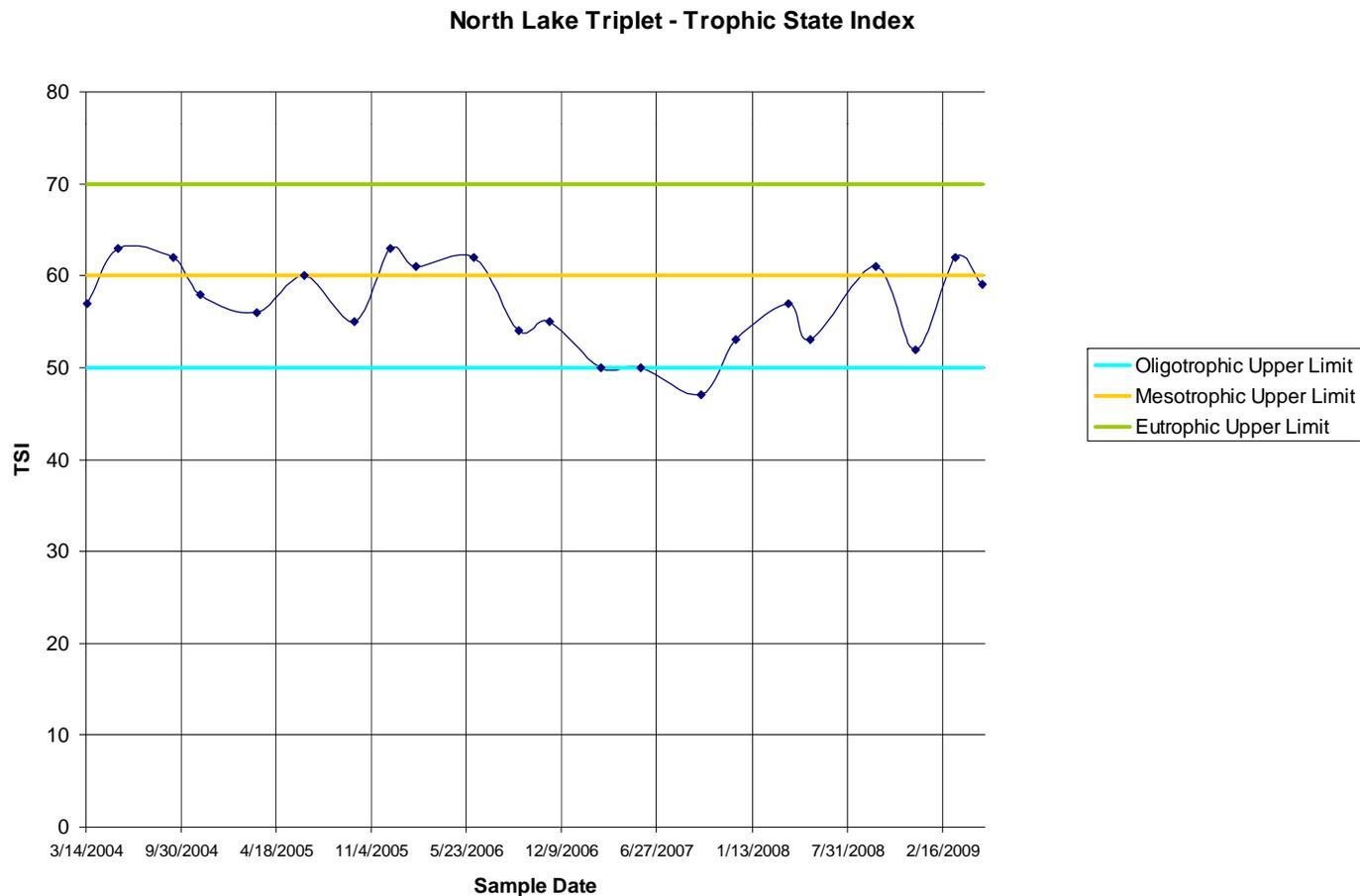
...Fish kill due to lack of oxygen



Lake Weir  
Photo by Vic Ramey  
Copyright 2003 Univ. Florida

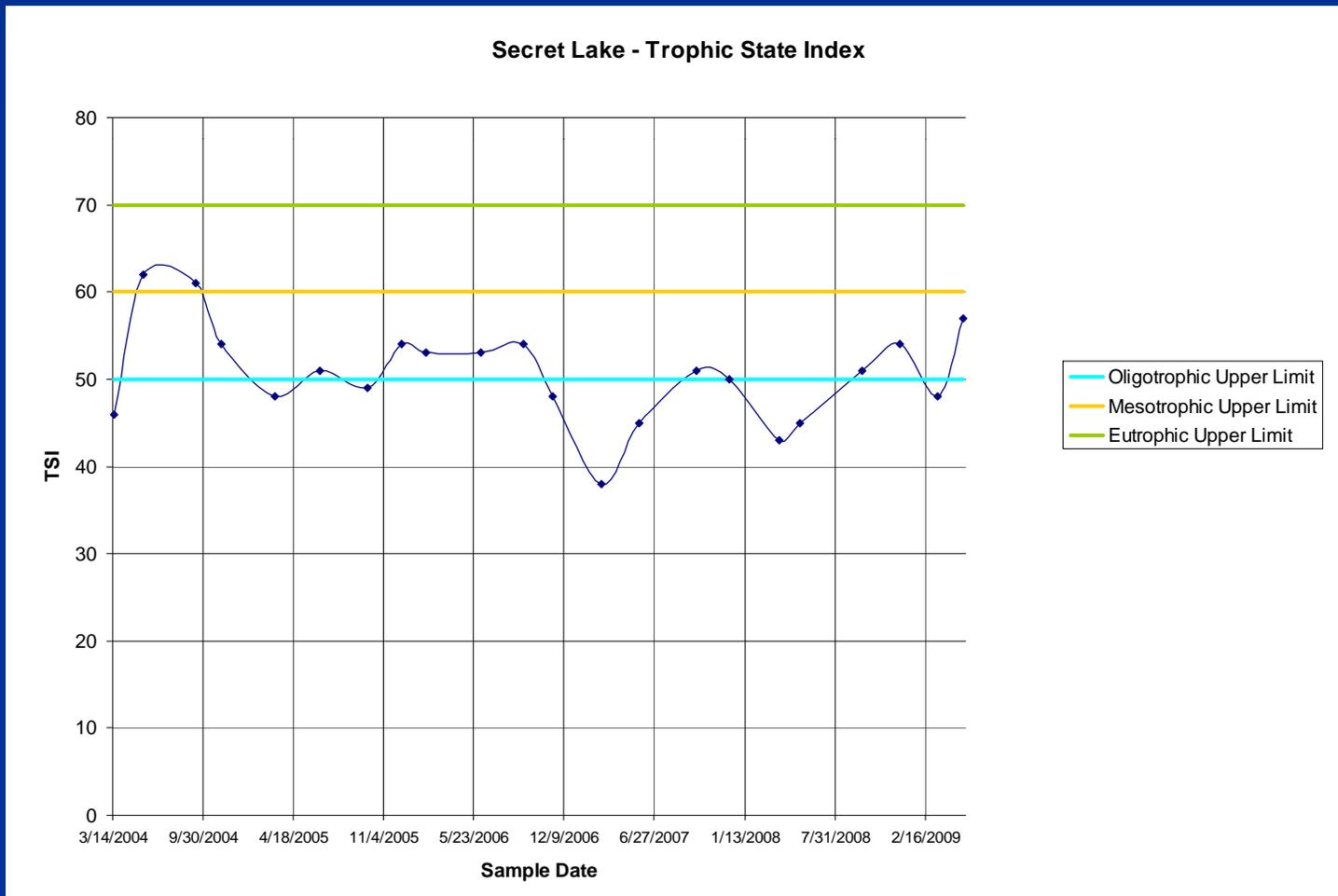
# Water Quality Characteristics

- North Lake Triplet Trophic State Index typically Mesotrophic (fair/average)



# Water Quality Characteristics

- Secret Lake Trophic State Index typically Mesotrophic to Oligotrophic (average to excellent)



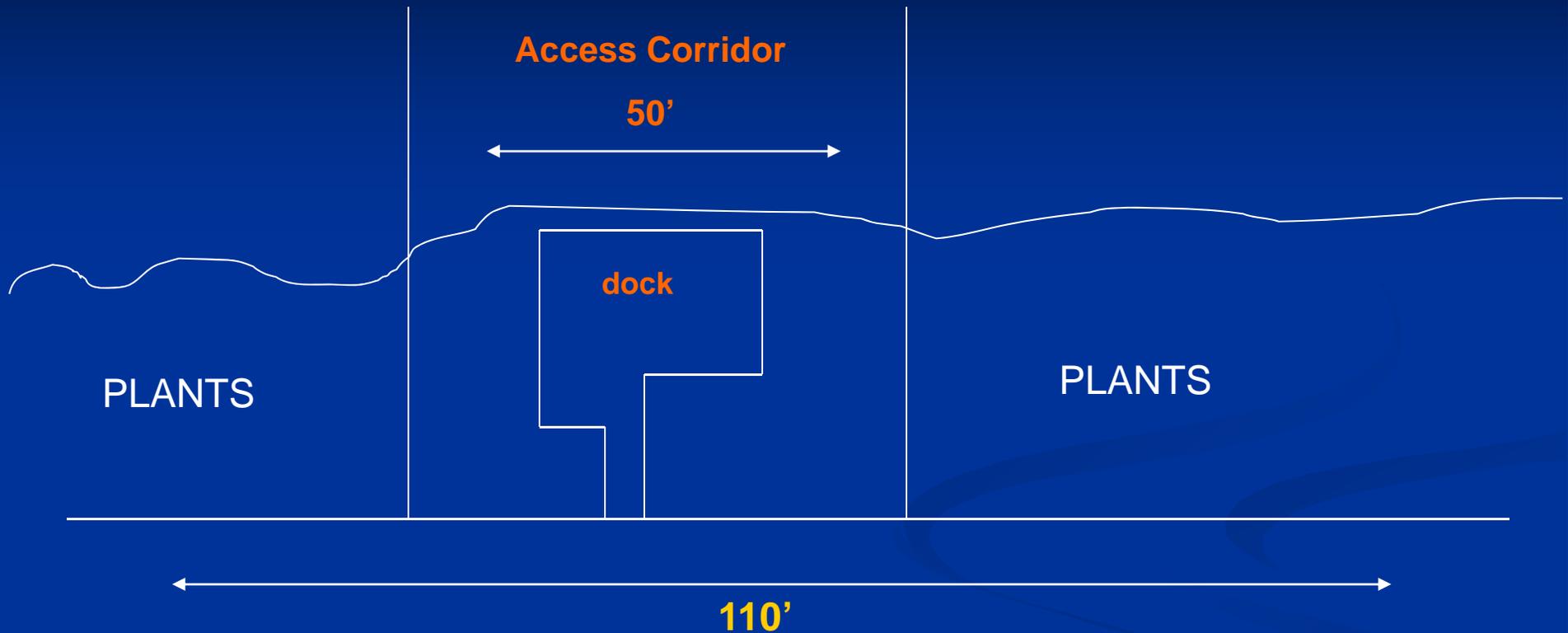


*What Revegetation Can Look Like*

# FWC Aquatic Plant Management Permit

- No fee
- Lakes larger than 10 acres in size, multiple owners
  - Secret Lake exempt from FWC regulation due to size
- 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](http://www.casselberry.org/lakes)

# What does the City do for North Lake Triplet and Secret Lake?

- Quarterly water quality sampling
- Monthly chemical (herbicide) aquatic treatment
  - Targeted species
  - “As needed” only
- Maintain canals; clear screens of debris (@Seminola)
  - Screen to contain grass carp
- Revegetation projects with swales and reverse berms



*North Lake Triplet (west shore) @ Secret Lake Park Before Project*



*North Lake Triplet (west shore) - After Clearing (Swale Construction)*



*North Lake Triplet (west shore) @ Secret Lake Park After Project*



*North Lake Triplet (west shore) @ Secret Lake Park – Completed project*



*North Lake Triplet (west shore) @ Secret Lake Park – Completed project*



*Secret Lake (SW Shore) - Before Project*



*Secret Lake (SW Shore) - During Project*



*Secret Lake (SW Shore) – After Project*



*Secret Lake (SW Shore) - Present*

# What does the City do for North Lake Triplet and Secret Lake?

- Quarterly water quality sampling
- Monthly chemical (herbicide) aquatic treatment
  - Targeted species
  - “As needed” only
- Maintain canals; clear screens of debris (@Seminola)
  - Screen to contain grass carp
- Revegetation projects with swales and reverse berms
- Erosion protection improvements
- Blueway Trail (for Triplet Chain)



*Blueway Trail System*

# What does the City do for North Lake Triplet and Secret Lake?

- Quarterly water quality sampling
- Monthly chemical (herbicide) aquatic treatment
  - Targeted species
  - “As needed” only
- Maintain canals; clear screens of debris (@Seminola)
  - Screen to contain grass carp, which help control hydrilla
- Revegetation projects with swales and reverse berms
- Erosion protection improvements
- Blueway Trail (for Triplet Chain)
- Public Education

# How can residents help protect North Lake Triplet and Secret Lake?

- Re-vegetate shorelines with natives when needed
- Reduce fertilizer use; provide a fertilizer free buffer near lake edge
  - Nutrients already in reclaim and lake water
- Inspect boat equipment for invasives
- Report suspected illicit discharge to Seminole Watershed Atlas (via [www.casselberry.org/lakes](http://www.casselberry.org/lakes))
- Participate in Florida Yards & Neighborhoods workshops for “greener” landscaping
  - Install rain gardens, rain barrels, and/or swales and reverse berms near lakeshore

**Questions / Comments / Issues**