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BOARD OF COUNTY COMMISSIONERS

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Floridians enjoy a year round climate in which to take advantage of recreating in lakes and streams. Orange County has over 500 lakes located in twelve major drainage basins or watersheds, within its boundaries. These water bodies can change naturally over time from an open lake to marsh by filling in with organic material. Sometimes, human activities can speed this process along. In order to try to identify these changes, monitoring is used as a tool to determine if they are happening too quickly.

The County has had a surface water monitoring program in place since the late 1960’s. The program began as a wastewater treatment effluent discharge monitoring program and has become a comprehensive large-scale effort across the county with quarterly sampling at over 200 sites. Rules and regulations have changed in the last thirty years so that there are few, if any wastewater discharges to surface waters. Stormwater runoff, or water flowing over the land surface, has become the primary means by which contaminants can enter our lakes and streams. This stormwater can pick up dirt, nutrients, bacteria, leaves and litter and carry these pollutants to a lake or stream.

Since the 1980’s rules have been put into place that limit the amount of direct discharge into surface waters, however, the County has many areas built before these regulations that have no stormwater treatment. As we try to determine the sources of pollution in each particular basin, there are many things that can be done by all to help water quality throughout the county. Everyday practices at home can help preserve or improve water quality in the basin. Things such as fertilizing your lawn with a zero phosphorus fertilizer, car washing with phosphate free soaps, maintaining septic tanks and drain fields, properly disposing of hazardous waste, preventing oil leaks from cars and equipment, cleaning up after pets, and limiting erosion all can positively affect a lake or stream several miles away.

The County is required through the National Pollutant Discharge Elimination System (NPDES) program to protect our surface waters. The Environmental Protection Agency (EPA) has delegated this program to the Florida Department of Environmental Protection (FDEP) since 2000. Through the permit process the County and other local municipalities are required to identify pollutant sources and loadings, implement a monitoring program, and detect and eliminate non-stormwater discharges.

Another program that has been mandated by the State and Federal government is the Total Maximum Daily Load (TMDL) Program, which came from the Federal Clean Water Act of 1972. This program identifies waters that do not meet specific water quality criteria outlined in Florida Administrative Code (F.A.C.) 62-302. The FDEP analyzes the monitoring data that is generated by the County and based on this information, some waterbodies are listed as impaired for certain constituents. As these water bodies are identified, the County and other stakeholders must establish the pollution source or sources, and eventually create a Basin Management Action Plan (BMAP) to eliminate or decrease these sources to improve water quality. This program has become the driving force behind the water quality monitoring program.
There are many ways to gauge the health of a water body, one way is to measure the Trophic State Index (TSI). This index, originally developed by Brezonik in 1984, takes the level of nitrogen, phosphorus and chlorophyll a into account and provides the level of productivity. This level of productivity equates to its trophic state. There are three levels of trophism: oligotrophic, mesotrophic and eutrophic. The more productive the lake, the more eutrophic it becomes. The trophic state succession is a naturally occurring process, but can be accelerated over time by anthropogenic or human sources mentioned above. Eutrophic lakes typically have a larger concentration of nitrogen or phosphorus (or both) and large amounts of chlorophyll a due to the abundance of algae. These lakes also have a larger fish, plant and invertebrate population, whereas the oligotrophic lakes are clearer, but typically have low amounts of nutrients and wildlife.

Stream sites do not have an index calculated on them, but do have the same constituents as the lakes tested. Other means of determining a water body’s health may be through the biological processes and types of organisms present. The County has been collecting data on invertebrate diversity for many years and has baseline diversity on several sites. The biology section of this report will go into detail on the methods used to analyze the plant and invertebrate populations in selected lakes and streams.

The County has also begun remote monitoring of water quality through real-time data transmissions at a small number of locations. This is a partnership with the United States Geological Survey (USGS) and the South Florida Water Management District (SFWMD) through which the County has located water quality probes with these agency’s communication and stage equipment. This allows staff and the public to view what is happening in the rivers on an hourly basis without having to be physically at the site. Please see the Remote Monitoring section for this information and the location of the sites.

**Data Compilation**

The data that has been compiled for this report includes historic and current data represented in trend graphs for each sample site covering the twelve major drainage basins within Orange County. A linear regression was performed on each graph to determine if the trend is significant for a ten year period (red dotted line) and another for the historical period of record (blue solid line). For lakes, the TSI for each year has been calculated using the formula located in the Appendix A of this report. The stream pages have trend graphs of bacteria and either nutrients or dissolved oxygen, depending on the impairment designation on the stream segment. Some sites will have biological data in addition to the chemical and physical data. This data summarizes plant or invertebrate surveys performed on the water body and the overall outcome. There is a separate section of the report for more comprehensive biological analyses.

The graphs presented in the following data pages are representative of data collected through a number of years to the present. This data should be used for
informational purposes only. Some of the sites have gaps between many years due to site access issues or budgetary reasons. Not all parameters analyzed are included in this report; please refer to Appendix B for the complete list of parameters.

**Methods**

The County follows the Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOP) for all field sampling. The analytical laboratories are certified through the National Environmental Laboratory Accreditation Program (NELAP) and are audited through the Florida Department of Health (FDOH). Once the data is collected, it is sent to the Orange County Water Atlas (www.orange.wateratlas.org), and then to the FDEP to upload to the Florida STORET (http://storet.dep.state.fl.us/WrmSpa) database. From there the data is accessible by the state’s TMDL assessment team to determine any impairment. It is then forwarded to the Environmental Protection Agency’s (EPA) STORET database, where they will also determine if a separate Federal TMDL will be created.

The physical conditions in the field are collected and analyzed by multiprobe meters. Theses parameters include temperature, dissolved oxygen, pH, specific conductivity, and sometimes turbidity. All readings reflect surface conditions at the time of sample collection.

Bathymetric data was collected using Odom Hydrographic System’s Hydrotrac single beam unit. This unit collects many data points per second and triangulates them over the lake area. The data are then averaged together and extrapolated into one image of the lake bottom.

Real time data are transmitted to a site at the USGS for a quality control check and then transmitted to a public website at http://waterdata.usgs.gov/fl/nwis/rt. All calibration and multiprobe collection procedures are sampled using USGS and FDEP collection SOP’s.

**Summary**

Orange County’s impaired water bodies increased to approximately 50. Most of these impairments are most likely due to nutrient runoff from surrounding land use. Nutrients remain the largest issue facing many of our lakes. Many projects are scheduled or ongoing to try to mitigate the amount of nutrients getting into the lakes from stormwater conveyances or overland flow. There are also education programs in place to let homeowners know about practices that they can change to help the water quality from their backyard or a lake in their drainage basin.
The above graph shows the monthly rainfall as recorded at the Orlando International Airport. Data is measured in inches.
**LAKE ANDERSON**

**Basin: Boggy Creek**

LAT: 28° 29' 56"  LONG: 81° 20' 12"
SECTION: 8  TOWNSHIP: 23S  RANGE: 30E

**Characteristics**

**Origin:** Natural
**Lake Surface Area (ac):** 13
**Lake Volume (ft³):** 6,512,220
**Average Depth (ft):** 11.5
**Shoreline Length (ft):** 3,083
**100 Year Flood (NGVD):** 83.50 O.C.E
**Historic Low Water Elevation (NGVD):** 56.4
**Historic High Water Elevation (NGVD):** 88.7
**Normal High Water Elevation (NHWE):** 79.5
**TMDL Impairment:** None
**TMDL Group:** 2
**BMAP:** No
**MSTU:** MSBU
**Public Access:** No

**Biological Information**

**Plant Management**
- **Surveys:** Yes
- **Treatment:** No
- **Target Species:** Acreage Treated: No

**Fish Management**
- **Fish Consumption Advisory:** No
- **Grass Carp:** No

**Macroinvertebrates**
- **LCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data

**2008 TSI Score:** 58

**Graph Legend**

- Historic TSI Trend ($R^2$)
- 10 Year Recent Trend

**Historic TSI Graph:**

$R^2 = 0.3445$
Lake Anderson
BC1

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE APOPKA

Basin: Apopka
LAT: 28° 37' 26"
LONG: 81° 37' 33"
SECTION: 12
TOWNSHIP: 23S
RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 30,862
Lake Volume (ft³): 9,410,441,040
Average Depth (ft): 7.0
Shoreline Length (ft): 152,870
100 Year Flood (NGVD): 69.2 FEMA
Historic Low Water Elevation (NGVD): 64.3
Historic High Water Elevation (NGVD): 74.5
Normal High Water Elevation (NHWE): 68.0
TMDL Impairment: Nutrients (TSI)
TMDL Group: 1
BMAP: Yes, Adopted 2007
MSTU: No
Public Access: Yes

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 82

Historic TSI Graph:

Graph Legend

- - - - - Historic TSI Trend (R²)
- - - - - 10 Year Recent Trend
Lake Apopka
LA5, LA7, LA9, LA10, LA11, LA12, LA17, LA18, LA19
LAKE AVALON

Basin: Apopka
LAT: 28° 30' 36"  LONG: 81° 38' 33"
SECTION: 6   TOWNSHIP: 23S   RANGE: 27E

Characteristics
Origin: Natural
Lake Surface Area (ac): 163
Lake Volume (ft³): 88,753,500
Average Depth (ft): 12.5
Shoreline Length (ft): 24,640
100 Year Flood (NGVD): 98.60 FEMA
Historic Low Water Elevation (NGVD): 80.4
Historic High Water Elevation (NGVD): 97.2
Normal High Water Elevation (NHWE): 90.9
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 41  Historic TSI Graph:

Graph Legend

- Historic TSI Trend (R²)
- 10 Year Recent Trend

R² = 0.0054
Lake Avalon
A3

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE BALDWIN

Basin: Little Econ

LAT: 28° 34' 20"
LONG: 81° 19' 20"
SECTION: 16   TOWNSHIP: 22S   RANGE: 30E

Characteristics

Origin: Natural
Lake Surface Area (ac): 202
Lake Volume (ft³): 131,986,800
Average Depth (ft): 15.0
Shoreline Length (ft): 10,541
100 Year Flood (NGVD): 95 FEMA
Historic Low Water Elevation (NGVD): 90.3
Historic High Water Elevation (NGVD): 93.3
Normal High Water Elevation (NHWE): 91.1
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: Yes

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: Yes

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: 4.2**

2008 TSI Score: 32

Historic TSI Graph:

R² = 0.7667

** Data collected in 1999
Lake Baldwin (Corrine)
LE7
**Characteristics**

- **Origin:** Natural
- **Lake Surface Area (ac):** 145
- **Lake Volume (ft³):** 122,534,280
- **Average Depth (ft):** 19.4
- **Shoreline Length (ft):** 9,286
- **100 Year Flood (NGVD):** 96.30 FEMA
- **Historic Low Water Elevation (NGVD):** 91.3
- **Historic High Water Elevation (NGVD):** 96.1
- **Normal High Water Elevation (NHWE):** 94.2
- **TMDL Impairment:** Nutrients (TSI)
- **TMDL Group:** 2
- **BMAP:** No
- **MSTU:** No
- **Public Access:** No

**Biological Information**

- **Plant Management**
  - **Surveys:** No
  - **Treatment:** No
  - **Target Species:**
  - **Acreage Treated:** No

- **Fish Management**
  - **Fish Consumption Advisory:** No
  - **Grass Carp:** Yes

- **Macroinvertebrates**
  - **LCI Score:** 52
  - **Overall Health:** Good
  - **Diversity Index:** 3.5

**2008 TSI Score: 45**

**Historic TSI Graph:**

- Data not available for all 4 quarters
BASS LAKE

Basin: Boggy Creek
LAT: 28° 30' 42"   LONG: 81° 20' 32"
SECTION: 5      TOWNSHIP: 23S      RANGE: 30E

Characteristics
Origin: Natural
Lake Surface Area (ac): 24
Lake Volume (ft³): 13,068,000
Average Depth (ft): 12.5
Shoreline Length (ft): 4,821
100 Year Flood (NGVD): 100.24 OCE
Historic Low Water Elevation (NGVD): 92.8
Historic High Water Elevation (NGVD): 97.2
Normal High Water Elevation (NHWE): 94.6
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

<table>
<thead>
<tr>
<th>Plant Management</th>
<th>Fish Management</th>
<th>Macroinvertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys: Yes</td>
<td>Fish Consumption Advisory: No</td>
<td>LCI Score: No Data</td>
</tr>
<tr>
<td>Treatment: No</td>
<td>Grass Carp: Yes</td>
<td>Overall Health: No Data</td>
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<tr>
<td>Target Species:</td>
<td></td>
<td>Diversity Index: No Data</td>
</tr>
<tr>
<td>Acreage Treated: No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2008 TSI Score: 54      Historic TSI Graph:

Graph Legend
- - - - - - Historic TSI Trend (R²)  
- - - - - - 10 Year Recent Trend

2008 TSI Score: 54      Historic TSI Graph:

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:

Historic TSI Trend (R²)  
10 Year Recent Trend

Graph Legend

2008 TSI Score: 54      Historic TSI Graph:
**Characteristics**

**Origin:** Natural  
**Lake Surface Area (ac):** 37  
**Lake Volume (ft³):** 12,410,244  
**Average Depth (ft):** 7.7  
**Shoreline Length (ft):** 4,694  
**100 Year Flood (NGVD):** 92.60 FEMA  
**Historic Low Water Elevation (NGVD):** 87.7  
**Historic High Water Elevation (NGVD):** 92.2  
**Normal High Water Elevation (NHWE):** 91.1  
**TMDL Impairment:** Nutrients (TSI)  
**TMDL Group:** 2  
**BMAP:** No  
**MSTU:** No  
**Public Access:** No

**Biological Information**

**Plant Management**
- **Surveys:** No  
- **Treatment:** No  
- **Target Species:**  
- **Acreage Treated:** No

**Fish Management**
- **Fish Consumption Advisory:** No  
- **Grass Carp:** Yes

**Macroinvertebrates**
- **LCI Score:** No Data  
- **Overall Health:** No Data  
- **Diversity Index:** No Data

**2008 TSI Score:** 60  
**Historic TSI Graph:**

**Graph Legend**
- **Historic TSI Trend (R²)**
- **10 Year Recent Trend**

**Historic TSI Trend (R²)**

**Recent Trend**

**Historic TSI Trend**

**2006**  
**2007**  
**2008**
Bay Lake
LW42

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
Characteristics

Origin: Natural
Lake Surface Area (ac): 16
Lake Volume (ft³): 6,830,208
Average Depth (ft): 9.8
Shoreline Length (ft): 3,430
100 Year Flood (NGVD): 93.4 OCE
Historic Low Water Elevation (NGVD): 88.8
Historic High Water Elevation (NGVD): 99.3
Normal High Water Elevation (NHWE): 90.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

2008 TSI Score: 51

Historic TSI Graph:

R² = 0.076

Lake Bearhead

BC4

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
Characteristics

Origin: Natural
Lake Surface Area (ac): 37
Lake Volume (ft³): 15,311,340
Average Depth (ft): 9.5
Shoreline Length (ft): 5,085
100 Year Flood (NGVD): 92.4 FEMA
Historic Low Water Elevation (NGVD): 86.9
Historic High Water Elevation (NGVD): 91.4
Normal High Water Elevation (NHWE): 89.4
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

2008 TSI Score: 36
Historic TSI Graph:

R² = 0.4675
LAKE BESSIE

Basin: Cypress Creek
LAT: 28° 29' 19"  LONG: 81° 31' 35"
SECTION: 17  TOWNSHIP: 23S  RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 164
Lake Volume (ft³): 119,302,128
Average Depth (ft): 16.7
Shoreline Length (ft): 13,400
100 Year Flood (NGVD): 102.6 FEMA
Historic Low Water Elevation (NGVD): 93.3
Historic High Water Elevation (NGVD): 102.1
Normal High Water Elevation (NHWE): 97.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: No

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

Biological Information

Plant Management
Surveys: Yes
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 35

Historic TSI Graph:

R² = 0.107
BIG SAND LAKE

Basin: Shingle Creek
LAT: 28° 25' 37"  LONG: 81° 29' 15"
SECTION: 2  TOWNSHIP: 24S  RANGE: 28E

Characteristics
Origin: Natural
Lake Surface Area (ac): 1,090
Lake Volume (ft³): 1,092,049,200
Average Depth (ft): 23.0
Shoreline Length (ft): 55,735
100 Year Flood (NGVD): 104.4 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 100.4
Normal High Water Elevation (NHWE): 90.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: 53**
Overall Health: Good
Diversity Index: 3.4**

2008 TSI Score: 29
Historic TSI Graph:

** Data collected in 2007

Graph Legend

--- Historic TSI Trend (R²)
--- 10 Year Recent Trend
BLACK LAKE

Basin: Apopka
LAT: 28° 31' 38"
LONG: 81° 36' 05"
SECTION: 34   TOWNSHIP: 22S   RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 225
Lake Volume (ft³): 115,651,800
Average Depth (ft): 11.8
Shoreline Length (ft): 15,104
100 Year Flood (NGVD): 100.6 FEMA
Historic Low Water Elevation (NGVD): 80.8
Historic High Water Elevation (NGVD): 98.3
Normal High Water Elevation (NHWE): 95.8
TMDL Impairment: None
TMDL Group: 1
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: Yes
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 52
Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend
LAKE BLANCHE

Basin: Cypress Creek
LAT: 28° 28' 50"
LONG: 81° 30' 57"
SECTION: 16 TOWNSHIP: 23S RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 122
Lake Volume (ft³): 142,955,208
Average Depth (ft): 26.9
Shoreline Length (ft): 12,213
100 Year Flood (NGVD): 101.6 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 100.8
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes, Keene Park

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: P
Acreage Treated: 8.25

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 28
Historic TSI Graph:

Graph Legend
Historic TSI Trend (R²)
10 Year Recent Trend

R² = 0.0875
Lake Blanche

Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
Characteristics

Origin: Natural
Lake Surface Area (ac): 137
Lake Volume (ft³): 27,451,512
Average Depth (ft): 4.6
Shoreline Length (ft): 15,652
100 Year Flood (NGVD): NA
Historic Low Water Elevation (NGVD): 101.6
Historic High Water Elevation (NGVD): 104.8
Normal High Water Elevation (NHWE): 105.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: Grass Carp: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Factors:

2008 TSI Score: No Data
Historic TSI Graph:

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

10 Year Recent Trend

Historic TSI Trend (R²)
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Britt
RC40
LAKE BUMBY

Characteristics

Origin: Natural
Lake Surface Area (ac): 11
Lake Volume (ft³): 3,785,364
Average Depth (ft): 7.9
Shoreline Length (ft): 3,792
100 Year Flood (NGVD): 95 FEMA
Historic Low Water Elevation (NGVD): 90.4
Historic High Water Elevation (NGVD): 93.4
Normal High Water Elevation (NHWE): 92.4
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: P, U
Acreage Treated: 33.2

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 55

Historic TSI Graph:

Graph Legend

- - - - - - - Historic TSI Trend (R²)
--- --- 10 Year Recent Trend

R² = 0.3034
Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Bumby
BC5
LAKE BURDEN

Basin: Cypress Creek
LAT: 28° 27' 20"   LONG: 81° 33' 12"
SECTION: 30   TOWNSHIP: 23S   RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 125
Lake Volume (ft³): 100,188,000
Average Depth (ft): 18.4
Shoreline Length (ft): 12,670
100 Year Flood (NGVD): 110 OCE
Historic Low Water Elevation (NGVD): 101.8
Historic High Water Elevation (NGVD): 107.5
Normal High Water Elevation (NHWE): 106.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

<table>
<thead>
<tr>
<th>Plant Management</th>
<th>Fish Management</th>
<th>Macroinvertebrates</th>
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</thead>
<tbody>
<tr>
<td>Surveys: No</td>
<td>Fish Consumption Advisory: No</td>
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<tr>
<td>Treatment: No</td>
<td>Grass Carp: No</td>
<td>Overall Health: No Data</td>
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<tr>
<td>Target Species:</td>
<td></td>
<td>Diversity Index: No Data</td>
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<tr>
<td>Acreage Treated: No</td>
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</tr>
</tbody>
</table>

2008 TSI Score: 16  

Historic TSI Graph:

Graph Legend

- - - Historic TSI Trend (R²)
- - - - - 10 Year Recent Trend

---

2008 TSI Score: 16
Historic TSI Graph:

Graph Legend

- - - Historic TSI Trend (R²)
- - - - - 10 Year Recent Trend

---
Characteristics

Origin: Natural
Lake Surface Area (ac): 75
Lake Volume (ft³): 56,845,800
Average Depth (ft): 17.4
Shoreline Length (ft): 6,575
100 Year Flood (NGVD): 56.0 FEMA
Historic Low Water Elevation (NGVD): 49.1
Historic High Water Elevation (NGVD): 55.0
Normal High Water Elevation (NHWE): 53.0
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 52

Historic TSI Graph:

R² = 0.0305
Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Legend
- Sampling Locations
- Orange County Outfalls

Lake Burkett
HB4
LAKE BUTLER

Basin: Cypress Creek
LAT: 28° 28' 32"  LONG: 81° 32' 50"
SECTION: 19  TOWNSHIP: 23S  RANGE: 28E

Characteristics
Origin: Natural
Lake Surface Area (ac): 1,618
Lake Volume (ft³): 993,769,128
Average Depth (ft): 14.1
Shoreline Length (ft): 66,127
100 Year Flood (NGVD): 102.3 FEMA
Historic Low Water Elevation (NGVD): 59.7
Historic High Water Elevation (NGVD): 102.4
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: Historic TSI (Nutrients)
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes, Keene Park

Biological Information
Plant Management
Surveys: Yes
Treatment: Yes
Target Species: A, P
Acreage Treated: 12.11

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: 81**
Overall Health: Very Good
Diversity Index: 3.9**

2008 TSI Score: 30
Historic TSI Graph:

Graph Legend
- - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

** Data collected in 2007
LAKE CANE

Basin: Shingle Creek
LAT: 28° 29' 06"  LONG: 81° 28' 21"
SECTION: 13  TOWNSHIP: 23S  RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 79
Lake Volume (ft³): 67,792,428
Average Depth (ft): 19.7
Shoreline Length (ft): 7,964
100 Year Flood (NGVD): 100.2 FEMA
Historic Low Water Elevation (NGVD): 48.6
Historic High Water Elevation (NGVD): 103.2
Normal High Water Elevation (NHWE): 98.8
TMDL Impairment: Nutrients (TSI)
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: Yes

Macroinvertebrates
LCI Score: 60
Overall Health: No Data
Diversity Index: 4

2008 TSI Score: 41

Historic TSI Graph:

Graph Legend

- - - - - - 10 Year Recent Trend

2008 TSI Score: 41

Graph Legend

- - - - - - 10 Year Recent Trend

2008 TSI Score: 41

Historic TSI Graph:

R² = 0.0252
Lake Cane

SC4

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE CARLTON

Basin: Apopka
LAT: 28° 45' 34"    LONG: 81° 39' 26"
SECTION: 7    TOWNSHIP: 20S    RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 384
Lake Volume (ft³): 219,124,224
Average Depth (ft): 13.1
Shoreline Length (ft): 13,451
100 Year Flood (NGVD): 65.9 FEMA
Historic Low Water Elevation (NGVD): 60.9
Historic High Water Elevation (NGVD): 63.8
Normal High Water Elevation (NHWE): 64.0
TMDL Impairment: Nutrients (TSI)
TMDL Group: 1
BMAP: Yes, Adopted 2007
MSTU: No
Public Access: Yes, Trimble Park

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 76
Historic TSI Graph:

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

2008 TSI Score: 76

R² = 0.4335
LAKE CATHERINE

Basin: Shingle Creek
LAT: 28° 30' 10"
LONG: 81° 24' 42"
SECTION: 9 TOWNSHIP: 23S RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 81
Lake Volume (ft³): 55,395,252
Average Depth (ft): 15.7
Shoreline Length (ft): 10,906
100 Year Flood (NGVD): 93.8 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 93.5
Normal High Water Elevation (NHWE): 90.4
TMDL Impairment: DO And Nutrients (TSI)
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

<table>
<thead>
<tr>
<th>Plant Management</th>
<th>Fish Management</th>
<th>Macroinvertebrates</th>
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</thead>
<tbody>
<tr>
<td>Surveys: No</td>
<td>Fish Consumption Advisory: No</td>
<td>LCI Score: No Data</td>
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<tr>
<td>Treatment: No</td>
<td>Grass Carp: No</td>
<td>Overall Health: No Data</td>
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<td>Target Species:</td>
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<td>Diversity Index: No Data</td>
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<td>Acreage Treated: No</td>
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</table>

2008 TSI Score: 49

Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

R² = 0.2954
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Catherine
SC6, SC28, SC29
**LAKE CHASE**

**Characteristics**

- **Origin:** Natural
- **Lake Surface Area (ac):** 142
- **Lake Volume (ft³):** 128,040,264
- **Average Depth (ft):** 20.7
- **Shoreline Length (ft):** 128,910
- **100 Year Flood (NGVD):** 102.2 FEMA
- **Historic Low Water Elevation (NGVD):** No Data
- **Historic High Water Elevation (NGVD):** No Data
- **Normal High Water Elevation (NHWE):** 99.5
- **TMDL Impairment:** None
- **TMDL Group:** 4
- **BMAP:** No
- **MSTU:** Yes
- **Public Access:** Yes, Keene Park

**Biological Information**

**Plant Management**
- **Surveys:** Yes
- **Treatment:** No
- **Target Species:** A, J
- **Acreage Treated:** 66

**Fish Management**
- **Fish Consumption Advisory:** Yes
- **Grass Carp:** No

**Macroinvertebrates**
- **LCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data

**2008 TSI Score:** 33

**Graph Legend**
- **Historic TSI Trend (R²)**
- **10 Year Recent Trend**

**Historic TSI Graph:**

- **R² = 0.1921**

**Basin: Cypress Creek**

LAT: 28° 28' 29"
LONG: 81° 31' 25"
SECTION: 21
TOWNSHIP: 23S
RANGE: 28E
CLEAR LAKE

 характеристик

объясняется

Биологическая информация

Расшифровка

2008 TSI Score: 53

Виды рыб

такое

Macrouguribetes

LCI Score: No Data

Overall Health: No Data

Diversity Index: No Data

2008 TSI Score: 53

Historic TSI Graph:
Characteristics

Origin: Natural
Lake Surface Area (ac): 3
Lake Volume (ft³): 509,652
Average Depth (ft): 3.9
Shoreline Length (ft): 1,386
100 Year Flood (NGVD): 98 OCE
Historic Low Water Elevation (NGVD): 88.3
Historic High Water Elevation (NGVD): 95.1
Normal High Water Elevation (NHWE): 94.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

<table>
<thead>
<tr>
<th>Plant Management</th>
<th>Fish Management</th>
<th>Macroinvertebrates</th>
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<tbody>
<tr>
<td>Surveys: No</td>
<td>Fish Consumption Advisory: No</td>
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<td>Treatment: No</td>
<td>Grass Carp: No</td>
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<td>Target Species:</td>
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<td>Diversity Index: No Data</td>
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<td>Acreage Treated: No</td>
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</table>

2008 TSI Score: 74

Graph Legend

- - - Historic TSI Trend (R²)
- - - - - 10 Year Recent Trend

Historic TSI Graph:

R² = 0.3165
LAKE CONWAY

Characteristics

Origin: Natural
Lake Surface Area (ac): No Data
Lake Volume (ft³): 636,790,572
Average Depth (ft): 23.3
Shoreline Length (ft): No Data
100 Year Flood (NGVD): 89 FEMA
Historic Low Water Elevation (NGVD): 74.3
Historic High Water Elevation (NGVD): 89.0
Normal High Water Elevation (NHWE): 86.9
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes, Randolph Boat Ramp

Biological Information

Macrobenthos

LCI Score: 67
Overall Health: Very Good
Diversity Index: 4.0

Graph Legend

- Historic TSI Trend (R²)
- 10 Year Recent Trend

2008 TSI Score: 30

Historic TSI Graph:

[Graph showing TSI scores from 1992 to 2008 with trend lines and R² value of 0.663]
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Conway
BC8, BC9
**CORNER LAKE**

**Baseline: Big Econ**

LAT: 28° 34' 56"
LONG: 81° 07' 45"
SECTION: 17 TOWNSHIP: 22S RANGE: 32E

---

**Characteristics**

**Origin:** Natural

**Lake Surface Area (ac):** 113

**Lake Volume (ft³):** 61,528,500

**Average Depth (ft):** 12.5

**Shoreline Length (ft):** 10,230

**100 Year Flood (NGVD):** 63.3

**Historic Low Water Elevation (NGVD):** 59.4

**Historic High Water Elevation (NGVD):** 63.6

**Normal High Water Elevation (NHWE):** 62.0

**TMDL Impairment:** None

**TMDL Group:** 2

**BMAP:** No

**MSTU:** No

**Public Access:** No

---

**Biological Information**

**Plant Management**

**Surveys:** No

**Treatment:** No

**Target Species:**

**Acreage Treated:** No

---

**Fish Management**

**Fish Consumption Advisory:** No

**Grass Carp:** No

---

**Macroinvertebrates**

**LCI Score:** No Data

**Overall Health:** No Data

**Diversity Index:** No Data

---

**2008 TSI Score:** 33

**Historic TSI Graph:**

![Historic TSI Trend (R²)]

---

**Graph Legend**

- Historic TSI Trend (R²)
- 10 Year Recent Trend

---
Characteristics

Origin: Natural
Lake Surface Area (ac): 187
Lake Volume (ft³): 152,324,964
Average Depth (ft): 18.7
Shoreline Length (ft): 15,530
100 Year Flood (NGVD): 105.1 FEMA
Historic Low Water Elevation (NGVD): 100.0
Historic High Water Elevation (NGVD): 104.0
Normal High Water Elevation (NHWE): 102.8
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: A, J, P, W
Acreage Treated: 24.05

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 39

Historic TSI Graph:

Graph Legend

- Historic TSI Trend (R²)
- 10 Year Recent Trend

R² = 0.2071
Lake Crescent

CC7

Legend
- Red: Sampling Locations
- Yellow: Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
CROOKED LAKE

Basin: Big Wekiva
LAT: 28° 35' 46" LONG: 81° 28' 52"
SECTION: 2 TOWNSHIP: 22S RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 100
Lake Volume (ft³): 28,686,351
Average Depth (ft): 6.6
Shoreline Length (ft): 17,826
100 Year Flood (NGVD): 79.9 FEMA
Historic Low Water Elevation (NGVD): 56.0
Historic High Water Elevation (NGVD): 81.9
Normal High Water Elevation (NHWE): 71.7
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Graph Legend
- - - - - - 10 Year Recent Trend
--- Historic TSI Trend (R²)

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 78

Historic TSI Graph:

* Data not available for all 4 quarters
Legend

Sampling Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Crooked Lake
BW19
LAKE CYPRESS

Basin: Cypress Creek
LAT: 28° 28' 49"  LONG: 81° 33' 59"
SECTION: 13  TOWNSHIP: 23S  RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 62
Lake Volume (ft³): 37,269,936
Average Depth (ft): 13.8
Shoreline Length (ft): 7,610
100 Year Flood (NGVD): 102.3 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 100.8
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 45

Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

2008 TSI Score: 45
Historic TSI Graph:

R² = 0.0761
DEEP LAKE

Basin: Howell Branch
LAT: 28° 36' 46"    LONG: 81° 15' 11"
SECTION: 31    TOWNSHIP: 21S    RANGE: 31E

Characteristics

Origin: Natural
Lake Surface Area (ac): 43
Lake Volume (ft³): 43,080,840
Average Depth (ft): 23.0
Shoreline Length (ft): 2,586
100 Year Flood (NGVD): 57.7 SJRWMD
Historic Low Water Elevation (NGVD): 49.1
Historic High Water Elevation (NGVD): 55.7
Normal High Water Elevation (NHWE): 56.8
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 36

Historic TSI Graph:

* Data not available for all 4 quarters
LAKE DOWN

Basin: Cypress Creek
LAT: 28° 30' 17"  LONG: 81° 31' 35"
SECTION: 8  TOWNSHIP: 23S  RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 911
Lake Volume (ft³): 781,758,252
Average Depth (ft): 19.7
Shoreline Length (ft): 48,061
100 Year Flood (NGVD): 102.3 FEMA
Historic Low Water Elevation (NGVD): 90.6
Historic High Water Elevation (NGVD): 101.6
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes, Down Boat Ramp

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: 85**
Overall Health: Very Good
Diversity Index: 3.8**

2008 TSI Score: 16

Historic TSI Graph:

** Data collected in 2006
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Down

CC9, CC9E
**Lake Downey**

**Basin: Little Econ**

LAT: 28° 34' 03"
LONG: 81° 14' 28"
SECTION: 20  TOWNSHIP: 22S  RANGE: 31E

### Characteristics

**Origin:** Natural

**Lake Surface Area (ac):** 18

**Lake Volume (ft³):** 12,545,280

**Average Depth (ft):** 16.0

**Shoreline Length (ft):** 3,279

**100 Year Flood (NGVD):** 73.2 FEMA

**Historic Low Water Elevation (NGVD):** 68.8

**Historic High Water Elevation (NGVD):** 72.3

**Normal High Water Elevation (NHWE):** 70.5

**TMDL Impairment:** None

**TMDL Group:** 2

**BMAP:** No

**MSTU:** No

**Public Access:** Yes, Downey Park

### Biological Information

#### Plant Management

- **Surveys:** No
- **Treatment:** No
- **Target Species:** Acreage Treated: No

#### Fish Management

- **Fish Consumption Advisory:** No
- **Grass Carp:** No

#### Macroinvertebrates

- **LCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data

### 2008 TSI Score: 35

#### Historic TSI Graph:

![Historic TSI Graph](image)  

$R^2 = 0.013\epsilon$
Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Downey
LE10
LAKE DRAWDY

Basin: Big Econ
LAT: 28° 35' 30"  LONG: 81° 07' 29"
SECTION: 9   TOWNSHIP: 22S   RANGE: 32E

Characteristics
Origin: Natural
Lake Surface Area (ac): 52
Lake Volume (ft³): 34,882,848
Average Depth (ft): 15.4
Shoreline Length (ft): 7,013
100 Year Flood (NGVD): 59.1 FEMA
Historic Low Water Elevation (NGVD): 54.0
Historic High Water Elevation (NGVD): 58.9
Normal High Water Elevation (NHWE): 57.5
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 47
Historic TSI Graph:

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - 10 Year Recent Trend

2008 TSI Score: 47
Historic TSI Graph:

R² = 0.015
LAKE ELLENOR

Characteristics

Origin: Natural
Lake Surface Area (ac): 113
Lake Volume (ft³): 38,393,784
Average Depth (ft): 7.8
Shoreline Length (ft): 8,476
100 Year Flood (NGVD): 98.00 FEMA
Historic Low Water Elevation (NGVD): 93.4
Historic High Water Elevation (NGVD): 96.0
Normal High Water Elevation (NHWE): 95.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 45
Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
--- - - 10 Year Recent Trend
LAKE FAIRVIEW

Basin: Little Wekiva
LAT: 28° 35' 38"
LONG: 81° 24' 24"
SECTION: 10 TOWNSHIP: 22S RANGE: 29E

Characteristics
Origin: Natural
Lake Surface Area (ac): 417
Lake Volume (ft³): 317,879,100
Average Depth (ft): 17.5
Shoreline Length (ft): 28,911
100 Year Flood (NGVD): 90.8 FEMA
Historic Low Water Elevation (NGVD): 85.8
Historic High Water Elevation (NGVD): 90.2
Normal High Water Elevation (NHWE): 88.5
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: Yes (South Lobe)
Public Access: Yes, Lake Fairview Park

Biological Information

<table>
<thead>
<tr>
<th>Plant Management</th>
<th>Fish Management</th>
<th>Macroinvertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys: Yes</td>
<td>Fish Consumption Advisory: No</td>
<td>LCI Score: 51**</td>
</tr>
<tr>
<td>Treatment: Yes</td>
<td>Grass Carp: Yes</td>
<td>Overall Health: Very Good</td>
</tr>
<tr>
<td>Target Species:</td>
<td></td>
<td>Diversity Index: 3.0**</td>
</tr>
<tr>
<td>Acreage Treated: No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2008 TSI Score: 47

Graph Legend

- Historic TSI Trend ($R^2$)
- 10 Year Recent Trend

Historic TSI Graph:

** Data collected in 2007
**LAKE FREDRICA**

**Basin: Little Econ**

LAT: 28° 30' 30"  LONG: 81° 18' 26"

SECTION: 10  TOWNSHIP: 23S  RANGE: 30E

### Characteristics

- **Origin:** Natural
- **Lake Surface Area (ac):** 67
- **Lake Volume (ft³):** 34,730,388
- **Average Depth (ft):** 11.9
- **Shoreline Length (ft):** 6,195
- **100 Year Flood (NGVD):** 99.7
- **Historic Low Water Elevation (NGVD):** 94.1
- **Historic High Water Elevation (NGVD):** 99.3
- **Normal High Water Elevation (NHWE):** 98.0
- **TMDL Impairment:** None
- **TMDL Group:** 2
- **BMAP:** No
- **MSTU:** No
- **Public Access:** No

### Biological Information

#### Plant Management
- **Surveys:** No
- **Treatment:** No
- **Target Species:**
- **Acreage Treated:** No

#### Fish Management
- **Fish Management:**
- **Fish Consumption Advisory:** Yes
- **Grass Carp:** No

#### Macroinvertebrates
- **LCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data

#### 2008 TSI Score: 35

**Historic TSI Graph:**

![Historic TSI Trend Graph](image)

**Graph Legend**

- **Historic TSI Trend** (R²)
- **10 Year Recent Trend**

**R² = 0.1164**
LAKE GANDY

Basin: Little Wekiva
LAT: 28° 37' 38"
LONG: 81° 25' 57"
SECTION: 29  TOWNSHIP: 21S  RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 45
Lake Volume (ft³): 18,621,900
Average Depth (ft): 9.5
Shoreline Length (ft): 9,550
100 Year Flood (NGVD): 76 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 77.5
Normal High Water Elevation (NHWE): 73.1
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 59

Historic TSI Graph:

Graph Legend

- - - - - - 10 Year Recent Trend

Historic TSI Trend (R²)

R² = 0.2715

2008 TSI Score: 59

Historic TSI Graph:
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Gandy

LW7
LAKE GATLIN

Basin: Boggy Creek
LAT: 28° 29' 28"
LONG: 81° 22' 06"
SECTION: 13
TOWNSHIP: 23S
RANGE: 29E

Characteristics
Origin: Natural
Lake Surface Area (ac): 64
Lake Volume (ft³): 61,332,480
Average Depth (ft): 22.0
Shoreline Length (ft): 7,297
100 Year Flood (NGVD): 89 FEMA
Historic Low Water Elevation (NGVD): 81.3
Historic High Water Elevation (NGVD): 87.5
Normal High Water Elevation (NHWE): 86.9
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: Yes, Ferncreek And Randolph Boat

Biological Information
Plant Management
Surveys: Yes
Treatment: No
Target Species: W
Acreage Treated: 0.05

Fish Management
Fish Consumption Advisory: No
Grass Carp: Yes

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Historic TSI Graph:
2008 TSI Score: 36

Graph Legend
- Historic TSI Trend (R²)
- 10 Year Recent Trend

---

R² = 0.3007
Legend

- Red: Sampling Locations
- Orange: Orange County Outfalls

Orange County Land Use:
- Red: Commercial
- Black: Industrial
- Pink: Residential
- Green: Parks / Conservation
- Orange: Rural / Agricultural
- Blue: Institutional

Lake Gatlin

BC11
LAKE GEM MARY

Basin: Boggy Creek
LAT: 28° 29' 46"
LONG: 81° 21' 54"
SECTION: 12   TOWNSHIP: 23S   RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 13
Lake Volume (ft³): 15,232,932
Average Depth (ft): 26.9
Shoreline Length (ft): 2,895
100 Year Flood (NGVD): 93.2 FEMA
Historic Low Water Elevation (NGVD): 86.3
Historic High Water Elevation (NGVD): 96.5
Normal High Water Elevation (NHWE): 89.6
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

2008 TSI Score: 60
Historic TSI Graph:

R² = 0.008
LAKE GEORGE

Basin: Boggy Creek
LAT: 28° 30' 02"  LONG: 81° 19' 11"
SECTION: 9   TOWNSHIP: 23S   RANGE: 30E

Characteristics

Origin: Natural
Lake Surface Area (ac): 69
Lake Volume (ft³): 39,975,012
Average Depth (ft): 13.3
Shoreline Length (ft): 8,089
100 Year Flood (NGVD): 99.2 OCE
Historic Low Water Elevation (NGVD): 86.6
Historic High Water Elevation (NGVD): 100.4
Normal High Water Elevation (NHWE): 95.5
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: Yes, Barber Park

Biological Information

<table>
<thead>
<tr>
<th>Plant Management</th>
<th>Fish Management</th>
<th>Macrinovertrebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys: No</td>
<td>Fish Consumption Advisory: No</td>
<td>LCI Score: 40**</td>
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<tr>
<td>Treatment: No</td>
<td>Grass Carp: No</td>
<td>Overall Health: Good</td>
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<td>Target Species:</td>
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<td>Diversity Index: 2.3**</td>
</tr>
<tr>
<td>Acreage Treated: No</td>
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<td></td>
</tr>
</tbody>
</table>

2008 TSI Score: 33

Historic TSI Graph:

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - - - - - 10 Year Recent Trend

** Data collected in 2004
Legend

- Red Circle: Sampling Locations
- Orange Circle: Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake George (Barber)

BC2
LAKE GEORGIA

Basin: Howell Branch
LAT: 28° 36' 22" LONG: 81° 14' 48"
SECTION: 6 TOWNSHIP: 22S RANGE: 31E

Characteristics
Origin: Natural
Lake Surface Area (ac): 83
Lake Volume (ft³): 40,131,828
Average Depth (ft): 11.1
Shoreline Length (ft): 9,889
100 Year Flood (NGVD): 61.9 FEMA
Historic Low Water Elevation (NGVD): 48.6
Historic High Water Elevation (NGVD): 61.4
Normal High Water Elevation (NHWE): 59.5
TMDL Impairment: Historic TSI (Nutrients)
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 26

Historic TSI Graph:

Graph Legend
- - Historic TSI Trend (R²)
- - 10 Year Recent Trend

R² = 0.0902
LAKE GIFFORD

Basin: Reedy Creek
LAT: 28° 21' 46"
LONG: 81° 38' 33"
SECTION: 30 TOWNSHIP: 24S RANGE: 27E

Biological Information

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Characteristics

Origin: Natural
Lake Surface Area (ac): 43
Lake Volume (ft³): 31,280,436
Average Depth (ft): 16.7
Shoreline Length (ft): 5,388
100 Year Flood (NGVD): 113.8 OCE
Historic Low Water Elevation (NGVD): 107.4
Historic High Water Elevation (NGVD): 110.5
Normal High Water Elevation (NHWE): 110.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 36

Historic TSI Graph:

R² = 0.0086

2008 TSI Score: 36

Historic TSI Graph:
Lake Gifford

RC8

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE HANCOCK

Basin: Reedy Creek

LAT: 28° 21' 55"
LONG: 81° 39' 24"
SECTION: 30  TOWNSHIP: 24S  RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 456
Lake Volume (ft³): 431,034,912
Average Depth (ft): 21.7
Shoreline Length (ft): 59,026
100 Year Flood (NGVD): 100.2 OCE
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 99.4
Normal High Water Elevation (NHWE): 97.3
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 25
Historic TSI Graph:

Graph Legend
- - - - - -10 Year Recent Trend
---Historic TSI Trend (R²)

2008 TSI Score: 25

Historic TSI Graph:

\[ R^2 = 0.0285 \]
Lake Hancock

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE HART

Basin: Hart
LAT: 28° 22' 46"
LONG: 81° 12' 40"
SECTION: 21   TOWNSHIP: 24S   RANGE: 31E

Characteristics

Origin: Natural
Lake Surface Area (ac): 1,880
Lake Volume (ft³): 777,981,600
Average Depth (ft): 9.5
Shoreline Length (ft): 48,281
100 Year Flood (NGVD): 64 OCE
Historic Low Water Elevation (NGVD): 54.3
Historic High Water Elevation (NGVD): 62.4
Normal High Water Elevation (NHWE): 61.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: Yes - Moss Park

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: 2.9**

2008 TSI Score: 41
Historic TSI Graph:

** Data collected in 1999
Lake Hart
H2

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
Characteristics

Origin: Natural
Lake Surface Area (ac): 11
Lake Volume (ft³): 7,858,224
Average Depth (ft): 16.4
Shoreline Length (ft): 2,734
100 Year Flood (NGVD): 92 FEMA
Historic Low Water Elevation (NGVD): 87.5
Historic High Water Elevation (NGVD): 92.3
Normal High Water Elevation (NHWE): No Data
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 34

Historic TSI Graph:

Graph Legend

---Historic TSI Trend (R²)

---10 Year Recent Trend

R² = 0.3431
LAKE HIAWASSEE

Basin: Big Wekiva
LAT: 28° 31' 40"
LONG: 81° 28' 53"
SECTION: 35  TOWNSHIP: 22S  RANGE: 28E

Characteristics
Origin: Natural
Lake Surface Area (ac): 170
Lake Volume (ft³): 68,127,840
Average Depth (ft): 9.2
Shoreline Length (ft): 19,041
100 Year Flood (NGVD): 83.5 FEMA
Historic Low Water Elevation (NGVD): 65.4
Historic High Water Elevation (NGVD): 82.4
Normal High Water Elevation (NHWE): 78.4
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: In Process
Public Access: No

Biological Information
Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 52

Graph Legend
-Historic TSI Trend (R²)
-10 Year Recent Trend

2008 TSI Score: 52
Historic TSI Graph: $R^2 = 0.0084$
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Hiawassee
BW26
Characteristics

Origin: Natural
Lake Surface Area (ac): 21
Lake Volume (ft³): 10,428,264
Average Depth (ft): 11.4
Shoreline Length (ft): 4,351
100 Year Flood (NGVD): 65.7 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 64.7
Normal High Water Elevation (NHWE): 64.4
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 51
Historic TSI Graph: 

Graph Legend

- Historic TSI Trend (R²)
- 10 Year Recent Trend

Basin: Little Wekiva
LAT: 28° 38' 11"
LONG: 81° 26' 15"
SECTION: 29 TOWNSHIP: 21S RANGE: 29E
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:

- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Hill
LW9
Characteristics

Origin: Natural
Lake Surface Area (ac): 265
Lake Volume (ft³): 157,375,020
Average Depth (ft): 13.6
Shoreline Length (ft): 22,974
100 Year Flood (NGVD): 92.8 FEMA
Historic Low Water Elevation (NGVD): 70.6
Historic High Water Elevation (NGVD): 92.6
Normal High Water Elevation (NHWE): 91.0
TMDL Impairment: Nutrients (TSI)
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: Yes

Macroinvertebrates
LCI Score: 17**
Overall Health: Very Poor
Diversity Index: 1.7**

2008 TSI Score: 47
Historic TSI Graph:

Graph Legend

** Data collected in 2007
Lake Holden
BC14M, BC14N, BC14NM, BC14S
LAKE HUCKLEBERRY

Basin: Reedy Creek
LAT: 28° 25' 55"
LONG: 81° 36' 55"
SECTION: 4   TOWNSHIP: 24S   RANGE: 27E

Characteristics
Origin: Natural
Lake Surface Area (ac): 110
Lake Volume (ft³): 66,124,080
Average Depth (ft): 13.8
Shoreline Length (ft): 7,972
100 Year Flood (NGVD): 98.8 OCE
Historic Low Water Elevation (NGVD): 41.8
Historic High Water Elevation (NGVD): 98.9
Normal High Water Elevation (NHWE): 97.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information
Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 31
Historic TSI Graph:

Graph Legend
- - - - - - Historic TSI Trend \((R^2)\)
--- - - - - - 10 Year Recent Trend

Historic TSI Trend \((R^2)\)
LAKE INGRAM

Basin: Reedy Creek
LAT: 28° 27' 39"
LONG: 81° 38' 37"
SECTION: 30  TOWNSHIP: 23S  RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 43
Lake Volume (ft³): 17,232,336
Average Depth (ft): 9.2
Shoreline Length (ft): 5,794
100 Year Flood (NGVD): 98 OCE
Historic Low Water Elevation (NGVD): 80.2
Historic High Water Elevation (NGVD): 95.5
Normal High Water Elevation (NHWE): 95.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 54
Historic TSI Graph:

Graph Legend

- Historic TSI Trend (R²)
  - 10 Year Recent Trend
LAKE ISLEWORTH

Basin: Cypress Creek
LAT: 28° 28' 21"
LONG: 81° 31' 45"
SECTION: 20  TOWNSHIP: 23S  RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 56
Lake Volume (ft³): 40,737,312
Average Depth (ft): 16.7
Shoreline Length (ft): 8,556
100 Year Flood (NGVD): 102.2 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): No Data
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes

Biological Information

Graph Legend

- - - - - - Historic TSI Trend (R²)
... - - - - - - 10 Year Recent Trend

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: P
Acreage Treated: 3.63

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: 3.8**

2008 TSI Score: 34
Historic TSI Graph:

** Data collected in 2000
Legend

Lake Isleworth
CC11

Orange County Outfalls

Commercial
Industrial
Residential
Parks / Conservation
Rural / Agricultural
Institutional

Sampling Locations
Biological Information

Macroinvertebrates
LCI Score: None To Date
Overall Health: NA
Diversity Index: NA

Plant Management
Surveys: No
Treatment: No Data
Target Species: Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Graph Legend

Historic TSI Trend ($R^2$)
10 Year Recent Trend

2008 TSI Score: 42
Historic TSI Graph:

Origin: Natural
Lake Surface Area (ac): 70
Lake Volume (ft$^3$): 59,459,400
Average Depth (ft): 19.5
Shoreline Length (ft): 10,860
100 Year Flood (NGVD): 92 FEMA
Historic Low Water Elevation (NGVD): 86.8
Historic High Water Elevation (NGVD): 91.8
Normal High Water Elevation (NHWE): 89.6
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

SECTION: 12  TOWNSHIP: 23S  RANGE: 29E

LAKE JENNIE JEWEL

Basin: Boggy Creek
LAT: 28° 29' 53"
LONG: 81° 22' 19"

Characteristics

Lake Surface Area (ac): 70
Lake Volume (ft$^3$): 59,459,400
Average Depth (ft): 19.5
Shoreline Length (ft): 10,860
100 Year Flood (NGVD): 92 FEMA
Historic Low Water Elevation (NGVD): 86.8
Historic High Water Elevation (NGVD): 91.8
Normal High Water Elevation (NHWE): 89.6
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No
Lake Jennie Jewel
BC16E, BC16W

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE JESSAMINE

Basin: Boggy Creek
LAT: 28° 28' 54"    LONG: 81° 23' 06"
SECTION: 14    TOWNSHIP: 23S    RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 292
Lake Volume (ft³): 204,360,288
Average Depth (ft): 16.1
Shoreline Length (ft): 26,420
100 Year Flood (NGVD): 94.1 FEMA
Historic Low Water Elevation (NGVD): 87.6
Historic High Water Elevation (NGVD): 96.7
Normal High Water Elevation (NHWE): 92.4
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: Yes

Macroinvertebrates
LCI Score: None To Date
Overall Health: NA
Diversity Index: NA

2008 TSI Score: 49

Historic TSI Graph:

Graph Legend
- - - - Historic TSI Trend (R²)
- - - - 10 Year Recent Trend

R² = 0.0317
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Jessamine
BC17M, BC17NE, BC17SW
JOHNS LAKE

Basin: Apopka
LAT: 28° 31' 49"  LONG: 81° 39' 26"
SECTION: 31  TOWNSHIP: 22S  RANGE: 27E

Characteristics
Origin: Natural
Lake Surface Area (ac): 2,439
Lake Volume (ft³): 1,221,792,660
Average Depth (ft): 11.5
Shoreline Length (ft): 104,936
100 Year Flood (NGVD): 100.6 FEMA
Historic Low Water Elevation (NGVD): 72.4
Historic High Water Elevation (NGVD): 98.5
Normal High Water Elevation (NHWE): 98.4
TMDL Impairment: Nutrients (TSI), Hg In Fish
TMDL Group: 1
BMAP: No
MSTU: No
Public Access: Yes, Johns Lake Park

Biological Information

Plant Management
Surveys: Yes
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: None To Date
Overall Health: NA
Diversity Index: NA

Historic TSI Graph:

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

2008 TSI Score: 56

Historic TSI Trend

R² = 0.5886
LAKE JUNE

Basin: Shingle Creek
LAT: 28° 31' 17"   LONG: 81° 23' 41"
SECTION: 3   TOWNSHIP: 23S   RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 4
Lake Volume (ft³): 1,428,768
Average Depth (ft): 8.2
Shoreline Length (ft): 1,546
100 Year Flood (NGVD): NA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): No Data
Normal High Water Elevation (NHWE): 100.2
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 65

Historic TSI Graph:
R² = 0.3787
LAKE KILLARNEY

Basin: Howell Branch
LAT: 28° 35’ 59”   LONG: 81° 22’ 28”
SECTION: 1   TOWNSHIP: 22S   RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 239
Lake Volume (ft³): 149,916,096
Average Depth (ft): 14.4
Shoreline Length (ft): 22,738
100 Year Flood (NGVD): 85.4 FEMA
Historic Low Water Elevation (NGVD): 52.3
Historic High Water Elevation (NGVD): 88.2
Normal High Water Elevation (NHWE): 83.0
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: Yes

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 55
Historic TSI Graph:

Graph Legend
- - - - - - 10 Year Recent Trend
LAKE LAWNE

Basin: Little Wekiva
LAT: 28° 33' 54"
LONG: 81° 26' 14"
SECTION: 20 TOWNSHIP: 22S RANGE: 29E

Characteristics
Origin: Natural
Lake Surface Area (ac): 145
Lake Volume (ft³): 46,108,260
Average Depth (ft): 7.3
Shoreline Length (ft): 15,037
100 Year Flood (NGVD): 90.4 FEMA
Historic Low Water Elevation (NGVD): 84.3
Historic High Water Elevation (NGVD): 92.5
Normal High Water Elevation (NHWE): 88.0
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: Yes - Barnett Park

Biological Information
Plant Management
Surveys: Yes
Treatment: Yes
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: 34**
Overall Health: Poor
Diversity Index: 2.1**

2008 TSI Score: 59
Historic TSI Graph:

** Data collected in 2007
Legend

Sampling Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Lawne
LW10M, LW10N, LW10S
LITTLE LAKE BRYAN

Basin: Shingle Creek
LAT: 28° 22' 05"
LONG: 81° 29' 44"
SECTION: 27 TOWNSHIP: 24S RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 214
Lake Volume (ft³): 223,724,160
Average Depth (ft): 24.0
Shoreline Length (ft): 12,690
100 Year Flood (NGVD): 100.1 FEMA
Historic Low Water Elevation (NGVD): 97.0
Historic High Water Elevation (NGVD): 100.2
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: 1.4**

2008 TSI Score: 31
Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

** Data collected in 1997
Little Lake Bryan

SC1

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LITTLE LAKE CONWAY

Basin: Boggy Creek
LAT: 28° 29' 13"  LONG: 81° 22' 06"
SECTION: 18  TOWNSHIP: 23S  RANGE: 30E

Biological Information

Macroinvertebrates
LCI Score: 67
Overall Health: Very Good
Diversity Index: 4.0

Plant Management
Surveys: No
Treatment: Yes
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: Yes

Graph Legend
- - - Historic TSI Trend (R²)
- - - - - 10 Year Recent Trend

Historic TSI Graph:

Historic TSI Score:

2008 TSI Score: 38

Characteristics

Origin: Natural
Lake Surface Area (ac): 640
Lake Volume (ft³): 629,923,020
Average Depth (ft): 22.6
Shoreline Length (ft): 55,804
100 Year Flood (NGVD): 89 FEMA
Historic Low Water Elevation (NGVD): 74.3
Historic High Water Elevation (NGVD): 95.8
Normal High Water Elevation (NHWE): 86.9
TMDL Impairment: No Data
TMDL Group: 4
BMAP: No Data
MSTU: Yes
Public Access: Yes, Randolph Boat Ramp

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: Yes

Macroinvertebrates
LCI Score: 67
Overall Health: Very Good
Diversity Index: 4.0

Section: 18  Township: 23S  Range: 30E

Historic TSI Graph:

R² = 0.0605
FISH LAKE

Characteristics

Origin: Natural
Lake Surface Area (ac): 24
Lake Volume (ft³): 16,831,584
Average Depth (ft): 16.1
Shoreline Length (ft): 3,938
100 Year Flood (NGVD): 102 FEMA
Historic Low Water Elevation (NGVD): 95.4
Historic High Water Elevation (NGVD): 101.8
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes (Canal)
Target Species: A, J, U, W
Acreage Treated: 5.55

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Fish Lake

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

CC12

Fish Lake

CC12
LITTLE SAND LAKE

Basin: Shingle Creek
LAT: 28° 26' 43"  LONG: 81° 29' 10"
SECTION: 35   TOWNSHIP: 23S   RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 161
Lake Volume (ft³): 161,302,680
Average Depth (ft): 23.0
Shoreline Length (ft): 14,784
100 Year Flood (NGVD): 101.8 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 101.8
Normal High Water Elevation (NHWE): 95.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No

Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 20

Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

R² = 0.0475
Characteristics

Origin: Natural
Lake Surface Area (ac): 119
Lake Volume (ft³): 90,195,336
Average Depth (ft): 17.4
Shoreline Length (ft): 18,186
100 Year Flood (NGVD): 76.7 FEMA
Historic Low Water Elevation (NGVD): 51.1
Historic High Water Elevation (NGVD): 93.0
Normal High Water Elevation (NHWE): 68.0
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 57
Historic TSI Graph:

Graph Legend
- - - - - -10 Year Recent Trend
---Historic TSI Trend (R²)
Lake Long
BW37

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE LOUISE

Basin: Big Econ
LAT: 28° 35' 27"
LONG: 81° 05' 54"
SECTION: 10   TOWNSHIP: 22S   RANGE: 32E

Characteristics

Origin: Natural
Lake Surface Area (ac): 55
Lake Volume (ft³): 24,437,160
Average Depth (ft): 10.2
Shoreline Length (ft): 6,025
100 Year Flood (NGVD): 63.4
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 64.3
Normal High Water Elevation (NHWE): 61.8
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

<table>
<thead>
<tr>
<th>Plant Management</th>
<th>Fish Management</th>
<th>Macroinvertebrates</th>
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<tbody>
<tr>
<td>Surveys: Yes</td>
<td>Fish Consumption Advisory: No</td>
<td>LCI Score: No Data</td>
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<td>Treatment: No</td>
<td>Grass Carp: No</td>
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<td>Target Species: P</td>
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2008 TSI Score: 44

Historic TSI Graph:

[Graph Legend]

Historic TSI Trend (R²)
10 Year Recent Trend

R² = 0.0725

[Graph showing TSI scores from 1994 to 2008]
Lake Louise (Big Econ Basin)

BE7

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE LOUISE

Biological Information

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Characteristics

Origin: Natural
Lake Surface Area (ac): 136
Lake Volume (ft³): 85,307,904
Average Depth (ft): 14.4
Shoreline Length (ft): 16,339
100 Year Flood (NGVD): 100.2 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 99.4
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes, Keene Boat Ramp

Graph Legend

2008 TSI Score: 34

Historic TSI Graph:

R² = 0.0227

2008 TSI Score: 34
Historic TSI Graph:
LAKE LOVELY

Basin: Little Wekiva
LAT: 28° 37' 27"
LONG: 81° 24' 42"
SECTION: 33     TOWNSHIP: 21S     RANGE: 29E

Characteristics
Origin: Natural
Lake Surface Area (ac): 31
Lake Volume (ft³): 6,616,764
Average Depth (ft): 4.9
Shoreline Length (ft): 4,311
100 Year Flood (NGVD): 81.5 OCE
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 79.4
Normal High Water Elevation (NHWE): 77.0
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: Yes
Public Access: No

2008 TSI Score: 48

Historic TSI Graph:

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

———-Historic TSI Trend  (R²)
Lake Lovely

LW40

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
Characteristics

Origin: Natural
Lake Surface Area (ac): 394
Lake Volume (ft³): 231,695,640
Average Depth (ft): 13.5
Shoreline Length (ft): 23,259
100 Year Flood (NGVD): 96.6 FEMA
Historic Low Water Elevation (NGVD): 91.6
Historic High Water Elevation (NGVD): 93.9
Normal High Water Elevation (NHWE): 94.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 34
Historic TSI Graph:

Graph Legend

- Historic TSI Trend (R²)
- 10 Year Recent Trend
Legend
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Mabel
RC17
LAKE MANN

Basin: Shingle Creek
LAT: 28° 32' 14"  LONG: 81° 25' 34"
SECTION: 32  TOWNSHIP: 22S  RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 255
Lake Volume (ft³): 126,628,920
Average Depth (ft): 11.4
Shoreline Length (ft): 15,701
100 Year Flood (NGVD): 95 FEMA
Historic Low Water Elevation (NGVD): 88.3
Historic High Water Elevation (NGVD): 96.7
Normal High Water Elevation (NHWE): 91.7
TMDL Impairment: Nutrients (TSI)
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: Yes

Biological Information

Plant Management
Surveys: Yes
Treatment: No
Target Species: P
Acreage Treated: 4.75

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: Yes

Macroinvertebrates
LCI Score: 44
Overall Health: Good
Diversity Index: 3.7

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

Historic TSI Graph:

2008 TSI Score: 61

Historic TSI Trend

R² = 0.0003
Legend

Sampling Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Mann
SC12
LAKE MARSHA

Characteristics

Origin: Natural
Lake Surface Area (ac): 86
Lake Volume (ft³): 103,394,016
Average Depth (ft): 27.6
Shoreline Length (ft): 9,901
100 Year Flood (NGVD): 129.7 FEMA
Historic Low Water Elevation (NGVD): 124.0
Historic High Water Elevation (NGVD): 129.9
Normal High Water Elevation (NHWE): 128.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 27

Historic TSI Graph:

Graph Legend

- - Historic TSI Trend (R²)
--- 10 Year Recent Trend
LAKE MARY JANE

Basin: Hart
LAT: 28° 22' 23"
LONG: 81° 10' 45"
SECTION: 26 TOWNSHIP: 24S RANGE: 31E

Characteristics

Origin: Natural
Lake Surface Area (ac): 1,135
Lake Volume (ft³): 341,140,140
Average Depth (ft): 6.9
Shoreline Length (ft): 41,997
100 Year Flood (NGVD): 64 OCE
Historic Low Water Elevation (NGVD): 56.9
Historic High Water Elevation (NGVD): 63.4
Normal High Water Elevation (NHWE): 61.5
TMDL Impairment: Pb And Hg(In Fish)
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: Yes, Moss Park

Biological Information

Graph Legend

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: 2.2**

2008 TSI Score: 48
Historic TSI Graph:

R² = 0.0022

** Data collected in 1999
**Biological Information**

**Plant Management**
- Surveys: Yes
- Treatment: Yes
- Target Species: J, P, W
- Acreage Treated: 168

**Fish Management**
- Fish Consumption Advisory: No
- Grass Carp: No

**Macroinvertebrates**
- LCI Score: No Data
- Overall Health: No Data
- Diversity Index: No Data

**Historic TSI Graph:**
- **2008 TSI Score:** 33
- **Historic TSI Trend (R²):**
- **10 Year Recent Trend:**

---

**Basin: Boggy Creek**

LAT: 28° 28' 33"
LONG: 81° 22' 11"
SECTION: 23 TOWNSHIP: 23S RANGE: 29E

**Characteristics**

- **Origin:** Natural
- **Lake Surface Area (ac):** 50
- **Lake Volume (ft³):** No Data
- **Average Depth (ft):** 19.4
- **Shoreline Length (ft):** 5,548
- **100 Year Flood (NGVD):** 95.3 FEMA
- **Historic Low Water Elevation (NGVD):** No Data
- **Historic High Water Elevation (NGVD):** 94.6
- **Normal High Water Elevation (NHWE):** 93.5
- **TMDL Impairment:** None
- **TMDL Group:** 4
- **BMAP:** No
- **MSTU:** Yes
- **Public Access:** No
LAKE MCCOY

Basin: Big Wekiva
LAT: 28° 41' 21"  LONG: 81° 29' 49"
SECTION: 3  TOWNSHIP: 21S  RANGE: 28E

Characteristics
Origin: Natural
Lake Surface Area (ac): 87
Lake Volume (ft³): 22,359,348
Average Depth (ft): 5.9
Shoreline Length (ft): 15,821
100 Year Flood (NGVD): 66.5 FEMA
Historic Low Water Elevation (NGVD): 52.4
Historic High Water Elevation (NGVD): 62.0
Normal High Water Elevation (NHWE): 61.5
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: MSBU
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 63

Historic TSI Graph:

* Data not available for all 4 quarters

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend
Characteristics

Origin: Natural
Lake Surface Area (ac): 27
Lake Volume (ft³): 23,522,400
Average Depth (ft): 20.0
Shoreline Length (ft): 4,197
100 Year Flood (NGVD): 66.8
Historic Low Water Elevation (NGVD): 63.2
Historic High Water Elevation (NGVD): 66.0
Normal High Water Elevation (NHWE): 64.7
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: No
Target Species: J
Acreage Treated: 1.5

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 40
Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend
Lake Nan
HB29

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- **Red**: Commercial
- **Black**: Industrial
- **Pink**: Residential
- **Green**: Parks / Conservation
- **Orange**: Rural / Agricultural
- **Blue**: Institutional
Lake Ola

Basin: Apopka
LAT: 28° 45' 15"
LONG: 81° 38' 05"
SECTION: 17
TOWNSHIP: 20S
RANGE: 27E

Characteristics
Origin: Natural
Lake Surface Area (ac): 439
Lake Volume (ft³): 313,614,576
Average Depth (ft): 16.4
Shoreline Length (ft): 20,631
100 Year Flood (NGVD): 74.4 FEMA
Historic Low Water Elevation (NGVD): 70.7
Historic High Water Elevation (NGVD): 77.3
Normal High Water Elevation (NHWE): 73.0
TMDL Impairment: None
TMDL Group: 1
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: No
Target Species: Grass Carp
Acreage Treated: 16

Fish Management
Fish Consumption Advisory: No
Grass Carp: Yes

Macroinvertebrates
LCI Score: 77**
Overall Health: Very Good
Diversity Index: 3.5**

2008 TSI Score: 28

Historic TSI Graph:

Graph Legend

- Historic TSI Trend (R²)
- 10 Year Recent Trend

** Data collected in 2006
Legend

Sampling Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Ola
A29
LAKE OLIVER

Basin: Reedy Creek
LAT: 28° 22' 10"     LONG: 81° 38' 50"
SECTION: 30      TOWNSHIP: 24S      RANGE: 27E

Characteristics
Origin: Natural
Lake Surface Area (ac): 21
Lake Volume (ft³): 12,503,462
Average Depth (ft): 13.8
Shoreline Length (ft): 3,695
100 Year Flood (NGVD): 114.4 FEMA
Historic Low Water Elevation (NGVD): 108.0
Historic High Water Elevation (NGVD): 113.6
Normal High Water Elevation (NHWE): 112.7
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 43
Historic TSI Graph:

Graph Legend
- - - - - -10 Year Recent Trend
Historic TSI Trend (R²)

2008 TSI Score: 43
Historic TSI Graph:

Graph Legend
- - - - - -10 Year Recent Trend
Historic TSI Trend (R²)

-- Historic TSI Trend (R²)
- - - - - -10 Year Recent Trend

Graph Legend
- - - - - -10 Year Recent Trend
Historic TSI Trend (R²)
Legend

Sampling Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Oliver
RC20
**Biological Information**

**Macroinvertebrates**
- LCI Score: 25*
- Overall Health: Poor
- Diversity Index: 2.2**

**Plant Management**
- Surveys: Yes
- Treatment: Yes
- Target Species: A, P
- Acreage Treated: 15.5

**Fish Management**
- Fish Consumption Advisory: No
- Grass Carp: No

**Historic TSI Graph:**
- R² = 0.704€

**Data collected in 2003**
**Biological Information**

**Plant Management**
- Surveys: No
- Treatment: No
- Target Species: No
- Acreage Treated: No

**Fish Management**
- Fish Consumption Advisory: No
- Grass Carp: No

**Macroinvertebrates**
- LCI Score: No Data
- Overall Health: No Data
- Diversity Index: No Data

**Historic TSI Graph:**
- **2008 TSI Score:** 60
- **Historic TSI Trend (R²):** 0.308
- **10 Year Recent Trend**

**Characteristics**

- **Origin:** Natural
- **Lake Surface Area (ac):** 183
- **Lake Volume (ft³):** 57,394,656
- **Average Depth (ft):** 7.2
- **Shoreline Length (ft):** 15,170
- **100 Year Flood (NGVD):** 87.9 FEMA
- **Historic Low Water Elevation (NGVD):** 22.8
- **Historic High Water Elevation (NGVD):** 84.9
- **Normal High Water Elevation (NHWE):** No Data
- **TMDL Impairment:** Nutrients (TSI)
- **TMDL Group:** 2
- **BMAP:** No
- **MSTU:** No
- **Public Access:** No

**Graph Legend**

- Historic TSI Trend (R²)
- 10 Year Recent Trend
Lake Orlando (Wekiwa)

Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:

- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
PAWL M LAKE

Basin: Shingle Creek
LAT: 28° 27' 42"   LONG: 81° 29' 11"
SECTION: 22   TOWNSHIP: 23S   RANGE: 28E

Biological Information

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Characteristics

Origin: Natural
Lake Surface Area (ac): 20
Lake Volume (ft³): 21,562,200
Average Depth (ft): 24.8
Shoreline Length (ft): No Data
100 Year Flood (NGVD): 149.5 OCE
Historic Low Water Elevation (NGVD): 144.5
Historic High Water Elevation (NGVD): 153.5
Normal High Water Elevation (NHWE): 144.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Graph Legend

Graph Trend

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 13
Historic TSI Graph:

R² = 0.8182
Palm Lake
SC14

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE PANTHER

Biological Information

LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Macroinvertebrates

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

2008 TSI Score: 39
Historic TSI Graph:

Baseline: Historic TSI Trend (R²)
Recent: 10 Year Recent Trend

Origin: Natural
Lake Surface Area (ac): 35
Lake Volume (ft³): 14,941,080
Average Depth (ft): 9.8
Shoreline Length (ft): 5,443
100 Year Flood (NGVD): NA
Historic Low Water Elevation (NGVD): 91.6
Historic High Water Elevation (NGVD): 98.9
Normal High Water Elevation (NHWE): 97.4
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

LAKE PANTHER
Basin: Reedy Creek
LAT: 28° 25' 38"
LONG: 81° 37' 52"
SECTION: 5 TOWNSHIP: 24S RANGE: 27E

Characteristics

Graph Legend

Graph Trend
Legend

- Red Circle: Sampling Locations
- Yellow Circle: Orange County Outfalls

Orange County Land Use:
- Red: Commercial
- Black: Industrial
- Pink: Residential
- Green: Parks / Conservation
- Orange: Rural / Agricultural
- Blue: Institutional

Lake Panther

RC41
LAKE PEARL

Basin: Big Wekiva
LAT: 28° 32' 30"  LONG: 81° 31' 58"
SECTION: 29  TOWNSHIP: 22S  RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 16
Lake Volume (ft³): 4,809,024
Average Depth (ft): 6.9
Shoreline Length (ft): 4,035
100 Year Flood (NGVD): 122.30 FEMA
Historic Low Water Elevation (NGVD): 69.1
Historic High Water Elevation (NGVD): 118.7
Normal High Water Elevation (NHWE): 117.4
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCP Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 48

Historic TSI Graph:

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

R² = 0.0021

2008 TSI Score: 48

Historic TSI Graph:

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

R² = 0.0021

2008 TSI Score: 48

Historic TSI Graph:

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

R² = 0.0021
Characteristics

Origin: Natural
Lake Surface Area (ac): 64
Lake Volume (ft³): 44,047,872
Average Depth (ft): 15.8
Shoreline Length (ft): 7,858
100 Year Flood (NGVD): 56.00 FEMA
Historic Low Water Elevation (NGVD): 51.9
Historic High Water Elevation (NGVD): 55.1
Normal High Water Elevation (NHWE): 54.0
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 61

Historic TSI Graph:

Graph Legend
- - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

R² = 0.0332
LAKE PICKETT

Characteristics
Origin: Natural
Lake Surface Area (ac): 762
Lake Volume (ft³): 614,065,320
Average Depth (ft): 18.5
Shoreline Length (ft): 40,603
100 Year Flood (NGVD): 58.8
Historic Low Water Elevation (NGVD): 50.8
Historic High Water Elevation (NGVD): 58.2
Normal High Water Elevation (NHWE): 56.8
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 33
Historic TSI Graph:

Graph Legend

- - - - - - 10 Year Recent Trend
  - - - - Historic TSI Trend (R²)
Lake Pickett
BE9E, BE9W
LAKE PINELOCH

Characteristics

Origin: Natural
Lake Surface Area (ac): 58
Lake Volume (ft³): 43,202,808
Average Depth (ft): 17.1
Shoreline Length (ft): 7,304
100 Year Flood (NGVD): 95.8 FEMA
Historic Low Water Elevation (NGVD): 88.2
Historic High Water Elevation (NGVD): 97.9
Normal High Water Elevation (NHWE): 93.0
TMDL Impairment: Nutrients (TSI)
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: Yes
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 57

Historic TSI Graph:

Graph Legend

- - - - - -10 Year Recent Trend

- - - - - -Historic TSI Trend (R²)

R² = 0.0004
LAKE PLEASANT

Characteristics

Origin: Natural
Lake Surface Area (ac): 53
Lake Volume (ft³): 17,545,968
Average Depth (ft): 7.6
Shoreline Length (ft): 9,024
100 Year Flood (NGVD): 82.6 FEMA
Historic Low Water Elevation (NGVD): 64.1
Historic High Water Elevation (NGVD): 82.2
Normal High Water Elevation (NHWE): 73.8
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 54
Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

* Data not available for all 4 quarters
Lake Pleasant

BW51

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
POCKET LAKE

Basin: Cypress Creek
LAT: 28° 25' 14"  LONG: 81° 30' 46"
SECTION: 4    TOWNSHIP: 24S    RANGE: 28E

Characteristics
Origin: Natural
Lake Surface Area (ac): 128
Lake Volume (ft³): 100,362,240
Average Depth (ft): 18.0
Shoreline Length (ft): 10,486
100 Year Flood (NGVD): 102 FEMA
Historic Low Water Elevation (NGVD): 94.2
Historic High Water Elevation (NGVD): 101.4
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

Biological Information

Plant Management
Surveys: Yes
Treatment: No
Target Species: A, J
Acreage Treated: 1.012

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 37
Historic TSI Graph:

R² = 0.0054
Legend

- Red Circle: Sampling Locations
- Yellow Circle: Orange County Outfalls

Orange County Land Use:
- Red: Commercial
- Black: Industrial
- Pink: Residential
- Green: Parks / Conservation
- Orange: Rural / Agricultural
- Blue: Institutional

Pocket Lake
CC22
Characteristics

Origin: Natural
Lake Surface Area (ac): 100
Lake Volume (ft³): 130,244,400
Average Depth (ft): 29.9
Shoreline Length (ft): 18,585
100 Year Flood (NGVD): 60.5 FEMA
Historic Low Water Elevation (NGVD): 47.4
Historic High Water Elevation (NGVD): 61.6
Normal High Water Elevation (NHWE): 56.5
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 72
Historic TSI Graph:

Graph Legend

- Historic TSI Trend (R²)
- 10 Year Recent Trend

R² = 0.0637
Legend

- Orange County Outfalls
- Sampling Locations

Orange County Land Use:

- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Prevatt
BW52
LAKE PRICE

Basin: Big Econ
LAT: 28° 35' 50"
LONG: 81° 10' 29"
SECTION: 12 TOWNSHIP: 22S RANGE: 31E

Characteristics

Origin: Natural
Lake Surface Area (ac): 86
Lake Volume (ft³): 50,573,160
Average Depth (ft): 13.5
Shoreline Length (ft): 8,564
100 Year Flood (NGVD): 53.7 OCE
Historic Low Water Elevation (NGVD): 47.2
Historic High Water Elevation (NGVD): 55.0
Normal High Water Elevation (NHWE): 52.0
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: P
Acreage Treated: 0.131

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 35

Historic TSI Graph:

R² = 0.0562
LAKE REAMS

Basin: Reedy Creek
LAT: 28° 26' 20"  LONG: 81° 34' 28"
SECTION: 35  TOWNSHIP: 23S  RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 117
Lake Volume (ft³): 78,486,408
Average Depth (ft): 15.4
Shoreline Length (ft): 9,244
100 Year Flood (NGVD): 99.43 OCE
Historic Low Water Elevation (NGVD): 95.8
Historic High Water Elevation (NGVD): 97.8
Normal High Water Elevation (NHWE): 96.9
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: No
Target Species: A
Acreage Treated: 4

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 24
Historic TSI Graph:

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

* Data not available for all 4 quarters
LAKE REXFORD

Characteristics

Origin: Natural
Lake Surface Area (ac): 29
Lake Volume (ft³): 21,980,376
Average Depth (ft): 17.4
Shoreline Length (ft): 4,769
100 Year Flood (NGVD): 112.3 OCE
Historic Low Water Elevation (NGVD): 106.2
Historic High Water Elevation (NGVD): 111.4
Normal High Water Elevation (NHWE): 111.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 28
Historic TSI Graph:

Graph Legend
- - - - - - 10 Year Recent Trend

LAKE REXFORD Characteristics
LAT: 28° 21' 04"
LONG: 81° 38' 29"
SECTION: 31
TOWNSHIP: 24S
RANGE: 27E

Basin: Reedy Creek
Characteristics

Origin: Natural
Lake Surface Area (ac): 116
Lake Volume (ft³): 77,815,584
Average Depth (ft): 15.4
Shoreline Length (ft): 11,036
100 Year Flood (NGVD): 111.5 OCE
Historic Low Water Elevation (NGVD): 99.7
Historic High Water Elevation (NGVD): 112.2
Normal High Water Elevation (NHWE): 109.0
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: A, V, W, CC
Acreage Treated: 12.055

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 63

Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend
Lake Roberts
A33
LAKE ROBINSON

Basin: Reedy Creek
LAT: 28° 28' 19"  LONG: 81° 34' 54"
SECTION: 23  TOWNSHIP: 23S  RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 6
Lake Volume (ft³): 2,780,870
Average Depth (ft): 11.2
Shoreline Length (ft): 7,104
100 Year Flood (NGVD): 107.6 OCE
Historic Low Water Elevation (NGVD): 104.7
Historic High Water Elevation (NGVD): 107.9
Normal High Water Elevation (NHWE): 106.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: Grass Carp: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 37
Historic TSI Graph:

Graph Legend

- - - - - - 10 Year Recent Trend

- - - - - - - Historic TSI Trend (R²)

R² = 0.7226
**LAKE ROPER**

**Basin: Apopka**

LAT: 28° 31' 36"  LONG: 81° 17' 44"

SECTION: 3  TOWNSHIP: 23S  RANGE: 30E

---

### Characteristics

**Origin:** Natural  
**Lake Surface Area (ac):** 35  
**Lake Volume (ft³):** 21,496,860  
**Average Depth (ft):** 14.1  
**Shoreline Length (ft):** 8,574  
**100 Year Flood (NGVD):** 104.5 OCE  
**Historic Low Water Elevation (NGVD):** No Data  
**Historic High Water Elevation (NGVD):** 104.2  
**Normal High Water Elevation (NHWE):** 102.5  
**TMDL Impairment:** None  
**TMDL Group:** 2  
**BMAP:** No  
**MSTU:** No  
**Public Access:** No

---

### Biological Information

**Plant Management**  
- **Surveys:** No  
- **Treatment:** No  
- **Target Species:** No  
- **Acreage Treated:** No

**Fish Management**  
- **Fish Consumption Advisory:** No  
- **Grass Carp:** No

**Macroinvertebrates**  
- **LCI Score:** No Data  
- **Overall Health:** No Data  
- **Diversity Index:** No Data

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**2008 TSI Score:** 46  

**Historic TSI Graph:**

![Historic TSI Graph](image)

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**2008 TSI Score:** 46  

**Historic TSI Graph:**

![Historic TSI Graph](image)

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**Graph Legend**

- **Historic TSI Trend (R²)**
- **10 Year Recent Trend**
LAKE ROSE

Basin: Big Wekiva
LAT: 28° 33' 24"  LONG: 81° 30' 22"
SECTION: 22  TOWNSHIP: 22S  RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 90
Lake Volume (ft³): 41,164,200
Average Depth (ft): 10.5
Shoreline Length (ft): 11,273
100 Year Flood (NGVD): 89.5 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 87.0
Normal High Water Elevation (NHWE): 70.7
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 54

Historic TSI Graph:
R² = 0.4278

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend
LAKE ROUSE

Characteristics
Origin: Natural
Lake Surface Area (ac): 33
Lake Volume (ft³): 24,580,908
Average Depth (ft): 17.1
Shoreline Length (ft): 4,636
100 Year Flood (NGVD): 70 OCE
Historic Low Water Elevation (NGVD): 65.5
Historic High Water Elevation (NGVD): 68.9
Normal High Water Elevation (NHWE): 68.0
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information
Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 45
Historic TSI Graph:

Graph Legend
- - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

Graph Legend

LAKE ROUSE

Basin: Little Econ
LAT: 28° 34' 23"
LONG: 81° 12' 43"
SECTION: 16
TOWNSHIP: 22S
RANGE: 31E

2008 TSI Score: 45
Historic TSI Graph:

Graph Legend

LAKE ROUSE

Basin: Little Econ
LAT: 28° 34' 23"
LONG: 81° 12' 43"
SECTION: 16
TOWNSHIP: 22S
RANGE: 31E

2008 TSI Score: 45
Historic TSI Graph:

Graph Legend

LAKE ROUSE

Basin: Little Econ
LAT: 28° 34' 23"
LONG: 81° 12' 43"
SECTION: 16
TOWNSHIP: 22S
RANGE: 31E

2008 TSI Score: 45
Historic TSI Graph:

Graph Legend

LAKE ROUSE

Basin: Little Econ
LAT: 28° 34' 23"
LONG: 81° 12' 43"
SECTION: 16
TOWNSHIP: 22S
RANGE: 31E

2008 TSI Score: 45
Historic TSI Graph:

Graph Legend

LAKE ROUSE

Basin: Little Econ
LAT: 28° 34' 23"
LONG: 81° 12' 43"
SECTION: 16
TOWNSHIP: 22S
RANGE: 31E

2008 TSI Score: 45
Historic TSI Graph:

Graph Legend
Lake Rouse
LE40

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE SARAH

Basin: Little Wekiva
LAT: 28° 35' 07"  LONG: 81° 24' 09"
SECTION: 10  TOWNSHIP: 22S  RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 15
Lake Volume (ft³): 6,860,700
Average Depth (ft): 10.5
Shoreline Length (ft): 3,051
100 Year Flood (NGVD): No Data
Historic Low Water Elevation (NGVD): 86.0
Historic High Water Elevation (NGVD): 89.0
Normal High Water Elevation (NHWE): 88.7
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: Yes

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 57  Historic TSI Graph:

Graph Legend
---Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

2008 TSI Score: 57  Historic TSI Graph:

R² = 0.2175
LAKE SAWGRASS

Basin: Reedy Creek
LAT: 28° 26' 37"
LONG: 81° 36' 27"
SECTION: 33  TOWNSHIP: 23S  RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 64
Lake Volume (ft³): 31,223,808
Average Depth (ft): 11.2
Shoreline Length (ft): 10,052
100 Year Flood (NGVD): NA
Historic Low Water Elevation (NGVD): 92.9
Historic High Water Elevation (NGVD): 99.5
Normal High Water Elevation (NHWE): 98.3
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 33
Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

---Historic TSI Trend (R²)
---10 Year Recent Trend
Lake Sawgrass

RC42

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE SAWYER

Basin: Reedy Creek
LAT: 28° 28' 07"
LONG: 81° 34' 02"
SECTION: 24    TOWNSHIP: 23S    RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 93
Lake Volume (ft³): 67,653,036
Average Depth (ft): 16.7
Shoreline Length (ft): 9,144
100 Year Flood (NGVD): 107.6 OCE
Historic Low Water Elevation (NGVD): 103.6
Historic High Water Elevation (NGVD): 105.0
Normal High Water Elevation (NHWE): 106.0
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: J, P, W
Acreage Treated: 7.25

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 33
Historic TSI Graph:

Graph Legend

Historic TSI Trend (R²) 10 Year Recent Trend

R² = 0.7077

Historic TSI Trend

2008 TSI Score
LAKE SHADOW

Biological Information

LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

2008 TSI Score: 43
Historic TSI Graph:

LAT: 28° 37' 19"
LONG: 81° 24' 11"
SECTION: 34
TOWNSHIP: 21S
RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 75
Lake Volume (ft³): 52,598,700
Average Depth (ft): 16.1
Shoreline Length (ft): 8,326
100 Year Flood (NGVD): 84.6 FEMA
Historic Low Water Elevation (NGVD): 80.1
Historic High Water Elevation (NGVD): 84.3
Normal High Water Elevation (NHWE): 81.4
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

2008 TSI Score: 43
Historic TSI Graph:
Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Shadow
LW17
LAKE SHEEN

Basin: Cypress Creek
LAT: 28° 25' 55"
LONG: 81° 31' 12"
SECTION: 4
TOWNSHIP: 24S
RANGE: 28E

Characteristics

Origin: Natural
Lake Surface Area (ac): 569
Lake Volume (ft³): 374,263,164
Average Depth (ft): 15.1
Shoreline Length (ft): 23,663
100 Year Flood (NGVD): 102.1 FEMA
Historic Low Water Elevation (NGVD): 71.9
Historic High Water Elevation (NGVD): 100.9
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes, Keene Boat Ramp

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: A, P, W, BB
Acreage Treated: 8.455

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 24
Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

2008 TSI Score: 24
Historic TSI Graph:

R² = 0.1453
**Biological Information**

- **Plant Management**
  - Surveys: No
  - Treatment: No
  - Target Species: Acreage Treated: No

- **Fish Management**
  - Fish Consumption Advisory: No
  - Grass Carp: No

- **Macroninvertebrates**
  - LCI Score: No Data
  - Overall Health: No Data
  - Diversity Index: No Data

**2008 TSI Score: 53**

**Historic TSI Graph:**

- **Historic TSI Trend (R²)**
- **10 Year Recent Trend**

---

* Data not available for all 4 quarters
SOUTH LAKE

Characteristics

Origin: Natural
Lake Surface Area (ac): 127
Lake Volume (ft³): 65,279,016
Average Depth (ft): 11.8
Shoreline Length (ft): 10,171
100 Year Flood (NGVD): 96.6 FEMA
Historic Low Water Elevation (NGVD): 91.6
Historic High Water Elevation (NGVD): 95.7
Normal High Water Elevation (NHWE): 94.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 43
Historic TSI Graph: $R^2 = 0.0876$
Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

South Lake
RC32
LAKE SPEER

Basin: Reedy Creek
LAT: 28° 28' 45"
LONG: 81° 35' 55"
SECTION: 15 TOWNSHIP: 23S RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 233
Lake Volume (ft³): 137,017,980
Average Depth (ft): 13.5
Shoreline Length (ft): 13,325
100 Year Flood (NGVD): 101.4 FEMA
Historic Low Water Elevation (NGVD): 83.1
Historic High Water Elevation (NGVD): 101.7
Normal High Water Elevation (NHWE): 100.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: None
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 52
Historic TSI Graph:

Graph Legend

- - Historic TSI Trend (R²)
- - - - 10 Year Recent Trend
Lake Speer
RC33

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
Biological Information

Macroinvertebrates
LCI Score: 61
Overall Health: Very Good
Diversity Index: 3.1

Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Fish Management

2008 TSI Score: 30
Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
--- 10 Year Recent Trend

Characteristics

Origin: Natural
Lake Surface Area (ac): 102
Lake Volume (ft³): 112,410,936
Average Depth (ft): 25.3
Shoreline Length (ft): 9,091
100 Year Flood (NGVD): 102.1 FEMA
Historic Low Water Elevation (NGVD): 74.5
Historic High Water Elevation (NGVD): 112.3
Normal High Water Elevation (NHWE): 98.7
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

SPRING LAKE

Basin: Shingle Creek
LAT: 28° 27' 17"
LONG: 81° 28' 59"
SECTION: 26
TOWNSHIP: 23S
RANGE: 28E
Spring Lake

Legend
- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
Characteristics

Origin: Natural
Lake Surface Area (ac): 55
Lake Volume (ft³): 28,989,180
Average Depth (ft): 12.1
Shoreline Length (ft): 6,180
100 Year Flood (NGVD): 50.1
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 48.8
Normal High Water Elevation (NHWE): 48.3
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Graph Legend

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 33
Historic TSI Graph:

R² = 0.0734

—-Historic TSI Trend (R²)
---10 Year Recent Trend
Legend

Lake Tanner
BE12

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LAKE TIBET

Basin: Cypress Creek
LAT: 28° 27' 11"
LONG: 81° 31' 25"
SECTION: 28 TOWNSHIP: 23S RANGE: 28E

Characteristics
Origin: Natural
Lake Surface Area (ac): 1,070
Lake Volume (ft³): 857,609,280
Average Depth (ft): 18.4
Shoreline Length (ft): 57,066
100 Year Flood (NGVD): 102.2 FEMA
Historic Low Water Elevation (NGVD): 86.4
Historic High Water Elevation (NGVD): 103.7
Normal High Water Elevation (NHWE): 99.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: Yes

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: A, J, P
Acreage Treated: 8.005

Fish Management
Fish Consumption Advisory: Yes
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 31
Historic TSI Graph: $R^2 = 0.0212$
Characteristics

Origin: Natural
Lake Surface Area (ac): 40
Lake Volume (ft³): 17,772,480
Average Depth (ft): 10.2
Shoreline Length (ft): 8,492
100 Year Flood (NGVD): 100.6 OCE
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 96.7
Normal High Water Elevation (NHWE): 95.8
TMDL Impairment: None
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: Yes
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 51

Historic TSI Graph:

Graph Legend

- - - - - - Historic TSI Trend (R²)
--- - - - - - 10 Year Recent Trend
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Tilden
A42
LAKE TUB

Basin: Reedy Creek
LAT: 28° 25' 37"
LONG: 81° 36' 48"
SECTION: 4   TOWNSHIP: 24S   RANGE: 27E

Characteristics

Origin: Natural
Lake Surface Area (ac): 42
Lake Volume (ft³): 21,588,336
Average Depth (ft): 11.8
Shoreline Length (ft): 5,641
100 Year Flood (NGVD): NA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): No Data
Normal High Water Elevation (NHWE): No Data
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: 
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 45
Historic TSI Graph:

Graph Legend

- - - - - - 10 Year Recent Trend

R² = 0.3494
LAKE TYLER

Basin: Shingle Creek
LAT: 28° 29' 26"  LONG: 81° 23' 55"
SECTION: 15    TOWNSHIP: 23S    RANGE: 29E

Characteristics

Origin: Natural
Lake Surface Area (ac): 23
Lake Volume (ft³): 16,130,268
Average Depth (ft): 16.1
Shoreline Length (ft): 6,259
100 Year Flood (NGVD): 94.7 FEMA
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 95.0
Normal High Water Elevation (NHWE): 94.4
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Graph Legend
- - - - - - Historic TSI Trend (R²)
- - - - - - 10 Year Recent Trend

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species:
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 41

Historic TSI Graph:

R² = 0.617E
**LAKE TYNER**

**Basin: Boggy Creek**

LAT: 28° 28' 49"  LONG: 81° 23' 34"

SECTION: 15  TOWNSHIP: 23S  RANGE: 29E

### Characteristics

- **Origin:** Natural
- **Lake Surface Area (ac):** 6
- **Lake Volume (ft³):** 1,803,384
- **Average Depth (ft):** 6.9
- **Shoreline Length (ft):** 1,898
- **100 Year Flood (NGVD):** 94.1 FEMA
- **Historic Low Water Elevation (NGVD):** No Data
- **Historic High Water Elevation (NGVD):** 92.7
- **Normal High Water Elevation (NHWE):** 92.4
- **TMDL Impairment:** None
- **TMDL Group:** 4
- **BMAP:** No
- **MSTU:** No
- **Public Access:** No

### Biological Information

#### Plant Management
- **Surveys:** Yes
- **Treatment:** Yes
- **Target Species:** B, P
- **Acreage Treated:** 16

#### Fish Management
- **Fish Consumption Advisory:** No
- **Grass Carp:** No

#### Macrionvertebrates
- **LCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data

### 2008 TSI Score: 58

**Historic TSI Graph:**

![Historic TSI Trend Graph](image)

**Graph Legend**

- Historic TSI Trend ($R^2$)
- 10 Year Recent Trend
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Tyner
BC45
**LAKE WAUNATTA**

**Basin: Howell Branch**

**LAT: 28° 36' 08"**  **LONG: 81° 16' 43"**

**SECTION: 2**  **TOWNSHIP: 22S**  **RANGE: 30S**

---

**Characteristics**

Origin: Natural

Lake Surface Area (ac): 70

Lake Volume (ft³): 31,101,840

Average Depth (ft): 10.2

Shoreline Length (ft): 8,024

100 Year Flood (NGVD): 63.8 FEMA

Historic Low Water Elevation (NGVD): No Data

Historic High Water Elevation (NGVD): 63.3

Normal High Water Elevation (NHWE): 62.7

TMDL Impairment: None

TMDL Group: 2

BMAP: No

MSTU: No

Public Access: No

---

**Biological Information**

**Plant Management**

Surveys: No

Treatment: No

Target Species: 

Acreage Treated: No

**Fish Management**

Fish Consumption Advisory: No

Grass Carp: Yes

**Macroinvertebrates**

LCI Score: No Data

Overall Health: No Data

Diversity Index: No Data

**2008 TSI Score: 45**

Historic TSI Graph:

\[ R^2 = 0.0224 \]
Biological Information

Macroinvertebrates
LCI Score: 58**
Overall Health: Very Good
Diversity Index: 3.4**

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Plant Management
Surveys: Yes
Treatment: No
Target Species: J, W
Acreage Treated: 2.007

2008 TSI Score: 32
Historic TSI Graph:

** Data collected in 2007
LAKE WESTON

Basin: Little Wekiva
LAT: 28° 36' 58"  LONG: 81° 24' 33"
SECTION: 34  TOWNSHIP: 21S  RANGE: 29E

Characteristics
Origin: Natural
Lake Surface Area (ac): 31
Lake Volume (ft³): 30,113,028
Average Depth (ft): 22.3
Shoreline Length (ft): 4,046
100 Year Flood (NGVD): 84.6 OCE
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 83.7
Normal High Water Elevation (NHWE): 82.8
TMDL Impairment: Nutrients (TSI)
TMDL Group: 2
BMAP: No
MSTU: No
Public Access: No

Biological Information

Plant Management
Surveys: Yes
Treatment: Yes
Target Species: A, J
Acreage Treated: 3

Fish Management
Fish Consumption Advisory: No

Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 59

Graph Legend

Historic TSI Trend (R²) 10 Year Recent Trend

2008 TSI Score: 59
Historic TSI Graph:

R² = 0.1527

Historic TSI Graph:

Legend

- **Sampling Locations**
- **Orange County Outfalls**

**Orange County Land Use:**
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Weston

**LW20**
LAKE WHIPPOORWILL

Basin: Hart
LAT: 28° 23' 20" LONG: 81° 14' 10"
SECTION: 20 TOWNSHIP: 24S RANGE: 31E

Characteristics
Origin: Natural
Lake Surface Area (ac): 326
Lake Volume (ft³): 186,027,336
Average Depth (ft): 13.1
Shoreline Length (ft): 17,786
100 Year Flood (NGVD): 68 OCE
Historic Low Water Elevation (NGVD): No Data
Historic High Water Elevation (NGVD): 66.7
Normal High Water Elevation (NHWE): 65.6
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: Yes
Public Access: No

Biological Information

Plant Management
Surveys: No
Treatment: No
Target Species: Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

2008 TSI Score: 25
Historic TSI Graph:

Graph Legend
- - - - Historic TSI Trend (R²)
- - - - 10 Year Recent Trend

R² = 0.0992
Legend

Sampling Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Whippoorwill
H6
LAKE WILLIS

Basin: Shingle Creek
LAT: 28° 23' 54"  LONG: 81° 28' 44"
SECTION: 14  TOWNSHIP: 24S  RANGE: 28E

Characteristics
Origin: Natural
Lake Surface Area (ac): 129
Lake Volume (ft³): 93,841,308
Average Depth (ft): 16.7
Shoreline Length (ft): 9,491
100 Year Flood (NGVD): 107.9 FEMA
Historic Low Water Elevation (NGVD): 10.6
Historic High Water Elevation (NGVD): 106.9
Normal High Water Elevation (NHWE): 104.5
TMDL Impairment: None
TMDL Group: 4
BMAP: No
MSTU: No
Public Access: No

Biological Information
Plant Management
Surveys: No
Treatment: No
Target Species: No
Acreage Treated: No

Fish Management
Fish Consumption Advisory: No
Grass Carp: No

Macroinvertebrates
LCI Score: No Data
Overall Health: No Data
Diversity Index: No Data

Graph Legend

Historic TSI Trend (R²)
10 Year Recent Trend

2008 TSI Score: 25
Historic TSI Graph:

R² = 0.3064

2003 2004 2005 2006 2007
Legend

- Sampling Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Lake Willis
SC40
Bay Lake
Bathymetric Contours
Data Collected: May 25, 2006
Volume: 478,047 cubic yards
Acreage: 36 acres
Depth range: 0-19 ft.
Clear Lake Bathymetric Contours

Date Collection Completed: August 3, 2007
Lake Volume: 7,498,668 cubic yards
Lake Elevation: July 5, 2007: 94.06 ft
Acreage: 352 acres
Depth Range: 0-31 ft

Contour Depth (ft)

1_00 - 12_00 - 24_00
2_00 - 14_00 - 26_00
4_00 - 16_00 - 28_00
6_00 - 18_00 - 30_00
8_00 - 20_00 - 31_00
10_00 - 22_00

April 2006 Aerial
Lake Cane Bathymetric Contours

Data Collection Completed: June 22, 2007
Volume: 2,042,146 cubic yards
Lake Elevation: June 6, 2007: 96.61 ft
Acreage: 79 acres
Depth Range: 0-34 ft

Lake Cane Bathymetric Contours

Contour Depth (ft)
- 3_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 26_00
- 28_00
- 30_00
- 32_00
- 34_00

April 2005 Aerial
Lake Catherine
Bathymetric Contours

Data collection completed: March 29, 2006
Volume: 3,219,342 cubic yards
Acreage: 91 acres
Depth range: 0-31 ft

Contour Depths (ft)

- 1_00
- 2_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 26_00
- 28_00
- 30_00
- 31_00

Lake Catherine Bathymetric Contours

April 2005 Aerial
Lake Crescent Bathymetric Contours

Data Collection Completed: June 6, 2007
Volume: 3,918,661 cubic yards
Lake Elevation: June 6, 2007: 101.41 ft
Acreage: 175 acres
Depth Range: 0-32 ft
Lake Ellenor

Bathymetric Contours

Data Collection Completed: April 5, 2006
Volume: 2,027,980 cubic yards
Elevation April 7, 2006: 94.49 ft.
Acreage: 113 acres
Depth Range: 0-28 ft.

Contour Depths (ft)

- 2_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 26_00
- 28_00
- 30_00
- 32_00

April 2005 Aerial
Lake Holden
Bathymetric Contours
Data collection completed: December 29, 2005
Acreage: 262 acres
Depth range 0-36 ft

Contour Depths (ft)
- 1.00
- 2.00
- 4.00
- 6.00
- 8.00
- 10.00
- 12.00
- 14.00
- 16.00
- 18.00
- 20.00
- 22.00
- 24.00
- 26.00
- 28.00
- 30.00
- 32.00
- 34.00
- 36.00

April 2005 Aerial
Lake Jessamine Bathymetric Contours

Data Collection Completed: May 25, 2006
Volume: 5,437,399 cubic yards
Lake Elevation: May 2, 2006: 90.59 ft
Acreage: 293 acres
Depth Range: 0-36ft

Contour Depth (ft)

- 1_00
- 2_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 26_00
- 28_00
- 30_00
- 32_00
- 34_00
- 36_00

April 2005 Aerial
Lake June
Bathymetric Contours

Contour Depths (ft)
- 1.00
- 2.00
- 3.00
- 4.00
- 5.00
- 6.00
- 7.00
- 8.00
- 9.00
Lake Killarney
Bathymetric Contours

Data Collection Completed: August 7, 2006
Volume: 5,167,371 cubic yards
Acreage: 236 acres
Depth Range: 0-32 ft.

Contour Depths (ft)

- 1_00
- 2_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 26_00
- 28_00
- 30_00
- 32_00

April 2005 Aerial

Lake Killarney
Bathymetric Contours

Data Collection Completed: August 7, 2006
Volume: 5,167,371 cubic yards
Acreage: 236 acres
Depth Range: 0-32 ft.

Contour Depths (ft)

- 1_00
- 2_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 26_00
- 28_00
- 30_00
- 32_00

April 2005 Aerial
Lake Lawne Bathymetric Contours
Final Data Collected: January 11, 2007
Volume: 1,380,001 cubic yards
Lake Elevation: December 5, 2006: 87.22 ft.
Acreage: 155 acres
Depth Range: 0-25 ft.

Contour Depths (ft)
- 1_00
- 2_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 25_00

April 2005 Aerial
Little Fairview
Bathymetric Contours

Data Collected: August 7, 2006
Volume: 1,511,937 cubic yards
Elevation June 30, 2006: 88.57 ft
Acreage: 85 acres
Depth Range: 0-44 ft

Contour Depths (ft)

- 1.00
- 2.00
- 3.00
- 4.00
- 5.00
- 6.00
- 8.00
- 10.00
- 12.00
- 14.00
- 16.00
- 18.00
- 20.00
- 22.00
- 24.00
- 26.00
- 28.00
- 30.00
- 32.00
- 34.00
- 36.00
- 38.00
- 40.00
- 42.00
- 44.00

April 2005 Aerial
Lake Mann
Bathymetric Contours

Data Collection Completed: June 7, 2006
Volume: 3,634,199 cubic yards
Acreage: 255 acres
Depth range: 0-23 ft.

April 2005 Aerial
Mary Jane Bathymetric Contours

Data Collection Completed: August 12, 2006
Lake Elevation July 5, 2006: 59.91 ft
Volume: 9,114,191 cubic yards
Acreage: 1160 acres
Depth: 0-25 ft.

Contour Depths (ft.)
- 1.00
- 2.00
- 3.00
- 4.00
- 5.00
- 6.00
- 7.00
- 8.00
- 9.00
- 10.00
- 12.00
- 14.00
- 16.00
- 18.00
- 20.00
- 22.00
- 24.00
- 25.00

April 2005 Aerial
Lake Mary Jess
Bathymetric Contours
Data collection completed: July 8, 2005
Volume: 1,014,447 cubic yards
Acreage: 48 acres
Depth range: 0-28 ft

Contour Depths (ft)

April 2005 Aerial
Lake Pineloch
Bathymetric Contours

Data collection completed: 01/13/06
Volume: 1,433,198 cubic yards
Acreage: 61 acres
Depth range: 0-34 ft

Contour Depths (ft)
- 2_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 26_00
- 28_00
- 30_00
- 32_00
- 34_00

April 2005 Aerial
Lake Robinson
Bathymetric Contours

Data collected: March 22, 2006
Volume: 1,377,869 cubic yards
Acreage: 63 acres
Depth range: 0-28 ft

Conour Depths (ft)

- 1.00
- 2.00
- 4.00
- 6.00
- 8.00
- 10.00
- 12.00
- 14.00
- 16.00
- 18.00
- 20.00
- 22.00
- 24.00
- 26.00
- 28.00

April 2005 Aerial
Lake Sawyer
Bathymetric Contours

Data Collected: April 4, 2006
Volume: 2,254,189 cubic yards
Acreage: 94 acres
Depth Range: 0-34 ft

Contour Depths (ft)

- 1_00
- 2_00
- 4_00
- 6_00
- 8_00
- 10_00
- 12_00
- 14_00
- 16_00
- 18_00
- 20_00
- 22_00
- 24_00
- 26_00
- 28_00
- 30_00
- 32_00
- 34_00

± 600 1,200 300 Feet

Volume: 2,254,189 cubic yards
Acreage: 94 acres
Depth Range: 0-34 ft
**BEC Characteristics**

- Average Flow (m/s): No Data
- Annual Average TN (mg/L): 1.0
- Annual Average TP (mg/L): 0.06
- Annual Average Chlorophyll a (ug/L): 0.7
- Annual Average (Fecal) Bacteria (CFU/100mL): 212
- Annual Average DO (mg/L): 6.5
- Maximum Peak Stage (Ft): No Data
- Receiving Body of Water: St Johns River
- TMDL Impairment: None
- TMDL Group: 2
- BMAP: No

**Biological Information**

**Plant Management**
- Riparian Buffer: 10 M
- Canopy Cover: Moderately Shaded
- Exotic Species: No Data

**Fishing Management**
- Fish Consumption Advisory: Yes

**Macroinvertebrates**
- SCI Score: No Data
- Overall Health: No Data
- Diversity Index: No Data
Legend

- BEC Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Big Econ Above Confluence Of Little Econ

BEC
BEG Characteristics

- Average Flow (m/s): No Data
- Annual Average TN (mg/L): 0.8
- Annual Average TP (mg/L): 0.05
- Annual Average Chlorophyll a (ug/L): 0.8
- Annual Average (Fecal) Bacteria (CFU/100mL): 753
- Annual Average DO (mg/L): 5.7
- Maximum Peak Stage (Ft): No Data
- Receiving Body of Water: St Johns River
- TMDL Impairment: None
- TMDL Group: 2
- BMAP: No

Biological Information

- Plant Management
  - Riparian Buffer: > 18 M
  - Canopy Cover: Lightly Shaded
  - Exotic Species: L

- Fishing Management
  - Fish Consumption Advisory: Yes

- Macroinvertebrates
  - SCI Score: 84
  - Overall Health: Good
  - Diversity Index: 4.7
**Nitrogen and Phosphorus**

- **N**
  - 1994: 0
  - 1995: 0.1
  - 1996: 0.3
  - 1997: 0.4
  - 1998: 0.5
  - 1999: 0.6
  - 2000: 0.7
  - 2001: 0.8
  - 2002: 0.9
  - 2003: 1.0
  - 2004: 1.1
  - 2005: 1.2
  - 2006: 1.3
  - 2007: 1.4

- **P**
  - 1994: 0
  - 1995: 0.05
  - 1996: 0.1
  - 1997: 0.15
  - 1998: 0.2
  - 1999: 0.25
  - 2000: 0.3
  - 2001: 0.35
  - 2002: 0.4
  - 2003: 0.45
  - 2004: 0.5
  - 2005: 0.55
  - 2006: 0.6
  - 2007: 0.65

**Bacteria**

- **Fecal Coliform**
  - 1994: 100
  - 1995: 200
  - 1996: 300
  - 1997: 400
  - 1998: 500
  - 1999: 600
  - 2000: 700
  - 2001: 800
  - 2002: 900
  - 2003: 1000
  - 2004: 1100
  - 2005: 1200
  - 2006: 1300
  - 2007: 1400

- **Total Coliform**
  - 1994: 0
  - 1995: 50
  - 1996: 100
  - 1997: 150
  - 1998: 200
  - 1999: 250
  - 2000: 300
  - 2001: 350
  - 2002: 400
  - 2003: 450
  - 2004: 500
  - 2005: 550
  - 2006: 600
  - 2007: 650

**BEII Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 1.1
- **Annual Average TP (mg/L):** 0.13
- **Annual Average Chlorophyll a (ug/L):** 1.9
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 413
- **Annual Average DO (mg/L):** 6.9
- **Maximum Peak Stage (Ft):** No Data
- **Receiving Body of Water:** St Johns River
- **TMDL Impairment:** None
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

- **Plant Management**
  - **Riparian Buffer:** 10 M
  - **Canopy Cover:** Lightly Shaded
  - **Exotic Species:** Yes

- **Fishing Management**
  - **Fish Consumption Advisory:** Yes

- **Macroinvertebrates**
  - **SCI Score:** No Data
  - **Overall Health:** No Data
  - **Diversity Index:** No Data
Big Econ At Discharge From Alafaya Wetlands

BEII

Legend

- BEII Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
BEHS Characteristics

- Average Flow (m/s): No Data
- Annual Average TN (mg/L): 1.1
- Annual Average TP (mg/L): 0.05
- Annual Average Chlorophyll a (ug/L): 1.2
- Annual Average (Fecal) Bacteria (CFU/100mL): 1,038
- Annual Average DO (mg/L): 6.0
- Maximum Peak Stage (Ft): No Data
- Receiving Body of Water: St Johns River
- TMDL Impairment: None
- TMDL Group: 2
- BMAP: No

Biological Information

- Plant Management
  - Riparian Buffer: > 18 M
  - Canopy Cover: Moderately Shaded
  - Exotic Species: No Data
- Fishing Management
  - Fish Consumption Advisory: Yes
- Macroinvertebrates
  - SCI Score: No Data
  - Overall Health: No Data
  - Diversity Index: No Data
Orange County Land Use:

- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Legend

- BEHS Sample Location
- Other Sample Locations
- Orange County Outfalls

Big Econ At Hal Scott

BEHS
Bed Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.8
Annual Average TP (mg/L): 0.07
Annual Average Chlorophyll a (ug/L): 0.9
Annual Average (Fecal) Bacteria (CFU/100mL): 98
Annual Average DO (mg/L): 7.1
Maximum Peak Stage (Ft): No Data
Receiving Body of Water: St Johns River
TMDL Impairment: None
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: > 18 M
Canopy Cover: Open
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: 2.3**
** Data collected in 1999
Big Econ At Hwy. 419
BED

Legend
- BED Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
BEB Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 1.1
Annual Average TP (mg/L): 0.06
Annual Average Chlorophyll a (ug/L): 0.7
Annual Average (Fecal) Bacteria (CFU/100mL): 359
Annual Average DO (mg/L): 6.5
Maximum Peak Stage (Ft): No Data
Receiving Body of Water: St Johns River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: > 18 M
Canopy Cover: Heavily Shaded
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Big Econ At Hwy. 420

BEB

Legend

- BEB Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Red: Commercial
- Black: Industrial
- Pink: Residential
- Green: Parks / Conservation
- Orange: Rural / Agricultural
- Pink: Institutional
**Belb Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.9
- **Annual Average TP (mg/L):** 0.10
- **Annual Average Chlorophyll a (µg/L):** 2.1
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 2,413
- **Annual Average DO (mg/L):** 3.6
- **Maximum Peak Stage (Ft):** No Data
- **Receiving Body of Water:** St Johns River
- **TMDL Impairment:** None
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** No Data
- **Canopy Cover:** No Data
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
**BEF Characteristics**

- **Average Flow (m/s):** 0.14
- **Annual Average TN (mg/L):** 0.9
- **Annual Average TP (mg/L):** 0.06
- **Annual Average Chlorophyll a (ug/L):** 0.9
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 1,685
- **Annual Average DO (mg/L):** 6.5
- **Maximum Peak Stage (Ft):** 3
- **Receiving Body of Water:** St Johns River
- **TMDL Impairment:** None
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

- **Plant Management**
  - **Riparian Buffer:** > 18 M
  - **Canopy Cover:** No Data
  - **Exotic Species:** No Data

- **Fishing Management**
  - **Fish Consumption Advisory:** Yes

- **Macroinvertebrates**
  - **SCI Score:** 34**
  - **Overall Health:** Poor
  - **Diversity Index:** 3.9**

**Data collected in 2007**
**BER Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 1.3
- **Annual Average TP (mg/L):** 0.11
- **Annual Average Chlorophyll a (ug/L):** 2.2
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 2,495
- **Annual Average DO (mg/L):** 6.4
- **Maximum Peak Stage (Ft):** No Data
- **Receiving Body of Water:** St Johns River
- **TMDL Impairment:** None
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** > 18 M
- **Canopy Cover:** Heavily Shaded
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
**BEE Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.9
- **Annual Average TP (mg/L):** 0.08
- **Annual Average Chlorophyll a (ug/L):** 1.1
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 87
- **Annual Average DO (mg/L):** 8.1
- **Maximum Peak Stage (Ft):** 25.3
- **Receiving Body of Water:** St Johns River
- **TMDL Impairment:** None
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** No Data
- **Canopy Cover:** No Data
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
**Beauvoir Ecosystem Information (BEI) Characteristics**

- **Average Flow (m/s):** 0.5
- **Annual Average TN (mg/L):** 1.1
- **Annual Average TP (mg/L):** 0.10
- **Annual Average Chlorophyll a (ug/L):** 1.1
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 938
- **Annual Average DO (mg/L):** 7.3
- **Maximum Peak Stage (Ft):** 1
- **Receiving Body of Water:** St Johns River
- **TMDL Impairment:** None
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** > 18 M
- **Canopy Cover:** Moderately Shaded
- **Exotic Species:** No

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** 64**
- **Overall Health:** Fair
- **Diversity Index:** 3.1**

**Notes:**
- **Data collected in 2007**
**BWKL Characteristics**

- **Average Flow (m/s):** 0.19
- **Annual Average TN (mg/L):** 1.2
- **Annual Average TP (mg/L):** 0.14
- **Annual Average Chlorophyll a (ug/L):** 1.7
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 112
- **Annual Average DO (mg/L):** 4.9
- **Maximum Peak Stage (Ft):** 3
- **Receiving Body of Water:** St Johns River
- **TMDL Impairment:** Nitrate And Phosphorus
- **TMDL Group:** 2
- **BMAP:** 2010

**Biological Information**

**Plant Management**
- **Riparian Buffer:** < 6 M
- **Canopy Cover:** Open
- **Exotic Species:** N

**Fishing Management**
- **Fish Consumption Advisory:** No

**Macroinvertebrates**
- **SCI Score:** 59**
- **Overall Health:** Good
- **Diversity Index:** 4.2**

**Notes:**
- **Data collected in 2007**
Big Wekiva At Katie Landing

BWKL

Legend

- BWKL Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Red: Commercial
- Black: Industrial
- Pink: Residential
- Green: Parks / Conservation
- Orange: Rural / Agricultural
- Purple: Institutional
BIG WEKIVA AT KELLY PARK

Basin: Big Wekiva
LAT: 28° 45' 22"    LONG: 81° 29' 55"

BWKP Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 1.3
Annual Average TP (mg/L): 0.08
Annual Average Chlorophyll a (ug/L): 0.6
Annual Average (Fecal) Bacteria (CFU/100mL): 93
Annual Average DO (mg/L): 2.7
Maximum Peak Stage (Ft): No Data
Receiving Body of Water: St Johns River
TMDL Impairment: Nitrate And Phosphorus
TMDL Group: 2
BMAP: 2010

Biological Information

Plant Management
Riparian Buffer: 8 M
Canopy Cover: Lightly Shaded
Exotic Species: OS

Fishing Management
Fish Consumption Advisory: No

Macroinvertebrates
SCI Score: 41
Overall Health: Poor
Diversity Index: 3
Big Wekiva At Kelly Park

Legend

BWKP Sample Location
Other Sample Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Big Wekiva At Kelly Park

BWKP
**BWB Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 1.3
- **Annual Average TP (mg/L):** 0.12
- **Annual Average Chlorophyll a (ug/L):** 1.4
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 82
- **Annual Average DO (mg/L):** 4.7
- **Maximum Peak Stage (Ft):** No Data
- **Receiving Body of Water:** St Johns River
- **TMDL Impairment:** Nitrate And Phosphorus
- **TMDL Group:** 2
- **BMAP:** 2010

**Biological Information**

**Plant Management**
- **Riparian Buffer:** 10 M
- **Canopy Cover:** Lightly Shaded
- **Exotic Species:** ABGOPS

**Fishing Management**
- **Fish Consumption Advisory:** No
- **Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data

---

**Nitrogen and Phosphorus**

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<th>Nitrogen</th>
<th>Phosphorus</th>
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<td>2004</td>
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<td>2007</td>
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**Bacteria**

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<th>Total Coliform</th>
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<td>1992</td>
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<td>2007</td>
<td>1000</td>
<td>0</td>
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</tbody>
</table>
Legend

- BWB Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Big Wekiva At Wekiva Marina

BWB
BIG WEKIVA AT WEKIVA SPRINGS

Basin: Big Wekiva
LAT: 28° 42' 45"
LONG: 81° 27' 32"

BWD Characteristics
- Average Flow (m/s): No Data
- Annual Average TN (mg/L): 1.0
- Annual Average TP (mg/L): 0.12
- Annual Average Chlorophyll a (ug/L): 0.6
- Annual Average (Fecal) Bacteria (CFU/100mL): 6
- Annual Average DO (mg/L): 1.2
- Maximum Peak Stage (Ft): No Data
- Receiving Body of Water: St Johns River
- TMDL Impairment: Nitrate And Phosphorus
- TMDL Group: 2
- BMAP: 2010

Biological Information
- Plant Management
  - Riparian Buffer: < 10 M
  - Canopy Cover: Lightly Shaded
  - Exotic Species: ABOPS
- Fishing Management
  - Fish Consumption Advisory: No
- Macrinovertebrates
  - SCI Score: No Data
  - Overall Health: No Data
  - Diversity Index: No Data
Big Wekiva At Wekiva Springs

BWD

Legend

- BWD Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
BCE Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 1.0
Annual Average TP (mg/L): 0.10
Annual Average Chlorophyll a (ug/L): 2.0
Annual Average (Fecal) Bacteria (CFU/100mL): 223
Annual Average DO (mg/L): 4.5
Maximum Peak Stage (Ft): No Data
Receiving Body of Water: Lake Toho
TMDL Impairment: None
TMDL Group: 4
BMAP: No

Biological Information

Plant Management
Riparian Buffer: < 10 M
Canopy Cover: Lightly Shaded
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: No

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
BOGGY CREEK AT SR 527A

Basin: Boggy Creek
LAT: 28° 23' 29"
LONG: 81° 19' 18"

BCB Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.8
Annual Average TP (mg/L): 0.04
Annual Average Chlorophyll a (µg/L): 3.8
Annual Average (Fecal) Bacteria (CFU/100mL): 153
Annual Average DO (mg/L): 5.1
Maximum Peak Stage (Ft): No Data
Receiving Body of Water: Lake Toho
TMDL Impairment: None
TMDL Group: 4
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 0 M
Canopy Cover: Open
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: No

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Boggy Creek At SR 527A

BCB

Legend

- **BCB Sample Location**
- **Other Sample Locations**
- **Orange County Outfalls**

**Orange County Land Use:**
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
BOGGY CREEK AT SR 530

Basin: Boggy Creek
LAT: 28° 20' 53"
LONG: 81° 19' 14"

BCC Characteristics

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.6
- **Annual Average TP (mg/L):** 0.03
- **Annual Average Chlorophyll a (ug/L):** 1.0
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 373
- **Annual Average DO (mg/L):** 5.8
- **Maximum Peak Stage (Ft):** No Data
- **Receiving Body of Water:** Lake Toho
- **TMDL Impairment:** None
- **TMDL Group:** 4
- **BMAP:** No

Biological Information

Plant Management
- **Riparian Buffer:** 15m
- **Canopy Cover:** Moderately Shaded
- **Exotic Species:** ABK

Fishing Management
- **Fish Consumption Advisory:** No

Macroinvertebrates
- **SCI Score:** 65
- **Overall Health:** Fair
- **Diversity Index:** 4.8
**BCA Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 1.3
- **Annual Average TP (mg/L):** 0.06
- **Annual Average Chlorophyll a (ug/L):** 30.7
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 108
- **Annual Average DO (mg/L):** 5.7
- **Maximum Peak Stage (Ft):** No Data
- **Receiving Body of Water:** Lake Toho
- **TMDL Impairment:** None
- **TMDL Group:** 4
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** 0 M
- **Canopy Cover:** Open
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** No

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
CCB Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 2.1
Annual Average TP (mg/L): 0.11
Annual Average Chlorophyll a (ug/L): 57.3
Annual Average (Fecal) Bacteria (CFU/100mL): 285
Annual Average DO (mg/L): 6.4
Maximum Peak Stage (Ft): No Data
Receiving Body of Water: Lake Tibet
TMDL Impairment: None
TMDL Group: 4
BMAP: No

Biological Information

Plant Management
Riparian Buffer: No Data
Canopy Cover: No Data
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: No

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Legend

- Red: CCB Sample Location
- Black: Other Sample Locations
- Orange: Orange County Outfalls

Orange County Land Use:
- Red: Commercial
- Black: Industrial
- Pink: Residential
- Green: Parks / Conservation
- Brown: Rural / Agricultural
- Pink: Institutional

Cypress Creek At Bay Hill

CCB
CCA Characteristics

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 2.3
- **Annual Average TP (mg/L):** 0.02
- **Annual Average Chlorophyll a (ug/L):** 2.9
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 300
- **Annual Average DO (mg/L):** 4.7
- **Maximum Peak Stage (Ft):** 96.5
- **Receiving Body of Water:** Bonnett Creek
- **TMDL Impairment:** None
- **TMDL Group:** 4
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** > 18 M
- **Canopy Cover:** Moderately Shaded
- **Exotic Species:** No

**Fishing Management**
- **Fish Consumption Advisory:** No

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** 3.9**
  **Data collected in 2000**
**HBC Characteristics**

- **Average Flow (m/s):** 0.05
- **Annual Average TN (mg/L):** 0.6
- **Annual Average TP (mg/L):** 0.06
- **Annual Average Chlorophyll a (ug/L):** 9.4
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 1,375
- **Annual Average DO (mg/L):** 5.3
- **Maximum Peak Stage (Ft):** 58.5
- **Receiving Body of Water:** Lake Howell
- **TMDL Impairment:** Fecal Coliforms
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

- **Plant Management**
  - **Riparian Buffer:** 0 M
  - **Canopy Cover:** Open
  - **Exotic Species:** BG

- **Fishing Management**
  - **Fish Consumption Advisory:** No

- **Macroinvertebrates**
  - **SCI Score:** 34
  - **Overall Health:** Poor
  - **Diversity Index:** 3.5
LEZAF Characteristics

**Biological Information**

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.9
Annual Average TP (mg/L): 0.10
Annual Average Chlorophyll a (ug/L): 1.3
Annual Average (Fecal) Bacteria (CFU/100mL): 302
Annual Average DO (mg/L): 6.6
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

**Plant Management**

Riparian Buffer: < 10 M
Canopy Cover: Lightly Shaded
Exotic Species: No Data

**Fishing Management**

Fish Consumption Advisory: Yes

**Macroinvertebrates**

SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
LET Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 1.0
Annual Average TP (mg/L): 0.10
Annual Average Chlorophyll a (ug/L): 1.9
Annual Average (Fecal) Bacteria (CFU/100mL): 860
Annual Average DO (mg/L): 5.4
Maximum Peak Stage (Ft): 10.7

Receiving Body of Water:
Econlockhatchee River

TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: > 18 M
Canopy Cover: Lightly Shaded
Exotic Species: BGON

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: 37**
Overall Health: No Data
Diversity Index: 3.8**

** Data collected in 2006
Nitrogen and Phosphorus

LEQ Characteristics

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.7
- **Annual Average TP (mg/L):** 0.07
- **Annual Average Chlorophyll a (ug/L):** 4.1
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 225
- **Annual Average DO (mg/L):** 7.4
- **Maximum Peak Stage (Ft):** 10.7
- **Receiving Body of Water:** Econlockhatchee River
- **TMDL Impairment:** Fecal Coliforms
- **TMDL Group:** 2
- **BMAP:** No

Biological Information

**Plant Management**
- **Riparian Buffer:** < 10 M
- **Canopy Cover:** Open
- **Exotic Species:** Yes

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
LEF Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L):
Annual Average TP (mg/L):
Annual Average Chlorophyll a (ug/L):
Annual Average (Fecal) Bacteria (CFU/100mL):
Annual Average DO (mg/L):
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 0 M
Canopy Cover: Lightly Shaded
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: 4.1**
** Data collected in 1999
LER Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.9
Annual Average TP (mg/L): 0.07
Annual Average Chlorophyll a (ug/L): 1.4
Annual Average (Fecal) Bacteria (CFU/100mL): 253
Annual Average DO (mg/L): 6.8
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: < 10 M
Canopy Cover: Open
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Little Econ At Buck Road
LER

Legend
LER Sample Location
Other Sample Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
**LEE Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 1.0
- **Annual Average TP (mg/L):** 0.11
- **Annual Average Chlorophyll a (ug/L):** 4.7
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 322
- **Annual Average DO (mg/L):** 5.6
- **Maximum Peak Stage (Ft):** 10.7
- **Receiving Body of Water:** Econlockhatchee River
- **TMDL Impairment:** Fecal Coliforms
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** 0 M
- **Canopy Cover:** Lightly Shaded
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** 2.5**
  - **Data collected in 1999**
Little Econ At Canal Confluence

Legend

- LEE Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LEYA Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.9
Annual Average TP (mg/L): 0.21
Annual Average Chlorophyll a (ug/L): 6.5
Annual Average (Fecal) Bacteria (CFU/100mL): 733
Annual Average DO (mg/L): 6.3
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 0 M
Canopy Cover: Open
Exotic Species: BO

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Little Econ At East Orange Canal
LEYA
LEYB Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.9
Annual Average TP (mg/L): 0.19
Annual Average Chlorophyll a (ug/L): 9.7
Annual Average (Fecal) Bacteria (CFU/100mL): 1,273
Annual Average DO (mg/L): 5.8
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 0 M
Canopy Cover: Open
Exotic Species: BO

Fishing Management
Fish Consumption Advisory: Yes
Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Legend
- LEYB Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Little Econ At East Orange Canal

#2
LEYB
**LEP Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 1.1
- **Annual Average TP (mg/L):** 0.07
- **Annual Average Chlorophyll a (ug/L):** 6.4
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 1,805
- **Annual Average DO (mg/L):** 5.1
- **Maximum Peak Stage (Ft):** 10.7
- **Receiving Body of Water:** Econlockhatchee River
- **TMDL Impairment:** Fecal Coliforms
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** < 5 M
- **Canopy Cover:** Open
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes
- **Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
Legend
- LEP Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Little Econ At Econ Trail
LEP
**LEO Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.9
- **Annual Average TP (mg/L):** 0.08
- **Annual Average Chlorophyll a (ug/L):** 5.9
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 2,074
- **Annual Average DO (mg/L):** 7.4
- **Maximum Peak Stage (Ft):** 10.7
- **Receiving Body of Water:** Econlockhatchee River
- **TMDL Impairment:** Fecal Coliforms
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** < 5 M
- **Canopy Cover:** Open
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
LEZ Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.9
Annual Average TP (mg/L): 0.10
Annual Average Chlorophyll a (ug/L): 4.4
Annual Average (Fecal) Bacteria (CFU/100mL): 625
Annual Average DO (mg/L): 5.8
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 10 M
Canopy Cover: Lightly Shaded
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Legend
- LEZ Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Red: Commercial
- Black: Industrial
- Light Pink: Residential
- Green: Parks / Conservation
- Orange: Rural / Agricultural
- Fuchsia: Institutional

Little Econ At Hwy 50: Park Manor
LEZ
LEH Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.8
Annual Average TP (mg/L): 0.09
Annual Average Chlorophyll a (ug/L): 1.9
Annual Average (Fecal) Bacteria (CFU/100mL): 3,395
Annual Average DO (mg/L): 5.2
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 10 M
Canopy Cover: Lightly Shaded
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
LEG Characteristics

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 1.4
- **Annual Average TP (mg/L):** 0.03
- **Annual Average Chlorophyll a (ug/L):** 4.6
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 297
- **Annual Average DO (mg/L):** 3.7
- **Maximum Peak Stage (Ft):** 10.7
- **Receiving Body of Water:** Econlockhatchee River
- **TMDL Impairment:** Fecal Coliforms
- **TMDL Group:** 2
- **BMAP:** No

Biological Information

**Plant Management**
- **Riparian Buffer:** 10 M
- **Canopy Cover:** Lightly Shaded
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
Little Econ At Landfill

LEG

Legend

- LEG Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:

- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LES Characteristics

- Average Flow (m/s): 2.5
- Annual Average TN (mg/L): 1.0
- Annual Average TP (mg/L): 0.11
- Annual Average Chlorophyll a (ug/L): 1.1
- Annual Average (Fecal) Bacteria (CFU/100mL): 312
- Annual Average DO (mg/L): 6.5
- Maximum Peak Stage (Ft): 10.7
- Receiving Body of Water: Econlockhatchee River
- TMDL Impairment: Fecal Coliforms
- TMDL Group: 2
- BMAP: No

Biological Information

- Plant Management
  - Riparian Buffer: 0 M
  - Canopy Cover: Open
  - Exotic Species: MP

- Fishing Management
  - Fish Consumption Advisory: Yes

- Macroinvertebrates
  - SCI Score: 42**
  - Overall Health: Poor
  - Diversity Index: 3.3**

** Data collected in 2007
LEZZ Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.7
Annual Average TP (mg/L): 0.07
Annual Average Chlorophyll a (ug/L): 7.3
Annual Average (Fecal) Bacteria (CFU/100mL): 458
Annual Average DO (mg/L): 7.2
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 0 M
Canopy Cover: Open
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
LEK Characteristics

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.7
- **Annual Average TP (mg/L):** 0.20
- **Annual Average Chlorophyll a (ug/L):** 295.4
- **Annual Average DO (mg/L):** 5.5
- **Maximum Peak Stage (Ft):** 10.7
- **Receiving Body of Water:** Econlockhatchee River
- **TMDL Impairment:** Fecal Coliforms
- **TMDL Group:** 2
- **BMAP:** No

Biological Information

**Plant Management**
- **Riparian Buffer:** 0 M
- **Canopy Cover:** Open
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
Legend
- LEK Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Red: Commercial
- Black: Industrial
- Pink: Residential
- Green: Parks / Conservation
- Orange: Rural / Agricultural
- Purple: Institutional

Little Econ At SR 436: WP Pines
LEK
LEZB Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.8
Annual Average TP (mg/L): 0.04
Annual Average Chlorophyll a (ug/L): 6.5
Annual Average (Fecal) Bacteria (CFU/100mL): 948
Annual Average DO (mg/L): 6.0
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Econlockhatchee River
TMDL Impairment: Fecal Coliforms
TMDL Group: 2
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 0 M
Canopy Cover: Open
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Legend

LEZB Sample Location
Other Sample Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Little Econ At SR436: Baldwin Outfall
LEZB
**LEZK Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.8
- **Annual Average TP (mg/L):** 0.11
- **Annual Average Chlorophyll a (ug/L):** 2.0
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 2,633
- **Annual Average DO (mg/L):** 4.9
- **Maximum Peak Stage (Ft):** 10.7
- **Receiving Body of Water:** Econlockhatchee River
- **TMDL Impairment:** Fecal Coliforms
- **TMDL Group:** 2
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** 0 M
- **Canopy Cover:** Open
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
Legend

LEZK Sample Location
Other Sample Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Little Econ At University Shores
LEZK
LITTLE WEKIVA AT N. ORANGE BLOSSOM TRAIL

Basin: Little Wekiva
LAT: 28° 36' 34"    LONG: 81° 25' 38"

LWB Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 1.1
Annual Average TP (mg/L): 0.06
Annual Average Chlorophyll a (ug/L): 14.7
Annual Average (Fecal) Bacteria (CFU/100mL): 305
Annual Average DO (mg/L): 5.8
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Wekiva River
TMDL Impairment: Fecal Coliforms, BOD, DO, Nutrients
TMDL Group: 2
BMAP: 2008/2009

Biological Information

Plant Management
Riparian Buffer: 0 M
Canopy Cover: Open
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: No

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
LITTLE WEKIVA AT ORANOLE ROAD

LWD Characteristics

- Average Flow (m/s): No Data
- Annual Average TN (mg/L): 1.0
- Annual Average TP (mg/L): 0.05
- Annual Average Chlorophyll a (ug/L): 6.2
- Annual Average (Fecal) Bacteria (CFU/100mL): 475
- Annual Average DO (mg/L): 4.7
- Maximum Peak Stage (Ft): 27.8
- Receiving Body of Water: Wekiva River
- TMDL Impairment: Fecal Coliforms, BOD, DO, Nutrients
- TMDL Group: 2

Biological Information

- Plant Management
  - Riparian Buffer: > 18 M
  - Canopy Cover: Moderately Shaded
  - Exotic Species: B
- Fishing Management
  - Fish Consumption Advisory: No
- Macroinvertebrates
  - SCI Score: 54
  - Overall Health: Fair
  - Diversity Index: 4
Little Wekiva At Oranole Road

LWD Sample Location
Other Sample Locations
Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
LITTLE WEKIVA AT SILVER STAR ROAD

Basin: Little Wekiva
LAT: 28° 34' 38"   LONG: 81° 26' 02"

LWA Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 1.4
Annual Average TP (mg/L): 0.06
Annual Average Chlorophyll a (ug/L): 8.8
Annual Average (Fecal) Bacteria (CFU/100mL): 338
Annual Average DO (mg/L): 6.3
Maximum Peak Stage (Ft): 10.7
Receiving Body of Water: Wekiva River
TMDL Impairment: Fecal Coliforms, BOD, DO, Nutrients
TMDL Group: 2
BMAP: 2008/2009

Biological Information

Plant Management
Riparian Buffer: 0 M
Canopy Cover: Open
Exotic Species: No Data

Fishing Management
Fish Consumption Advisory: No

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
Little Wekiva At Silver Star Road

LWA
SHINGLE CREEK AT CENTRAL FL. PARKWAY

Basin: Shingle Creek
LAT: 28° 24' 37"    LONG: 81° 26' 01"

SCC Characteristics

Average Flow (m/s): No Data
Annual Average TN (mg/L): 0.7
Annual Average TP (mg/L): 0.05
Annual Average Chlorophyll a (ug/L): 1.6
Annual Average (Fecal) Bacteria (CFU/100mL): 99
Annual Average DO (mg/L): 5.5
Maximum Peak Stage (Ft): 7.7
Receiving Body of Water: Lake Toho
TMDL Impairment: None
TMDL Group: 4
BMAP: No

Biological Information

Plant Management
Riparian Buffer: 0m
Canopy Cover: Open
Exotic Species: ABKP

Fishing Management
Fish Consumption Advisory: No

Macroinvertebrates
SCI Score: 53
Overall Health: Fair
Diversity Index: 3.6
SHINGLE CREEK AT CONROY ROAD

Basin: Shingle Creek
LAT: 28° 29' 50"  LONG: 81° 26' 46"

SCN Characteristics

- Average Flow (m/s): No Data
- Annual Average TN (mg/L): 0.8
- Annual Average TP (mg/L): 0.04
- Annual Average Chlorophyll a (ug/L): 3.2
- Annual Average (Fecal) Bacteria (CFU/100mL): 195
- Annual Average DO (mg/L): 3.5
- Maximum Peak Stage (Ft): No Data
- Receiving Body of Water: Lake Toho
- TMDL Impairment: None
- TMDL Group: 4
- BMAP: No

Biological Information

Plant Management
- Riparian Buffer: 0 M
- Canopy Cover: Open
- Exotic Species: BEO

Fishing Management
- Fish Consumption Advisory: No

Macroinvertebrates
- SCI Score: No Data
- Overall Health: No Data
- Diversity Index: No Data
**SCD Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.7
- **Annual Average TP (mg/L):** 0.04
- **Annual Average Chlorophyll a (ug/L):** 0.8
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 402
- **Annual Average DO (mg/L):** 5.5
- **Maximum Peak Stage (Ft):** 7.7
- **Receiving Body of Water:** Lake Toho
- **TMDL Impairment:** None
- **TMDL Group:** 4
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** < 10 M
- **Canopy Cover:** Lightly Shaded
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** No

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
Shingle Creek At Hwy. 192

Legend

- SCD Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
**SHINGLE CREEK AT N. OF L.B. MCLEOD**

**Basin:** Shingle Creek  
**LAT:** 28° 30' 39"  
**LONG:** 81° 27' 17"

**SCH Characteristics**

- **Average Flow (m/s):** No Data
- **Annual Average TN (mg/L):** 0.8
- **Annual Average TP (mg/L):** 0.04
- **Annual Average Chlorophyll a (ug/L):** 6.4
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 232
- **Annual Average DO (mg/L):** 3.3
- **Maximum Peak Stage (Ft):** No Data
- **Receiving Body of Water:** Lake Toho
- **TMDL Impairment:** None
- **TMDL Group:** 4
- **BMAP:** No

**Biological Information**

**Plant Management**
- **Riparian Buffer:** 0 M
- **Canopy Cover:** Open
- **Exotic Species:** No Data

**Fishing Management**
- **Fish Consumption Advisory:** No

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
SHINGLE CREEK AT N. OF L.B. MCLEOD

Legend

- SCH Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

Shingle Creek At N. Of L.B. Mcleod

SCH
**ST. JOHNS RIVER AT HWY 50 EAST**

**Basin: St. Johns River**

LAT: 28° 32' 36"  LONG: 80° 55' 56"

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**SJ22 Characteristics**

- **Average Flow (m/s):** 5.2
- **Annual Average TN (mg/L):** 2.5
- **Annual Average TP (mg/L):** 0.12
- **Annual Average Chlorophyll a (ug/L):** 27.4
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 831
- **Annual Average DO (mg/L):** 5.1
- **Maximum Peak Stage (Ft):** 9.6
- **Receiving Body of Water:** Lake Monroe
- **TMDL Impairment:** DO And Nutrients
- **TMDL Group:** 3
- **BMAP:** No

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**Biological Information**

**Plant Management**

- **Riparian Buffer:** < 6 M
- **Canopy Cover:** Open
- **Exotic Species:** ABJS

**Fishing Management**

- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**

- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
St. Johns River At Hwy 50 East
SJ22

Legend
- SJ22 Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
ST. JOHNS RIVER AT HWY 50 WEST

Basin: St. Johns River
LAT: 28° 32' 36"  LONG: 80° 56' 36"

SJ21 Characteristics

Average Flow (m/s): 5.1
Annual Average TN (mg/L): 2.0
Annual Average TP (mg/L): 0.11
Annual Average Chlorophyll a (ug/L): 19.9
Annual Average (Fecal) Bacteria (CFU/100mL): 826
Annual Average DO (mg/L): 5.3
Maximum Peak Stage (Ft): 9.6
Receiving Body of Water: Lake Monroe
TMDL Impairment: DO And Nutrients
TMDL Group: 3
BMAP: No

Biological Information

Plant Management
Riparian Buffer: < 6 M
Canopy Cover: Open
Exotic Species: ABJS

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
ST. JOHNS RIVER AT HWY 528

Basin: St. Johns River
LAT: 28° 27' 12"   LONG: 80° 53' 50"

SJ19A Characteristics

Average Flow (m/s): 4.5
Annual Average TN (mg/L): 2.0
Annual Average TP (mg/L): 0.11
Annual Average Chlorophyll a (ug/L): 9.9
Annual Average (Fecal) Bacteria (CFU/100mL): 380
Annual Average DO (mg/L): 5.0
Maximum Peak Stage (Ft): 9.6
Receiving Body of Water: Lake Monroe
TMDL Impairment: DO And Nutrients
TMDL Group: 3
BMAP: No

Biological Information

Plant Management
Riparian Buffer: < 6 M
Canopy Cover: Open
Exotic Species: ABJS

Fishing Management
Fish Consumption Advisory: Yes

Macroinvertebrates
SCI Score: No Data
Overall Health: No Data
Diversity Index: No Data
St. Johns River At Hwy 528

SJ19A

Legend

- SJ19A Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
The ST. JOHNS RIVER AT HWY. 520 Basin has the following characteristics:

### SJ18 Characteristics

- **Average Flow (m/s):** 5.9
- **Annual Average TN (mg/L):** 2.2
- **Annual Average TP (mg/L):** 0.13
- **Annual Average Chlorophyll a (ug/L):** 12.2
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 257
- **Annual Average DO (mg/L):** 5.6
- **Maximum Peak Stage (Ft):** 9.6
- **Receiving Body of Water:** Lake Monroe
- **TMDL Impairment:** DO And Nutrients
- **TMDL Group:** 3
- **BMAP:** No

### Biological Information

#### Plant Management
- **Riparian Buffer:** < 6 M
- **Canopy Cover:** Open
- **Exotic Species:** ABJS

#### Fishing Management
- **Fish Consumption Advisory:** Yes

#### Macroinvertebrates
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
Legend
- SJ18 Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional

St. Johns River At Hwy. 520
SJ18
ST. JOHNS RIVER AT LAKE CANE OUTLET

Baseline: St. Johns River
LAT: 28° 34' 01"   LONG: 80° 57' 36"

**Nitrogen and Phosphorus**
- **N**: 0.00 to 2.50
- **P**: 0.00 to 0.140

**Dissolved Oxygen**
- 0.00 to 6.0

**SJ23 Characteristics**
- Average Flow (m/s): 5.2
- Annual Average TN (mg/L): 2.2
- Annual Average TP (mg/L): 0.12
- Annual Average Chlorophyll a (ug/L): 23.0
- Annual Average (Fecal) Bacteria (CFU/100mL): 216
- Annual Average DO (mg/L): 4.9
- Maximum Peak Stage (Ft): 9.6
- Receiving Body of Water: Lake Monroe
- TMDL Impairment: DO And Nutrients
- TMDL Group: 3
- BMAP: No

**Biological Information**
- **Plant Management**
  - Riparian Buffer: < 6 M
  - Canopy Cover: Open
  - Exotic Species: ABJS
- **Fishing Management**
  - Fish Consumption Advisory: Yes
- **Macroinvertebrates**
  - SCI Score: No Data
  - Overall Health: No Data
  - Diversity Index: No Data
St. Johns River At Lake Cane Outlet
SJ23
**ST. JOHNS RIVER AT ORANGE MOUND**

**Basin:** St. Johns River

**LAT:** 28° 35' 53"  **LONG:** 80° 58' 11"

---

**Nitrogen and Phosphorus**

- **N**
  - 2005: 3.5
  - 2006: 3.0

- **P**
  - 2005: 0.2
  - 2006: 0.18

**Dissolved Oxygen**

- 1968: 9
- 1975: 8
- 1983: 6
- 1993: 4
- 1998: 2
- 2003: 1

---

**SJ24 Characteristics**

- **Average Flow (m/s):** 5
- **Annual Average TN (mg/L):**
- **Annual Average TP (mg/L):**
- **Annual Average Chlorophyll a (ug/L):**
- **Annual Average (Fecal) Bacteria (CFU/100mL):**
- **Annual Average DO (mg/L):**
- **Maximum Peak Stage (Ft):** 9.6
- **Receiving Body of Water:** Lake Monroe
- **TMDL Impairment:** DO And Nutrients
- **TMDL Group:** 3
- **BMAP:** No

---

**Biological Information**

**Plant Management**
- **Riparian Buffer:** 10 M
- **Canopy Cover:** Open
- **Exotic Species:** ABJS

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
St. Johns River At Orange Mound

SJ24

Legend
- SJ24 Sample Location
- Other Sample Locations
- Orange County Outfalls

Orange County Land Use:
- Commercial
- Industrial
- Residential
- Parks / Conservation
- Rural / Agricultural
- Institutional
ST. JOHNS RIVER AT POSSUM BLUFF

Baseline: St. Johns River
LAT: 28° 26' 44"
LONG: 80° 53' 25"

**SJ19 Characteristics**

- **Average Flow (m/s):** 4.7
- **Annual Average TN (mg/L):** 2.1
- **Annual Average TP (mg/L):** 0.12
- **Annual Average Chlorophyll a (ug/L):** 10.6
- **Annual Average (Fecal) Bacteria (CFU/100mL):** 519
- **Annual Average DO (mg/L):** 5.2
- **Maximum Peak Stage (Ft):** 9.6
- **Receiving Body of Water:** Lake Monroe
- **TMDL Impairment:** DO And Nutrients
- **TMDL Group:** 3
- **BMAP:** No

**Nitrogen and Phosphorus**

- **Nitrogen**
- **Phosphorus**

**Dissolved Oxygen**

- **Dissolved Oxygen**

**Biological Information**

**Plant Management**
- **Riparian Buffer:** < 6 M
- **Canopy Cover:** Open
- **Exotic Species:** ABJS

**Fishing Management**
- **Fish Consumption Advisory:** Yes

**Macroinvertebrates**
- **SCI Score:** No Data
- **Overall Health:** No Data
- **Diversity Index:** No Data
BIOLOGICAL ANALYSIS
The Macroinvertebrate Program

The Macroinvertebrate Program is part of the Environmental Assessment Team within the Natural Resources Management of the Orange County Environmental Protection Division of Community and Environmental Services of Orange County Government, Florida. The program is tasked to contribute biological data in combination with the surface water data, to assist in the ecological assessment of our watersheds within Orange County.

Method changes in 2008. Laboratory and field method changes in FDEP SOP LQ7000 and FS3000 went into effect December, 2008. Data collection in 2008 prior to December continued to be based on 2004 SOP standards. The Lake Vegetation Index (LVI) has replaced the Lake Condition Index (LCI) for means of determining listing status and overall health of the lake. The Stream Condition Index (SCI) has increased its sub-sample size from 100 organisms to 300 organisms, to reduce variability in scoring.

The LVI focuses on the shoreline vegetation habitat, where most water-born organisms live. FDEP has shown statistical significance in determining impacts of land usage adjacent to lakes, using the new LVI method.

FDEP Individual Audits. A Stream Condition Index audit is a meticulous practical examination of an analyst’s field sampling, knowledge, and method application capability. After a two-year apprenticeship consisting of numerous sampling events at several different sites in a variety of physical conditions, an analyst is scrutinized carefully to determine their level of knowledge and skill at a field site by authorities from the bureau of laboratories within FDEP.

On August 14, 2008, Jeff Darr passed the FDEP Stream Condition Index audit.

Internal Audits. Internal audits are necessary to insure compliance to standards set by certifying agencies, that insure integrity of data and methods by which they are derived. The audit focuses on the laboratory processing and analysis of macroinvertebrate samples. The NELAC Institute sets the quality standards for sample handling and documentation requirements.

On July 24, 2008, Jeff Darr passed the Macroinvertebrate Laboratory Audit

FDEP Agency Level Audits. The Lake Vegetation Index Audit is an agency-level audit administered on one day with several agencies attempting to demonstrate their proficiency of the LVI method. It takes place on several lakes, all of which have been examined by qualified FDEP personnel to pre-determine the correct score range.

On September 18, 2008, EPD passed the FDEP Lake Vegetation Condition Index audit. The team members included Julie Bortles, Lynn Denahan, Catherine Johnson, and Jeff Darr

Program and Agency Cooperative Improvements. Analysts completed the examination and inventory of the entire benthic collection to establish a documented library and database of vouchers and confirmed specimens.

To facilitate quick and accurate scoring of the Lake Vegetation Index, an LVI calculator was developed within the section. This calculator is now being used by other agencies to help their analysts who are also tasked to monitor watershed biology.

Metadata standards were developed with the Florida Office of Coastal and Aquatic Managed Areas Integrated Data Management system for future state-wide data submission.
2008 Bioassessment Site Results

In 2008, twenty-two bioassessments were performed in the macroinvertebrate program. Orange County EPD staff collected samples from ten sites. The City of Orlando staff collected nine samples, from five sites. Data is shared between The City of Orlando and Orange County for those five sites, as a cross-agency cooperation to fulfill the event mean characterization monitoring for the National Pollution Discharge Elimination System (NPDES) permit. Eight LCI’s, one LVI, and eleven SCI’s were performed. Two LVI’s in Lake County sites were also performed for FDEP’s biocriteria dataset is not presented here.

Table 1.0 features many of the pertinent physical and chemical parameters usually effecting benthic macroinvertebrate health. The table includes all the diversity, sensitivity, and condition indices, along with the dates and site locations with their prospective analysis, scores, habitat assessments, and score interpretations. In Table 1.0 most of our lakes were shown to be slightly more alkaline than our streams. Secchi depths were included to indicate clarity of water for light penetration.

Figure 1.1 features the LCI scores on a chart to illustrate the general condition of bioassessment sites, on lakes, according to sample date. Figure 1.2 illustrates the relative percentages of LCI scores to category. Figure 2.1 features the new LVI method on one lake, with scoring based on the new FDEP 2008 SOP method. Figure 3.1 features the SCI Scores on a chart to illustrate the general condition of bioassessment sites, in streams, according to sample date. Figure 3.2 illustrates the relative percentages of SCI scores to category. Figure 3.3 charts the variability of scores across all systems. Figure 4.0 is a map of the 2008-benthic collection and LVI site locations in their respective drainage basin for Orange County.

In general, most of our sites’ biological health is good to fair, with the lakes doing better and more evenly represented, categorically, nearly 2:1 over the streams. There is a 30 point difference in the scores of our best lake to our lowest performing lake. In the streams, it’s nearly double. There is a 57 point difference in the scores of our best stream to our lowest performing stream. The standard deviation of stream scores was 15.62 with the median at 54. The standard deviation of lake scores was 9.97 with the median at 51.5. More attention was given to sites in the Shingle Creek basin this year over other basins due to public interest and continuity of data sets.
Figure 1.1 Lake Condition Index (LCI) Scores by date. The (O) indicator means it was collected by the City of Orlando, but processed by EPD.

Figure 1.2 Distribution of LCI Scores according to health category in 2008.

Figure 2.1 Lake Vegetation Index (LVI) Scoring based on the new Lake Vegetation Index FDEP 2008 Method.
Stream Condition Index (SCI) Scores

Figure 3.1 SCI Scores by date in 2008. The (O) indicator means it was collected by the City of Orlando, but processed by EPD.

SCI Score Distribution Using 2004 FDEP Rule

Figure 3.2 Distribution of SCI Scores according to health category in 2008, using the existing 2004 SOP method of scoring according to FDEP.

SCI and LCI Variability Standard Deviation

Figure 3.3 Variability of SCI and LCI Scores across sample locations with standard deviation shown.
<table>
<thead>
<tr>
<th>Date</th>
<th>Site Location</th>
<th>Basin</th>
<th>Analysis</th>
<th>Score</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/28/08</td>
<td>SCO Shingle Creek (O)</td>
<td>Shingle Creek SCI</td>
<td>54</td>
<td>Fair</td>
<td>36 3.62 13 4.59 7.06 213</td>
</tr>
<tr>
<td>2/14/08</td>
<td>BEG Big Econ @ Altman Power</td>
<td>Big Econ SCI</td>
<td>84</td>
<td>Good</td>
<td>129 4.73 18 6.52 6.86 156</td>
</tr>
<tr>
<td>2/18/08</td>
<td>HB34 Lake Rowena (O)</td>
<td>Howell Branch LCI</td>
<td>37</td>
<td>Good</td>
<td>38 1.57 3 10.05 7.36 197</td>
</tr>
<tr>
<td>2/25/08</td>
<td>LE2 Lake Barton (O)</td>
<td>Little Econ LCI</td>
<td>49</td>
<td>Good</td>
<td>107 3.59 6 9.67 8.47 143</td>
</tr>
<tr>
<td>3/3/08</td>
<td>BCO Boggy Creek (O)</td>
<td>Boggy Creek SCI</td>
<td>49</td>
<td>Fair</td>
<td>115 3.66 12 7.55 6.99 170</td>
</tr>
<tr>
<td>3/25/08</td>
<td>BWKP Rock Springs @ Kelly Park</td>
<td>Big Wekiva SCI</td>
<td>41</td>
<td>Poor</td>
<td>110 2.98 5 3.93 7.98 268</td>
</tr>
<tr>
<td>4/15/08</td>
<td>LWD Little Wekiva at Lotus</td>
<td>Little Wekiva SCI</td>
<td>54</td>
<td>Fair</td>
<td>72 4.01 7 10.30 7.38 203</td>
</tr>
<tr>
<td>5/5/08</td>
<td>BCC Boggy Creek at 535</td>
<td>Boggy Creek SCI</td>
<td>65</td>
<td>Fair</td>
<td>93 4.78 17 6.20 6.50 158</td>
</tr>
<tr>
<td>5/6/08</td>
<td>SCC Shingle Creek @ CntFLPky</td>
<td>Shingle Creek SCI</td>
<td>53</td>
<td>Fair</td>
<td>83 3.56 10 5.20 7.20 277</td>
</tr>
<tr>
<td>5/7/08</td>
<td>SC21 Spring Lake</td>
<td>Shingle Creek LCI</td>
<td>61</td>
<td>Very Good</td>
<td>39 3.10 14 8.51 7.90 282</td>
</tr>
<tr>
<td>7/8/08</td>
<td>BC7 Lake Conway NW</td>
<td>Boggy Creek LCI</td>
<td>67</td>
<td>Very Good</td>
<td>64 4.02 20 7.50 7.10 255</td>
</tr>
<tr>
<td>7/9/08</td>
<td>HBC Howell Branch Creek</td>
<td>Howell Branch SCI</td>
<td>34</td>
<td>Poor</td>
<td>65 3.45 8 4.30 6.70 231</td>
</tr>
<tr>
<td>8/4/08</td>
<td>HB34 Lake Rowena (O)</td>
<td>Howell Branch LCI</td>
<td>47</td>
<td>Good</td>
<td>44 3.44 6 10.78 8.93 218</td>
</tr>
<tr>
<td>8/11/08</td>
<td>LE2 Lake Barton (O)</td>
<td>Little Econ LCI</td>
<td>54</td>
<td>Very Good</td>
<td>53 3.45 8 7.80 8.20 194</td>
</tr>
<tr>
<td>8/26/08</td>
<td>SC4 Lake Cane</td>
<td>Shingle Creek LCI</td>
<td>60</td>
<td>Good</td>
<td>50 3.99 13 8.40 7.90 193</td>
</tr>
<tr>
<td>10/20/08</td>
<td>BCO Boggy Creek (O)</td>
<td>Boggy Creek SCI</td>
<td>64</td>
<td>Fair</td>
<td>108 3.75 9 7.67 8.67 158</td>
</tr>
<tr>
<td>11/10/08</td>
<td>SCO Shingle Creek (O)</td>
<td>Shingle Creek SCI</td>
<td>57</td>
<td>Fair</td>
<td>50 4.20 10 6.08 7.18 228</td>
</tr>
<tr>
<td>11/24/08</td>
<td>SC12 Lake Mann</td>
<td>Shingle Creek LCI</td>
<td>44</td>
<td>Good</td>
<td>44 3.66 3 10.10 8.00 218</td>
</tr>
</tbody>
</table>

**Interpretation:**
- **HA** = Habitat Assessment (Score determined by field attributes and conditions of the land surrounding the site)
- **SWDI** = Shannon Weaver Diversity (Information Content) Index (Entropic; bridges physical entropy and information theory)
- **HI** = Hulbert Sensitivity Index (Score based on the organisms found in the system, their average sensitivity to pollutants)
- **DO** = Dissolved Oxygen Level mg/L (100% saturation is also affected by pressure and temperature; 100% sat = 9.0 mg/L)
- **pH** = Acidity/Alkalinity [0 - 14] (pure water = 7, <7 Acid, >7 Alkaline)
- **Sp Cond** = Conductivity/Salinity μmhos/cm (fresh 0-999 [average 200 ± 80], brackish 1000-9,999, marine 10,000-100,000 [average 45,000 ± 17,000])

*Interpretation is based on 2004 SOP’s, Corresponds to Aquatic Life Index 2 in FDEP LT7500.*
2008 Bioassessment Site Data

Figure 4.0 GIS map of 2008 Benthic Collection Sites per Drainage Basin.


Orange County currently has four operational real-time water quality data collection units. The physical sondes are maintained by Orange County and communications and flow/stage equipment is operated by a coordinating agency. The USGS currently manages three of the sites, located at Boggy Creek, Cypress Creek, and Shingle Creek. The South Florida Water Management District (SFWMD) manages the site on the discharge canal from Lake Hart.

The four stations collect water quality data every 15 minutes for temperature, conductivity, pH, dissolved oxygen, and turbidity. The stations are maintained by USGS and FDEP protocol and are checked every two weeks for calibration and operational status. The measurements are available at a slight delay after the readings are taken at the websites listed in the introduction.

Three additional sites will be operational in 2009. One site station on the Little Econ is managed by the USGS and two others located on the Little Wekiva and Big Econ rivers are managed by Orange County Stormwater.

2008 sites are shown in Red
2009 proposed sites are shown in Green
SHINGLE CREEK REALTIME

Basin: Shingle Creek
LAT: 28° 28' 18" LONG: 81° 25' 46"
SECTION: 20 TOWNSHIP: 23 RANGE: 29

Characteristics
Drainage Area: 20.6 Sq miles
USGS Period of Record: August 2006 to present

Daily Discharge in Cubic Feet/Sec
Daily Gauge Height in Feet

![Gauge Height Graph]

Daily Temperature in Celsius

![Temperature Graph]

† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.
Daily Specific Conductance $\mu$S/cm at 25°C

Daily Dissolved Oxygen mg/L

† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.
Daily pH

DATA NOT AVAILABLE

Daily Turbidity (FNU)

DATA NOT AVAILABLE

† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.
Basin: Boggy Creek
LAT: 28° 22’ 16” LONG: 81° 18’ 39”
SECTION: 28 TOWNSHIP: 24 RANGE: 30

Characteristics
Drainage Area: 83.6 Sq miles
USGS Period of Record: September 1959 to present

Daily Discharge in Cubic Feet/Sec
Daily Gauge Height in Feet

Daily Temperature in Celsius

† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.
Daily Specific Conductance $\mu$S/cm at 25°C

† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.
† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.
Characteristics

Drainage Area: 33.4 Sq miles
USGS Period of Record: August 1945 to February 2003, March 2003 to February 2005 (discharge measurements only), March 2005 to present

Daily Discharge in Cubic Feet/Sec

![Daily Discharge Chart](image)
Daily Gauge Height in Feet

† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.

Daily Temperature in Celsius
Daily Specific Conductance $\mu$S/cm at 25°C

Daily Dissolved Oxygen mg/L

† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.
† Data gaps in the period of water quality record were due to site maintenance of equipment or data was qualified as poor and not used in analysis. Turbidity data prior to February 2008 was qualified as poor and was not used in analysis. Data from October 1 until December 31 is still qualified as provision and subject to revision by the US Geological Survey until finalization of the water year ending September 30.
Characteristics

Drainage Area: 68.4 Sq miles
USGS Period of Record: Realtime data available from June 2008 to Present. Stage and Flow data from 1969 to Present.

Daily Discharge in Cubic Feet/Sec
† The Lake Hart site located at the S-62 structure maintained by the SFWMD has had stage and flow data collected from May 1969 to the present. Real time water quality data is available from June 2008 to the present. This information is available for download at the SFWMD DBHYDRO database at https://my.sfwmd.gov/portal/page/portal/PG_GRP_SFWMD ERA/PG_SFWMD ERA_dbhydrobrowser
Daily Specific Conductance $\mu$S/cm at 25°C

Daily Dissolved Oxygen mg/L

† The Lake Hart site located at the S-62 structure maintained by the SFWMD has had stage and flow data collected from May 1969 to the present. Real time water quality data is available from June 2008 to the present. This information is available for download at the SFWMD DBHYDRO database at https://my.sfwmd.gov/portal/page/portal/PG_GRP_SFWMD_ERA/PG_SFWMD_ERA_dbhydrobrowser
Daily pH

Daily Turbidity (FNU)

† The Lake Hart site located at the S-62 structure maintained by the SFWMD has had stage and flow data collected from May 1969 to the present. Real time water quality data is available from June 2008 to the present. This information is available for download at the SFWMD DBHYDRO database at https://my.sfwmd.gov/portal/page/portal/PG_GRP_SFWMD_ERA/PG_SFWMD_ERA_dbhydrobrowser
### GLOSSARY OF TERMS

**BMAP**  
**Basin Management Action Plan** - Developed with local stakeholders to specify how to achieve water quality goals on a basin wide approach by recommending management activities that address water quality problems and implements TMDL's set for the basin.

**Canopy Cover**  
- Open (0-10%)
- Lightly shaded (11-45%)
- Moderately Shaded (46-80%)
- Heavily shaded (81-100%)

**FCA**  
**Fish Consumption Advisory** - Issued by the State of Florida to alert the general public about potential health risks from consuming specific fish species from specific waterbodies.

**Grass Carp**  
A plant eating fish that has been introduced to Florida as a biological control for aggressive aquatic weeds. These fish are also called white amur or Chinese carp and only triploid or sterile carp are permitted for use in lakes or ponds. These fish can live for over 10 years and can reach 60 pounds. The favorite foods are hydrilla, coontail, muskgrass, naiad, slender spikerush, and jointed spikerush.

**Exotic/Target Plant Species**

<table>
<thead>
<tr>
<th>Letter</th>
<th>Species Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Water Hyacinth (<em>Eichornia crassipes</em>)</td>
</tr>
<tr>
<td>B</td>
<td>Aligator weed (<em>Alternathera philoxeroides</em>)</td>
</tr>
<tr>
<td>C</td>
<td>Muskgrass (<em>Chara spp.</em>)</td>
</tr>
<tr>
<td>D</td>
<td>Stonewart (<em>Nitella spp.</em>)</td>
</tr>
<tr>
<td>E</td>
<td>Parrot Feather (<em>Myriophyllum aquaticum</em>)</td>
</tr>
<tr>
<td>F</td>
<td>Brazillian Pepper (<em>Schinus terebinthifolius</em>)</td>
</tr>
<tr>
<td>G</td>
<td>Primrose Willow (<em>Ludwigia peruviana</em>)</td>
</tr>
<tr>
<td>H</td>
<td>Chinaberry (<em>Melia azedarach</em>)</td>
</tr>
<tr>
<td>I</td>
<td>Tropical Soda Apple (<em>Solanum tampicense</em>)</td>
</tr>
<tr>
<td>J</td>
<td>Torpedo grass (<em>Panicum repens</em>)</td>
</tr>
<tr>
<td>K</td>
<td>Swamp Mallow (<em>Limnophila sessiliflora</em>)</td>
</tr>
<tr>
<td>L</td>
<td>Indian Swamp Weed (<em>Hygrophila polysperma</em>)</td>
</tr>
<tr>
<td>M</td>
<td>Brazilian Elodea (<em>Egeria densa</em>)</td>
</tr>
<tr>
<td>N</td>
<td>Air Potato (<em>Dioscorea bulbifera</em>)</td>
</tr>
<tr>
<td>O</td>
<td>Elephant Ear (<em>Colocasia esculenta</em>)</td>
</tr>
<tr>
<td>P</td>
<td>Hydrilla (<em>Hydrilla verticillata</em>)</td>
</tr>
<tr>
<td>Q</td>
<td>Chinese Tallow (<em>Sapium sebiferum</em>)</td>
</tr>
<tr>
<td>R</td>
<td>Paperbark Tree (<em>Melaleuca quinquenervia</em>)</td>
</tr>
<tr>
<td>S</td>
<td>Water Lettuce (<em>Pistia stratiotes</em>)</td>
</tr>
<tr>
<td>T</td>
<td>Watermilfoil (<em>Myriophyllum spicatum</em>)</td>
</tr>
<tr>
<td>U</td>
<td>Cattails (<em>Typha spp.</em>)</td>
</tr>
<tr>
<td>V</td>
<td>Spatterdock (<em>Nuphar luteum</em>)</td>
</tr>
<tr>
<td>W</td>
<td>Duckweed (<em>Lemma valdiviana</em>)</td>
</tr>
<tr>
<td>X</td>
<td>Fanwort (<em>Cabomba caroliniana</em>)</td>
</tr>
<tr>
<td>Y</td>
<td>Snowflakes (<em>Nymphoides spp.</em>)</td>
</tr>
<tr>
<td>Z</td>
<td>Water Lily (<em>Nymphaea odorata</em>)</td>
</tr>
<tr>
<td>AA</td>
<td>Algae</td>
</tr>
<tr>
<td>BB</td>
<td>Water Fern (<em>Salvinia minima</em>)</td>
</tr>
<tr>
<td>CC</td>
<td>Coontail (<em>Ceratophyllum demersum</em>)</td>
</tr>
<tr>
<td>DD</td>
<td>Bladderwort (<em>Utricularia spp.</em>)</td>
</tr>
</tbody>
</table>
**LVI**  
**Lake Vegetation Index** - A way of measuring a lake's ecological condition by determining the species mix of the aquatic and wetland plants present within the lake.

**LCI**  
**Lake Condition Index** - A way of measuring an ecosystem's health by sampling the benthic invertebrates, collecting water chemistry and phytoplankton samples.

**DI**  
**Diversity Index** - A mathematical measure of species diversity in a community. This index measures not only the number of species present but the relative abundance of different species. Three indexes used in Florida are the Shannon Weaver Diversity Index, the Hulbert Index, and the Habitat Assessment.

**TSI**  
**Trophic State Index** - The TSI is based on several criteria: chlorophyll, nitrogen, and phosphorus levels as well as water clarity.

**TMDL**  
**Total Daily Maximum Load** - Establishes the maximum amount of a pollutant that can enter a water body without causing exceedances of water quality standards. If a water body does not meet the applicable DEP water quality standard then the TMDL is established. TMDL’s require any combination of management activities to reduce the pollutant loading to the water body.
**Water Quality Parameters**

**Total Nitrogen** - A measure of all the forms of nitrogen, including inorganic and organic, in a sample. Nitrogen is necessary for the growth of aquatic plants and algae. Increased nitrogen levels result from natural and human related sources of run-off to surface waters.

**Total Phosphorus** – Includes inorganic and organic types of phosphorus. An essential chemical element that can contribute to the eutrophication of lakes and other water bodies. Increased phosphorus levels result from discharge of phosphorus-containing materials into surface waters.

**Fecal Coliform** – the major portion of fecal coliform is E. coli, a species indicative of fecal pollution. Found in wastewater treatment systems and bathing waters.

**Dissolved Oxygen** - A measure of the amount of oxygen available in the water for plants and wildlife. Plants do produce oxygen, but only during daytime hours when the sun is shining. At this time, the aquatic plants can use photosynthesis to convert carbon dioxide into oxygen. At nighttime, the aquatic plants reverse the process converting oxygen to carbon dioxide therefore removing oxygen from the water. With excessive nutrients from sources such as fertilizers and wastewaters, the plants will flourish. Then when nighttime comes, the excess of aquatic plants may remove a significant amount of oxygen from the water causing a fish kill.

**Copper** - used as conductor material in electrical equipment. Also used in alloys, plumbing, pesticides, algicides, fungicides, insecticides, ceramics, and paints.

**Lead** - used in batteries, inorganic pigments, soldering, and piping. Industrial mining may also create lead pollution.
APPENDIX A

Trophic State Index Equations For Lakes*

\( (LN = \text{Natural Log}) \)

\[ \text{CHL}_{\text{TSI}} = 16.8 + [14.4 \times LN(\text{CHLA})] \]
\[ \text{T}_{\text{NSI}} = 56 + [19.8 \times LN(\text{TN})] \]
\[ \text{T}_{2\text{NSI}} = 10 \times [5.96 + 2.15 \times LN(\text{TN} + .0001)] \]
\[ \text{TP}_{\text{TSI}} = [18.6 \times LN(\text{TP} \times 1000)] - 18.4 \]
\[ \text{TP}_{2\text{TSI}} = 10 \times [2.36 \times LN(\text{TP} \times 1000) - 2.38] \]

If \( \text{TN/TP} > 30 \) then \( \text{NUTR}_{\text{TSI}} = \text{TP}_{2\text{TSI}} \)

If \( \text{TN/TP} < 10 \) then \( \text{NUTR}_{\text{TSI}} = \text{TN}_{2\text{TSI}} \)

If \( 10 < \text{TN/TP} < 30 \) then \( \text{NUTR}_{\text{TSI}} = (\text{TP}_{\text{TSI}} + \text{TN}_{\text{TSI}}) / 2 \)

\[ \text{TSI} = (\text{CHL}_{\text{TSI}} + \text{NUTR}_{\text{TSI}}) / 2 \]

Interpretation of TSI Results

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<thead>
<tr>
<th>TSI Category</th>
<th>TSI Range</th>
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<tr>
<td>Oligotrophic</td>
<td>0-49</td>
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<tr>
<td>Mesotrophic</td>
<td>50-59</td>
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<tr>
<td>Eutrophic</td>
<td>60-69</td>
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<tr>
<td>Hypereutrophic</td>
<td>70-100</td>
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*Taken from the 1996 305(b) report by the Florida Department of Environmental Protection (FDEP)
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<th>Parameter Names</th>
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