

Placido Bayou Community Association

Standard Lake Assessment



Sample date: 10/19/2023

Report date: 11/28/2023

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Trophic State Index (TSI)

A Trophic State Index (TSI) provides a single quantitative result for the purpose of classifying and ranking lakes in terms of water quality. Nutrients such as phosphorus are usually the limiting resource for algae and plant abundance and therefore are used in creating a TSI reference number. Generally, the higher the lakes TSI the greater the likelihood of elevated nutrient levels, increased algae problems and decreased water clarity. Due to the dynamic nature of Florida's geology and differing climate zones, regional locations may differ slightly in what is considered a healthy water quality profile.

| TSI Values | Trophic Status | Attributes |
|------------|----------------|--|
| 30-40 | Oligotrophic | Clear water, few plants and algae, small bass |
| 40-50 | Mesotrophic | Water moderately clear, but increasing probability of anoxia, green algae are likely dominant, balanced fishery with medium sized bass |
| 50-60 | Eutrophic | Decreased transparency, occasional light algal blooms, lots of available food making for large bass |
| 60-70 | Eutrophic | Dominance of blue-green algae, algal scums possible, extensive macrophyte problems possible, higher probability of anoxia, fishery starting to decline |
| 70-80 | Hypereutrophic | Dominance of blue-green algae, frequent algal scums, higher probability of anoxia, stunted fishery |
| >80 | Hypereutrophic | Algal scums, higher probability of anoxia, fish kills, few macrophytes, very poor water clarity |

More information on data sources available upon request.

Secchi depth

A mechanical test to judge water clarity, accomplished by lowering a black and white disk into the water and recording the point at which it can no longer be seen.

- Higher values indicate greater water clarity.
- Nutrient rich lakes tend to have Secchi depths less than 9 feet and highly enriched sites less than 3 feet.

| Nutrient Tested | Desired Range | Action Level | Issues with high levels | Likely causes of high levels |
|------------------|---------------|--------------|--|---|
| Total Phosphorus | < 100 ppb | > 200 ppb | > 100 ppb can cause excessive aquatic weeds and algae | Reclaimed water discharge, landscape fertilizer runoff and agricultural drainage, phosphorus laden bottom sediments |
| Total Nitrogen | < 1200 ppb | >2000 ppb | > 1200 ppb can cause excessive aquatic weeds and algae | Landscape fertilizer runoff |
| Ammonia | < 100 ppb | > 250 ppb | > 500 ppb can be toxic to fish and animals | Organic decomposition, landscape/fertilizer runoff, and anoxic conditions (low oxygen) |

Nutrients Thresholds

The desired range is the threshold value recommended for Florida freshwaters in order to limit algae growth and water clarity issues. Keeping nutrients in this range help maintain a balanced ecosystem. If nutrients are measured above the action level, it is likely that the nutrient levels may have a detrimental effect on aquatic life and long-term lake health. Action needs to be taken at this point to maintain a healthy ecosystem. Nutrients above the action level will require more maintenance.

TN/TP Ratio

The TN/TP ratio can provide a useful clue as to the relative importance of nitrogen or phosphorous toward the abundance of algae in a waterbody. In general, the lower the TN/TP ratio the more cyanobacteria will be present (i.e., Microcystis) and the higher the TN/TP ratio the more desirable green algae will be present. Studies done on TN/TP ratios have found good agreement in predicting the type of algae present (Schindler et al., 2008; Yoshimasa Amano et al., 2008).

Dissolved Oxygen

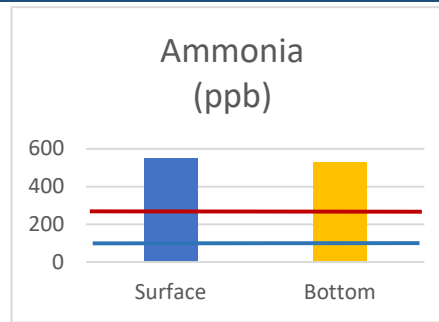
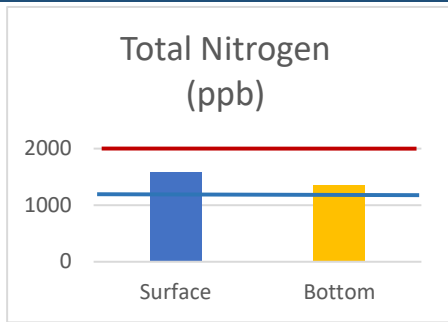
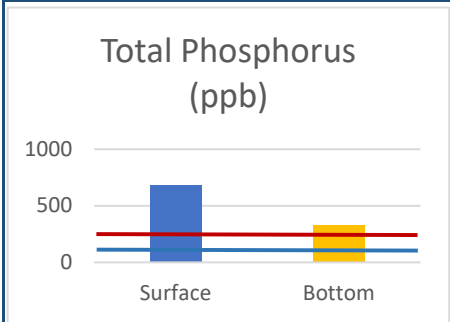
The most critical indicator of a lake's health and water quality.

- Oxygen is added to aquatic ecosystems by aquatic plants and algae through photosynthesis and by diffusion at the water's surface and atmosphere interface.
- Oxygen is required for fast oxidation of organic wastes including bottom muck.
- When the oxygen is used up in the bottom of the lake, anaerobic bacteria continue to breakdown organic materials, creating toxic gasses such as hydrogen sulfide.
- For a healthy game-fish population, oxygen levels should not go below 4.0 ppb

Water Quality Data: Placido Bayou, Pond 1

Site Readings

| Test | Desired | Action | Lake Readings- Pond 1 | | This lake is: |
|------------------------------|------------|------------|-----------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 682 | 329 | Very High |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 1580 | 1350 | Within Range |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 550 | 530 | Very High |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | > 10 ft. | | Very Good |



The TN/TP Ratio is: **2.90**

When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: **93.92**

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 100 |

Hypereutrophic lakes have a TSI of 70-100 and are more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Basic Lake Information

| Measured | Calculated Approximation |
|----------------------|--------------------------|
| Perimeter Ft: 1,300' | Volume-Gal: 2,346,127.2 |
| Surface Acres: 1 | Total Acre Ft: 7.2 |
| Depth: 12' | |

Observations

Water quality data shows that this site is experiencing elevated levels of total phosphorus and ammonia. Nitrogen levels are on the high end of the reasonable range.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Elevated nitrogen may be due to fertilizer runoff, decaying plant material, or low oxygen levels at the bottom of the water column.

Ammonia is a byproduct of organic matter decomposition. It is common for ammonia to accumulate under low-oxygen conditions or from recent runoff events. Elevated ammonia may cause toxicity issues for aquatic life.

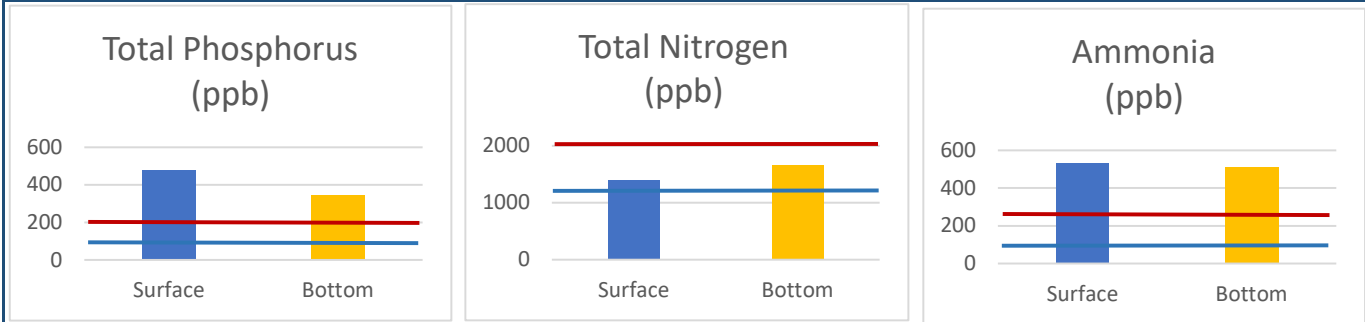
| Dissolved Oxygen: DO (ppm) + | Temperature (°F) - | Indicates that this lake is: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------|------------------------------|---|------|---|------|---|------|---|------|---|------|----|------|----|------|--|-------------|------------------|---|------|---|------|---|------|---|------|---|------|----|------|----|------|---|
| <table border="1"> <caption>Dissolved Oxygen (DO) (ppm)</caption> <thead> <tr> <th>Water Depth</th> <th>DO (ppm)</th> </tr> </thead> <tbody> <tr><td>1</td><td>12.5</td></tr> <tr><td>3</td><td>11.5</td></tr> <tr><td>5</td><td>11.5</td></tr> <tr><td>7</td><td>11.5</td></tr> <tr><td>9</td><td>11.5</td></tr> <tr><td>11</td><td>11.0</td></tr> <tr><td>13</td><td>10.5</td></tr> </tbody> </table> | Water Depth | DO (ppm) | 1 | 12.5 | 3 | 11.5 | 5 | 11.5 | 7 | 11.5 | 9 | 11.5 | 11 | 11.0 | 13 | 10.5 | <table border="1"> <caption>Temperature (°F)</caption> <thead> <tr> <th>Water Depth</th> <th>Temperature (°F)</th> </tr> </thead> <tbody> <tr><td>1</td><td>75.5</td></tr> <tr><td>3</td><td>74.5</td></tr> <tr><td>5</td><td>74.5</td></tr> <tr><td>7</td><td>74.5</td></tr> <tr><td>9</td><td>74.5</td></tr> <tr><td>11</td><td>74.5</td></tr> <tr><td>13</td><td>74.5</td></tr> </tbody> </table> | Water Depth | Temperature (°F) | 1 | 75.5 | 3 | 74.5 | 5 | 74.5 | 7 | 74.5 | 9 | 74.5 | 11 | 74.5 | 13 | 74.5 | <p>Oversaturated: the dissolved oxygen and temperature profile shows that this pond is adequately mixed, but oversaturated. The dissolved oxygen levels are above what is considered "normal" for Florida stormwater ponds. This could be due to increased levels of zooplankton or phytoplankton in the water column, or excessive submersed aquatic vegetation at the bottom producing oxygen as a result of photosynthesis. It is recommended to monitor oxygen levels closely to ensure that a "crash" does not happen.</p> |
| Water Depth | DO (ppm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 12.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 11.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 11.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 11.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 11.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | 10.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 1 | 75.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 74.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 9 | 74.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 74.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | 74.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- ### Recommendations for This Lake
- Phosphorus reduction
 - Nitrogen/Ammonia reduction
 - Watershed Management
 - On-going water quality monitoring

Water Quality Data: Placido Bayou, Pond 2

Site Readings

| Test | Desired | Action | Lake Readings - Pond 2 | | This lake is: |
|------------------------------|------------|------------|------------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 478 | 342 | Very High |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 1390 | 1660 | Within Range |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 530 | 510 | Very High |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | > 10 ft. | | Very Good |



The TN/TP Ratio is: 3.72

When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: 90.90

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 80 100 |

Hypereutrophic lakes have a TSI of 70-100 and more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Basic Lake Information

| Measured | Calculated Approximation |
|--------------------|--------------------------|
| Perimeter Ft: 470' | Volume-Gal: 625,900 |
| Surface Acres: 0.3 | Total Acre Ft: 1.9 |
| Depth: 10' | |

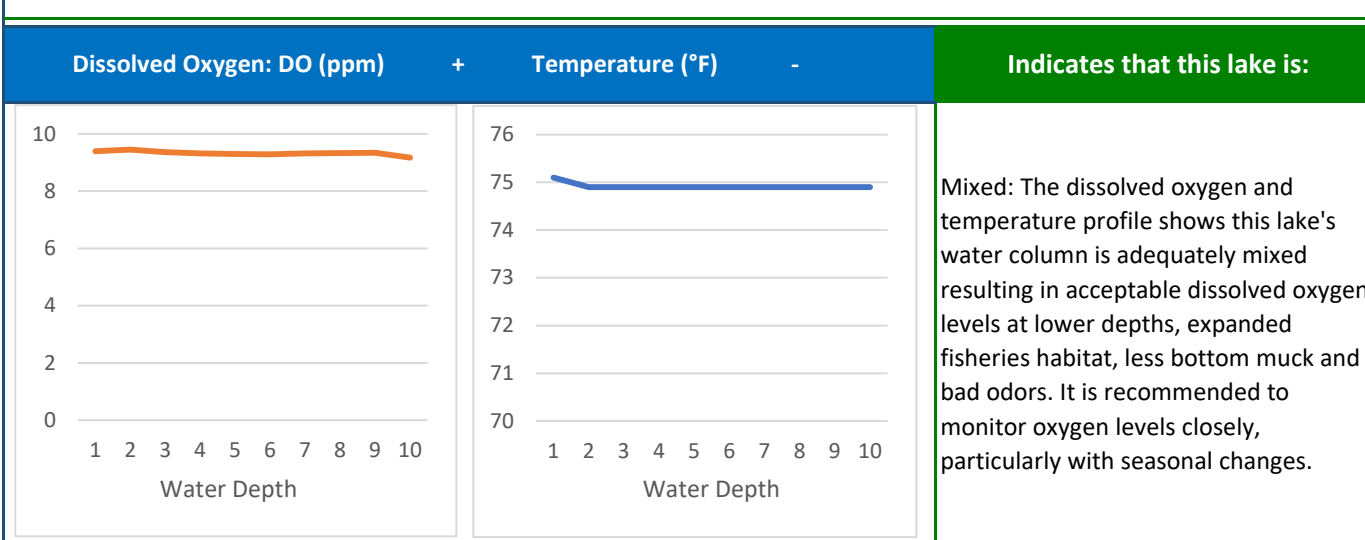
Observations

Water quality data shows that this site is experiencing elevated levels of total phosphorus and ammonia. Nitrogen levels are on the high end of the reasonable range.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Elevated nitrogen may be due to fertilizer runoff, decaying plant material, or low oxygen levels at the bottom of the water column.

Ammonia is a byproduct of organic matter decomposition. It is common for ammonia to accumulate under low-oxygen conditions or from recent runoff events. Elevated ammonia may cause toxicity issues for aquatic life.

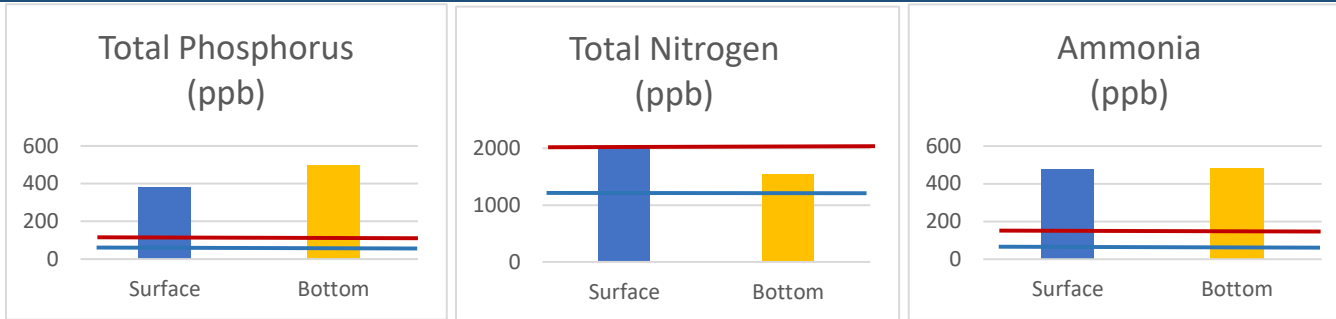


- ### Recommendations for This Lake
- Phosphorus reduction
 - Nitrogen/Ammonia reduction
 - Watershed Management
 - On-going water quality monitoring

Water Quality Data: Placido Bayou, Pond 3

Site Readings

| Test | Desired | Action | Lake Readings - Pond 3 | | This lake is: |
|------------------------------|------------|------------|------------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 380 | 496 | Very High |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 2030 | 1540 | Elevated |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 480 | 480 | Very High |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | 6.5 ft. | | Good |



Basic Lake Information

| Measured | Calculated Approximation |
|----------------------|--------------------------|
| Perimeter Ft: 1,570' | Volume-Gal: 10,858,000 |
| Surface Acres: 2.5 | Total Acre Ft: 33 |
| Depth: 19' | |

Observations

Water quality data shows that this site is experiencing elevated levels of total phosphorus and ammonia. Nitrogen levels are on the high end of the reasonable range.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Elevated nitrogen may be due to fertilizer runoff, decaying plant material, or low oxygen levels at the bottom of the water column.

Ammonia is a byproduct of organic matter decomposition. It is common for ammonia to accumulate under low-oxygen conditions or from recent runoff events. Elevated ammonia may cause toxicity issues for aquatic life.

The TN/TP Ratio is: 4.08

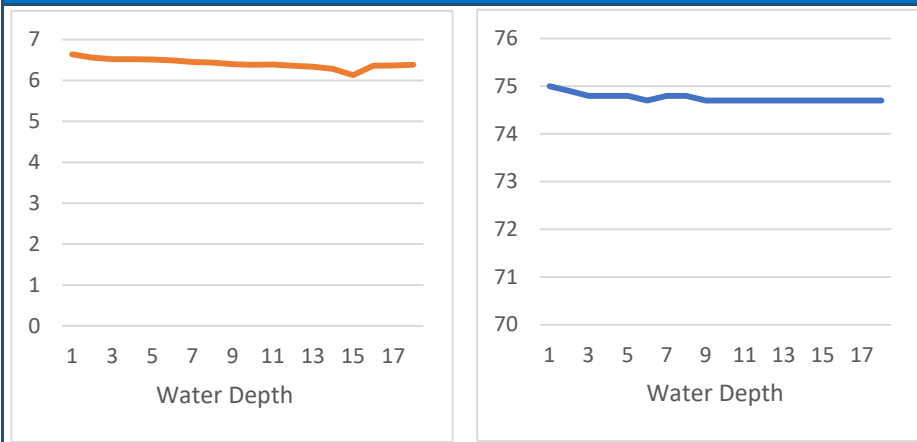
When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: 91.86

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 100 |

Hypereutrophic lakes have a TSI of 70-100 and more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Dissolved Oxygen: DO (ppm) + Temperature (°F) - Indicates that this lake is:



Mixed: The dissolved oxygen and temperature profile shows this lake's water column is adequately mixed resulting in slightly lower, but still acceptable, dissolved oxygen levels at lower depths which yield expanded fisheries habitat, less bottom muck and bad odors. It is recommended to monitor oxygen levels closely, particularly with seasonal changes.

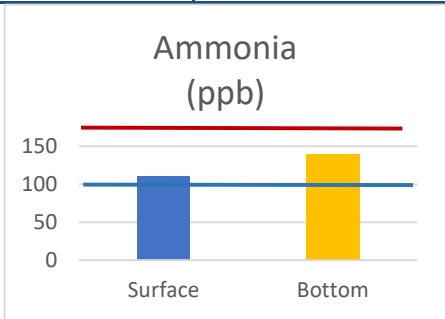
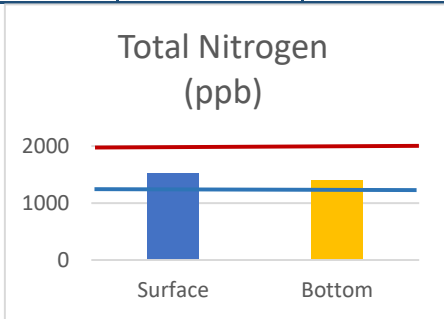
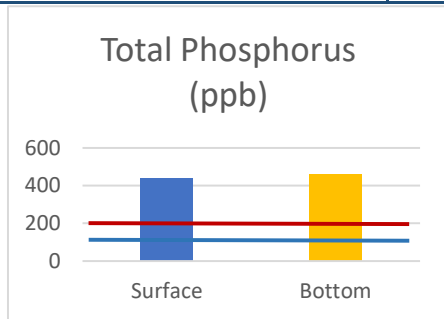
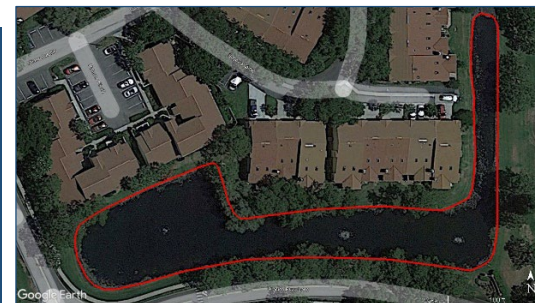
Recommendations for This Lake

- Phosphorus reduction
- Nitrogen/Ammonia reduction
- Watershed Management
- On-going water quality monitoring

Water Quality Data: Placido Bayou, Pond 4

Site Readings

| Test | Desired | Action | Lake Readings - Pond 4 | | This lake is: |
|------------------------------|------------|------------|------------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 438 | 459 | Very High |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 1510 | 1390 | Within Range |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 110 | 140 | Within Range |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | 2.5 ft. | | Turbid |



| Basic Lake Information | |
|------------------------|--------------------------|
| Measured | Calculated Approximation |
| Perimeter Ft: 1,400' | Volume-Gal: 1,233,000 |
| Surface Acres: 0.7 | Total Acre Ft: 3.8 |
| Depth: 10' | |

The TN/TP Ratio is: **3.23**

When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: **92.20**

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 80 |
| | | | 100 |

Observations

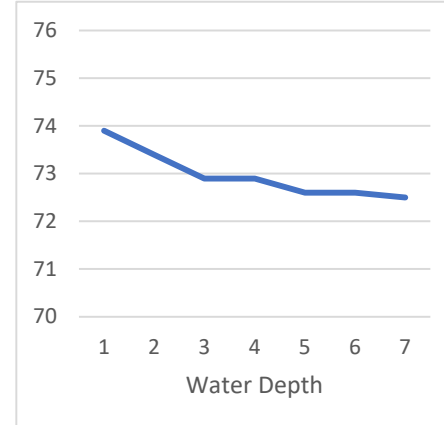
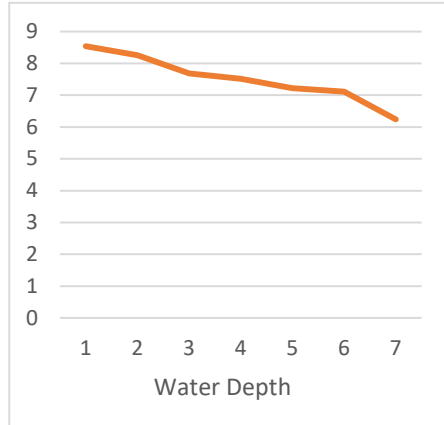
Water quality data shows that this site is experiencing elevated levels of total phosphorus and some increased turbidity.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Hypereutrophic lakes have a TSI of 70-100 and more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Secchi is a measurement of how productive the pond is by the quantity of phytoplankton present. Lower depth readings can also mean the presence of tannins (organic) or suspended silt (inorganic) in the water column.

Dissolved Oxygen: DO (ppm) + Temperature (°F) - Indicates that this lake is:



Mixed: The dissolved oxygen and temperature profile shows this lake's water column is adequately mixed resulting in slightly lower, but still acceptable, dissolved oxygen levels at lower depths which yield expanded fisheries habitat, less bottom muck and bad odors. It is recommended to monitor oxygen levels closely, particularly with seasonal changes.

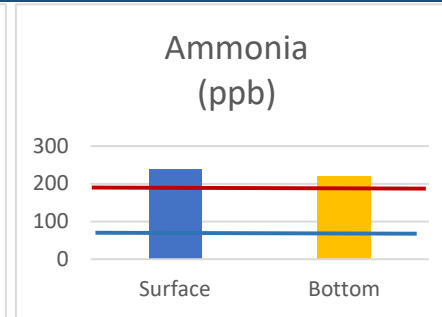
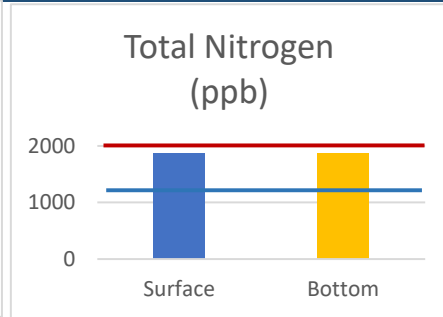
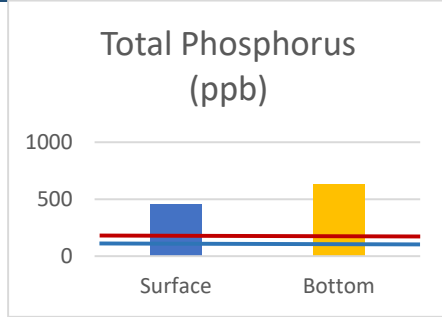
Recommendations for This Lake

- Phosphorus reduction
- Nitrogen/Ammonia reduction
- Watershed Management
- On-going water quality monitoring

Water Quality Data: Placido Bayou, Pond 5

Site Readings

| Test | Desired | Action | Lake Readings - Pond 5 | | This lake is: |
|------------------------------|------------|------------|------------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 454 | 634 | Very High |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 1870 | 1860 | Elevated |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 240 | 220 | Elevated |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | 1.5 ft. | | Turbid |



| Basic Lake Information | |
|------------------------|--------------------------|
| Measured | Calculated Approximation |
| Perimeter Ft: 670' | Volume-Gal: 1,624,000 |
| Surface Acres: 0.6 | Total Acre Ft: 5 |
| Depth: 12' | |

Observations

Water quality data shows that this site is experiencing elevated levels of total phosphorus and some increased turbidity. Nitrogen and ammonia levels are on the high end of the reasonable range.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Elevated nitrogen may be due to fertilizer runoff, decaying plant material, or low oxygen levels at the bottom of the water column.

Ammonia is a byproduct of organic matter decomposition. It is common for ammonia to accumulate under low-oxygen conditions or from recent runoff events. Elevated ammonia may cause toxicity issues for aquatic life.

Secchi is a measurement of how productive the pond is by the quantity of phytoplankton present. Lower depth readings can also mean the presence of tannins (organic) or suspended silt (inorganic) in the water column.

Recommendations for This Lake

- Phosphorus reduction
- Nitrogen reduction
- Watershed Management
- On-going water quality monitoring

The TN/TP Ratio is: 3.43

When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: 94.98

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 80 100 |

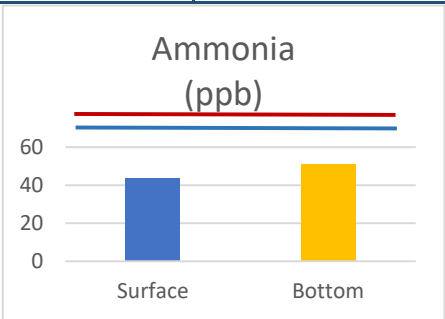
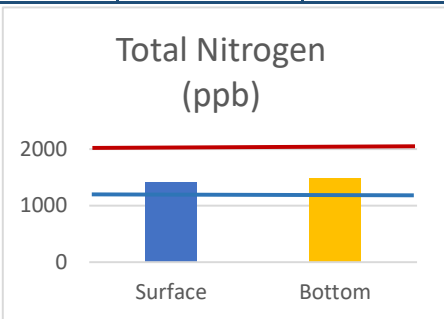
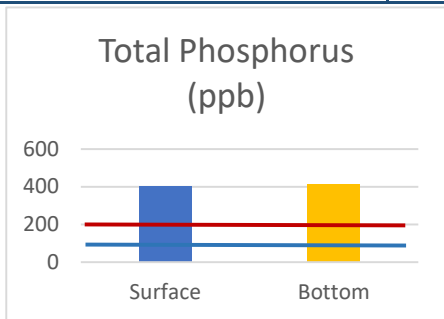
Hypereutrophic lakes have a TSI of 70-100 and more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

| Dissolved Oxygen: DO (ppm) + | Temperature (°F) - | Indicates that this lake is: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------|------------------------------|---|------|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-------------|------------------|---|------|---|------|---|------|---|------|---|------|---|------|---|------|---|
| <table border="1"> <caption>Dissolved Oxygen (DO) Profile</caption> <thead> <tr> <th>Water Depth</th> <th>DO (ppm)</th> </tr> </thead> <tbody> <tr><td>1</td><td>10.0</td></tr> <tr><td>2</td><td>9.5</td></tr> <tr><td>3</td><td>9.2</td></tr> <tr><td>4</td><td>9.1</td></tr> <tr><td>5</td><td>9.1</td></tr> <tr><td>6</td><td>9.1</td></tr> <tr><td>7</td><td>9.1</td></tr> </tbody> </table> | Water Depth | DO (ppm) | 1 | 10.0 | 2 | 9.5 | 3 | 9.2 | 4 | 9.1 | 5 | 9.1 | 6 | 9.1 | 7 | 9.1 | <table border="1"> <caption>Temperature Profile</caption> <thead> <tr> <th>Water Depth</th> <th>Temperature (°F)</th> </tr> </thead> <tbody> <tr><td>1</td><td>74.5</td></tr> <tr><td>2</td><td>74.2</td></tr> <tr><td>3</td><td>73.8</td></tr> <tr><td>4</td><td>73.8</td></tr> <tr><td>5</td><td>73.8</td></tr> <tr><td>6</td><td>73.8</td></tr> <tr><td>7</td><td>73.8</td></tr> </tbody> </table> | Water Depth | Temperature (°F) | 1 | 74.5 | 2 | 74.2 | 3 | 73.8 | 4 | 73.8 | 5 | 73.8 | 6 | 73.8 | 7 | 73.8 | <p>Mixed: The dissolved oxygen and temperature profile shows this lake's water column is adequately mixed resulting in acceptable dissolved oxygen levels at lower depths, expanded fisheries habitat, less bottom muck and bad odors. It is recommended to monitor oxygen levels closely, particularly with seasonal changes.</p> |
| Water Depth | DO (ppm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 10.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 9.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 9.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 9.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 9.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 9.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 9.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Depth | Temperature (°F) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 74.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 74.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 73.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 73.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 73.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 73.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 73.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Water Quality Data: Placido Bayou, Pond 6

Site Readings

| Test | Desired Range | Action Level | Lake Readings - Pond 6 | | This lake is: |
|------------------------------|---------------|--------------|------------------------|--------|---------------|
| | | | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 401 | 414 | Very High |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 1410 | 1490 | Within Range |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 44 | 51 | Within Range |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | 4 ft. | | Good |



| Basic Lake Information | |
|------------------------|--------------------------|
| Measured | Calculated Approximation |
| Perimeter Ft: 560' | Volume-Gal: 513,900 |
| Surface Acres: 0.3 | Total Acre Ft: 1.6 |
| Depth: 8' | |

The TN/TP Ratio is: **3.56**

When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: **90.81**

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 80 |
| | | | 100 |

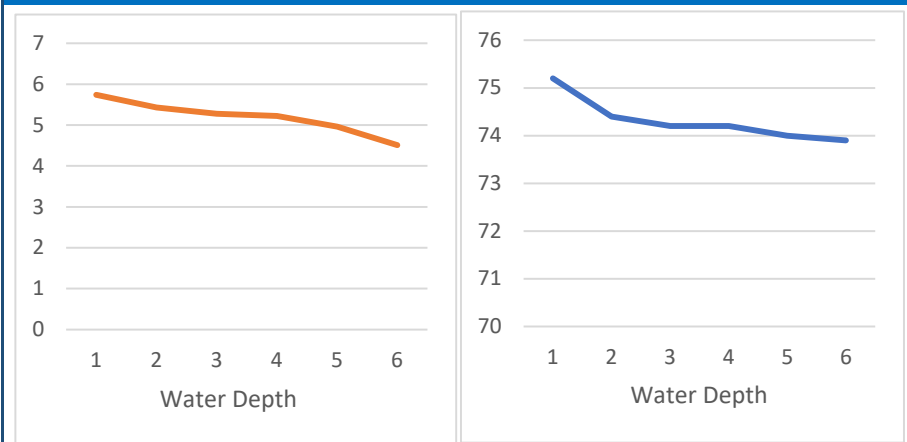
Observations

Water quality data suggest that this site is experiencing elevated levels of phosphorus.

Hypereutrophic lakes have a TSI of 70-100 and more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Dissolved Oxygen: DO (ppm) + Temperature (°F) - Indicates that this lake is:



Mixed, but lower than "normal": The dissolved oxygen and temperature profile shows this lake's water column is adequately mixed, but lower than what is "normal" for Florida stormwater ponds. Dissolved oxygen levels of 5ppm start to stress fish, dissolved oxygen levels below 4ppm can become toxic to fish. It is recommended to monitor oxygen levels closely, particularly with seasonal changes.

Recommendations for This Lake

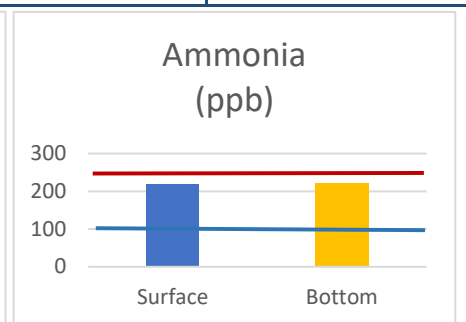
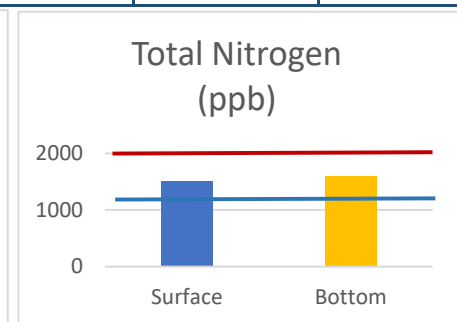
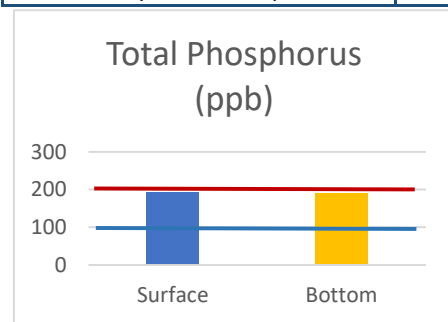
- Phosphorus reduction
- Nitrogen reduction
- Watershed Management
- On-going water quality monitoring

Water Quality Data: Placido Bayou, Pond 7



Site Readings

| Test | Desired | Action | Lake Readings - Pond 7 | | This lake is: |
|------------------------------|------------|------------|------------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 194 | 189 | Elevated |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 1520 | 1590 | Elevated |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 220 | 220 | Elevated |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | 7 ft. | | Good |



Basic Lake Information

| Measured | Calculated Approximation |
|----------------------|--------------------------|
| Perimeter Ft: 6,000' | Volume-Gal: 75,558,000 |
| Surface Acres: 12.5 | Total Acre Ft: 232 |
| Depth: 28' | |

Observations

Water quality data shows that this site has phosphorus, nitrogen and ammonia levels that are on the high end of the reasonable range.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Elevated nitrogen may be due to fertilizer runoff, decaying plant material, or low oxygen levels at the bottom of the water column.

Ammonia is a byproduct of organic matter decomposition. It is common for ammonia to accumulate under low-oxygen conditions or from recent runoff events. Elevated ammonia may cause toxicity issues for aquatic life.

The TN/TP Ratio is: 8.12

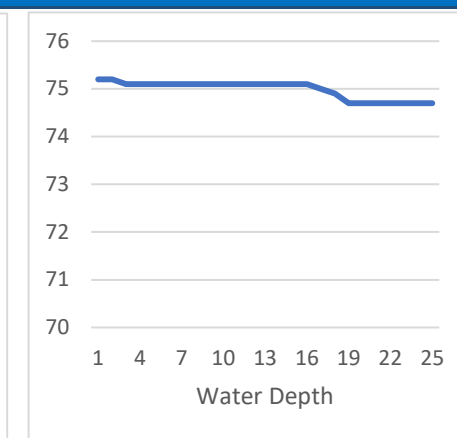
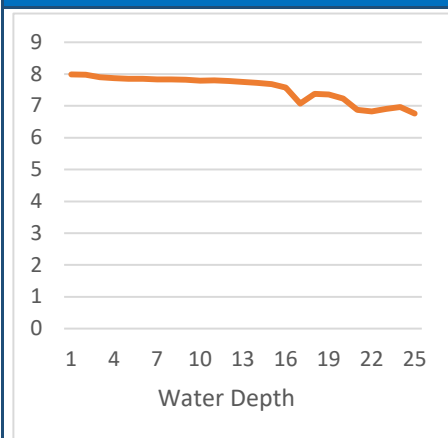
When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: 79.93

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 80 |
| | | | 100 |

Hypereutrophic lakes have a TSI of 70-100 and are more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Dissolved Oxygen: DO (ppm) + Temperature (°F) -



Indicates that this lake is:

Mixed: The dissolved oxygen and temperature profile shows this lake's water column is adequately mixed resulting in acceptable dissolved oxygen levels at lower depths, expanded fisheries habitat, less bottom muck and bad odors. It is recommended to monitor oxygen levels closely, particularly with seasonal changes.

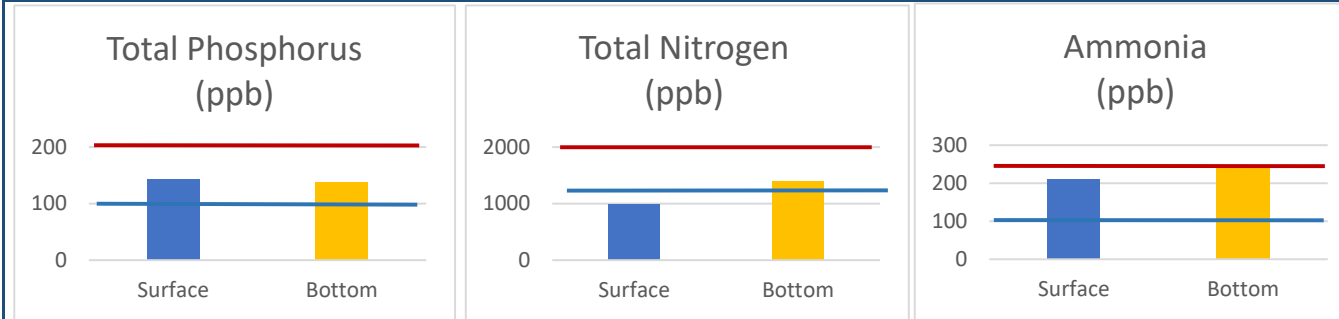
Recommendations for This Lake

- Phosphorus reduction
- Nitrogen/Ammonia reduction
- Watershed Management
- On-going water quality monitoring

Water Quality Data: Placido Bayou, Pond 8

Site Readings

| Test | Desired | Action | Lake Readings - Pond 8 | | This lake is: |
|------------------------------|------------|------------|------------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 144 | 138 | Within Range |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 988 | 1400 | Within Range |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 210 | 240 | Elevated |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | 4.5 ft. | | Good |



| Basic Lake Information | |
|------------------------|--------------------------|
| Measured | Calculated Approximation |
| Perimeter Ft: 1,100' | Volume-Gal: 4,680,000 |
| Surface Acres: 1.5 | Total Acre Ft: 14.4 |
| Depth: 12' | |

The TN/TP Ratio is: **8.47**

When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: **75.51**

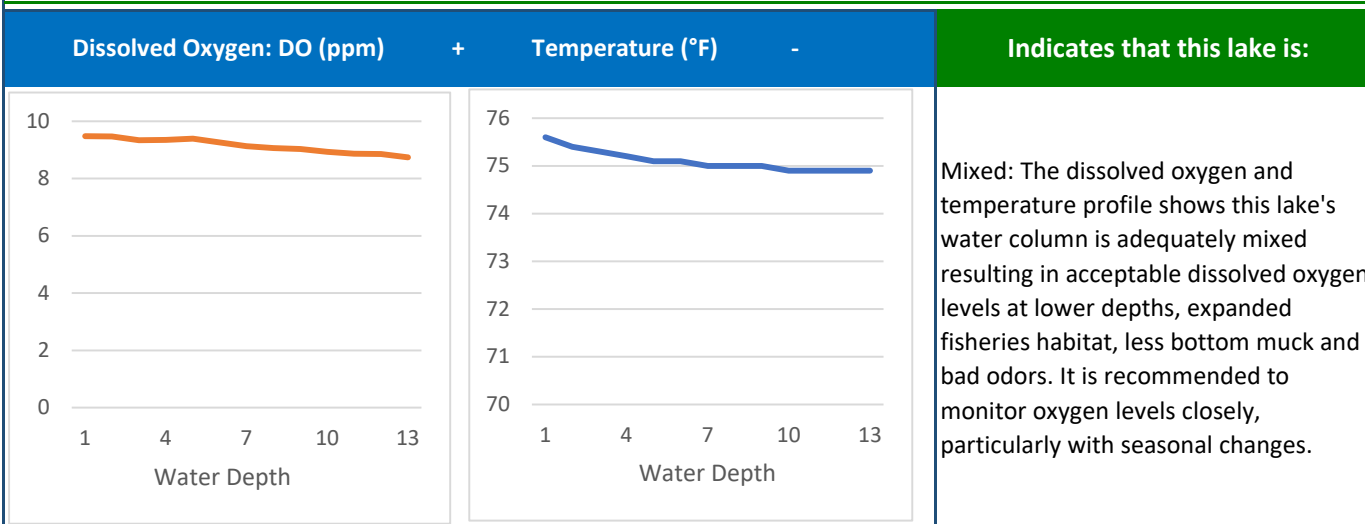
| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 80 |
| | | | 100 |

Observations

Water quality data shows that this site has ammonia levels that are on the high end of the reasonable range.

Hypereutrophic lakes have a TSI of 70-100 and more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Ammonia is a byproduct of organic matter decomposition. It is common for ammonia to accumulate under low-oxygen conditions or from recent runoff events. Elevated ammonia may cause toxicity issues for aquatic life.

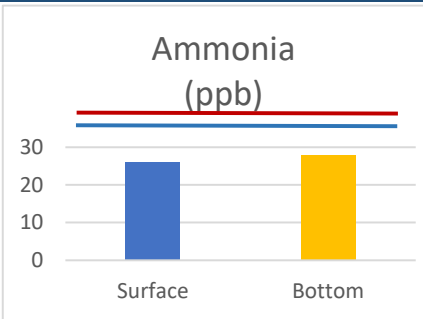
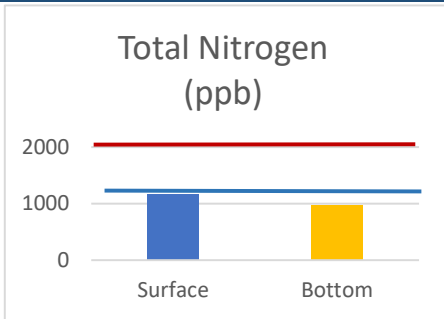
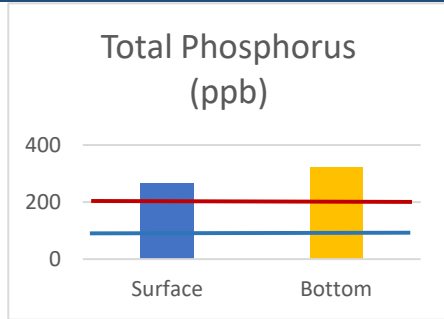


- ### Recommendations for This Lake
- Phosphorus reduction
 - Ammonia reduction
 - Watershed Management
 - On-going water quality monitoring

Water Quality Data: Placido Bayou, Pond 9

Site Readings

| Test | Desired | Action | Lake Readings - Pond 9 | | This lake is: |
|------------------------------|------------|------------|------------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 266 | 321 | Very High |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 1160 | 972 | Within Range |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 26 | 28 | Within Range |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | 2 ft. | | Turbid |



The TN/TP Ratio is: **3.63**

When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: **86.08**

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 80 |
| | | | 100 |

Hypereutrophic lakes have a TSI of 70-100 and more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Basic Lake Information

| Measured | Calculated Approximation |
|----------------------|--------------------------|
| Perimeter Ft: 1,200' | Volume-Gal: 8,235,000 |
| Surface Acres: 1.9 | Total Acre Ft: 25.3 |
| Depth: 18' | |

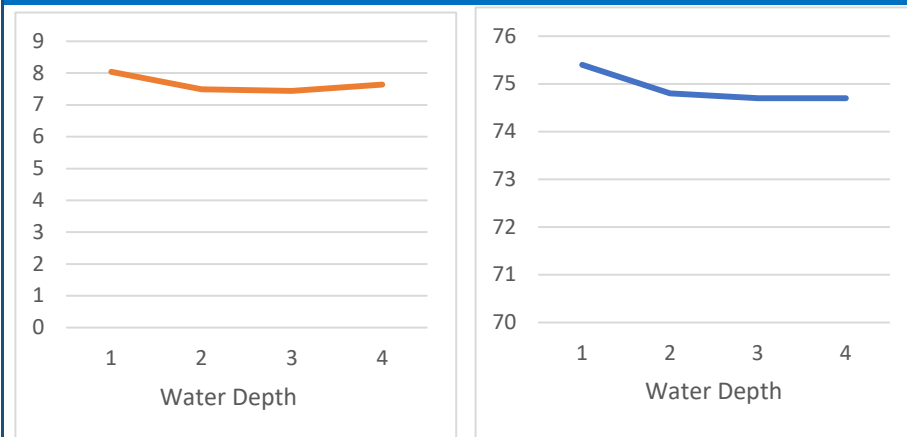
Observations

Water quality data suggest that this site is experiencing some turbidity and elevated levels of phosphorus.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Secchi is a measurement of how productive the pond is by the quantity of phytoplankton present. Lower depth readings can also mean the presence of tannins (organic) or suspended silt (inorganic) in the water column.

Dissolved Oxygen: DO (ppm) + Temperature (°F) -



Indicates that this lake is:

Mixed: The dissolved oxygen and temperature profile shows this lake's water column is adequately mixed resulting in acceptable dissolved oxygen levels at lower depths, expanded fisheries habitat, less bottom muck and bad odors. It is recommended to monitor oxygen levels closely, particularly with seasonal changes.

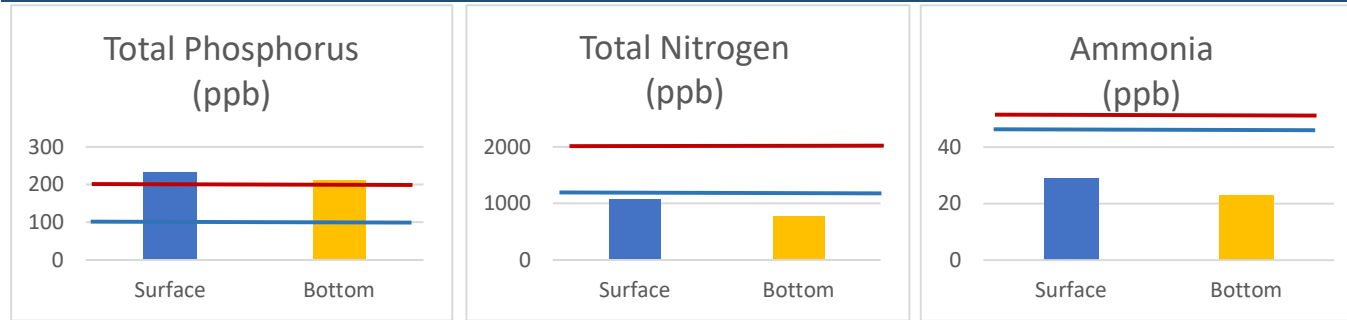
Recommendations for This Lake

- Phosphorus reduction
- Water Clarity Improvement
- Watershed Management
- On-going water quality monitoring

Water Quality Data: Placido Bayou, Pond 10

Site Readings

| Test | Desired | Action | Lake Readings - Pond 10 | | This lake is: |
|------------------------------|------------|------------|-------------------------|--------|---------------|
| | Range | Level | Surface | Bottom | |
| Nutrients – Total Phosphorus | < 100 ppb | > 200 ppb | 231 | 210 | Elevated |
| Nutrients – Total Nitrogen | < 1200 ppb | > 2000 ppb | 1070 | 776 | Within Range |
| Nutrients – Ammonia | < 100 ppb | > 250 ppb | 29 | 23 | Within Range |
| Water Clarity - Secchi Depth | ≥ 4 Feet | N/A | 2 ft. | | Turbid |



Basic Lake Information

| Measured | Calculated Approximation |
|----------------------|--------------------------|
| Perimeter Ft: 1,500' | Volume-Gal: 5,099,000 |
| Surface Acres: 1.6 | Total Acre Ft: 15.7 |
| Depth: 14' | |

Observations

Water quality data shows that this site is experiencing some turbidity and has phosphorus levels that are on the high end of the reasonable range.

Excess phosphorus can come from reclaimed water use, decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with elevated phosphorus levels can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

Secchi is a measurement of how productive the pond is by the quantity of phytoplankton present. Lower depth readings can also mean the presence of tannins (organic) or suspended silt (inorganic) in the water column.

Recommendations for This Lake

- Phosphorus reduction
- Water Clarity Improvement
- Watershed Management
- On-going water quality monitoring

The TN/TP Ratio is: 4.19

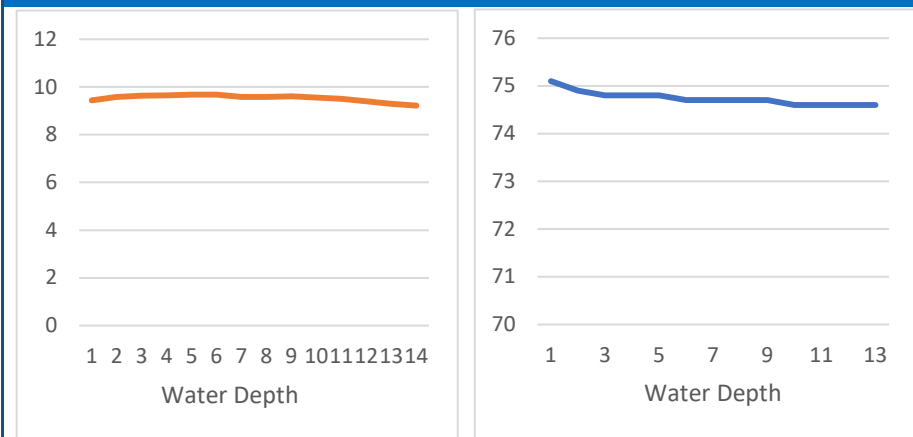
When the TN/TP ratio is < 75, the chances of having toxin producing cyanobacterial blooms (blue-green algae) as plankton or filamentous mats increase. Water column phosphorus needs to be reduced to promote more desirable algal groups.

The trophic lake health index is: 81.96

| Oligotrophic | Mesotrophic | Eutrophic | Hypereutrophic |
|--------------|-------------|-----------|----------------|
| 0 | 40 | 60 | 80 |
| | | | 100 |

Hypereutrophic lakes have a TSI of 70-100 and are more prone to algal scums, muck accumulation, lesser water quality, potential fish-kills, unfavorable odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Dissolved Oxygen: DO (ppm) + Temperature (°F) -



Indicates that this lake is:

Mixed: The dissolved oxygen and temperature profile shows this lake's water column is adequately mixed resulting in acceptable dissolved oxygen levels at lower depths, expanded fisheries habitat, less bottom muck and bad odors. It is recommended to monitor oxygen levels closely, particularly with seasonal changes.