

Placido Bayou Community Association

Standard Lake Assessment



Sample date: 10/25/2022

Report date: 11/30/2022

Produced by: Savannah Berger
Aquatic Consultant and Biologist



www.AdvancedAquatic.com

lakes@advancedaquatic.com

292 S. Military Trail, Deerfield Beach, FL 33442

Locations in: Deerfield Beach, Fort Myers, Port St. Lucie, and Clearwater/Tampa

1-800-491-9621

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

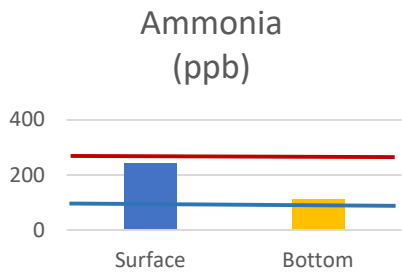
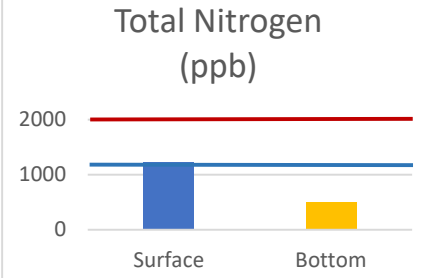
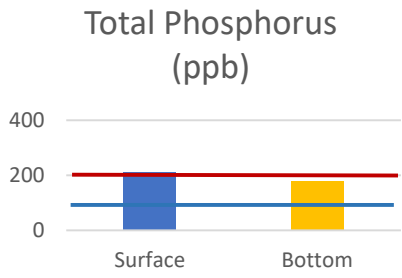
The most critical indicator of a lake's health and water quality.

- 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	210	180	Within Range
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	1230	492	Within Range
Nutrients – Ammonia	< 100 ppb	> 250 ppb	240	110	Within Range
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	3.5 ft.		Slightly Turbid



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'	

The TN/TP Ratio is: **4.42**

The trophic lake health index is: **80.19**

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
			120

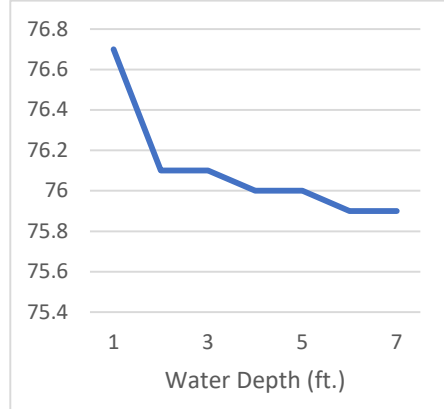
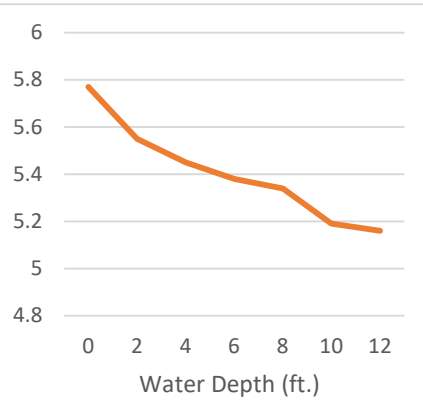
Observations

Water quality data shows that this site is experiencing elevated levels of phosphorus. Nitrogen and ammonia levels are within or below the reasonable range.

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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: 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. Aquatic Stress Zone= FDEP D.O. criteria for Class III waters.

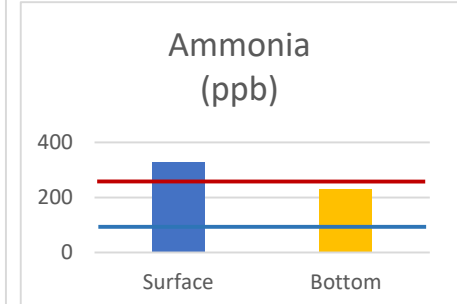
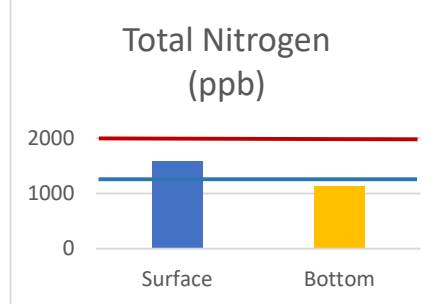
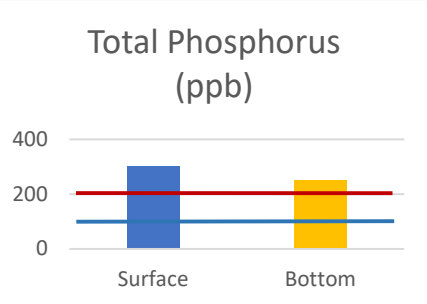
Recommendations for This Lake

- Phosphorus monitoring
- Nitrogen/Ammonia monitoring
- 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	300	250	Elevated
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	1580	1140	Within Range
Nutrients – Ammonia	< 100 ppb	> 250 ppb	330	230	Elevated
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	2.5 ft.		Very Turbid



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

The TN/TP Ratio is: 4.95

The trophic lake health index is: 85.14

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
			120

Observations

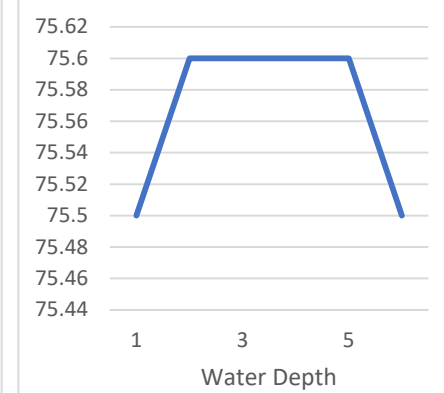
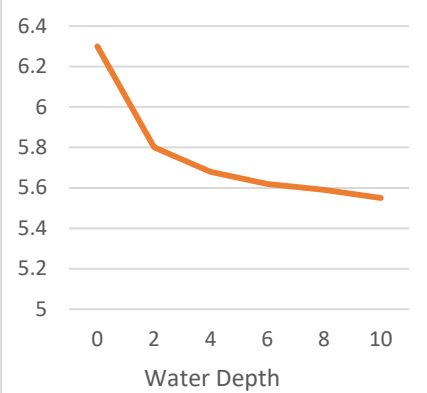
Water quality data shows that this site is experiencing elevated levels of phosphorus and ammonia. Nitrogen levels are within the reasonable range.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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.

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.

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional 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. Aquatic Stress Zone= FDEP D.O. criteria for Class III waters.

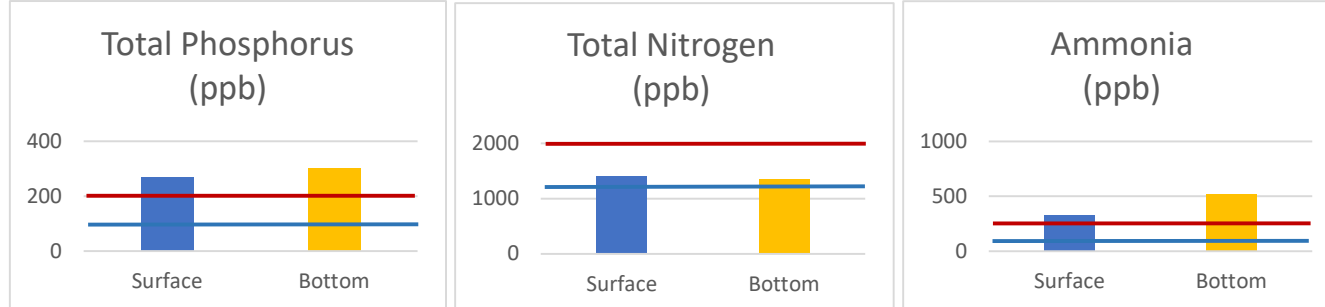
Recommendations for This Lake

- Phosphorus monitoring
- Nitrogen/Ammonia monitoring
- 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	270	300	Elevated
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	1410	1340	Within Range
Nutrients – Ammonia	< 100 ppb	> 250 ppb	330	520	Elevated
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	3 ft.		Turbid



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'	

The TN/TP Ratio is: 4.47

The trophic lake health index is: 86.40

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
		120	

Observations

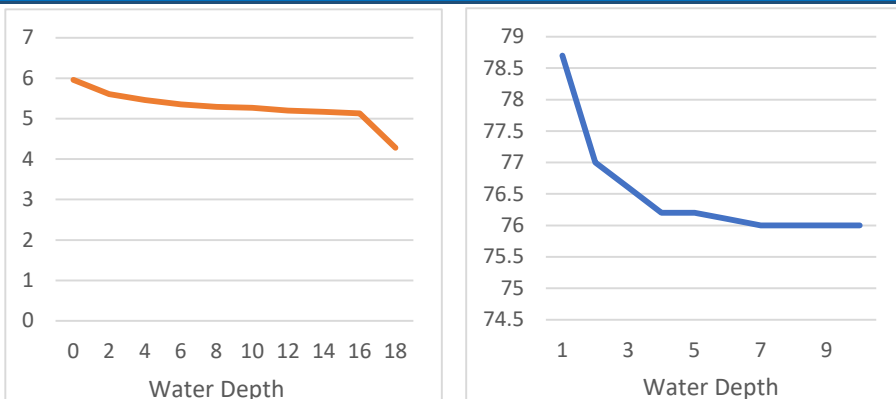
Water quality data shows that this site is experiencing elevated levels of phosphorus and ammonia. Nitrogen levels are within the reasonable range.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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.

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.

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional 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. Aquatic Stress Zone= FDEP D.O. criteria for Class III waters.

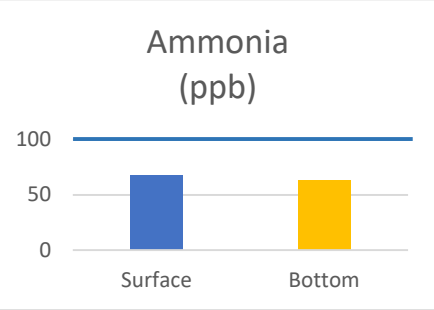
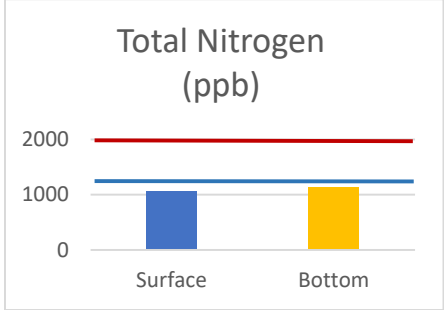
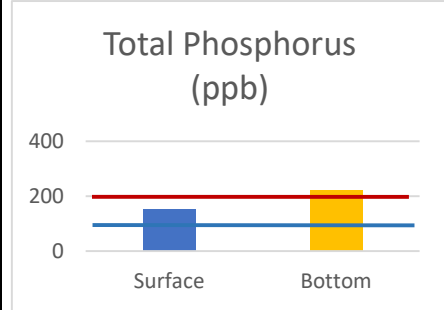
Recommendations for This Lake

- Phosphorus monitoring
- Nitrogen/Ammonia monitoring
- 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	150	220	Within Range
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	1060	1140	Low
Nutrients – Ammonia	< 100 ppb	> 250 ppb	68	63	Low
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	4 ft.		Normal



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'	

Observations

Water quality data shows that this site is experiencing elevated levels of phosphorus. Nitrogen and ammonia levels are within or below the reasonable range.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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.

The TN/TP Ratio is: **5.18**

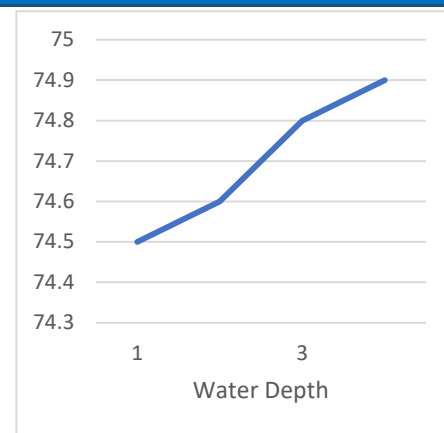
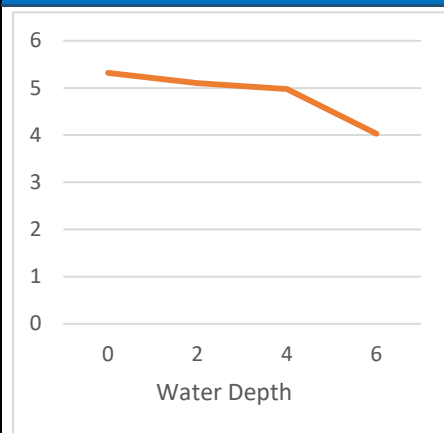
The trophic lake health index is: **81.93**

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
			120

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional 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. Aquatic Stress Zone= FDEP D.O. criteria for Class III waters.

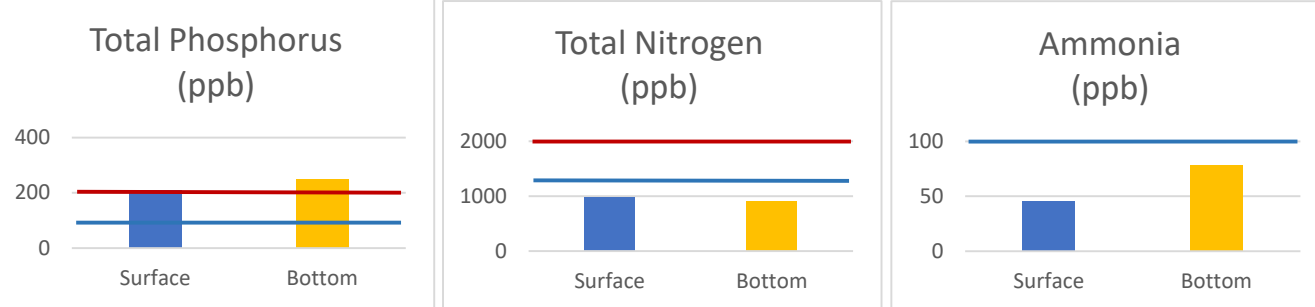
Recommendations for This Lake

- Phosphorus monitoring
- Nitrogen/Ammonia monitoring
- 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	210	250	Elevated
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	982	905	Low
Nutrients – Ammonia	< 100 ppb	> 250 ppb	46	78	Low
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	4.5 ft.		Normal



The TN/TP Ratio is: 3.62

The trophic lake health index is: 83.77

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
			120

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Basic Lake Information

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

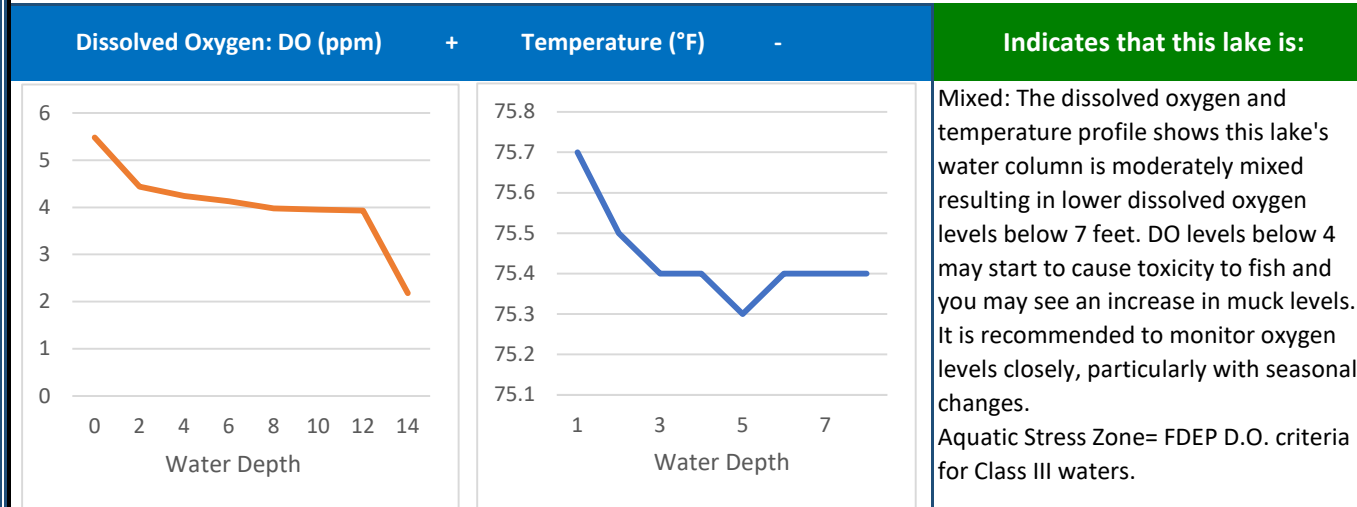
Observations

Water quality data shows that this site is experiencing elevated levels of phosphorus. Nitrogen and ammonia levels are within or below the reasonable range.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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.

Recommendations for This Lake

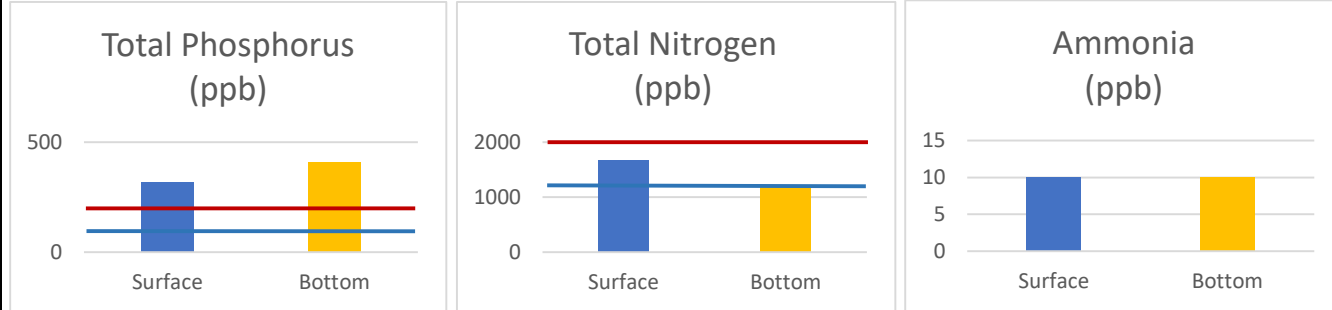
- Phosphorus monitoring
- Nitrogen/Ammonia monitoring
- Watershed Management
- On-going water quality monitoring



Water Quality Data: Placido Bayou, Pond 6

Site Readings

Test	Desired	Action	Lake Readings - Pond 6		This lake is:
	Range	Level	Surface	Bottom	
Nutrients – Total Phosphorus	< 100 ppb	> 200 ppb	320	410	High
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	1660	1190	Within Range
Nutrients – Ammonia	< 100 ppb	> 250 ppb	10	10	Low
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	3 ft.		Turbid



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: **2.90**

The trophic lake health index is: **90.90**

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
			120

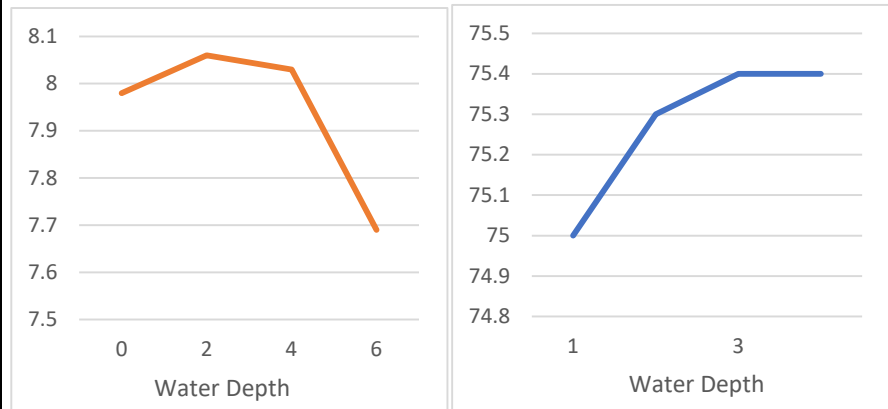
Observations

Water quality data shows that this site is experiencing elevated levels of phosphorus. Nitrogen and ammonia levels are within or below the reasonable range.

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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: 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. Aquatic Stress Zone= FDEP D.O. criteria for Class III waters.

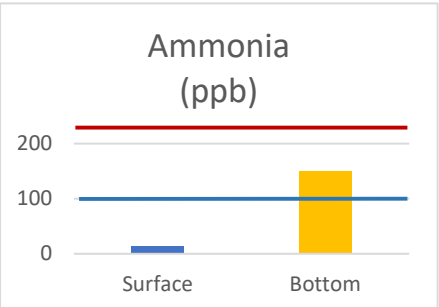
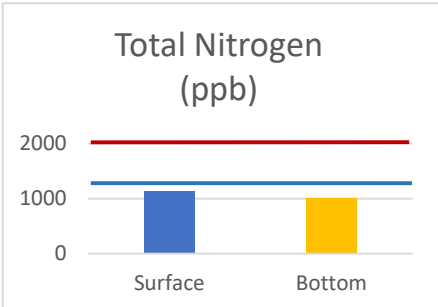
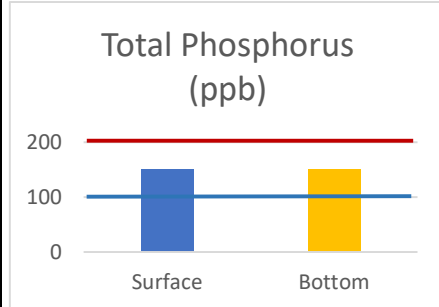
Recommendations for This Lake

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

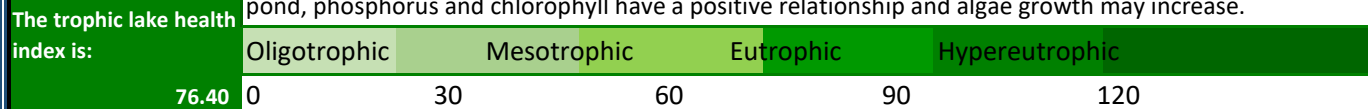
Water Quality Data: Placido Bayou, Pond 7

Site Readings

Test	Desired	Action	Lake Readings - Pond 7		This lake is:
	Range	Level	Surface	Bottom	
Nutrients – Total Phosphorus	< 100 ppb	> 200 ppb	150	150	Within Range
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	1130	1010	Low
Nutrients – Ammonia	< 100 ppb	> 250 ppb	13	150	Within Range
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	4 ft.		Normal



The TN/TP Ratio is: **6.73**
 When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.



Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

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

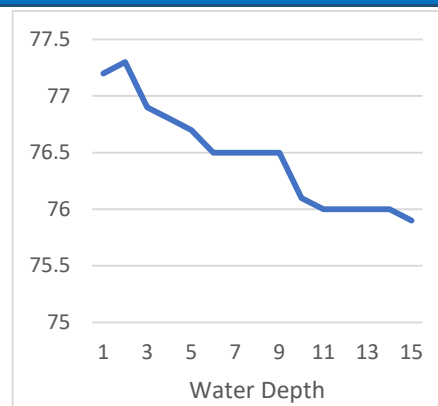
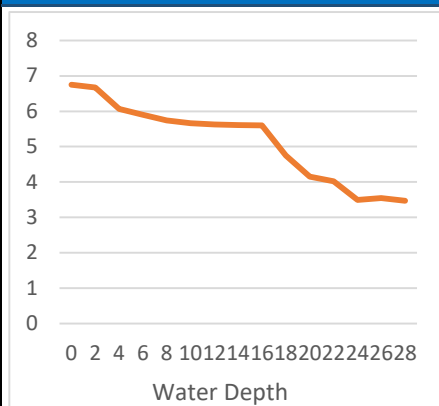
Water quality data shows that this site is experiencing elevated levels of phosphorus. Nitrogen and ammonia levels are within or below the reasonable range.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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.

Recommendations for This Lake

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

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

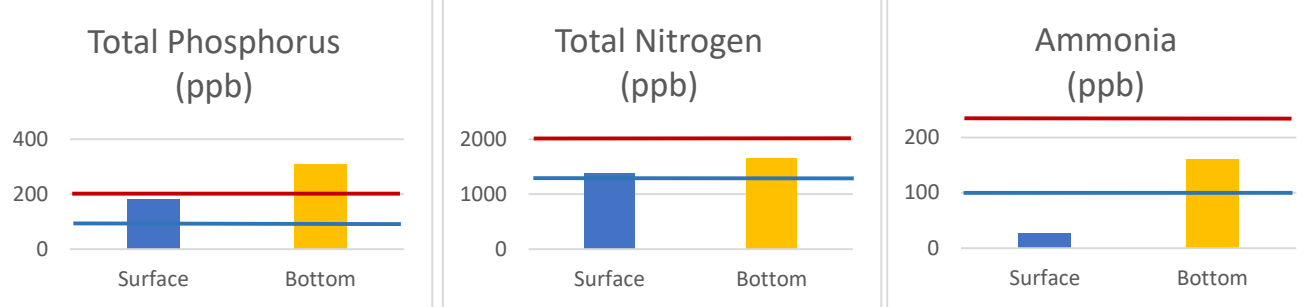


Mixed: The dissolved oxygen and temperature profile shows this lake's water column is moderately mixed resulting in lower dissolved oxygen levels below 20 feet. DO levels below 4 may start to cause toxicity to fish and you may see an increase in muck levels. It is recommended to monitor oxygen levels closely, particularly with seasonal changes.
 Aquatic Stress Zone= FDEP D.O. criteria for Class III waters.

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	180	310	Elevated
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	1380	1660	Within Range
Nutrients – Ammonia	< 100 ppb	> 250 ppb	27	160	Within Range
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	1.5 ft.		Very Turbid



The TN/TP Ratio is: **5.35**

The trophic lake health index is: **86.87**

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
			120

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

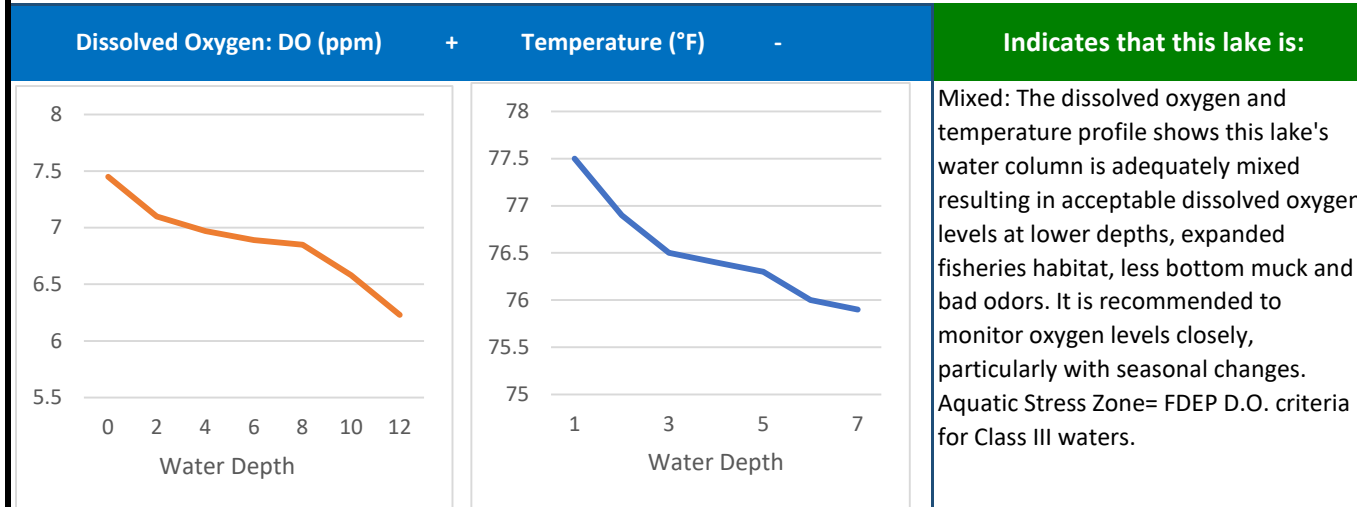
Basic Lake Information

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

Observations

Water quality data shows that this site is experiencing elevated levels of phosphorus. Nitrogen and ammonia levels are within or below the reasonable range.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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.

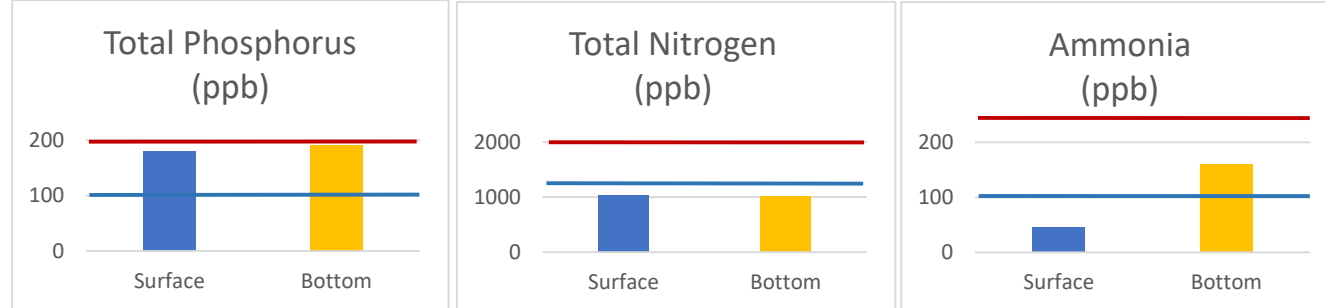


- ### Recommendations for This Lake
- Phosphorus monitoring
 - Nitrogen/Ammonia monitoring
 - Watershed Management
 - On-going water quality monitoring

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	180	190	Within Range
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	1040	1010	Low
Nutrients – Ammonia	< 100 ppb	> 250 ppb	46	160	Within Range
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	4.5 ft.		Normal



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'	

The TN/TP Ratio is: **5.32**

The trophic lake health index is: **79.81**

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
			120

Observations

Water quality data shows that this site is experiencing elevated levels of phosphorus. Nitrogen and ammonia levels are within or below the reasonable range.

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional odor, moderate dissolved oxygen levels, dense submersed plant growth and algae mats.

Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution 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:
				<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. Aquatic Stress Zone= FDEP D.O. criteria for Class III waters.</p>

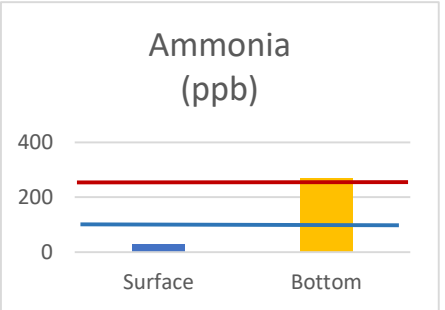
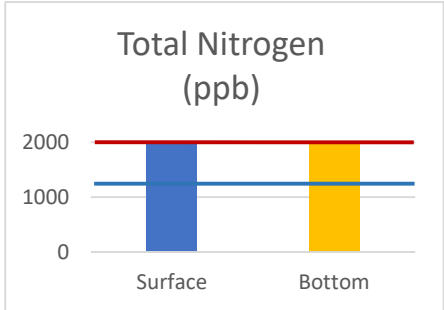
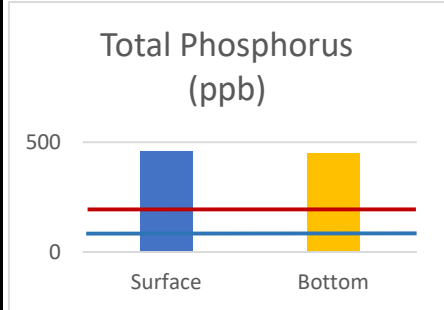
Recommendations for This Lake

- Phosphorus monitoring
- Nitrogen/Ammonia monitoring
- 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	460	450	Very High
Nutrients – Total Nitrogen	< 1200 ppb	> 2000 ppb	2620	2480	High
Nutrients – Ammonia	< 100 ppb	> 250 ppb	28	270	High
Water Clarity - Secchi Depth	≥ 4 Feet	N/A	1.5 ft.		Very 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'	

The TN/TP Ratio is: **5.51**

The trophic lake health index is: **92.25**

When the TN/TP ratio is < 75, the chances of having cyanobacterial blooms (blue-green algae) as plankton or filamentous mats may increase. In ponds with TN/TP ratios <10, it is considered a nitrogen limited pond, phosphorus and chlorophyll have a positive relationship and algae growth may increase.

Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
0	30	60	90
			120

Observations

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

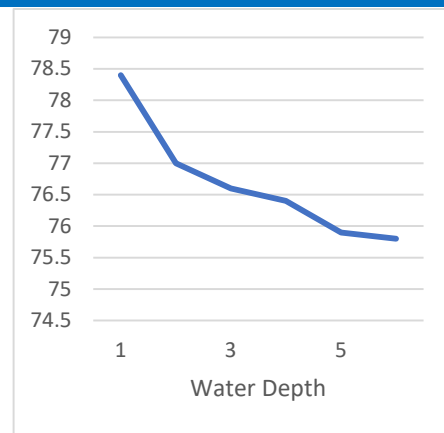
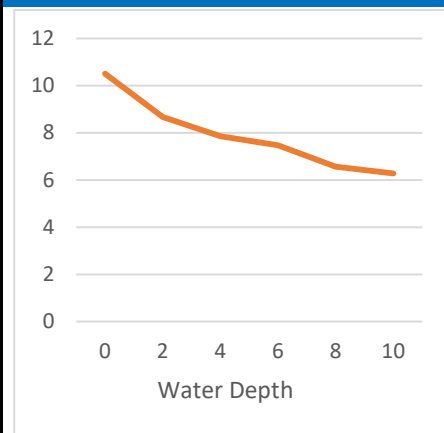
Excess phosphorus can come from decaying plant material, fertilizers, runoff, animal waste, etc. Lakes with phosphorous pollution can lead to an unbalanced ecosystem. This can lead to a variety of negative effects including, but not limited to, foul odors, reduced clarity, etc.

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.

Eutrophic lakes have a TSI of 41-100 and usually have intermittent plankton algae blooms, fair water clarity, muck accumulation, occasional 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. Aquatic Stress Zone= FDEP D.O. criteria for Class III waters.

Recommendations for This Lake

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