WENTWORTH ESTATES
COMMUNITY DEVELOPMENT DISTRICT

Monthly Field Manager's Report
March 2024

Prepared For:

James Ward
District Manager

Prepared By:

Calvin, Giordano & Associates, Inc.
A SAFEbuilt COMPANY

CGA Project No. 17-9809

April 1, 2024

WENTWORTH ESTATES
COMMUNITY DEVELOPMENT DISTRICT

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WENTWORTH ESTATES
COMMUNITY DEVELOPMENT DISTRICT

I. PURPOSE

The purpose of this report is to provide the District Manager with an update on recent inspection-related activities. We will continue to provide updated monthly inspection reports on the status of ongoing field activities.

II. CURRENT ASSET UPDATES

1. Landscaping
    A. Treviso Bay Boulevard
    B. Southwest Boulevard
2. Lake Maintenance
3. Preserves Maintenance
4. Corrective Actions

1. ***Landscaping***

A. Treviso Bay Boulevard

- Vehicle ran off SR 41 near lake two and causing considerable damage to the sod in this area. The landscape vendor was notified, and this work will be completed over the next two weeks.

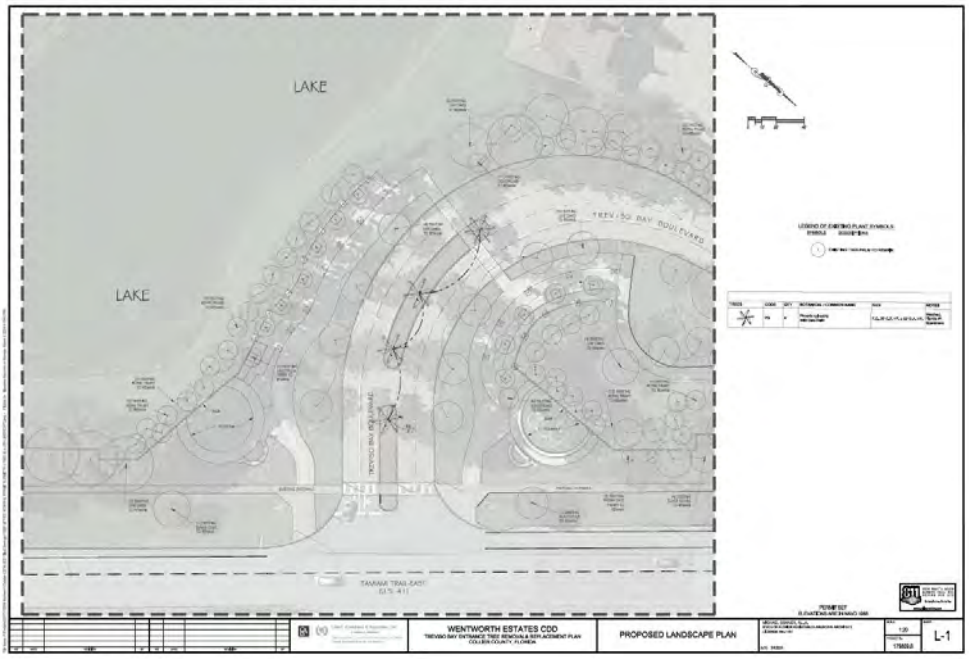
- The ruts caused by the FPL truck several months ago, are scheduled to be repaired mid-April depending upon sod availability. Zoysa grass is dormmate during the winter seasons and is unavailable at most farms.

- The four (4) oak trees located in the center median off Treviso Bay Boulevard are not in a healthy state and they are never going to flourish. These four (4) oaks trees have some sparse foliage throughout the canopy and poor structural branching. This was determined by the CDD Landscape Architect. The CDD staff are currently looking for alternatives for the entrance trees that will correlate with our landscaping enhance plan. The recommended replacement is Phoenix Date Slyvester Date Palm (picture below).

- The annual are scheduled to be switched out on April 9, 2024.

Vehicular damage near lake two.

Landscape vendor performing monthly weeding.



The four (4) oak trees proposed to be removed on the center median off US 41 just as you enter Treviso Bay

Suggested replacement for the oak trees.

B. Southwest Boulevard

- Landscape vendor mowed grass, discarded dead palm fronds and trimmed hedges along Southwest Boulevard. Maintenance is ongoing and occurs every other week.

2. ***Lake Maintenance***

- During this month's visits sites 1-24, 29, 30, and 32-39 were selectively targeted for shoreline weeds in the littorals and on open banks. Targets included torpedo grass, cattails, vines, sedge, primrose, pennywort, and alligator weed.

- Lake 39 was treated for floating weeds (mosquito fern). Lake 27 received a contact treated for water lilies (floating crested heart).

- Surface algae was treated multiple times in lakes 4, 5, 6, 7, 8, 13, 16, and 17. Most of the algae observed was a result of previous Chara treatments. Chara continues to remain one of the primary submersed targets on site. Lakes 4, 5, 6, and 7 will need continuous monitoring. Additional treatment will be conducted if necessary.

- Lakes 20, 21 and 42 received multiple contact treatments this month targeting hydrilla and Illinois pondweed. The sonar treatment is scheduled for April 2nd.

- Sampling of all 14 lakes was completed on 2/29. Overall, the lakes are in fairly good condition. A few of the lakes had low dissolved oxygen and aeration was recommended.

- The gulf spike rush in lake number 15 has diminished significantly. Additional treatments are still required.

- The next quarterly inspection will be completed in April.

- Water levels are higher than usual this month due to recent rain.

- Between the tri annual water quality testing reports (Exhibits A and B), the recent report received from the aquatic vendor and the problematic history of the lakes. The analysis of the reports suggest that there are several lakes that would benefit from aeration. Aeration can be bubblers or fountains or combination of both. When it comes to larger lake fountains are perforable because they supply an astatic look on top of providing dissolved oxygen, when it comes to smaller lake bubblers are preferable as you do not get a lot of water sloss on windy days and the acreage of the lakes benefits more for bubblers due to stagnant waters. After adding in all consideration, lakes with low dissolved oxygen lakes and that have been problematic in the past are 7, 14, 15, 20, 21, 28, 4, 22 and 42. These lakes need to have some sort of circulating oxygen to benefit the overall health of the lakes. CDD staff has put together a 5-year capital plan based of the information provided to help with astatic needs and the overall health of the lakes that would benefit the community. Please see attached 5-year CIP and reporting that summarizes our findings. Lakes 7 and 15 are recommended for a fountain in Lake 15 and two aerators in Lake 7.

Lake 6 before treatment

Lake 6 after treatment

3. ***Entrance Maintenance***

- A proposal was created and approved to add new reflective signs to the existing signs at the front entrance of Treviso Bay Boulevard. The new signs are scheduled to be installed in late April.
- A green 6-foot gate and fencing was installed around the irrigation pump house to prevent unwanted company accessing the pump house equipment.

New gate fencing

4. Preserve Maintenance

- The Boardwalk is scheduled for pressuring cleaning and staining in late April. Work will take approximately a week to perform.

- Preserve vendor is scheduled to treat parcels 16-17 for invasive species removal and routine maintenance starting April 1-5.

- The annual Howard Parcel Annual Panther Monitoring Report has been received (Exhibit C). This report is submitted to fulfill the mitigation monitoring requirements of the U.S. Fish and Wildlife Service (USFWS) for the Treviso Bay (FKA Wentworth Estates) development. *(Please see attached maps at the end of this report).*

5. Corrective Actions

- Dead palm fronds and other debris continue to be a nuisance along the boulevards (Treviso Bay Blvd and Southwest Blvd.) Landscape vendor need to routinely check for and properly dispose of debris to keep the walkways clean. Vendor has stated they will make a few extra trips a week to accomplish this goal.

- Selective areas of grass have a brownish appearance. Due to lack of irrigation, the landscape vendor was asked to redirect some irrigation heads to allow for these areas to also receive adequate irrigation. This issue is ongoing. Vendor has stated that they are having a hard time finding stock of replacement grass and mew grass is about three weeks out.

III. LOCATION MAP

Wentworth Estates CDD - Engineer's Report Asset Map

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Fort Myers, Florida 33901
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Our ref: 11225022-12

March 13, 2024

Mr. Richard Freeman
Calvin, Giordano & Associates, Inc.
1800 Eller Drive, Suite 600
Fort Lauderdale, FL 33316

Water Quality Monitoring – February 2024 – Treviso Bay

Dear Mr. Freeman:

GHD Services Inc. (GHD) is pleased to present the results of the February 2024 water quality sampling services for Lakes 4, 5, 12, 14, 22, and 32 within the Treviso Bay Golf Club.

1. Water Quality Sampling – February 2024

The February 8, 2024 sampling event consisted of the collection of six (6) surface water samples from six (6) different lakes within the Treviso Bay residential community, as identified in **Figure 1**.

Samples were collected using direct-dip methods from Lakes 4, 5, 12, 14, 22, and 32 at locations with a minimum water depth of one and a half (1.5) feet to minimize the disturbance of sediments. Where applicable, samples were collected near the outfall structure/weir, particularly if there is flow over the weir. If the water depth is too shallow near the outfall structure/weir, samples were collected using a long-reach sampling pole from the bank of the lake, to as far into the lake as possible. See **Figure 1** for locations of outfall structures/weirs. Of note, there is no visible outfall structure/weir in Lake 5.

Conductivity, dissolved oxygen (DO), pH, and temperature were measured in the field with a calibrated YSI Pro Plus multi-parameter water quality meter. Turbidity was also measured at each location. Surface Water Field Sheets are attached. Field data is summarized in the Table in the **Laboratory Data Compliance Memo**.

The collected samples were capped, labeled, packed on ice, and transported to Benchmark EnviroAnalytical, Inc., in North Port, Florida. Benchmark EnviroAnalytical, Inc. is certified by the State of Florida and NELAP (National Environmental Laboratory Accreditation Conference). Laboratory analyses were conducted for 5-day biochemical oxygen demand (BOD), total suspended solids (TSS), total nitrogen, nitrogen speciation (ammonia, total Kjeldahl nitrogen (TKN), and nitrate + nitrite), total phosphorus, orthophosphorus, and chlorophyll-*a*.

All samples collected during the February 2024 sampling event were prepared and analyzed within the method-required holding times. The laboratory data has been reviewed with respect to authenticity, precision, limits of detection, and accuracy of the data. The laboratory analytical results are summarized in the attached **Laboratory Data Compliance Memo** and **Table 1**.

2. Analytical Summary

The February 2024 sampling event represents the thirteenth sampling event and is the first analysis for 2024. Trend graphs have been prepared for each monitor location for laboratory analytical results and select field measurements. These trend graphs are included in the appendix.

All lakes' water levels were relatively normal during the February 2024 sampling event. No lake had high enough water levels for there to be flow over the weir. Every sample was collected from the bank of each respective lake, except Lake 4 (collected from the weir), to as far into the pond as possible. Minor coagulated algae was observed along the banks of Lake 4 and Lake 22. At Lake 32 and 14, the water appeared cloudy, with a green hue. This hue is suspected to be suspended, filamentous algae. Shortly following the sampling event, GHD coordinated these observations, along with images displaying them with Richard Freeman via email.

It appears that between the prior sampling event in October 2023 and the recent sampling event conducted on February 8, 2024:

- BOD5 levels remain consistent and either below the method detection limit (MDL, noted by a "U" following the result), or between the method detection and practical quantitation limit (PQL, noted by a "I" following the result).
- The average chlorophyll-*a* concentration decreased, from 9.27 mg/m3 in October to 6.21 mg/m3 in February.
- The average concentration of dissolved oxygen (%) significantly increased, from 55.8% in October to 79.2% in February.
- The average concentration of total nitrogen slightly increased, from 0.69 mg/L in October to 0.85 mg/L in February.
- The average concentration of total phosphorus remained consistent, from 0.03 mg/L in October to 0.04 mg/L in February.
- The average turbidity increased, from 2.60 NTU in October to 8.40 NTU in February.
- The average concentration of TSS increased, from 3.54 mg/L in October to 10.0 mg/L in February.
- The average conductivity increased, from 704.2 µS/cm in October to 814.5 µS/cm in February.
- The average pH increased, from 7.85 SU in October to 8.26 SU in February.
- The average temperature decreased, from 28.9°C in October to 21.9°C in February.

No sampling location during the February 2024 sampling event resulted in BOD concentrations in exceedance of their PQLs. All samples were reported as 1 U mg/L, which is below detectable levels and consistent with historical results, except for Lake 14 (1.33 I mg/L).

As noted above, minor coagulated algae growth was noted along the banks of Lake 4 and Lake 22. Suspected suspended, filamentous algae was noted at Lake 32 and Lake 14. The average chlorophyll-*a* levels have decreased since the previous sampling event. Concentrations decreased at all lakes except for Lake 12, where they slightly increased. In general, chlorophyll-*a* levels below 10.0 mg/m3 are ideal for freshwater lakes to support a healthy ecosystem. One (1) sampling location exceeded this standard, Lake 14 (which displayed the highest concentration, 19.3 mg/L). Lake 14 has displayed the highest concentration of chlorophyll-*a* over the past three (3) sampling events; however, a decreasing trend is displayed when compared to October 2023. Contrastingly, Lake 5 has displayed the lowest concentration over the past five (5) sampling events. The chlorophyll-*a* concentrations appear to confirm the presence of filamentous algae within Lake 14. Chlorophyll-*a* levels appear to display a cyclic trend, with increasing concentrations during the warmer months of the year, with peaks recorded in October, and decreasing concentrations in the cooler months, with lows recorded in January/February. GHD will continue to closely monitor chlorophyll-*a* concentrations to confirm and define this cyclic pattern.

The highest concentration of DO was observed at Lake 22 (91.5%), and the lowest was at Lake 4 (70.7%). The dissolved oxygen content at the water quality locations is anticipated to fluctuate throughout the year given the temperature of the water. The action level for dissolved oxygen (%) is defined by the Florida Department of Environmental Protection (FDEP) for the Peninsula and Everglades bioregions as 38%. All sampling locations displayed DO concentrations above this standard. All sampling locations displayed an increasing trend when compared to the previous sampling event, except for Lake 14, which decreased (from 84.2% in October to 72.0% in February). Lake 12 was closely monitored during the current sampling event due to the low DO content previously observed in October (32.5%). Since October, the DO has significantly increased at this location and is now far above the defined standard.

The DO content at all sampling locations has fluctuated since the initial sampling event in February 2020. Given temperature and DO are inversely related, the concentration of DO is expected to fluctuate throughout the year, with the lakes displaying higher, more abundant concentrations in the colder months, and lower, more scarce concentrations in the warmer months. GHD expects the concentration of DO to remain consistent or to slightly decrease during the next sampling event and will continue to closely monitor the DO in all lakes to define trends.

Sampling location Lake 14 displayed the highest concentration of total nitrogen (0.988 mg/L) and TKN (0.974 mg/L), consistent with the previous sampling event. The total nitrogen concentration at all locations either slightly increased or remained consistent since the previous sampling event. All results are within historical ranges. The TKN concentration trends follow similar patterns as the total nitrogen.

The sampling location Lake 32 displayed the highest concentration of total phosphorus (0.083 mg/L). Although the concentration of total phosphorus remains low, all sampling locations either slightly increased or remained consistent when compared to the previous sampling event. The concentration of orthophosphate has historically fluctuated. The concentration has increased since the previous sampling event at Lakes 12, 14, and 32, and has decreased at the remaining Lakes (4, 5, and 22). A spike in orthophosphate concentration is observed in Lake 32 for the current sampling event (0.074 mg/L).

The highest concentration of TSS was displayed in Lake 32 (25.2 mg/L), which represents a significant increase since the previous sampling event. The concentration of TSS increased at Lakes 12, 14, and 32, and remained consistent at remaining Lakes 4, 5, and 22. The highest level of turbidity was displayed in Lake 22 (33.3 NTU), which represents a significant increase since the previous sampling event. This elevated turbidity supports the suspicion of suspended filamentous algae within the lake, as mentioned above. Turbidity also significantly increased in Lake 14 when compared to the previous sampling event. All other locations either remained consistent or decreased.

The average pH increased by 0.41 SU and the temperature decreased by 7°C since the previous sampling event. The highest temperature was displayed at Lake 14 (23.1°C) and the highest pH was displayed at Lake 22 (8.64 SU).

A Trophic State Index calculation (defined by FAC 62-303.200 and the Water Quality Assessment for the State of Florida 305(b) Report) was used to help classify the quality of water based on each water body's chlorophyll-α, total phosphorous, and total nitrogen concentration. A ratio of total nitrogen to total phosphorus was calculated for each water body to determine general conditions. For this sample event, the breakdown of the sample locations is:

- Nutrient Balanced (10<TN/TP<30) – None
- Nitrogen Limited (TN/TP<10) – Lakes 4, 5, 12, 14, 22, 32
- Phosphorus Limited (TN/TP>30) – None

A TSI value was calculated based on the TN/TP ratio for each location. A TSI value for lakes of 0-59 is "good", a value of 60-69 is "fair", and a value of 70+ is "poor". Based on the results of this sampling event, each sampling location's calculated TSI value is:

Lake 4	Lake 5	Lake 12	Lake 14	Lake 22	Lake 32
40.5	39.3	50.2	58.9	45.6	46.8

3. Conclusions and Recommendations

The TN/TP ratio of each location is nitrogen-limited, consistent with the previous sampling event. This infers that additional inputs of nitrogen will most likely result in algae growth and eutrophication of the water body. Minor coagulated algae growth was observed along the banks of Lakes 4 and 22. Suspected suspended, filamentous algae was noted at Lakes 14 and 32. Lake 14 continues to display the highest level of chlorophyll-*a* with respect to the rest of the sampling locations, and the concentration exceeded the defined standard of 10 mg/m3 (19.3 mg/m3).

Lake 14 also displayed a decreasing trend in DO when compared to the previous sampling event, an increasing trend in total phosphorus, the highest concentration of total nitrogen, and the highest temperature when compared to the remaining sampling locations. Due to these trends, GHD recommends increased visual inspection of Lake 14 to ensure that algae does not start to bloom and coagulate. If chlorophyll-*a* levels remain elevated at this location, GHD will recommend the implementation of a temporary aerator in the lake.

Chlorophyll-*a* levels appear to display a cyclic trend, with increasing concentrations during the warmer months of the year, with peaks recorded in October, and decreasing concentrations in the cooler months, with lows recorded in January/February. In addition, DO is expected to fluctuate throughout the year, with the lakes displaying a higher DO in the fall and winter, and a lower DO in the spring and summer. Other than at Lake 14, based on the trends of total phosphorous, total nitrogen, chlorophyll-a, DO, and BOD there is no concern for biological activity and algae growth at this time.

Due to the apparent cyclic trend identified above for DO and nutrients, GHD recommends increased visual investigations by lake maintenance for algal growth during the warmer months of the year. Other than Lake 14, there does not appear to be any water quality concerns at this time.

The next tri-annual sampling event is planned for June 2024. Please contact Jessica Walsh or Connor Haydon at the number/email below if you have questions or need additional information.

Sincerely,

GHD

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Encl: Figure
Table
Trend Graphs
Laboratory Analytical Reports
Surface Water Field Sheets

Data Table

Table 1

Analytical Results Summary
Surface Water Quality Monitoring
Treviso Bay, Naples, Florida
February 2024

Sample Location/Sample ID:		Lake 4												
Sample Date:		**2/17/2020**	**6/4/2020**	**10/22/2020**	**3/04/2021**	**6/30/2021**	**10/27/2021**	**2/16/2022**	**6/09/2022**	**10/11/2022**	**2/21/2023**	**6/6/2023**	**10/3/2023**	**2/8/2024**
Field Parameters	**Units**													
Sample Depth	Feet	1.5	1.5	1.5	0.5	1	1.5	1.5	outfall	outfall	1.5	1.5	1.5	2
Conductivity, field	umhos/cm	908	1129	514	666	755	646	634	563	448	766	656	582	634
Dissolved oxygen (DO), field	mg/L	6.07	4.36	2.78	3.50	3.82	3.99	4.65	4.07	6.30	6.73	4.24	5.45	6.30
Dissolved oxygen (DO), field	%	70.6	56.4	34.7	41.7	49.3	50.6	50.8	54.3	80.1	80.7	54.2	68.8	70.7
pH, field	s.u.	7.27	8.4	7.79	8.04	7.9	7.59	7.65	8.04	7.27	7.62	7.67	7.55	7.75
Temperature, field	Deg C	22.68	29.1	26.8	24.3	28.6	27.5	19.5	30.4	27.7	24.6	29.8	28.3	21.0
Turbidity, field	NTU	1.02	2.33	1.84	2.70	2.91	1.24	1.76	0.54	0.50	0.10	1.36	0.09	1.24
Wet Parameters	**Units**													
Ammonia-N	mg/L	0.010 I	0.008 U	0.181	0.008 U	0.084	0.083	0.008 U	0.062	0.038	0.008 U	0.008 U	0.008 U	0.008 U
Total kjeldahl nitrogen (TKN)	mg/L	0.651	0.812	1.19	0.870	0.431	0.668	0.588	0.776	0.495	1.12	0.739	0.529	0.633
Total nitrogen	mg/L	0.770	0.818	1.23	0.05 U	0.451	0.754	0.695	0.776	0.541	1.20	0.753	0.548	0.689
Nitrite/Nitrate	mg/L	0.119	0.006 I	0.043	0.130	0.020 I	0.086	0.107	0.006 U	0.046	0.078	0.014 I	0.019 I	0.056
Ortho phosphorus (Field Filtered)	mg/L	0.039	0.043	0.026	0.008	0.020	0.004 I	0.006 I	0.008	0.013	0.012	0.046	0.043	0.005 I
Total phosphorus	mg/L	0.046	0.045	0.024 I	0.084	0.022 I	0.015 I	0.024 I	0.058	0.041	0.013 I	0.112	0.120	0.026 I
Chlorophyll	mg/m3	4.58	10.4	4.87	18.4	7.73	3.57	2.04	5.13	3.78	3.57	3.11	4.89	2.44
Total suspended solids (TSS)	mg/L	1.75 I	3.00	2.20 I	0.570 U	1.93 I	0.667 I	1.33 I	3.00	0.570 U	1.60 I	1.76 I	3.33	4.00
Biochemical oxygen demand (total BOD5)	mg/L	1 U	1.0 U	1 U	1.08 I	1 U	1 U	1.77 I	1 U	1.62 I	1 U	1.6 I	1 U	1 U

Sample Location/Sample ID:		Lake 12												
Sample Date:		**2/17/2020**	**6/4/2020**	**10/22/2020**	**3/04/2021**	**6/30/2021**	**10/27/2021**	**2/16/2022**	**6/09/2022**	**10/11/2022**	**2/21/2023**	**6/6/2023**	**10/3/2023**	**2/8/2024**
Field Parameters	**Units**													
Sample Depth	Feet	overflow	surface	overflow	1.5	1.5	1.5	1.5	outfall	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	959	1382	658	583	817	777	713	769	974	1095	897	846	907
Dissolved oxygen (DO), field	mg/L	10.03	5.25	2.69	5.69	8.65	2.84	4.22	1.72	6.77	5.41	7.01	2.50	6.70
Dissolved oxygen (DO), field	%	116.7*	69.0	33.1	66.2	40.9	35.5	45.5	61.7	87.5	65.1	93.1	32.5	77.5
pH, field	s.u.	7.54	8.31	7.74	8.63	8.65	7.58	7.90	7.97	7.92	8.14	8.08	7.80	8.28
Temperature, field	Deg C	22.43	29.2	25.8	23.1	28.1	26.9	19.1	30.4	27.9	24.2	30.1	28.8	22.1
Turbidity, field	NTU	1.75	1.46	0.58	5.48	1.32	1.66	8.64	1.86	2.97	1.50	3.34	1.24	2.32
Wet Parameters	**Units**													
Ammonia-N	mg/L	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.032	0.008 U	0.078	0.073	0.008 U	0.008 U	0.008 U	0.008 U
Total kjeldahl nitrogen (TKN)	mg/L	0.708	0.710	0.927	1.85	0.570	0.446	1.68	1.05	0.802	2.49	0.926	0.600	0.942
Total nitrogen	mg/L	0.708	0.710	0.927	1.86	0.570	0.446	1.68	1.05	0.838	2.53	0.932	0.623	0.954
Nitrite/Nitrate	mg/L	0.006 U	0.006 U	0.006 U	0.008 I	0.006 U	0.006 U	0.006 U	0.006 U	0.036	0.043	0.006 I	0.023 I	0.012 I
Ortho phosphorus (Field Filtered)	mg/L	0.012	0.034	0.005 I	0.002 I	0.002 U	0.002 I	0.002 I	0.016	0.018	0.010	0.015	0.004 I	0.009
Total phosphorus	mg/L	0.020 I	0.040	0.011 I	0.047	0.008 U	0.019 I	0.020 I	0.061	0.038	0.014 I	0.026 I	0.016 I	0.015 I
Chlorophyll	mg/m3	5.55	5.55	2.19	34.9	10.3	5.44	19.9	5.43	13.7	7.74	4.18	5.46	5.91
Total suspended solids (TSS)	mg/L	1.25 I	1.50 I	0.769 I	124	0.570 U	1.00 I	42.7	4.33	6.00	19.0	5.25	2.20 I	7.60
Biochemical oxygen demand (total BOD5)	mg/L	1 U	1.0 U	1 U	4.07	1 U	1 U	1.62 I	1.01 I	1.05 I	1.36 I	1.4 I	1 U	1 U

Sample Location/Sample ID:		Lake 22												
Sample Date:		**2/17/2020**	**6/4/2020**	**10/22/2020**	**3/04/2021**	**6/30/2021**	**10/27/2021**	**2/16/2022**	**6/09/2022**	**10/11/2022**	**2/21/2023**	**6/6/2023**	**10/3/2023**	**2/8/2024**
Field Parameters	**Units**													
Sample Depth	Feet	1.5	surface	overflow	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	656	1057	453	450	978	462	449	475	766	1007	881	755	732
Dissolved oxygen (DO), field	mg/L	8.62	5.96	4.20	5.14	3.83	8.24	6.25	6.06	4.76	6.61	5.02	3.75	8.01
Dissolved oxygen (DO), field	%	99.6	52.6	54.0	61.0	45.7	105.8	68.9	80.2	61.0	80.1	63.2	49.0	91.5
pH, field	s.u.	7.73	8.28	8.27	8.76	7.98	8.50	8.38	8.10	8.03	8.52	7.99	7.95	8.64
Temperature, field	Deg C	22.42	29.9	26.8	24.4	28.1	28.3	20.0	30.0	28.1	24.7	29.7	29.0	21.7
Turbidity, field	NTU	1.17	1.06	1.52	1.38	2.21	1.75	1.77	0.81	1.04	9.39	3.77	6.63	33.3
Wet Parameters	**Units**													
Ammonia-N	mg/L	0.008 U	0.008 U	0.026 I	0.008 U	0.008 U	0.036	0.008 U	0.066	0.019 I	0.008 U	0.008 U	0.008 U	0.008 U
Total kjeldahl nitrogen (TKN)	mg/L	0.648	1.05	1.23	0.807	0.678	0.499	0.689	0.952	0.578	1.36	0.939	0.656	0.866
Total nitrogen	mg/L	0.648	1.05	1.23	0.807	0.678	0.499	0.689	0.952	0.601	1.37	0.939	0.678	0.877
Nitrite/Nitrate	mg/L	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.023 I	0.012 I	0.006 U	0.022 I	0.011 I
Ortho phosphorus (Field Filtered)	mg/L	0.005 I	0.019	0.007 I	0.002 U	0.002 U	0.002 I	0.002 U	0.004 I	0.005 I	0.008	0.008	0.011	0.005 I
Total phosphorus	mg/L	0.024 I	0.027 I	0.030 I	0.008 U	0.008 U	0.021 I	0.028 I	0.023 I	0.023 I	0.148	0.014 I	0.014 I	0.016 I
Chlorophyll	mg/m3	4.31	5.00	6.48	2.34	4.06	3.35	1.81	4.19	2.76	10.9	4.12	10.7	3.50
Total suspended solids (TSS)	mg/L	1.00 I	3.00	2.25 I	1.60 I	0.570 U	1.67 I	0.570 U	1.41 I	1.20 I	34.8	10.0	5.71	6.00
Biochemical oxygen demand (total BOD5)	mg/L	1 U	3.00	1.00	1 U	1 U	1 U	1.29 I	1 U	1 U	1.87 I	1.25 I	1 U	1 U

Notes:
U - Not detected at the associated reporting limit
I - Reported value is between method detection limit and the practical quantitation limit
NS - Not sampled during noted event
NM - Not measured
* DO values at or above 100% are possible super-saturation conditions due to high water temperatures and/or high volume of algae.

Table 1

Analytical Results Summary
Surface Water Quality Monitoring
Treviso Bay, Naples, Florida
February 2024

Sample Location/Sample ID:		Lake 5												
Sample Date:		**2/17/2020**	**6/4/2020**	**10/22/2020**	**3/04/2021**	**6/30/2021**	**10/27/2021**	**2/16/2022**	**6/09/2022**	**10/11/2022**	**2/21/2023**	**6/6/2023**	**10/3/2023**	**2/8/2024**
Field Parameters	**Units**													
Sample Depth	Feet	1.5	1.5	1.5	1.5	surface	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2
Conductivity, field	umhos/cm	405	630	561	284	389	308	310	311	335	344.4	306.2	278.2	349.2
Dissolved oxygen (DO), field	mg/L	9.25	4.46	6.72	5.60	4.48	5.60	8.67	5.07	5.30	6.85	3.74	4.12	7.56
Dissolved oxygen (DO), field	%	107.9*	59.3	83.9	67.5	59.4	72.5	96.5	68.1	67.0	82.1	50.4	53.1	85.1
pH, field	s.u.	7.61	7.78	8.61	8.71	8.26	8.62	8.49	8.37	6.80	6.74	7.50	7.7	8.26
Temperature, field	Deg C	22.95	30.1	27.2	25.1	30.2	28.8	20.7	30.8	27.6	24.6	29.8	28.7	21.0
Turbidity, field	NTU	1.36	2.45	3.54	6.43	1.94	4.53	5.34	--	0.90	0.85	1.34	0.5	0.02
Wet Parameters	**Units**													
Ammonia-N	mg/L	0.008 U	0.009 I	0.030 I	0.008 U	0.053	0.085	0.008 U	0.073	0.032	0.008 U	0.008 U	0.008 U	0.008 U
Total kjeldahl nitrogen (TKN)	mg/L	0.654	0.750	1.04	0.828	0.638	0.910	1.41	0.954	0.462	0.884	0.707	0.682	0.763
Total nitrogen	mg/L	0.654	0.750	1.04	0.828	0.638	0.976	1.41	0.954	0.501	0.892	0.715	0.699	0.775
Nitrite/Nitrate	mg/L	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.066	0.006 U	0.006 U	0.039	0.008 I	0.008 I	0.017 I	0.012 I
Ortho phosphorus (Field Filtered)	mg/L	0.024	0.053	0.026	0.007 I	0.002 U	0.020	0.005 I	0.007 I	0.006 I	0.002 U	0.008	0.002 I	0.002 U
Total phosphorus	mg/L	0.044	0.063	0.027 I	0.014 I	0.008 U	0.046	0.009 I	0.033	0.096	0.008 I	0.013 I	0.012 I	0.072
Chlorophyll	mg/m3	6.71	8.71	9.27	6.17	9.17	29.3	14.2	6.80	2.03	1.65	2.68	3.30	1.73
Total suspended solids (TSS)	mg/L	5.00	2.25 I	6.20	4.80	1.00 I	6.67	9.67	1.67 I	0.570 U	3.60	2.22 I	3.60	2.00 I
Biochemical oxygen demand (total BOD5)	mg/L	1.11 I	1.0 U	1.49 I	1.11 I	1 U	1.97 I	1.75 I	1.17 I	1 U	1 U	1.34 I	1 U	1 U

Sample Location/Sample ID:		Lake 14												
Sample Date:		**2/17/2020**	**6/4/2020**	**10/22/2020**	**3/04/2021**	**6/30/2021**	**10/27/2021**	**2/16/2022**	**6/09/2022**	**10/11/2022**	**2/21/2023**	**6/6/2023**	**10/3/2023**	**2/8/2024**
Field Parameters	**Units**													
Sample Depth	Feet	1.5	1.5	1.5	1.5	1	1.5	1.5	outfall	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	14.67	2066	999	967	1223	1119	1032	1041	1384	2049	1898	1721	1753
Dissolved oxygen (DO), field	mg/L	5.79	4.36	5.45	4.13	4.31	4.92	6.89	5.67	3.74	5.53	6.21	6.44	6.06
Dissolved oxygen (DO), field	%	66.7	57.6	67.8	48.8	54.1	63.7	74.9	74.2	47.7	65.5	84.1	84.2	72.0
pH, field	s.u.	7.71	8.33	8.44	8.55	8.28	8.43	8.49	8.53	7.97	8.33	8.18	8.15	8.41
Temperature, field	Deg C	22.04	29.6	26.4	23.7	28.6	28.2	19.4	30.7	27.7	24.6	30.7	29.0	23.1
Turbidity, field	NTU	2.07	7.06	3.44	2.83	2.60	3.80	9.41	2.04	2.77	1.58	3.81	3.09	12.3
Wet Parameters	**Units**													
Ammonia-N	mg/L	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.041	0.008 U	0.063	0.019 I	0.008 U	0.008 U	0.016 I	0.008 U
Total kjeldahl nitrogen (TKN)	mg/L	0.816	0.926	1.35	0.908	0.750	0.738	1.17	1.24	0.756	1.82	0.819	0.837	0.974
Total nitrogen	mg/L	0.816	0.926	1.35	0.908	0.750	0.738	1.17	1.24	0.766	1.83	0.831	0.860	0.988
Nitrite/Nitrate	mg/L	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.010 I	0.013 I	0.012 I	0.023 I	0.014 I
Ortho phosphorus (Field Filtered)	mg/L	0.007 I	0.031	0.004 I	0.002 U	0.002 U	0.007 I	0.002 U	0.003 I	0.009	0.002 U	0.010	0.009	0.023
Total phosphorus	mg/L	0.029 I	0.044	0.025 I	0.020 I	0.008 U	0.011 I	0.035	0.041	0.038	0.020 I	0.012 I	0.009 I	0.029 I
Chlorophyll	mg/m3	8.51	10.3	11.7	5.95	16.0	20.0	9.84	10.2	19.7	7.12	11.6	21.8	19.3
Total suspended solids (TSS)	mg/L	4.50	3.75	7.50	4.40	3.60	6.00	7.00	5.33	6.40	19.0	7.33	3.85	15.2
Biochemical oxygen demand (total BOD5)	mg/L	1.55 I	1.0 U	2.32 I	1.59 I	1.03 I	1.61 I	1 U	1.81 I	1.69 I	1.98 I	1.75 I	1 U	1.33 I

Sample Location/Sample ID:		Lake 32												
Sample Date:		**2/17/2020**	**6/4/2020**	**10/22/2020**	**3/04/2021**	**6/30/2021**	**10/27/2021**	**2/16/2022**	**6/09/2022**	**10/11/2022**	**2/21/2023**	**6/6/2023**	**10/3/2023**	**2/8/2024**
Field Parameters	**Units**													
Sample Depth	Feet	1.5	1.5	1.5	1.5	1.5	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Conductivity, field	umhos/cm	426	680	298	296	508	298	289	324	391	459.4	468	43.2	512
Dissolved oxygen (DO), field	mg/L	8.4	4.27	6.44	5.08	5.71	5.54	6.25	1.37	5.55	6.42	4.80	3.58	6.74
Dissolved oxygen (DO), field	%	99.5	56.3	80.3	61.0	71.8	71.8	69.6	18.1	71.3	77.4	67.1	47.0	78.1
pH, field	s.u.	8.15	8.15	8.16	8.49	8.27	8.72	8.28	7.24	7.82	8.53	7.60	7.96	8.21
Temperature, field	Deg C	23.8	29.7	27.0	24.7	29.1	28.7	20.5	29.8	28.4	24.6	30.4	29.5	22.5
Turbidity, field	NTU	0.47	2.75	3.31	9.56	3.28	3.18	1.62	1.71	0.54	9.71	2.54	4.05	1.24
Wet Parameters	**Units**													
Ammonia-N	mg/L	0.008 U	0.008 U	0.045	0.008 U	0.008 U	0.028 I	0.008 U	0.094	0.017 I	0.008 U	0.008 U	0.008 U	0.027 I
Total kjeldahl nitrogen (TKN)	mg/L	0.483	0.897	1.65	0.791	0.639	0.05 U	0.514	0.872	0.573	0.934	0.687	0.691	0.813
Total nitrogen	mg/L	0.483	0.897	1.67	0.791	0.639	0.05 U	0.514	0.872	0.813	0.941	0.696	0.712	0.845
Nitrite/Nitrate	mg/L	0.006 U	0.006 U	0.018 I	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.240	0.007 I	0.009 I	0.021 I	0.032
Ortho phosphorus (Field Filtered)	mg/L	0.018	0.035	0.008	0.002 I	0.002 U	0.008	0.002 U	0.007 I	0.008	0.002 U	0.010	0.006 I	0.074
Total phosphorus	mg/L	0.022 I	0.058	0.041	0.010 I	0.013 I	0.014 I	0.027 I	0.044	0.016 I	0.012 I	0.012 I	0.013 I	0.083
Chlorophyll	mg/m3	2.00	7.08	7.29	3.73	11.8	16.1	2.54	7.42	3.26	1.96	4.80	9.47	4.35
Total suspended solids (TSS)	mg/L	0.750 I	5.25	4.00	1.20 I	3.40	3.67	2.67	3.67	0.570 U	1.60 I	4.85	2.55	25.2
Biochemical oxygen demand (total BOD5)	mg/L	1 U	1.0 U	1.25 I	1 U	1 U	1.23 I	1 U	1.32 I	1 U	1 U	1 U	1 U	1 U

Notes:
U - Not detected at the associated reporting lim
I - Reported value is between method detection
NS - Not sampled during noted event
NM - Not measured
* DO values at or above 100% are possible su

Figures

NOTE: LAKE 5 DOES NOT HAVE AN ABOVE WATER LEVEL OUTFALL STRUCTURE/WEIR.

WATER QUALITY SAMPLING REPORT
LAKES 4, 5, 12, 14, 22, AND 32 - TREVISO BAY
NAPLES, COLLIER COUNTY, FLORIDA

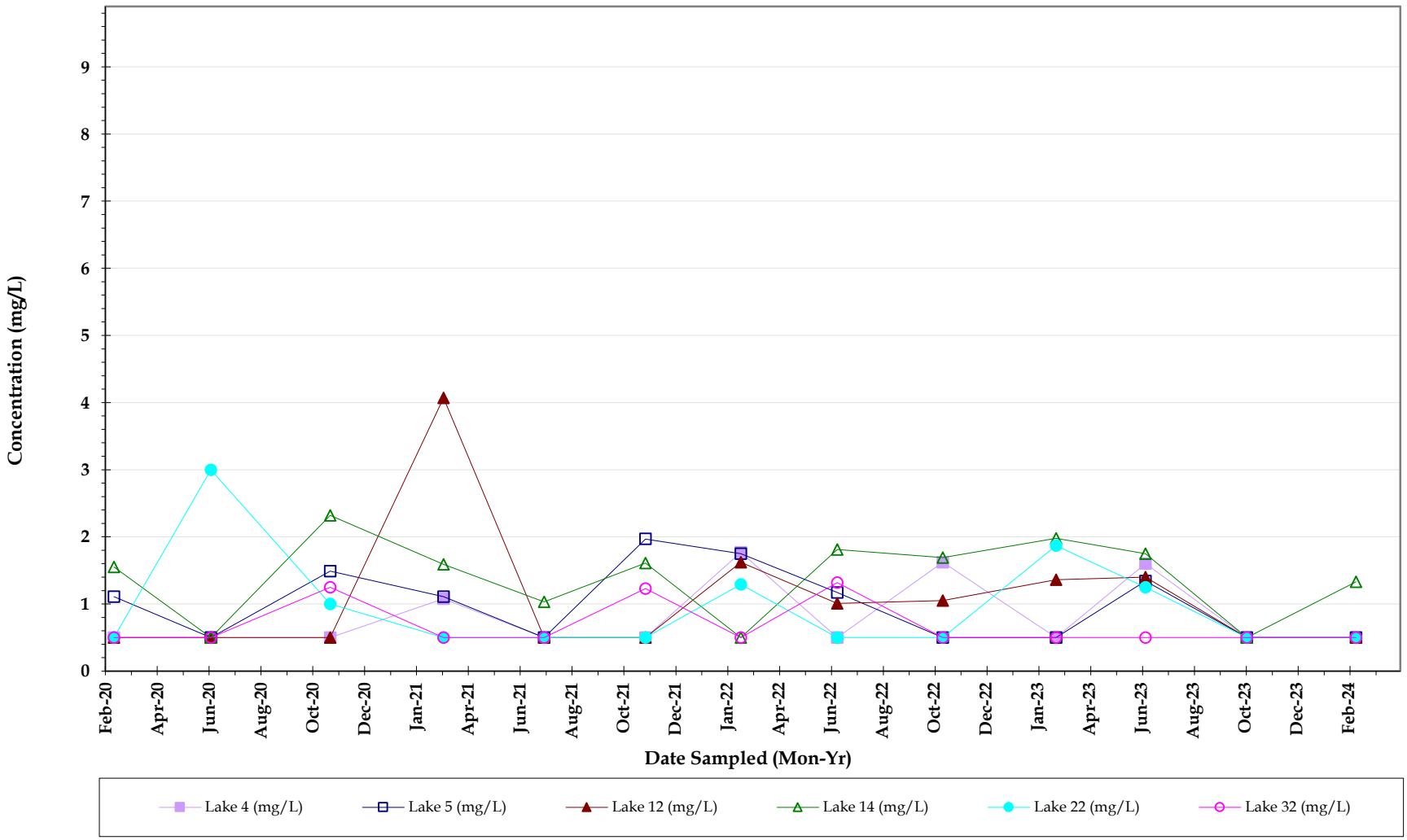
11225022-01

30-June-21

SAMPLE LOCATION MAP

FIGURE NO. 1

Trend Graphs

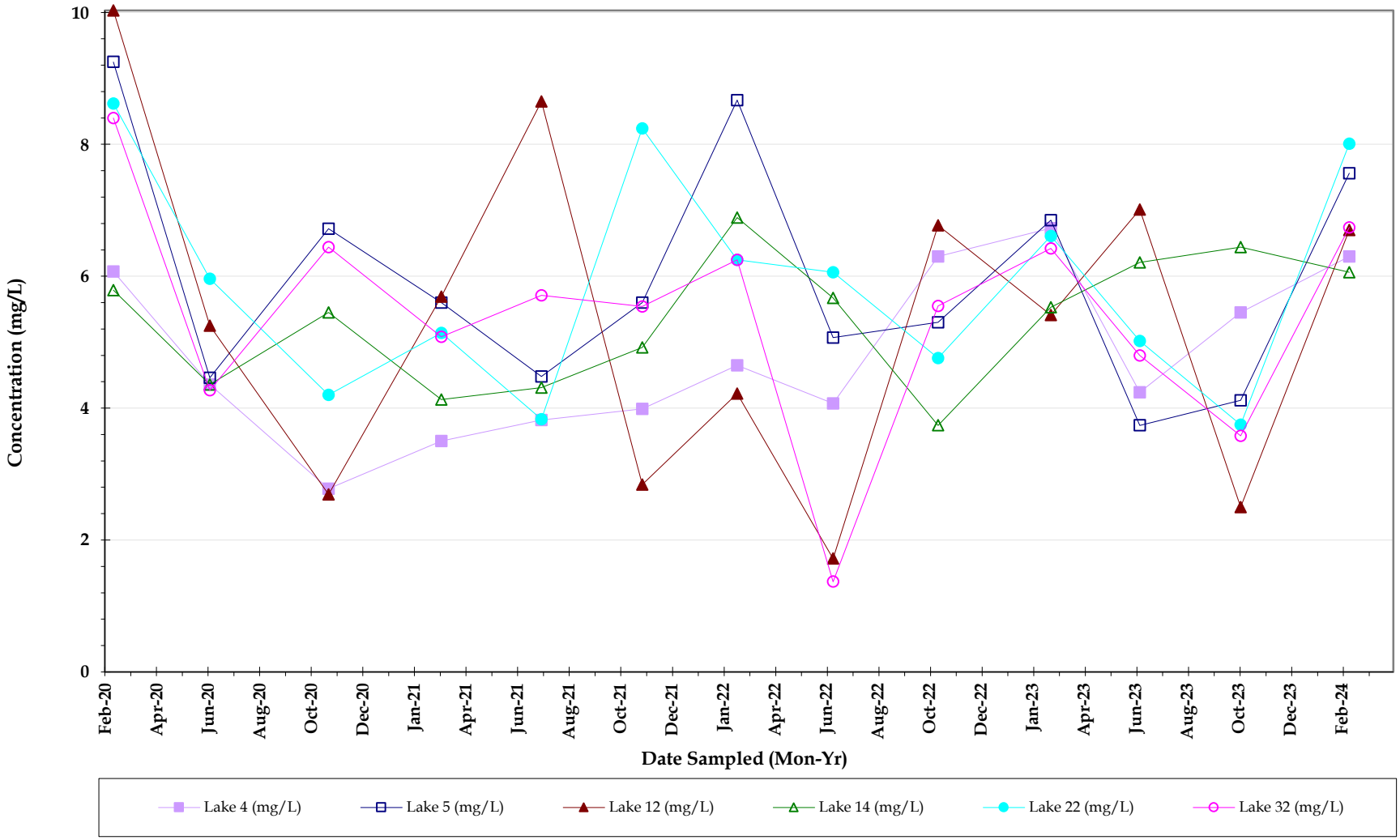


Biochemical Oxygen Demand

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

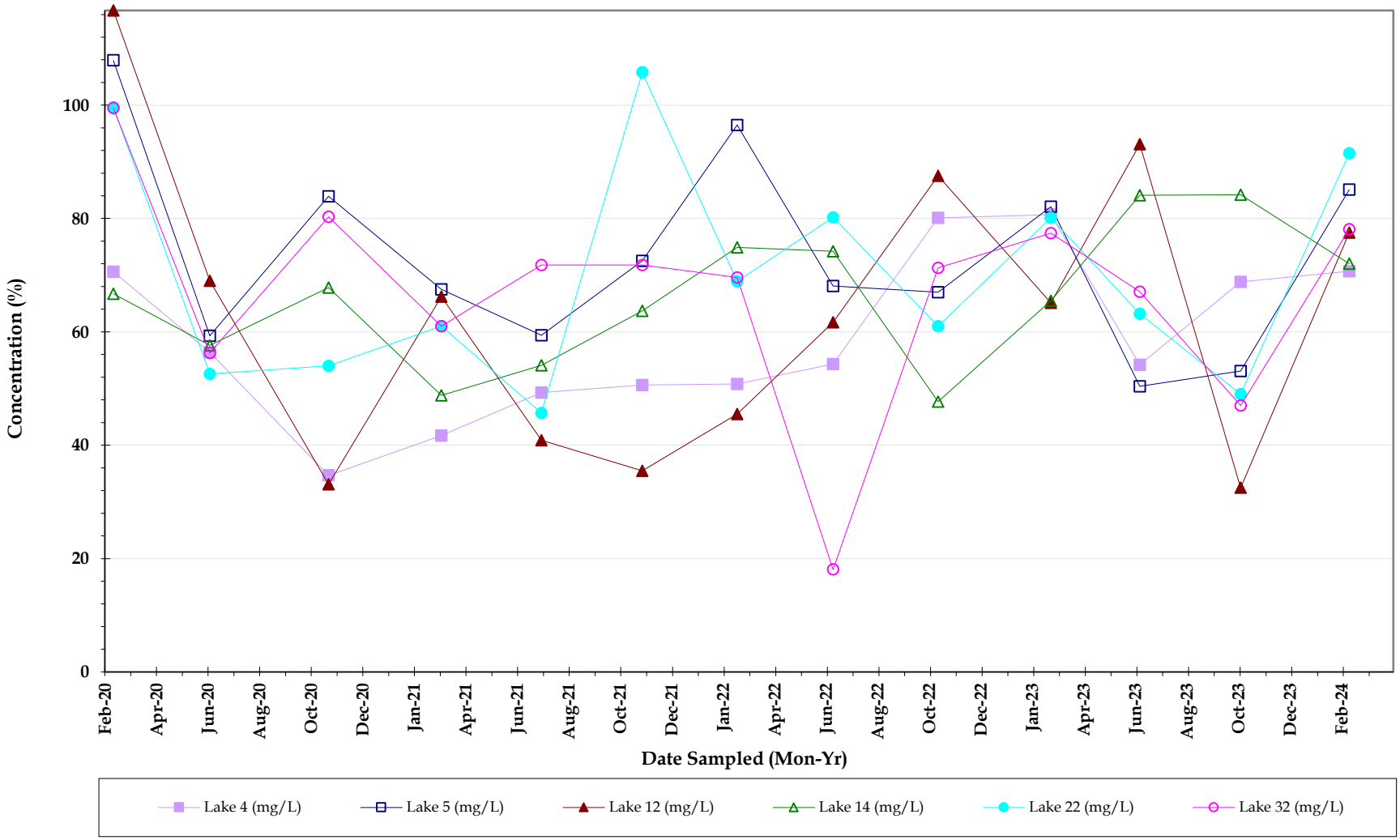


Dissolved Oxygen (mg/L)

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

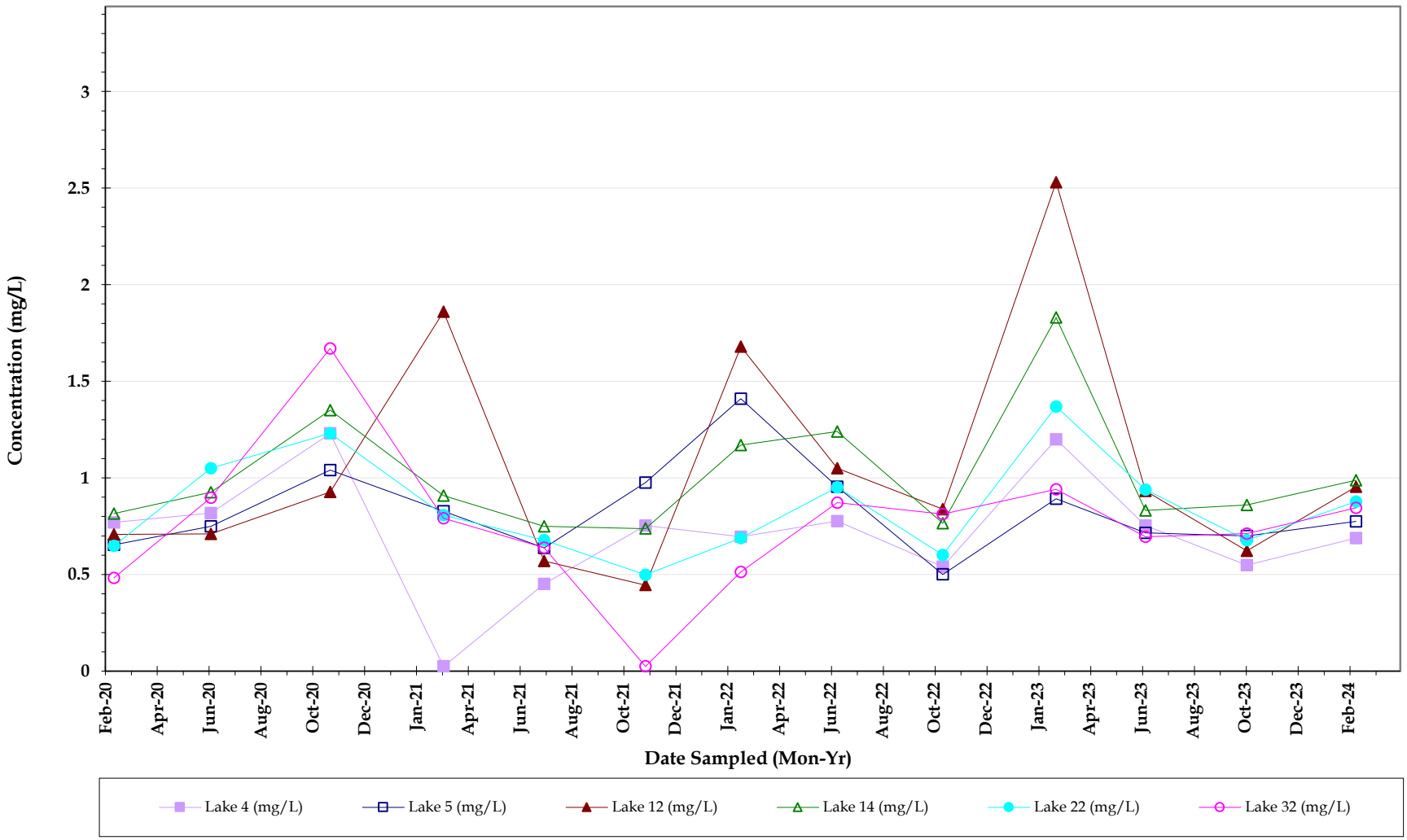


Dissolved Oxygen (%)

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

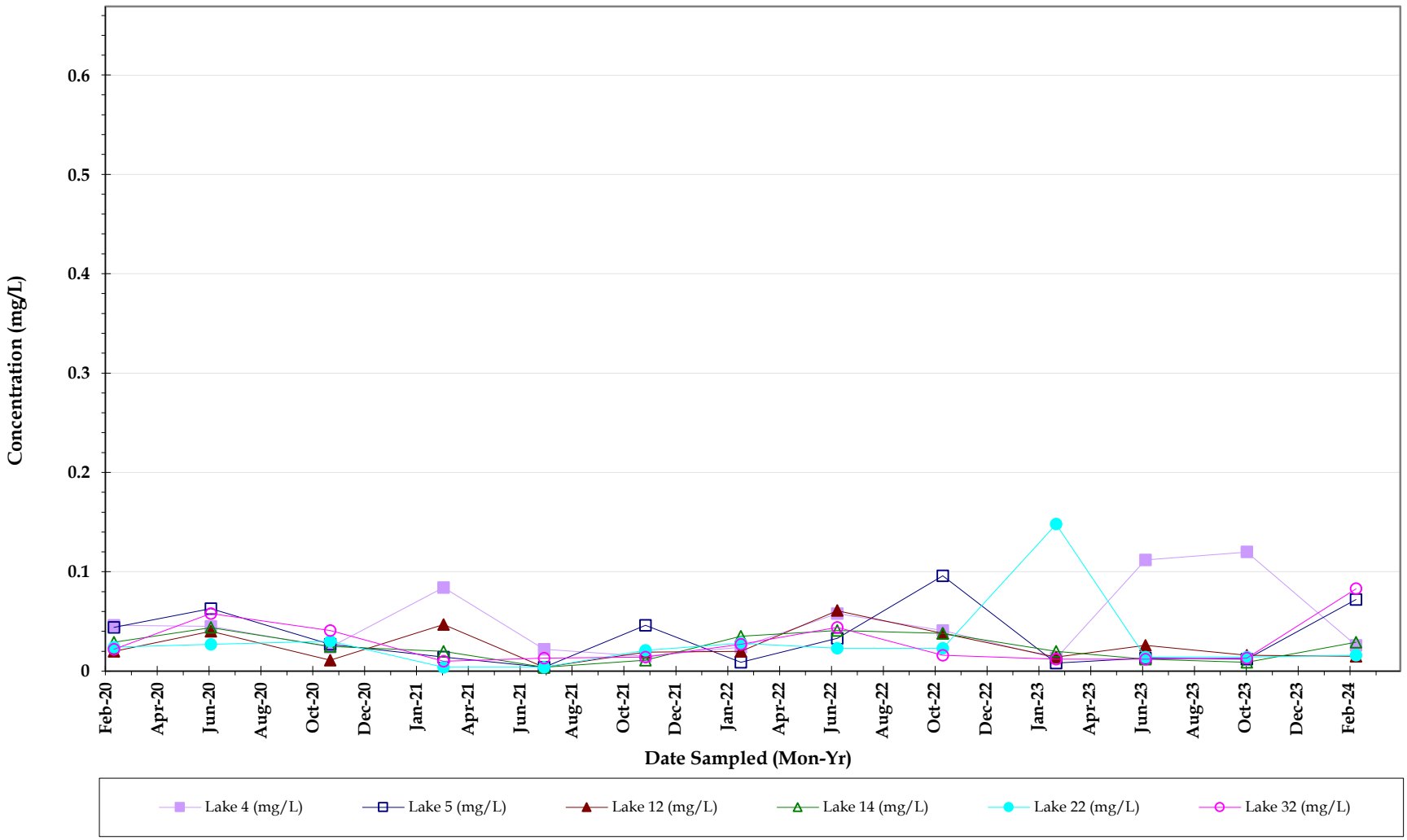


Total Nitrogen

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

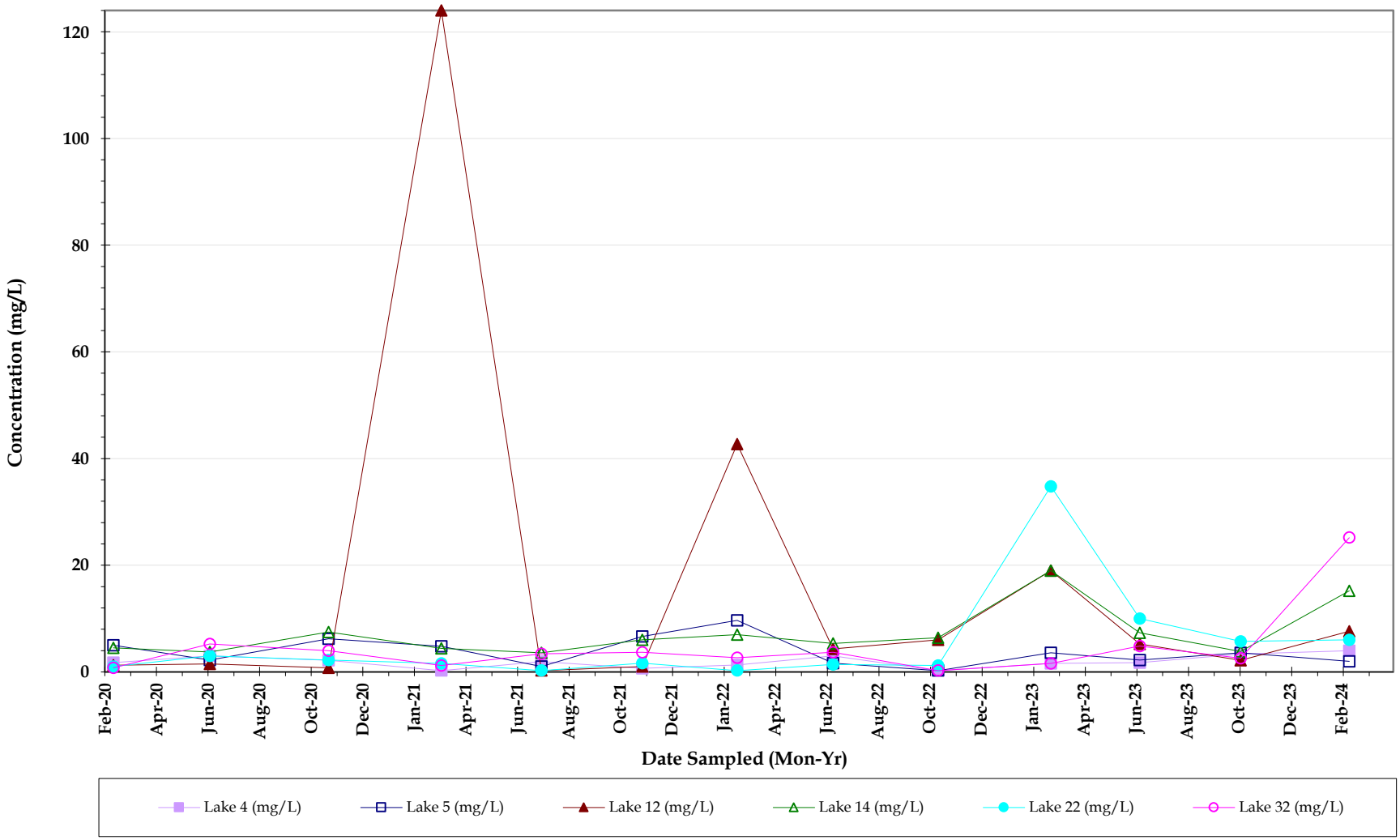


Total Phosphorus

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

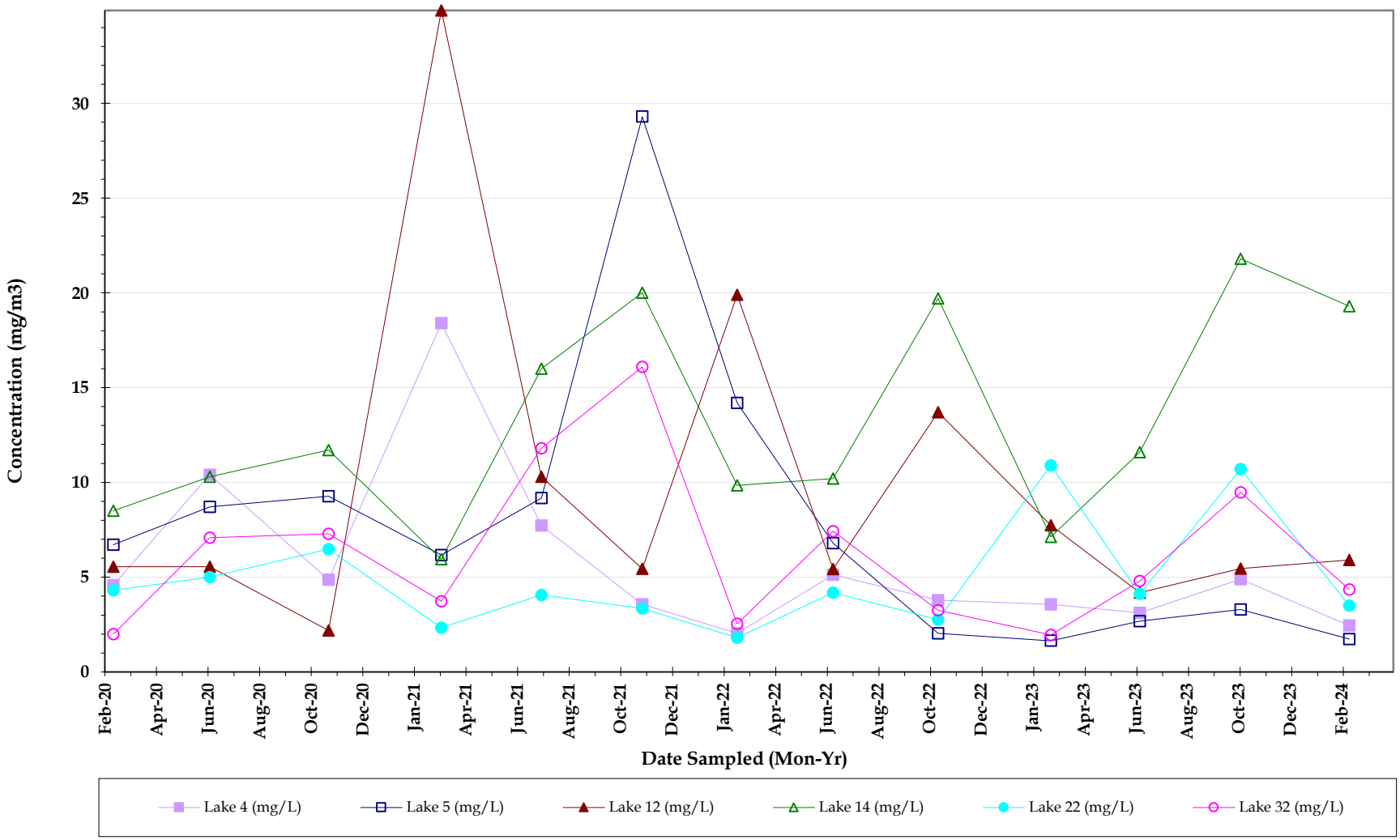


Total Suspended Solids

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

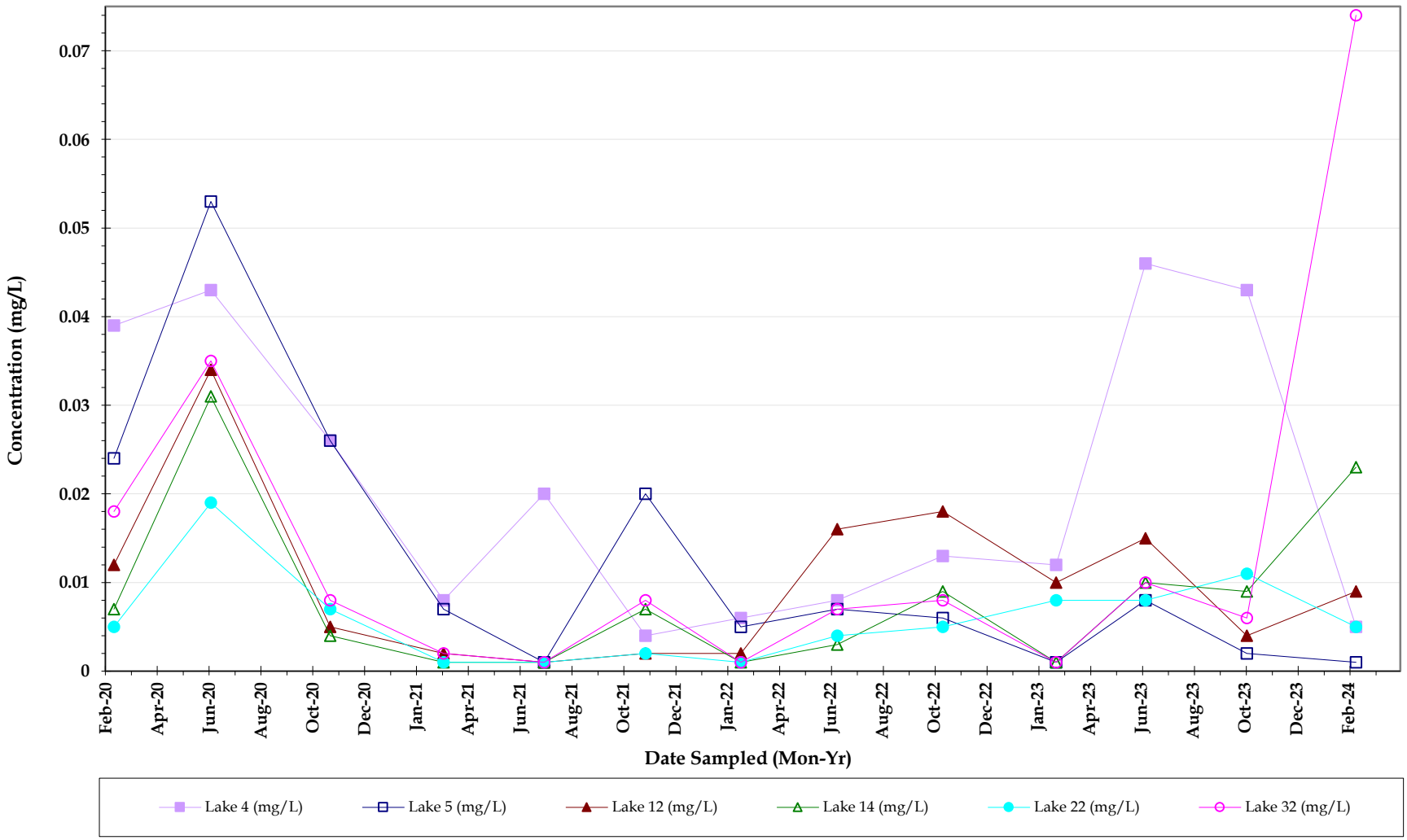


Chlorophyll *a*

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

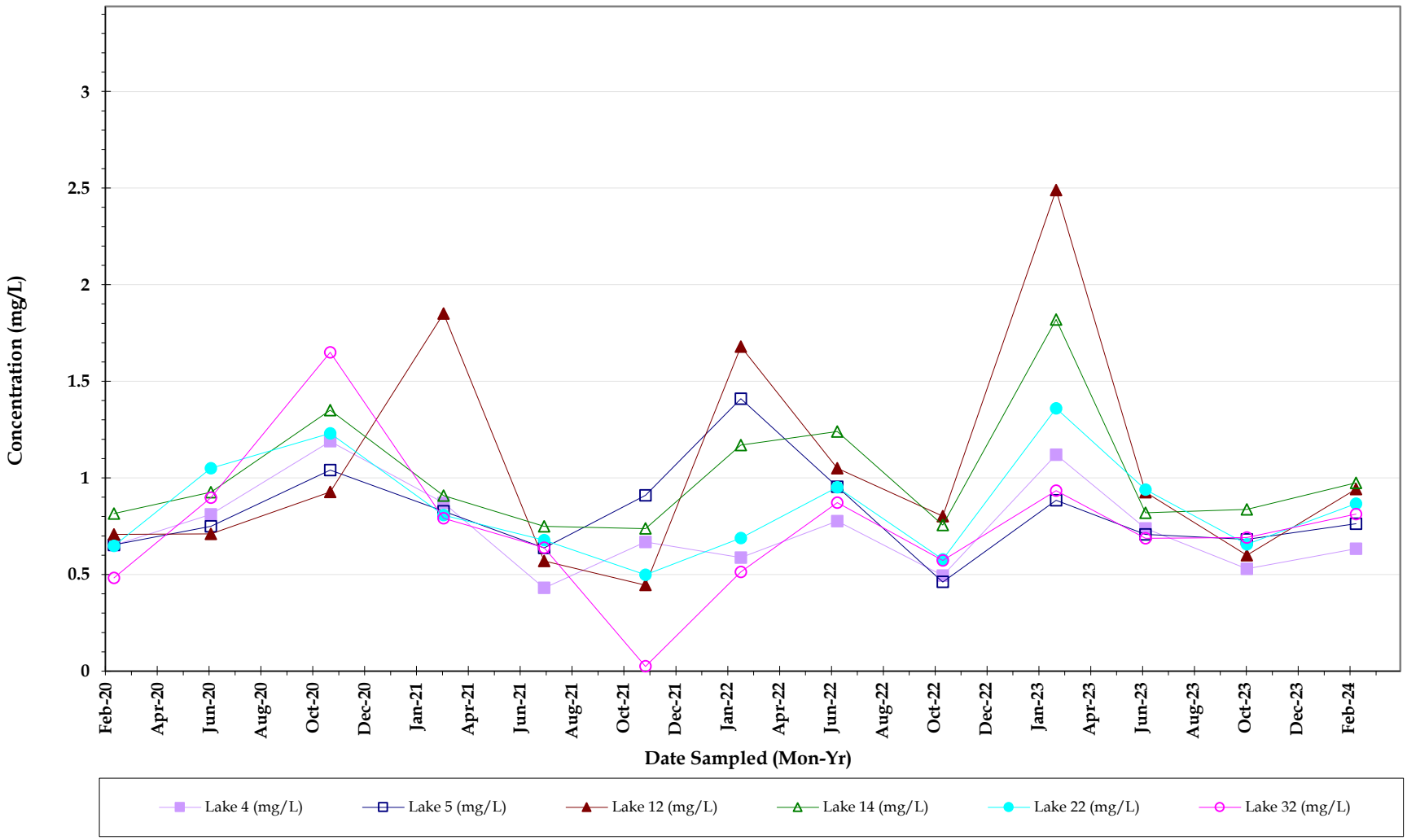


Orthophosphate

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

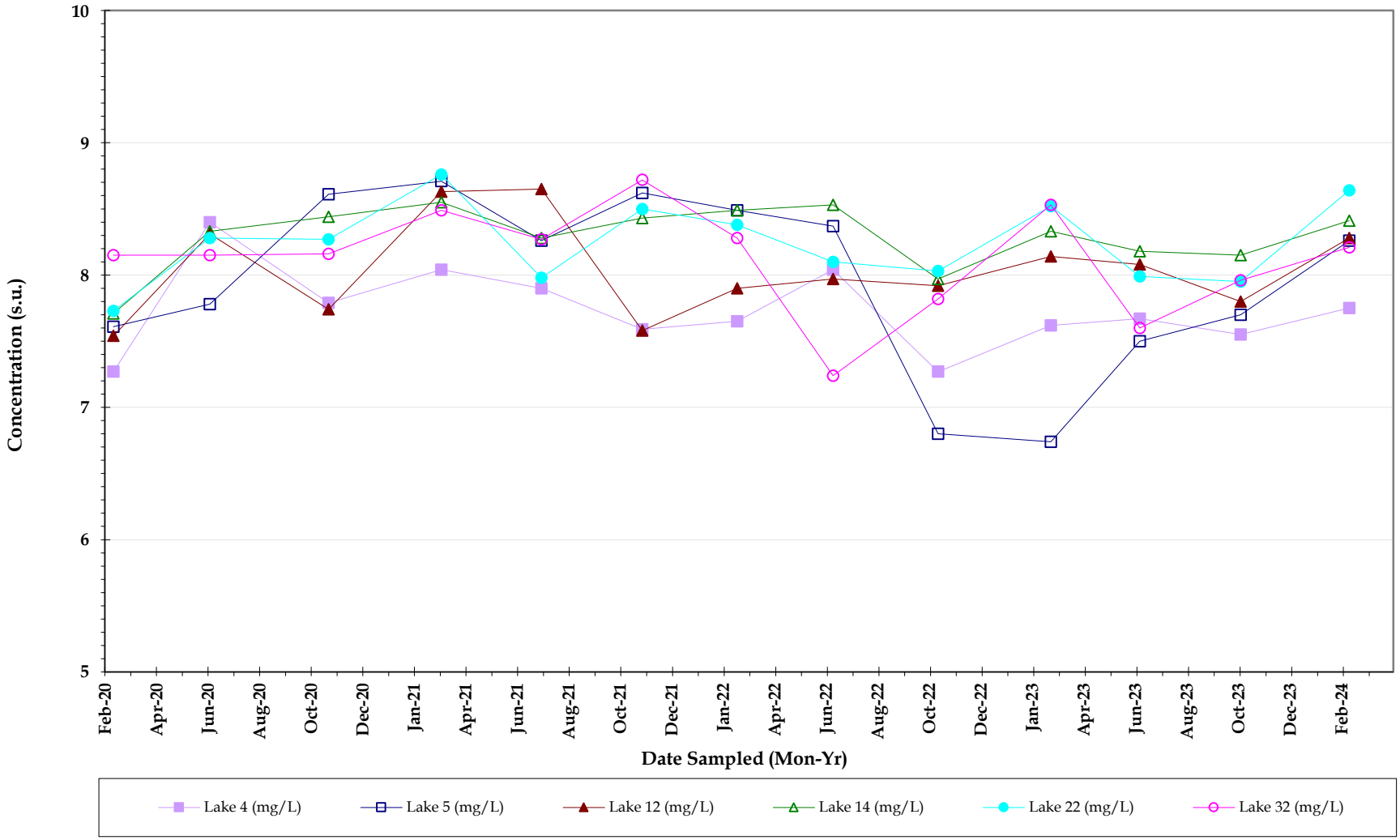


Total kjeldahl nitrogen (TKN)

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

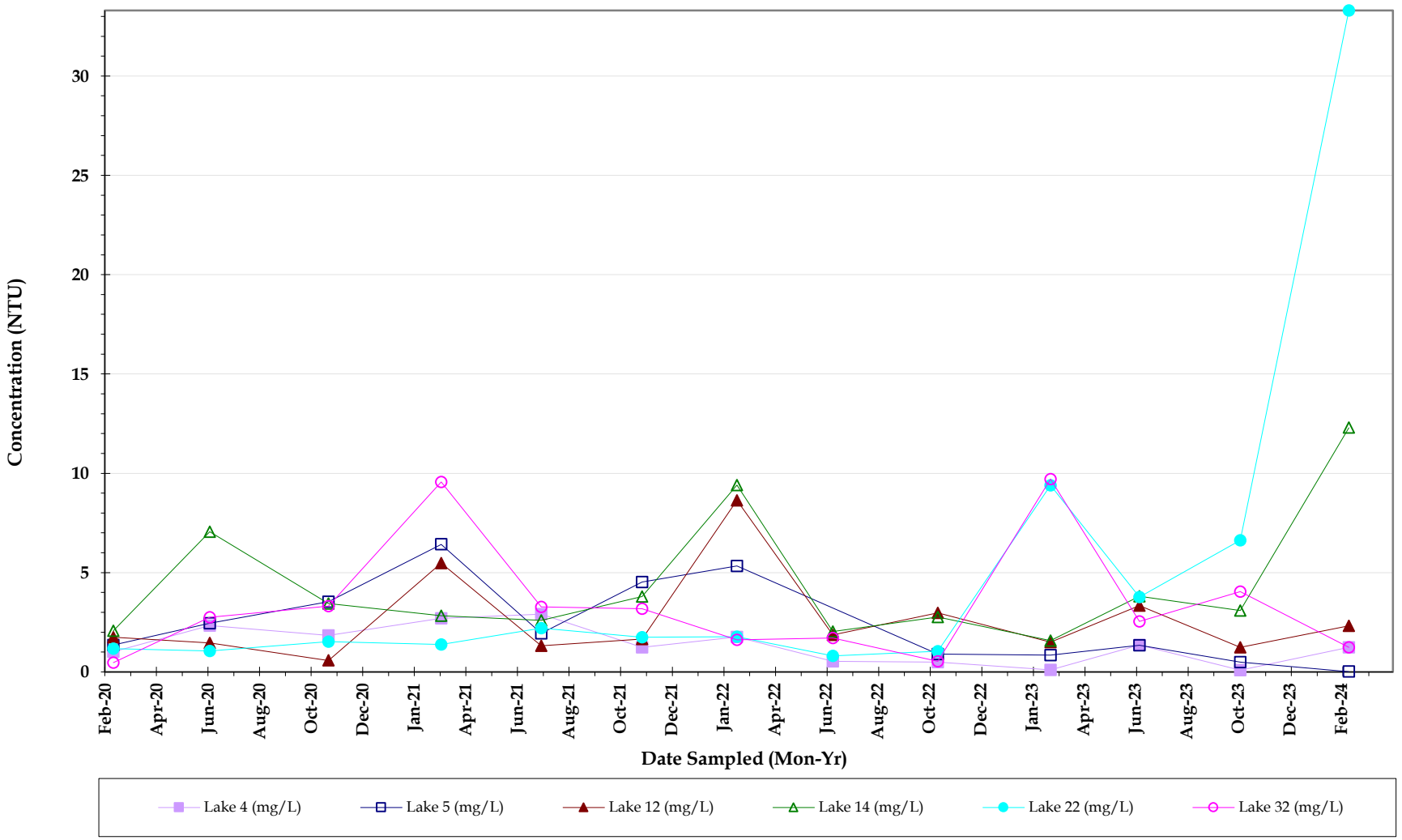


pH, Field

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

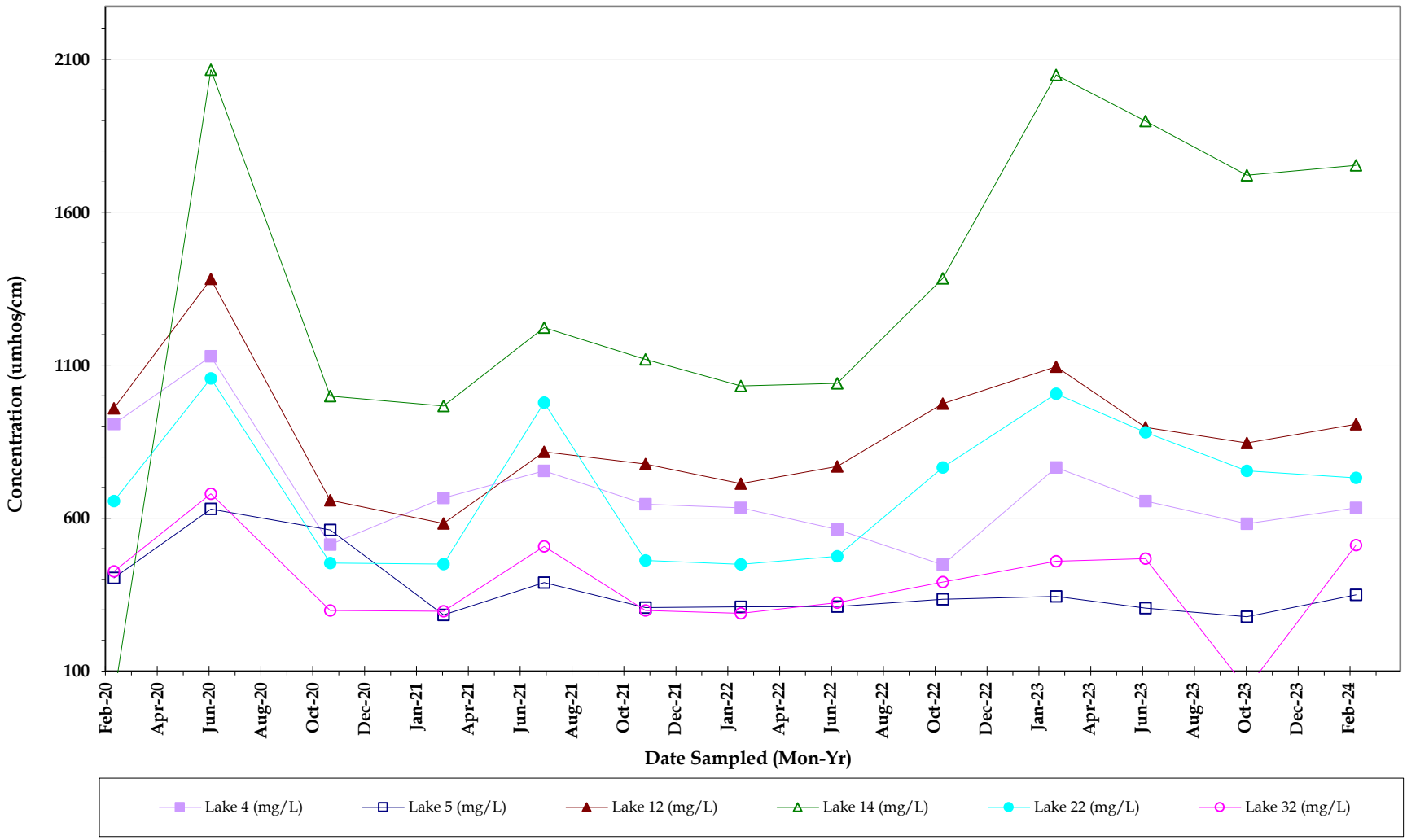


Turbidity

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

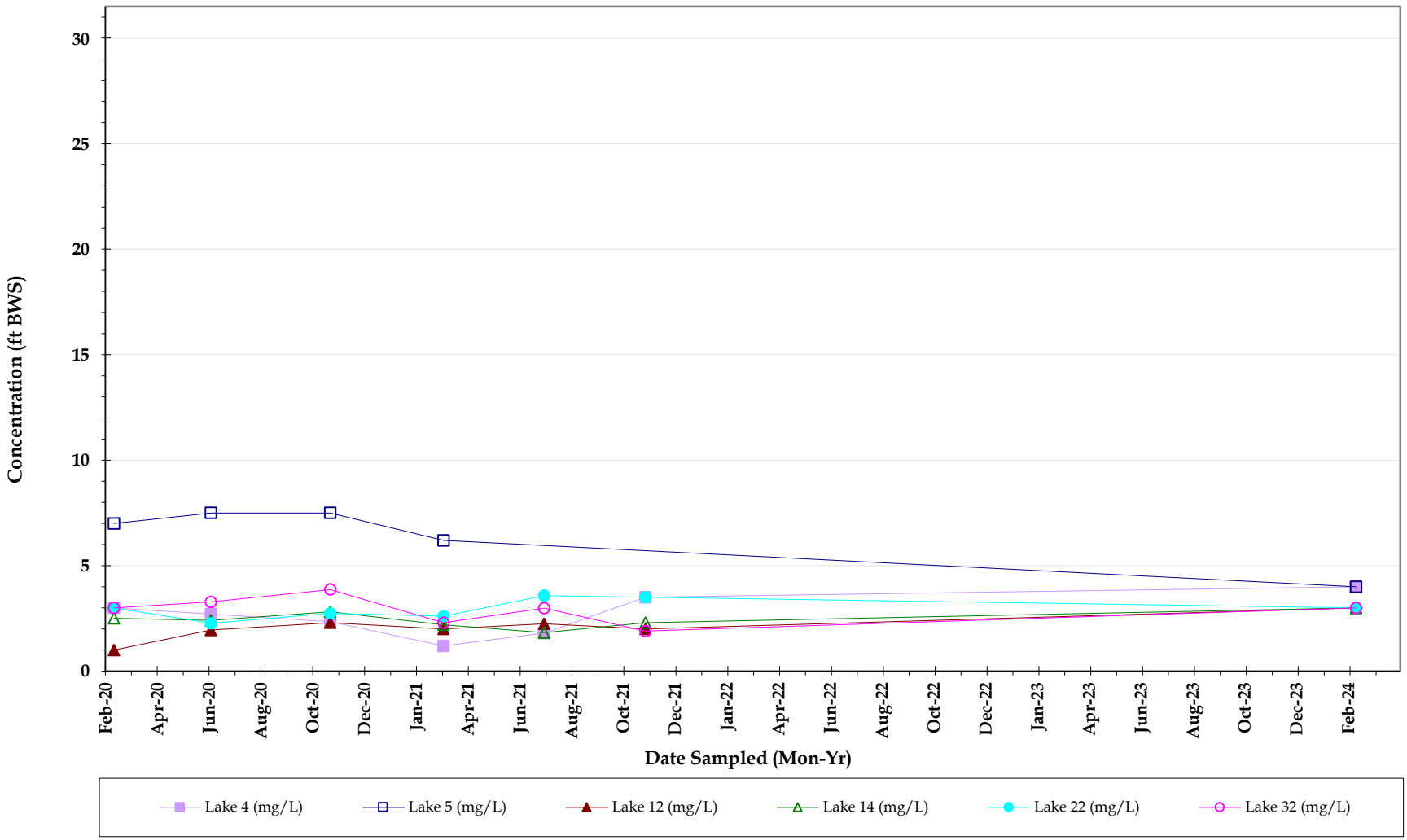


Conductivity

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

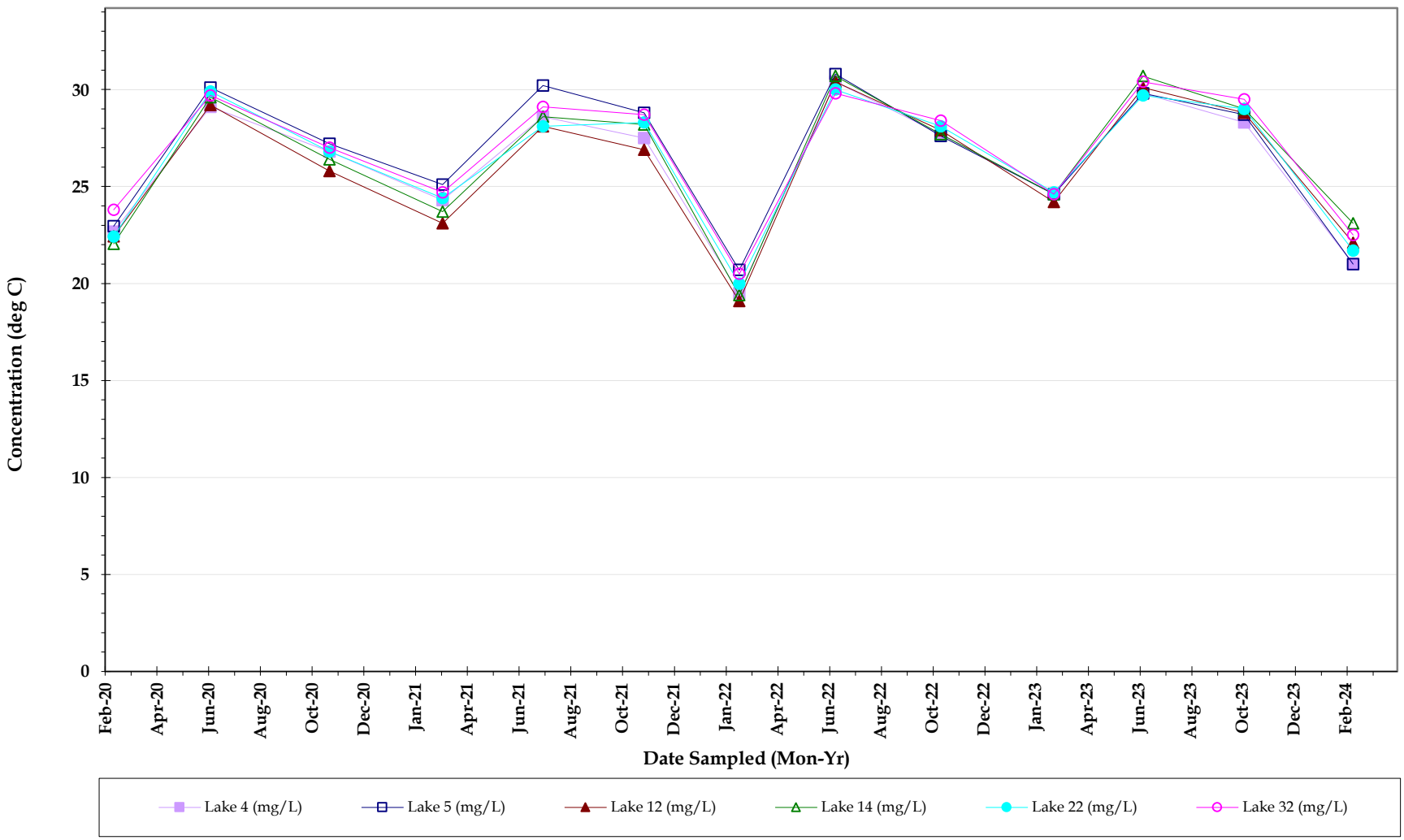


Water Depth

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024



Temperature, sample

Treviso Bay

Water Quality Surface Water Sample results

FEBRUARY 2024

Laboratory Analytical Report

FDOH Certification #E84167

BENCHMARK *EnviroAnalytical, Inc.*

ANALYTICAL TEST REPORT

THESE RESULTS MEET NELAC STANDARDS

Submission Number : 24020572

G H D Services, Inc.
2675 Winkler Ave., Ste.180
Fort Myers, FL 33901

Project Name : TREVISO LAKES WQM
Date Received : 02/09/2024
Time Received : 14:40
Project #: 11147356-01

Submission Number: 24020572
Sample Number: 001
Sample Description: Lake 4

Sample Date: 02/08/2024
Sample Time: 10:40
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	02/13/2024 19:25	LK
TOTAL KJELDAHL NITROGEN	0.633	MG/L	0.05	0.20	351.2	02/19/2024 16:42	JA/MS
ORTHO PHOSPHORUS AS P	0.005 I	MG/L	0.002	0.008	365.3	02/09/2024 18:31	JS
TOTAL PHOSPHORUS AS P	0.028 I	MG/L	0.008	0.032	365.3	02/12/2024 17:58	JS
CHLOROPHYLL A	2.44	MG/M3	0.25	1.00	445.0	02/15/2024 13:13	JS
TOTAL SUSPENDED SOLIDS	4.00	MG/L	0.570	2.280	SM2540D	02/12/2024 09:26	IR
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	02/09/2024 16:28	LD/LD
NITRATE+NITRITE AS N	0.056	MG/L	0.006	0.024	SYSTEA EASY	02/12/2024 12:10	LK
TOTAL NITROGEN	0.689	MG/L	0.05	0.20	SYSTEA+351	02/19/2024 16:42	JA/MS/LK

Submission Number: 24020572
Sample Number: 002
Sample Description: Lake 5

Sample Date: 02/08/2024
Sample Time: 11:05
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	02/14/2024 14:23	LK
TOTAL KJELDAHL NITROGEN	0.763	MG/L	0.05	0.20	351.2	02/19/2024 15:18	JA/MS
ORTHO PHOSPHORUS AS P	0.002 U	MG/L	0.002	0.008	365.3	02/09/2024 18:32	JS
TOTAL PHOSPHORUS AS P	0.072	MG/L	0.008	0.032	365.3	02/13/2024 09:44	JS
CHLOROPHYLL A	1.73	MG/M3	0.25	1.00	445.0	02/15/2024 13:13	JS
TOTAL SUSPENDED SOLIDS	2.00 I	MG/L	0.570	2.280	SM2540D	02/12/2024 09:28	IR
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	02/09/2024 16:28	LD/LD
NITRATE+NITRITE AS N	0.012 I	MG/L	0.006	0.024	SYSTEA EASY	02/12/2024 12:10	LK
TOTAL NITROGEN	0.775	MG/L	0.05	0.20	SYSTEA+351	02/19/2024 15:18	JA/MS/LK

Submission Number: 24020572
Sample Number: 003
Sample Description: Lake 22

Sample Date: 02/08/2024
Sample Time: 11:35
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	02/13/2024 19:28	LK
TOTAL KJELDAHL NITROGEN	0.866	MG/L	0.05	0.20	351.2	02/19/2024 16:41	JA/MS
ORTHO PHOSPHORUS AS P	0.005 I	MG/L	0.002	0.008	365.3	02/09/2024 18:34	JS
TOTAL PHOSPHORUS AS P	0.016 I	MG/L	0.008	0.032	365.3	02/12/2024 18:01	JS
CHLOROPHYLL A	3.50	MG/M3	0.25	1.00	445.0	02/15/2024 13:13	JS
TOTAL SUSPENDED SOLIDS	6.00	MG/L	0.570	2.280	SM2540D	02/12/2024 09:28	IR
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	02/09/2024 16:28	LD/LD
NITRATE+NITRITE AS N	0.011 I	MG/L	0.008	0.024	SYSTEA EASY	02/12/2024 12:11	LK
TOTAL NITROGEN	0.877	MG/L	0.05	0.20	SYSTEA+351	02/19/2024 16:41	JA/MS/LK

Submission Number: 24020572
Sample Number: 004
Sample Description: Lake 32

Sample Date: 02/08/2024
Sample Time: 11:50
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.027 I	MG/L	0.008	0.032	350.1	02/13/2024 19:30	LK
TOTAL KJELDAHL NITROGEN	0.813	MG/L	0.05	0.20	351.2	02/19/2024 15:04	JA/MS
ORTHO PHOSPHORUS AS P	0.074	MG/L	0.002	0.008	365.3	02/09/2024 18:35	JS
TOTAL PHOSPHORUS AS P	0.083	MG/L	0.008	0.032	365.3	02/12/2024 18:02	JS
CHLOROPHYLL A	4.35	MG/M3	0.25	1.00	445.0	02/15/2024 13:13	JS
TOTAL SUSPENDED SOLIDS	25.2	MG/L	0.570	2.280	SM2540D	02/12/2024 09:28	IR
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	02/09/2024 16:28	LD/LD
NITRATE+NITRITE AS N	0.032	MG/L	0.008	0.024	SYSTEA EASY	02/12/2024 12:11	LK
TOTAL NITROGEN	0.845	MG/L	0.05	0.20	SYSTEA+351	02/19/2024 15:04	JA/MS/LK

Submission Number: 24020572
Sample Number: 005
Sample Description: Lake 12

Sample Date: 02/08/2024
Sample Time: 12:10
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	02/13/2024 19:32	LK
TOTAL KJELDAHL NITROGEN	0.942	MG/L	0.05	0.20	351.2	02/19/2024 14:44	JA/MS
ORTHO PHOSPHORUS AS P	0.009	MG/L	0.002	0.008	365.3	02/09/2024 18:36	JS
TOTAL PHOSPHORUS AS P	0.015 I	MG/L	0.008	0.032	365.3	02/12/2024 18:03	JS
CHLOROPHYLL A	5.91	MG/M3	0.25	1.00	445.0	02/15/2024 13:13	JS
TOTAL SUSPENDED SOLIDS	7.60	MG/L	0.570	2.280	SM2540D	02/12/2024 09:28	IR
BIOCHEMICAL OXYGEN DEMAND	1 U	MG/L	1	4	SM5210B	02/09/2024 16:28	LD/LD

NITRATE+NITRITE AS N	0.012 I	MG/L	0.006	0.024	SYSTEA EASY	02/12/2024 12:12	LK
TOTAL NITROGEN	0.954	MG/L	0.05	0.20	SYSTEA+351	02/19/2024 14:44	JA/MS/LK

Submission Number: 24020572
Sample Number: 006
Sample Description: Lake 14
Sample Date: 02/08/2024
Sample Time: 12:30
Sample Method: Grab

Parameter	Result	Units	MDL	PQL	Procedure	Analysis Date/Time	Analyst
AMMONIA NITROGEN	0.008 U	MG/L	0.008	0.032	350.1	02/13/2024 19:45	LK
TOTAL KJELDAHL NITROGEN	0.974	MG/L	0.05	0.20	351.2	02/19/2024 17:11	JA/MS
ORTHO PHOSPHORUS AS P	0.023	MG/L	0.002	0.008	365.3	02/09/2024 18:38	JS
TOTAL PHOSPHORUS AS P	0.029 I	MG/L	0.008	0.032	365.3	02/12/2024 18:04	JS
CHLOROPHYLL A	19.3	MG/M3	0.25	1.00	445.0	02/15/2024 13:13	JS
TOTAL SUSPENDED SOLIDS	15.2	MG/L	0.570	2.280	SM2540D	02/12/2024 09:28	IR
BIOCHEMICAL OXYGEN DEMAND	1.33 I	MG/L	1	4	SM5210B	02/09/2024 16:28	LD/LD
NITRATE+NITRITE AS N	0.014 I	MG/L	0.006	0.024	SYSTEA EASY	02/12/2024 12:12	LK
TOTAL NITROGEN	0.988	MG/L	0.05	0.20	SYSTEA+351	02/19/2024 17:11	JA/MS/LK

Haley Rin — 03/01/2024

Dr. Dale D. Dixon Laboratory Director — Date

Haley Richardson QC Manager / **Leah Lepore** QC Officer

DATA QUALIFIERS THAT MAY APPLY:

A = Value reported is an average of two or more determinations.
B = Results based upon colony counts outside the ideal range.
H = Value based on field kit determination. Results may not be accurate.
I = Reported value is between the laboratory MDL and the PQL.
J1 = Estimated value. Surrogate recovery limits exceeded.
J2 = Estimated value. No quality control criteria exists for component.
J3 = Estimated value. Quality control criteria for precision or accuracy not met.
J4 = Estimated value. Sample matrix interference suspected.
J5 = Estimated value. Data questionable due to improper lab or field protocols.
K = Off-scale low. Value is known to be < the value reported.
L = Off-scale high. Value is known to be > the value reported.
N = Presumptive evidance of presence of material.
Q = Sampled, but analysis lost or not performed.
Q = Sample held beyond accepted hold time.
T = Value reported is < MDL. Reported for informational purposes only and shall not be used in statistical analysis.
U = Analyte analyzed but not detected at the value indicated.
V = Analyte detected in sample and method blank. Results for this analyte in associated samples may be biased high. Standard, Duplicate and Spike values are within control limits. Reported data are usable.
Y = Analysis performed on an improperly preserved sample. Data may be inaccurate.
Z = Too many colonies were present (TNTC). The numeric value represents the filtration volume.
! = Data deviate from historically established concentration ranges.
? = Data rejected and should not be used. Some or all of QC data were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
* = Not reported due to interference.
Oil & Grease - If client does not send sufficient sample quantity for spike evaluation surface water samples are supplied by the laboratory.

NOTES:

MBAS calculated as LAS; molecular weight = 340.
PQL = 4xMDL.
ND = Not detected at or above the adjusted reporting limit.
G1 = Accuracy standard does not meet method control limits, but does meet lab control limits that are in agreement with USEPA generated date. USEPA letter available upon request.
G2 = Accuracy standard exceeds acceptable control limits. Duplicate and spike values are within control limits. Reported data are usable.

COMMENTS:

Chlorophyll A lab filtered at E85086 on 02/09/24 at 0759.

For questions or comments regarding these results, please contact us at (941) 723-9986.

Results relate only to the samples.

Benchmark EA South
1001 Corporate Avenue, Suite 102
North Port, FL 34289
(941) 625-3137 / (800) 736-9986
(941) 423-7336 fax
Sample Temperature checked upon receipt at BEAS with Temperature Gun ID #7

Benchmark EA, Inc.
1711 12th St. East
Palmetto, FL 34221
(941) 723-9986 / (800) 736-9986
(941) 723-6061-fax
Sample Temperature checked upon receipt at BEA with Temperature Gun ID #258

Client: **GHD Services, Inc.** (HSA ENG)
2675 Winkler Ave. Suite 180
Ft. Myers Fl 33901
Erik Isern (239) 215-3914 Shannon Tucker 239-210-8653
Email EDD Reports to: Connor Haydon (Connor.Haydon@ghd.com)
2023 PO# Q1024

Kit Shipped to client via UPS Standard in 1 large cooler

Jessica - Walsh

Chain of Custody Form: Treviso Lakes WQM

Project Number: 11225022-09

Profile: 840, QC Report

Laboratory Submission #: 24020572

Station ID	Sample Type[1]	Sample Matrix[2]	Parameters, Preservative[4], Container Type[3] / Total # of Containers = 4				Laboratory Submission #
			Unique bottle ID 1A	Unique bottle ID 1B	Unique bottle ID 1C	Unique bottle ID 1D	
			NO_3-NO_2 (353.2) TKN (351.2) NH_3 (350.1) TP (365.3) T-N (Calc.)	BOD5 (SM5210B) TSS (SM2540D)	Ortho-Phos (Lab Filtered) (365.3)	Chlorophyll a (445.0) Filtered @ BEAS 2/9/24 0759	
			1.1mL 1:4 H_2SO_4 pH<2 ☐ Lot # 23-21	Plain	Plain	Plain	
			1 x ½ Pint Plastic	1 x 2 Quart Plastic	1 x ½ Pint Plastic	1 x 500mL Opaque Plastic	
Lake 4	Grab	SW	Date/Time: 2/8/24 • 1040	•	•	•	1
Lake 5	Grab	SW	Date/Time: •	• 1105	•	•	2
Lake 22	Grab	SW	Date/Time:	• 1135	•	•	3
Lake 32	Grab	SW	Date/Time:	• 1150	•	•	4
Lake 12	Grab	SW	Date/Time:	• 1210	•	•	5
Lake 14	Grab	SW	Date/Time: •	• 1230	•	•	6

Notes:
1. "Sample Type" is used to indicate whether the sample was a grab (G) or whether it was a composite (C).
2. "Sample Matrix" is used to indicate whether the sample is being discharged to drinking water (DW), groundwater (GW), surface water (SW), fresh surface water (FSW), saline surface water (SSW), soil, sediment (SDMNT), or sludge (SLDG).
3. "Container Type" is used to indicate whether the container is plastic (P) or glass (G).
4. **Sample must be refrigerated or stored in wet ice after collection. The temperature during storage should be less than or equal to 6°C (42.8°F).**
5. Under "Preservative," list any preservatives that were added to the sample container. Lot Number of preservative used is specific to the bottles included in the kit. NaThio, H_2SO_4 and HNO3 do not have expiration dates per the manufacturer. Micro bottles are pre-preserved at manufacturing stage. 40mL vials are pre-preserved at manufacturing stage.
6. 2 Quart plastic bottles are not certified.

Instructions:
1. Each bottle has a label identifying sample ID, premeasured preservative contained in the bottle, sample type, client ID, and parameters for analysis.
2. The following information should be added to each bottle label after collection with permanent black ink: date and time of collection, sampler's name or initials, and any field number or ID.
3. All bottles not containing preservative may be rinsed with appropriate sample prior to collection.
4. The client is responsible for documentation of the sampling event. Please note special sampling events on the sample custody form.
5. Sample kit has been created by BEA using new, certified bottles unless otherwise noted.

Laboratory Sample Acceptability:
pH <2 : ✓ BEA Temperature: 0.8°C BEAS Temp: 5.4°C

	Relinquished By & Affiliation: (Print & Sign)	Date:	Time:	Received By & Affiliation: (Print & Sign)	Date:	Time:
1	Jessica Walsh	1435	2/8/24	Brooke Kwaternick BEAS	2/8/24	1435
2	Brooke Kwaternick BEAS	2/9/24	1146	Steven Nelder BEA	2/9/24	1146
3	Steven Nelder BEA	2/9/24	1440	Kera McGowan BEA	2/9/24	1440
4						
5						

Approved

BENCHMARK
EnviroAnalytical, Inc.

NELAP Certification #E84167

Submission Number: 24020572

Project Name: TREVISO LAKES WQM

QC REPORT

SUBMISSION NUMBER	SAMPLE NUMBER	METHOD	ANALYTE	ANALYSIS DATE/TIME	QC FLAG	QC VALUE	SAMPLE RESULT	LR RESULT	LR %RSD	SPK RESULT	STD-SPK %REC
24020505 - 07B	708773	350.1	AMMONIA NITROGEN	02/13/2024 18:56	LR		0.153	0.145	3.79		
		350.1	AMMONIA NITROGEN	02/13/2024 18:00	MB	0.00	0.000				
24020539 - 005	708833	350.1	AMMONIA NITROGEN	02/13/2024 18:30	SPK	1.00	0.000			0.952	93.4
		350.1	AMMONIA NITROGEN	02/13/2024 19:36	STD	1.00	1.070				107.0
24020270 - 001	708430	351.2	TOTAL KJELDAHL NITROGEN	02/19/2024 10:19	LR		55.100	58.700	4.50		
		351.2	TOTAL KJELDAHL NITROGEN	02/19/2024 16:32	MB	0.00	0.000				
24020569 - 001	708888	351.2	TOTAL KJELDAHL NITROGEN	02/19/2024 16:35	SPK	2.00	2.650			4.480	91.8
		351.2	TOTAL KJELDAHL NITROGEN	02/19/2024 17:21	STD	2.00	2.020				101.0
24020531 - 001	708815	365.3	ORTHO PHOSPHORUS AS P	02/09/2024 11:45	LR		3.560	3.310	4.97		
		365.3	ORTHO PHOSPHORUS AS P	02/09/2024 16:44	MB	0.00	0.000				
24020489 - 001	708741	365.3	ORTHO PHOSPHORUS AS P	02/09/2024 11:33	SPK	0.20	0.250			0.443	96.8
		365.3	ORTHO PHOSPHORUS AS P	02/09/2024 18:08	STD	0.20	0.219				109.0
24020567 - 002	708885	365.3	TOTAL PHOSPHORUS AS P	02/12/2024 09:32	LR		2.010	1.910	3.60		
		365.3	TOTAL PHOSPHORUS AS P	02/12/2024 18:00	MB	0.00	0.000				
24020652 - 002	709008	365.3	TOTAL PHOSPHORUS AS P	02/12/2024 20:08	SPK	0.20	0.183			0.383	100.0
		365.3	TOTAL PHOSPHORUS AS P	02/12/2024 17:47	STD	0.20	0.190				95.0
24020374 - 001	708585	445.0	CHLOROPHYLL A	02/15/2024 11:00	LR		1.446	1.480	1.66		
		445.0	CHLOROPHYLL A	02/15/2024 11:00	MB	0.00	0.000				
		445.0	CHLOROPHYLL A	02/15/2024 11:00	STD	56.54	52.848				93.5
24020567 - 001	708884	SM2540D	TOTAL SUSPENDED SOLIDS	02/12/2024 09:28	LR		128.000	116.000	6.96		
		SM2540D	TOTAL SUSPENDED SOLIDS	02/12/2024 09:28	MB	0.00	0.000				
		SM2540D	TOTAL SUSPENDED SOLIDS	02/12/2024 09:28	STD	951.00	952.000				100.1
24020544 - 001	708855	SM5210B	BIOCHEMICAL OXYGEN DEMAND	02/09/2024 13:28	LR		1390.000	1300.000	4.73		0.0
		SM5210B	BIOCHEMICAL OXYGEN DEMAND	02/09/2024 13:28	MB	0.00	0.000				
		SM5210B	BIOCHEMICAL OXYGEN DEMAND	02/09/2024 11:56	STD	198.00	192.500				97.2

QC FLAGS: MB or BLK = METHOD BLANK LR = LAB REPLICATE MSD = MATRIX SPIKE DUPLICATE STD or LCS = STANDARD SPK or MS = MATRIX SPIKE

SUBMISSION NUMBER	SAMPLE NUMBER	METHOD	ANALYTE	ANALYSIS DATE/TIME	QC FLAG	QC VALUE	SAMPLE RESULT	LR RESULT	LR %RSD	SPK RESULT	STD-SPK %REC
24020489 - 001	708741	SYSTEA EASY	NITRATE+NITRITE AS N	02/12/2024 12:31	LR		2.400	2.500	3.01		
		SYSTEA EASY	NITRATE+NITRITE AS N	02/12/2024 12:21	MB	0.00	0.000				
24020535 - 001	708823	SYSTEA EASY	NITRATE+NITRITE AS N	02/12/2024 12:08	SPK	2.00	0.660			2.760	105.0
		SYSTEA EASY	NITRATE+NITRITE AS N	02/12/2024 12:22	STD	0.25	0.234				93.7

Comments:

Data Compliance Report

March 08, 2024

To	Mr. Bruce Bernard Manager of Field Operations Calvin, Giordano & Associates, Inc. 1800 Eller Drive, Suite 600 Fort Lauderdale, FL 33316	**Contact No.**	716-205-1977
Copy to	File	**Email**	Sheri.Finn@ghd.com
From	Sheri Finn/eew/34	**Project No.**	11225022
Project Name	Treviso Bay Surface Water Sampling		
Subject	Analytical Results Compliance Report Surface Water Quality Monitoring Treviso Bay Naples, Florida February 2024		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Compliance Review

Samples were collected in February 2024 in support of the Treviso Bay Surface Water Quality Monitoring sampling. The analytical results are summarized in Table 1. All samples were prepared and analyzed within the method required holding times. The method blank results were non-detect. All reported laboratory control sample (LCS) analyses demonstrated acceptable accuracy. Laboratory duplicate analyses were performed for some analytes. All results were acceptable, indicating good analytical precision. The matrix spike (MS) results were evaluated per the laboratory limits. The MS analyses performed were acceptable, demonstrating good analytical accuracy.

Based on this compliance review, the results in Table 1 are acceptable for use.

Regards

Sheri Finn
Analyst

Surface Water Field Sheets

SURFACE WATER FIELD SHEET
Station Information

STATION ID: Lake 4

LOCATION: off of weir

DATE/TIME: 2/8/24 1040

ALL TIMES ARE: (ETZ) or CTZ (circle one)

WATERBODY TYPE: (Circle One)
- (Small Lake (>4 and <10HA) (collect samples in middle of open water))
- Large Lake (>10HA) (collect samples at selected location point)
- Small Stream (collect samples in representative area)
- Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 4.0 (feet) (Average of 2 measurements)

Sample Depth: 2.0 (feet)

STREAM FLOW: (Circle One if applicable) (No Flow) Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low (Normal) High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle (Dipper) Other

Field Measurements **Meter ID#** **Field Measurements Read By:** (initials)

Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg /L)	D O (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
1040	2.0	7.75	6.30	70.7	21.0	634	1.24
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg /L)	D O (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: —

Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, (clear,) partly cloudy, (windy)

PERSONNEL ON SITE: Jessica Walsh

REMARKS: Light layer of algae along SW bank, vegetation growth along perimeter

SURFACE WATER FIELD SHEET
Station Information

STATION ID: Lake 5

LOCATION: OFF OF bank

DATE/TIME: 2/8/24 1105

ALL TIMES ARE: (ETZ) or CTZ (circle one)

WATERBODY TYPE: (Circle One)
- (Small Lake (>4 and <10HA) (collect samples in middle of open water)
- Large Lake (>10HA) (collect samples at selected location point)
- Small Stream (collect samples in representative area)
- Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 4.0 (feet) (Average of 2 measurements)

Sample Depth: 2.0 (feet)

STREAM FLOW: (Circle One if applicable) (No Flow) Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low (Normal) High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle (Dipper) Other

Field Measurements **Meter ID#** **Field Measurements Read By:** (initials)

Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg/L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
1105	2.0	8.26	7.56	85.1	21.0	349.2	0.02
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg/L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: —

Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, (clear), partly cloudy, windy

PERSONNEL ON SITE: DW

REMARKS: No algal presence, light vegetation growth around perimeter

SURFACE WATER FIELD SHEET
Station Information

STATION ID: Lake 22

LOCATION: off of bank

DATE/TIME: 2/8/24 1135

ALL TIMES ARE: (ETZ) or CTZ (circle one)

WATERBODY TYPE: (Circle One)
- (Small Lake (>4 and <10HA) (collect samples in middle of open water))
- Large Lake (>10HA) (collect samples at selected location point)
- Small Stream (collect samples in representative area)
- Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 3.0 (feet) (Average of 2 measurements) Sample Depth: 1.5 (feet)

STREAM FLOW: (Circle One if applicable) (No Flow) Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low (Normal) High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle (Dipper) Other _____

Field Measurements **Meter ID#** **Field Measurements Read By:** (initials)

Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
1135	1.5	8.64	8.01	91.5	21.7	732	33.3
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: _____

Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, (clear), partly cloudy, windy

PERSONNEL ON SITE: JW

REMARKS: light vegetation growth, light regulated algae

SURFACE WATER FIELD SHEET
Station Information

STATION ID:	Lake 32
LOCATION:	OFF of Hook
DATE/TIME:	2/8/24 1150
ALL TIMES ARE:	(ETZ) or CTZ (circle one)

WATERBODY TYPE: (Circle One)
(Small Lake (>4 and <10HA) (collect samples in middle of open water)) Large Lake (>10HA) (collect samples at selected location point)
Small Stream (collect samples in representative area) Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 3.0 (feet) Sample Depth: 1.5 (feet)
(Average of 2 measurements)

STREAM FLOW: (Circle One if applicable) (No Flow) Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low (Normal) High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle (Dipper) Other

Field Measurements **Meter ID#** **Field Measurements Read By:** (initials)

Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
1150	1.5	8.21	6.74	78.1	22.5	512	1.24
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2: —

Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, (clear), partly cloudy, windy

PERSONNEL ON SITE: JW

REMARKS: No algal presence. Water appears to be turbid. Aerator is on

SURFACE WATER FIELD SHEET
Station Information

STATION ID:	Lake 12
LOCATION:	off of bank
DATE/TIME:	2/8/24 1210
ALL TIMES ARE:	(ETZ) or CTZ (circle one)

WATERBODY TYPE: (Circle One)
(Small Lake (>4 and <10HA) (collect samples in middle of open water)) Large Lake (>10HA) (collect samples at selected location point)
Small Stream (collect samples in representative area) Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 3.0 (feet) Sample Depth: 1.5 (feet)
(Average of 2 measurements)

STREAM FLOW: (Circle One if applicable) (No Flow) Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low (Normal) High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle (Dipper) Other

Field Measurements **Meter ID#** **Field Measurements Read By:** (initials)

Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg/L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
1210	1.5	8.28	6.70	77.5	22.1	907	2.32
Time (24 hr.)	Bottom Depth Collected (feet)	pH (SU)	D.O.(mg/L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)

*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2:

Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, clear, partly cloudy, windy

PERSONNEL ON SITE: JW

REMARKS: No algal growth present, light vegetation growth around perimeter

SURFACE WATER FIELD SHEET
Station Information

STATION ID:	Lake 14
LOCATION:	off E bank
DATE/TIME:	2/8/24 1230
ALL TIMES ARE:	(ETZ) or CTZ (circle one)

WATERBODY TYPE: (Circle One)
(Small Lake (>4 and <10HA) (collect samples in middle of open water)) Large Lake (>10HA) (collect samples at selected location point)
Small Stream (collect samples in representative area) Large River (collect samples in representative area)

Water Characteristics

TOTAL WATER DEPTH: 3.0 (feet) Sample Depth: 1.5 (feet)
(Average of 2 measurements)

STREAM FLOW: (Circle One if applicable) (No Flow) Flow within Banks Flood Conditions

WATER LEVEL: (Circle One) Low (Normal) High

WATER SAMPLE COLLECTION DEVICE (Circle One) Van Dorn Direct Grab with Sample Bottle (Dipper) Other

Field Measurements **Meter ID#** **Field Measurements Read By:** (initials)

Time (24 hr.)	Surface Depth Collected (feet)	pH* (SU)	D.O.(mg./L)	D.O. (%)	Temp (°C)	Conductivity (µmhos/cm)	Turbidity (NTU)
1230	1.5	8.41	6.06	72.0	23.1	1753	12.3
Time (24 hr.)	**Bottom Depth Collected (feet)**	**pH (SU)**	**D.O.(mg./L)**	**D.O. (%)**	**Temp (°C)**	**Conductivity (µmhos/cm)**	**Turbidity (NTU)**

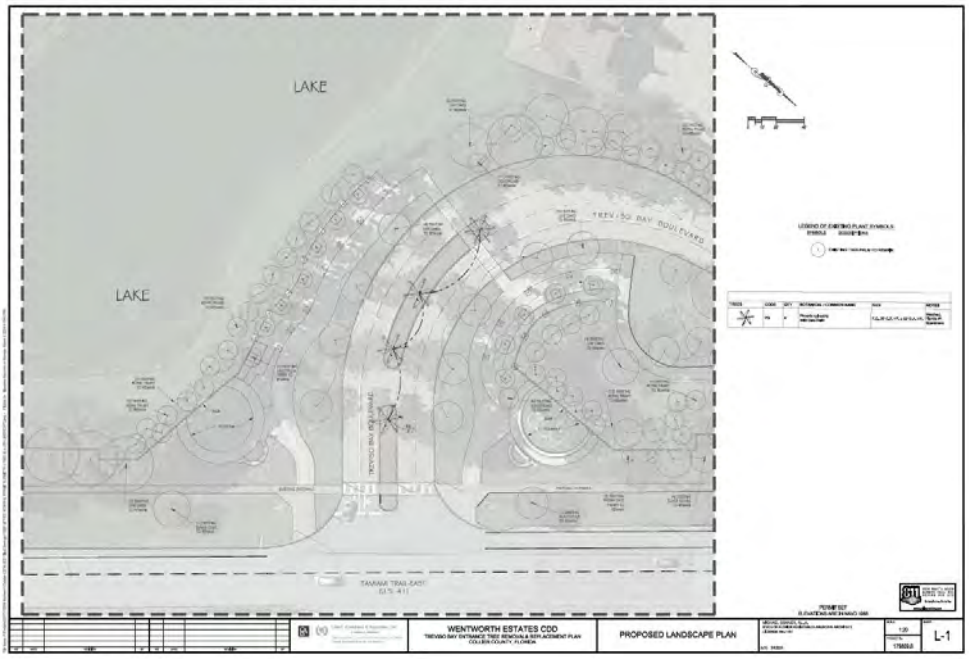
*pH of preserved sample: number of drops of sulfuric acid added in field to achieve pH of less than 2:

Samples immediately placed on ice? (Yes) No

WEATHER CONDITIONS: (circle) raining, (clear), partly cloudy, windy

PERSONNEL ON SITE: SW

REMARKS: Light vegetation growth, water appears to be cloudy (possibly suspended filamentous algae)



The four (4) oak trees proposed to be removed on the center median off US 41 just as you enter Treviso Bay

Suggested replacement for the oak trees.

B. Southwest Boulevard

- Landscape vendor mowed grass, discarded dead palm fronds and trimmed hedges along Southwest Boulevard. Maintenance is ongoing and occurs every other week.

2. ***Lake Maintenance***

- During this month's visits sites 1-24, 29, 30, and 32-39 were selectively targeted for shoreline weeds in the littorals and on open banks. Targets included torpedo grass, cattails, vines, sedge, primrose, pennywort, and alligator weed.

- Lake 39 was treated for floating weeds (mosquito fern). Lake 27 received a contact treated for water lilies (floating crested heart).

- Surface algae was treated multiple times in lakes 4, 5, 6, 7, 8, 13, 16, and 17. Most of the algae observed was a result of previous Chara treatments. Chara continues to remain one of the primary submersed targets on site. Lakes 4, 5, 6, and 7 will need continuous monitoring. Additional treatment will be conducted if necessary.

- Lakes 20, 21 and 42 received multiple contact treatments this month targeting hydrilla and Illinois pondweed. The sonar treatment is scheduled for April 2nd.

- Sampling of all 14 lakes was completed on 2/29. Overall, the lakes are in fairly good condition. A few of the lakes had low dissolved oxygen and aeration was recommended.

- The gulf spike rush in lake number 15 has diminished significantly. Additional treatments are still required.

- The next quarterly inspection will be completed in April.

- Water levels are higher than usual this month due to recent rain.

- Between the tri annual water quality testing reports, the recent report received from the aquatic vendor and the problematic history of the lakes. The analysis of the reports suggest that there are several lakes that would benefit from aeration. Aeration can be bubblers or fountains or combination of both. When it comes to larger lake fountains are perforable because they supply an astatic look on top of providing dissolved oxygen, when it comes to smaller lake bubblers are preferable as you do not get a lot of water sloss on windy days and the acreage of the lakes benefits more for bubblers due to stagnant waters. After adding in all consideration, lakes with low dissolved oxygen lakes and that have been problematic in the past are 7, 14, 15, 20, 21, 28, 4, 22 and 42. These lakes need to have some sort of circulating oxygen to benefit the overall health of the lakes. CDD staff has put together a 5-year capital plan based of the information provided to help with astatic needs and the overall health of the lakes that would benefit the community. Please see attached 5-year CIP and reporting that summarizes our findings. Lakes 7 and 15 are recommended for a fountain in Lake 15 and two aerators in Lake 7.

Lake 6 before treatment

Lake 6 after treatment

3. ***Entrance Maintenance***

- A proposal was created and approved to add new reflective signs to the existing signs at the front entrance of Treviso Bay Boulevard. The new signs are scheduled to be installed in late April.
- A green 6-foot gate and fencing was installed around the irrigation pump house to prevent unwanted company accessing the pump house equipment.

New gate fencing

4. Preserve Maintenance

- The Boardwalk is scheduled for pressuring cleaning and staining in late April. Work will take approximately a week to perform.

- Preserve vendor is scheduled to treat parcels 16-17 for invasive species removal and routine maintenance starting April 1-5.

- The annual Howard Parcel Annual Panther Monitoring Report has. This report is submitted to fulfill the mitigation monitoring requirements of the U.S. Fish and Wildlife Service (USFWS) for the Treviso Bay (FKA Wentworth Estates) development. *(Please see attached maps at the end of this report).*

5. Corrective Actions

- Dead palm fronds and other debris continue to be a nuisance along the boulevards (Treviso Bay Blvd and Southwest Blvd.) Landscape vendor need to routinely check for and properly dispose of debris to keep the walkways clean. Vendor has stated they will make a few extra trips a week to accomplish this goal.

- Selective areas of grass have a brownish appearance. Due to lack of irrigation, the landscape vendor was asked to redirect some irrigation heads to allow for these areas to also receive adequate irrigation. This issue is ongoing. Vendor has stated that they are having a hard time finding stock of replacement grass and mew grass is about three weeks out.

III. LOCATION MAP

Wentworth Estates CDD - Engineer's Report Asset Map

Wentworth Estates CDD

Enhanced Waterbody Assessment

Sample Date: 29 Feb 2024
Report Date: 13 Mar 2024

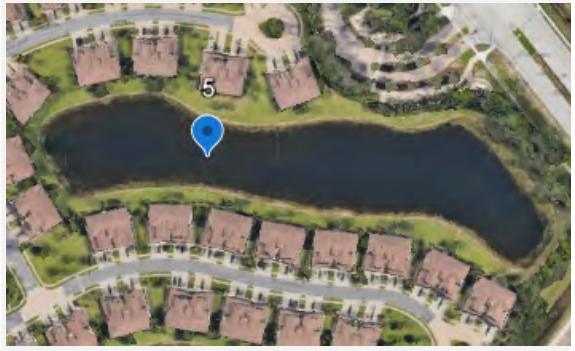
Field Biologist: Bailey Hill & Corey Williamson
Lab Analyst: Haley Canady

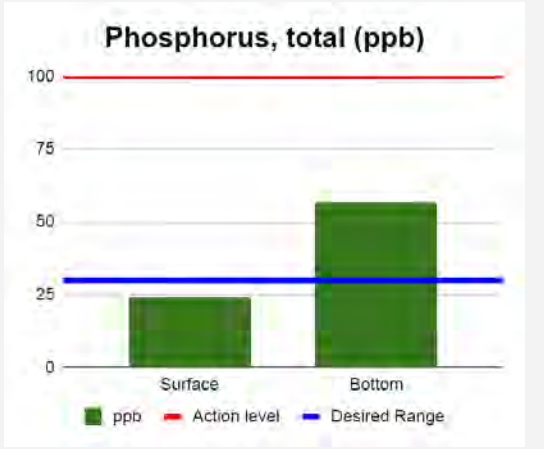
SOLITUDE LAKE MANAGEMENT
888.480.LAKE (5253)
Solitudelakemanagement.com

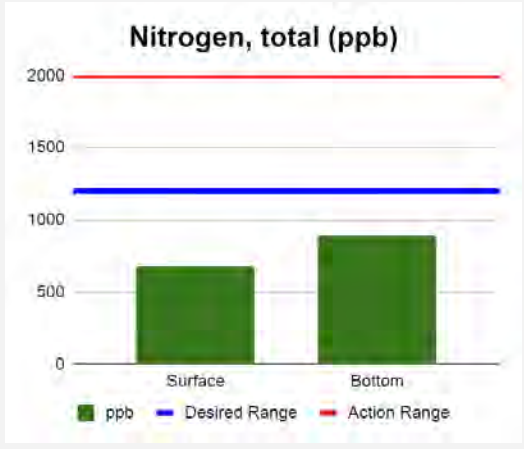
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #5

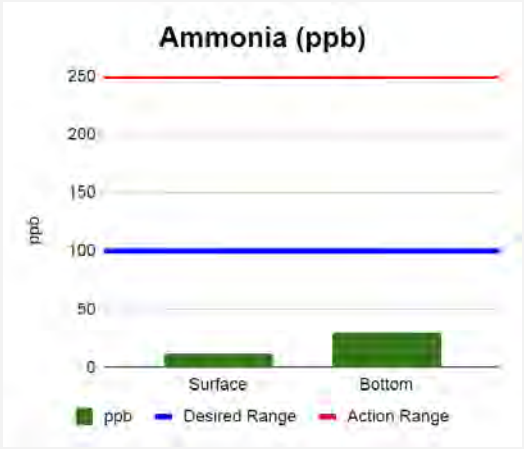
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**24**	**57**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**680**	**890**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**12**	**30**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**309**	**332**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**103**	**107**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.0**	**5.3**	**Borderline**
pH reading	6.5 - 8.5	**NA**	**8.3**	**8.0**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**< 5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**8.5**		**Healthy**



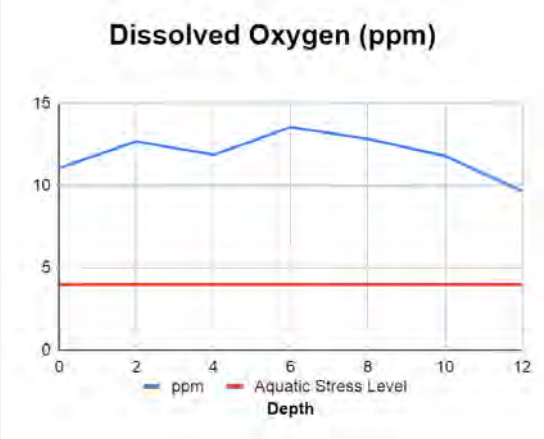


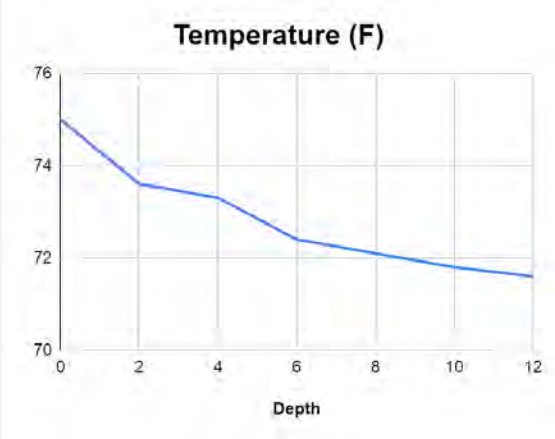




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #5

Sample Date: 29 Feb 2024





Water Column Profile

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.

Observations

Turbidity levels are slightly elevated at this site. Common causes may include, planktonic algae blooms, suspended decaying plant material, silts/clays, construction run-off, shoreline erosion, etc.. Further testing may be required to determine the specific cause.

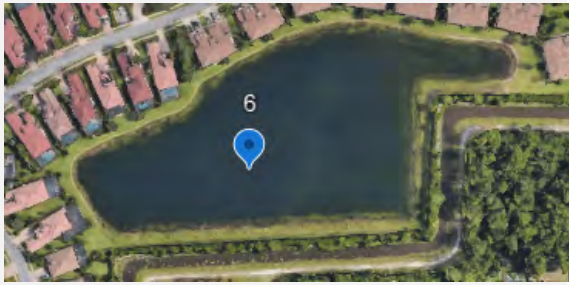
Recommendations

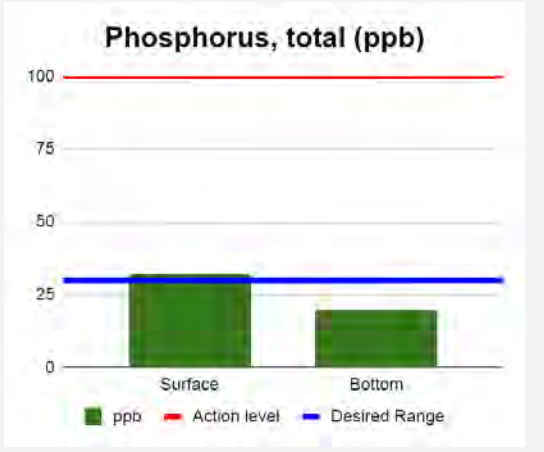
- **Watershed management**
- **Ongoing water quality monitoring**

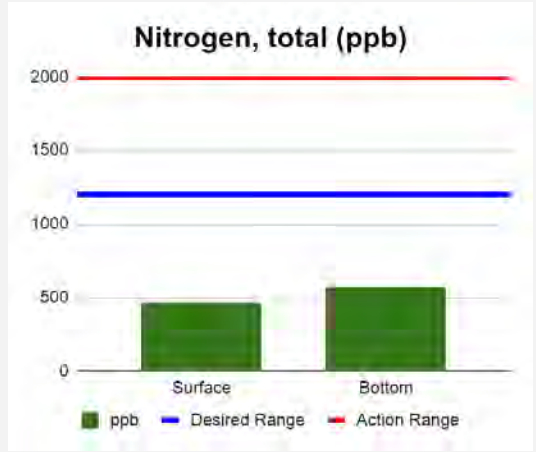
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #6

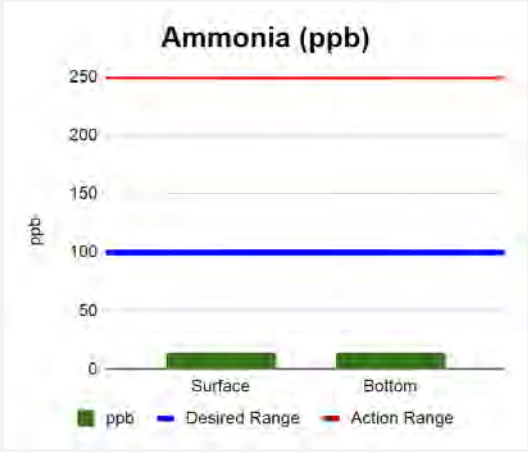
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**32**	**20**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**470**	**570**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**14**	**14**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**293**	**299**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**103**	**102**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.1**	**4.1**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.2**	**8.0**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**< 5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**11.5**		**Healthy**



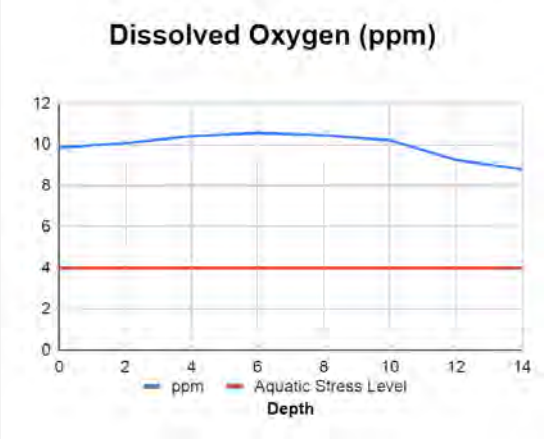


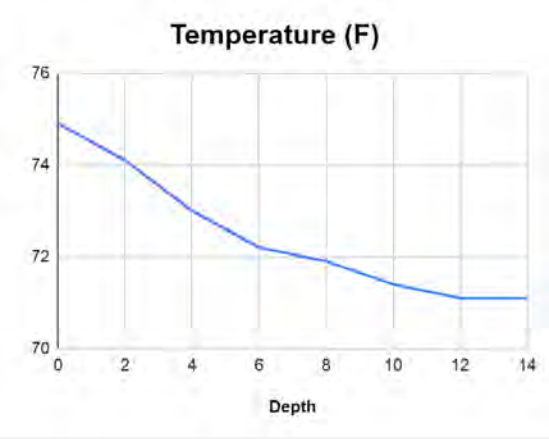




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #6

Sample Date: 29 Feb 2024





Water Column Profile

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.

Observations

All measured parameters are within the desired range for a healthy lake system. It is recommended to continue monitoring water quality since lakes are likely to experience seasonal variation.

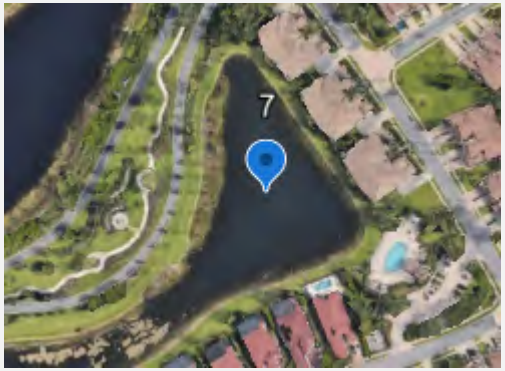
Recommendations

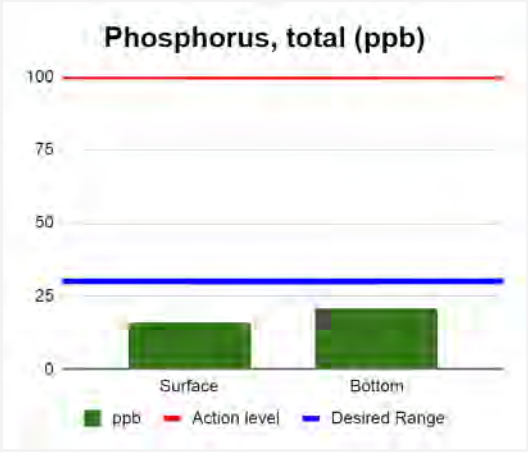
- **Watershed management**
- **Ongoing water quality monitoring**

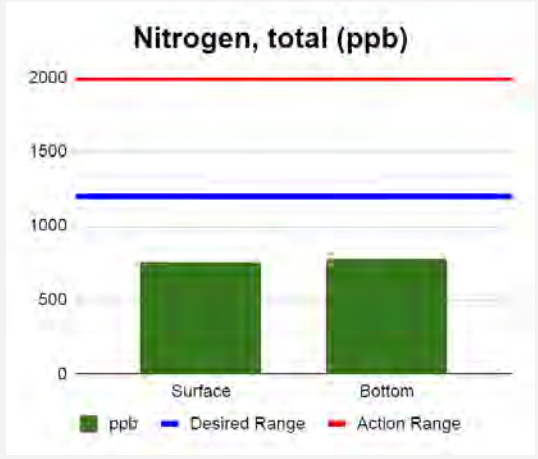
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #7

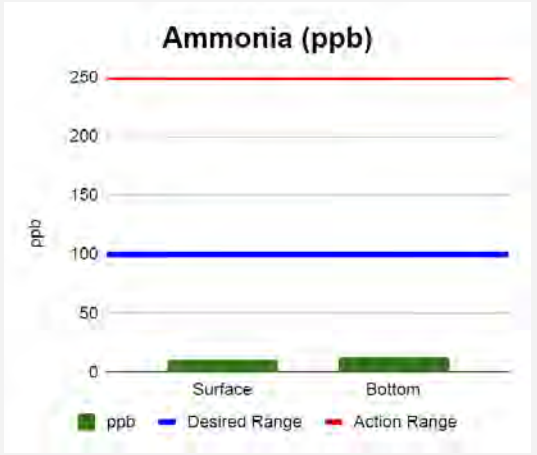
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**16**	**21**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**760**	**780**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**11**	**13**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**298**	**315**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**94**	**97**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.0**	**4.2**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.3**	**8.1**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**< 5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**11.5**		**Healthy**



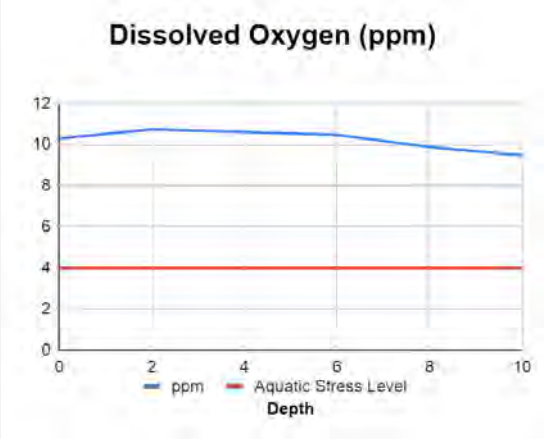


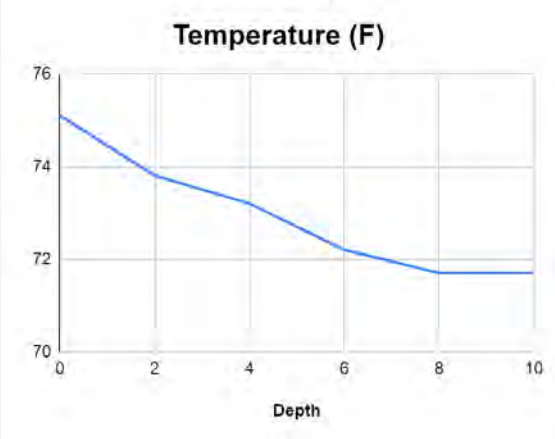




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #7

Sample Date: 29 Feb 2024





Water Column Profile

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.

Observations

All measured parameters are within the desired range for a healthy lake system. It is recommended to continue monitoring water quality since lakes are likely to experience seasonal variation.

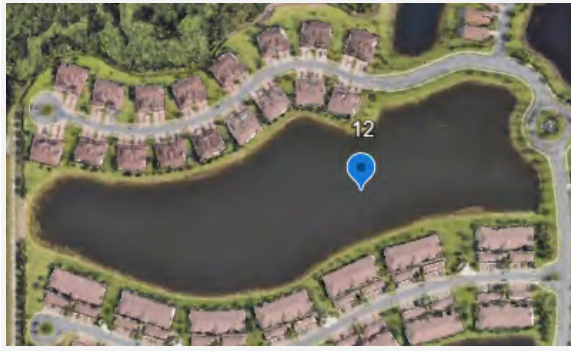
Recommendations

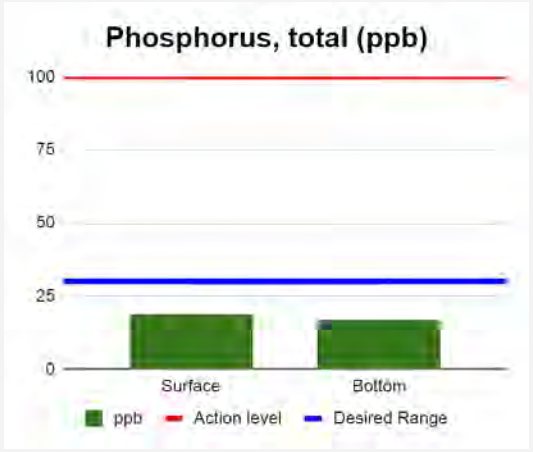
- **Watershed management**
- **Ongoing water quality monitoring**

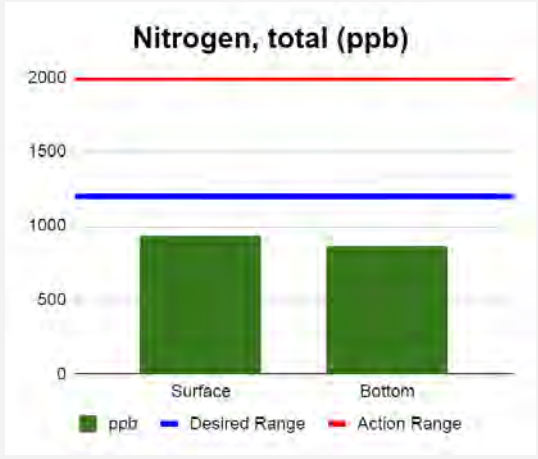
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #12

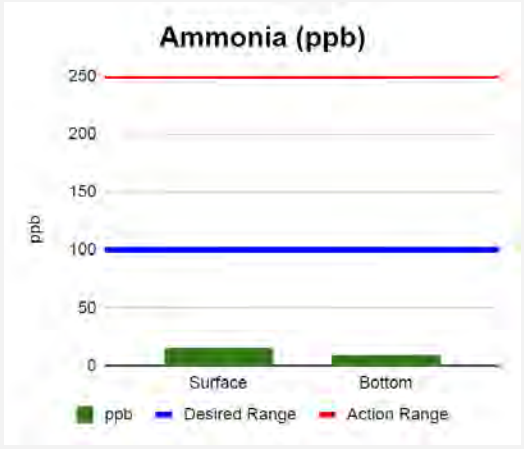
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**19**	**17**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**930**	**860**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**15**	**9**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**908**	**404**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**177**	**73**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.4**	**7.4**	**High**
pH reading	6.5 - 8.5	**NA**	**8.2**	**8.0**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**7**		**Healthy**



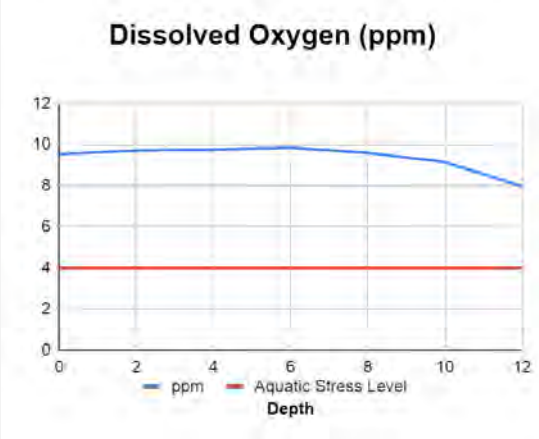


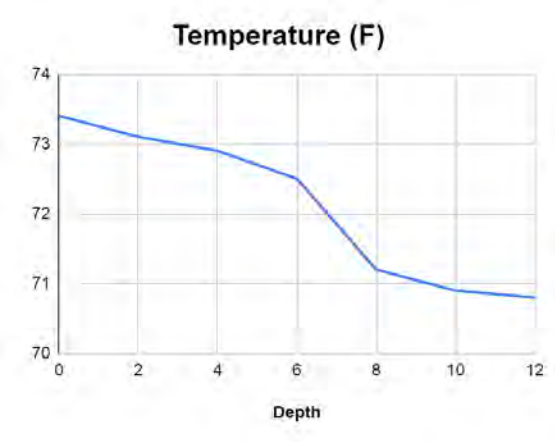




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #12

Sample Date: 29 Feb 2024





Water Column Profile

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.

Observations

Turbidity levels are slightly elevated at this site. Common causes may include, planktonic algae blooms, suspended decaying plant material, silts/clays, construction run-off, shoreline erosion, etc.. Further testing may be required to determine the specific cause.

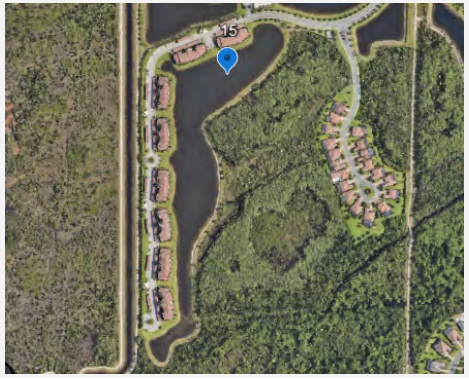
Recommendations

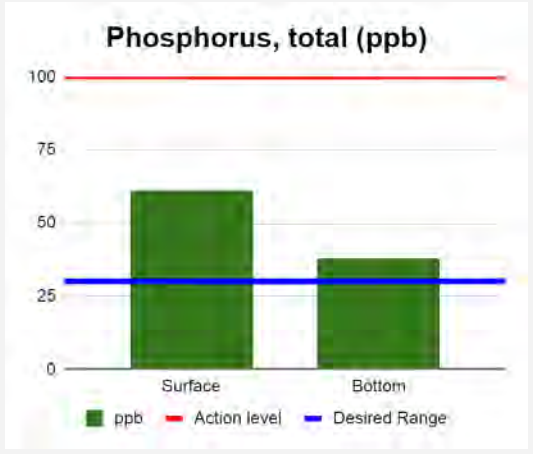
- **Watershed management**
- **Ongoing water quality monitoring**

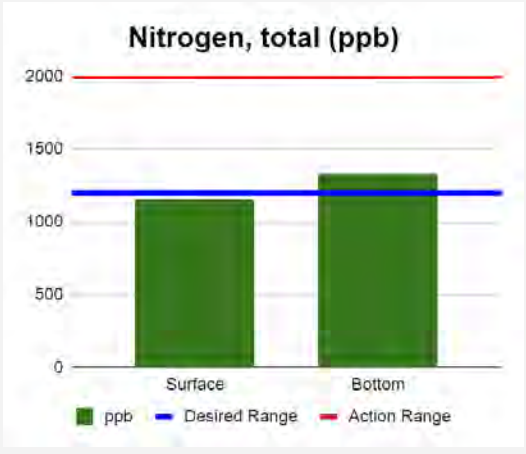
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #15

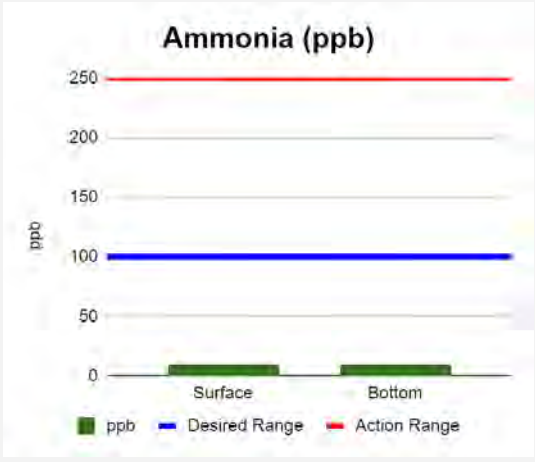
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**61**	**38**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**1,160**	**1,330**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**10**	**10**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**1,471**	**1,580**	**High**
Alkalinity, Total	> 80 ppm	**NA**	**148**	**156**	**Healthy**
Turbidity	< 5 NTU	**NA**	**4.1**	**4.4**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.4**	**8.0**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**< 5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**5**		**Healthy**



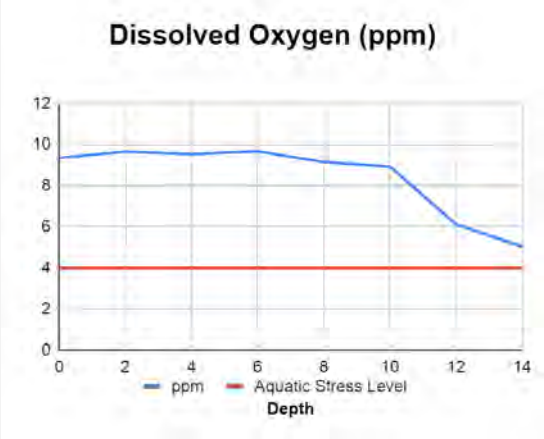


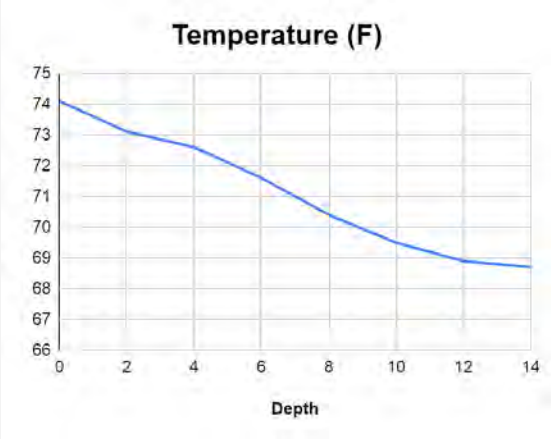




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #15

Sample Date: 29 Feb 2024





Water Column Profile

Reduced Oxygen & Temperature: The water column profiles show that oxygen and temperature both decrease slightly with depth. It is likely that this lake is in the process of stratifying. This often leads to fish kills, algae blooms, muck accumulation and foul odors.

Observations

Water quality analysis suggests that this site may be experiencing some salt water intrusion. Chloride, conductivity and total dissolved solids are indicators of most commonly salt water intrusion or in arid and northern climates salt concentration from roadways or reclaimed water charging.

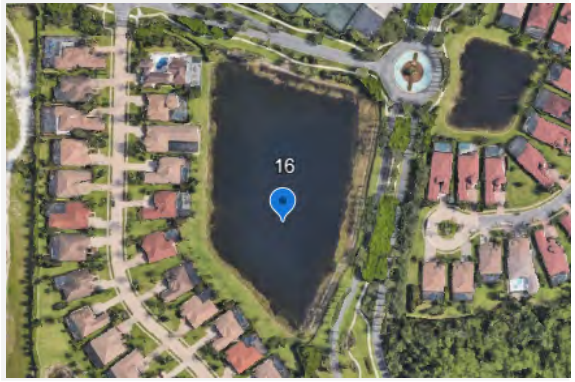
Recommendations

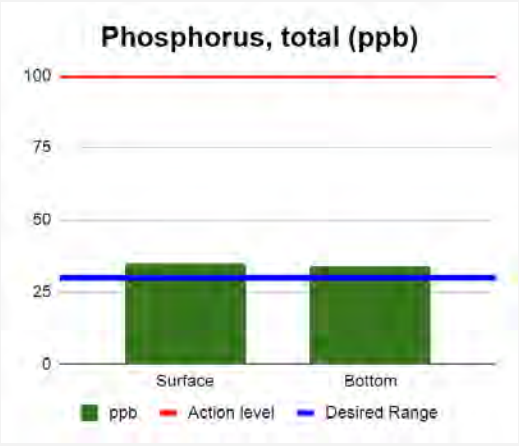
- **Aeration for increased dissolved oxygen**
- **Watershed management**
- **Ongoing water quality monitoring**

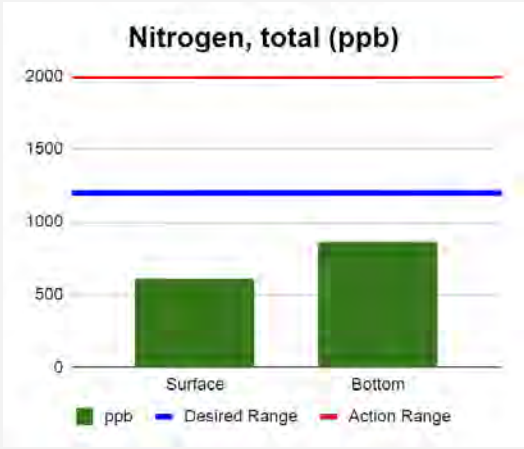
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #16

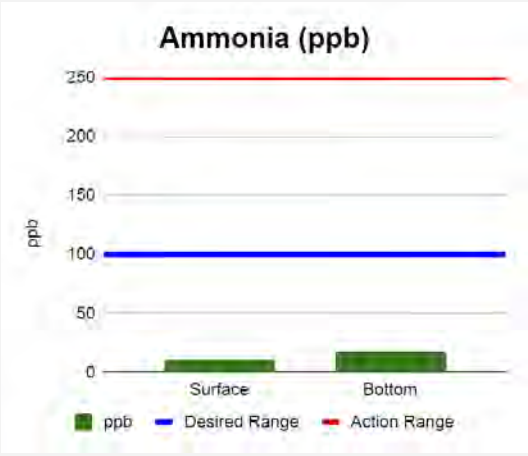
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**35**	**34**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**610**	**860**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**11**	**18**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**344**	**345**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**115**	**117**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.2**	**3.9**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.2**	**8.0**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**11**		**Healthy**



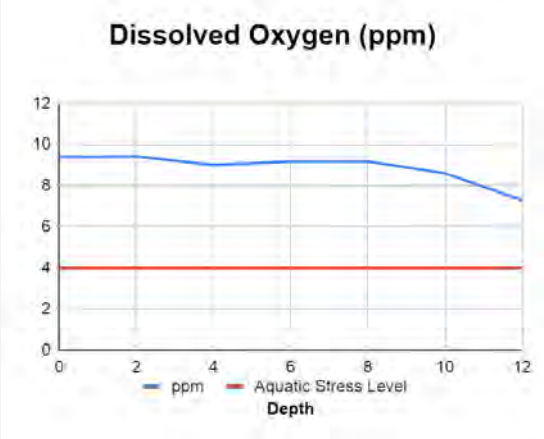


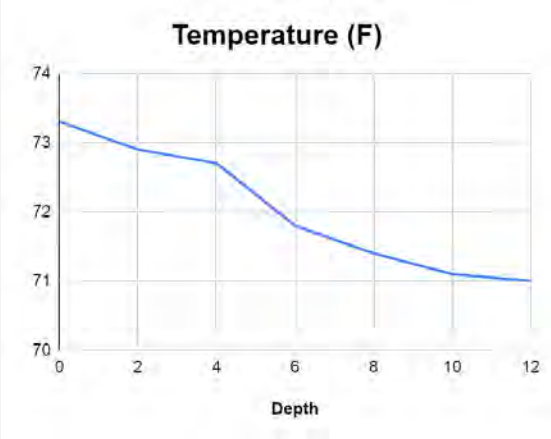




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #16

Sample Date: 29 Feb 2024





Water Column Profile

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.

Observations

All measured parameters are within the desired range for a healthy lake system. It is recommended to continue monitoring water quality since lakes are likely to experience seasonal variation.

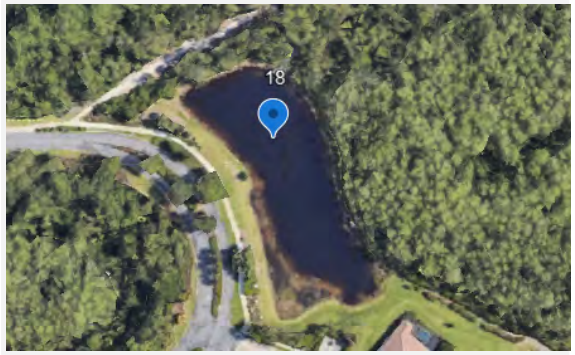
Recommendations

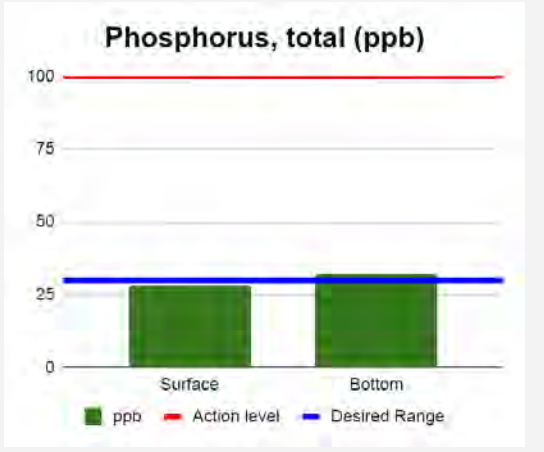
- **Watershed management**
- **Ongoing water quality monitoring**

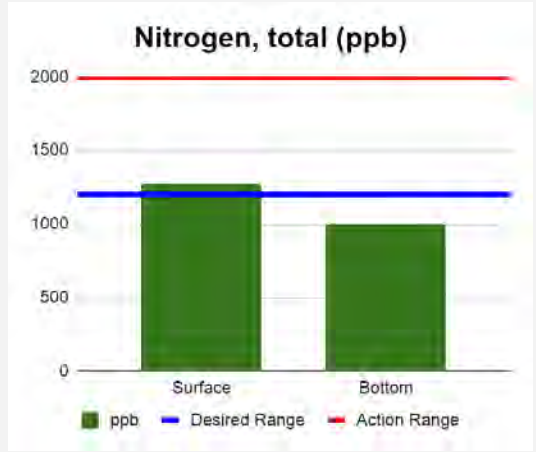
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #18

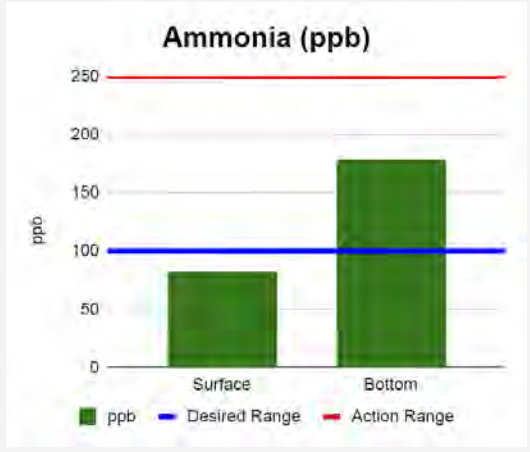
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**28**	**32**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**1,270**	**1,000**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**82**	**179**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**840**	**845**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**198**	**200**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.1**	**4.8**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.0**	**7.7**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**< 5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**8.5**		**Healthy**



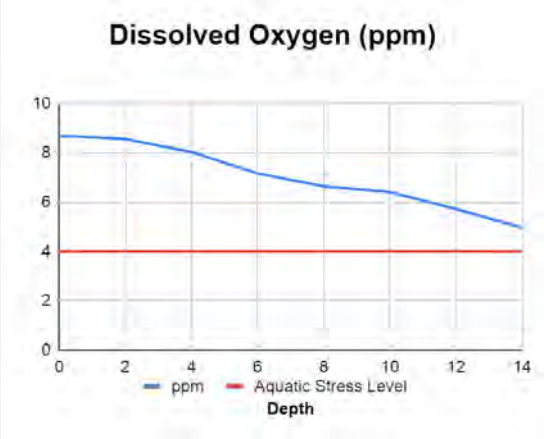


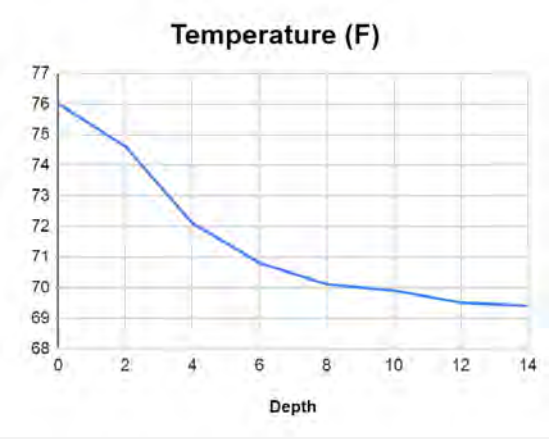




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #18

Sample Date: 29 Feb 2024





Water Column Profile

Reduced Oxygen & Temperature: The water column profiles show that oxygen and temperature both decrease slightly with depth. It is likely that this lake is in the process of stratifying. This often leads to fish kills, algae blooms, muck accumulation and foul odors.

Observations

Water quality analysis suggests that this site is experiencing reduced oxygen levels. When oxygen levels are low it can cause nutrients to leach out of the bottom sediments. It is recommended to install an aeration system in order to circulate the water column, increase oxygen levels and reduce nutrient availability.

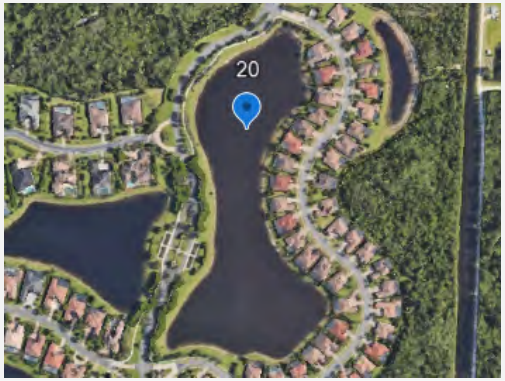
Recommendations

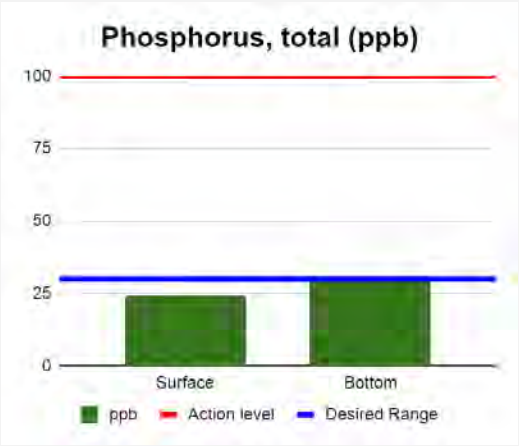
- **Aeration for increased dissolved oxygen**
- **Watershed management**
- **Ongoing water quality monitoring**

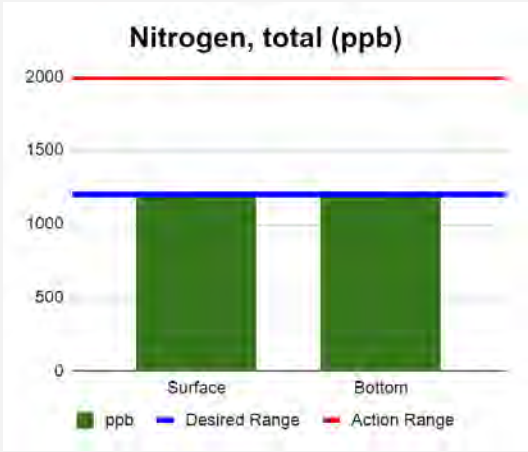
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #20

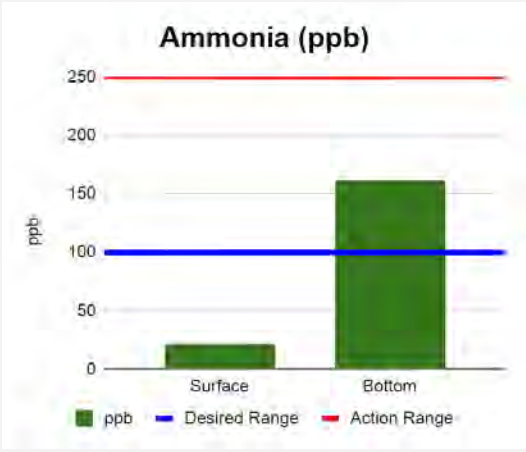
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**24**	**31**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**1,180**	**1,210**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**22**	**161**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**658**	**714**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**162**	**164**	**Healthy**
Turbidity	< 5 NTU	**NA**	**4.1**	**5.8**	**High**
pH reading	6.5 - 8.5	**NA**	**8.4**	**7.8**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**< 5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**4.5**		**Healthy**



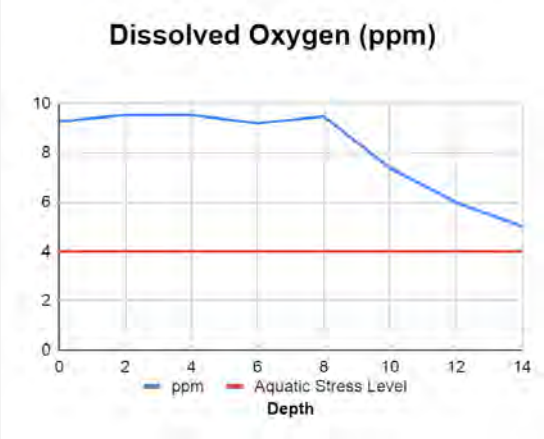


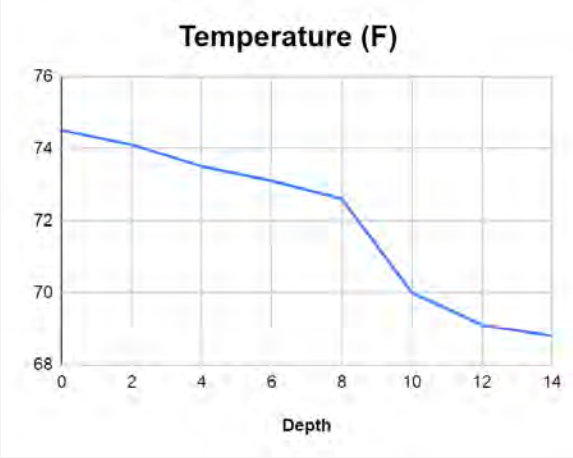




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #20

Sample Date: 29 Feb 2024





Water Column Profile

Reduced Oxygen & Temperature: The water column profiles show that oxygen and temperature both decrease slightly with depth. It is likely that this lake is in the process of stratifying. This often leads to fish kills, algae blooms, muck accumulation and foul odors.

Observations

Water quality analysis suggests that this site is experiencing reduced oxygen levels. When oxygen levels are low it can cause nutrients to leach out of the bottom sediments. It is recommended to install an aeration system in order to circulate the water column, increase oxygen levels and reduce nutrient availability.

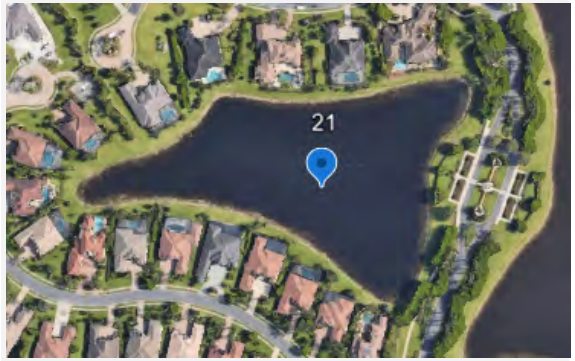
Recommendations

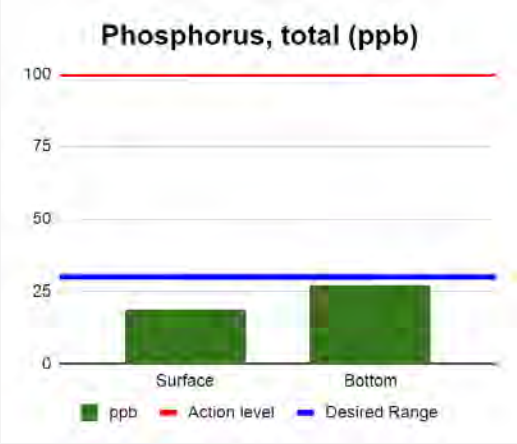
- **Aeration for increased dissolved oxygen**
- **Watershed management**
- **Ongoing water quality monitoring**

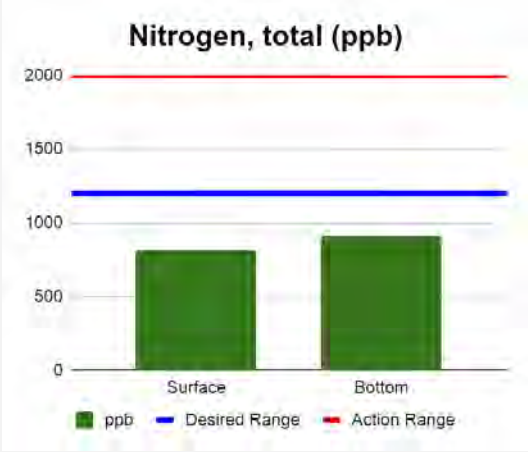
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #21

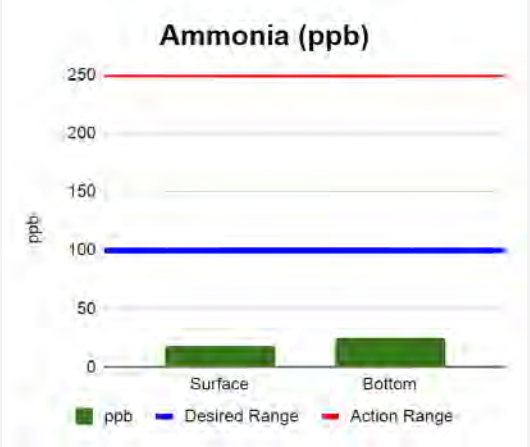
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**19**	**27**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**820**	**910**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**18**	**25**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**622**	**636**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**121**	**123**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.1**	**4.9**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.2**	**7.9**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**5**	**6**	**Healthy**
Secchi reading	> 4 feet	**NA**	**9.5**		**Healthy**



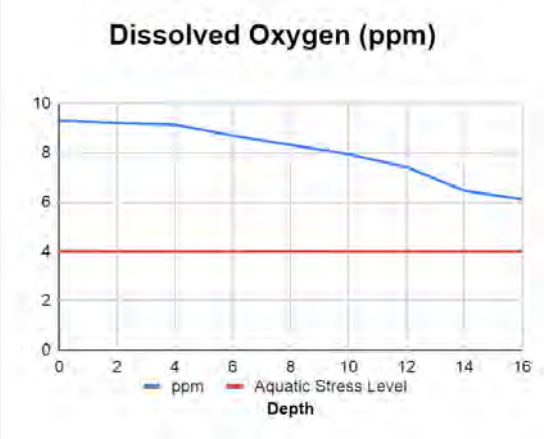


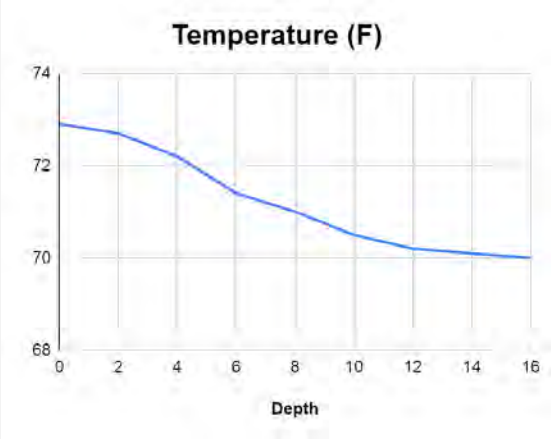




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #21

Sample Date: 29 Feb 2024





Water Column Profile

Reduced Oxygen & Temperature: The water column profiles show that oxygen and temperature both decrease slightly with depth. It is likely that this lake is in the process of stratifying. This often leads to fish kills, algae blooms, muck accumulation and foul odors.

Observations

Water quality analysis suggests that this site is experiencing reduced oxygen levels. When oxygen levels are low it can cause nutrients to leach out of the bottom sediments. It is recommended to install an aeration system in order to circulate the water column, increase oxygen levels and reduce nutrient availability.

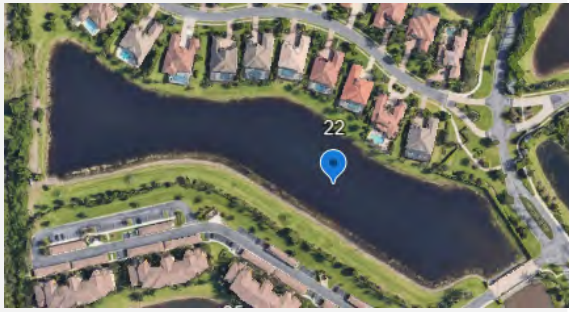
Recommendations

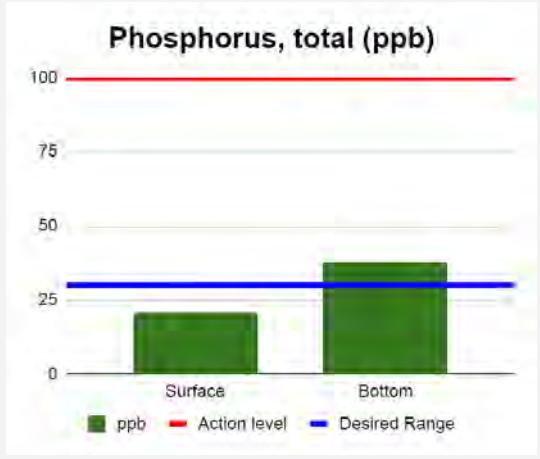
- **Aeration for increased dissolved oxygen**
- **Watershed management**
- **Ongoing water quality monitoring**

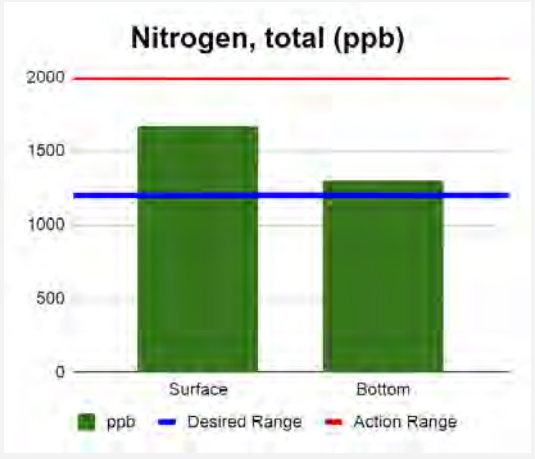
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #22

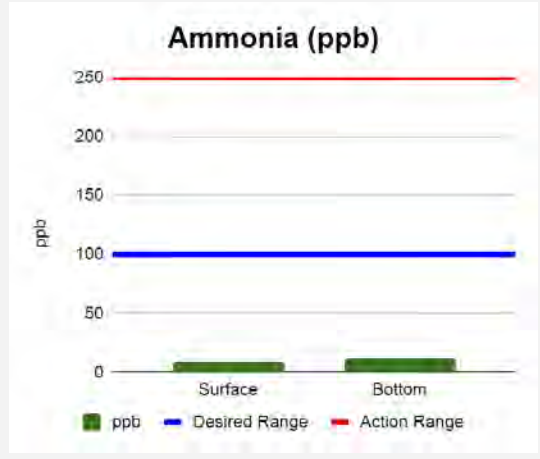
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**21**	**38**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**1,670**	**1,300**	**Borderline**
Ammonia	< 100 ppb	**> 250**	**9**	**12**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**735**	**746**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**121**	**124**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.3**	**3.4**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.3**	**8.1**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**8.5**		**Healthy**



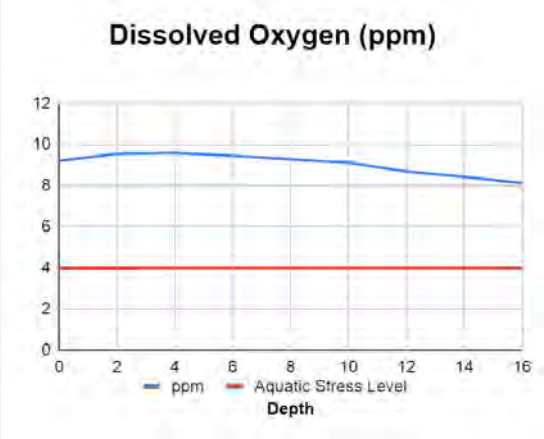


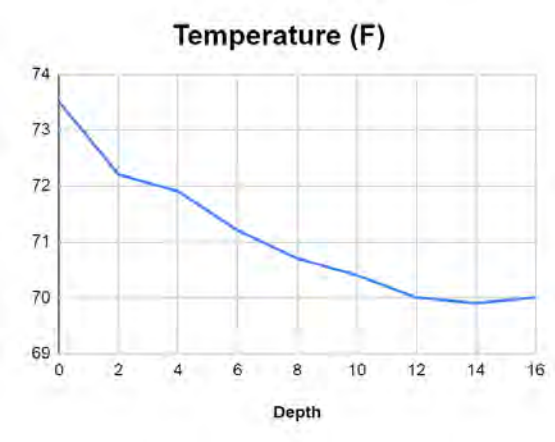




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #22

Sample Date: 29 Feb 2024





Water Column Profile

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.

Observations

Water quality analysis suggests that this site is experiencing slightly elevated nitrogen levels. Elevated nitrogen may be due to fertilizer runoff, decaying plant material, or low oxygen levels at the bottom of the water column.

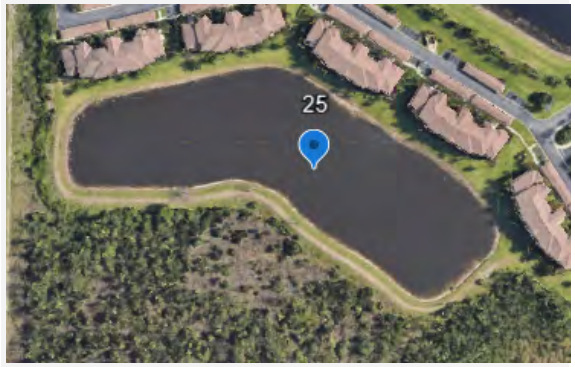
Recommendations

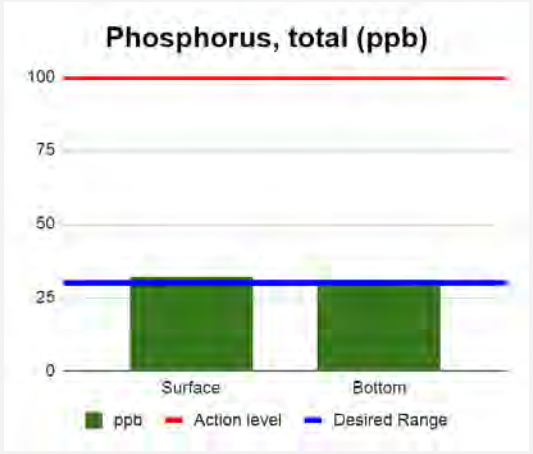
- **Nitrogen reduction**
- **Watershed management**
- **Ongoing water quality monitoring**

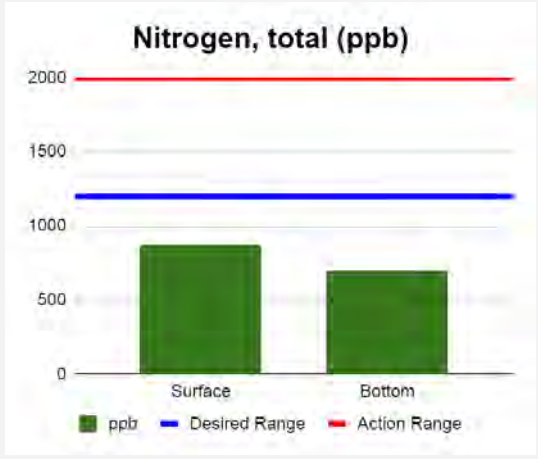
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #25

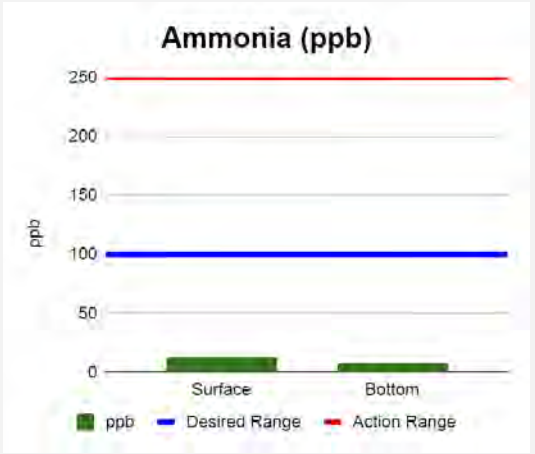
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**32**	**31**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**870**	**700**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**13**	**8**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**810**	**853**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**120**	**118**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.1**	**3.9**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.4**	**8.3**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**5**	**5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**9.5**		**Healthy**



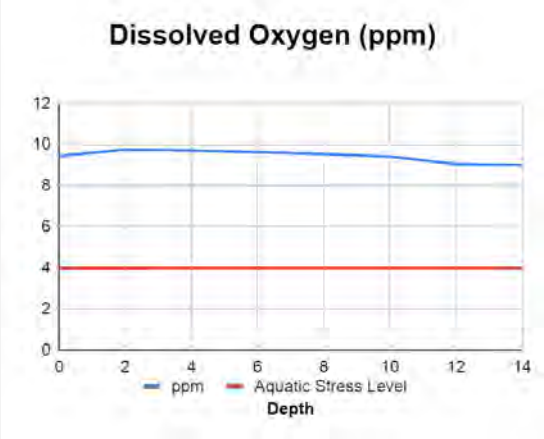


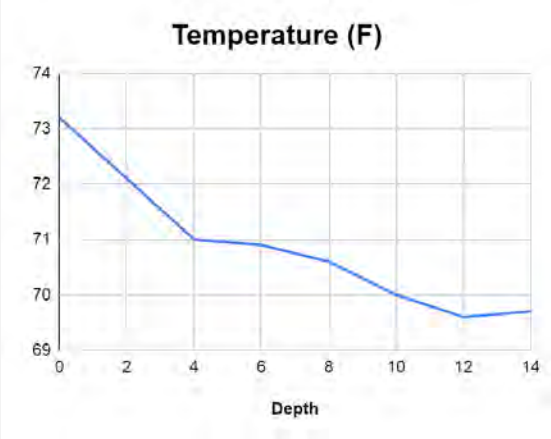




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #25

Sample Date: 29 Feb 2024





Water Column Profile

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.

Observations

All measured parameters are within the desired range for a healthy lake system. It is recommended to continue monitoring water quality since lakes are likely to experience seasonal variation.

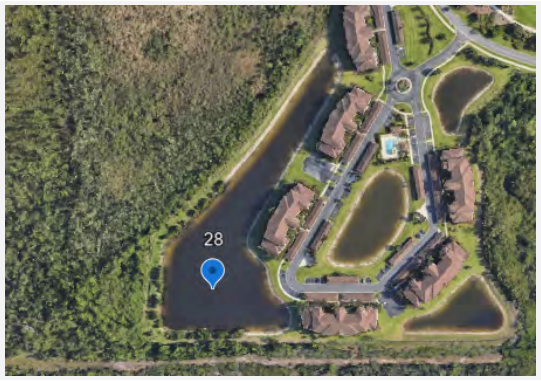
Recommendations

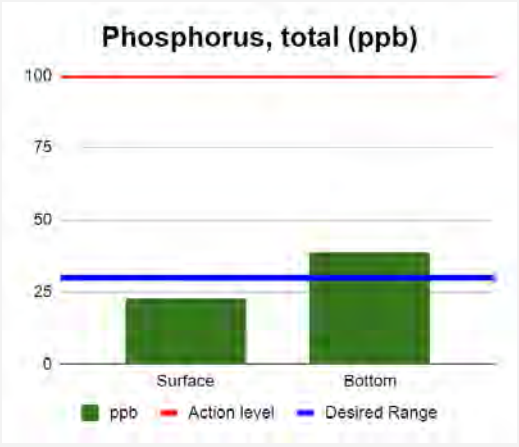
- **Watershed management**
- **Ongoing water quality monitoring**

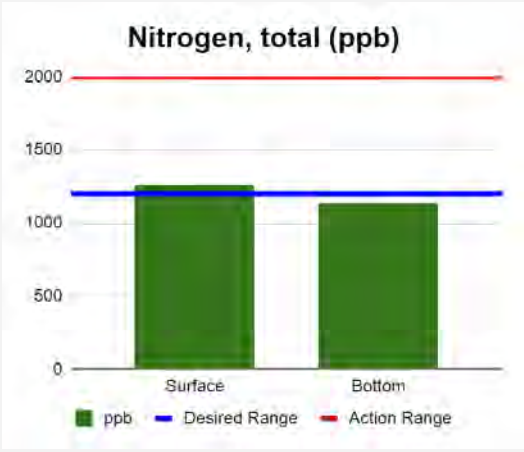
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #28

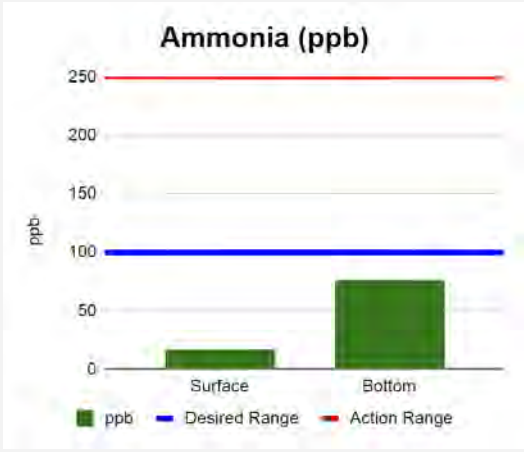
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**23**	**39**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**1,260**	**1,140**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**17**	**76**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**1,145**	**1,247**	**Borderline**
Alkalinity, Total	> 80 ppm	**NA**	**114**	**129**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.2**	**3.7**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.5**	**7.7**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**5**	**< 5**	**Healthy**
Secchi reading	> 4 feet	**NA**	**7.5**		**Healthy**



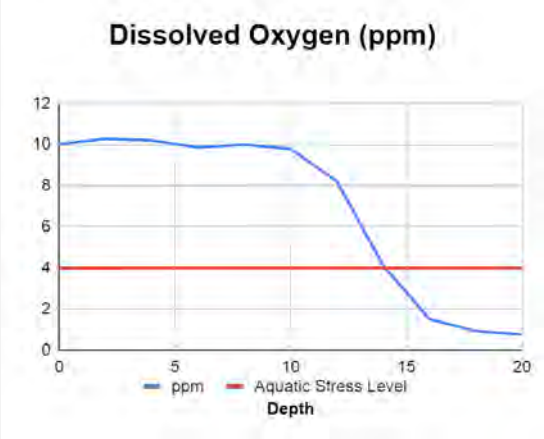


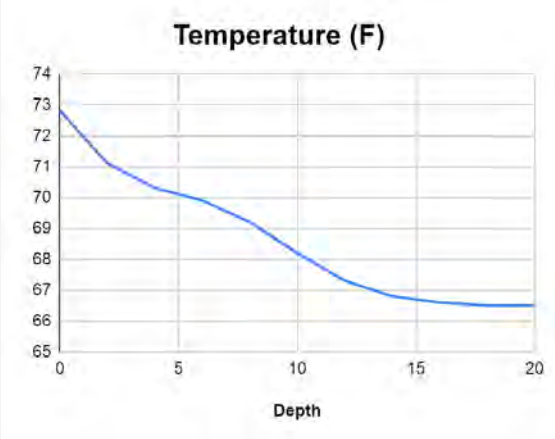




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #28

Sample Date: 29 Feb 2024





Water Column Profile

Stratified: The dissolved oxygen and temperature profile shows the water column is stratified into separate water temperature layers resulting in reduced oxygen concentrations at lower depths. This often leads to fish kills, algae blooms, muck accumulation and foul odors.

Observations

Water quality analysis suggests that this site is experiencing extreme stratification. When oxygen levels are low it can cause nutrients to leach out of the bottom sediments. It is recommended to install bottom-diffused aeration in order to circulate the water column, increase oxygen levels and reduce nutrient availability. When lakes become extremely stratified, they become at risk of a fish kill.

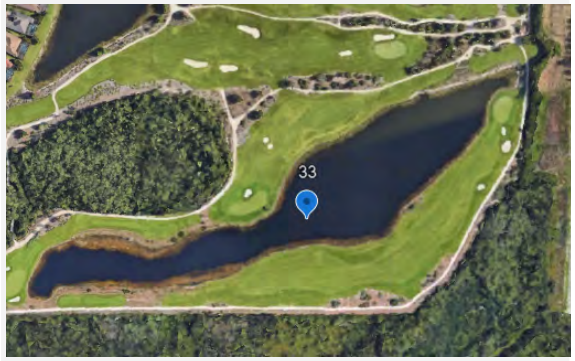
Recommendations

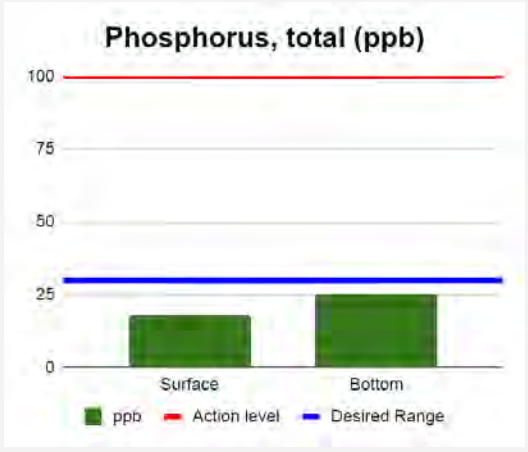
- **Aeration for destratification**
- **Watershed management**
- **Ongoing water quality monitoring**

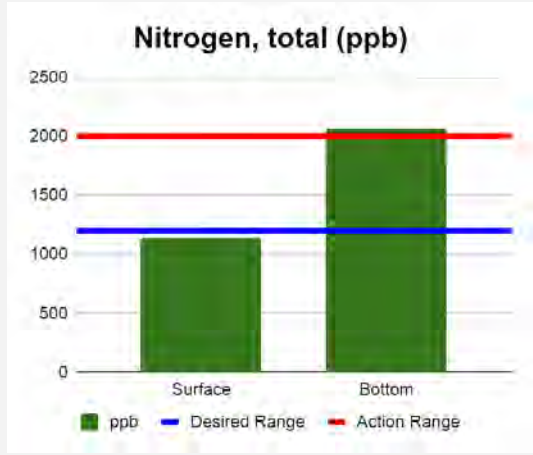
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #33

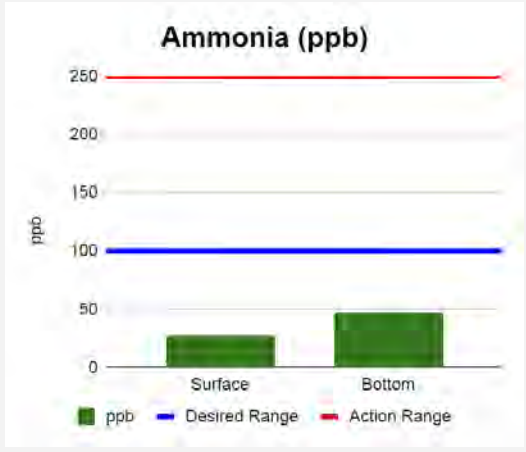
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**18**	**25**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**1,140**	**2,070**	**High**
Ammonia	< 100 ppb	**> 250**	**28**	**47**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**891**	**916**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**189**	**189**	**Healthy**
Turbidity	< 5 NTU	**NA**	**2.9**	**3.3**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.0**	**7.9**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**< 5**	**6**	**Healthy**
Secchi reading	> 4 feet	**NA**	**8.5**		**Healthy**



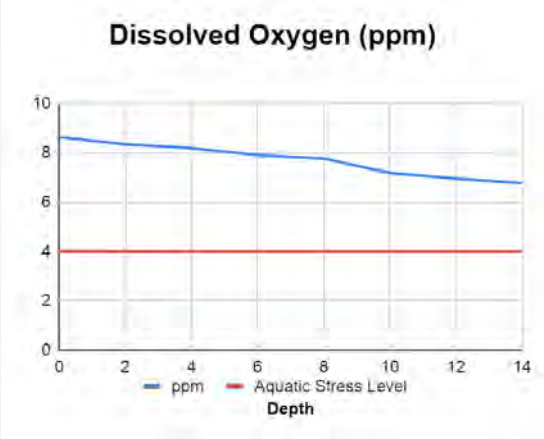


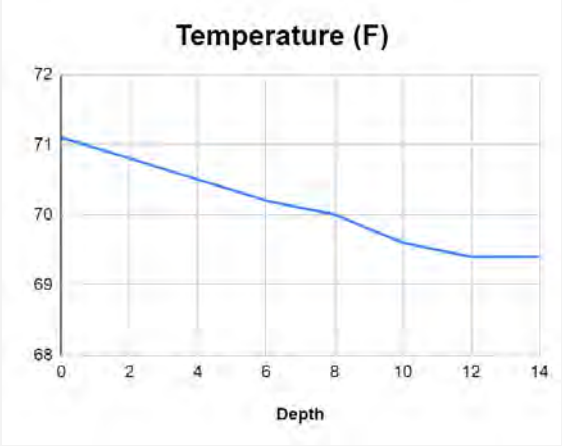




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #33

Sample Date: 29 Feb 2024





Water Column Profile

Reduced Oxygen & Temperature: The water column profiles show that oxygen and temperature both decrease slightly with depth. It is likely that this lake is in the process of stratifying. This often leads to fish kills, algae blooms, muck accumulation and foul odors.

Observations

Water quality analysis suggests that this site is experiencing elevated nitrogen levels. Elevated nitrogen may be due to fertilizer runoff, decaying plant material, or low oxygen levels at the bottom of the water column.

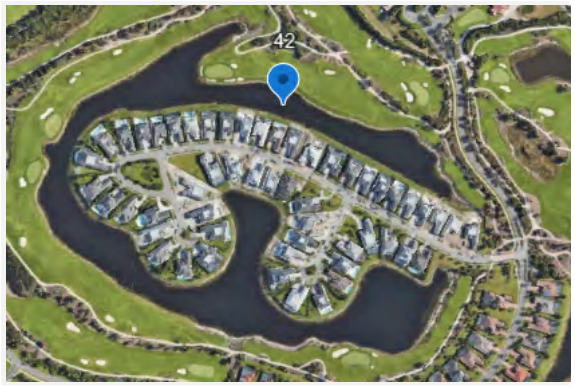
Recommendations

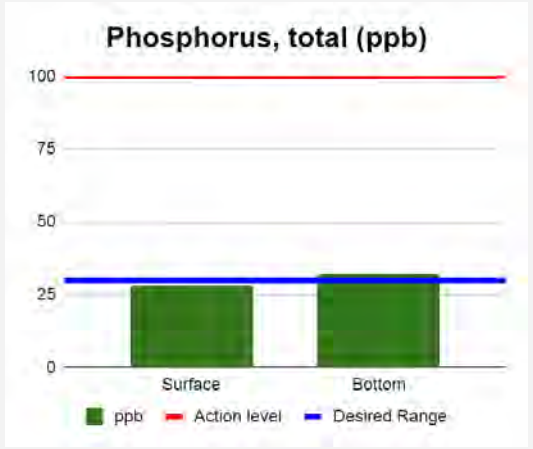
- **Nitrogen reduction**
- **Aeration for increased dissolved oxygen**
- **Watershed management**
- **Ongoing water quality monitoring**

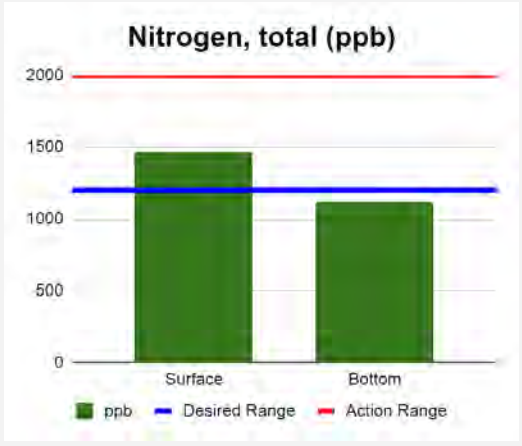
Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #42

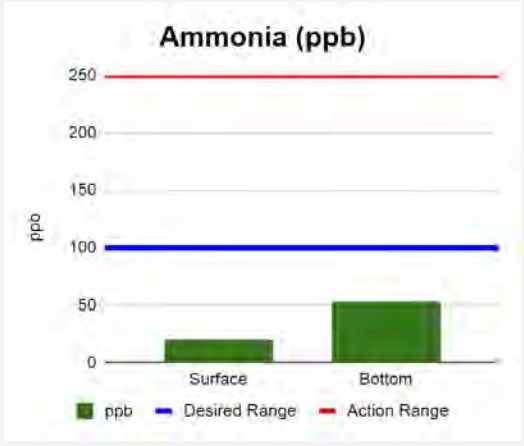
Sample Date: 29 Feb 2024

Test	Desired Range	Action Range	Surface	Bottom	This lake is
Phosphorus, Total	< 30 ppb	**> 100**	**28**	**32**	**Healthy**
Nitrogen, Total	<1,200 ppb	**> 2,000**	**1,470**	**1,120**	**Healthy**
Ammonia	< 100 ppb	**> 250**	**20**	**53**	**Healthy**
Conductivity	< 1,200 uS/cm	**NA**	**746**	**777**	**Healthy**
Alkalinity, Total	> 80 ppm	**NA**	**133**	**133**	**Healthy**
Turbidity	< 5 NTU	**NA**	**3.0**	**4.0**	**Healthy**
pH reading	6.5 - 8.5	**NA**	**8.2**	**8.0**	**Healthy**
Orthophosphate	< 30 ppb	**> 100**	**7**	**6**	**Healthy**
Secchi reading	> 4 feet	**NA**	**7.5**		**Healthy**



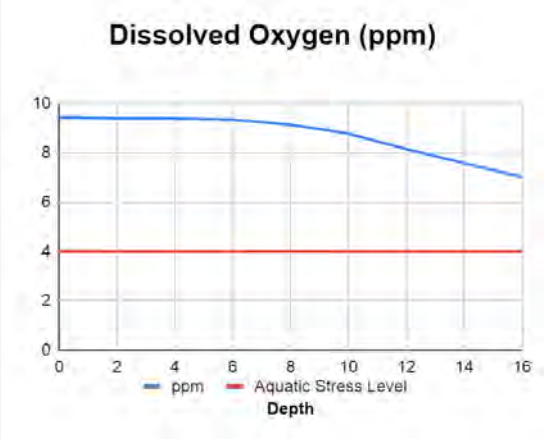


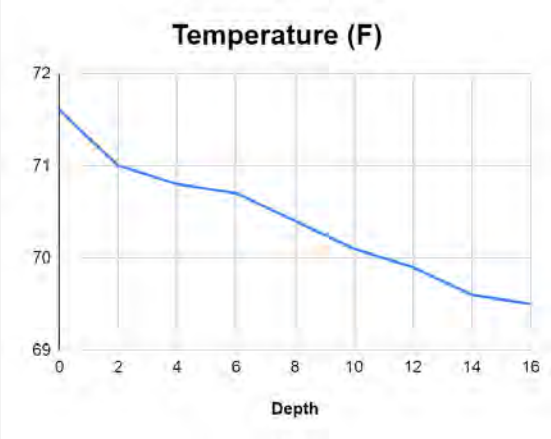




Enhanced Waterbody Assessment: Wentworth Estates CDD, Site #42

Sample Date: 29 Feb 2024





Water Column Profile

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.

Observations

All measured parameters are within the desired range for a healthy lake system. It is recommended to continue monitoring water quality since lakes are likely to experience seasonal variation.

Recommendations

- **Watershed management**
- **Ongoing water quality monitoring**

Enhanced Waterbody Assessment - Wentworth Estates CDD, Site Map

Sample Date: 29 Feb 2024

Please speak with your local SOLitude Lake Manager about the options for restoring balance in your aquatic resource.

Glossary

Water Quality Parameter	Desired Range	Action Level	Non-normal results may lead to	Common causes of non-normal levels
Phosphorus, total	< 30 ppb	> 100 ppb	Excessive algae growth, muck accumulation, nuisance midge fly population, unbalanced fishery, etc.	Reclaimed water discharge, landscape fertilizer runoff and agricultural drainage, phosphorus laden bottom sediments
Nitrogen, total	< 1,200 ppb	> 2,000 ppb	Excessive algae growth, muck accumulation, nuisance midge fly population, unbalanced fishery, etc.	Reclaimed water discharge, landscape fertilizer runoff and agricultural drainage, organic material input like grass clippings and leaf litter
Ammonia	< 100 ppb	> 250 ppb	May lead to fish and wildlife becoming unhealthy or passing, especially under high pH conditions	Organic decomposition, landscape/fertilizer runoff, and anoxic conditions (low oxygen), excessive waterfowl excrement
Dissolved Oxygen	> 4 ppm	N/A	Leads to nutrient recycling from the sediments (phosphorus), may cause fish kill events, foul odors, etc.	Stratification, higher than normal biological oxygen demand
Temperature	< 4 degree difference	N/A	Often leads to low dissolved oxygen, nutrient recycling, and unbalanced ecosystems	Natural processes
Alkalinity	> 80 ppm	N/A	Drastic pH swings and an unhealthy ecosystem to grow sportfish populations	Low background levels
Conductivity	< 1,200 uS/cm	N/A	Fish kills for salt intolerant species, damage to turf through irrigation, change in algae community (golden algae)	Salt water intrusion, road salt runoff, excessive additions of reclaimed / effluent water
Hardness	> 80 ppm	N/A	Buildup of solid material in water systems and an unhealthy environment for fish populations	Leaching of soil and rocks
Turbidity	< 5 NTU	N/A	Loss of clarity in water and in extreme conditions fish kills	Sediment run-off, bottom sediment in suspension, algae blooms, etc.
Secchi Disk	> 4 feet	N/A	Loss of clarity in water	Sediment run-off, bottom sediment in suspension, algae blooms, etc.
pH reading	6.5 - 8.5	N/A	Unbalanced ecosystems and potentially fish kill events	Watershed run-off, pool discharges, algae blooms, etc.

^The above thresholds are general goals that have been determined by decades of lake management experience from our lake management team and a variety of peer reviewed journal studies.

2024 ANNUAL
MITIGATION MONITORING REPORT

HOWARD PARCEL
Hendry County, Florida

U.S. Fish and Wildlife Service
Biological Opinion – Service Log No. 4-1-03-F-3915

U.S. Army Corps of Engineers
Permit No. SAJ-1998-06220

April 2024

Prepared by:

Ian Vincent & Associates
Environmental Consulting Services

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INTRODUCTION

This report is submitted to fulfill the mitigation monitoring requirements of the U.S. Fish and Wildlife Service (USFWS) for the Treviso Bay (FKA Wentworth Estates) development. The Treviso Bay site is a 1,044± acre development tract located within Collier County, Florida.

The USFWS issued a Biological Opinion (BO) for Treviso Bay (FKA Wentworth Estates) in accordance with Section 7 of the Endangered Species Act of 1973, as amended (ESA) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*) on March 25, 2005. The BO required mitigation to offset potential incidental effects the project may have on the endangered Florida panther (*Puma concolor coryi*). The USFWS required mitigation included the following: 1) preservation and enhancement of approximately 298.08 acres of Primary Zone panther habitat, known as the Howard Parcel, located in Hendry County; 2) purchase of 15.41 credits from the Panther Island Mitigation Bank (PIMB). Please refer to the enclosed Location Map and Mitigation Monitoring Map. As conditioned within the USFWS BO, the Howard Parcel mitigation area must be monitored until success criteria are achieved. This annual mitigation monitoring report is provided to satisfy the conditioned monitoring requirements.

Submittal of this Annual Mitigation Monitoring Report shall satisfy the requirements for monitoring and reporting for the year of 2024. The Annual Mitigation Monitoring Report data provided herein were collected in April 2024.

APPLICABLE PERMITS

U.S. Fish and Wildlife Service: Biological Opinion – Service Log No. 4-1-03-F-3915
U.S. Army Corps of Engineers: Permit No. SAJ-1998-06220

MONITORING SCHEDULE

ACTIVITY	DATE COMPLETED
First Annual Monitoring Report	April, 2012
Second Annual Monitoring Report	March, 2013
Third Annual Monitoring Report	February, 2014
Fourth Annual Monitoring Report	April, 2015
Fifth Annual Monitoring Report	March, 2016
Sixth Annual Monitoring Report	April, 2017
Seventh Annual Monitoring Report	April, 2018
Eighth Annual Monitoring Report	April 2019
Ninth Annual Monitoring Report	March 2020
Tenth Annual Monitoring Report	March 2021
Eleventh Annual Monitoring Report	April 2022
Twelfth Annual Monitoring Report	April 2023
Thirteenth Annual Monitoring Report	April 2024

MITGATION SUMMARY

In accordance with Condition No. 1 of the USFWS BO, to compensate for impacts to 917.19 acres of Florida

panther habitat resulting from the construction of the Treviso Bay (FKA Wentworth Estates) development, the Permittee is required to: 1) preserve and enhance 298.08 acres known as the Howard Parcel in Hendry County; 2) purchase of 15.41 credits from the PIMB (160 acres of restoration in PIMB Phase VII). All habitat to be preserved and restored is located within the panther Primary Zone.

Land management of the 298.08-acre Howard Parcel consists of the removal of exotic and nuisance vegetative species, and planting of native species when necessary. The site shall be managed in perpetuity for the control of invasive exotic vegetation. In addition, the Howard Parcel shall be placed under a conservation easement granted to the South Florida Water Management District (SFWMD) with third party enforcement rights to the USACE. The easement was recorded in Alameda County, California in January 2006.

SUCCESS CRITERIA

The USFWS BO does not provide specific success criterion for the Howard Parcel. Management activities prescribed by the BO were intended to enhance foraging habitat for panther prey species, primarily white-tailed deer (*Odocoileus virginianus*). Enhancement of foraging habitat is achieved through eradication of exotic vegetation and maintenance of open understory areas, allowing for the recruitment and establishment of native forbs. Prior to enhancement activities, the Howard Parcel displayed approximately 15% total coverage of exotic/nuisance vegetation, primarily Brazilian pepper (*Schinus terebinthifolius*). Based on the enhancement goals expressed within the BO, it is concluded that achievement of the following criteria would result in fulfillment of the intended mitigation goals.

1. Total coverage by exotic/nuisance vegetative species within the mitigation area does not exceed 5%;
2. The mitigation area is indicative of suitable functional foraging habitat for panther prey species.

MITIGATION and MAINTENANCE ACTIVITIES

Initial enhancement activities were completed in April 2006, and included removal of exotic/nuisance vegetation and bush hogging. A maintenance program has been implemented to ensure the long-term integrity and viability of the subject mitigation area. The maintenance program includes perpetual vegetative maintenance so that exotic and nuisance vegetative species do not exceed 5% total coverage. Additionally, the maintenance program includes implementation of selective bush hogging to maintain open foraging habitat for panther prey species. A maintenance program shall continue to be implemented so as to ensure the long-term integrity and viability of the subject mitigation area.

MONITORING METHODOLOGY

The monitoring program is designed to evaluate the degree of success of the implemented mitigation. Furthermore, the monitoring program is designed to evaluate the success of the implemented maintenance program and provide a tool for recommendation of any changes to the mitigation and/or maintenance programs necessary to achieve the mitigation objectives as stipulated by the USFWS BO.

Random meandering sampling transects were established within the subject mitigation area, providing

approximately 70% total coverage of the mitigation site, to qualitatively assess the mitigation site. Field observations were utilized to develop a map of the vegetative communities onsite. The vegetative communities were identified and classified utilizing the Florida Land Use Cover and Forms Classification System (FLUCCS). A description of the site conditions and vegetative communities is provided below. Approximate percent coverage of vegetative strata occupied (canopy, mid-story, and groundcover), as well as approximate percent coverage of any exotic/nuisance vegetative species is provided. Observation of wildlife utilization within the mitigation area was also noted, and was based on direct observation and/or observation of signs such as tracks, burrows, nests, scat, etc. In addition, six (6) permanent photographic stations were established within the mitigation area to document the relative current condition of the mitigation area. Photographic documentation of the relative current condition of the mitigation area is enclosed.

SITE CONDITIONS and VEGETATIVE COMMUNITIES

The following table displays the four vegetative associations found on the subject parcel. The vegetative communities were identified and classified utilizing the Florida Land Use Cover and Forms Classification System (FLUCCS). A description of the communities is provided below. Please refer to the attached Mitigation Monitoring Map

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FLUCCS ID	FLUCCS DESCRIPTION	ACREAGE
310	Dry Prairie	130.12
400	Upland Forest	46.82
618	Willow	10.90
640	Herbaceous Wetland	110.24
TOTAL		**298.08**

FLUCCS 310 – Dry Prairie

This upland association is characteristic of open herbaceous rangeland dominated by dense groundcover of grasses, sedges, and other forbs. Approximate total percent coverage of vegetative strata occupied within this community is as follows: canopy 3%; mid-story 6%; groundcover 95%. The on-site Dry Prairie habitat is primarily comprised of the following vegetative species: bahia grass (*Paspalum notatum*), frog-fruit (*Phyla nodiflora*), wiregrass (*Aristida stricta*), broomsedges (*Andropogon spp.*), fleabane (*Erigeron sp.*), coinwort (*Centella asiatica*), and dogfennel (*Eupatorium capillifolium*). Scattered camphorweed (*Pluchea odorata*), thistle (*Cirsium sp.*), blackberry (*Rubus sp.*), saw palmetto (*Serenoa repens*), beautyberry (*Callicarpa americana*), wax myrtle (*Myrica cerifera*), buckthorn (*Sageretia minutiflora*), cabbage palm (*Sabal palmetto*), live oak (*Quercus virginiana*), slash pine (*Pinus elliottii*), peppervine (*Ampelopsis arborea*), and grapevine (*Vitis sp.*) are also present.

The exotic/nuisance species Brazilian pepper (*Schinus terebinthifolius*) and cogongrass (*Imperata cylindrica*) were identified within the on-site Dry Prairie habitat, and together comprise approximately 3% total coverage.

FLUCCS 400 – Upland Forest

This upland association is similar to the on-site Dry Prairie (FLUCCS 310) habitat, but exhibits substantial cover of canopy and mid-story vegetation. Approximate total percent coverage of vegetative strata occupied within this

community is as follows: canopy 55%; mid-story 35%; groundcover 95%. The forested canopy is primarily comprised of a mixture of cabbage palm, live oak, slash pine, and laurel oak (*Quercus laurifolia*). The remaining strata are primarily comprised of bahia grass, saw palmetto, frog-fruit, wax myrtle, broomsedge, dogfennel, thistle, beautyberry, blackberry, peppervine, grapevine, greenbrier (*Smilax sp.*), and Virginia creeper (*Parthenocissus quinquefolia*).

The exotic/nuisance species Brazilian pepper and Caesarweed (*Urena lobata*) were identified within the on-site Upland Forest habitat, and together comprise approximately 5% total coverage.

FLUCCS 618 – Willow

This freshwater forested wetland association is dominated by a dense mid-story of Carolina willow (*Salix caroliniana*) and is present within the most deep water zones of the on-site wetland areas. Approximate total percent coverage of vegetative strata occupied within this community is as follows: canopy 0%; mid-story 75%; groundcover 85%. In addition to the mid-story of Carolina willow, the on-site Willow habitat is primarily comprised of smartweed (*Polygonum punctatum*), sawgrass (*Cladium jamaicense*), dayflower (*Commelina diffusa*), pickerelweed (*Pontederia cordata*), duck potato (*Sagittaria lancifolia*), alligator flag (*Thalia geniculata*), and hempvine (*Mikania scandens*).

The exotic/nuisance species West Indian marsh grass (*Hymenachne amplexicaulis*) was identified within the on-site Willow habitat, as well as immediately abutting this habitat within the transitional zone between the on-site Willow and on-site Herbaceous Wetland (FLUCCS 640) habitat described below. Additionally, the exotic/nuisance species Peruvian primrose willow (*Ludwigia peruviana*), water-hyacinth (*Eichhornia crassipes*), and cattail (*Typha sp.*) were identified. Combined, the above noted exotic/nuisance vegetative species comprise approximately 5% total coverage within the on-site Willow habitat.

FLUCCS 640 – Herbaceous Wetland

This freshwater herbaceous wetland association is comprised of a mosaic of wet prairie and freshwater marsh. Approximate total percent coverage of vegetative strata occupied within this community is as follows: canopy 0%; mid-story 0%; groundcover 95%. The on-site Herbaceous Wetland habitat is primarily comprised of the following vegetative species: bahia grass, wiregrass, frog-fruit, broomsedges, fleabane, flatsedges (*Cyperus spp.*), dogfennel, dayflower, pennyworts (*Hydrocotyle spp.*), coinwort, sand cordgrass (*Spartina bakeri*), creeping seedbox (*Ludwigia repens*), water-hyssop (*Bacopa monnieri*), smartweed, maidencane (*Panicum hemitomon*), pickerelweed, duck potato, sawgrass, alligator flag, and hempvine.

The exotic/nuisance species West Indian marsh grass was identified within the transitional zone of the on-site Herbaceous Wetland habitat immediately abutting the on-site Willow (FLUCCS 618) habitat described above. Additionally, the exotic/nuisance species cattail and torpedo grass (*Panicum repens*), and water hyacinth were identified. Combined, the above noted exotic/nuisance vegetative species comprise less than 5% total coverage within the on-site Herbaceous Wetland habitat.

WILDLIFE UTILIZATION

Observation of wildlife utilization within the mitigation area was noted during the subject monitoring event. Evidence of wildlife utilization was based on visual observation, vocalization, and/or observation of signs such as burrows, nests, scat, etc. Evidence of utilization by the following wildlife species was observed: white-tailed

deer, gray squirrel, red-shouldered hawk, eastern meadowlark, sandhill crane, black vulture, turkey vulture, cattle egret, great egret, northern cardinal, little blue heron, glossy ibis, anhinga, great blue heron, brown anole, American alligator, peninsula cooter, black racer, and American crow.

Note that of particular importance to the Florida panther is the prey species white-tailed deer, although many of the other observed species are known to supplement the diet of the Florida panther. A large local feral hog population was evidenced by substantial amounts of rooting activity.

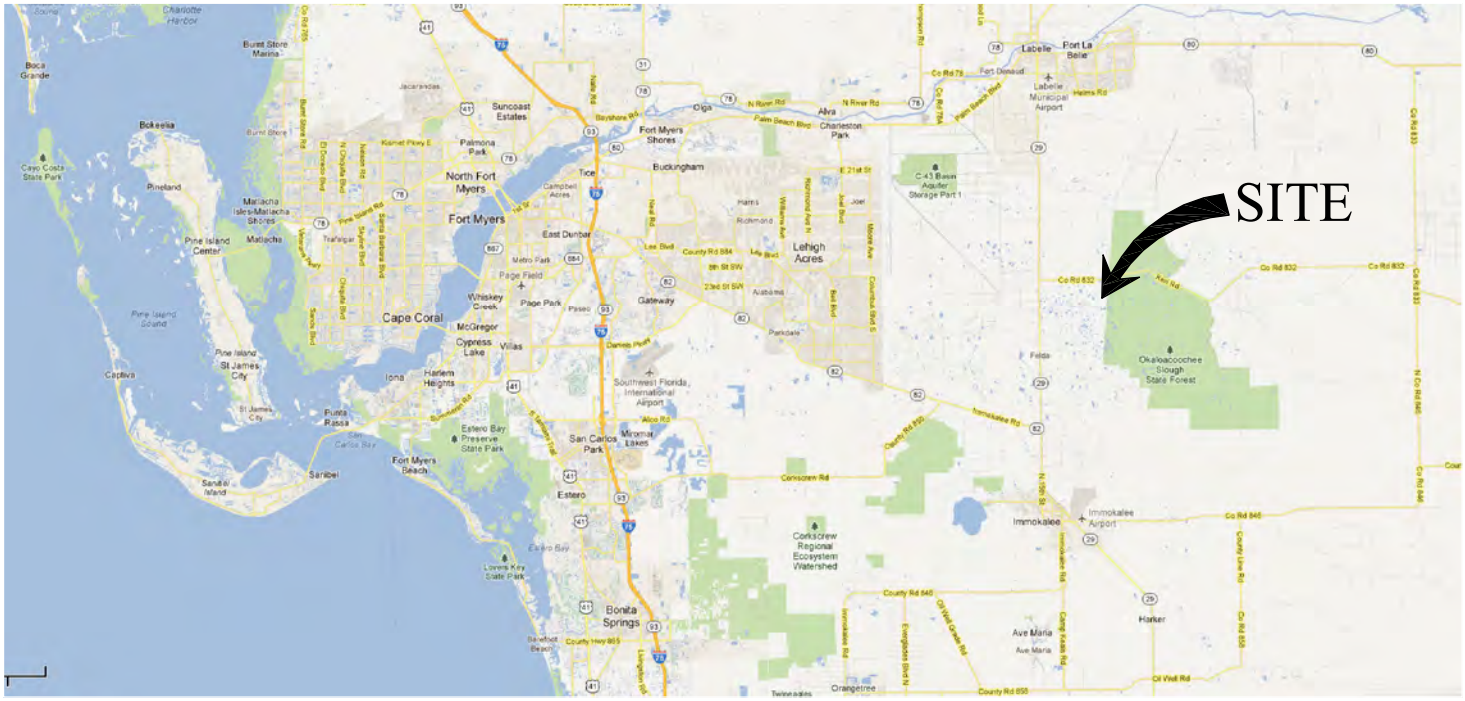
RESULTS and CONCLUSIONS

The following narrative provides a summary of the relative condition of the mitigation area at the time of the monitoring event. The narrative also includes a determination as to whether the mitigation area fulfills the mitigation objectives as stipulated by the USFWS BO. If the mitigation area was determined to not meet the mitigation goals, recommendations for supplemental maintenance and/or enhancement activities has been provided.

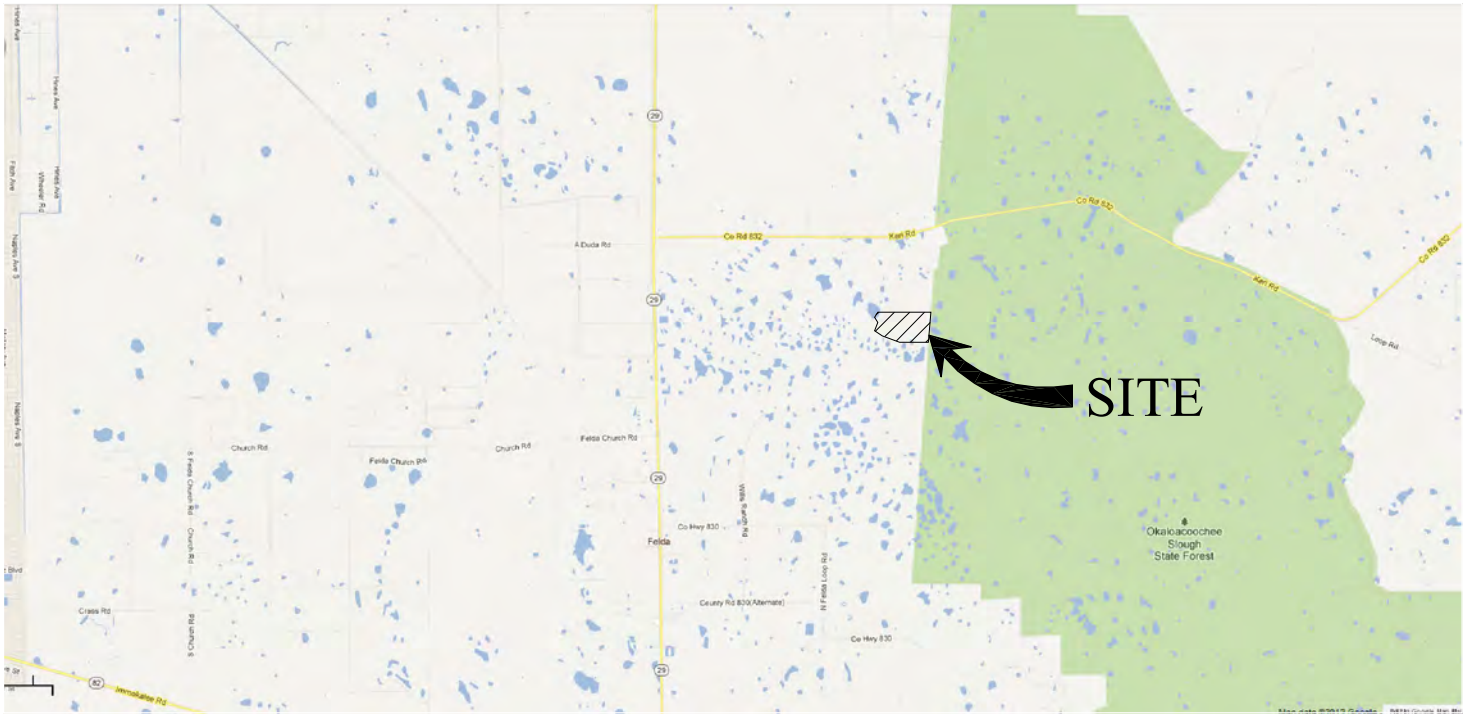
The mitigation area (Howard Parcel) is functioning as a dynamic native ecosystem providing an array of vegetative communities and habitats which provide high-quality foraging habitat for panther prey species. The previously prescribed mitigation activities and expanding coverage by desirable native vegetation is limiting exotic and nuisance vegetation to levels below the thresholds set forth in the mitigation success criteria. Based on the data collected for this monitoring event, it is concluded that the mitigation area provides quality habitat suitable of helping support the Florida panther and that the mitigation area fulfills the objectives of the USFWS BO. As required, on-going maintenance events shall be scheduled for the mitigation area to ensure that coverage by exotic and/or nuisance vegetative species remains within the allowable limits outlined in the permitted success criteria.

SECTIONS 11&12, TOWNSHIP 45S, RANGE 29E

NOT TO SCALE



HENDRY COUNTY, FLORIDA



LOCATION MAP

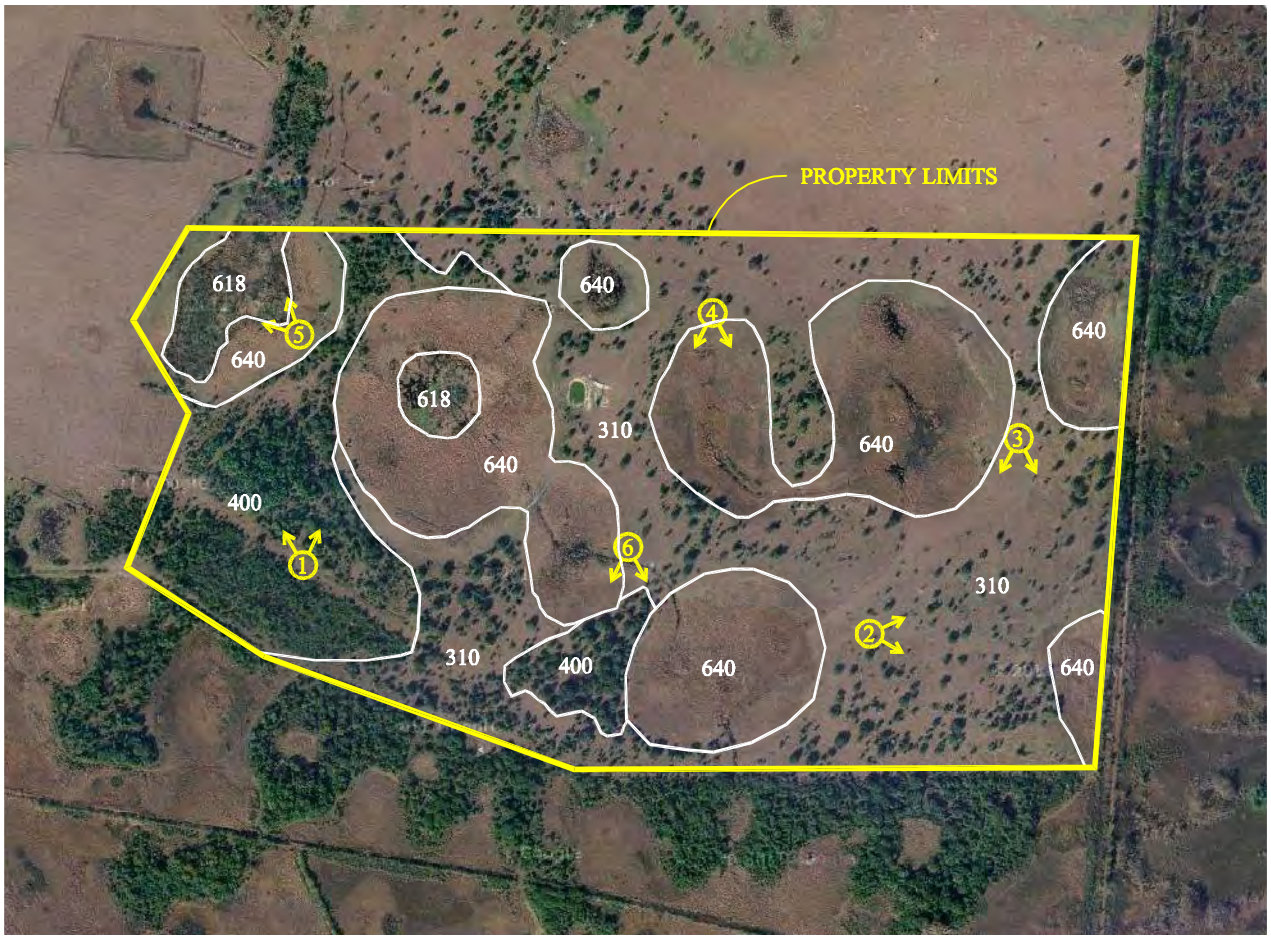
12-005/HOWARD PARCEL / APRIL 3, 2012

HOWARD PARCEL

LOCATION MAP

Ian Vincent & Associates
Environmental Consulting Services

SECTIONS 11&12, TOWNSHIP 45S, RANGE 29E



N

0 1000'

SCALE 1"=1000'

LEGEND

FLUCCS	DESCRIPTIONS	ACREAGE
310	DRY PRAIRIE	130.12±
400	UPLAND FOREST	46.82±
618	WILLOW	10.90±
640	HERBACEOUS WETLAND	110.24±
	TOTAL	298.08±

PHOTO STATION 6

NOTES:
1) FOR PERMIT USE ONLY, NOT FOR CONSTRUCTION.
2) PROPERTY BOUNDARY OBTAINED FROM JOHNSON ENGINEERING SKETCH OF DESCRIPTION, DATED 11/03/05
3) MAPPING APPROXIMATE AND BASED ON INTERPRETATION OF 2012 GOOGLE AERIAL PHOTOGRAPHY AT 1"=1000' SCALE.

12-005 / HOWARD PARCEL FEBRUARY 25, 2014

HOWARD PARCEL

MITIGATION MONITORING MAP

Ian Vincent & Associates
Environmental Consulting Services

PHOTO STATION 1

PHOTO STATION 2

PHOTO STATION 3

PHOTO STATION 4

PHOTO STATION 5

PHOTO STATION 6