



LAKE TARPON TYPE III NUTRIENT SITE SPECIFIC ALTERNATIVE CRITERIA (SSACs)

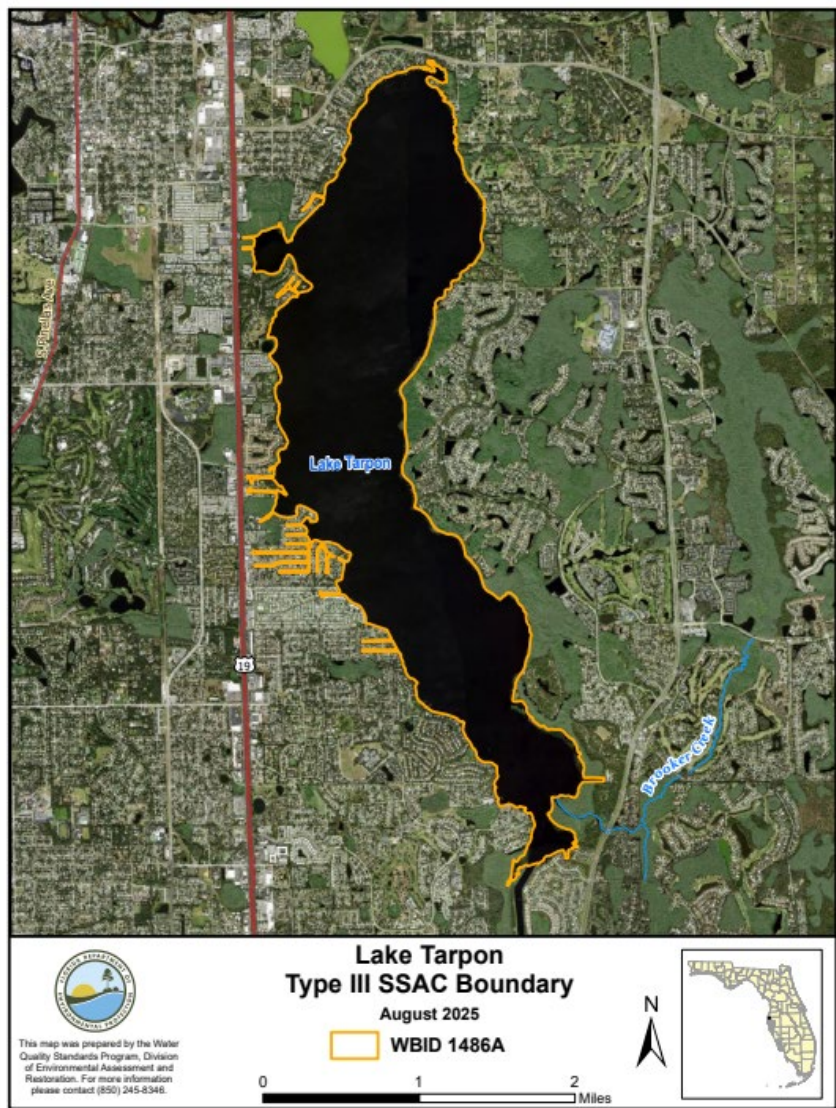
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DEAR / Water Quality Standards Program
Florida Department of Environmental Protection

Brooker Creek Preserve Environmental Education Center Auditorium
Oct. 15, 2025



INTRODUCTION AND HEARING PURPOSE



- The purpose of this public hearing to present proposed site specific alternative criteria (SSAC) for total phosphorus (TP), total nitrogen (TN), and chlorophyll-a (Chl-a) developed by the Florida Department of Environmental Protection (department) for Lake Tarpon in Pinellas County.



AGENDA



- Background on SSACs.
- Characterization of historic and existing water quality.
- Characterization of historic and existing biological communities.
- Type III SSAC development and proposed criteria.
- Next steps.
- Public comments.



SITE SPECIFIC ALTERNATIVE CRITERIA (SSACs)



What is a SSAC?

- A Site Specific Alternative Criterion (SSAC) is a surface water quality criterion developed for a particular waterbody, or segment of a waterbody, designed to more accurately reflect site specific conditions.
- Type III SSAC (defined in subsection 62-302.800(3), F.A.C.):
 - Limited to nutrients in streams and lakes.
 - Supported by biological health assessments
 - Calculated to maintain the nutrient regime associated with healthy biological conditions.



TYPE III SSACS



- A Type III SSAC for lakes must include information on:
 - Chlorophyll-*a* levels.
 - Algal mats or blooms indicating there is not an imbalance in flora or fauna.
 - At least two temporally independent Lake Vegetation Index (LVI) samples with an average score of 43 or above.
 - SSACs must also be protective of downstream waters.



TYPE III SSACS

Development of Type III Site Specific Alternative Criteria for Nutrients



FDEP Bureau of Assessment and Restoration Support

October 24, 2011

DEP-SAS-004/11

- DEP's Type III SSAC development guidance document also allows that the period used to derive the SSAC values can be expanded beyond the period in which there are biological data indicating healthy communities.
- A demonstration must be made that there has not been a statistically significant trend in nutrients throughout the expanded period of record used for SSAC development.



LAKE TARPON: APPLICABLE CRITERIA

Generally Applicable Nutrient Criteria for Florida Lakes

Long Term Geometric Mean Lake Color and Alkalinity	Annual Geometric Mean Chlorophyll _a	Minimum Calculated Numeric Interpretation		Maximum Calculated Numeric Interpretation	
		Annual Geometric Mean Total Phosphorus	Annual Geometric Mean Total Nitrogen	Annual Geometric Mean Total Phosphorus	Annual Geometric Mean Total Nitrogen
>40 Platinum Cobalt Units	20 µg/L	0.05 mg/L	1.27 mg/L	0.16 mg/L	2.23 mg/L
≤ 40 Platinum Cobalt Units and >20 mg/L as CaCO ₃	20 µg/L	0.03 mg/L	1.05 mg/L	0.09 mg/L	1.91 mg/L
≤ 40 Platinum Cobalt Units and ≤20 mg/L as CaCO ₃	6 µg/L	0.01 mg/L	0.51 mg/L	0.03 mg/L	0.93 mg/L

- Lake Tarpon (WBID 1486A) is a 2,500-acre Class III freshwater colored (>40 PCU) lake.
- The Chl-a NNC for colored lakes is an AGM value of 20 µg/L, not to be exceeded more than 1 in 3 years.
- The associated total phosphorus (TP) and total nitrogen (TN) criteria for a lake can vary annually from minimum values of 0.05 and 1.27 mg/L, respectively, to maximum values of 0.16 and 2.23 mg/L, respectively, depending on the Chl-a concentrations in the lake and data availability.



LAKE TARPON: HISTORIC CONDITIONS



- Major algal blooms in 1987
- Extensive growth and treatment of the non-native invasive submersed hydrilla until 2009.
- Lake Tarpon Management Committee, Surface Water Improvement and Management plan established.
- Nutrient reduction and restoration efforts
 - 1999 - Designation as nutrient-sensitive watershed
 - 2009 – stormwater treatment improvements
 - 2010 – Pinellas County fertilizer ordinance
 - 2008 to present – Vegetation restoration projects
 - Ongoing non-native plant species management



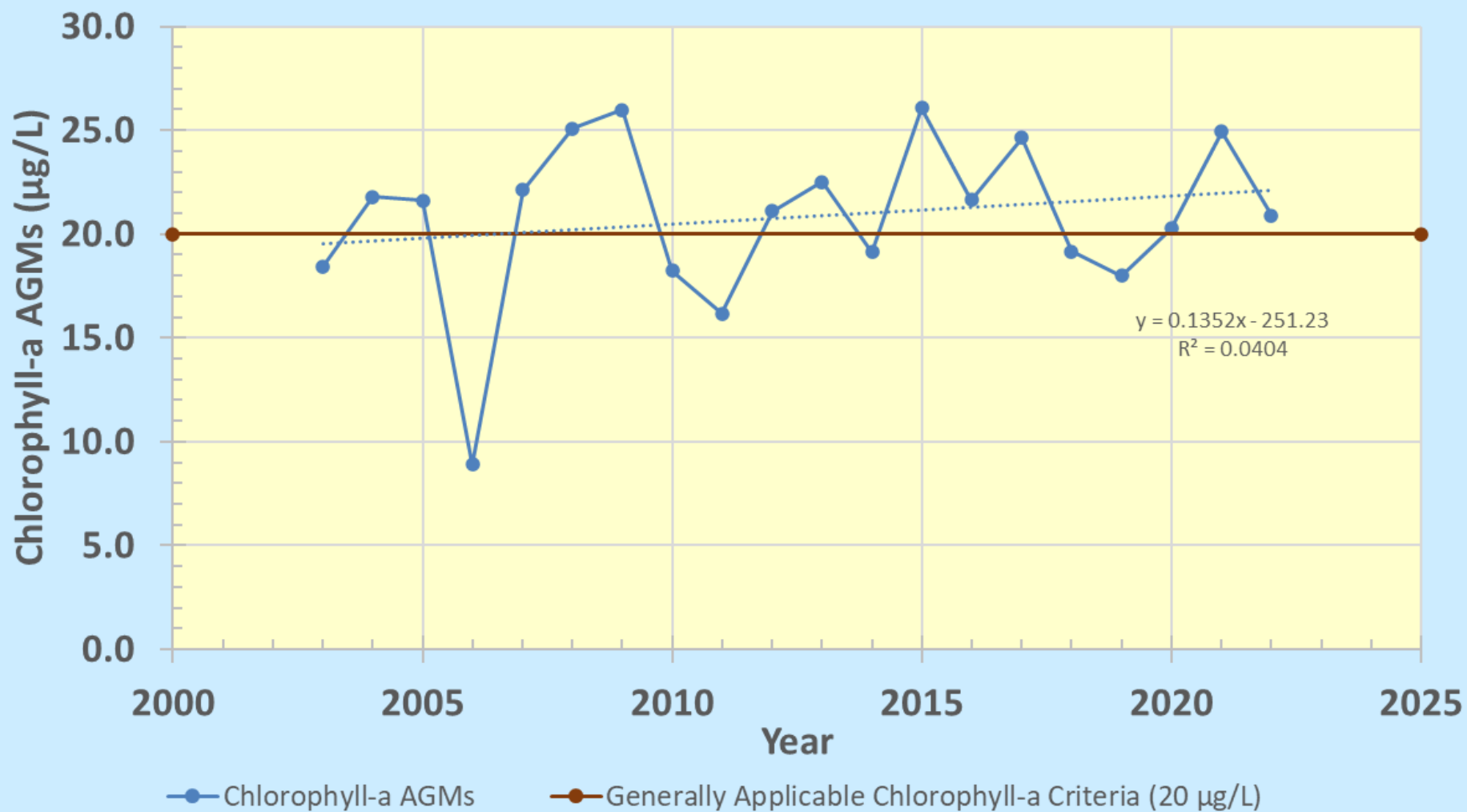
LAKE TARPON: RECENT WATER QUALITY



- In recent years, Lake Tarpon has had generally low TN and TP concentrations and fluctuating chlorophyll-*a* levels that frequently exceed the 20 µg/L criterion.
- In the 2017 *Lake Tarpon Management Plan* developed by Atkins and ESA for Pinellas County, chlorophyll-*a* fluctuations were shown to be related to lake elevation management, residence time, and the abundance and treatment of submerged aquatic vegetation (SAV) rather than level of TN and TP.
- Water Quality Characterization – 1995-2022
 - Alkalinity: 49 - 67 mg/L as CaCO₃
 - Color: 35 -90 PCU
 - pH: 7.3 - 8.3 SU
 - Specific conductance – 453-982 µmhos/cm
 - DO Saturation: 59 - 100%

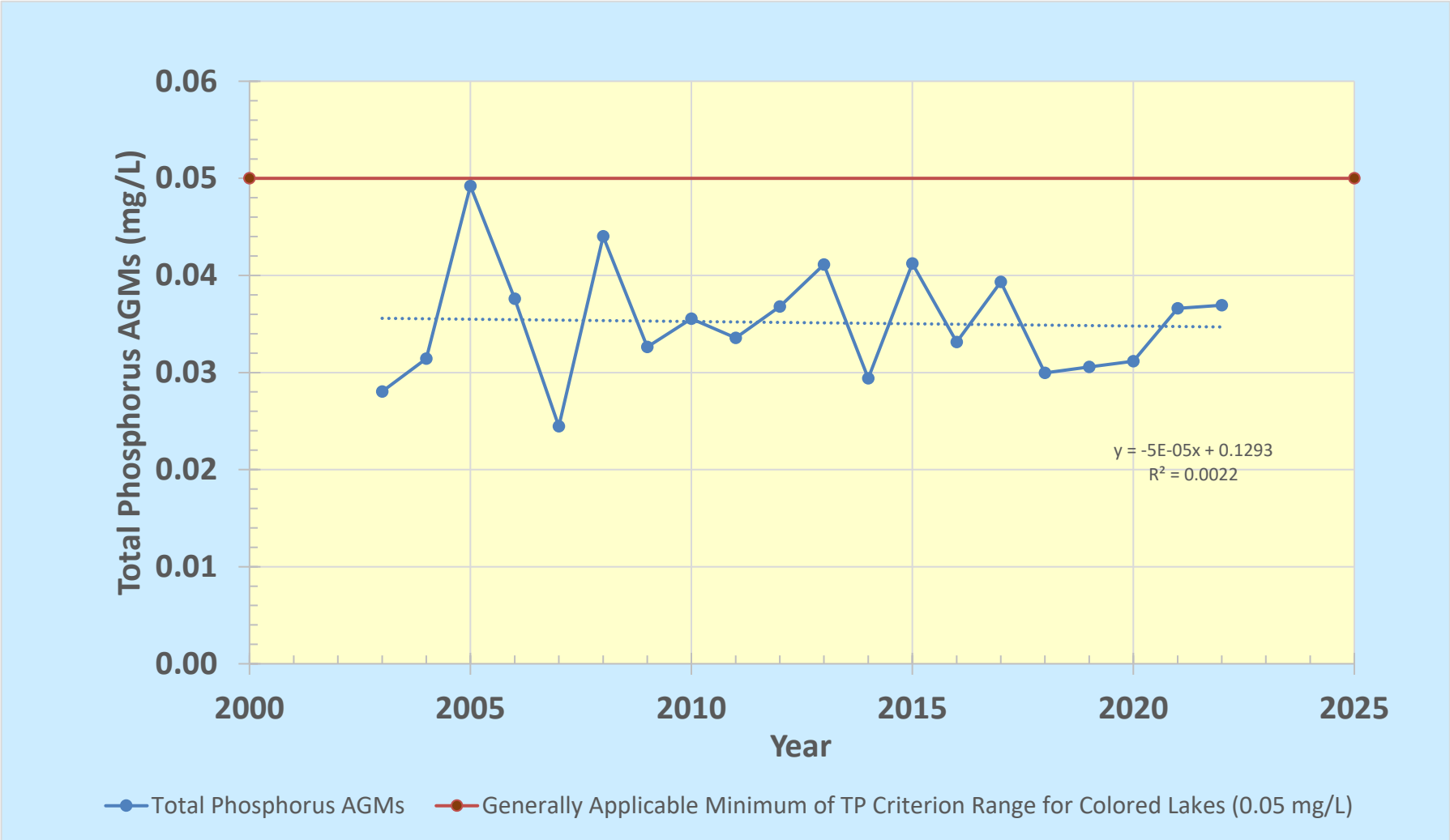


Lake Tarpon Chlorophyll-a, 2003-2022



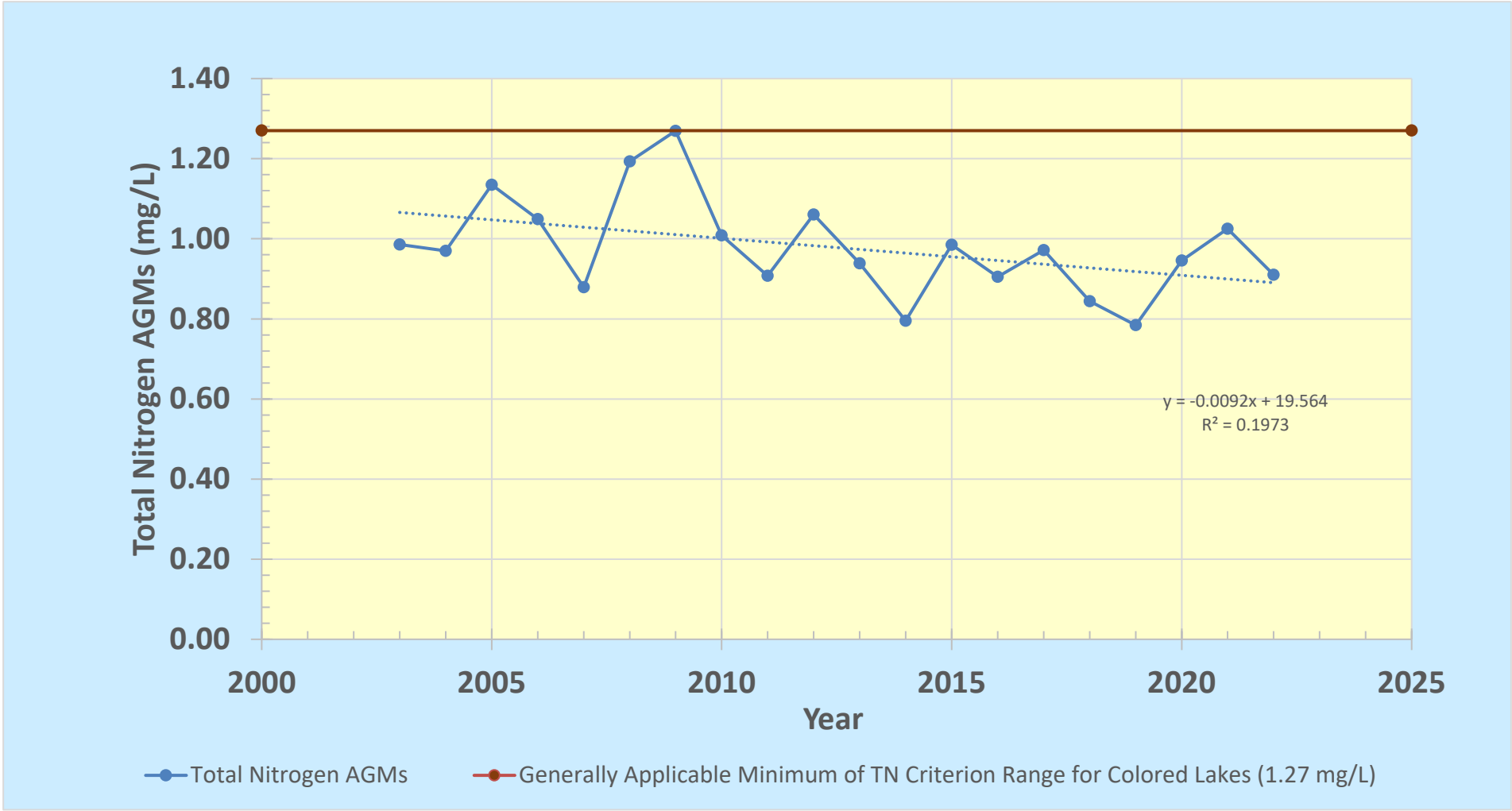


Lake Tarpon Total Phosphorus, 2003-2022





Lake Tarpon Total Nitrogen, 2003-2022





LAKE TARPON: HISTORIC AND EXISTING BIOLOGICAL COMMUNITIES



- Lake vegetation Index (LVI) data, other vegetation surveys, plant management data, phytoplankton community data, and fish community data were evaluated for this effort.
- Vegetation surveys show that Lake Tarpon has been dominated by beneficial native plants since detailed surveys began in 2015 and the average LVI score from 2017 to 2022 meets DEP's threshold for a healthy, well-balanced plant community.
- Limited phytoplankton data show a stable community since 2010, without reported algal blooms.
- FWC fish survey data show that Lake Tarpon consistently supports a strong fishery with a balanced community of sport and prey fish.



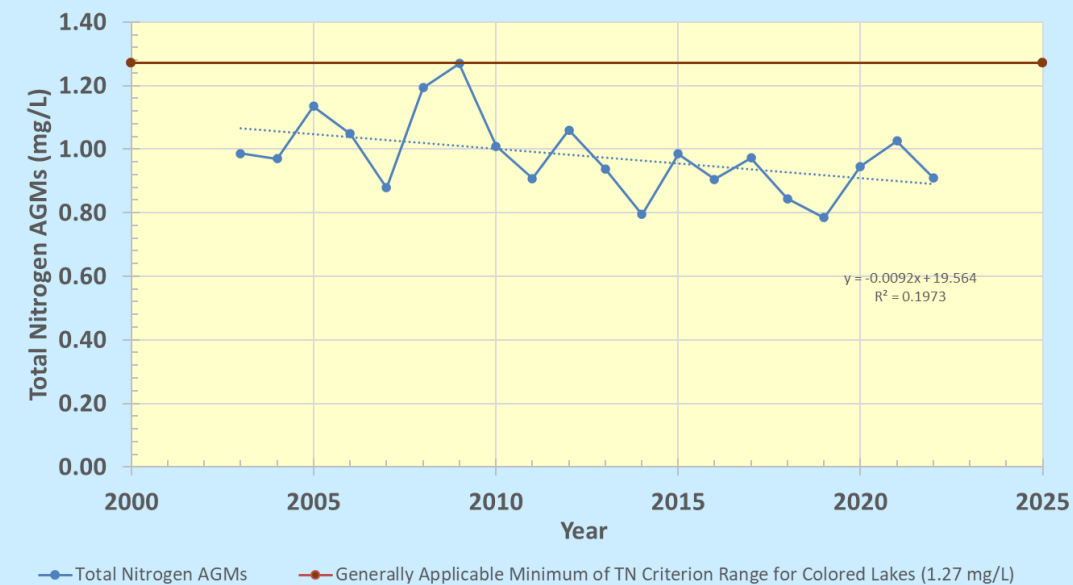
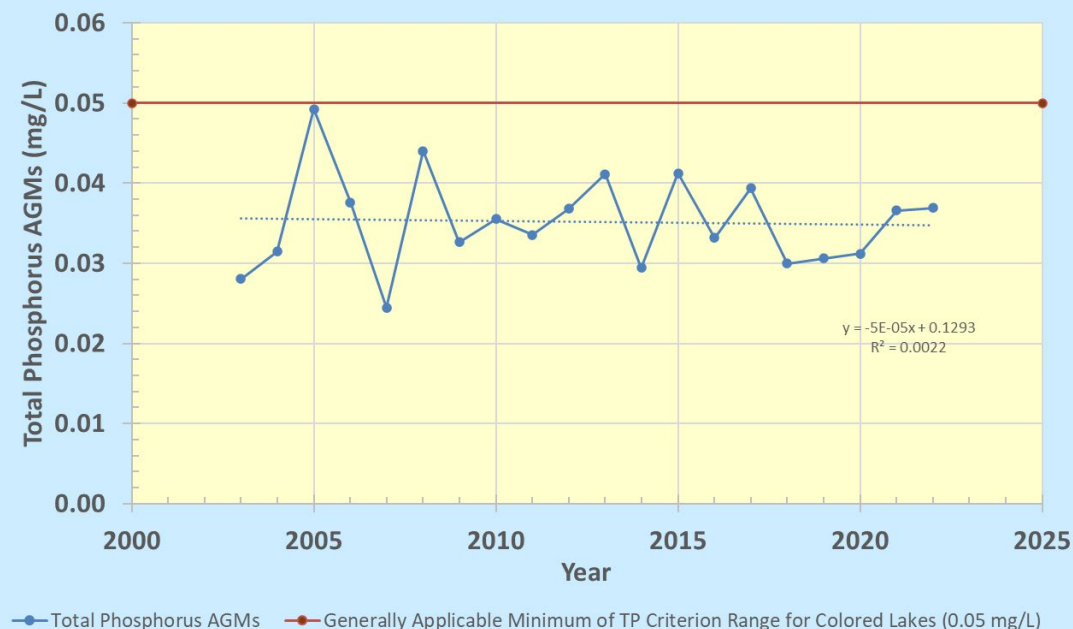
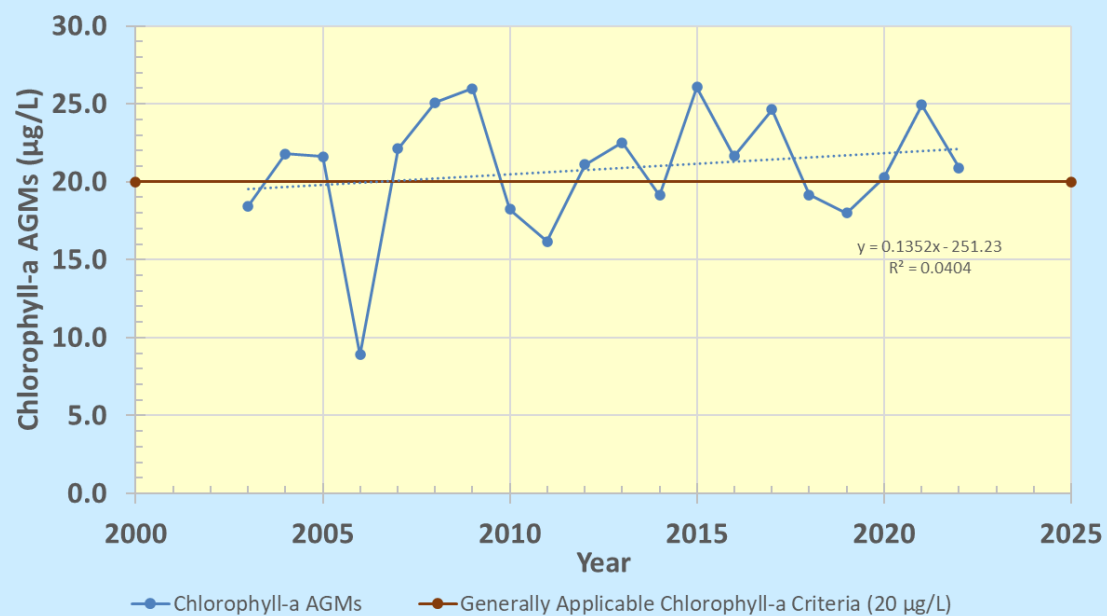
TYPE III SSAC DEVELOPMENT



- Data collected from 2015 to 2022 indicated that Lake Tarpon supports healthy biological communities.
- However, the water quality during this relatively short eight-year period does not fully capture the expected range of natural variability in the lake.
- DEP expanded the period of record (POR) used to develop to the SSACs to 2003 to 2022 to capture the full range of natural variability in the lake.
- Based on a Mann-Kendall trend analysis, none of the nutrients exhibited a significant trend during the expanded period.
- The 2003 to 2022 period corresponds to the time when Pinellas County was conducting their comprehensive randomized monitoring program in Lake Tarpon.



Plots of nutrient annual geometric mean (AGM) concentrations for the 2003-2022 period used for SSAC development





SUMMARY OF PROPOSED TYPE III NUTRIENT SSACs FOR LAKE TARPON

Parameter	Proposed SSAC Value
Chlorophyll- <i>a</i>	28 µg/L
TN	1.15 mg/L
TP	0.04 mg/L

- The proposed SSACs were calculated as the 90 percent prediction interval of the natural log transformed annual geometric means for the period from 2003 to 2022.
- The recommended SSACs for Lake Tarpon will be applied such that the annual geometric mean (AGM) concentrations in the lake (WBID 1486A) will not exceed the SSAC values more than once in any consecutive three-year period.
- Proposed SSACs are consistent with SWFWMD's Lake Tarpon SWIM Plan Goal of maintaining healthy existing water quality conditions for TN, TP and Chlorophyll a.



NEXT STEPS



- Two-week written comment period ending on October 29, 2025.
- Send comments to:
WQS_Rulemaking@FloridaDEP.gov, or
2600 Blair Stone Road, Mail Station 6511,
Tallahassee, FL 32399-2400.
- Secretarial Final Order.
- Submittal to EPA for review and approval.



Public Comments.





THANK YOU

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