Orange Creek Basin Management Action Plan (BMAP) Annual Meeting

Via Webinar
June 20, 2024
10 AM

Webinar Registration Link:
https://register.gotowebinar.com/register/6623448589224313943

Agenda

- Orange Creek Basin Management Action Plan (BMAP) Overview.
- Annual Progress.
- St. Johns River Water Management District (SJRWMD) Update.
- Next Steps - BMAP Update.

Please note the FTP site for documents pertaining to the Orange Creek BMAP:
https://publicfiles.dep.state.fl.us/DEAR/BMAP/OrangeCreek/
For more information on the Orange Creek BMAP, contact: Jessica Fetgatter, 850-245-8107,
Jessica.Fetgatter@FloridaDEP.gov

WEBINAR HOUSEKEEPING

Attendee Participation

Open your control panel.

Join audio:

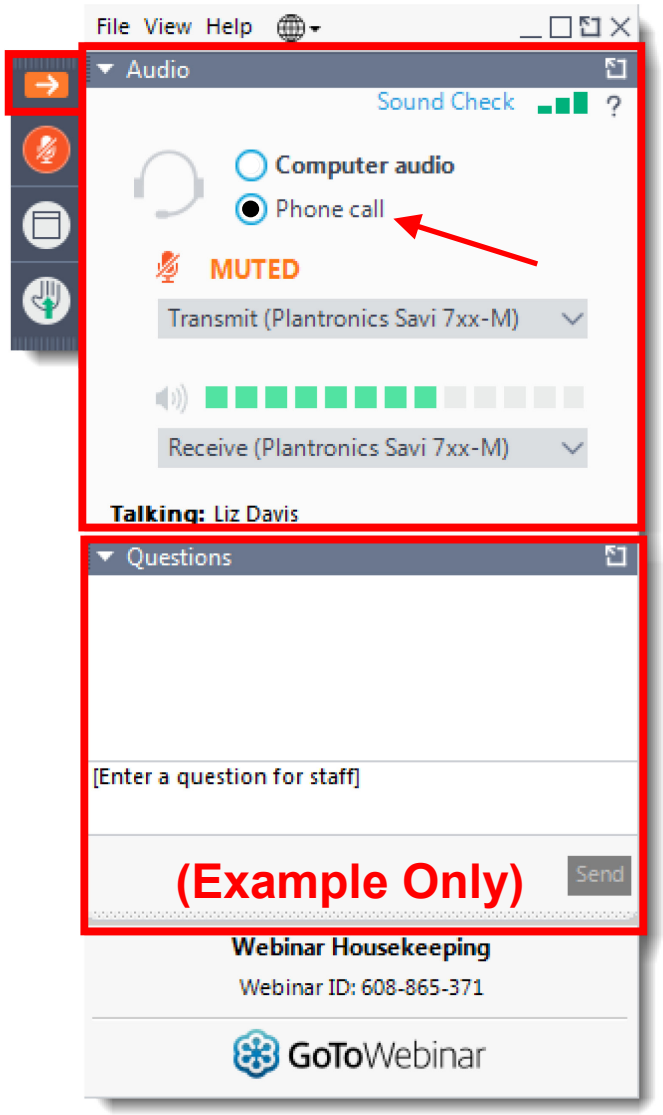
- Choose Computer Audio **or**
- Choose Phone Call and dial using the information provided with your registration.

Attendee audio will automatically be muted.

Submit questions and comments via the **Questions** panel.

If viewing this webinar as a group, please provide a list of attendees via the **Questions** panel.

Note: Today's presentation is being recorded and will be provided on the file transfer protocol (FTP) site after the webinar.



ORANGE CREEK BASIN MANAGEMENT ACTION PLAN ANNUAL MEETING

Jessica Fetgatter
Water Quality Restoration Program
Florida Department of Environmental Protection

GoToWebinar | June 20, 2024

Photo Credit: SFWMD

AGENDA

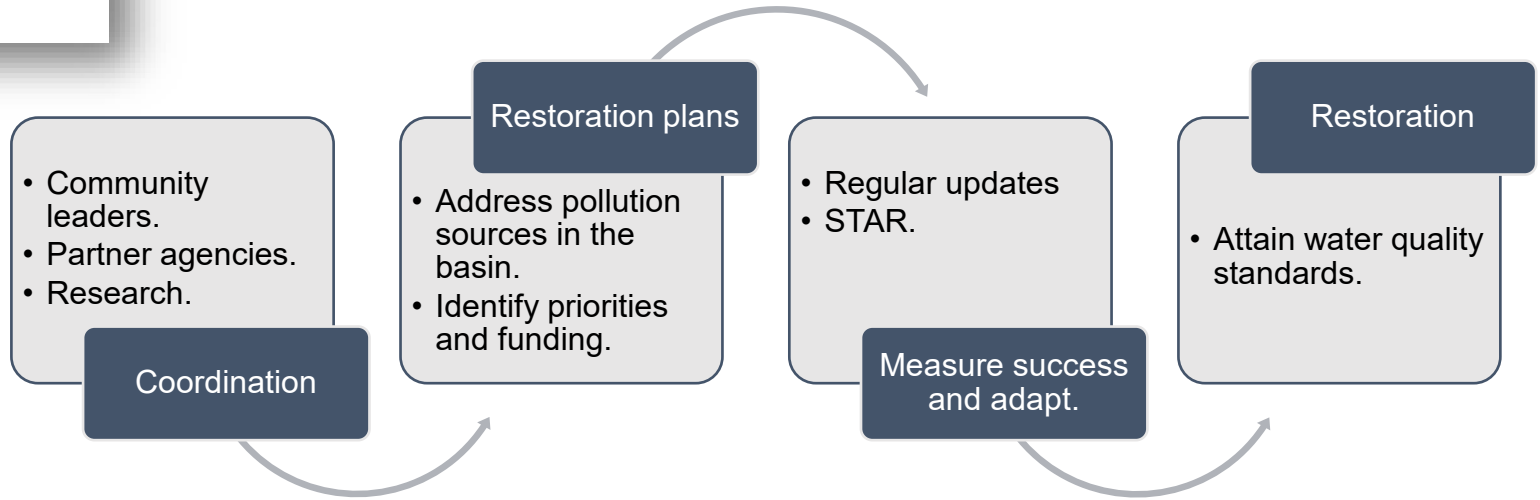
- Basin Management Action Plan (BMAP) Overview.
- Statewide Annual Report (STAR).
- Annual Progress.
- St. Johns River Water Management District (SJRWMD) Update.
- Next Steps - BMAP Update:
  - Milestones.
  - Hotspot Analysis.
  - SJR Model.

BMAPs

One of DEP's methods for **restoring water quality** in an impaired waterbody.

BMAPs are:

- Developed with stakeholder input.
- Adopted by Florida Department of Environmental Protection's (DEP) Secretarial Order.
- Enforceable.
- Implemented through a phased approach.
- Reported on annually.
- Updated regularly.



KEY BMAP COMPONENTS

- Total maximum daily loads (TMDLs) being addressed.
- Area addressed by the restoration plan.
- Identify sources.
- Phased implementation approach.
- Milestones.
- Projects and management strategies.
- Future growth impacts.

Projects to meet the TMDL:

- Implementation timeline.
- Commitment to projects.
- Expected water quality improvement from projects and management strategies.

Process to assess progress toward achieving the TMDL:

- Monitoring plan.
- Project reporting.
- Periodic follow-up meetings.
- Water quality analyses.

STAKEHOLDERS

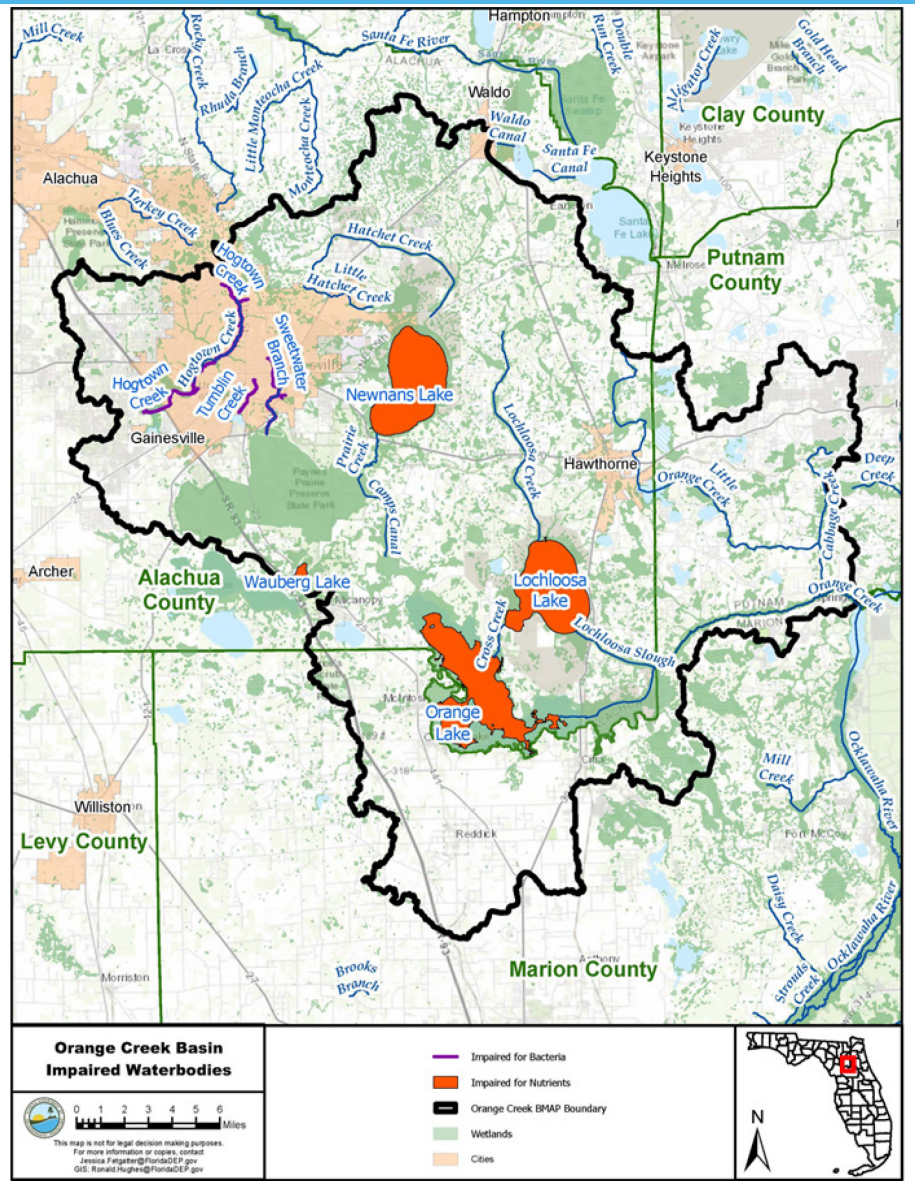
Local Governments:

- Alachua County.
- Marion County.
- Putnam County.
- Gainesville.
- Gainesville Regional Utilities.
- Hawthorne.
- McIntosh.
- Micanopy.
- Waldo.

Regional and State Agencies:

- SJRWMD.
- Florida Fish and Wildlife Conservation Commission.
- Florida Department of Agriculture and Consumer Services (DACS).
- Florida Department of Transportation (DOT), District 2.
- Florida Department of Transportation, District 5.
- DEP – Northeast District and Tallahassee.
- Florida Department of Health in Alachua County.
- University of Florida.

BACKGROUND



Orange Creek BMAP:

- 2008: Initial adoption.
- 2014: Phase 2.
- 2019: Amendment adoption.
- 2025: BMAP update.
- **2028: 20-year milestone.**

Orange Creek Target Concentrations		
Waterbody	TP (mg/L)	TN (mg/L)
Alachua Sink		None
Lochloosa	0.0552	1.152
Newnans	0.062	0.97
Orange	0.031	
Wauberg	0.056	1.01

CLEAN WATERWAYS ACT: TIMELINE

June 12, 2023

Final Order signed by the Secretary.

July 12, 2023

Deadline for written explanation of potential exemption to be submitted to the department.

Feb. 1, 2024

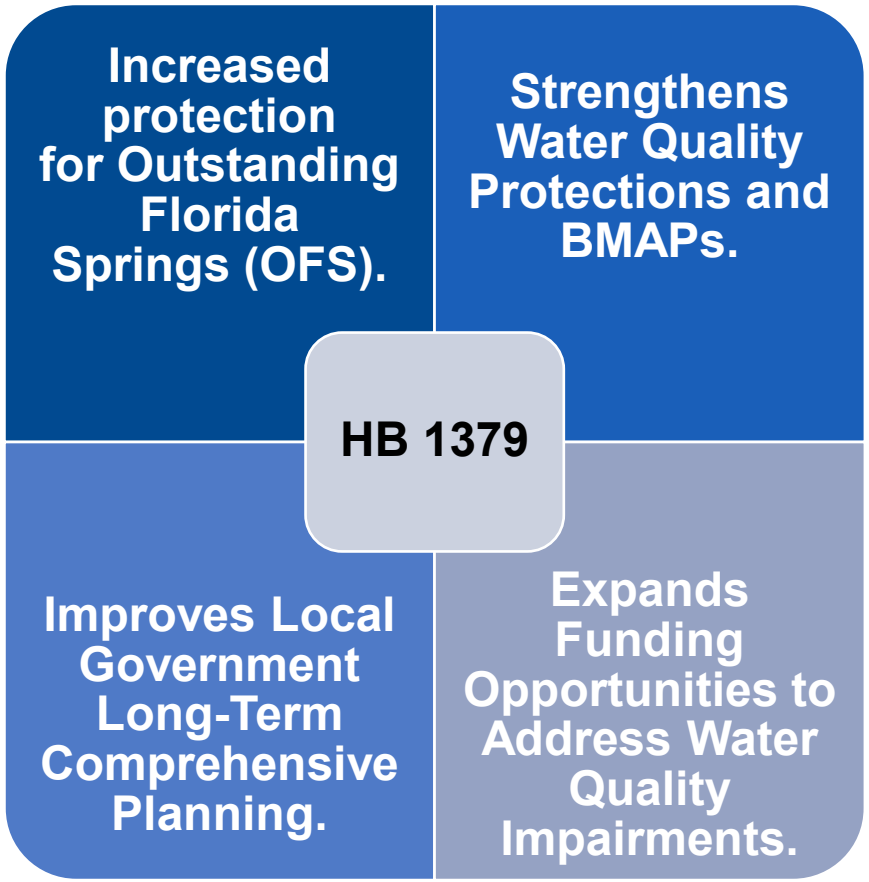
Deadline for submitting draft onsite sewage treatment and disposal systems (OSTDS) remediation and/or wastewater treatment plans for the department's review.

Aug. 1, 2024

Deadline for submitting complete OSTDS remediation and/or wastewater treatment plans to the department.

The nutrient BMAPs included in the Final Order require these plans.

HOUSE BILL (HB) 1379: ENVIRONMENTAL PROTECTION



Strengthen BMAPs:

- Requires a list of identified projects to achieve 5-year milestones.
- Requires a list of agricultural cooperative regional water quality improvement elements.

Improve Comprehensive Planning:

- Requires BMAP projects to be included in comprehensive plans to prioritize implementation.

Improve Domestic Wastewater:

- Requires more stringent wastewater treatment standards, if required to meet the TMDL.

Expand Grant Opportunities.

2024 DEP AGENCY BILL: HB 1557

Advances the protection of our environmental resources by:

Improving Treatment of Reclaimed Water

Ensures that reclaimed water is treated to meet advanced waste treatment (AWT) or a more stringent treatment standard in certain BMAP areas, while still promoting its use to eliminate surface water discharges and meet water supply challenges.

Expanding Wastewater Facility Plans

Supports the development of domestic wastewater treatment plans and OSTDS remediation plans within BMAP or other restoration areas by requiring facilities to provide information to the local entities developing these plans.

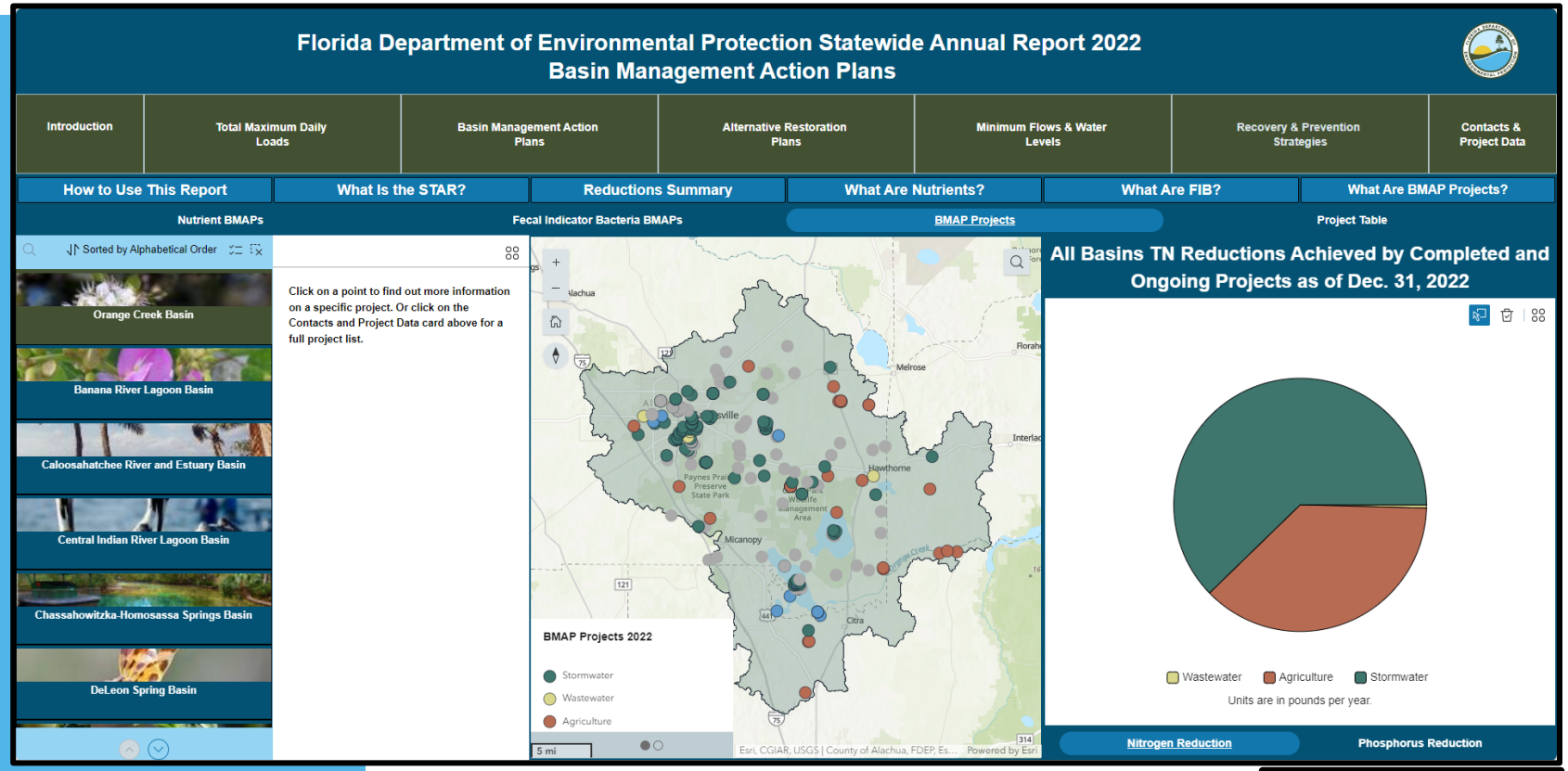
Investing in Innovative Technologies

Creates a program to expeditiously review new and innovative enhanced nutrient-reducing OSTDS to reduce the nutrients entering Florida's waterways.

STAR
PROJECT REPORTING

What is the STAR?

- Summarizes accomplishments in the BMAPs statewide.
- Reports on restoration projects and management strategies.
- Published July 1 of each year.
- Currently in the process of project updates and verification for STAR 2023.



https://floridadep.gov/STAR

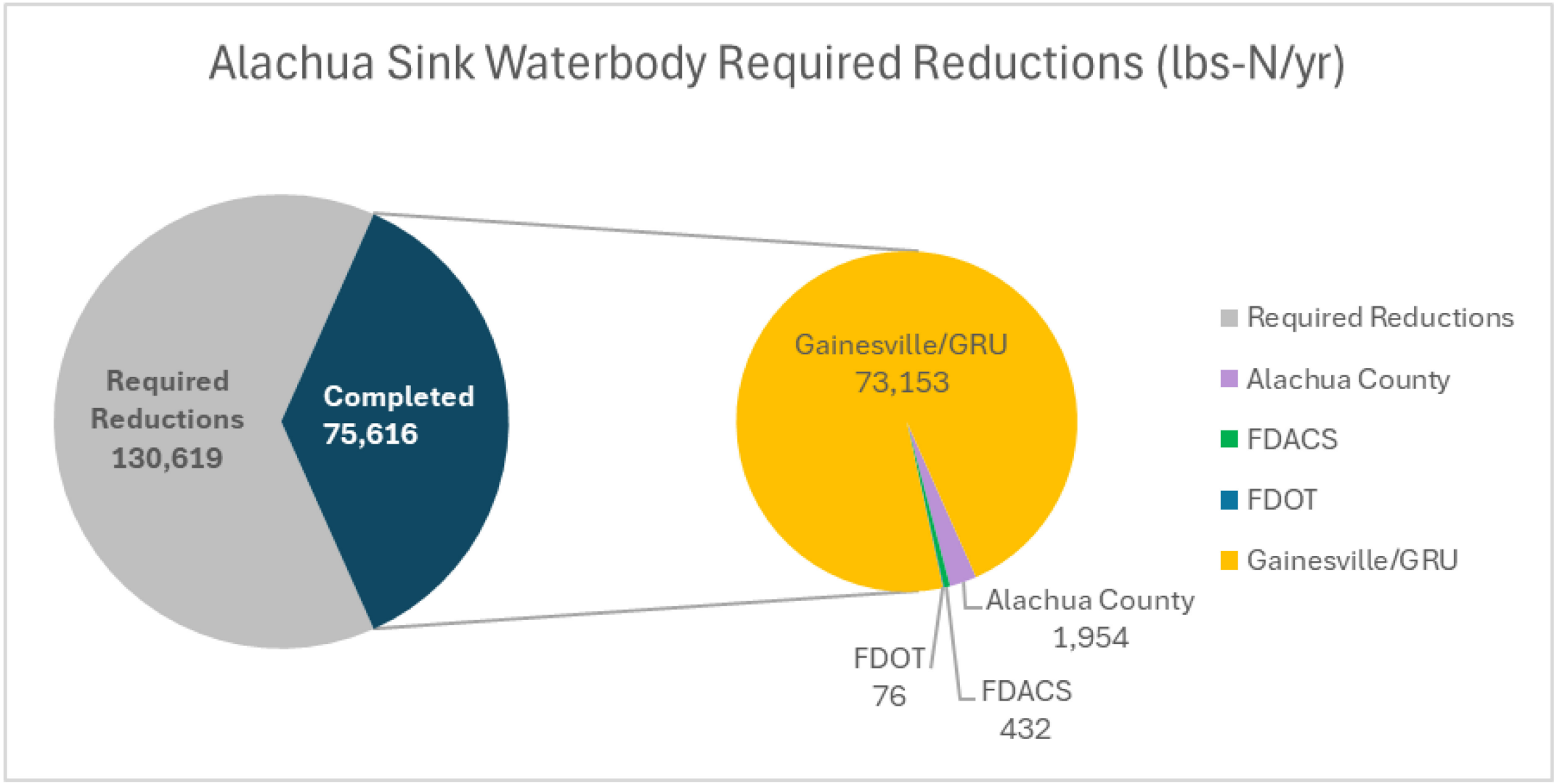
STAR

*PRELIMINARY 2023 STATUS OF PROJECTS

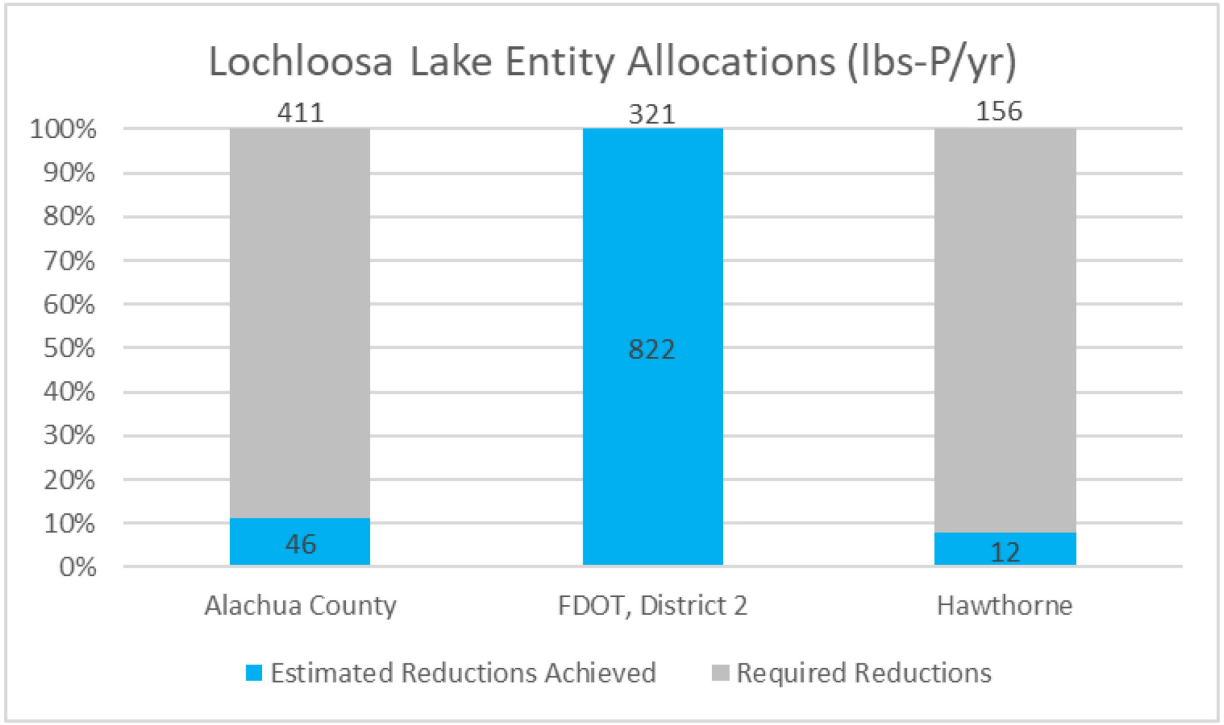
Lead Entity	Completed	Ongoing	Planned	Underway	Total
Alachua County	76	19	2	6	103
City of Gainesville	32	24	1	1	58
City of Hawthorne		1	1		2
City of Waldo		1			1
DEP	4				4
FDACS	6	7			13
FDOT District 2	9	7			16
FDOT District 5	2	1			3
FFS		1			1
FWC	25	3		2	30
GRU	15	6		1	22
Marion County	2	3			5
Orange Creek Basin Partnership	1				1
SJRWMD	24		1		25
Town of McIntosh		1			1
Town of Micanopy		1			1
Town of Reddick		1			1
Grand Total	**196**	**76**	**5**	**10**	**287**

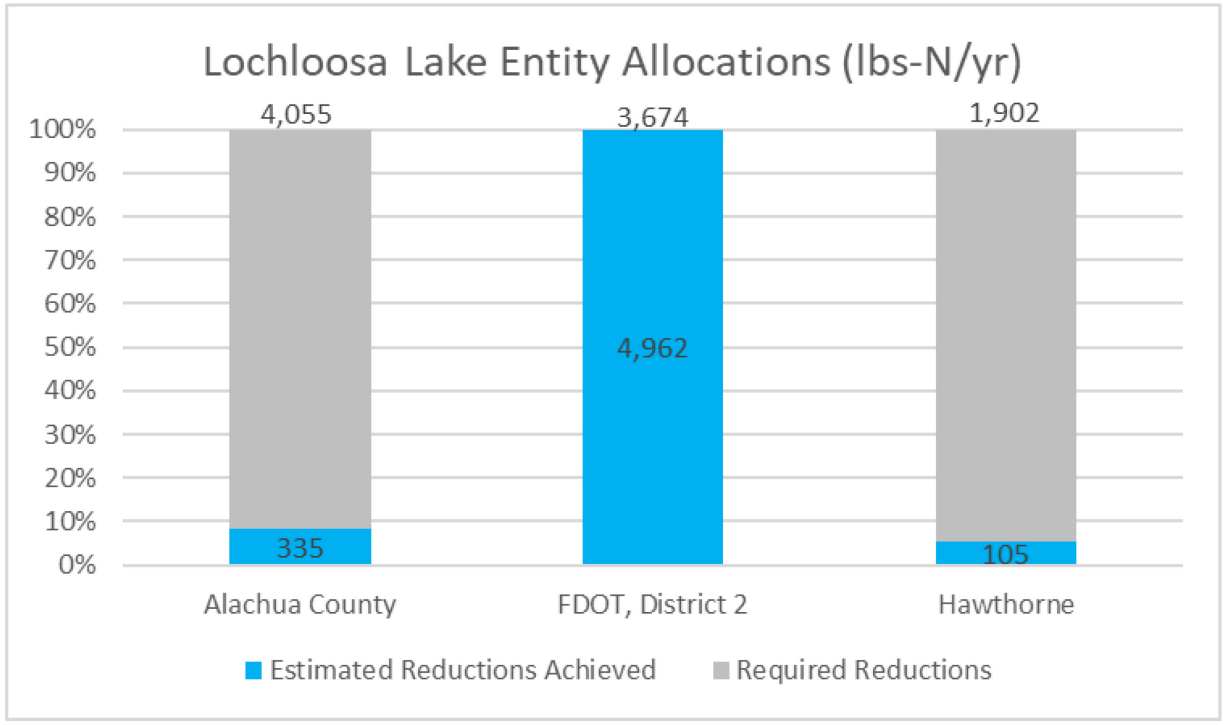
As of Dec. 31, 2023, verified projects in the Orange Creek BMAP have reduced **58,617 lbs./yr.** of TP and **155,958 lbs./yr.** of TN.

PROGRESS
ALACHUA SINK

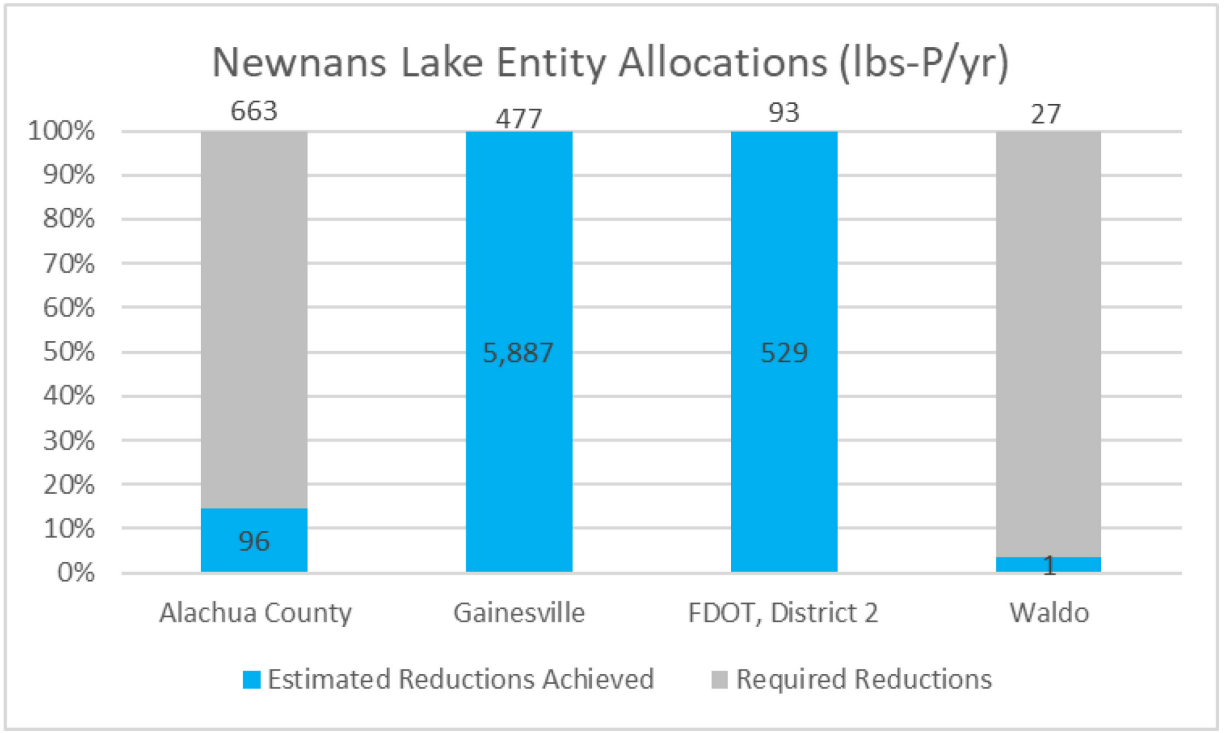


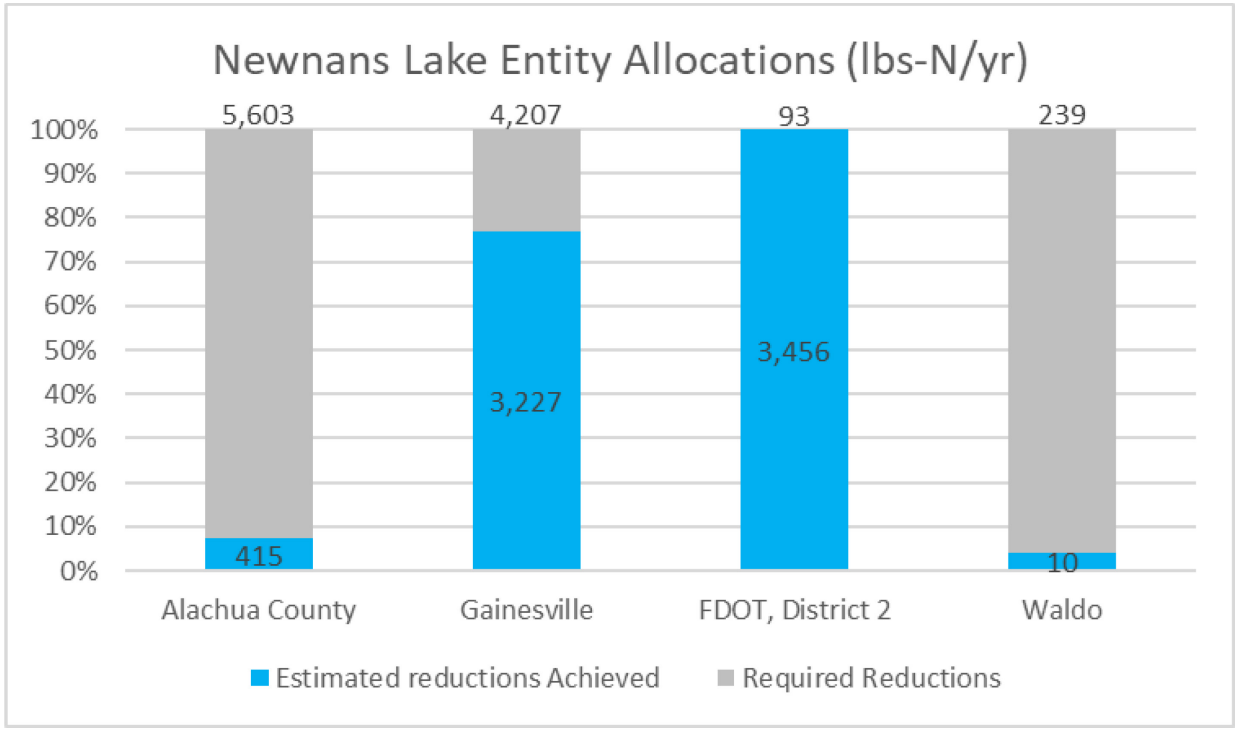
PROGRESS
LOCHLOOSA LAKE



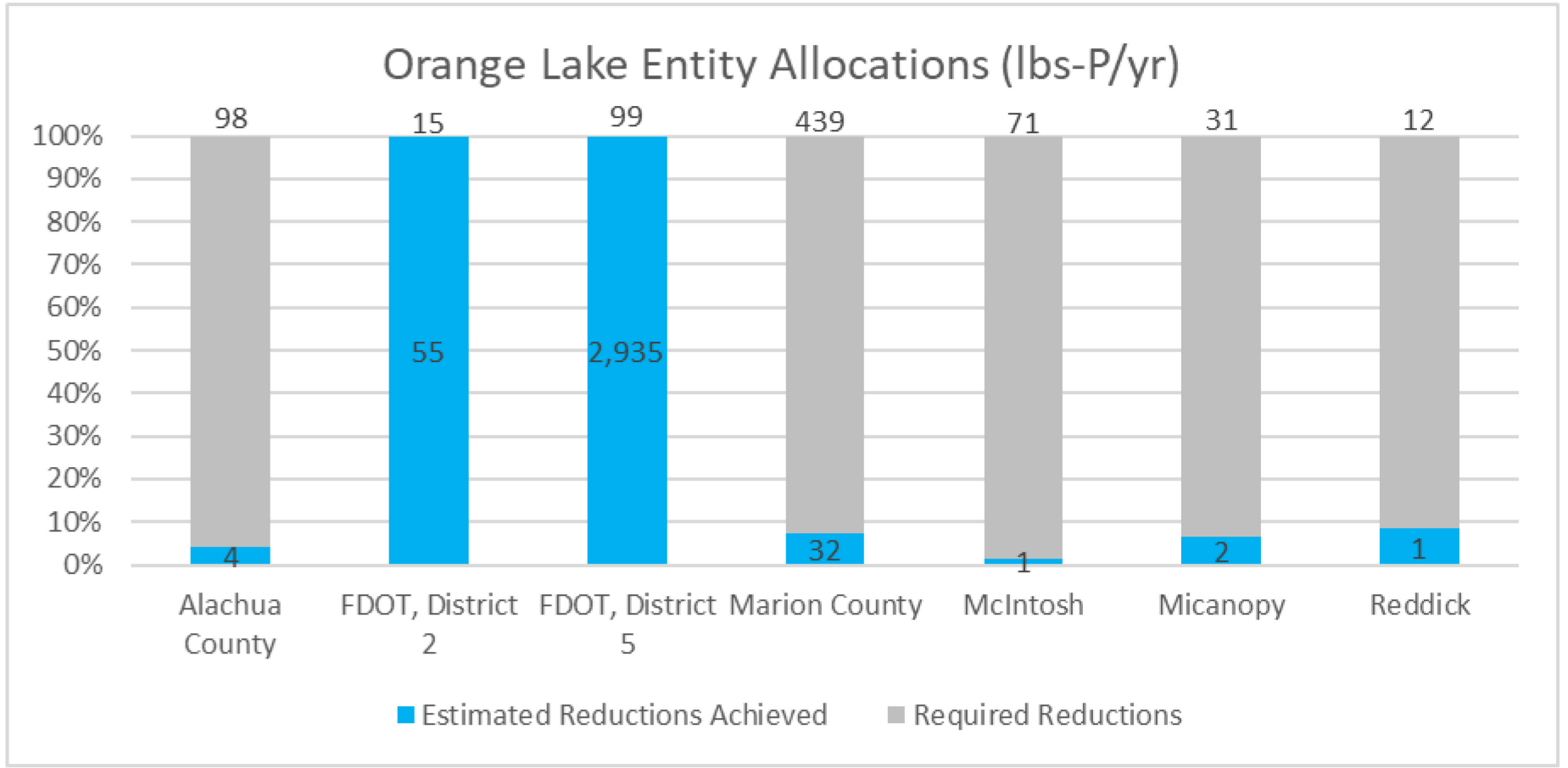


PROGRESS
NEWNANS LAKE

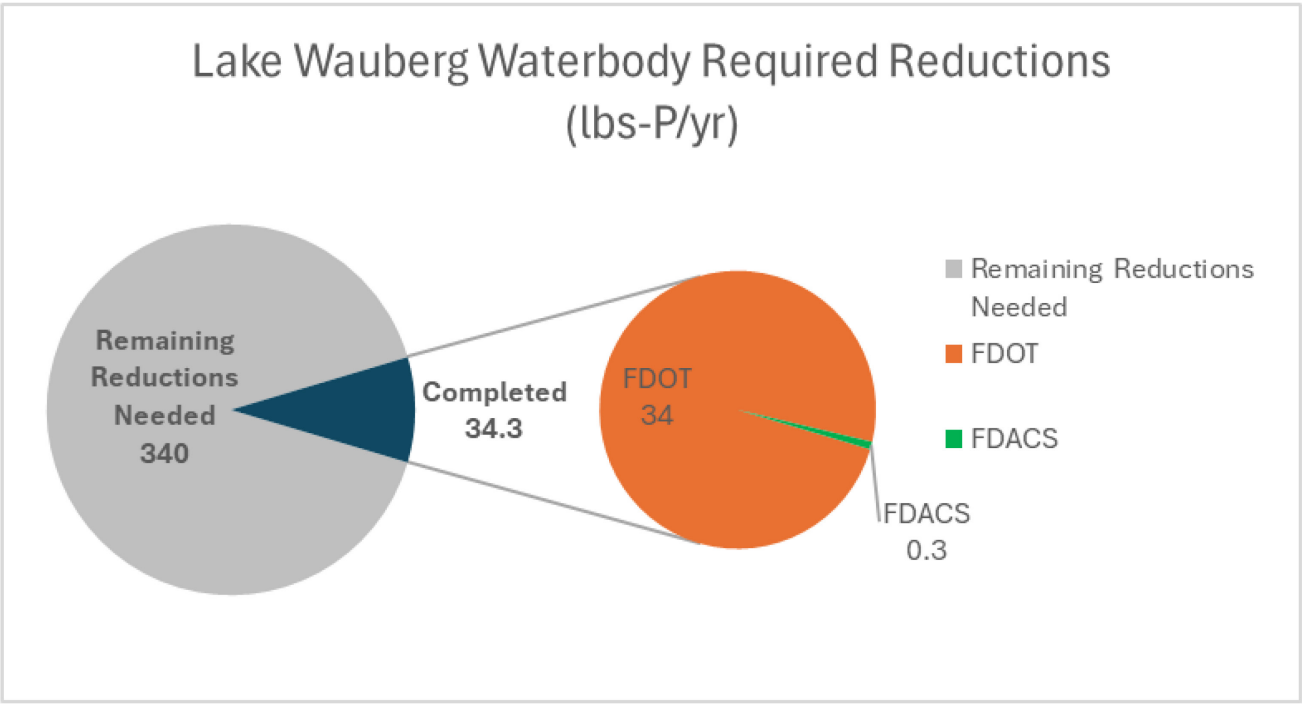


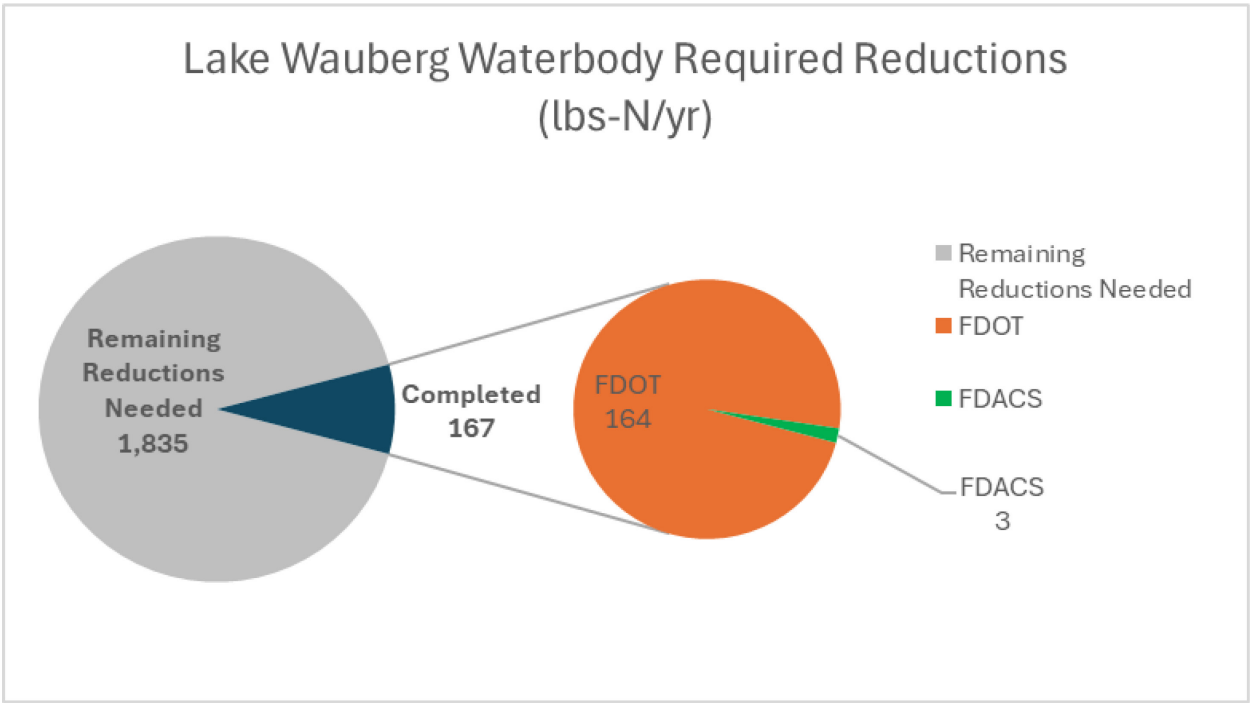


PROGRESS
ORANGE LAKE



PROGRESS
LAKE WAUBERG





PROGRESS

OTHER REDUCTION CONTRIBUTIONS

Orange Creek BMAP	
TP (lbs-P./yr.)	TN (lbs-N./yr.)
46,192	64,217

DATA UPLOAD
WATERSHED INFORMATION NETWORK (WIN)

- Through both the WIN and Florida STORET (STOrage and RETrieval) data repositories, DEP implements Florida statutory requirements, DEP rule requirements and U.S. Environmental Protection Agency (EPA) funding requirements for management of environmental (non-regulatory) data for the state.

- Data from WIN are used by DEP for standards development, Impaired Waters Rule assessments, TMDL development, reasonable assurance plans, alternative restoration plans, **BMAP development and assessment** and for providing data as required to EPA and to the public.

- WIN data can be retrieved through the WIN Reports and Extracts menu at https://prodenv.dep.state.fl.us/DearWin/.

- Data providers to WIN and STORET include Division of Environmental Assessment and Restoration and other DEP entities, water management districts (WMDs), cities, counties, other state agencies, universities, private and volunteer organizations.

- If your entity is collecting ambient water quality data, please upload it to WIN.

WIN COORDINATORS

WIN Coordinator	DEP District Area or Role	Phone	Email
Justin Nelson	Northeast, Northwest, Southeast	850-245-8510	Justin.M.Nelson@FloridaDEP.gov
Casey Marston	South, Southwest	850-245-8049	Casey.Marston@FloridaDEP.gov
Lisa Schwenning	SPA (STORET Public Access), WQX (U.S. EPA Water Quality Exchange)	850-245-8509	Lisa.Schwenning@floridaDEP.gov
Jason Storrs	Central, Statewide	850-245-8467	Jason.Storrs@FloridaDEP.gov

Orange Creek Basin Water Quality Update

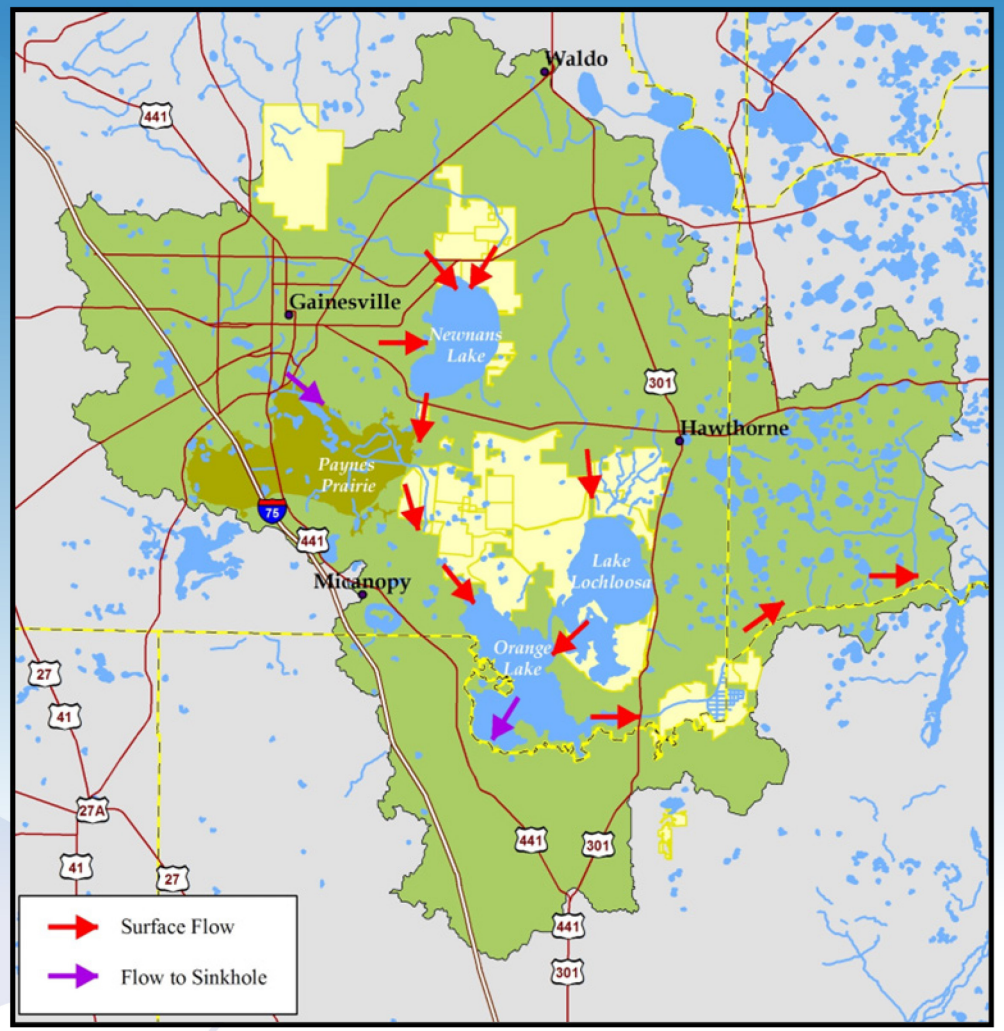
Jian Di

Environmental Scientist V

Bureau of Environmental Sciences/Division of Water Resources

St. Johns River
Water Management District

Orange Creek Basin Surface Flow



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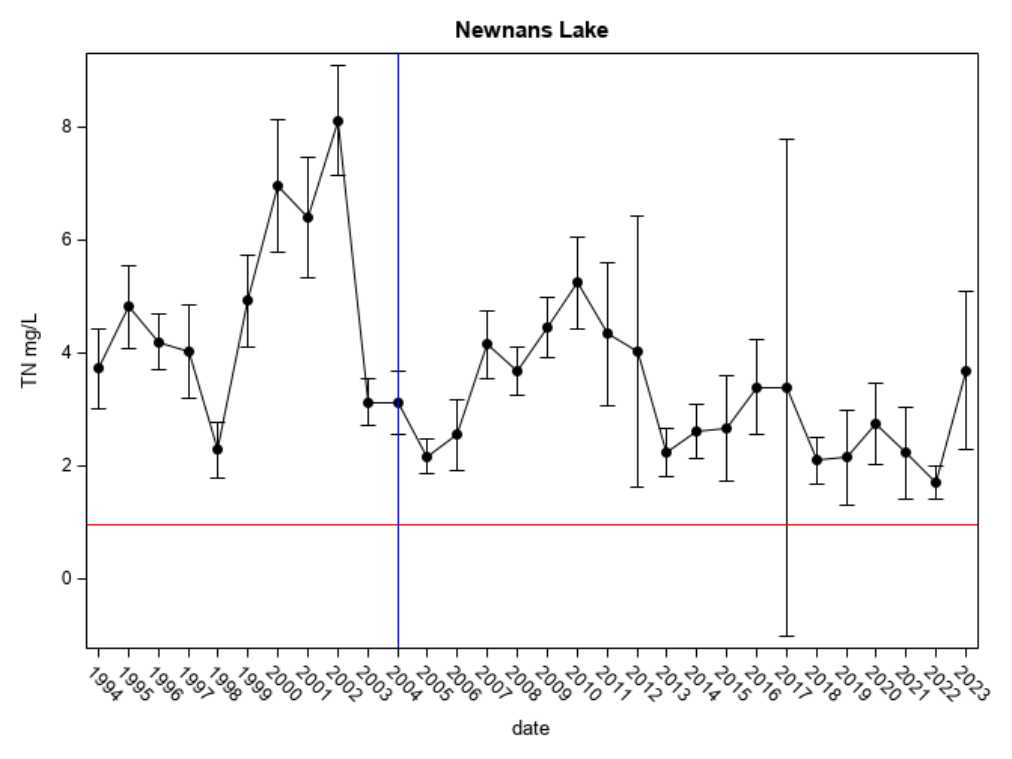
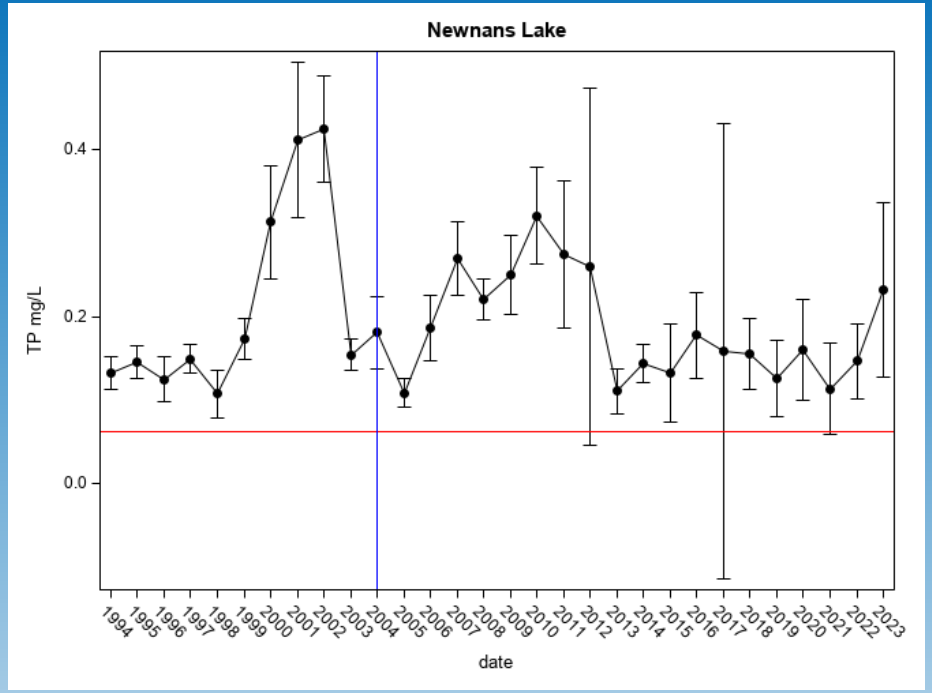
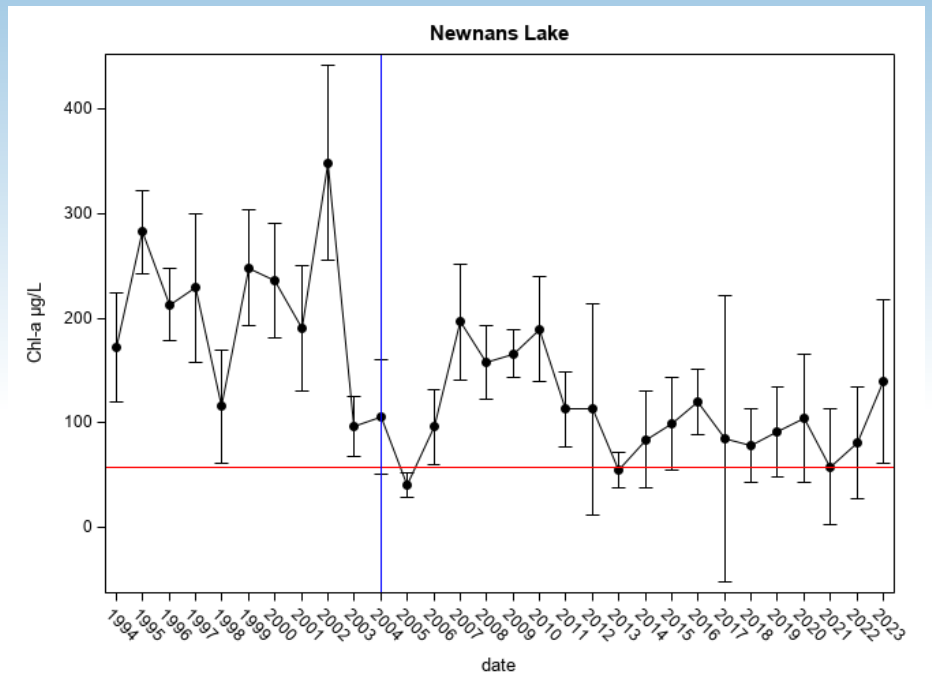
Newnans Lake Water Quality





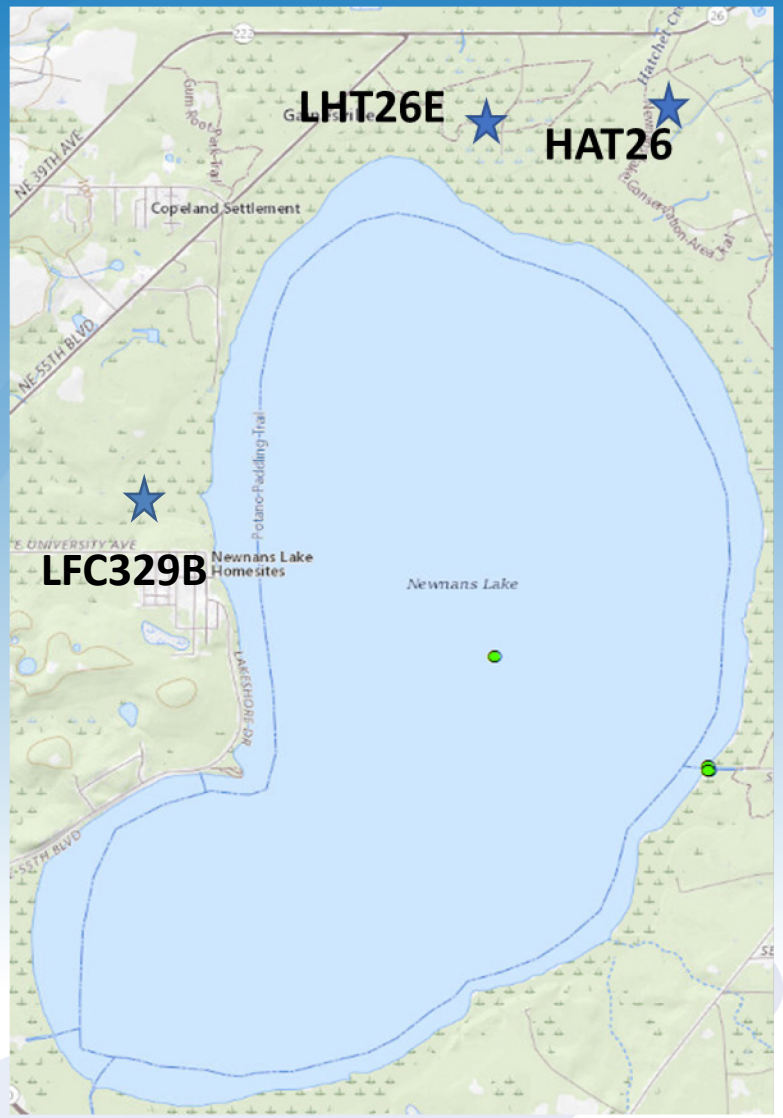


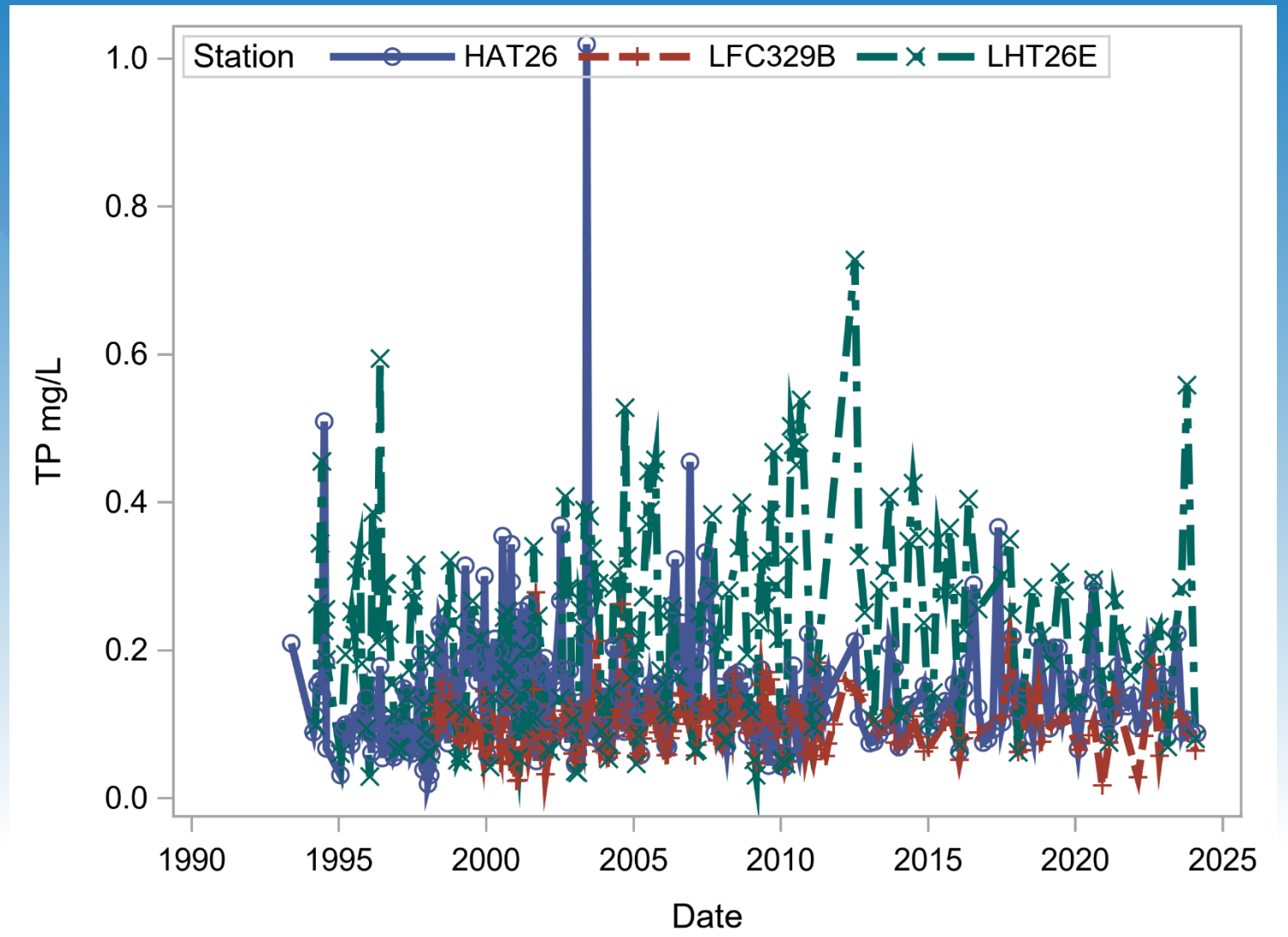
Newnans Lake	TMDL Target (mg/L)	2023 average (mg/L)
TN	0.97	3.69
TP	0.062	0.232
Chl-a	0.058	0.139

The red line is TMDL target

St. Johns River Water Management District

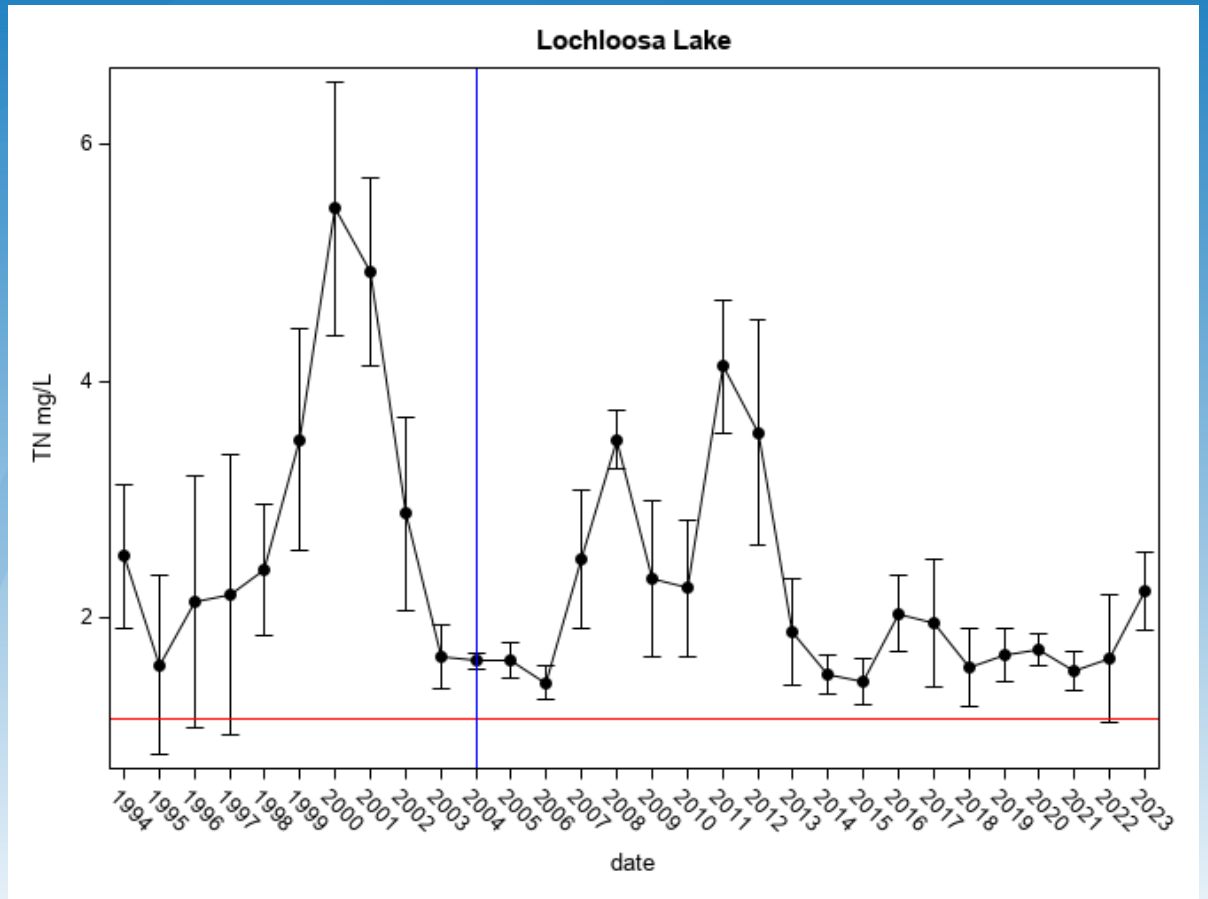
TP concentrations in Newnans Lake tributaries

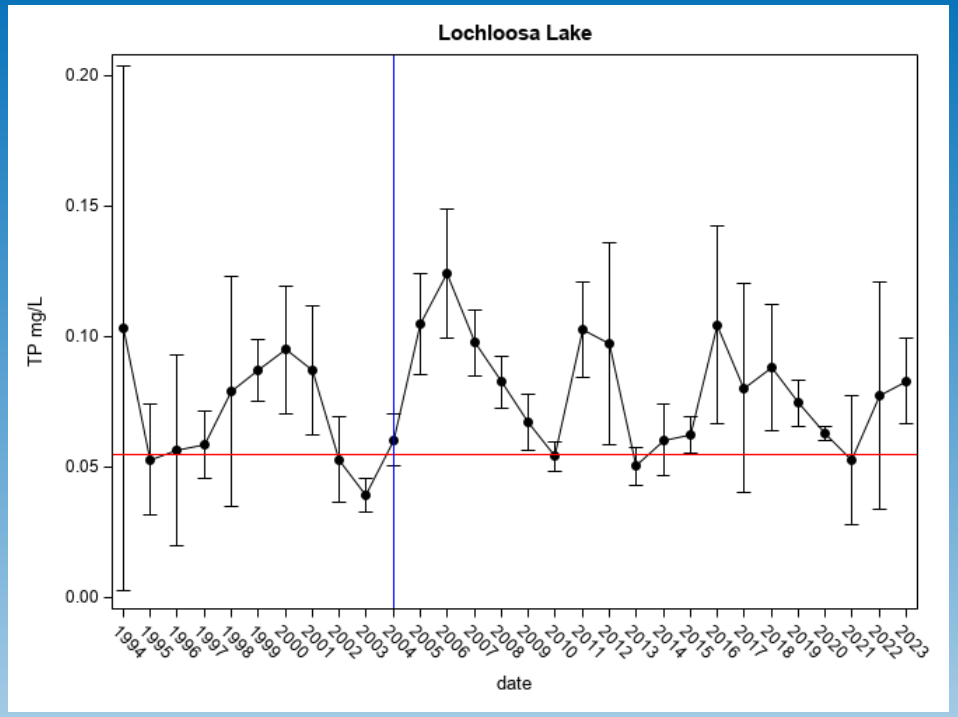


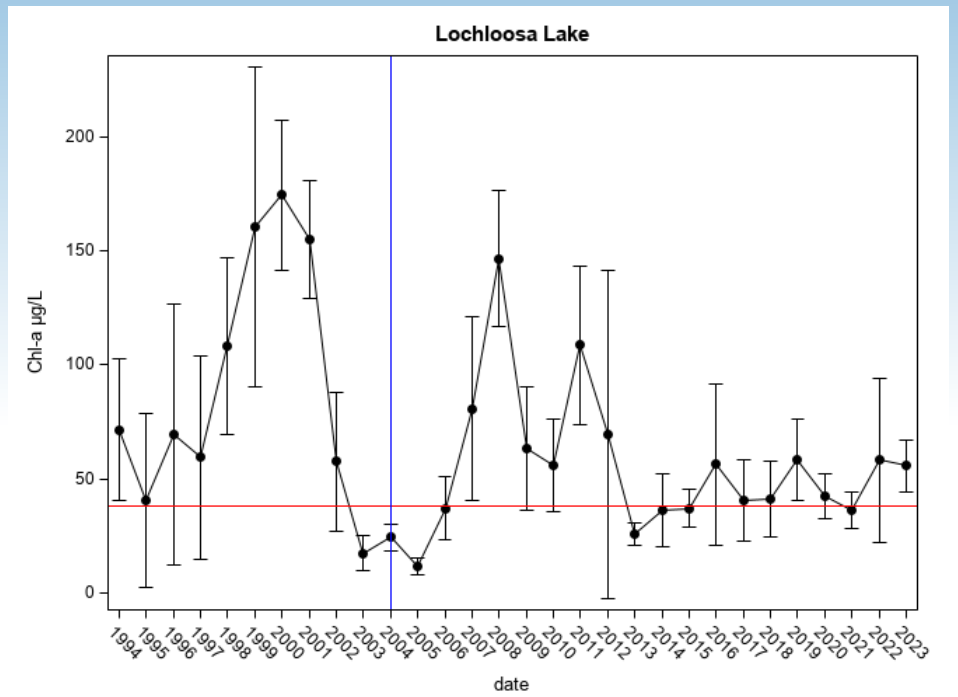


St. Johns River Water Management District

Lochloosa Lake Water Quality







Lochloosa Lake	TMDL Target (mg/L)	2023 average (mg/L)
TN	1.15	1.66
TP	0.055	0.083
Chl-a	0.038	0.056

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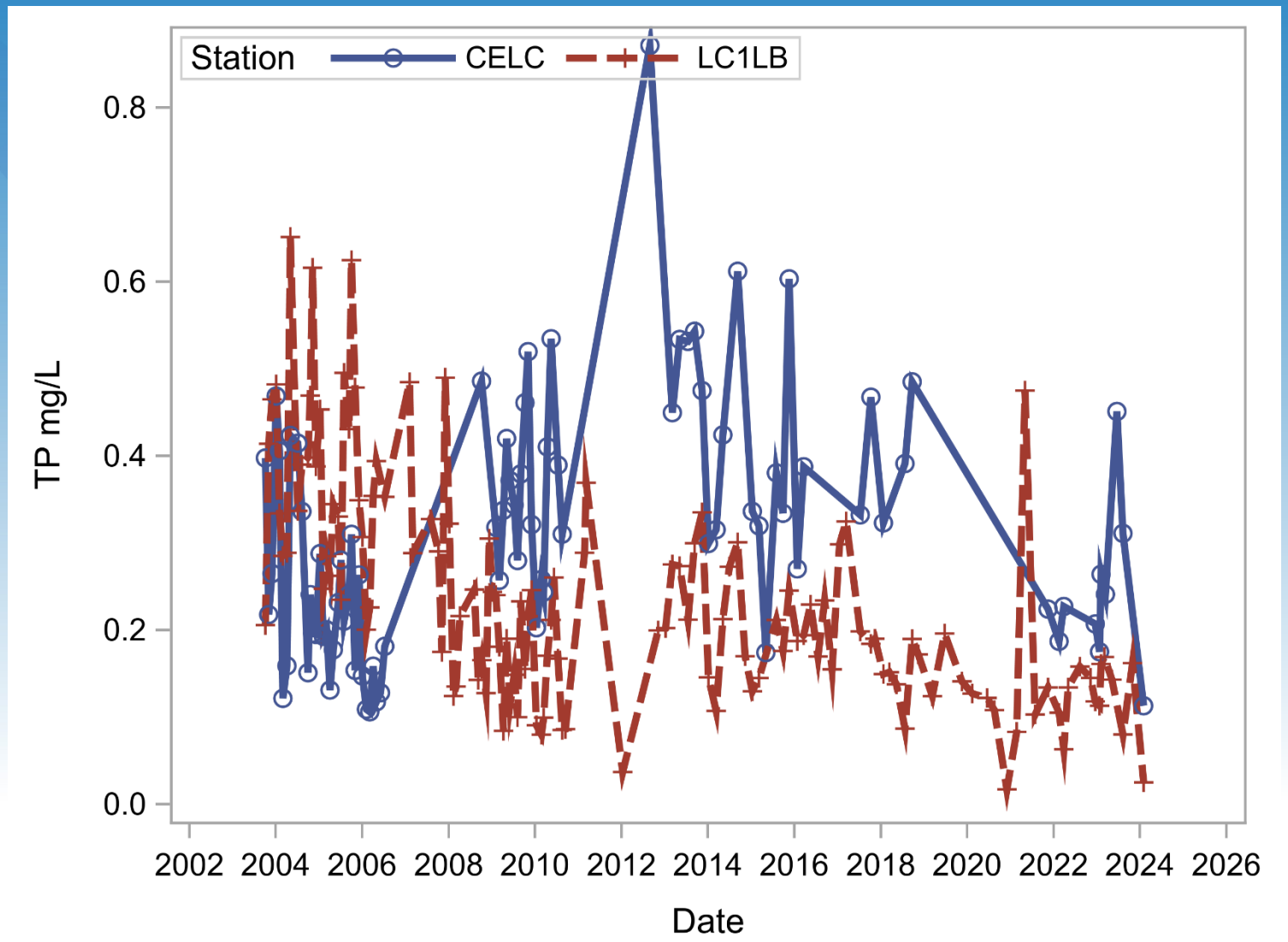
The red line is TMDL target

TP concentrations in Lochloosa Lake tributaries



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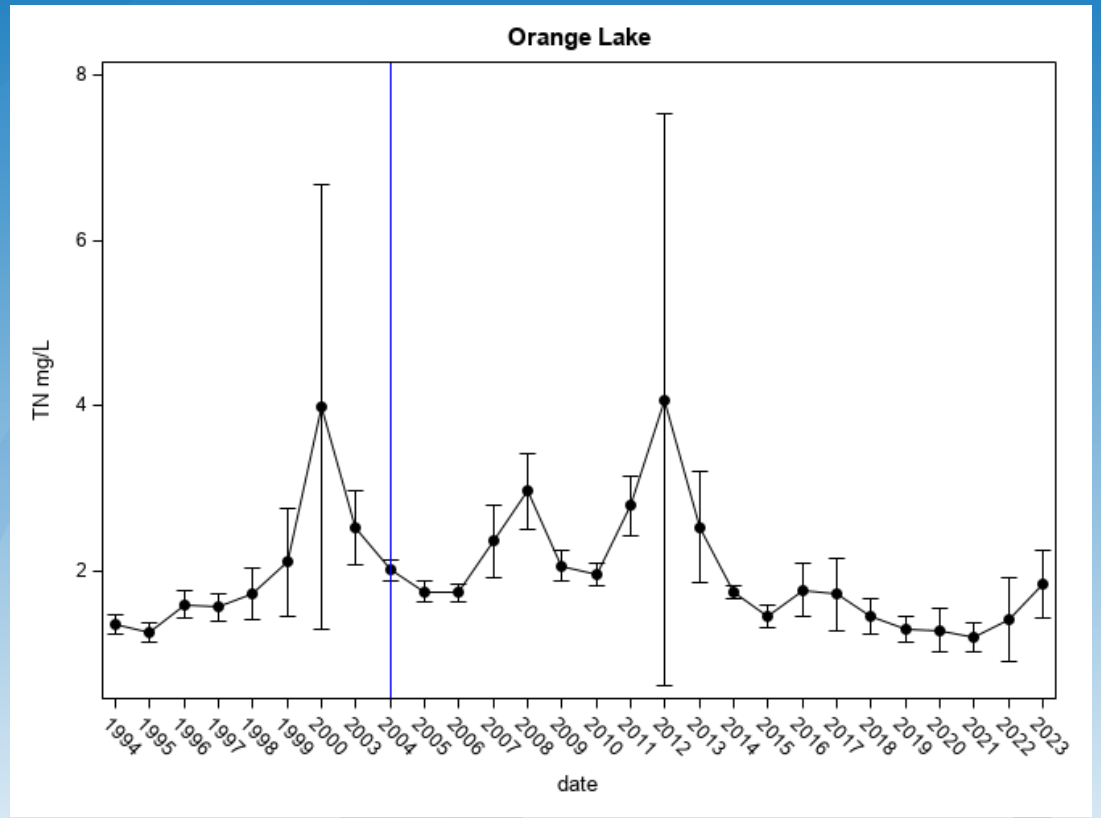
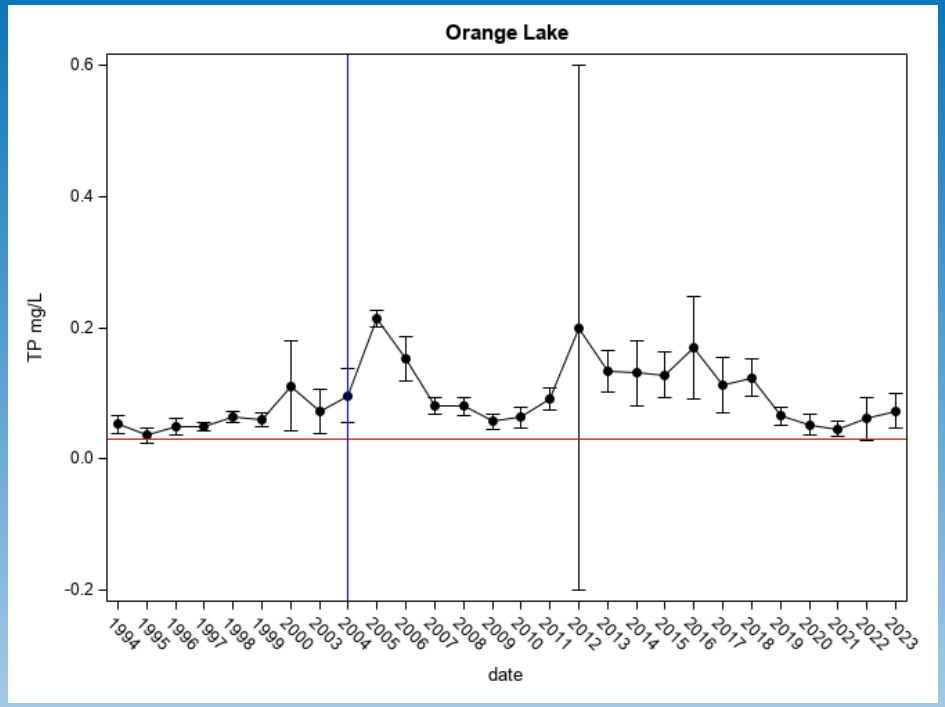
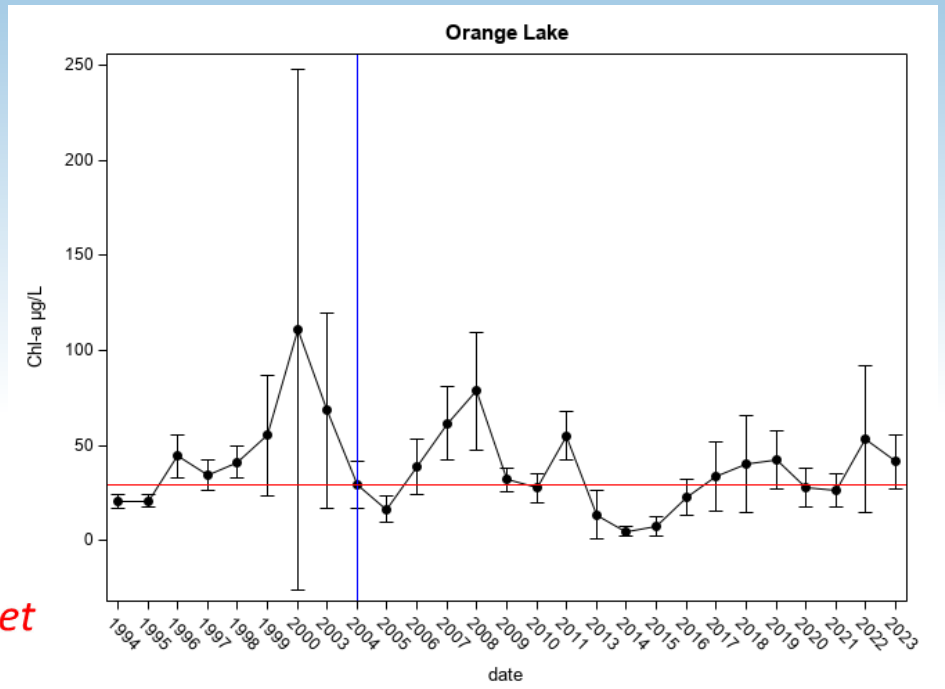
Water Management District

Orange Lake Water Quality







Orange lake	TMDL Target (mg/L)	2023 average (mg/L)
TP	0.031	0.073
Chl-a	0.029	0.041

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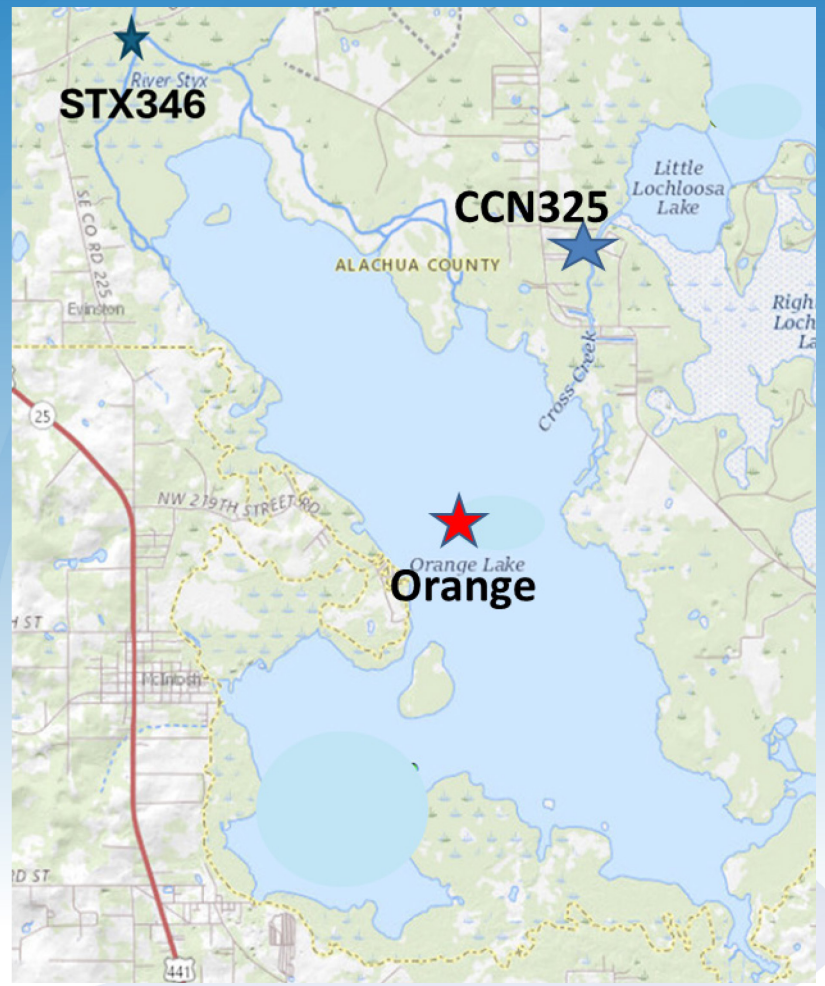
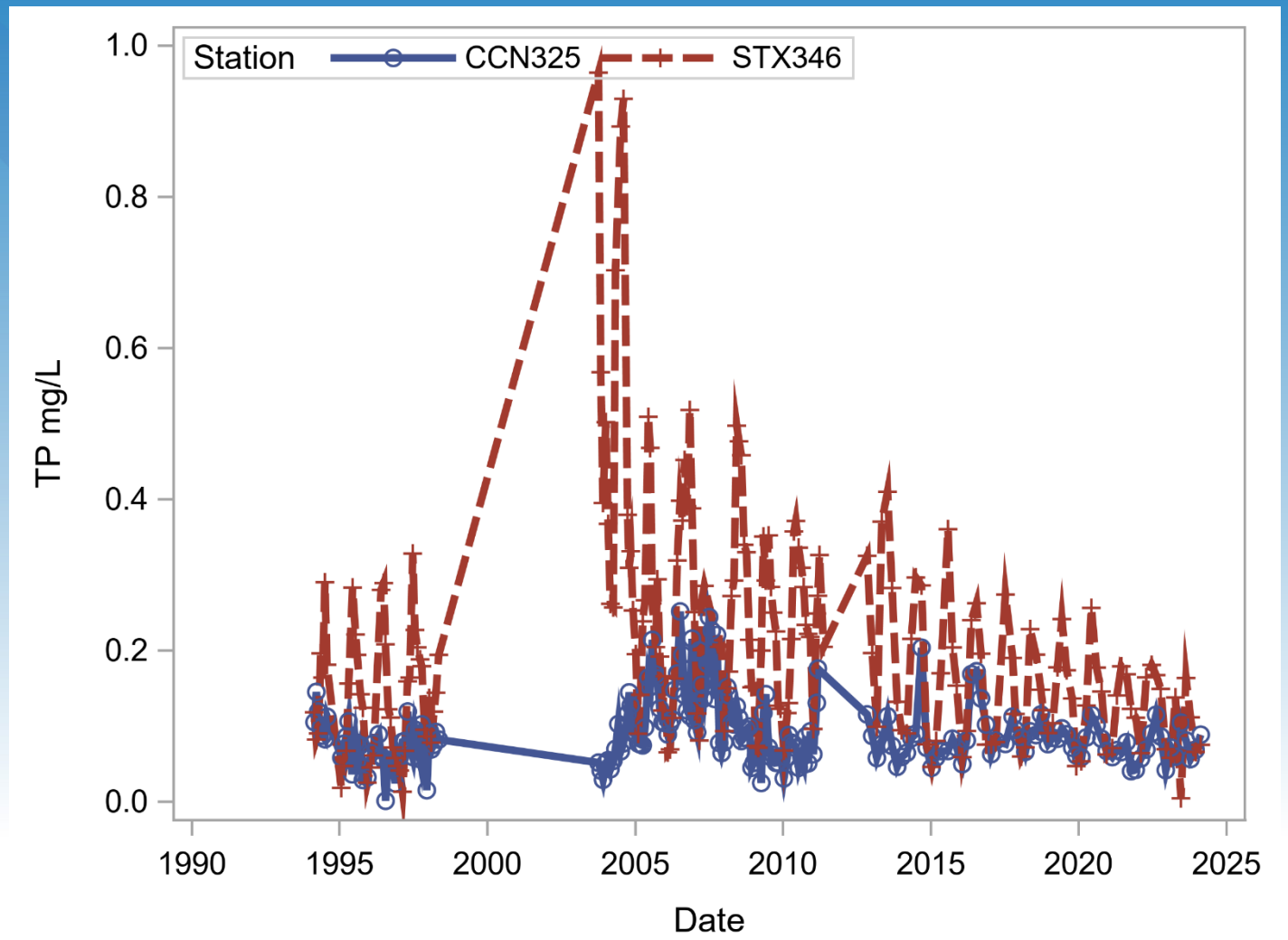
The red line is TMDL target

TP concentrations in Orange Lake tributaries





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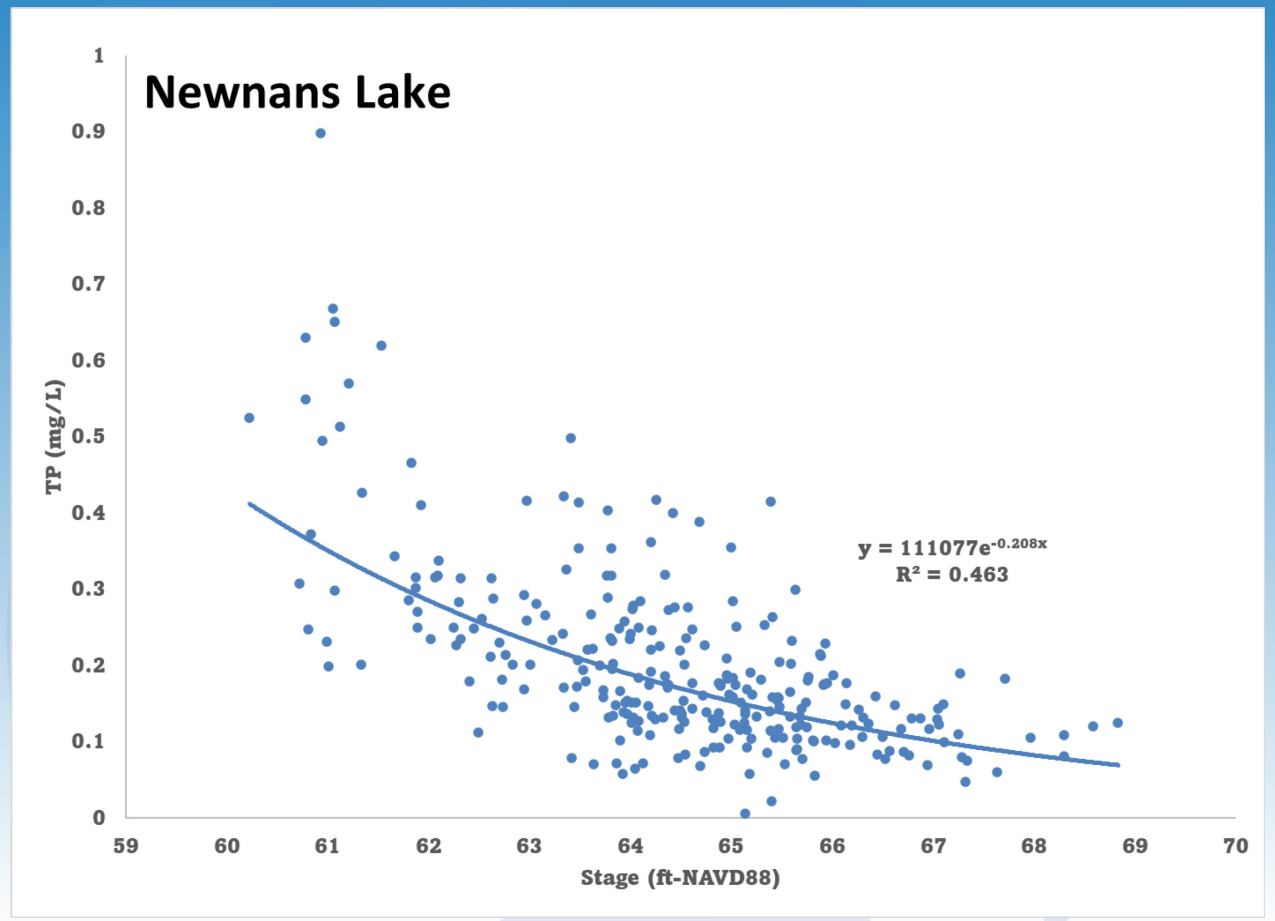
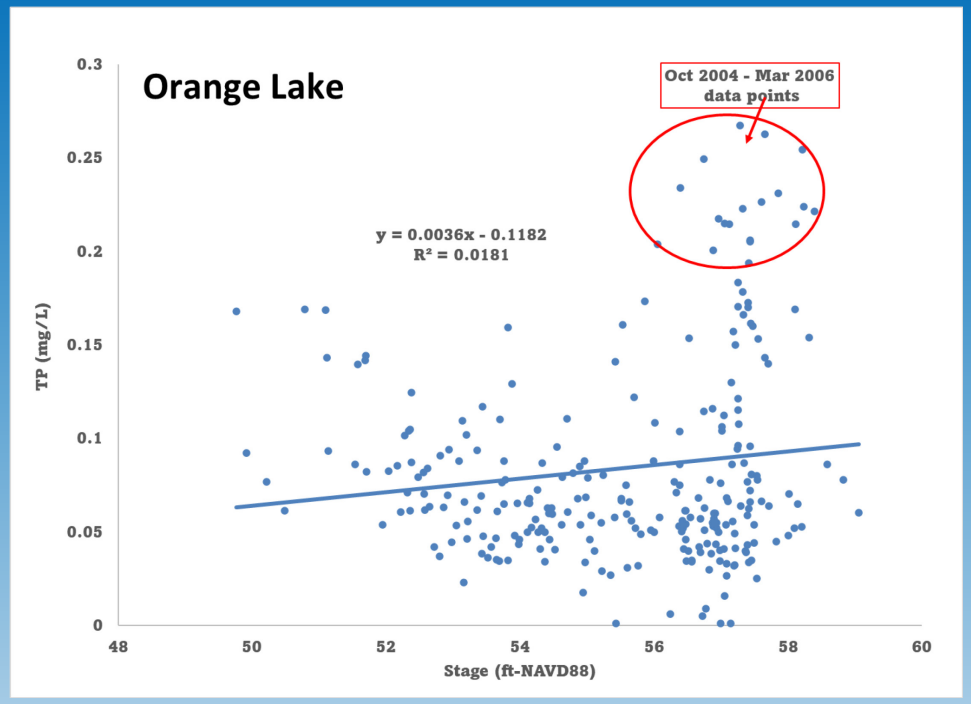
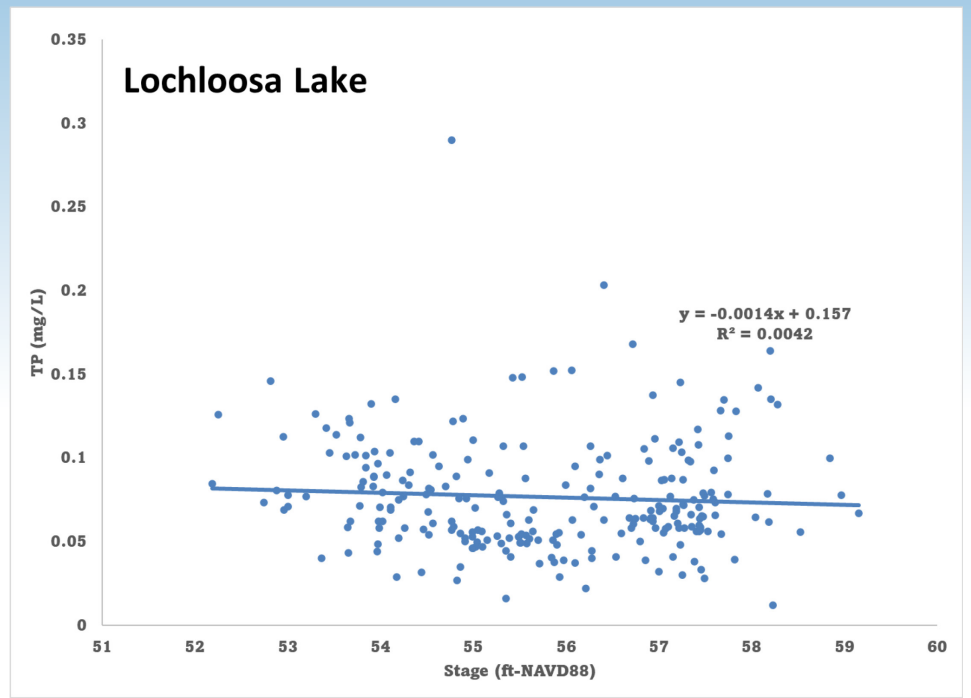
Stage and TP relationships in OCB Lakes

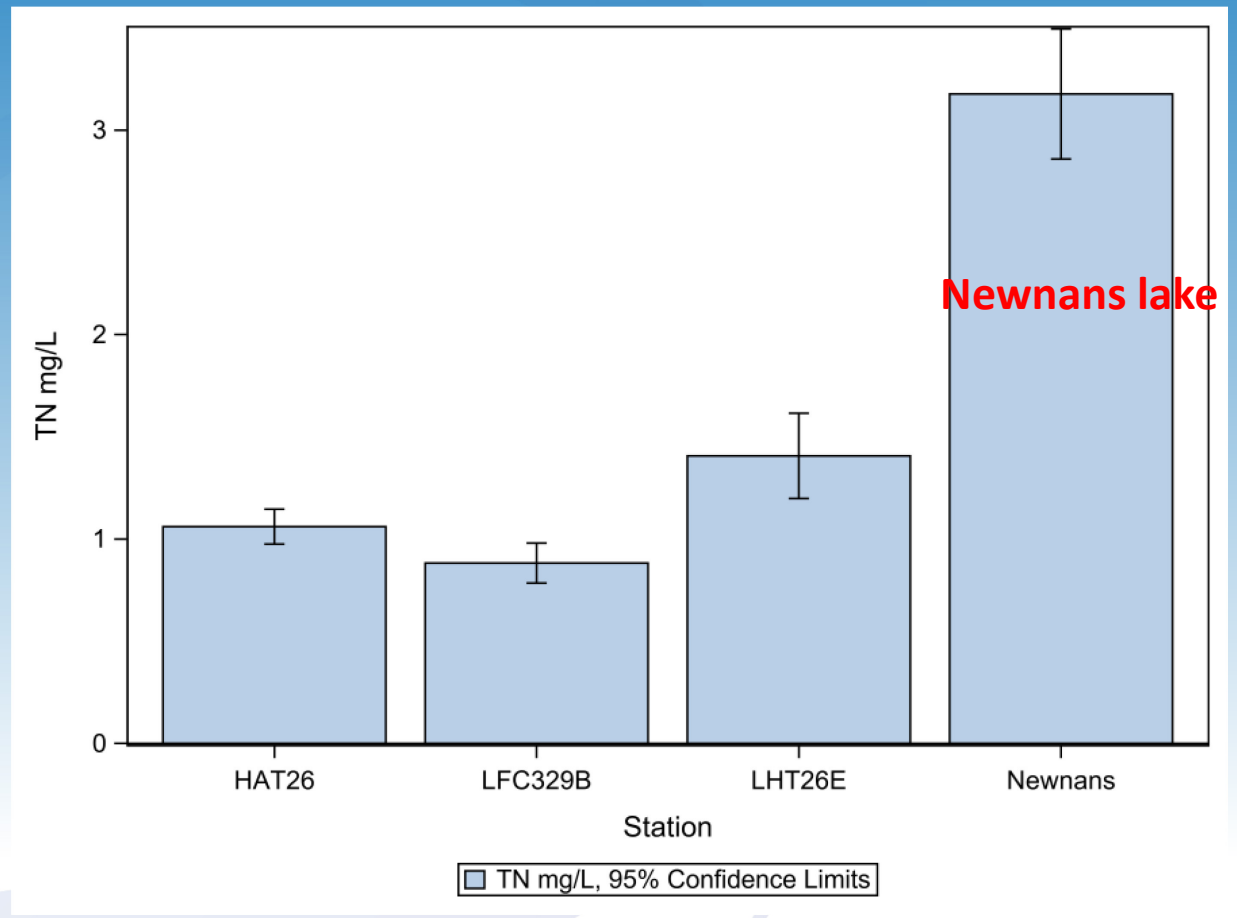


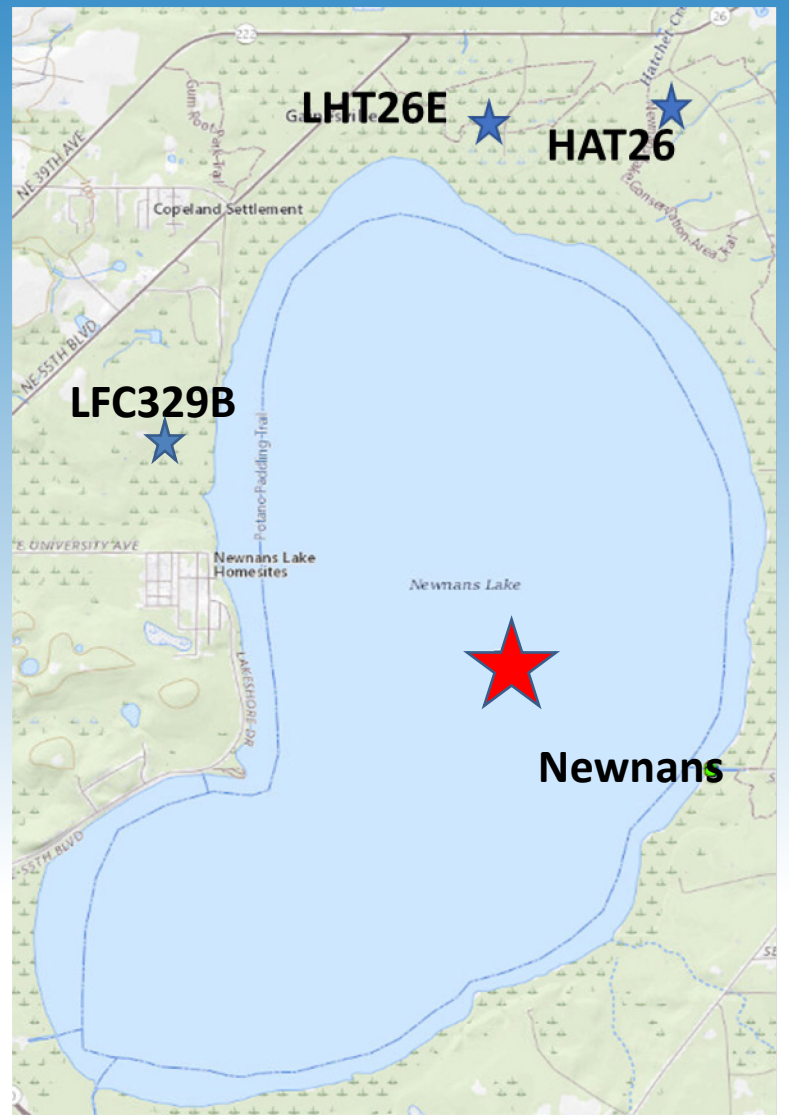




St. Johns River
Water Management District

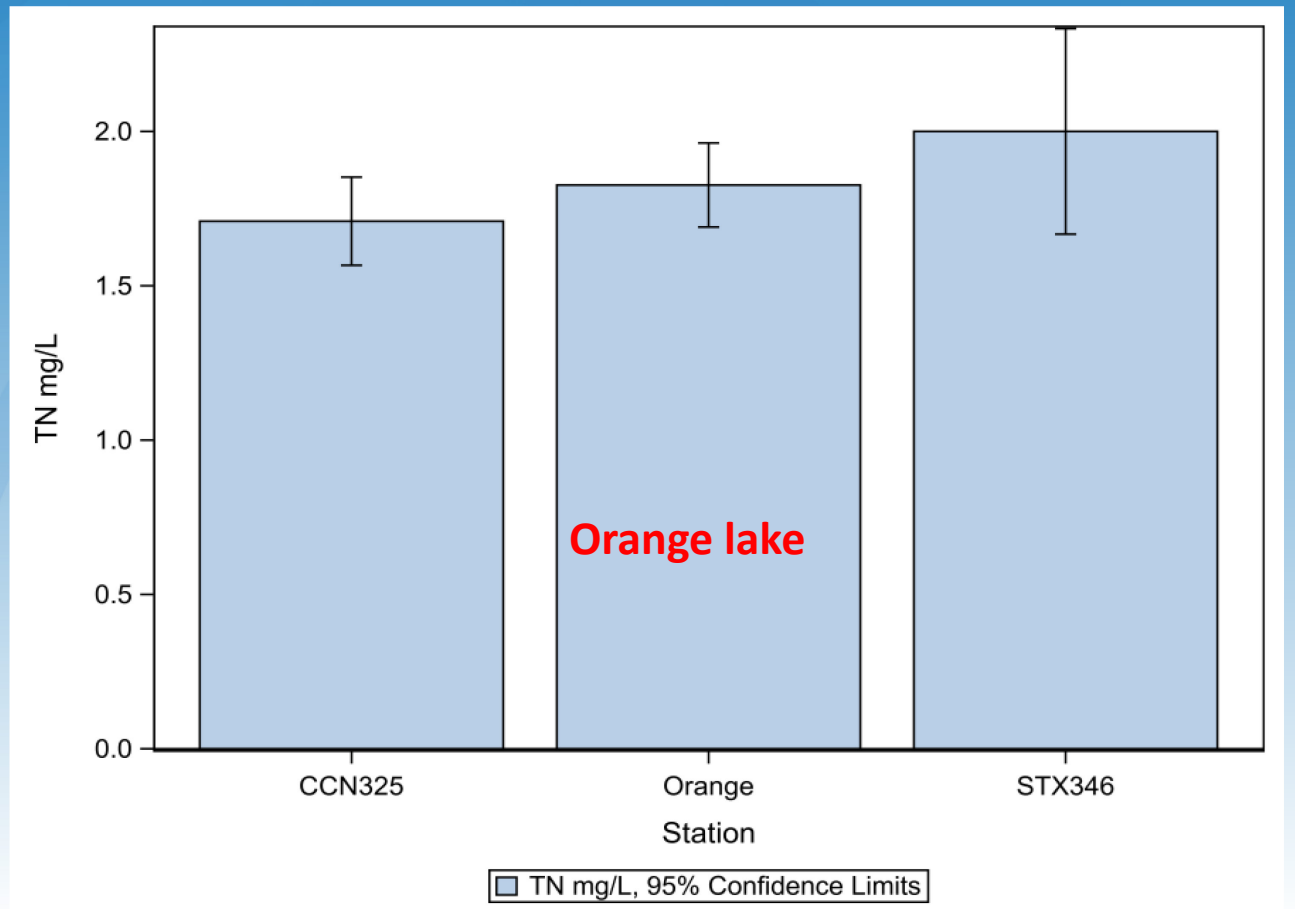
Nitrogen fixation probably is a significant N source to Newnans Lake

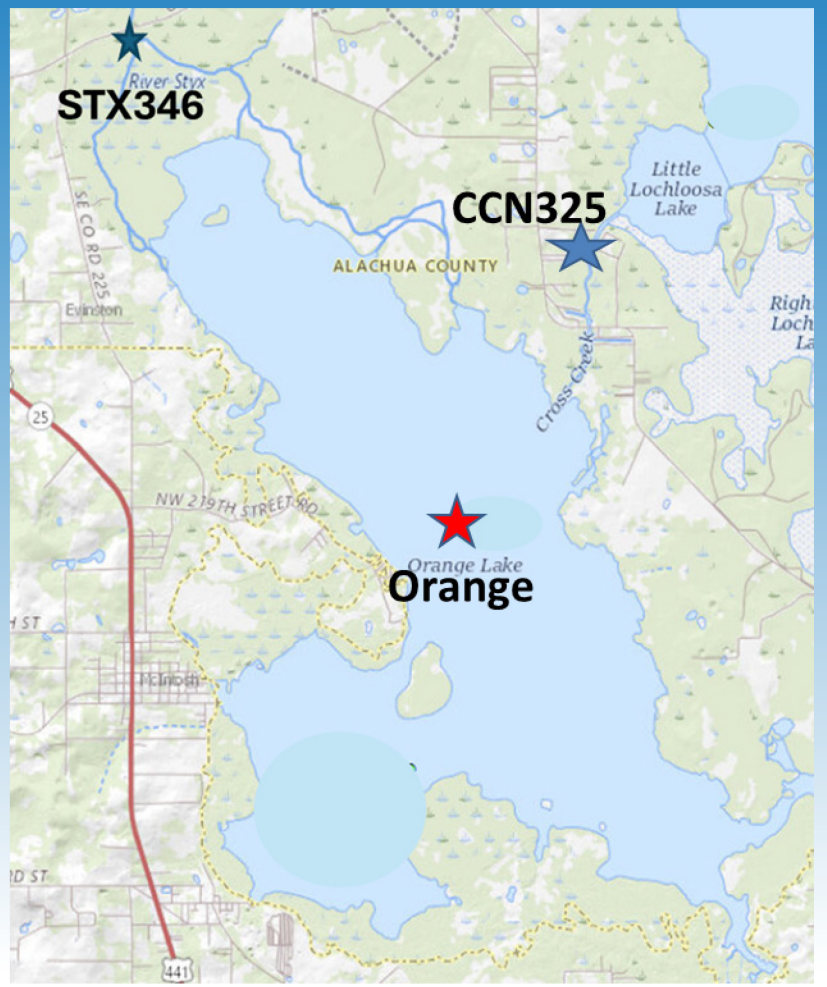




St. Johns River Water Management District

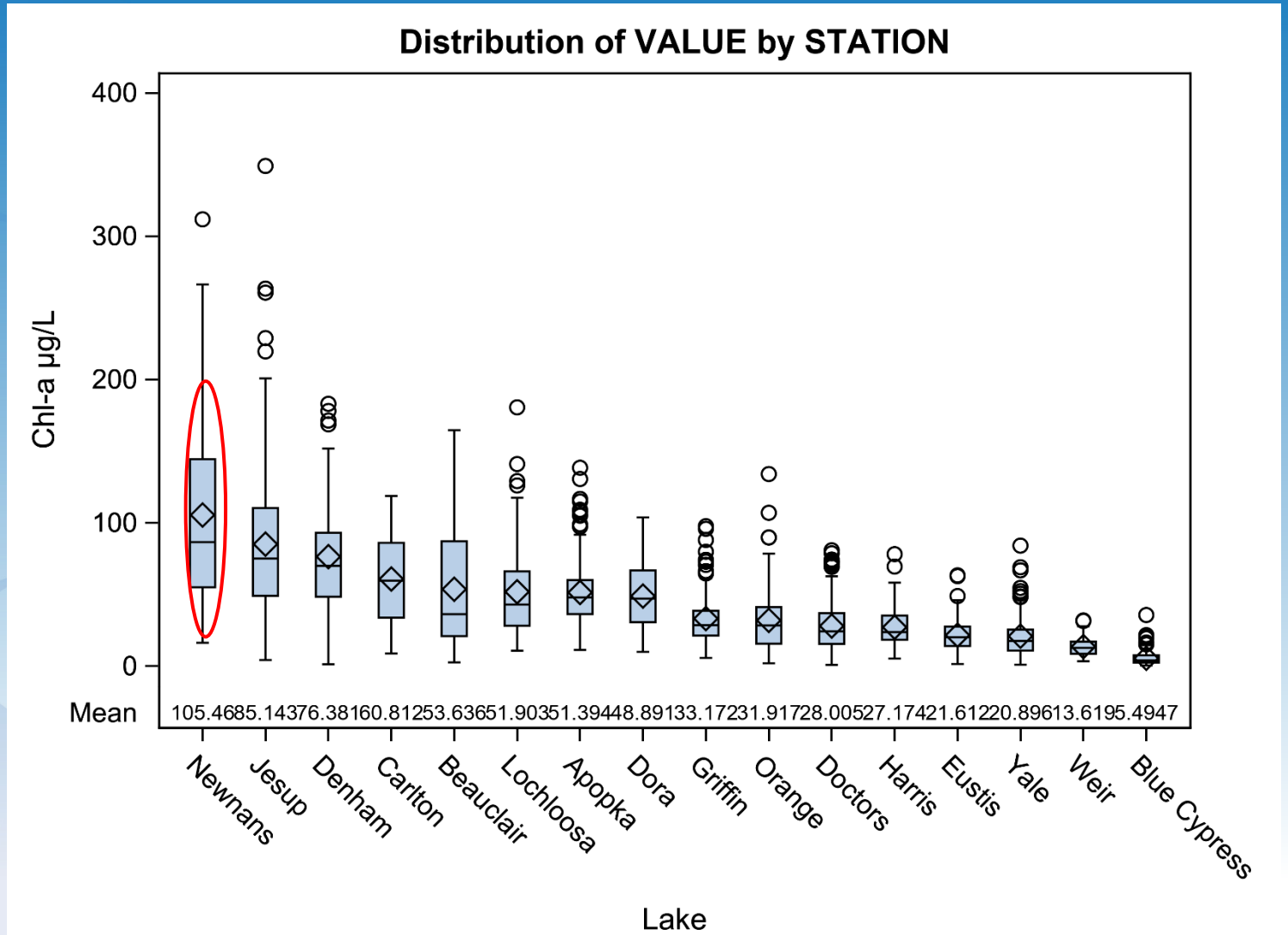
Nitrogen fixation is likely an insignificant N source to Orange Lake





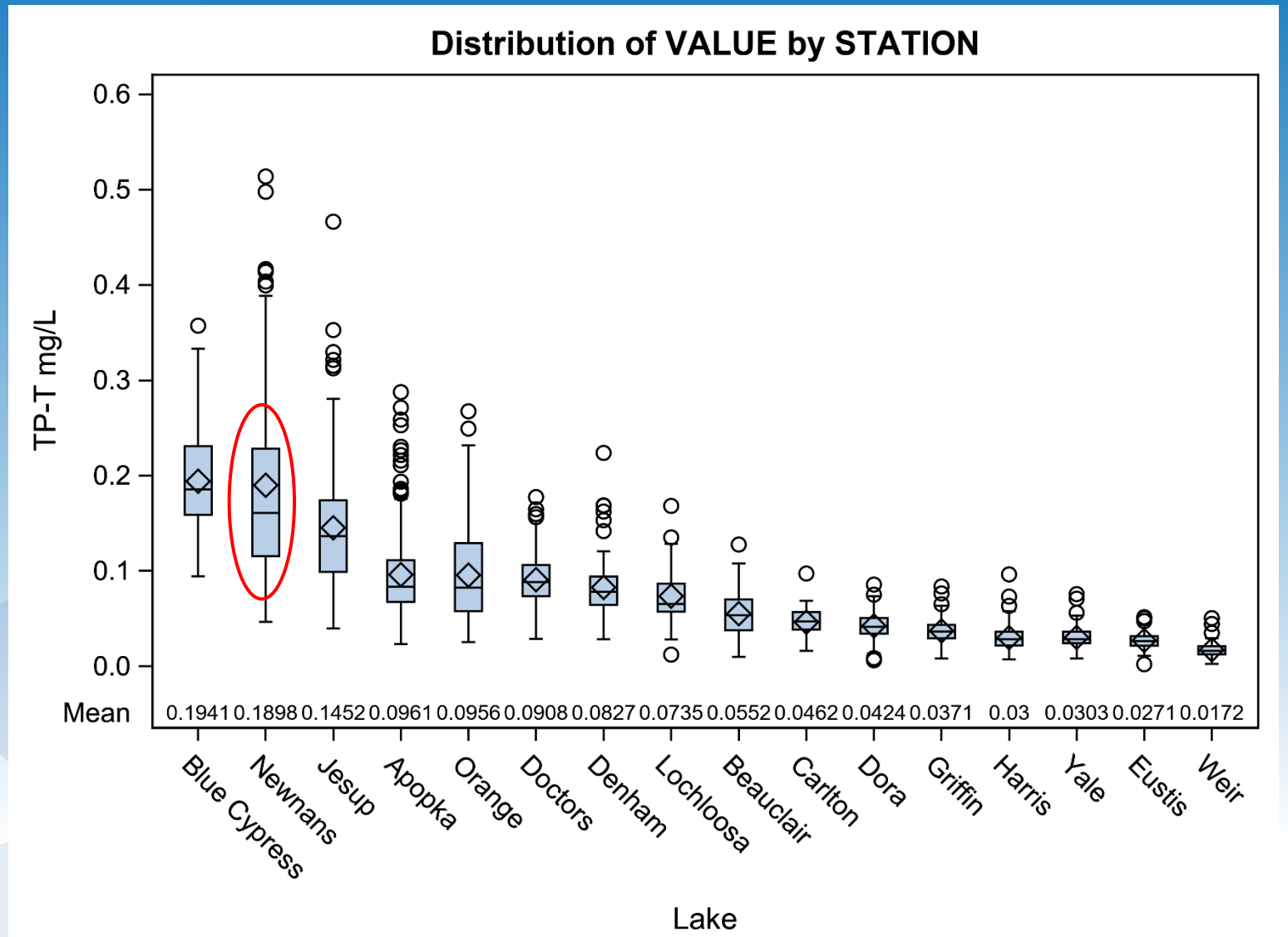
St. Johns River
Water Management District

Chl-a Concentration in Selected District Lakes (2010-2023)



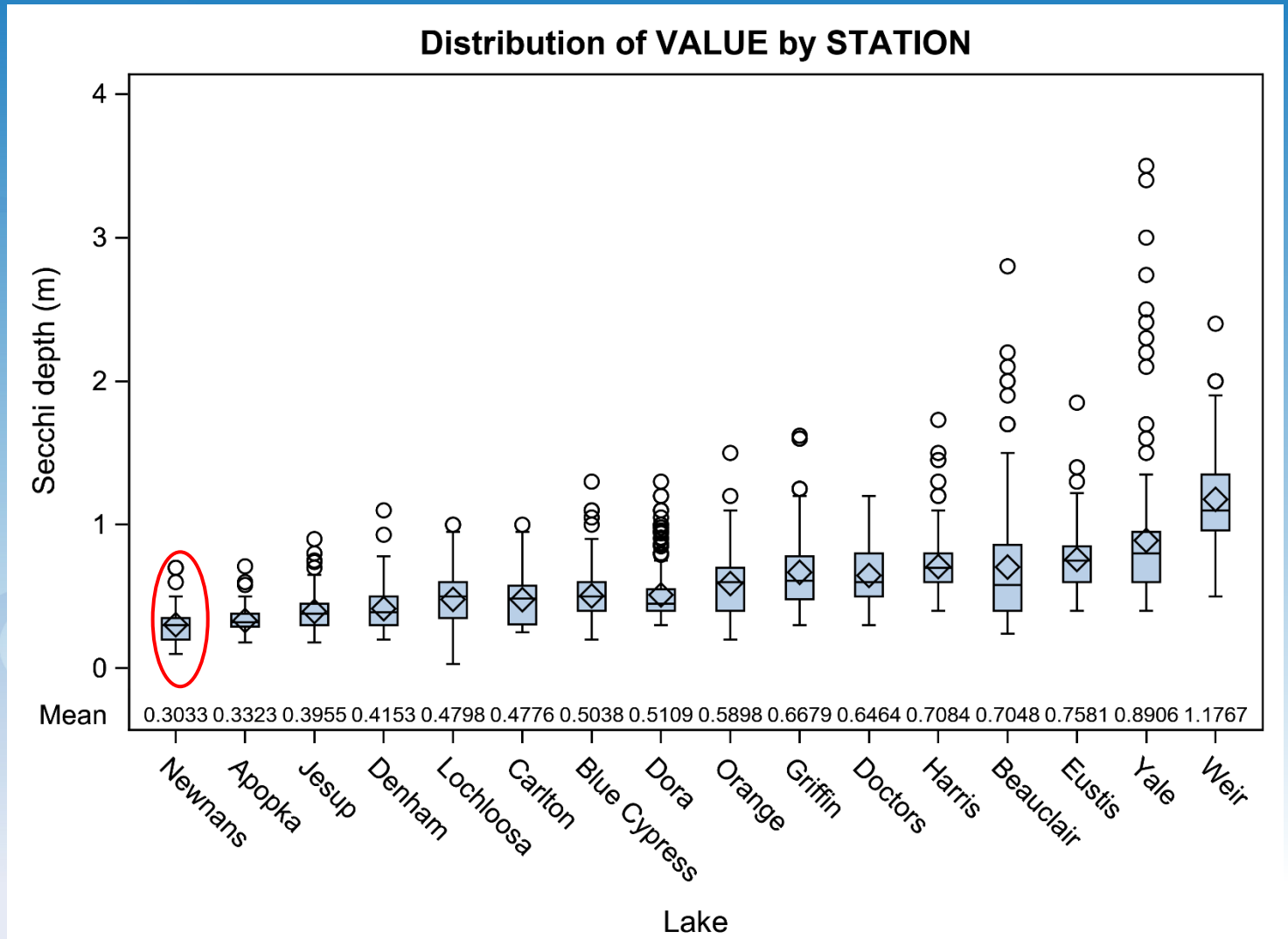
St. Johns River Water Management District

TP Concentration in Selected District Lakes (2010-2023)



St. Johns River
Water Management District

Secchi Depth in Selected District Lakes (2010-2023)



St. Johns River
Water Management District

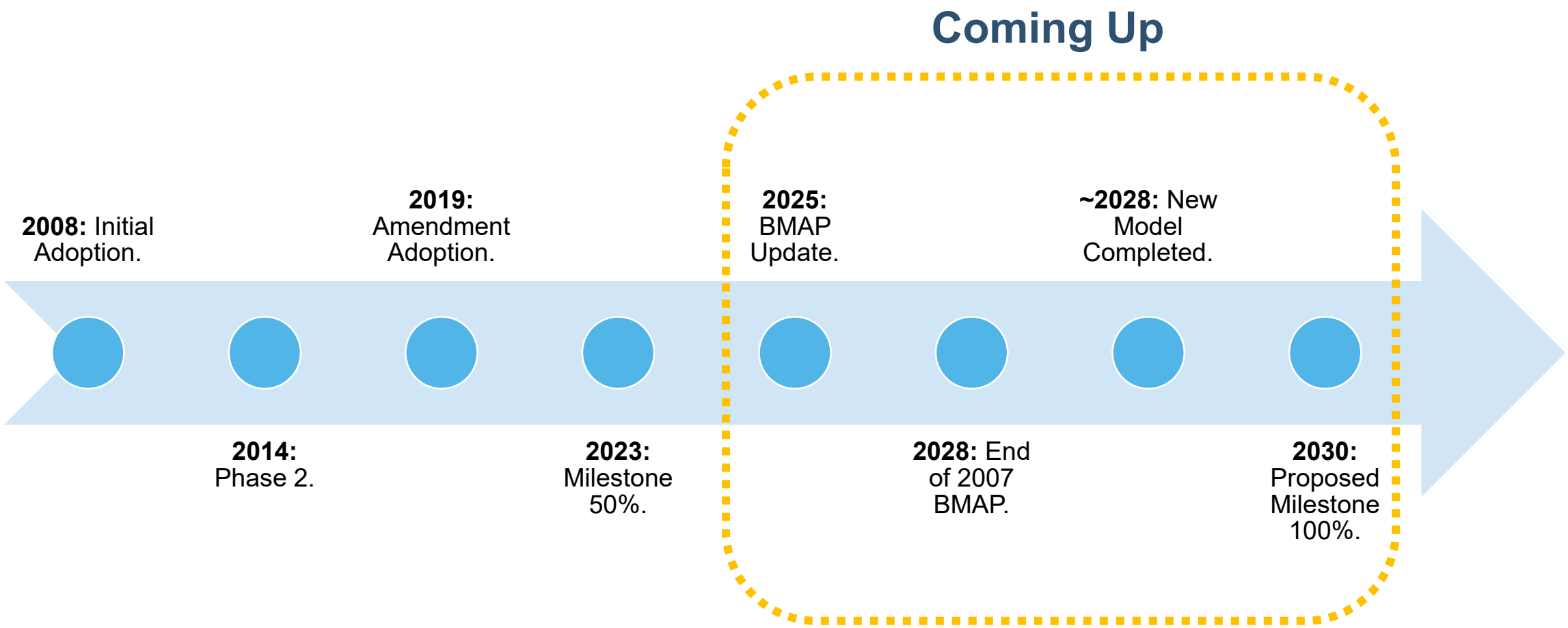
Summary

- None of the three lakes met either TN or TP concentration targets in 2023.
- No trends in TP concentrations in the inflow tributaries to Newnans Lake.
- TP concentrations had improving trends in the main tributaries to Lochloosa and Orange Lakes.
- Nitrogen fixation is likely a significant N source for Newnans Lake and it is much less for Orange lakes.
- Newnans Lake had the worst water quality among selected District lakes with the highest Chl-a concentration and the shallowest Secchi depth.

UPCOMING BMAP UPDATE
COMPONENTS

- Establish entity milestones.
- Wastewater effluent limits based on size of facility and effluent disposal method utilized.
- OSTDS requirements for new systems on lots one acre or less.
- Inclusion of a hot spot analysis.
- Evaluation of the monitoring network.
- Inclusion of regional projects.
- Addition of future growth estimates.
- Inclusion of the Clean Waterways Act requirements.

BMAP TIMELINE AND MILESTONES



HOT SPOT ANALYSIS DEVELOPMENT

OVERVIEW

Purpose:

- To find more specific areas to focus restoration activities.
- To highlight areas where projects might have stronger results.
- To highlight areas where more investigation is needed.

Analysis is NOT to determine BMAP or TMDL compliance.

HOT SPOT ANALYSIS DEVELOPMENT
COMPONENTS OF THE HOT SPOT INDEX

These four statistics calculated for the BMAP overall and used to compare against each station average:

- TN or TP concentration average.
- TN or TP 90th percentile.
- TN or TP Standard Deviation (SD).
- TN or TP Percent Frequency of Samples over Threshold.

BMAP Threshold:

- Orange Creek:
  - TN – 0.97 mg/L.
  - TP – 0.031 mg/L.

HOT SPOT ANALYSIS DEVELOPMENT

INDEX RANKING APPROACH

Station Concentration Average Rank

Compare to BMAP Threshold and overall BMAP average.

Rank 0: Station average below BMAP threshold.

Rank 1: Station average above threshold but below BMAP average.

Rank 2: Station average 2x above BMAP average.

Percentiles Rank

Compare to BMAP Threshold and 90th percentile for the whole BMAP.

Rank 0: Station average below BMAP threshold.

Rank 1: Station average above threshold but below 90th percentile.

Rank 2: Station average above 90th percentile.

SD Rank

Compare to overall BMAP SD.

Rank 0: Station average below BMAP average + 0.5 SD.

Rank 1: Station average at or above average + 0.5 SD but less than BMAP average + 1 SD.

Rank 2: Station average at or above BMAP average + 1 SD.

Frequency Rank

Compare to BMAP Threshold.

Rank 0: Station percent exceedance below 5% of samples.

Rank 1: Station exceedances between 5% and 49% of samples.

Rank 2: Station exceedances over 50% of samples.

HOT SPOT ANALYSIS DEVELOPMENT

FINAL OVERALL RANK

Average Rank
+
Percentile Rank
+
SD Rank
+
Frequency Rank

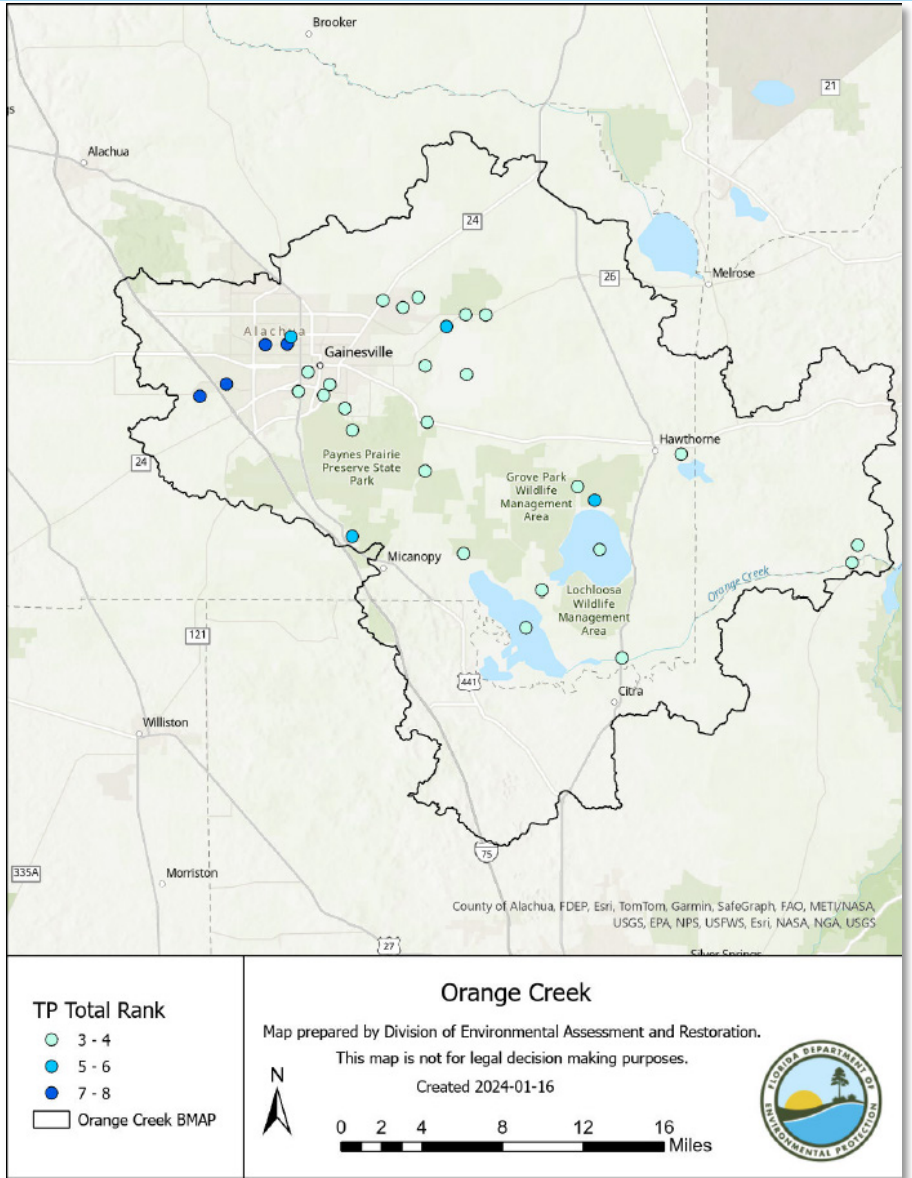
=

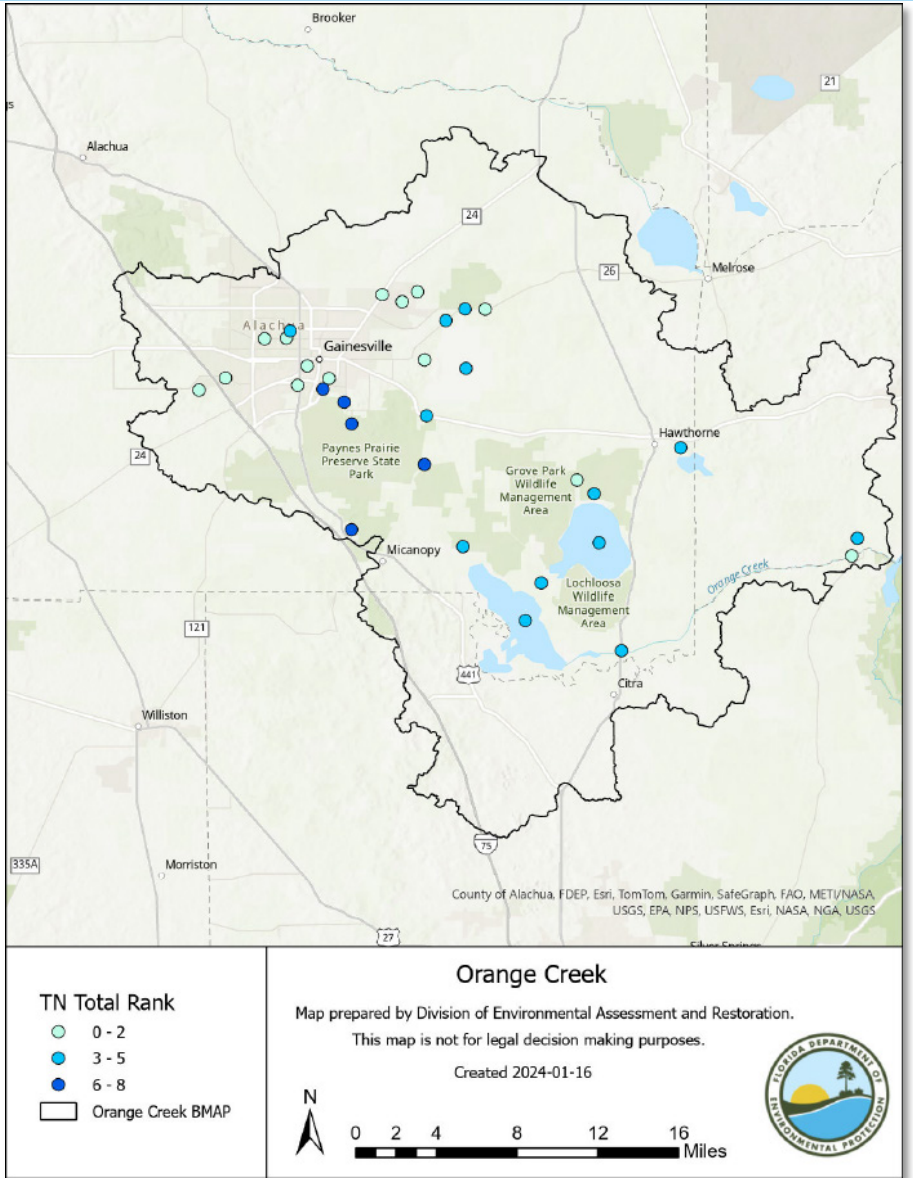
Total Index Rank

Rank 0 = Least Concern
Rank 8 = High Concern

HOT SPOT ANALYSIS RESULTS DRAFT

ORANGE CREEK





AGRICULTURAL COOPERATIVE ELEMENT (ACE)

- Cooperative Agricultural Regional Water Quality Improvement elements will establish a collaborative framework for identifying, prioritizing and implementing regional projects that address nutrient loading from agricultural operations in Florida's waterways.
- These elements establish a structured framework efforts among key stakeholders, including:
  - DEP.
  - DACS.
  - WMDs.
  - Agricultural producers.
  - Local communities.

AGRICULTURAL COOPERATIVE ELEMENT (ACE)

- Engaging producers in the decision-making process is key to this element and ensures that projects are practical, feasible, and tailored to the needs and realities of agricultural operations.

- Partner agencies work in annual cycles to provide technical support, regulatory guidance, and funding opportunities, enhancing the implementation and success of regional water quality improvement initiatives.

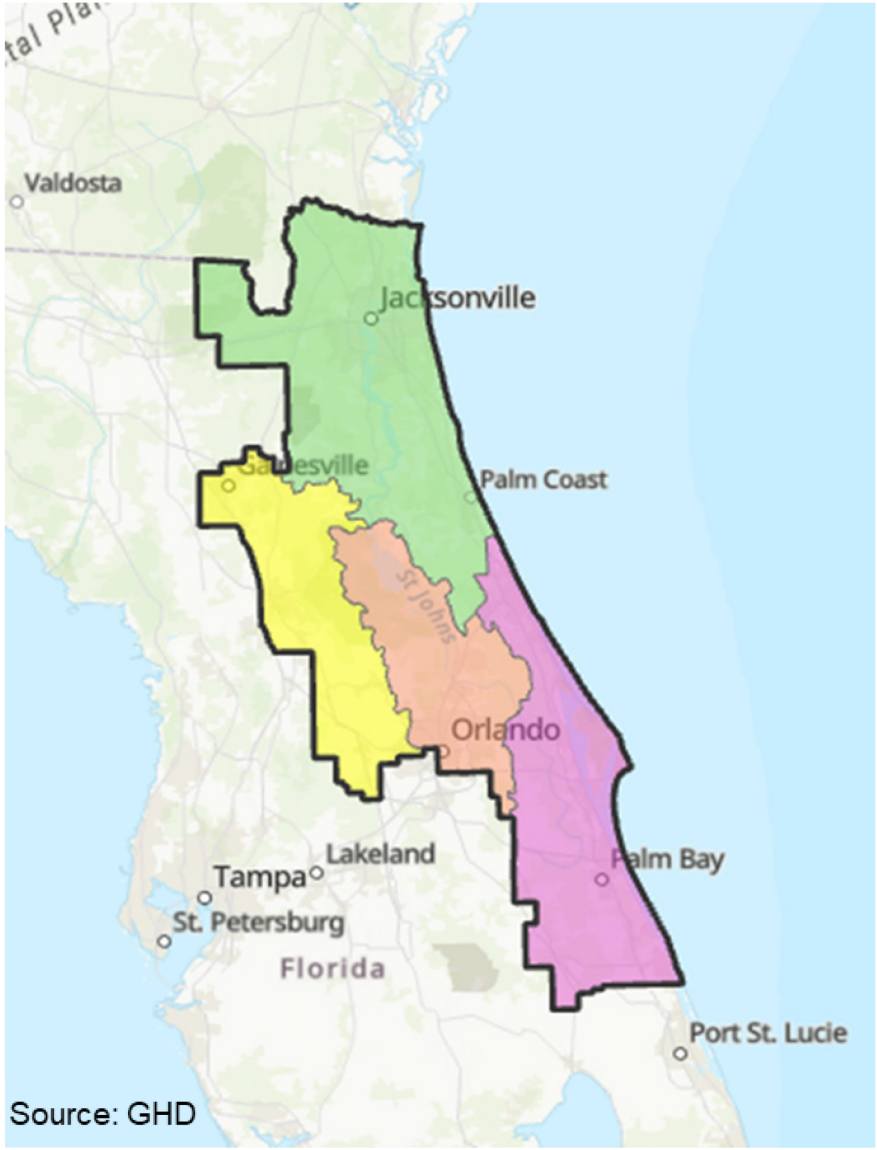
FUTURE GROWTH

- **Domestic Wastewater Projections:**
  - Use wastewater to estimate future growth projections.
  - Start with population growth for each county from Bureau of Economic and Business Research:
    - 2040 Medium Growth Projections.
  - Proportion growth for each entity based on land area.
  - Distinguish the future population expected to be served by sewer versus those with OSTDS based on the most recent Florida Water Management Inventory for each BMAP county.
  - Use per person calculations to estimate future loads from Wastewater Treatment Facilities (WWTF) and OSTDS.

- **Agriculture Projections:**
  - Exploring different tools to estimate future changes in agricultural acreage in the BMAPs to estimate changes in agricultural loading.

ST. JOHNS RIVER MODEL UPDATE

- Public meeting was held on March 12, 2024.
- Meeting materials are available at the QR code below.



ST. JOHNS RIVER MODEL UPDATE

PROJECT SCHEDULE

April 2024:
Modeling Document/Quality Assessment (QA) Plan

March 2025:
HSPF Model

July 2025:
EFDC Model

June 2026:
WASP Model

HSPF: Hydrologic Simulation Program FORTRAN
EFDC: Environmental Fluid Dynamics Code
WASP: Water Quality Analysis Simulation Program

ST. JOHNS RIVER MODEL UPDATE
STAKEHOLDER COORDINATION

- Periodic project updates will be sent via email.
- The project email list will be used for sending updates.
- To be added to the project email list, send your contact information:
  - Admin@WildwoodConsulting.net.
  - Or visit the website (QR code below), go to the “Contact” tab and enter your contact information.

ST. JOHNS RIVER MODEL UPDATE

DATA SHARING: OPPORTUNITIES TO ENGAGE

Source: Plexel

- Provide additional data for the EFDC Model by Aug. 1, 2024.
- To share data, questions or concerns, please contact StJohnsRiverData@ghd.com.
- Data must:
  - Meet the requirements of DEP's Standard Operating Procedures (SOP).
  - When sharing data, please include:
    - Name.
    - Organization/Company.
    - Role.

We will make every effort to include data which meet these standards. However, due to necessary consistency across districts and/or other concerns, not all provided data may be utilized.

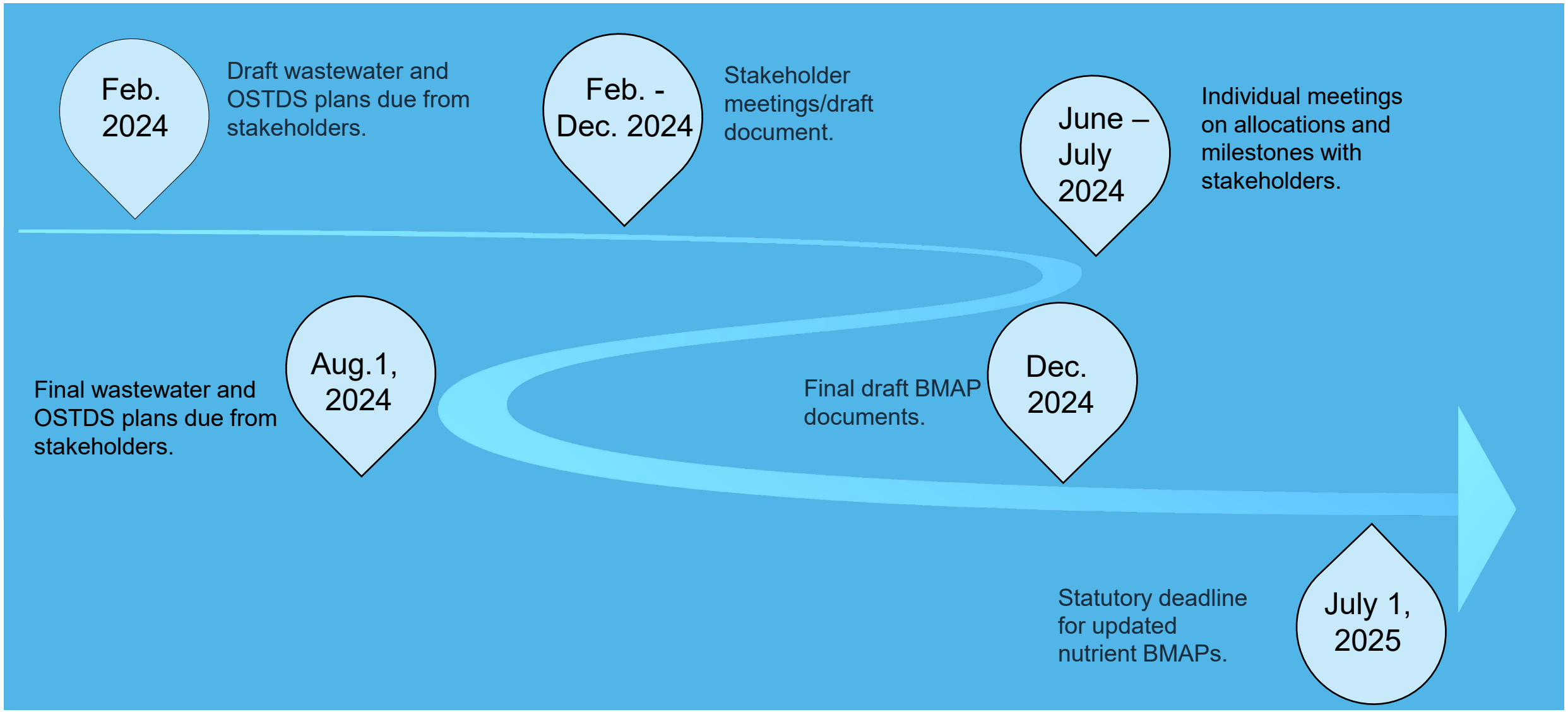
ST. JOHNS RIVER MODEL UPDATE

DATA INVENTORY

Land Cover	Florida Land Cover Classification System (FLUCCS) 2014
Meteorological	NCDC, NEXRAD, Rain Gages and other local data from SJRWMD
Boundaries (Planning Units, Subbasins, etc.)	SJRWMD Geospatial Open Data
Water Quality Ambient Data	Impaired Waters Rule (IWR) Database, Run 63
Flow Data	USGS, DEP and SJRWMD

NCDC: National Climatic Data Center
NEXRAD: Next Generation Weather Radar
USGS: U.S. Geological Survey

UPCOMING SCHEDULE



RESOURCES

BMAP WEBSITE AND STORYMAP

Basin Management Action Plans (BMAPs)

Home » Divisions » Division of Environmental Assessment and Restoration » Water Quality Restoration Program » Basin Management A

Water Quality Restoration Program Quick Links

- Basin Management Action Plans (BMAPs)
- Statewide Annual Report
- Water Quality Grant Opportunities 2023-24
- BMAP Public Meetings
- Impaired Waters, TMDLs and Basin Management Action Plans Interactive Map
- Tools and Guidance for

What is a Basin Management Action Plan?

A basin management action plan (BMAP) is a framework for water quality restor
reduce pollutant loading through current and future projects and strategies. BM
permit limits on wastewater facilities, urban and agricultural best management
achieve pollutant reductions established by a total maximum daily load (TMDL)
stakeholders and rely on local input and commitment for development and suc
Department of Environmental Protection Secretarial Order and are legally enfor

Water Quality Protection Grant Portal f

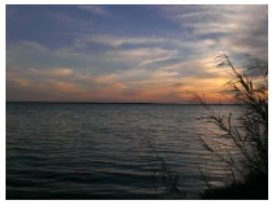
DEP has launched an online grant portal to provide eligible entities the opportu
programs. Eligible entities include local governments, academic institutions, an
application portal opened July 5, 2023. Closing dates for individual grant progra
the posted date f each grant program. Applicants are encouraged to submit p

Collection

Surface Water Nutrient Basin Management Action Plans (BMAPs)

Get started

1 Legislative Requirements



2 (COPY) Lake Harney, Lake Monroe, Middle St. Johns Riv...

3 (COPY) Everglades West Coast Basin Management Action Plan

4 (COPY) Lake Jesup Basin Management Action Plan

5 (Copy) Orange Creek Basin Management Action Plan

6 (Copy)Lower St. Johns Main Stem Basin Management Actio...

7 (COPY) Wekiva River, Rock Springs Run, and Little Wekiv...

8 (COPY) Upper Ocklawaha Basin Management Action Plan

9 (COPY) Long Branch Basin Management Action Plan

RESOURCES
FUNDING OPPORTUNITIES

Florida Department of Environmental Protection
Funding Opportunities

FloridaDEP.gov/Funding

SUBSCRIBER PAGE

HOW TO CONTACT US

BMAPProgram@FloridaDEP.gov

THANK YOU

Jessica Fetgatter
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

Contact Information:
850-245-8107
Jessica.Fetgatter@FloridaDEP.gov


FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Florida Department of Environmental Protection (DEP)

Orange Creek Basin Management Action Plan (BMAP) Public Meeting

Question and Answer (Q&A) Summary

June 20, 2024

10:00 am – 11:20 am Via GoToWebinar

Attendees

Sally Adkins, City of Gainesville
Suzanne Archer, SJRWMD
Evelyn Becerra, DEP
Steve Beck, Florida Fish and Wildlife
Connie Becker, DEP
Adam Blalock, DEP
Matthew Burke, City of Gainesville
Tiffany Busby, Wildwood Consulting
Jason Cambre, Marion County
Lauren Campbell, DEP
Andy Canion, SJRWMD
Stacy Cecil, SJRWMD
Veronica Dau, Lake County
Susan Davis, SJRWMD
Jian Di, SJRWMD
Douglas Dycus, FDOT
Amanda Exposito-Ferree, AtkinsRealis
Jessica Fetgatter, DEP
Randy Fink, SJRWMD
Jennifer Green, FDOT
Roxanne Groover, FOWA
Samuel Hankinson, DEP
Madeline Hart, FDACS
Janet Hearn, ATM
Margarita Hernandez, DEP
Robin Holland, FDACS
Moira Homann, DEP
Steven Hooley, Florida Fish and Wildlife
Laila Hudda, EPA
Trevor Knight, Marion County
Celeste Lyon, RES
Erich Marzolf, SJRWMD
Jennifer McElroy, Gainesville Regional Utilities
Jessica Mostyn, DEP
Sarah Noble, DEP
Sky Notestein, Wetland Solutions
Jaroslaw Nowak, FDACS
Alan Obaigbena, Citizen
Josh Papacek, SJRWMD
Jim Peterson, SJRWMD
Tiffany Simpson, DEP
Kaitlyn Sutton, DEP
Scott A Towler, Anser Advisory
Diana Turner, DEP
Unknown, The Florida Channel
Lisa Van Houdt, DEP
Christine Vrabic, Marion County
Tim Waln, SJRWMD
Stefani Weeks, Holloway
Tanya Welborn, DEP
Shane Williams, City of Gainesville

Questions and Answers Summary

Q: Do we know why Newnans Lake appears to have more ability to fixate nitrogen than Orange Lake? Is that a result of different algal types that comprise the chlorophyll-a between the two lakes?

A: At the St. Johns River Water Management District, we no longer speciate the algae in Newnans Lake, but the type of algae present does influence how much nitrogen fixation can occur. We do not know if this is the case in Newnans Lake currently.

Q: Are the concentration averages shown in Jian Di's presentation arithmetic or geometric means?
A: They are arithmetic means. It is worth noting that the total maximum daily loads use a geometric mean so in the future, we may switch to showing the geometric means.

Adjournment

The meeting ended at 11:20 am.