Orange Creek Basin Management Action Plan (BMAP)
Annual Meeting

Via Webinar
Webinar Registration Link:
https://attendee.gotowebinar.com/register/737321956461612380

April 22, 2026
10 AM EDT

Agenda

- Orange Creek Basin Management Action Plan (BMAP) Background.
- Annual Progress Update.
- Policy & Reporting Reminders.
- SJRWMD Updates.
- SJR Model Update.

Please note the site for documents relating to the Orange Creek BMAP:
BMAP Public Meetings | Florida Department of Environmental Protection

For more information on the Orange Creek BMAP, contact: Jessica Fetgatter, 850-245-8107,
Jessica.Fetgatter@FloridaDEP.gov

ORANGE CREEK BASIN MANAGEMENT ACTION PLAN (BMAP) ANNUAL MEETING

Jessica Fetgatter
Division of Environmental Assessment and Restoration
Water Quality Restoration Program
Florida Department of Environmental Protection

GoToWebinar | April 22, 2026

WEBINAR HOUSEKEEPING

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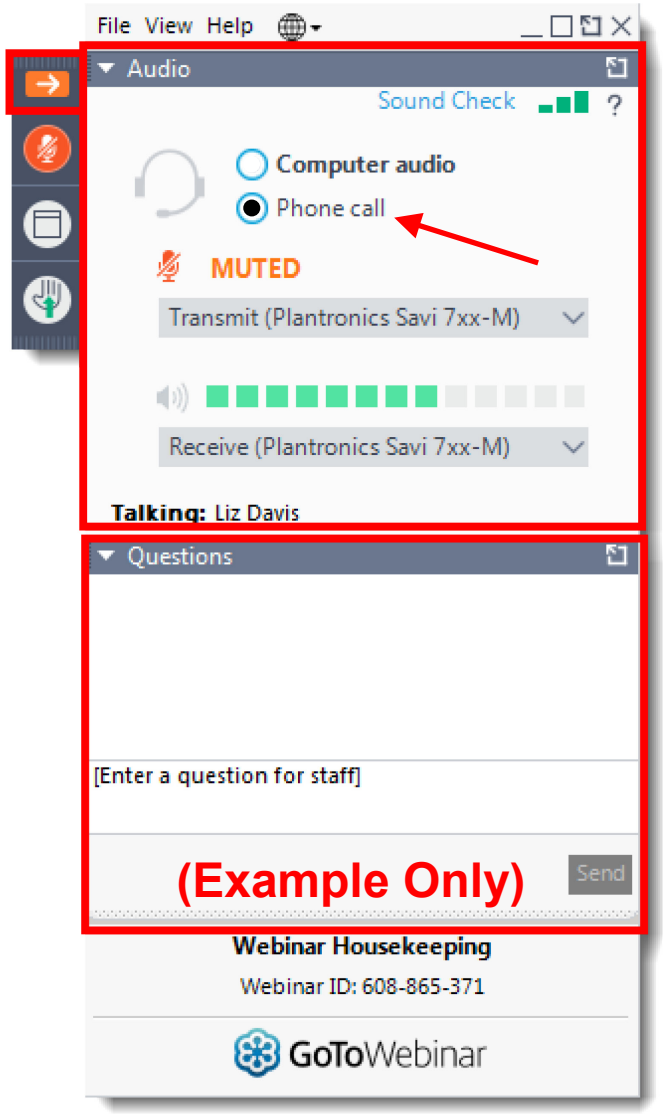
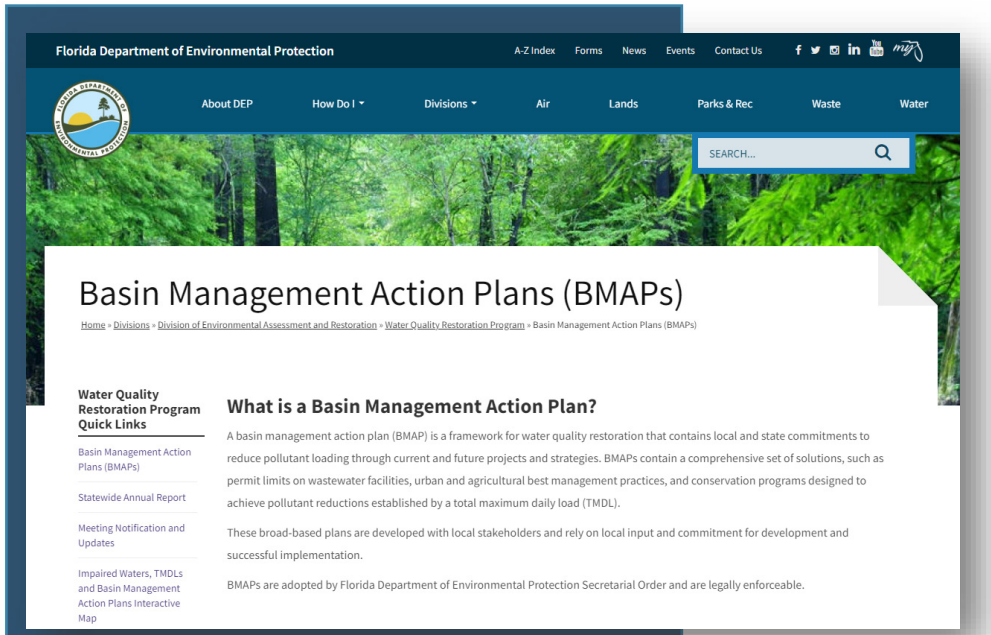
Note: Today's presentation is being recorded and will be provided after the webinar.



AGENDA

- Basin Management Action Plan (BMAP) Overview.
- Policy and Reporting Reminders.
- Statewide Annual Report (STAR).
- Progress.
- St. Johns River Water Management District (SJRWMD) Update.
- St. Johns River (SJR) Model Update.

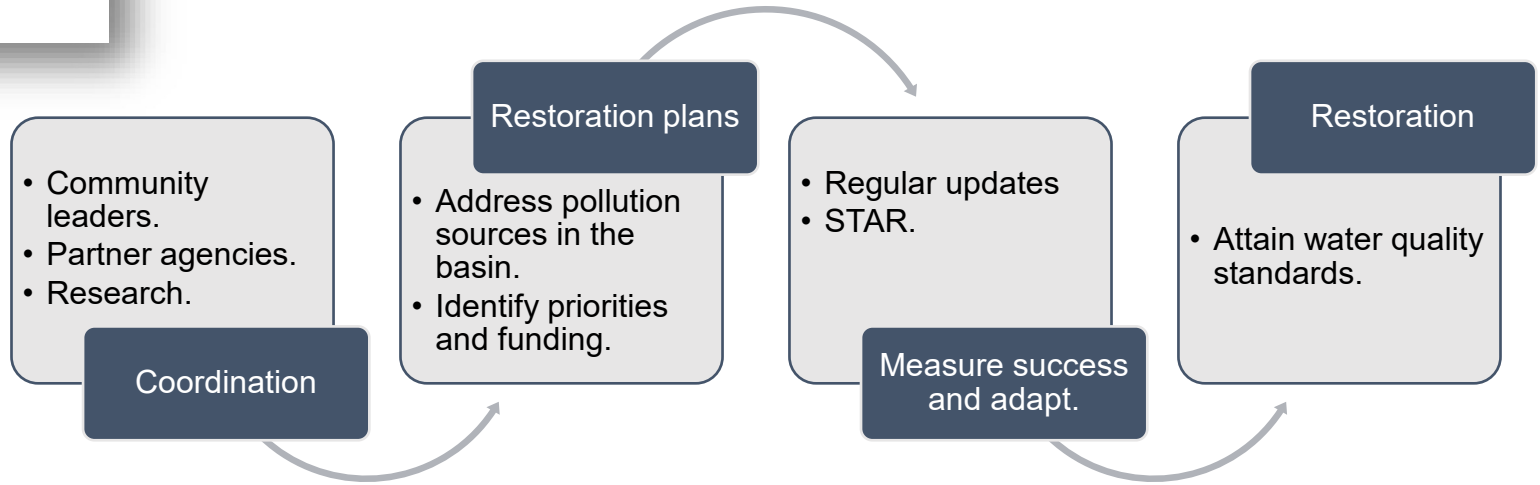
BMAPs



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

BMAPs are:

- Developed with stakeholder input.
- Adopted by the 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.

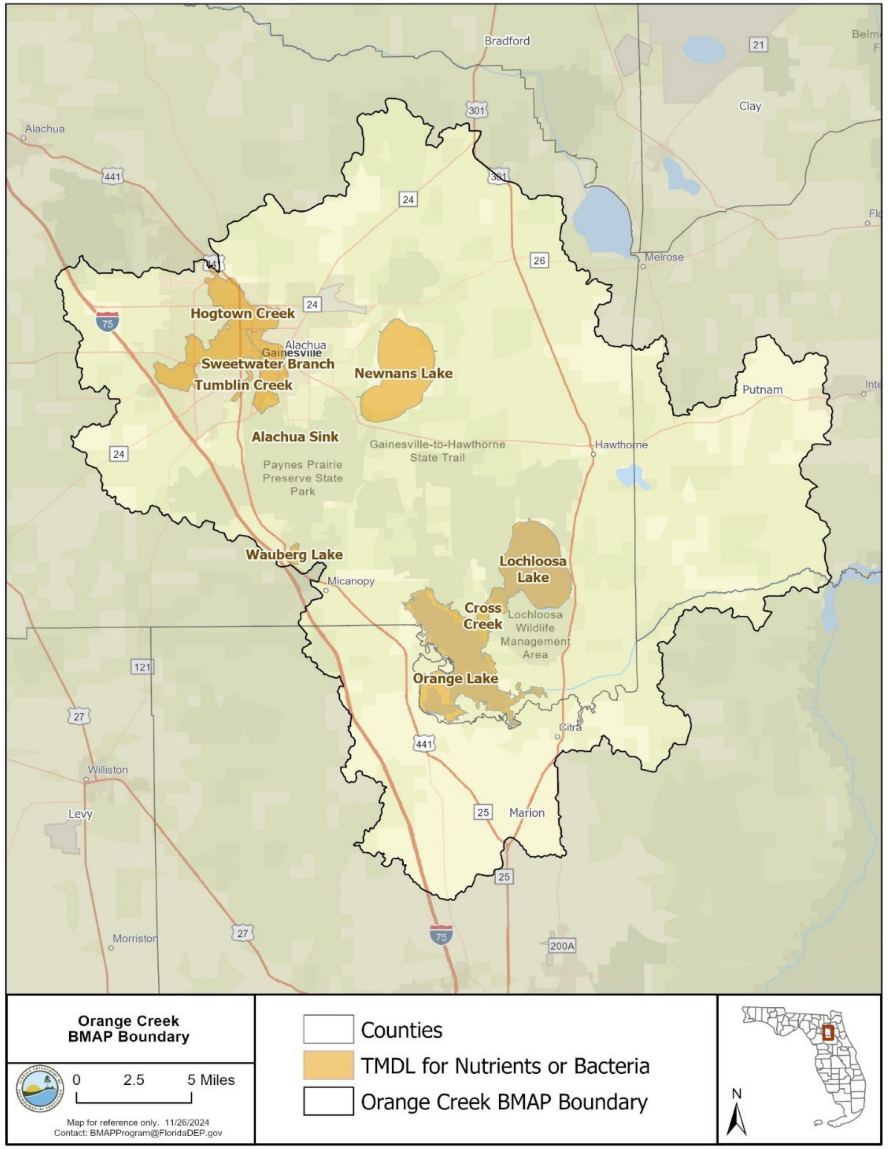
Projects to meet the TMDL:

- 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.

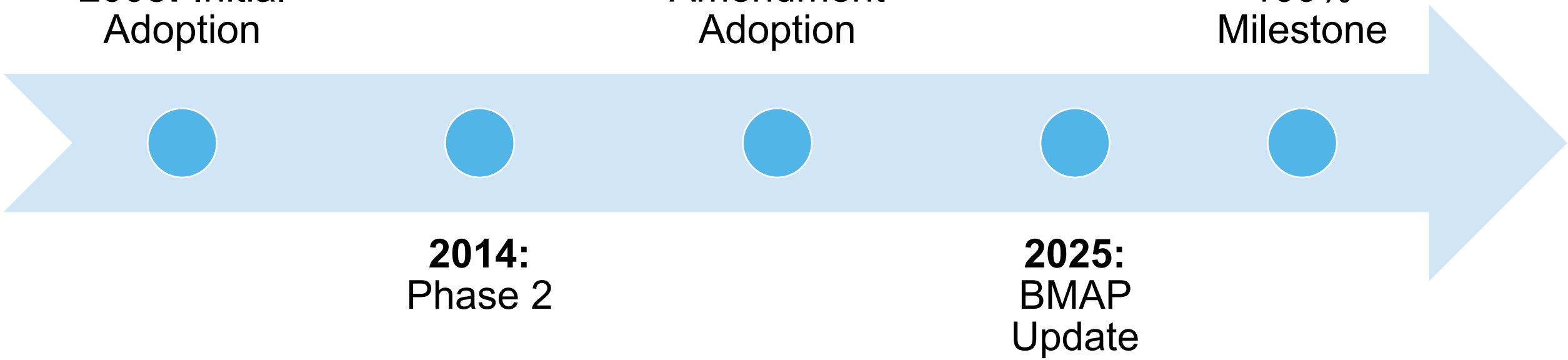
BACKGROUND



Orange Creek Target Concentrations		
Waterbody	**Total Phosphorus (TP) (mg/L)**	**Total Nitrogen (TN) (mg/L)**
Alachua Sink		NA
Lochloosa	0.0552	1.152
Newnans	0.062	0.97
Orange	0.031	
Wauberg	0.056	1.01

(mg/L) = milligrams/liter

BMAP TIMELINE AND MILESTONES



BACKGROUND
ORANGE CREEK BMAP STAKEHOLDERS

Type of Entity/ Organization	Name
Responsible Entities	Alachua County Marion County Putnam County City of Gainesville City of Hawthorne Town of McIntosh Town of Micanopy Town of Reddick City of Waldo Gainesville Regional Utilities (GRU) Agriculture University of Florida Wastewater Treatment Facilities
Responsible Agencies	County Health Departments Florida Department of Agriculture and Consumer Services (DACS) Florida Department of Environmental Protection (DEP) Florida Department of Transportation (DOT), Districts 2 & 5 Florida Fish and Wildlife Conservation Commission St. Johns River Water Management District (SJRWMD) University of Florida

Type of Entity/ Organization	Name
Other Interested Stakeholders	Florida Forestry Association Rayonier Inc. Weyerhaeuser Company Suwannee-St. Johns Group Sierra Club Applied Technology and Management Environmental Consulting and Technology DB Environmental Pegasus Engineering AMEC Foster Wheeler Jones Edmunds Sierra Club

POLICY & REPORTING REMINDERS

Source	Topic	Requirement
Wastewater	Wastewater Effluent Limits	Where the law does not provide effluent limits or a compliance timeframe, new effluent standards **will take effect at the time of permit renewal or no later than five years after BMAP adoption**, whichever is sooner. Tables 12 and 13 in the BMAP document.
	Connection to Sewer	**Beginning February 2026 and every two years thereafter**, utilities with sewer lines in BMAPs must provide DEP a list of properties with existing OSTDS where sewer is available (as defined in 381.00655, F.S.) but have not connected.
Agriculture	Concentrated animal feeding operations (CAFOs) - Dairies	To minimize infiltration of liquid manure, if a dairy uses a clay liner or some other type of engineered waste storage pond system, **within two years of BMAP adoption,** the dairy must submit to DEP an evaluation identifying the environmental, technical, and economic feasibility of upgrading to a concrete or geosynthetic liner.

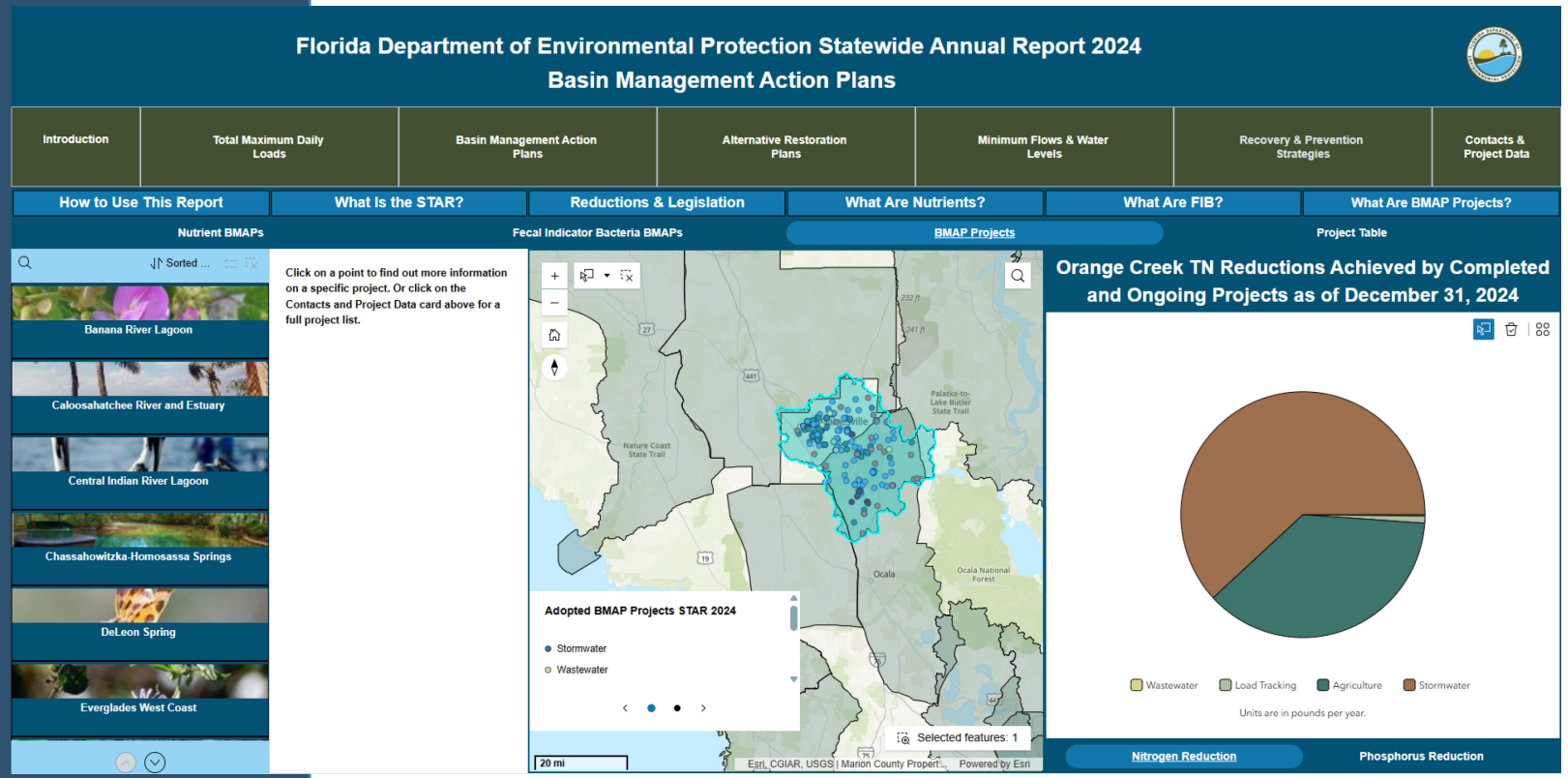
POLICY & REPORTING REMINDERS
CONT.

Source	Topic	Requirement
Sports Turf	Golf Courses	Draft nutrient management plan (NMP): **Due June 27, 2026.** Final NMP: **Due June 27, 2027**.
		Golf Course superintendents for publicly-owned courses (those owned/operated by local governments/responsible entities: counties, municipalities, CDDs...) must have obtained UF-IFAS Golf Course Best Management Practices Program certification by **Dec. 31, 2026**.
		Annual reporting begins **November 2028- January 2029**.

STATEWIDE ANNUAL REPORT (STAR)
PROJECT REPORTING

What is the STAR?

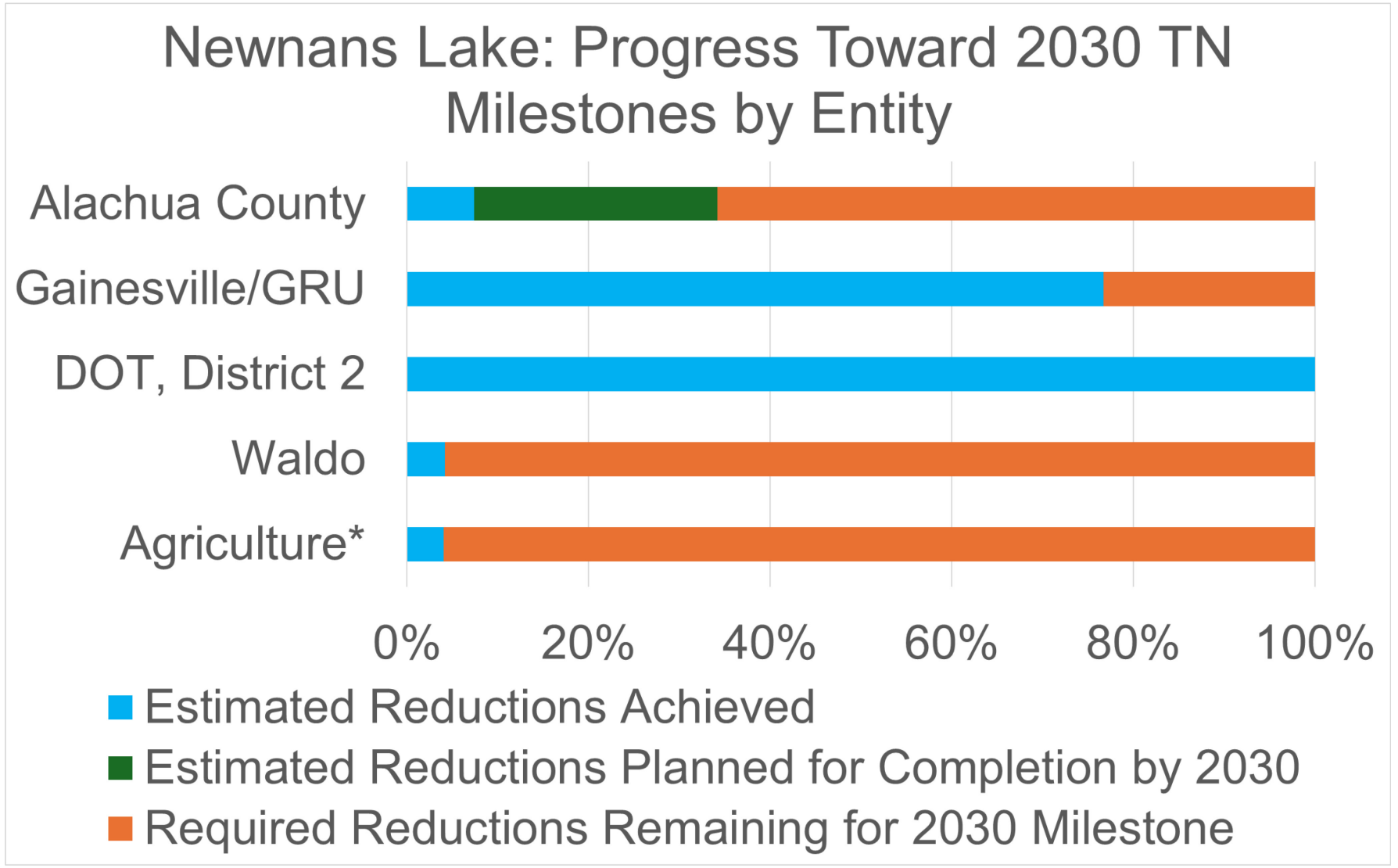
- Summarizes accomplishments in the BMAPs statewide.
- Reports on restoration projects and management strategies.
- Published July 1 of each year.
- Currently in the process of project updates and verification for STAR 2025.
  - Projects reported through Dec. 31, 2025.



https://floridadep.gov/STAR

PROGRESS THRU DEC. 31, 2025 (DRAFT)

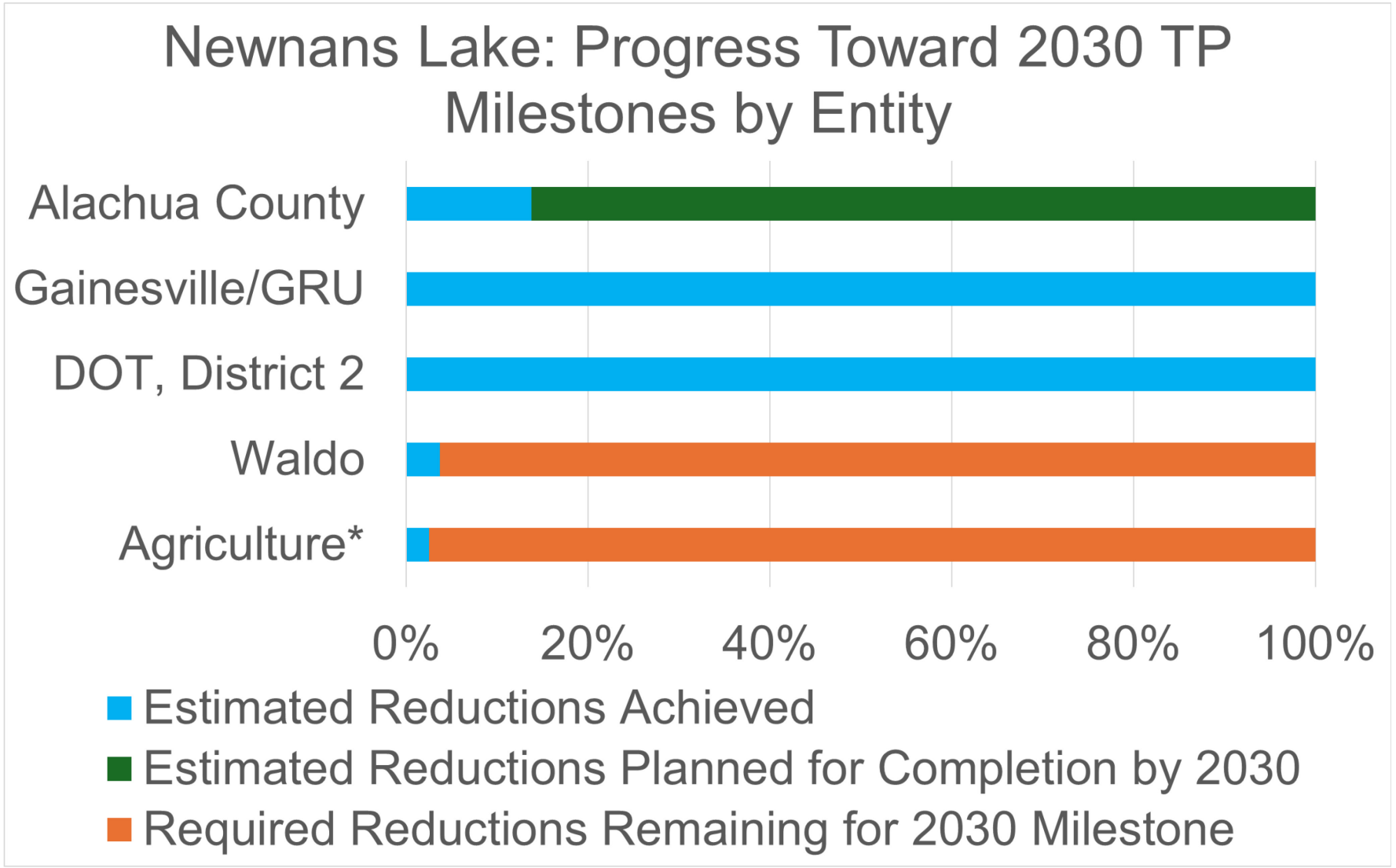
NEWNANS LAKE



*These reductions are a combination of projects completed by DACS and the WMDs.

PROGRESS THRU DEC. 31, 2025 (DRAFT)

NEWNANS LAKE



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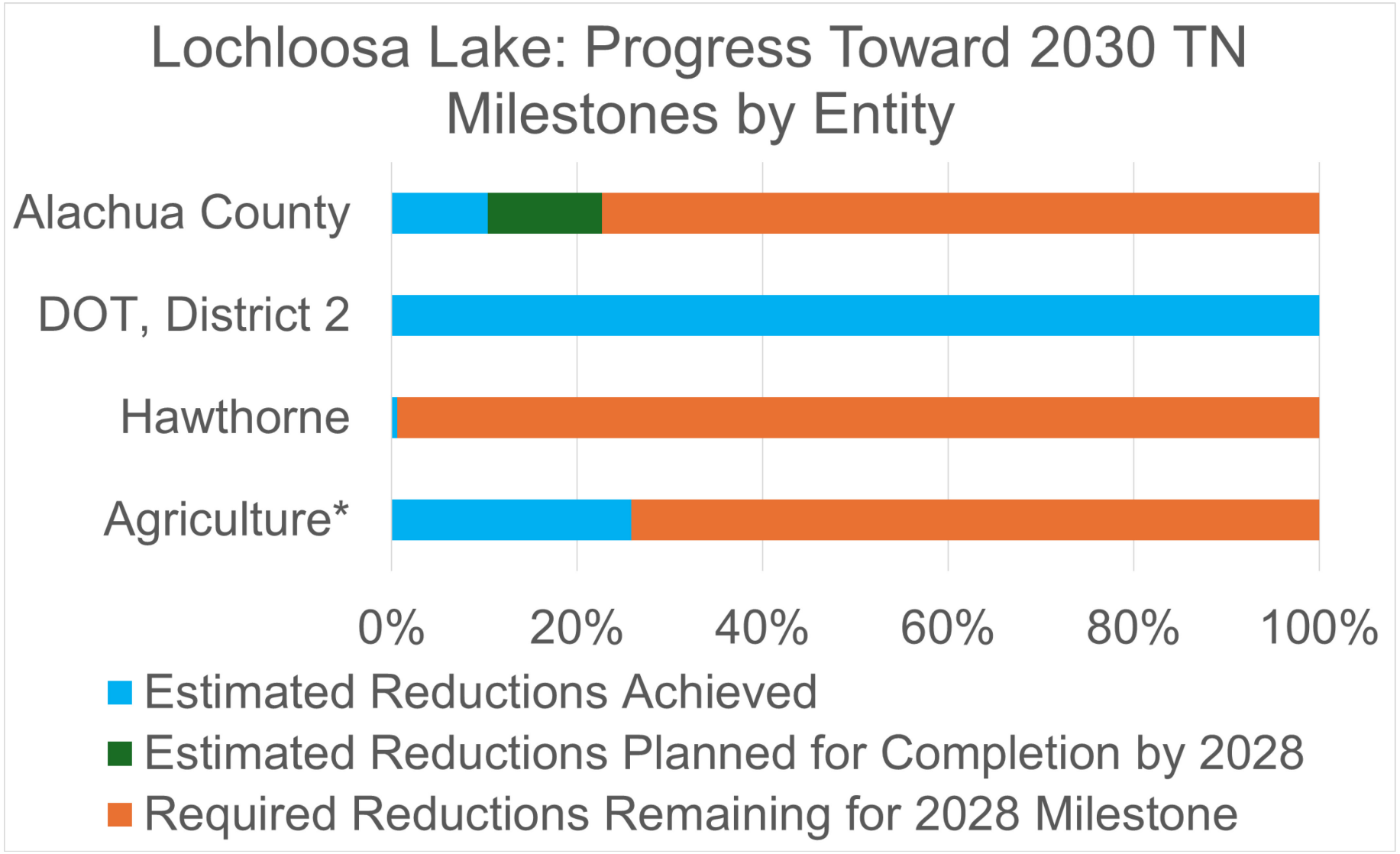
PROGRESS THRU DEC. 31, 2025 (DRAFT)

LOCHLOOSA LAKE



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PROGRESS THRU DEC. 31, 2025 (DRAFT)

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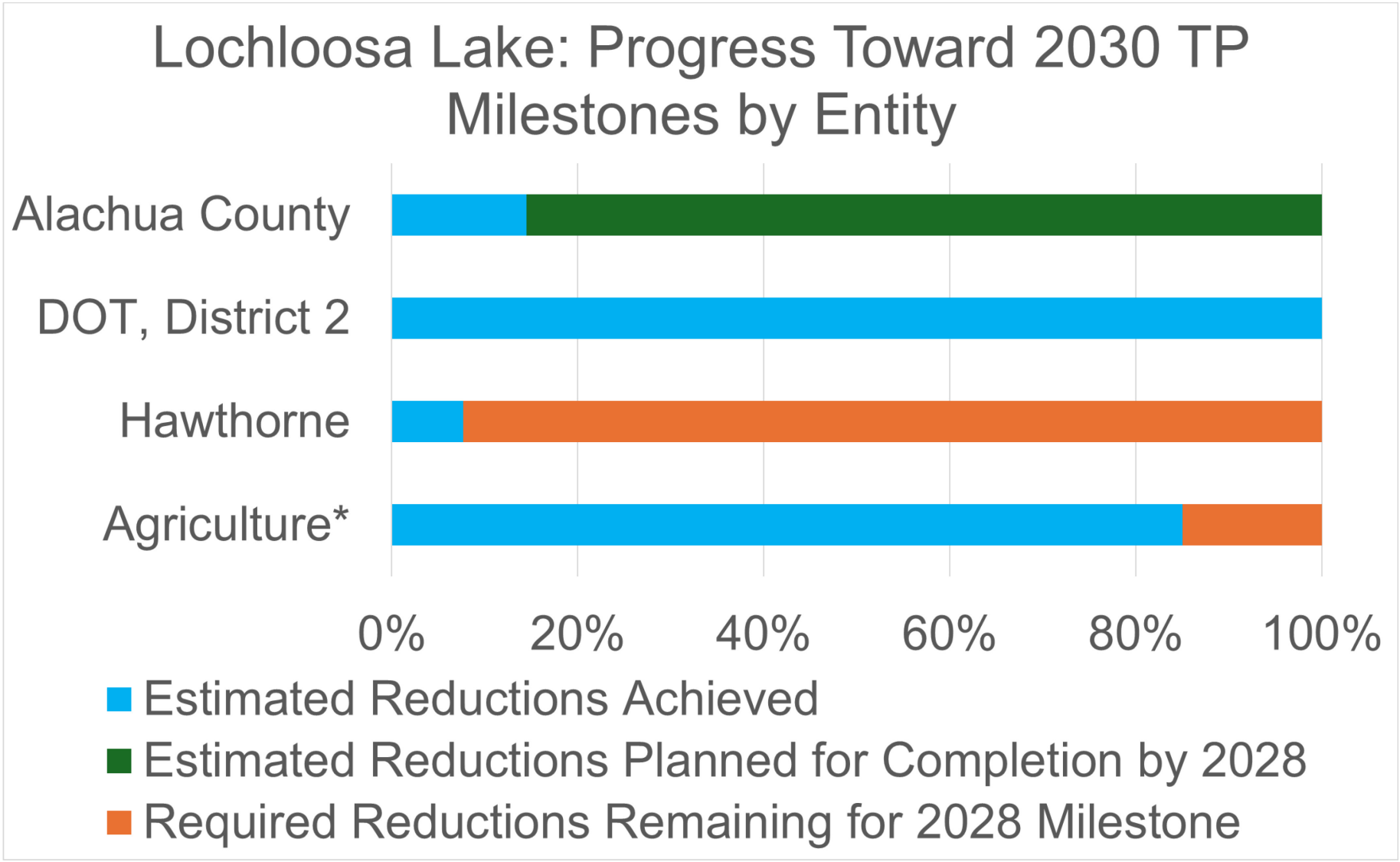

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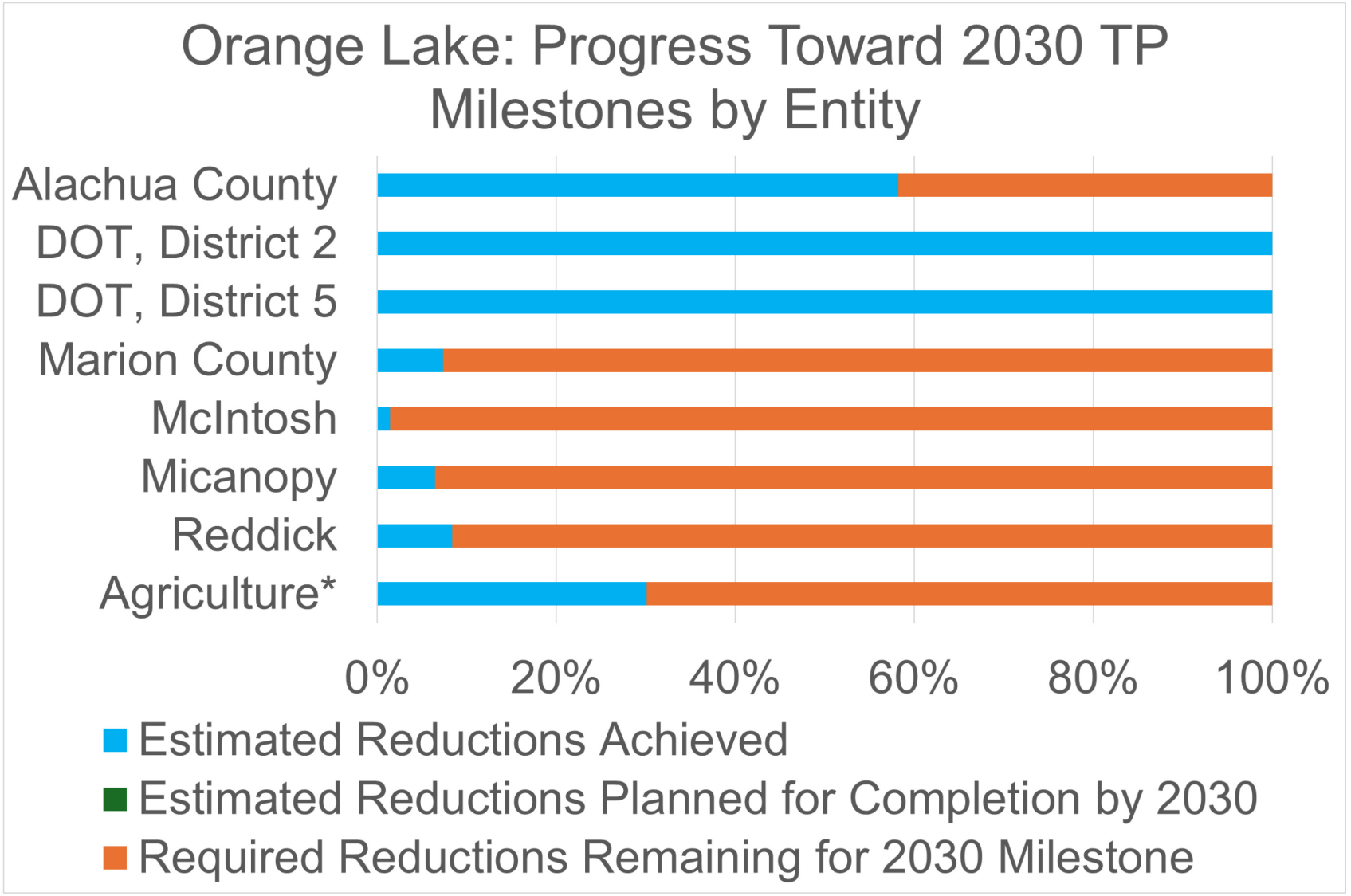
PROGRESS THRU DEC. 31, 2025 (DRAFT)

ORANGE LAKE



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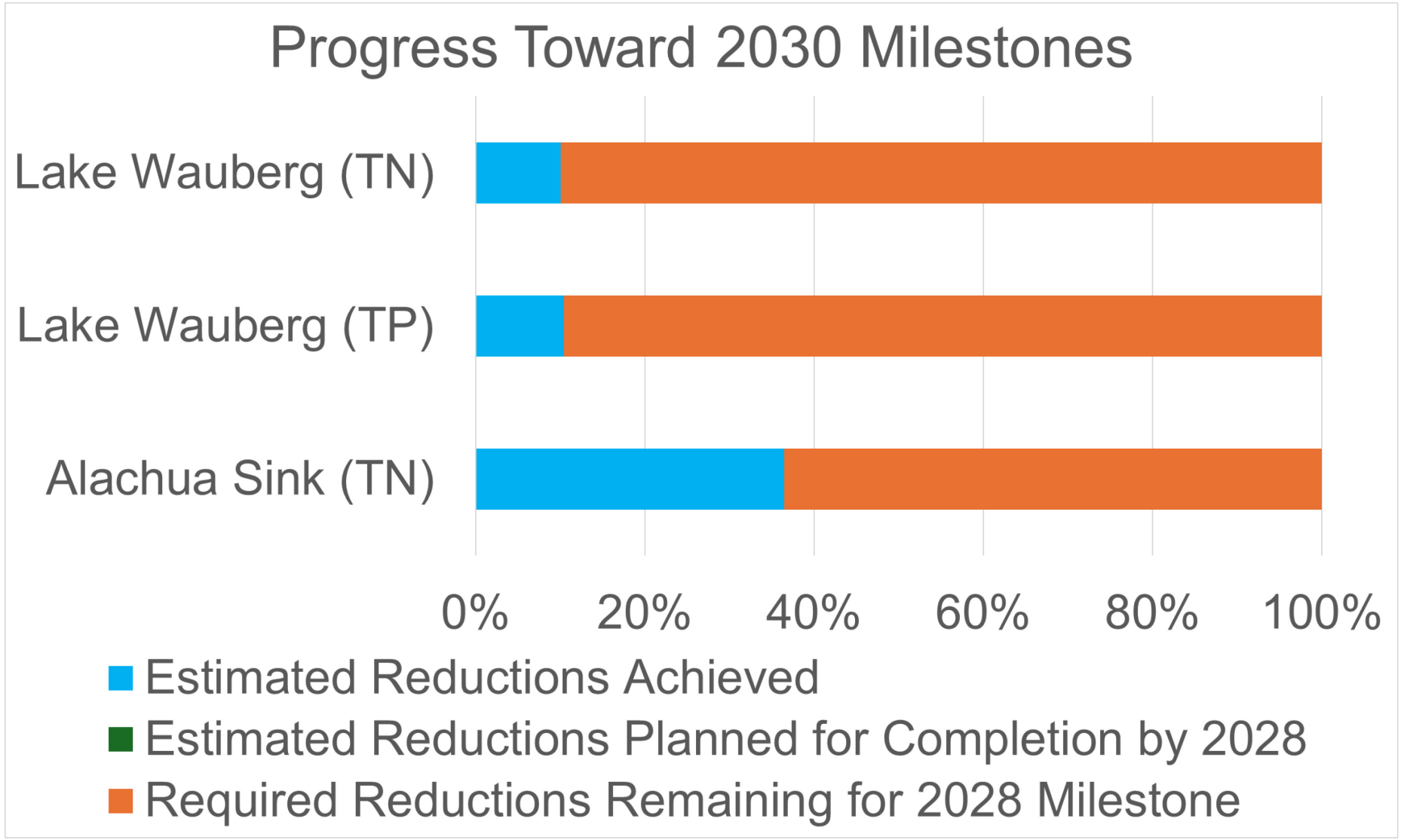
PROGRESS THRU DEC. 31, 2025 (DRAFT)

WATERSHED ALLOCATED REDUCTIONS



PROGRESS THRU DEC. 31, 2025 (DRAFT)

LAKE WAUBERG

Total Required TN Reduction: 2,002 lbs/yr

Entities Within the Watershed	Completed and Ongoing TN Reductions (lbs/yr)	Planned and Underway TN Reduction Estimates* (lbs/yr)
Alachua County	35	0
DACS	3	0
DOT District 2	164	0
Total	**202**	**0**

lbs/yr = pounds/year

Percent Achieved: 10%

Required Reduction Remaining: 1,800 lbs/yr

*Planned and Underway project reductions are rough estimates. They are not included when calculating what has been achieved.

PROGRESS THRU DEC. 31, 2025 (DRAFT)

LAKE WAUBERG

Total Required TP Reduction: 374 lbs/yr

Entities Within the Watershed	Completed and Ongoing TP Reductions (lbs/yr)	Planned and Underway TP Reduction Estimates* (lbs/yr)
Alachua County	4	0
DACS	0	0
DOT District 2	34	0
Total	**38**	**0**

Percent Achieved: 10%

Required Reduction Remaining: 336 lbs/yr

*Planned and Underway project reductions are rough estimates. They are not included when calculating what has been achieved.

PROGRESS THRU DEC. 31, 2025 (DRAFT)

ALACHUA SINK

Total Required TN Reduction: 206,135 lbs/yr

Entities Within the Watershed	Completed and Ongoing TN Reductions (lbs/yr)	Planned and Underway TN Reduction Estimates* (lbs/yr)
Alachua County	2,041	2
City of Gainesville	19,196	0
GRU	53,437	0
DACS	432	0
DOT District 2	76	0
Total	**75,182**	**2**

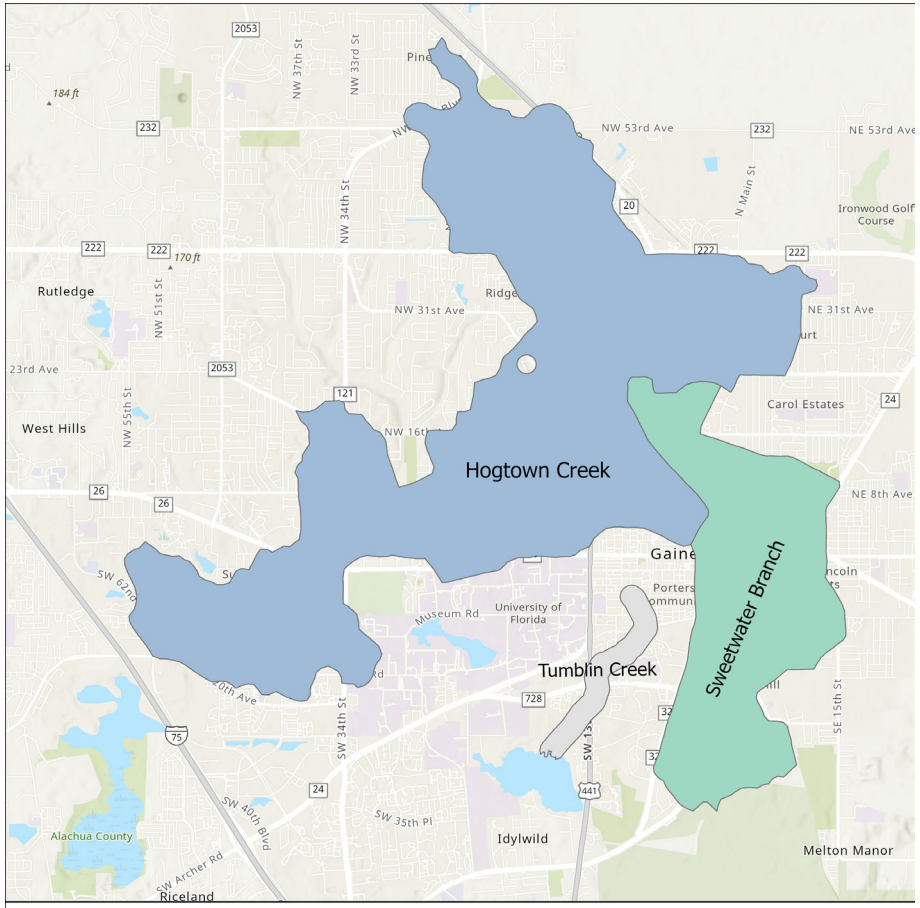
Percent Achieved: 37%

Required Reduction Remaining: 130,953 lbs/yr

*Planned and Underway project reductions are rough estimates. They are not included when calculating what has been achieved.

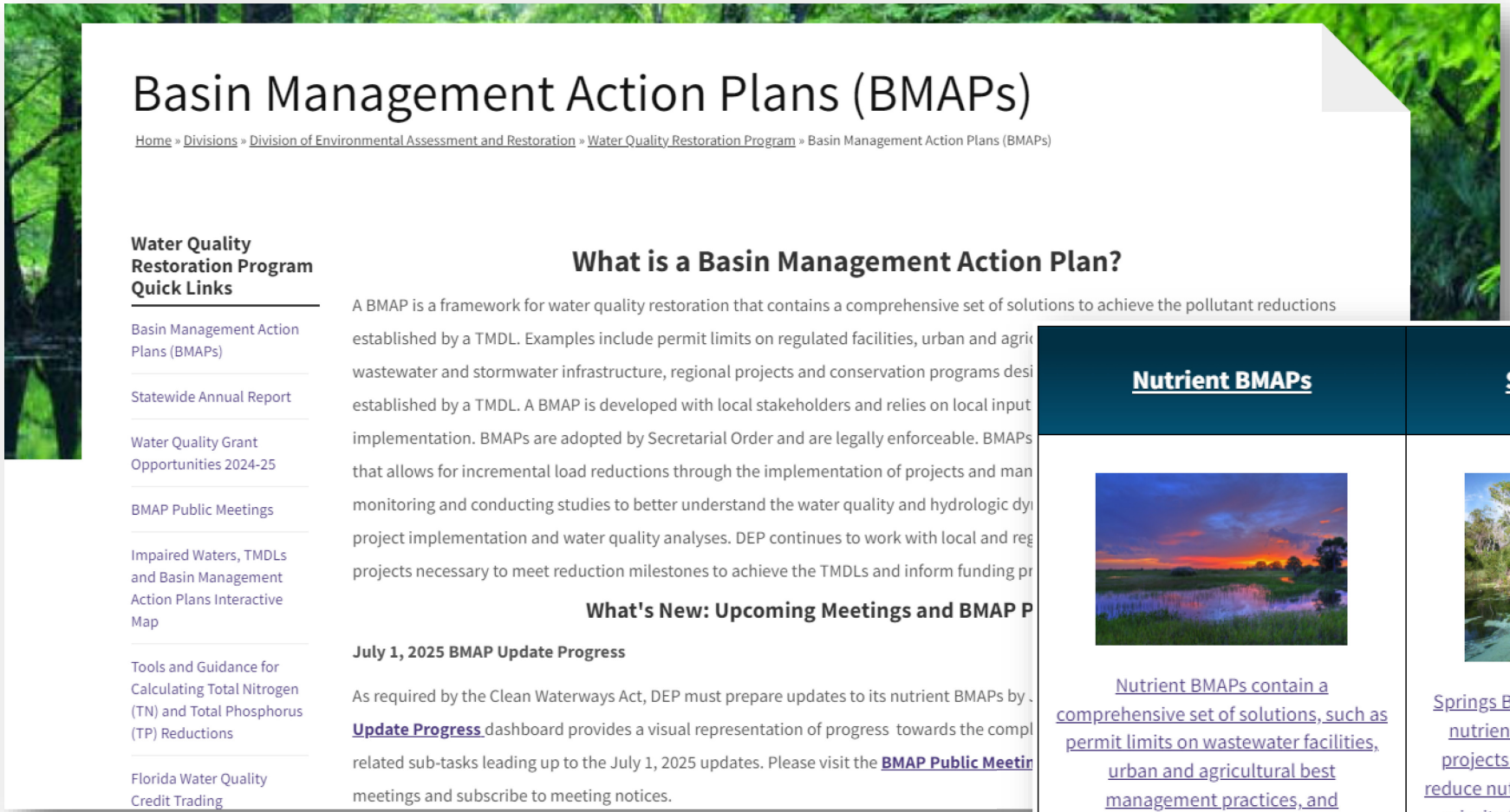
PROGRESS (DRAFT)

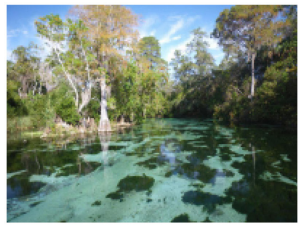
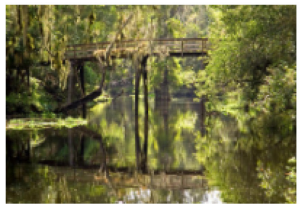
FECAL INDICATOR BACTERIA (FIB)



Waterbody	Percent Exceedance Jan. 1, 2018 to June 30, 2025
Hogtown Creek	79%
Tumblin Creek	91%
Sweetwater Branch	30%

RESOURCES
BMAP WEBSITE AND STORYMAPS



Nutrient BMAPs	Springs BMAPs	Fecal Bacteria Impaired BMAPs
		
Nutrient BMAPs contain a comprehensive set of solutions, such as permit limits on wastewater facilities, urban and agricultural best management practices, and conservation programs designed to achieve pollutant reductions established by a total maximum daily load	Springs BMAPs identify the sources of nutrient pollution, list the specific projects and programs necessary to reduce nutrient pollution, and establish priority focus areas where statutory prohibitions on certain activities apply (such as installation of new conventional septic systems).	Bacteria basin management action plans (BMAPs) include management strategies or projects, to be implemented by local stakeholders, that aim to eliminate and prevent the release of waste, containing pathogens, to natural waterbodies.

[Basin Management Action Plans (BMAPs) | Florida Department of Environmental Protection]

RESOURCES
FUNDING OPPORTUNITIES

Florida Department of Environmental Protection
Funding Opportunities

FloridaDEP.gov/Funding

SUBSCRIBER PAGE

HOW TO CONTACT US

BMAPProgram@FloridaDEP.gov

THANK YOU

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Florida Department of Environmental Protection

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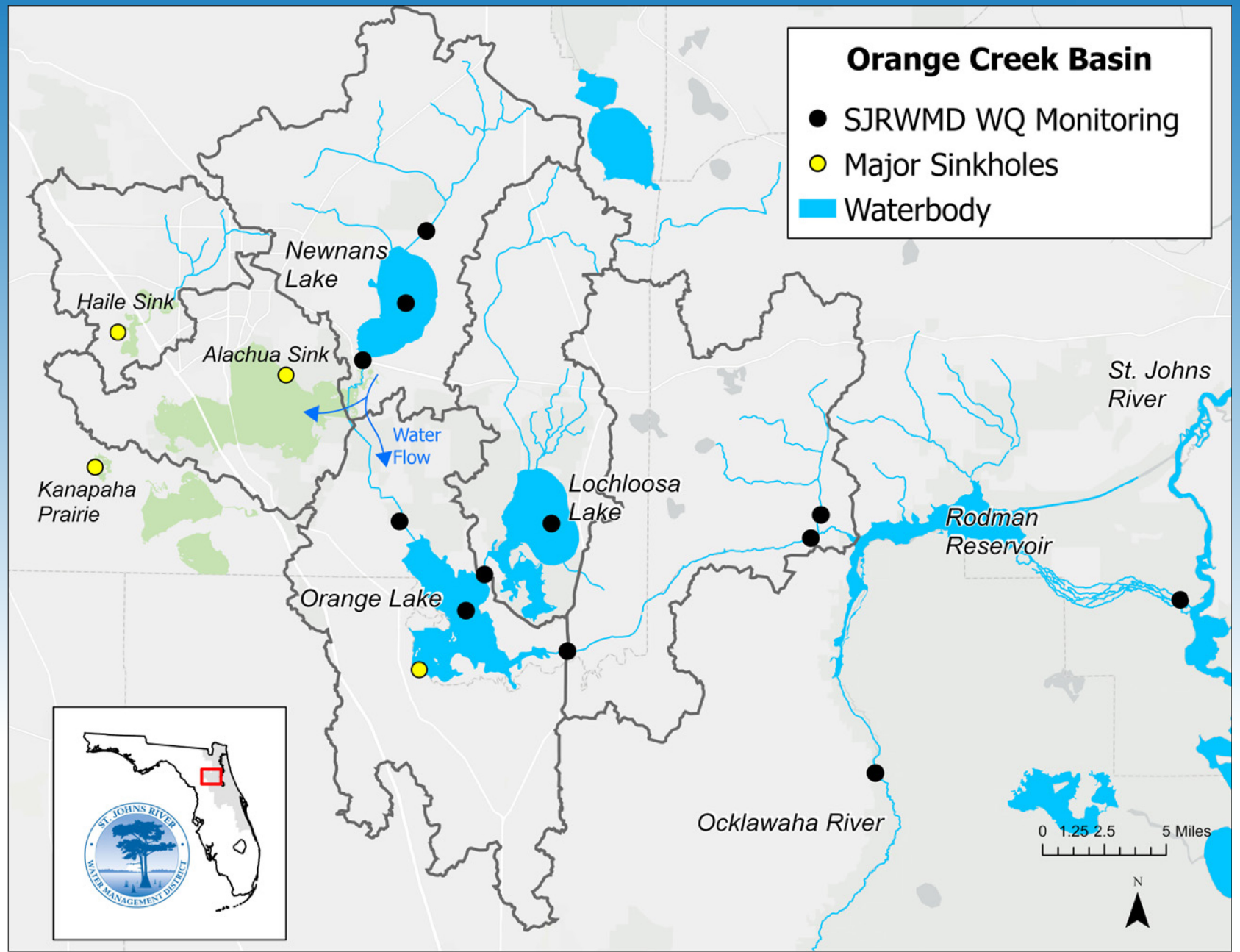
Orange Creek Basin Water Quality Update

Jian Di, Environmental Scientist V
Division of Water Resources, Bureau of Environment Science

DEP BMAP meeting
April 22, 2026

St. Johns River
Water Management District

Orange Creek Basin (OCB)



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Main Topics

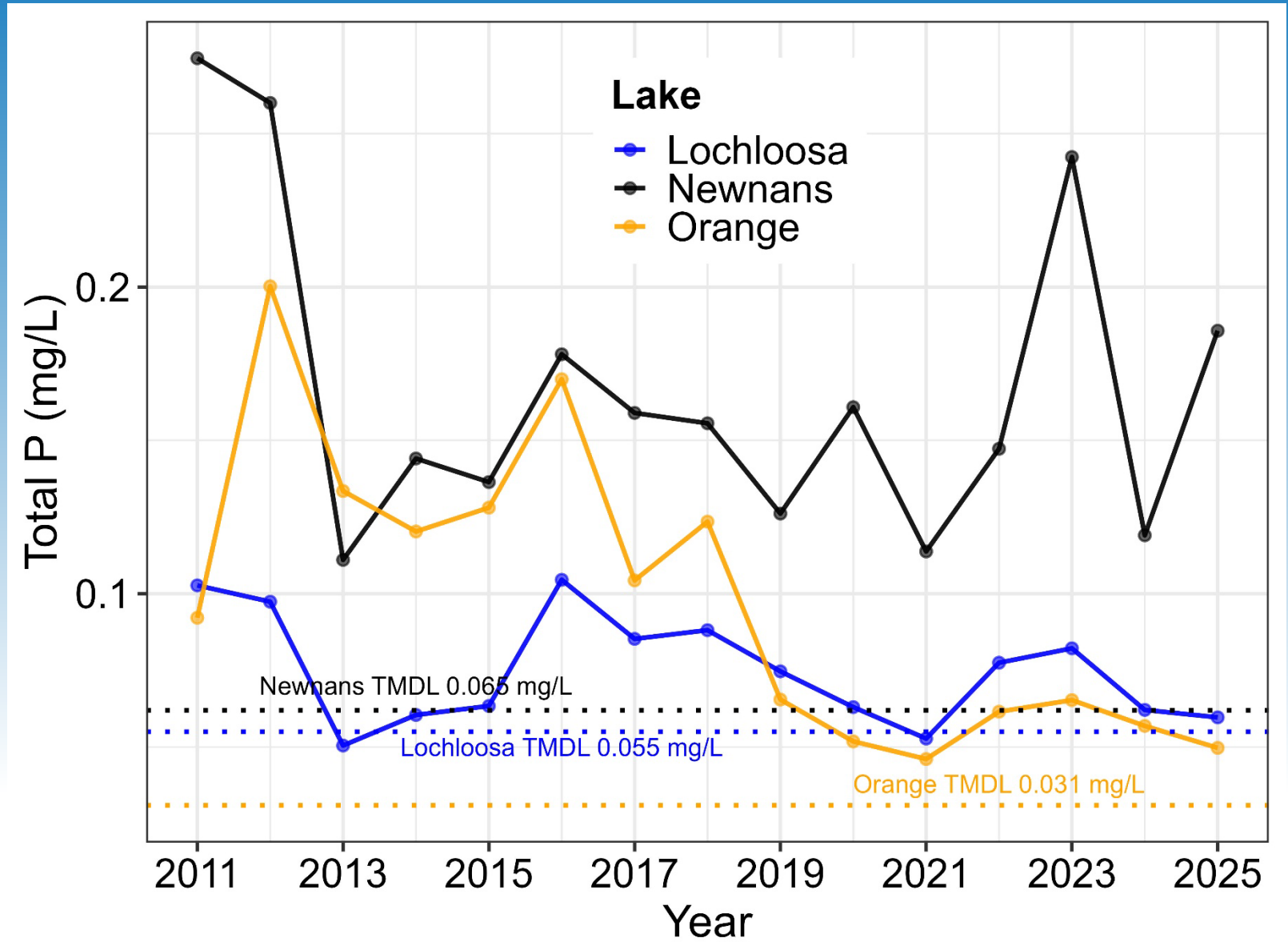
I. Total phosphorus (TP), Total nitrogen (TN), and Chlorophyll-a (Chl-a) concentrations relative to Total Maximum Daily Load (TMDL) targets in the Orange Creek Basin (OCB) lakes

II. TP concentration in major tributaries of the OCB lakes

III. Newnans Lake external TP loading estimation for 1996 to 2020 period

TP Concentration and TMDL Target of OCB Lakes

- Newnans Lake TP concentrations remain above TMDL with no long-term improvement
- Orange Lake shows long-term improvement but remains well above TMDL
- Lochloosa Lake demonstrates long-term improvement and is nearing its TP target



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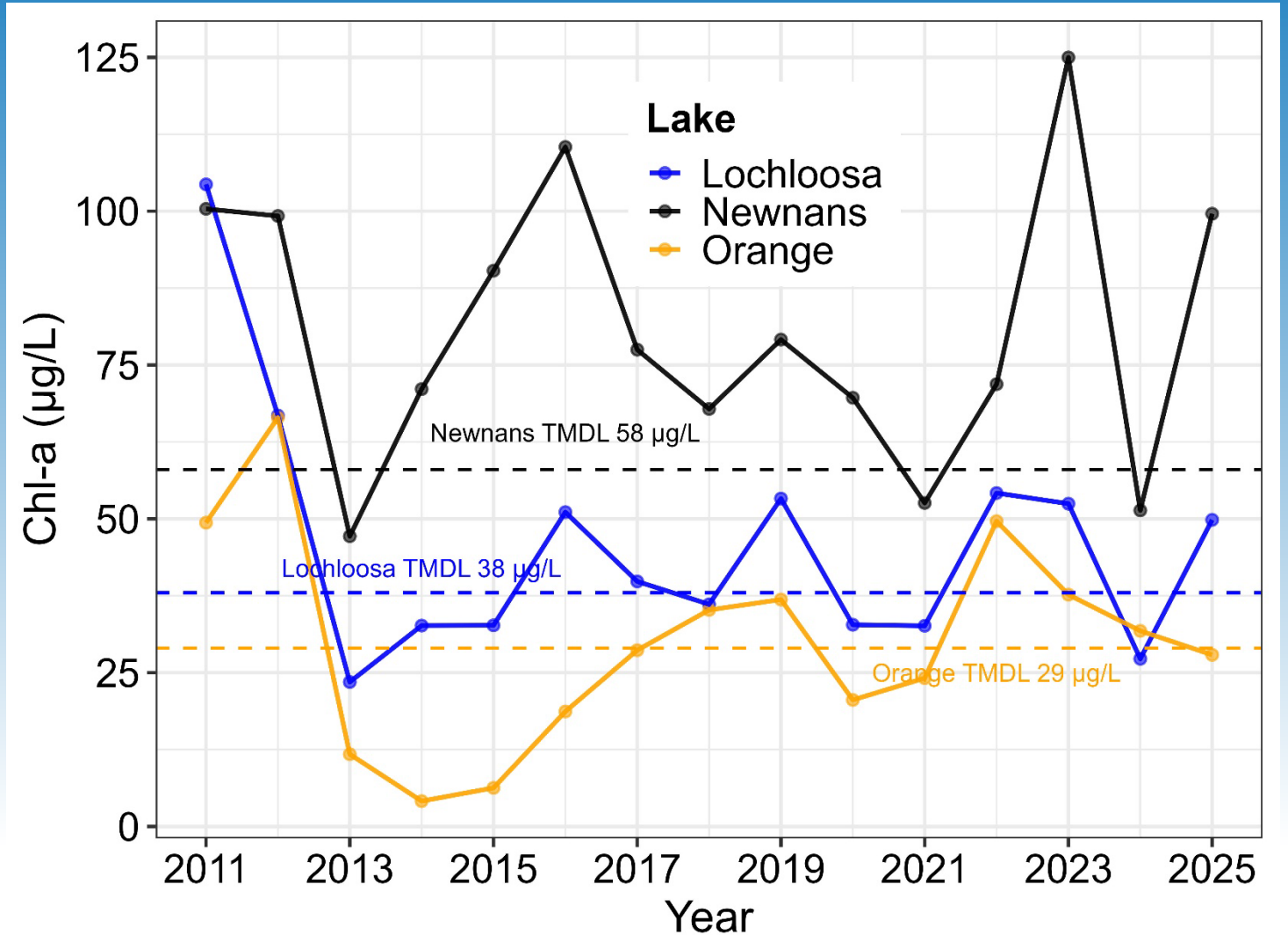
Chl-a Concentration and TMDL Target of OCB Lakes

- Chl-a concentration in Newnans Lake remains above the TMDL target most of the years, with no improving trend
- Orange Lake met Chl-a target in many years, but showing increasing trends since 2014
- Lochloosa Lake Chl-a concentrations show no clear long-term improvement trend and have fluctuated around the TMDL target in recent years



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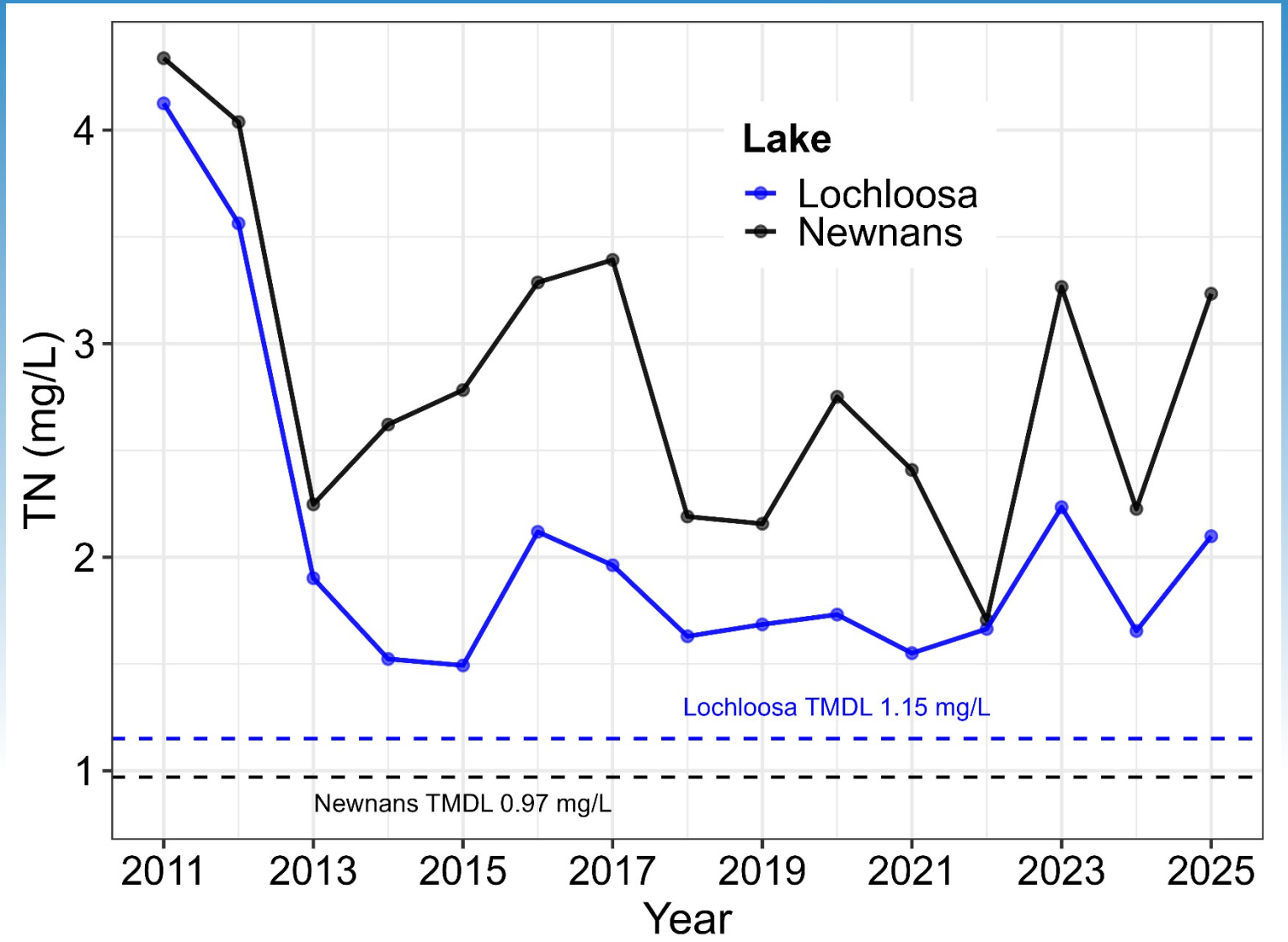
TN Concentration and TMDL Target in Newnans and Lochloosa Lakes

- Neither lake is meeting its TN TMDL target
- Neither lake shows a meaningful trend toward meeting the TMDL target since 2014
- No TN TMDL for Orange Lake



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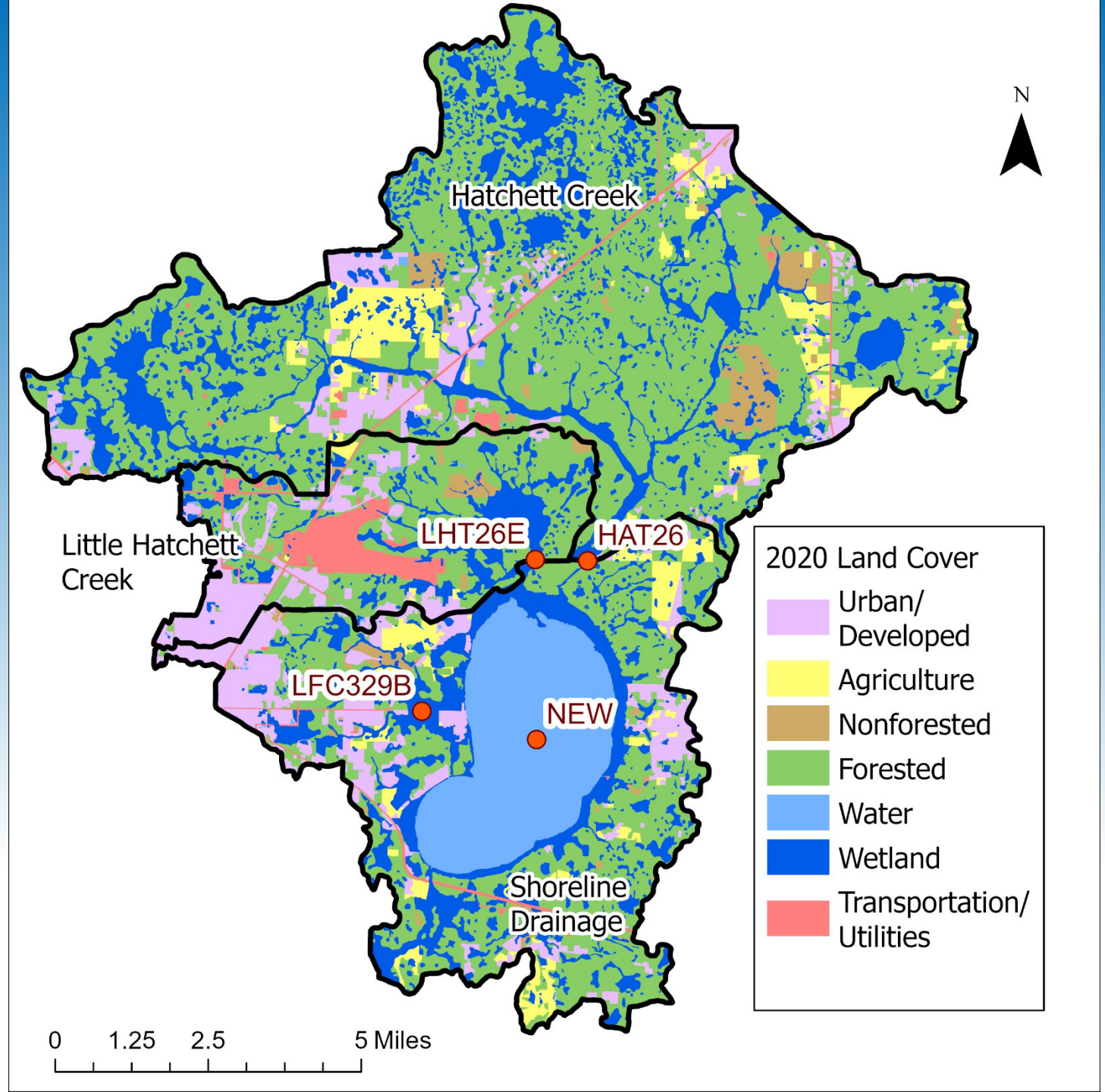
Newnans Lake Watershed and Water Quality Monitoring Stations



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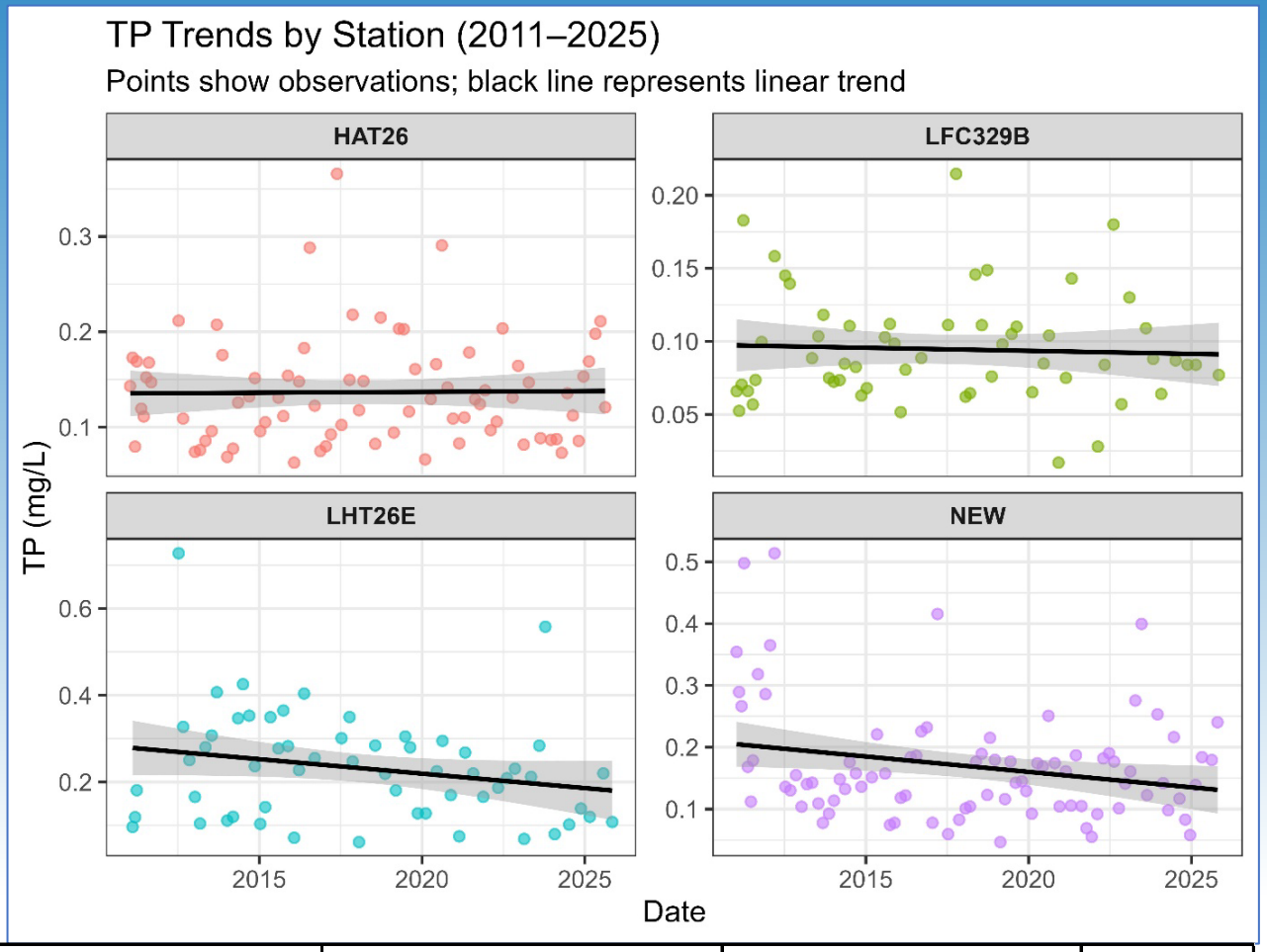
TP Concentration Trends in Newnans Lake and Its Tributaries 2011-2025

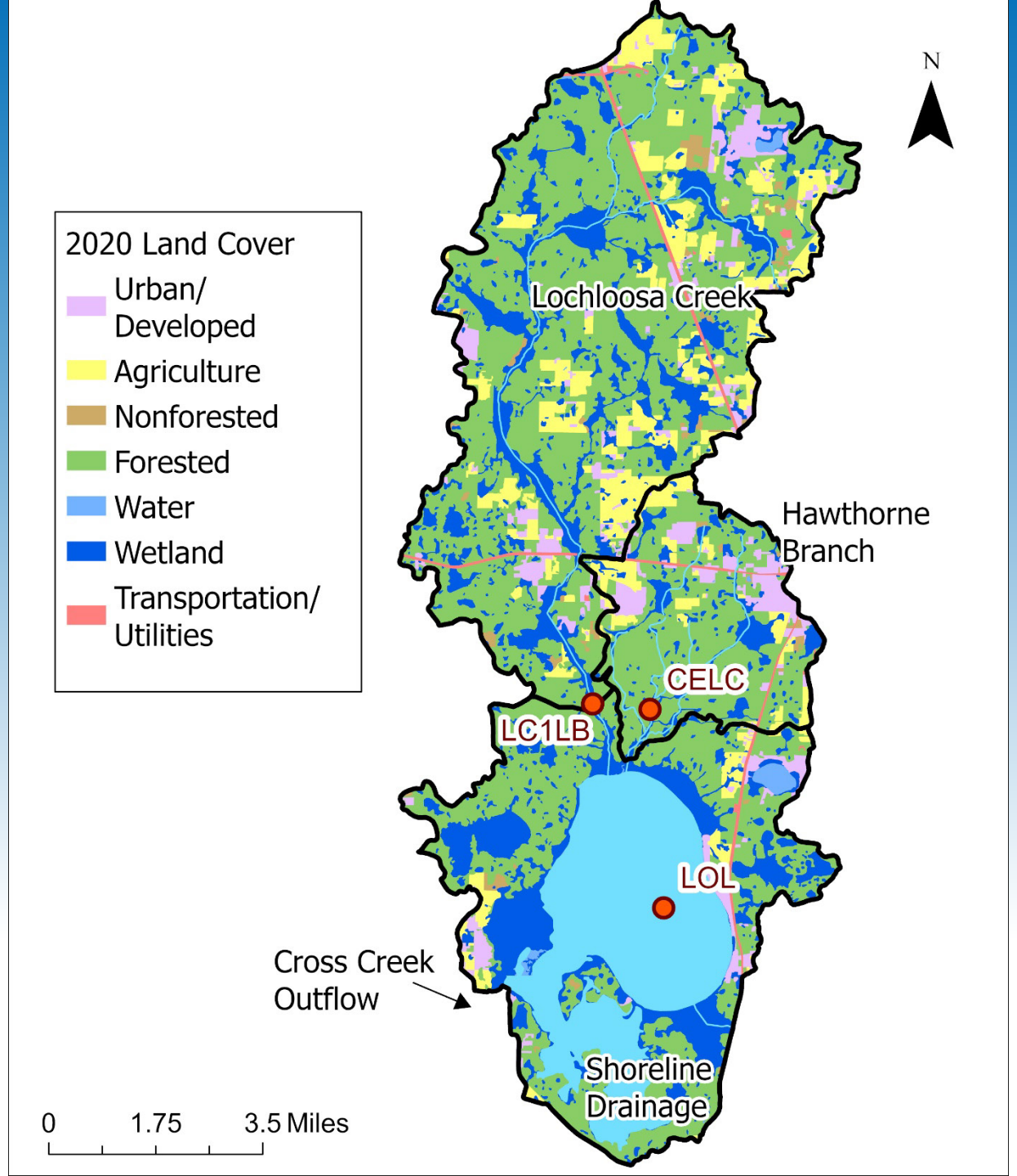
- No statistically significant TP trend was detected at Hatchet Creek, Lake Forest Creek, or the Newnans Lake center station
- A statistically significant decreasing TP trend was identified at Little Hatchet Creek
- TP trends in Newnans Lake and its tributaries are generally stable, with limited evidence of basin-wide change during the analysis period



Station	Station description	Mann-Kendall Trend Test	Statistically Significant?	P-value
HAT26	Hatchet Creek at SR26 bridge	No	No	0.852
LFC329B	Lake Forest Creek at CR329B	No	No	0.862
LHT26E	Little Hatchet Creek at SR26	**Decreasing**	**Yes**	**0.029**
NEW	Newnans Lake Center	No	No	0.25

St. Johns River Water Management District

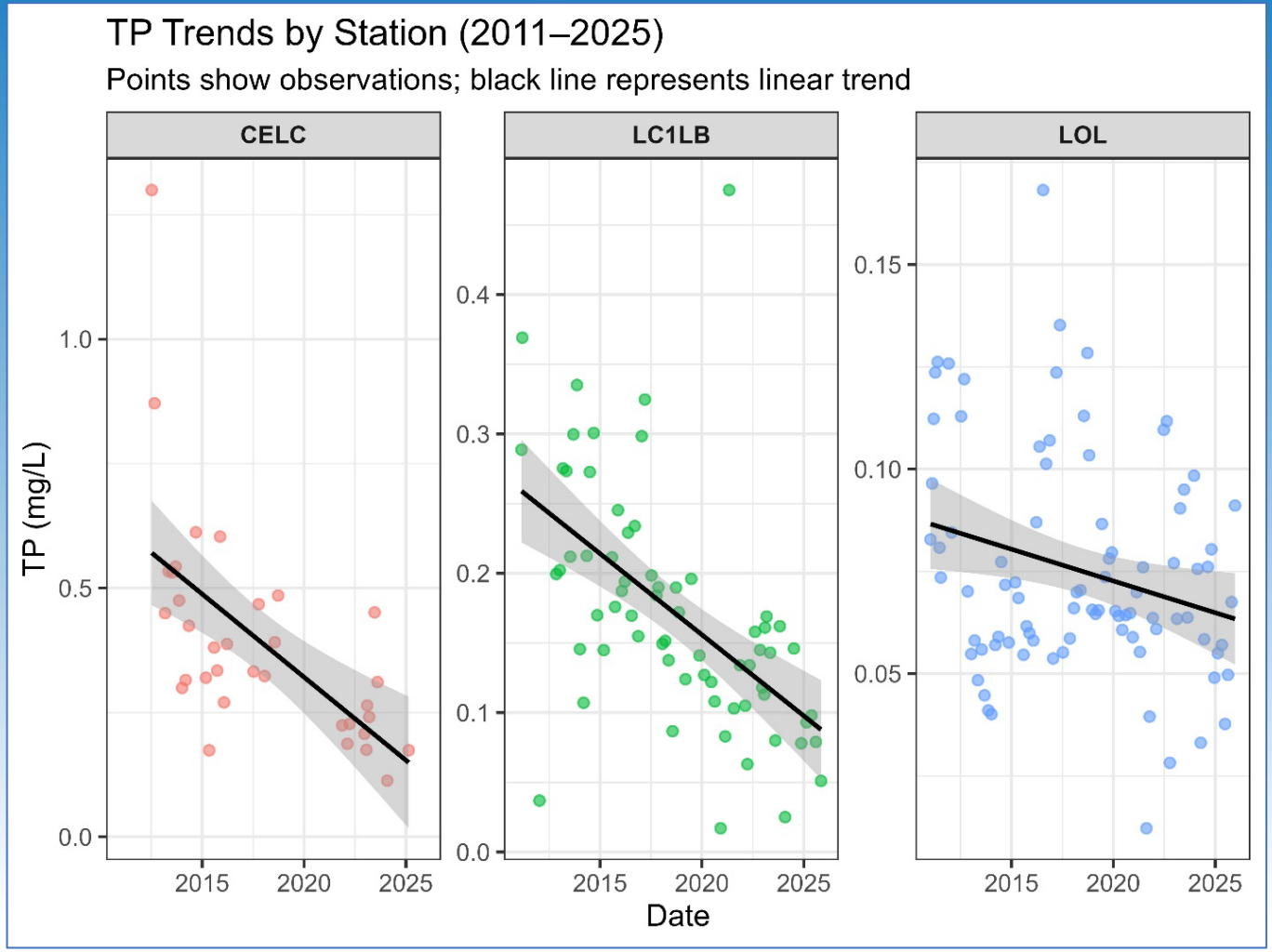
Lochloosa Lake Watershed and Water Quality Monitoring Stations



St. Johns River Water Management District

TP Concentration Trends in Lochloosa Lake and its Tributaries 2011-2025

- TP shows statistically significant decreasing trends in Lochloosa Creek and the Hawthorne Branch.
- A weak, non-significant decreasing TP trend is observed at the Lochloosa Lake center station.
- Overall, TP trends in the Lochloosa Lake watershed indicate measurable improvement in tributaries, with limited change observed within the lake.



Station	Station description	Mann-Kendall Trend Test	Statistically Significant?	P-value
CELC	Hawthorne Branch	**Decreasing ↓**	**Yes**	**<0.001**
LC1LB	Lochloosa Creek	**Decreasing ↓**	**Yes**	**<0.001**
LOL	Lochloosa Lake Center	Weak decreasing↓	No (borderline)	0.097

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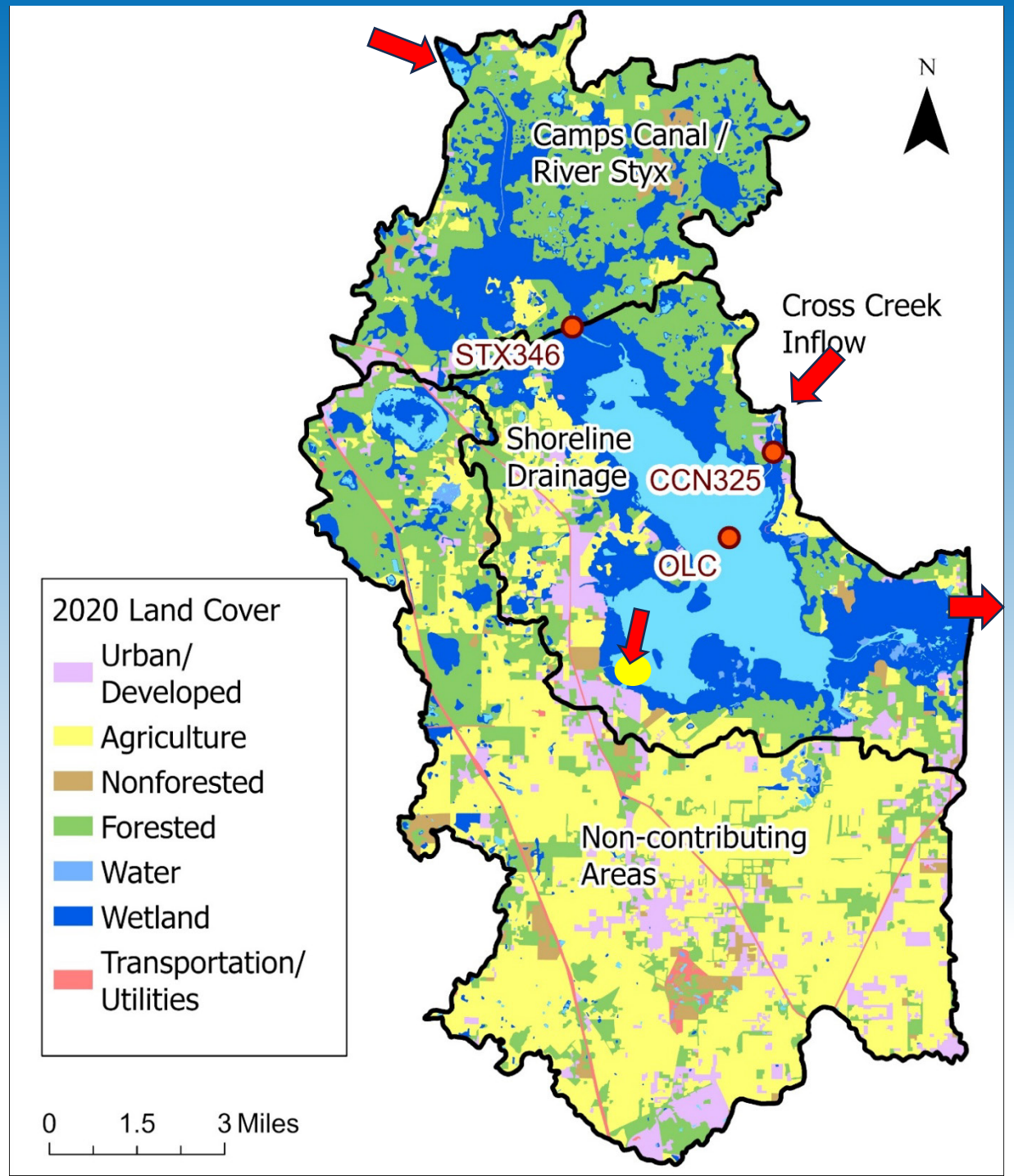
Orange Lake Watershed and Water Quality Monitoring Stations



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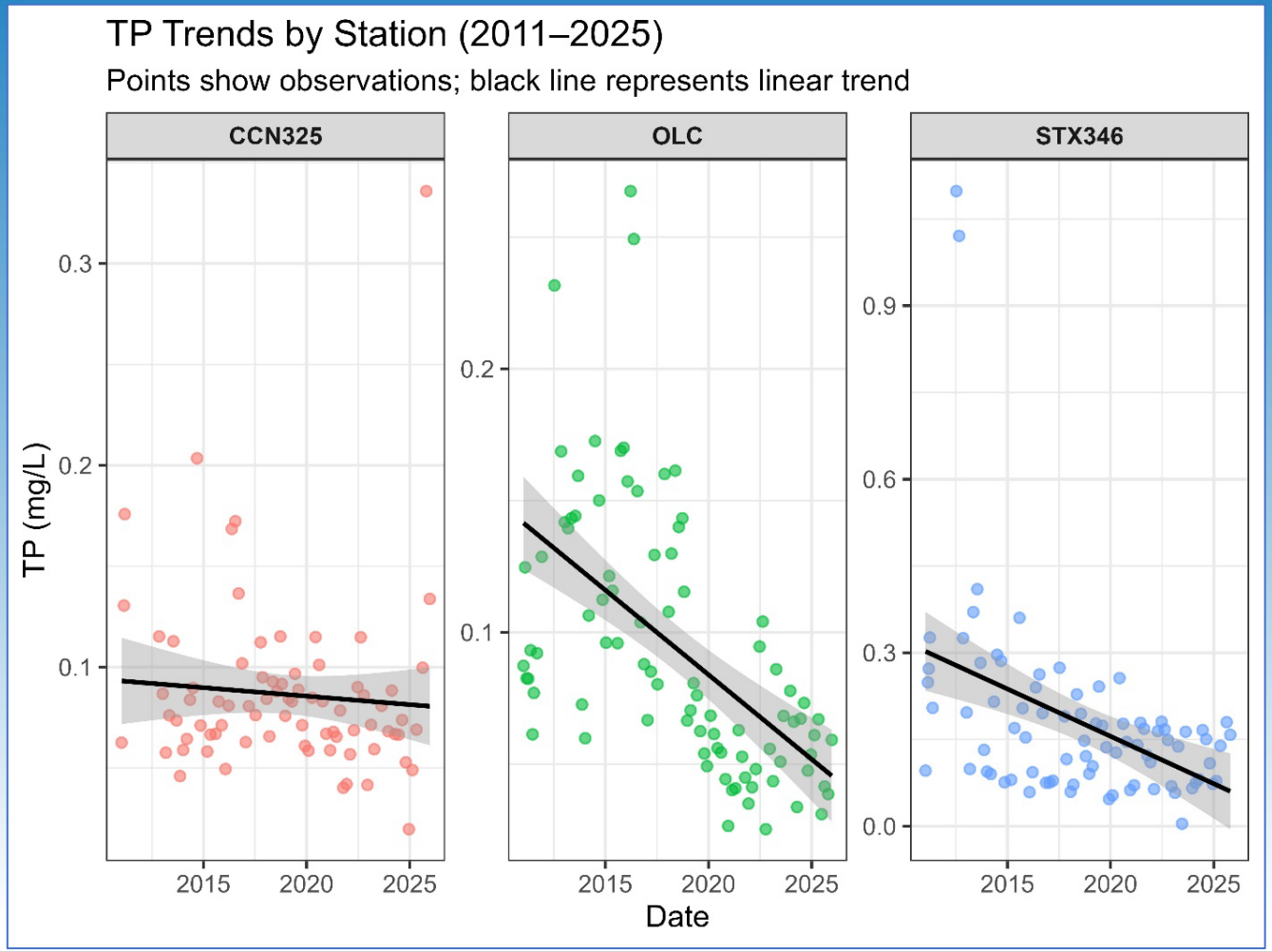
TP Concentration Trends in Orange Lake and its Tributaries 2011-2025

- No statistically significant TP trend is observed at Cross Creek
- Statistically significant decreasing TP trends are observed at the Orange Lake center station and River Styx



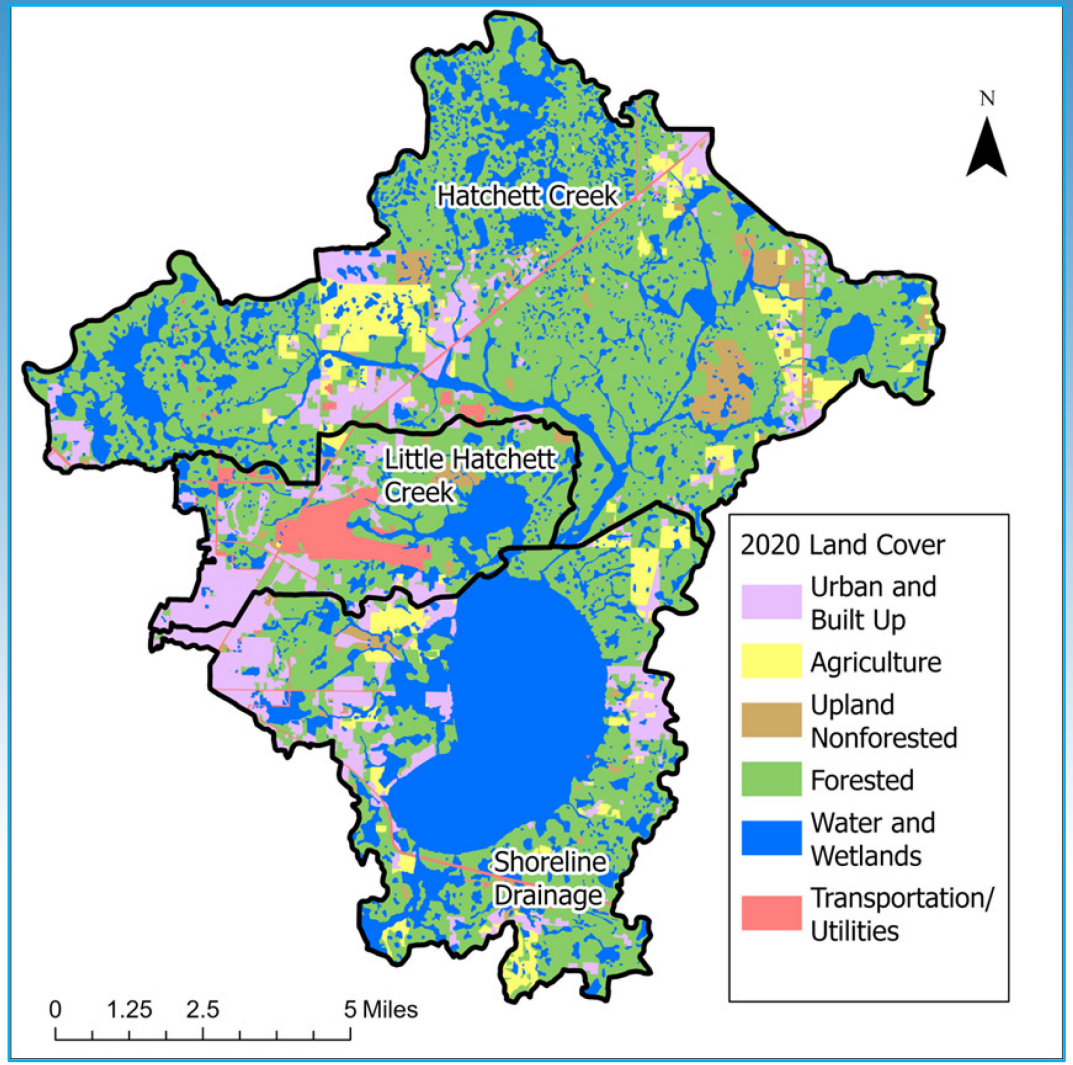
Station	Station description	Mann-Kendall Trend Test	Statistically Significant?	P-value
CCN325	Cross Creek at CR325	No	No	0.281
OLC	Orange Lake Center	**Decreasing**	**Yes**	**<0.001**
STX346	River Styx at CR346	**Decreasing**	**Yes**	**<0.001**

St. Johns River Water Management District

Hydrological Simulation Program-FORTRAN (HSPF) Model Simulated Surface Water Runoffs from 1996-2020

Model simulated daily runoff volumes

- Hatchet Creek drainage basin
- Little Hatchet Creek drainage basin
- Shoreline drainage basin



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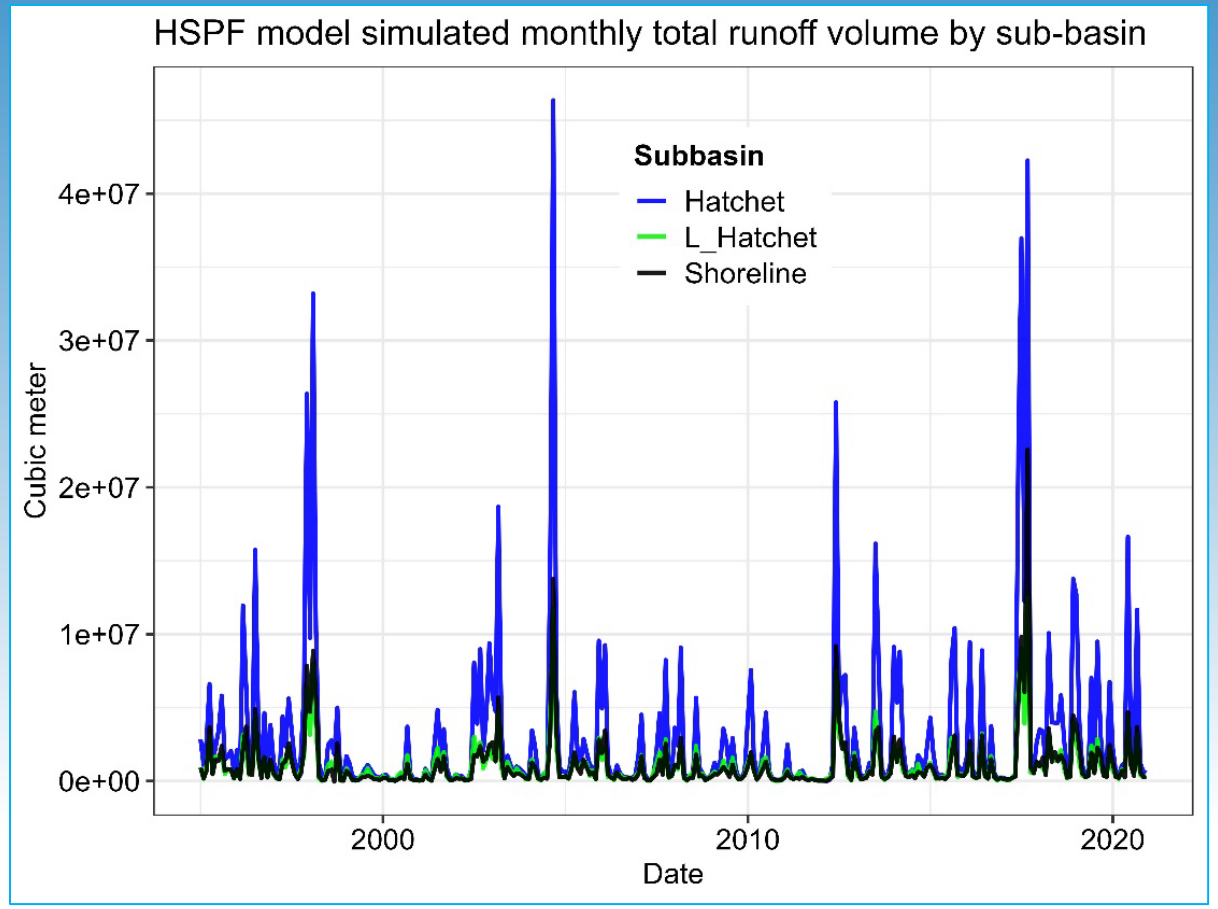
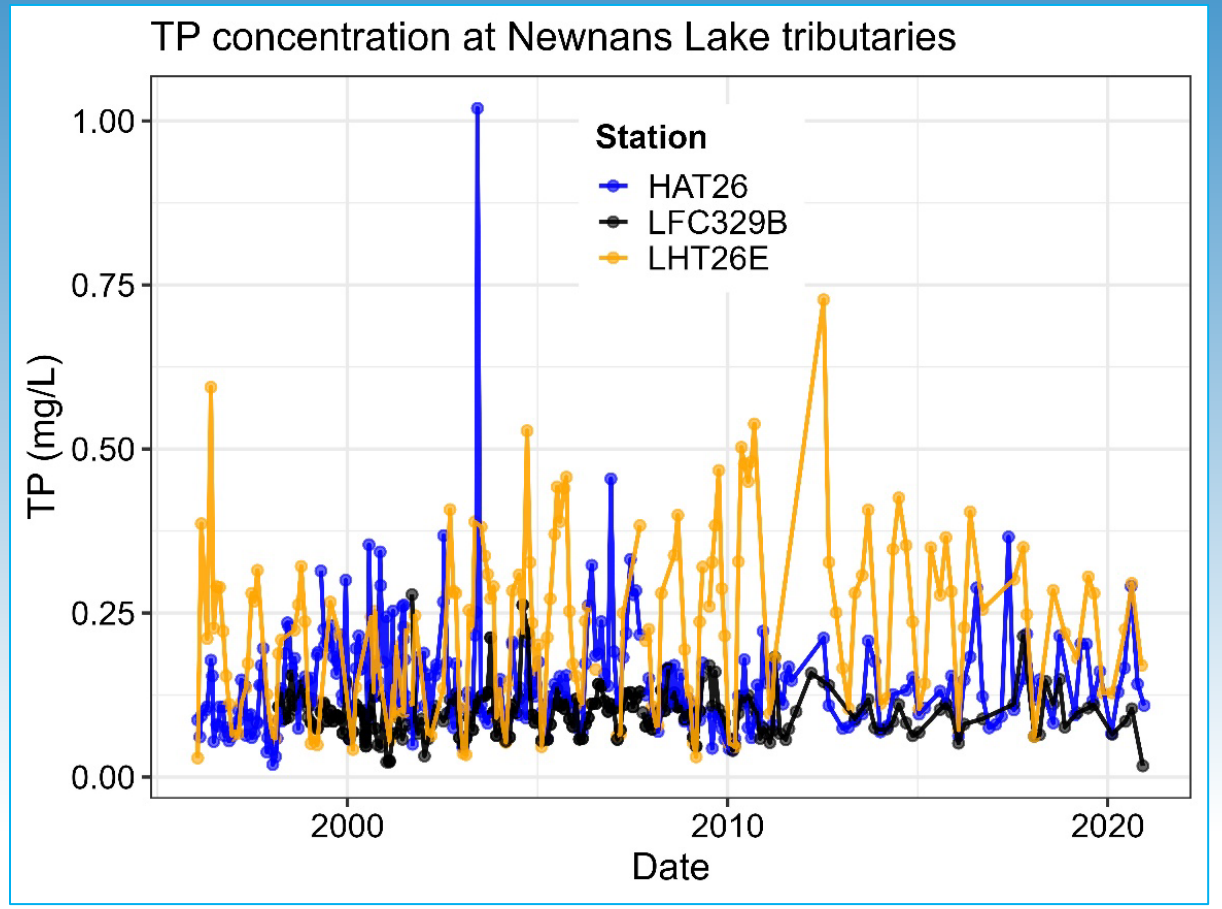
Model Simulated Runoffs and Observed TP Concentrations for Watershed Loading Calculation

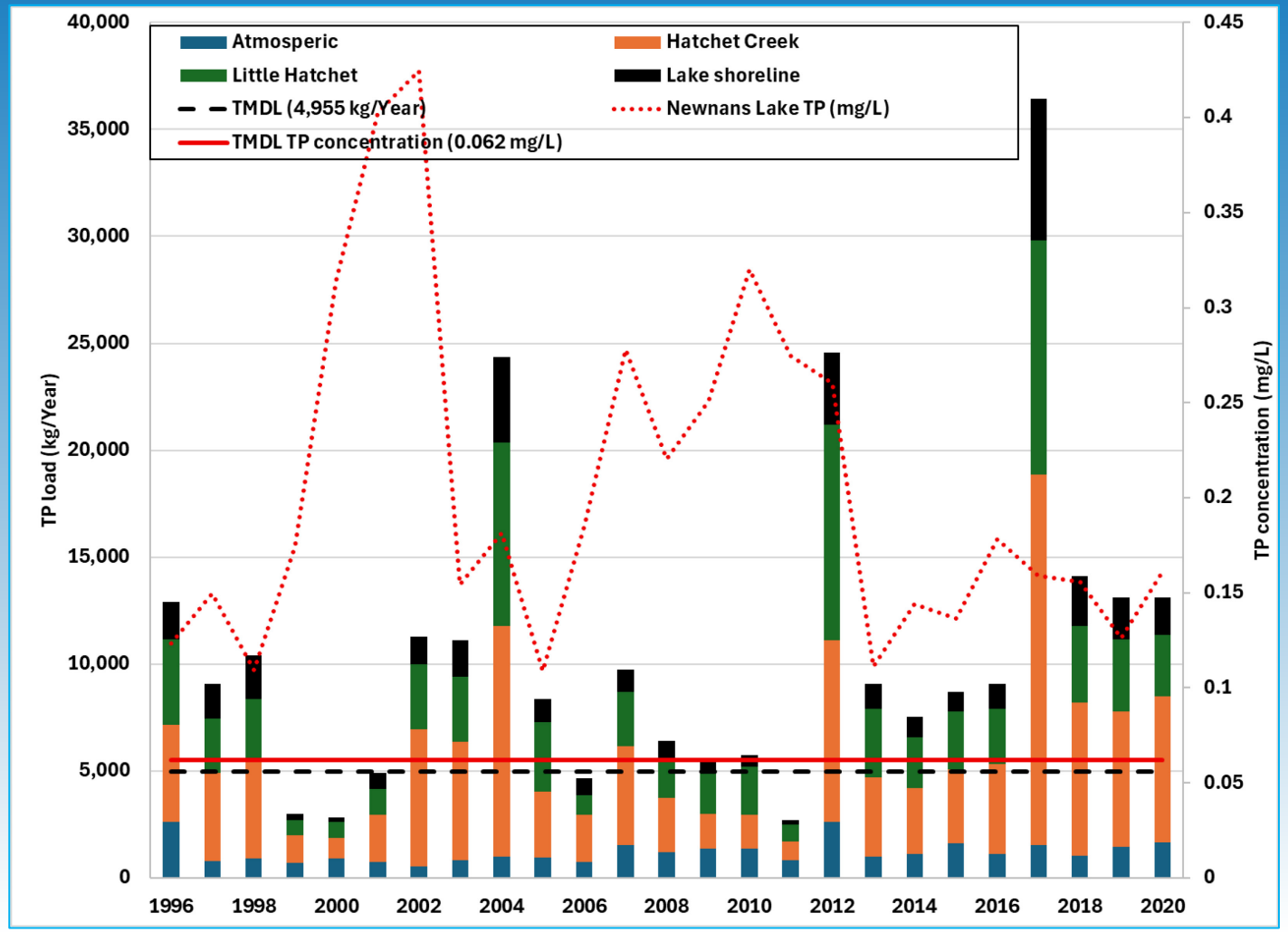




St. Johns River Water Management District

Annual External TP Loading and Concentration in Newnans Lake

- Average external annual TP loading exceeds the TMDL by more than twofold (≈11,444 vs. TMDL 4,955 kg/year) between 1996-2020
- TP loading and in-lake TP concentration show no long-term declining trend
- Observed TP concentrations exceed the target by 2x to 6x for most years



Note: Atmospheric deposition is estimated using dry and wet deposition data collected from two stations near Lake Apopka and annual rainfall in Gainesville

St. Johns River Water Management District

Key Takeaways

- Nutrient conditions in the OCB lakes remain a concern: TP, TN, and Chl-a concentrations generally exceed TMDL targets, with the strongest in-lake TP improvement observed in Lochloosa Lake
- Tributary TP trends show mixed but encouraging signals: Several tributaries exhibit statistically significant TP declines; however, these improvements are not consistently reflected at lake center stations
- External TP loading to Newnans Lake remains excessive: Average TP loads exceed the TMDL by more than twofold, with no long-term decline observed

Thank you!

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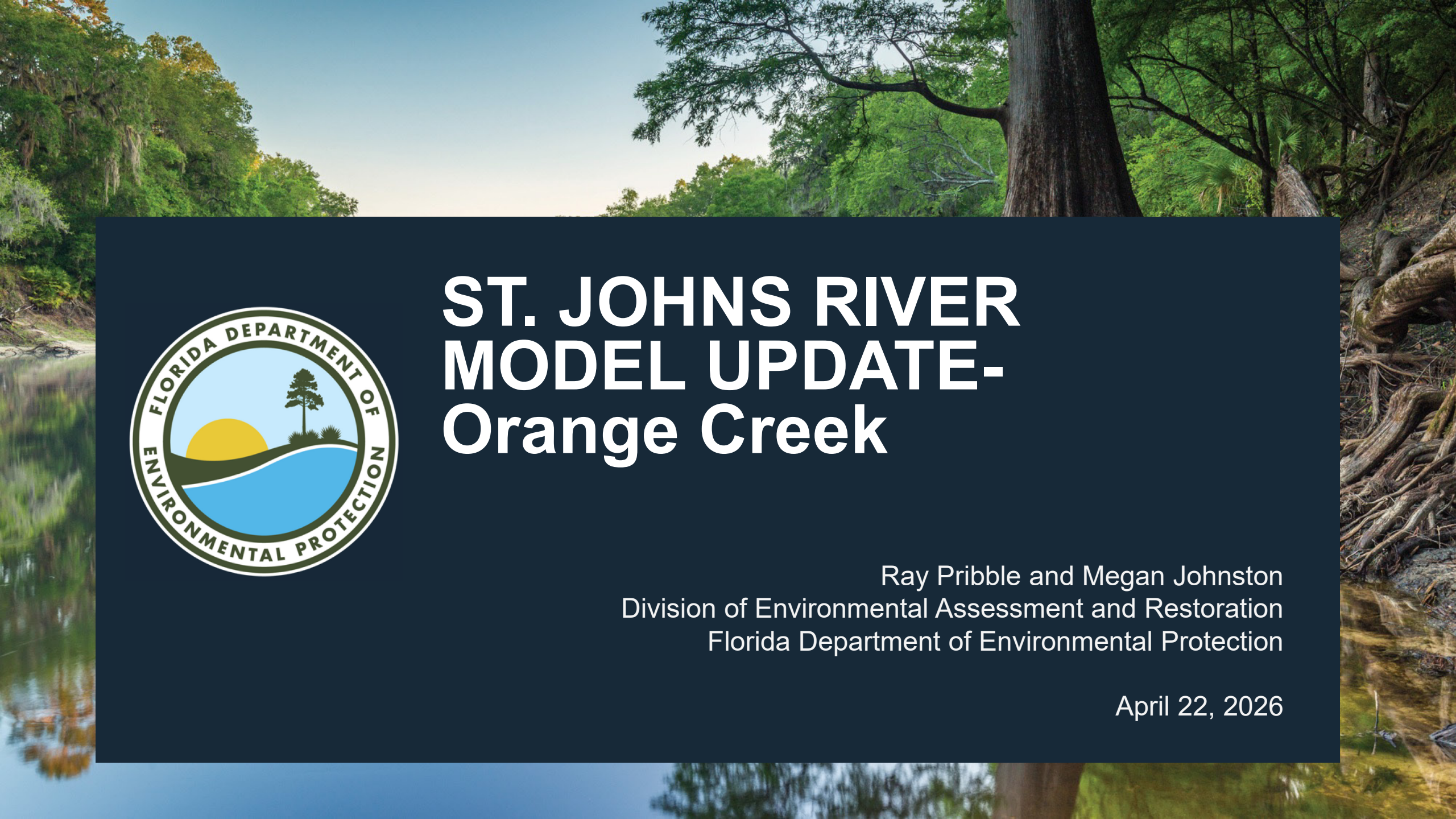
Division of Water Resources, Bureau of Environment Science



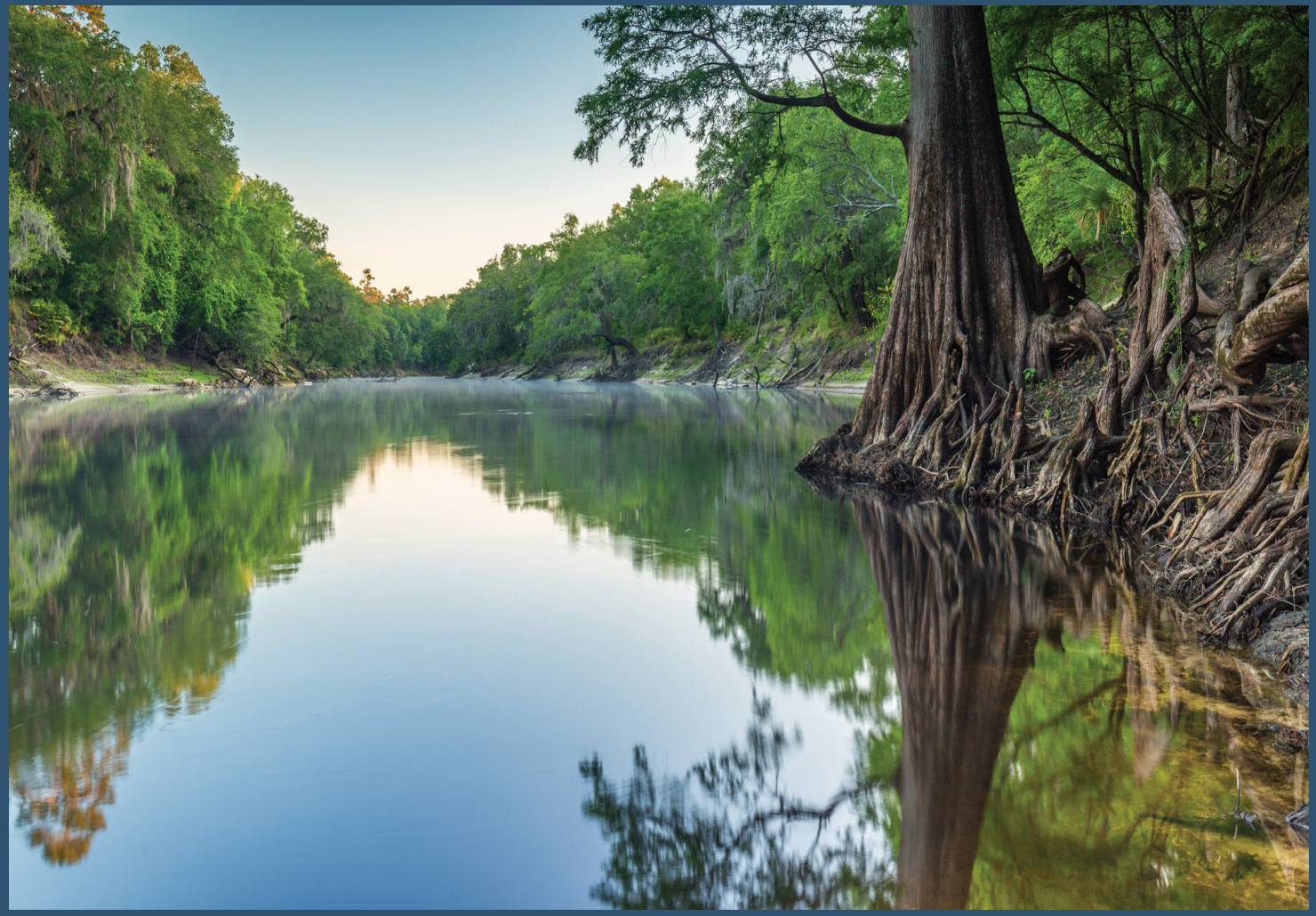
ST. JOHNS RIVER MODEL UPDATE- Orange Creek

Ray Pribble and Megan Johnston
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

April 22, 2026

AGENDA

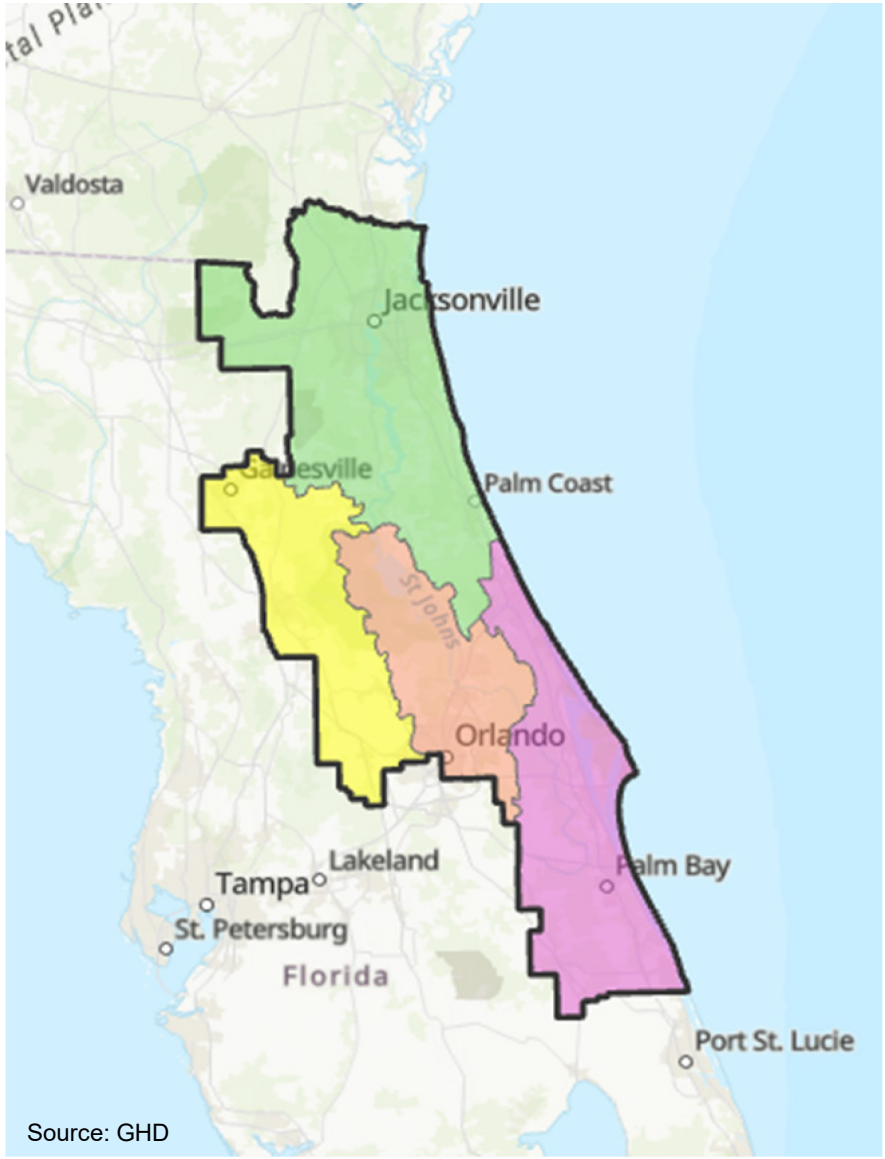
- Project Background.
  - Project Team.
  - Overview of Project.
- Project Schedule.
- Data Sharing and Knowledge.
  - Current Data Inventory.
- Model Details/Workflow.
- Current Status.
- Questions.



PROJECT BACKGROUND: OVERVIEW

Project overview:

- Sponsors:
  - Florida Department of Environmental Protection (DEP).
  - St. Johns River Water Management District (SJRWMD).
- Consulting team:
  - Environmental Science Associates (ESA).
  - GHD.
  - Wildwood Consulting.
- Phases of the project:
  - Phase I.
  - Phase II.



Source: GHD

PROJECT SCHEDULE

Completed:
Modeling Document/Quality Assessment (QA) Plan

July 2026:
HSPF Model

July 2026:
EFDC Model

July 2027:
WASP Model

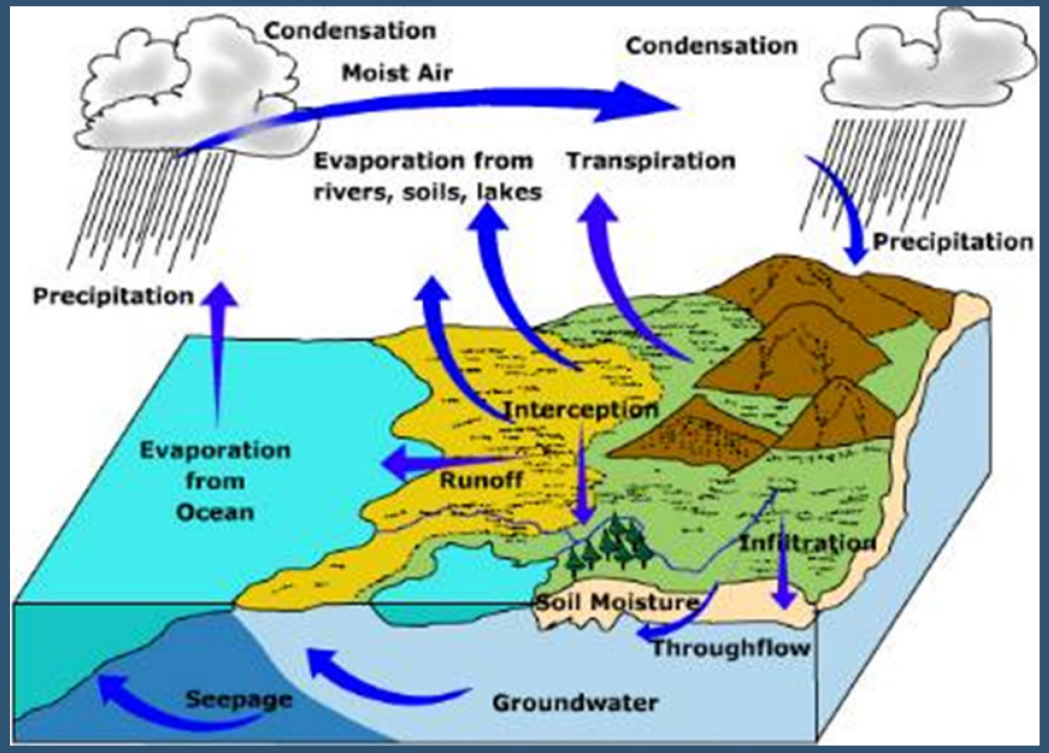
HSPF: Hydrologic Simulation Program FORTRAN
EFDC: Environmental Fluid Dynamics Code
WASP: Water Quality Analysis Simulation Program

CURRENT 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

HSPF WATERSHED MODEL

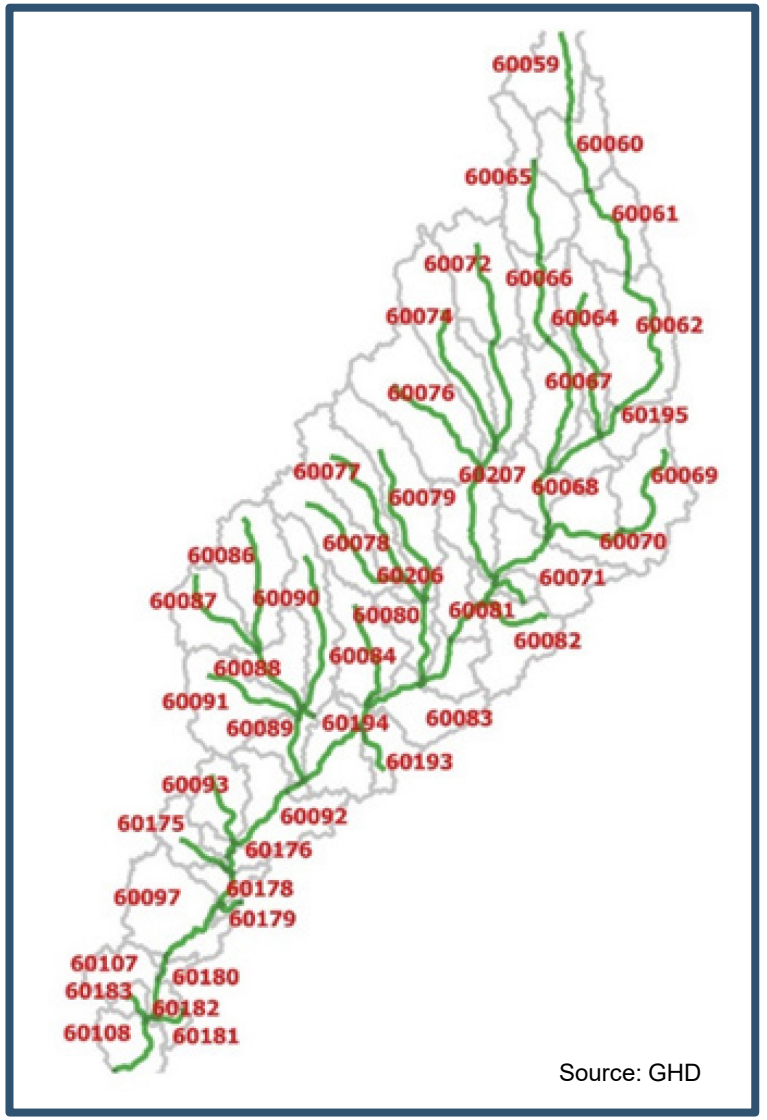


Source: Ritter, Michael E. The Physical Environment: an Introduction to Physical Geography.

- SJRWMD HSPF Models:
  - Calibrated for flow.
- Model extends in time through 2023.
  - Updated meteorological data.
  - Point source flow data.
  - Re-calibrate flow.
- Pollutant Contribution from land surface added.
  - Total nitrogen (TN), total phosphorus (TP), carbonaceous biochemical oxygen demand (CBOD).
- Land Use Coverage updated to FLUCCS 2020.

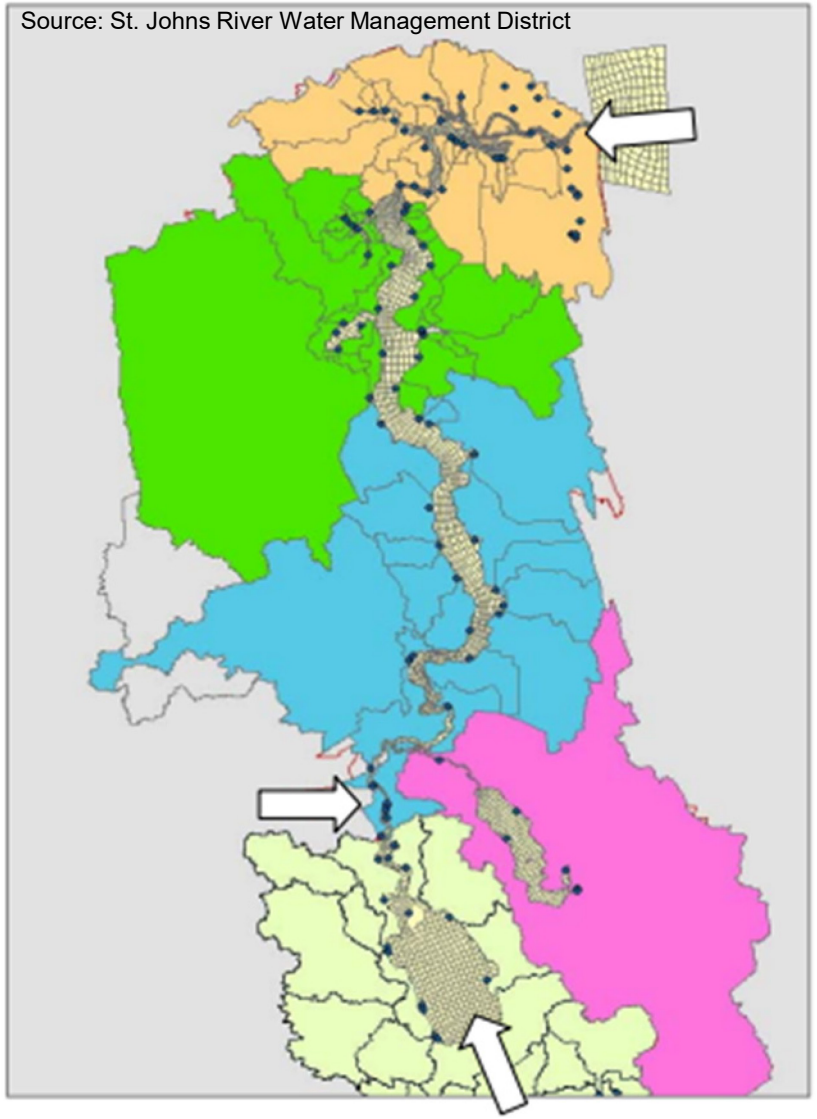
WASP RECEIVING WATERBODY MODEL

- Implement U.S. Environmental Protection Agency's (EPA) WASP Model.
- Develop WASP model network consistent with HSPF Reach Network.
- Develop WASP Models for major basins and tributaries.
- Integrate the flows and loads simulated by HSPF to predict water quality conditions as a function of varying meteorological conditions.



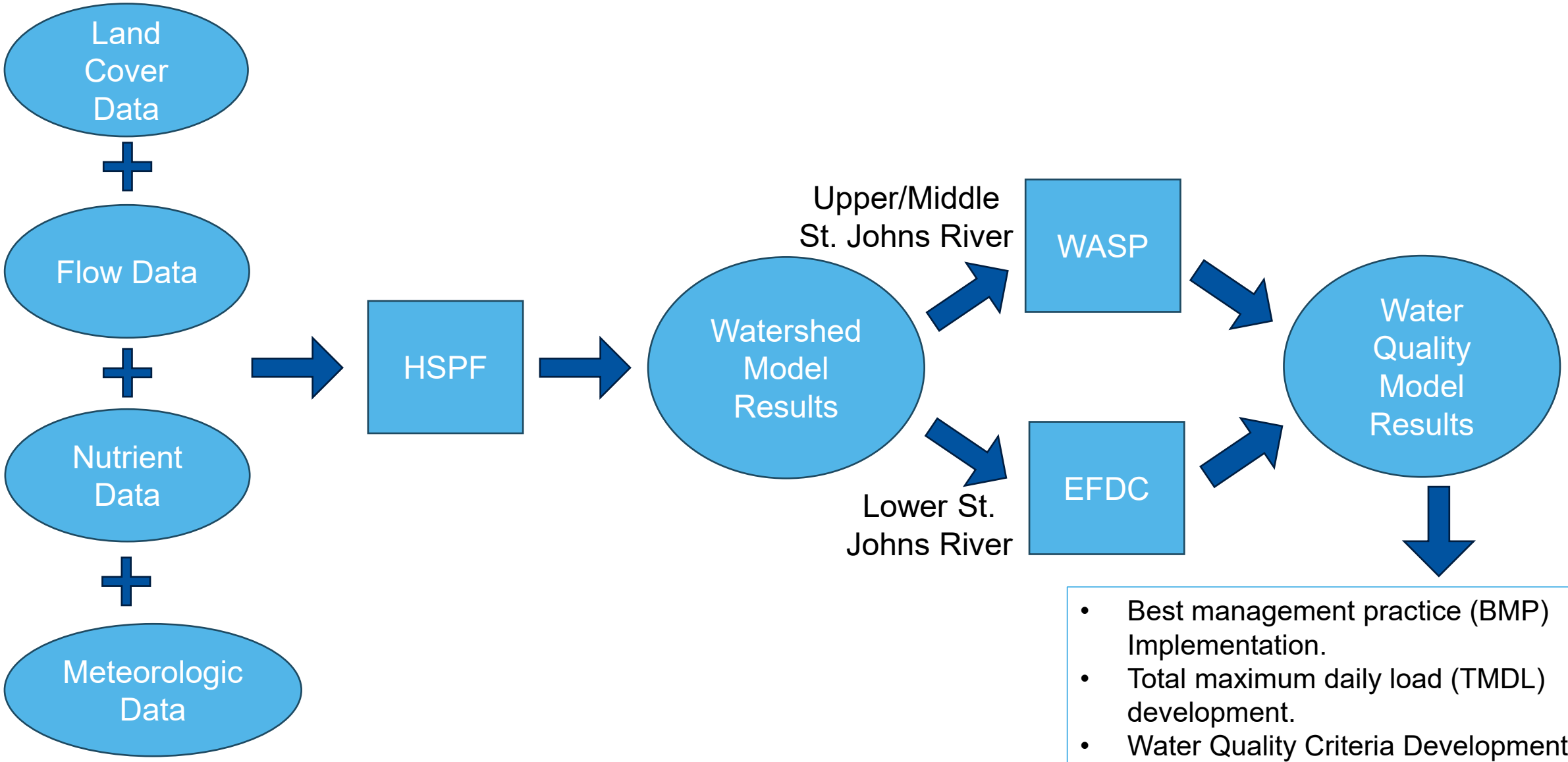
Source: GHD

EFDC HYDRODYNAMIC MODEL



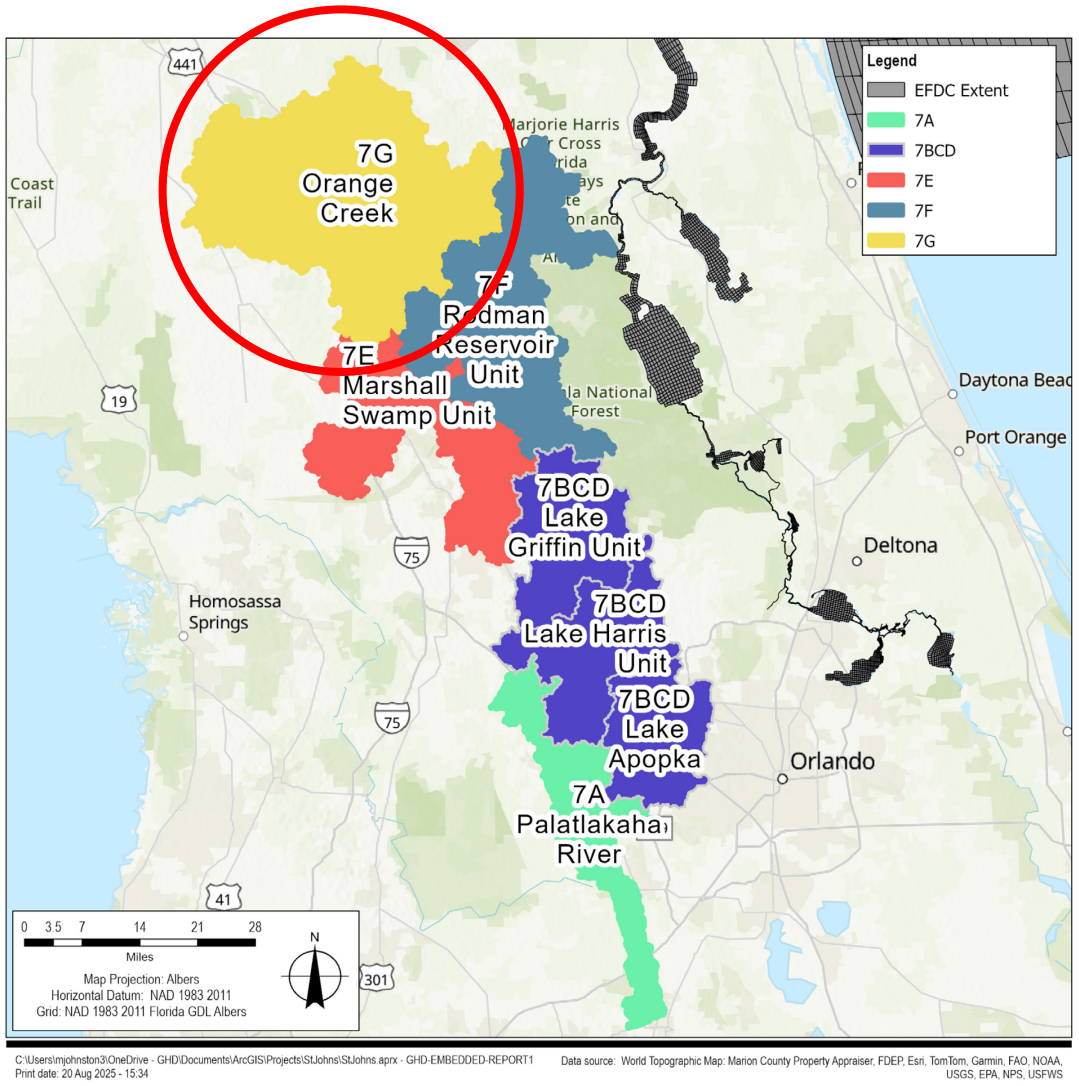
- Evaluated SJRWMD version of EFDC.
  - Updated to current version of EFDC.
- Extended EFDC through 2023.
- Investigate replacing current water quality model (CE-QUAL-ICM).
- Update flows and loads from HSPF/WASP models from the upstream basins.

MODELING WORKFLOW



- Best management practice (BMP) Implementation.
- Total maximum daily load (TMDL) development.
- Water Quality Criteria Development

ORANGE CREEK BASIN

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*** x -  x HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR
    1  999    3    5    6    5    5    5    5    6    6    6    1   12
  END BINARY-INFO

  GEN-INFO
***                                          Unit sys T  Printer        Binary
***       NAME                    Nexit        in  out Engl Metr Lkfg Engl Metr
*** 7G REACH 1
    1     Lake Elizabeth              1         1    1   82    0    0   83    0
*** 7G REACH 2
    2     Lk Elizabeth Outlet         1         1    1   82    0    0   83    0
*** 7G REACH 3
    3     Lochloosa Ck Trib 3         1         1    1   82    0    0   83    0
*** 7G REACH 4
    4     Upp Lochloosa Ck            1         1    1   82    0    0   83    0
*** 7G REACH 5
    5     Lochloosa Ck Trib 1         1         1    1   82    0    0   83    0
*** 7G REACH 6
    6     Mid Lochloosa Ck            1         1    1   82    0    0   83    0
*** 7G REACH 7
    7     Lo Lochloosa Ck             1         1    1   82    0    0   83    0
*** 7G REACH 8
    8     W Hawthorne Br              1         1    1   82    0    0   83    0
*** 7G REACH 9
    9     Lake Jeffords Outlet        2         1    1   82    0    0   83    0
*** 7G REACH 10
   10     Lochloosa Lk Trib           1         1    1   82    0    0   83    0
*** 7G REACH 11
   11     Watson Prairie Drain        1         1    1   82    0    0   83    0
*** 7G REACH 12
   12     Lochloosa Lake              2         1    1   82    0    0   83    0
*** 7G REACH 13
   13     Lochloosa Slough            1         1    1   82    0    0   83    0
                                                                    1   82    0    0   83    0
                                                                    1   82    0    0   83    0
                                                                    1   82    0    0   83    0
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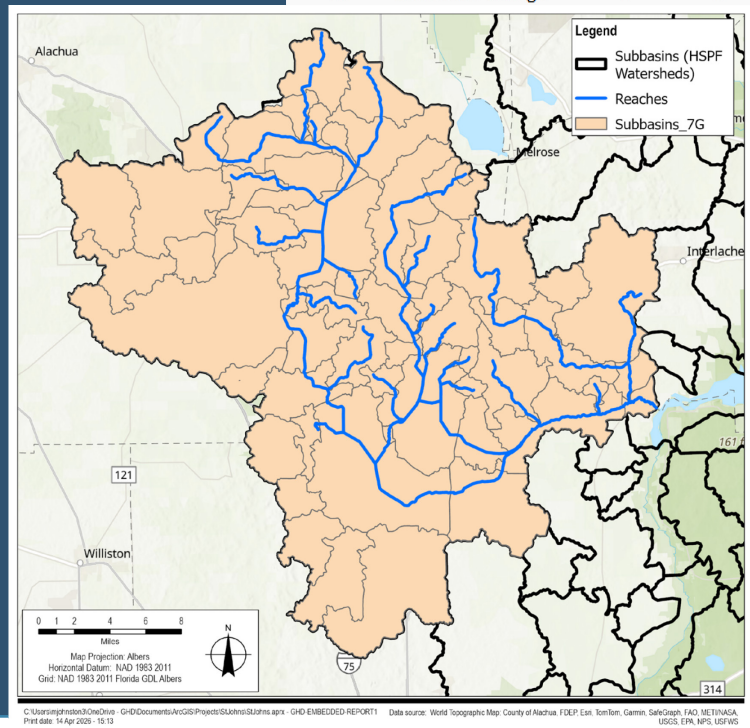

QUESTIONS?

THANK YOU

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FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Annual Meeting Summary – Orange Creek Basin Management Action Plan (BMAP)

Florida Department of Environmental Protection (DEP)

April 22, 2026, via GoToWebinar

10:00 am – 11:31 am

Attendees

Miranda Anderson, DEP
Suzanne Baird, ECT
Lisa Bally, Geosyntec
Janelle Barriero, Florida Senate
Evelyn Becerra, DEP
Amanda Boone, Woodard & Curran
Chelsea Braz, USF
Matthew Burke, City of Gainesville
Tiffany Busby, Wildwood Consulting
Jason Cambre, Marion County
Claudia Castro, DEP
The Florida Channel
Carolin Ciarlariello, DEP
Susan Davis, SJRWMD
Jian Di, SJRWMD
Dean Dobberfuhl, SJRWMD
Ashley Dowdy, GrantWorks
Sara Driggers, Wildwood Consulting
Douglas Dycus, FDOT
Kristina Embrey, FGUA
Julie Espy, SAS
Jessica Fetgatter, DEP
Agustin Francisco, FDACS
Samuel Hankinson, DEP
Moira Homann, DEP
Brad Hopkins, Integrity Sales and Marketing
Rick Hutton, GRU
Megan Johnston, GHD
Chuck Kammin, UF
Chris Keller, Wetland Solutions
Stephanie Lambert, Flovac
Natalia Larsen, GRU
Celeste Lyon, RES
Lori McCloud, SJRWMD
Sarah Menz, DEP
Jessica Mostyn, DEP
Jim Myles, DB Environmental
Alejandra Nirenberg, Carr Riggs & Ingram
Jarek Nowak, FDACS
Kevin O'Donnell, DEP
Rick Owen, DEP
Gregory Owen, Alachua County
Josh Papacek, SJRWMD
Lindsey Pavao, Alachua County
Adel Pena, FWC
Ben Pernezny, Ardurra
Jon Perry, ESA
Nicolas Pisarello, Applied Technology & Management
David Prado, Integrity Sales and Marketing
Ray Pribble, ESA
Matt Schivinski, Matt Engineering
Brandon Smith, FDOT
Raymond Stuart, DEP
Tom Sweeting, Integrity Sales and Marketing
Mary Szoka, Alachua County
Zoe Tressel, St. Johns Riverkeeper
Diana Turner, DEP
Christine Vrabic, Marion County
Ken Weaver, DEP
Shane Williams, City of Gainesville
Jonathan Woods, DEP

Questions and Answers (Q&A)

Q: Can we get a copy of the presentation? I need more time to see the information on the phosphorus-impaired lakes.
A: Yes, a copy of today's presentation will be posted. A GovDelivery notice will be sent out via email when the meeting materials are available along with a link to their online location. To manage your DEP GovDelivery notifications, please visit https://floridadep.gov/dear/dear/content/subscribe.

Q: How will DEP use the model results in the total maximum daily load (TMDL) process? Will the allocations change?
A: The TMDLs are handled by a different group within DEP, so we cannot comment directly on their plans. However, it is important to understand that the TMDLs (assimilative capacity) rarely change. What changes is the loading from present day conditions and the calculation of how far we are from the assimilative capacity set in the TMDLs. Jessica noted that the Orange Creek BMAP has been in effect for almost 20 years and the current required reductions, based on the previous models/period of record, are required to be met by the time the new model will be ready for incorporation. So, when the Orange Creek BMAP requirements are updated based on the revised models, reductions in nutrient loading from the lands surface will be reflected but also considered will be any increased development/land uses changes and population growth. DEP does not want entities to be surprised if there is more work to be done to meet the TMDLs, even if they have achieved their currently required reductions. In many areas of Florida, there has been substantial new development and/or land use changes, which is likely to have added loading that will need to be addressed to meet/maintain the assimilative capacity set by the TMDLs. Even when the TMDLs are met, the BMAP and TMDLs remain in place to maintain protection of the water quality.

Q: Will the updated modeling give an indication of how the narrative water quality (i.e., chlorophyll-a, Secchi depth, etc.) will be expected to change with implementation of the BMAP reductions?
A: We are not modeling chlorophyll-a or Secchi depth. The modeling will show how water quality will respond to changes in loads. We are modeling total nitrogen (TN), total phosphorus (TP), biochemical oxygen demand (BOD), and dissolved oxygen (DO). We will be able to run different scenarios with the model. For example, you could run the model for different land use scenarios (e.g., all natural lands). We could also use the model to estimate reductions from projects—DEP does intend to use the model results to estimate stormwater restoration project reductions.

Q: How will the model represent internal recycling in the lakes?
A: In the HSPF Model, we do specify the links which lead to the internal recycling processes. However, the opportunity to represent internal cycling of nutrients will be in the WASP Model, which we have not worked on yet. So that is a question to return to when we get to the point when we are working on the water quality model (i.e., WASP). It is worth noting, the modeling work being performed now is at a larger scale on the entire river system. Once the large-scale models are fully running, we intend to circle back to the specific BMAP areas and add details to the models at the BMAP scale. Modeling the internal loads is also data dependent. The HSPF model is not particularly good at representing sediment flux, so that is why the modeling team will use WASP to represent sediment flux dynamics.

Comment: Newnans Lake has some significant internal loads. The current BMAP says 76% of load to Newnans Lake is an internal recycling issue.
Response: The current BMAP acknowledges that there are important internal loads in some of the lakes. However, the load reductions that are assigned as allocations are only reducing the watershed loads; presently, the responsibility for the internal loads is not being assigned to anyone. So, while DEP wants to understand the role of the internal loads on lake concentrations, it is known that we need to reduce the watershed loads to achieve water quality restoration. The internal loads originated in the watershed and the current watershed loads add to the internal loading problems. The necessity to reduce watershed loads is not going to change with an updated understanding of the internal loads; the surficial loads need to be under control for the internal loading to also improve. Further, if we do not control the watershed loads adequately, the internal loads will get worse or return, so we must have projects that reduce watershed loads, even when internal loads are also a factor in the water quality conditions.

Comment: Don't forget about the groundwater loading to Lochloosa Lake.

Q: We are an allocated entity in this BMAP. Is there somewhere we can access spatial data layers for the hot spot analysis that Jessica Fetgatter mentioned in her presentation?
A: Those files are not posted online but Jessica Fetgatter offered to confirm with her managers and may be able to provide them directly to a responsible entity. There are also map images include in the 2025 BMAP document for anyone to review.

Q: I see that the University of Florida (UF) has been newly listed as a responsible entity in the 2025 BMAP. For which areas will they have responsibility? Is this for the Lake Wauberg area?
A: As noted in the presentation, there are many diverse stakeholders within the BMAP. Different lake subbasins have different approaches for BMAP allocations. In some cases, there are entity-specific allocations with specific assignments to a responsible party, where other subbasins have an overall allocation and are expected to work together to achieve the total reductions, absent individual assignments. UF falls under the collaboration approach so they are expected to work cooperatively with their local governments. They also have a wastewater facility that is subject to

the BMAP requirements like all the other wastewater facilities. They have a municipal separate storm sewer system (MS4) permit and are subject to those requirements as well. Additionally, they have BMAP requirements pertaining to management of their sports turf.

Q: Are there any documented changes in the Orange Lake and Lochloosa Lake watersheds that might relate to the water quality improvement around 2013? Or that might relate to the decline in loading in the tributaries? It's on the earlier figures that show steep decline in lake concentrations.
A: Jian indicated that he was uncertain of the changes that allowed the 2013 water quality improvements. He speculated that the TP concentration decreases might be related to a drought period just prior to 2013. There were very high concentrations right before 2013. However, it looks like 2013 was dry also (below 45 inches per year). He noted that over time, we observe that in Orange Lake sometimes the TP lake concentrations are uncoupled from the loading rates. We believe this can be related to the hydrilla extent in some years. When the hydrilla are quite extensive in the lake, the plants can uptake a lot of nutrients and drop the lake TP concentrations, even when the incoming loads are high. It is possible that dynamic would explain the conditions in 2013.

Q: Any idea why tributaries in those watersheds seem to be declining in TP load?
A: Jian Di was unsure if the loading declines are related to projects or if perhaps some of the agricultural practices upstream have changed and have decreased the agricultural stormwater loads. Around Lochloosa Creek there are also lands the St. Johns River Water Management District (SJRMWD) has acquired and those land use/land management changes may also be improving the long-term conditions and water quality in those creeks.

Comment: Alachua County also has acquired many conservation lands in Lochloosa Creek watershed, which may be related to the observed improvements in water quality.

Q: What is the method/data sets being used for model calibration and validation?
A: The water quality data used for calibration is the DEP Impaired Waters Rule (IWR) dataset. For flows, the SJRWMD used the U.S. Geological Survey (USGS) data to calibrate.