



## **Lower St. Johns River Main Stem Basin Management Action Plan (BMAP) Annual Meeting**

### **Via Webinar**

Webinar Registration Link:

<https://attendee.gotowebinar.com/register/2189061035766950751>

*Tuesday, June 2, 2026*

*10 AM EDT*

### **Agenda**

- Lower St. Johns River Main Stem Basin Management Action Plan (BMAP) Background.
- Annual Progress Update.
- Policy & Reporting Reminders.
- St. Johns River Water Management District (SJRWMD) Updates.
- Florida Department of Agriculture and Consumer Services (FDACS) Tri-County Agricultural Area Updates.
- St. Johns River Model Update.

Please note the site for documents relating to the Lower St. Johns River Main Stem BMAP:

[BMAP Public Meetings | Florida Department of Environmental Protection](#)

For more information on the Lower St. Johns River Main Stem BMAP, contact: Moira Homann, 850-245-8460,

[Moira.Homann@FloridaDEP.gov](mailto:Moira.Homann@FloridaDEP.gov)



# WEBINAR HOUSEKEEPING

## Attendee Participation

### Open **Settings**.

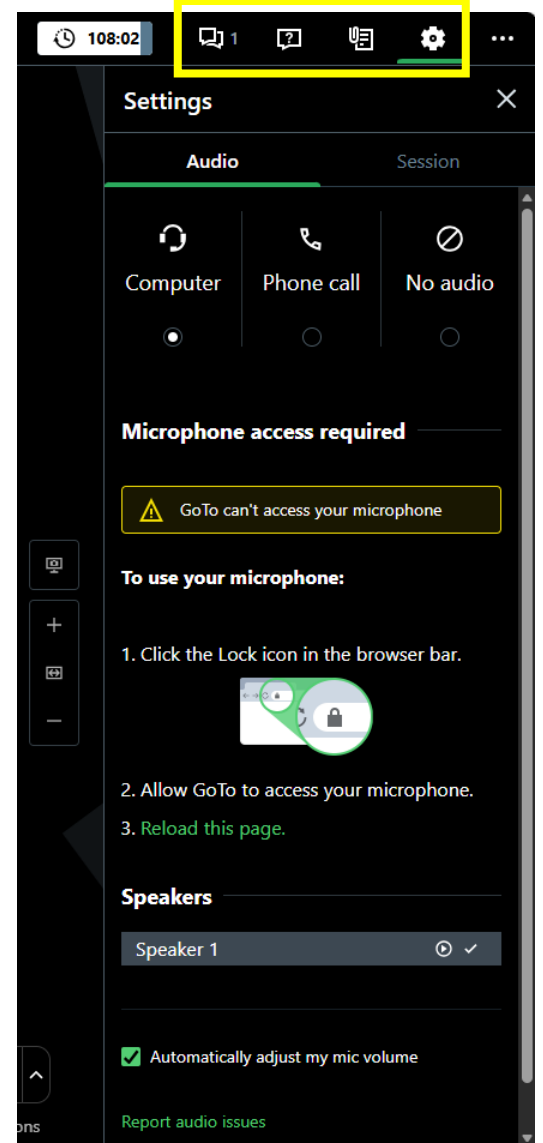
- Join audio:
  - Choose Computer Audio or
  - Choose Phone Call and dial using the information provided with your registration
- Attendee audio will automatically be muted.

### 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.

### Information or links from staff will be provided in the **Chat** panel.

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

A screenshot of the GoTo webinar interface. At the top, a yellow box highlights the settings icon (a gear) in the top right corner of the meeting window. Below this, the "Settings" panel is open, showing the "Audio" tab. Under "Audio", there are three options: "Computer" (selected with a radio button), "Phone call", and "No audio". Below these options, a yellow warning box states "GoTo can't access your microphone". Underneath, a section titled "To use your microphone:" lists three steps: 1. Click the Lock icon in the browser bar. (An image shows a browser address bar with a lock icon highlighted in a green circle), 2. Allow GoTo to access your microphone. 3. Reload this page. At the bottom of the settings panel, there is a "Speakers" section with "Speaker 1" listed and a checkmark. A checkbox for "Automatically adjust my mic volume" is checked. At the very bottom, there is a link for "Report audio issues".



# LOWER ST. JOHNS RIVER MAIN STEM BASIN MANAGEMENT ACTION PLAN (BMAP) ANNUAL MEETING

**Moira Rojas Homann, Program Administrator**  
Water Quality Restoration Program  
Division of Environmental Assessment and Restoration  
Florida Department of Environmental Protection

GoToWebinar | June 2, 2026



# AGENDA



- BMAP Overview.
- Policy and Reporting Reminders.
- Statewide Annual Report (STAR) Progress.
- St. Johns River Water Management District (SJRWMD) Update.
- Florida Department of Agriculture and Consumer Services (FDACS) Tri-County Agricultural Area (TCAA) Update.
- St. Johns River (SJR) Model Update.

Image Source: [Haw Creek Preserve State Park | Florida State Parks](#)



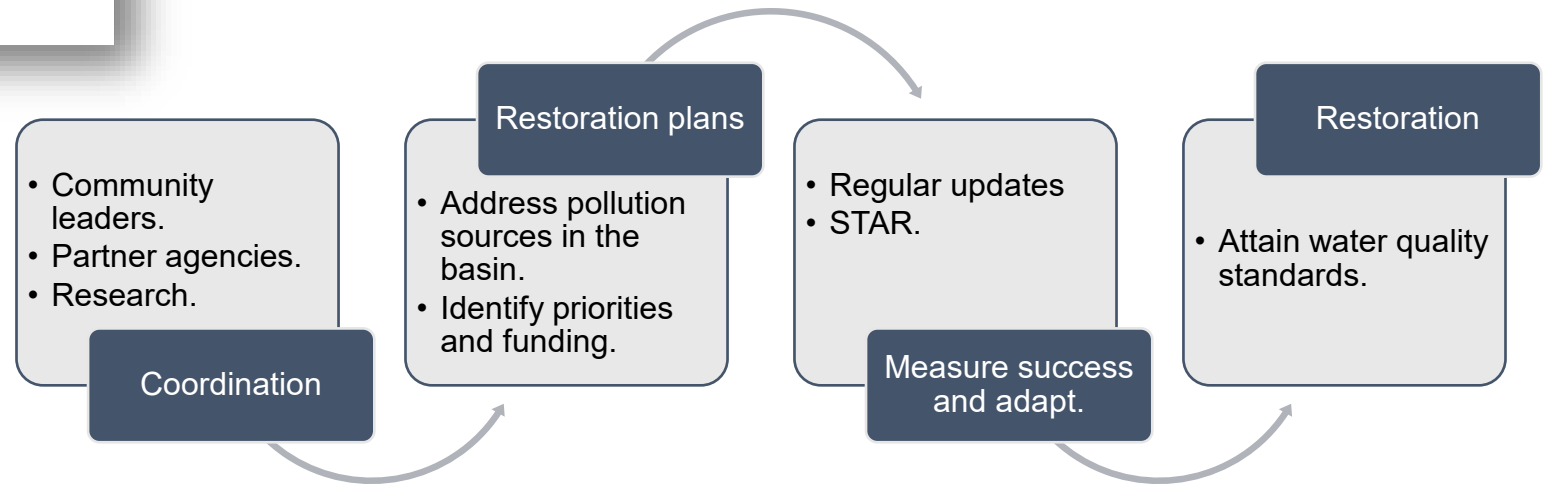
# BMAPs



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:**

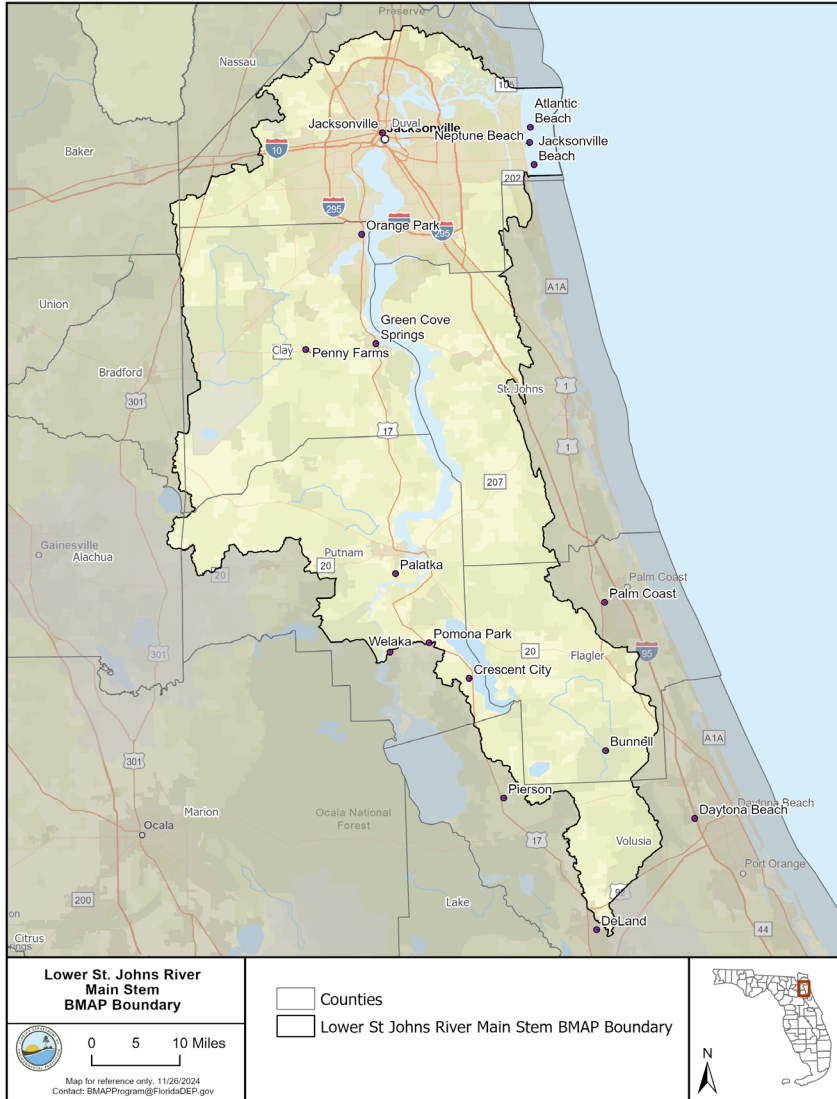
- Implementation timeline.
- Commitment to projects.
- Expected water quality improvement from projects and management strategies.

## **Process to assess progress toward achieving the TMDL:**

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



# BACKGROUND



- 2008: Initial BMAP adoption.
- 2025: BMAP update.



# BACKGROUND

## TOTAL NITROGEN (TN) AND TOTAL PHOSPHORUS (TP)

### LSJR Main Stem Adopted TMDLs

| WBID(s)           | TMDL (kg/yr) | TMDL Baseline Load (kg/yr) | Wasteload Allocation* (kg/yr) | Load Allocation (nonpoint) (kg/yr) | Overall Needed Reduction (kg/yr) |
|-------------------|--------------|----------------------------|-------------------------------|------------------------------------|----------------------------------|
| <b>Freshwater</b> |              |                            |                               |                                    |                                  |
| 2213I to 2213N    | 500,325 TP   | 599,610 TP                 | 46,357 TP                     | 453,968 TP                         | 99,285 TP                        |
| 2213I to 2213N    | 8,571,563 TN | 10,115,552 TN              | 236,695 TN                    | 8,334,868 TN                       | 1,543,989 TN                     |
| <b>Marine</b>     |              |                            |                               |                                    |                                  |
| 2213A to 2213H    | 1,376,855 TN | 2,453,258 TN               | 1,027,590 TN                  | 349,265 TN                         | 1,076,403 TN                     |

kg/yr = kilograms per year

WBID = Waterbody Identification Number

\*Includes a percent reduction from NPDES stormwater sources





# BACKGROUND

## LOWER ST. JOHNS RIVER MAIN STEM BMAP STAKEHOLDERS

| Type of Entity       | Name                                 |
|----------------------|--------------------------------------|
| Responsible Entities | Agriculture                          |
|                      | Alachua County                       |
|                      | American Water Military Services     |
|                      | Anheuser Busch                       |
|                      | Baker County                         |
|                      | Bradford County                      |
|                      | Camp Blanding                        |
|                      | City of Atlantic Beach               |
|                      | City of Bunnell                      |
|                      | City of Crescent City                |
|                      | City of Daytona Beach                |
|                      | City of Deland                       |
|                      | City of Green Cove Springs           |
|                      | City of Jacksonville/Duval County    |
|                      | City of Jacksonville Beach           |
|                      | City of Keystone Heights             |
|                      | City of Neptune Beach                |
|                      | City of Palatka                      |
|                      | City of Palm Coast                   |
|                      | City of Pamona Park                  |
|                      | Clay County                          |
|                      | Clay County Utility Authority (CCUA) |
|                      | Flagler County                       |
|                      | Georgia-Pacific                      |

| Type of Entity                | Name  |
|-------------------------------|---|
| Responsible Entities          | JEA   |
|                               | Seminole Electric Cooperative                                   |
|                               | Town of Penney Farms  |
|                               | Town of Pomona Park   |
|                               | Town of Pierson   |
|                               | Town of Welaka  |
|                               | Turnpike Enterprise   |
|                               | U.S. Navy   |
|                               | Volusia County  |
|                               | WestRock  |
| Responsible Agencies          | County Health Departments                                       |
|                               | DACS  |
|                               | DEP   |
|                               | Florida Department of Transportation (DOT) District 2<br>SJRWMD |
| Other Interested Stakeholders | Residents/Homeowners  |
|                               | Florida Audubon   |
|                               | Jacksonville University   |
|                               | Northeast Florida Regional Planning Council                     |
|                               | Florida Farm Bureau   |
|                               | Florida Onsite Wastewater Association                           |
|                               | Septic System Contractors                                       |
|                               | St. Johns Riverkeeper   |
|                               | University of North Florida                                     |



# NEW RESPONSIBLE ENTITIES



- Alachua County.\*
- Baker County.\*
- Bradford County.\*
- Flagler County.
- Volusia County.
- Penney Farms.
- Bunnell.
- Palm Coast.
- Crescent City.
- Pomona Park.
- Daytona.\*
- DeLand.
- Pierson.

Image Source:  
[Big Talbot Island State Park | Florida State Parks](#)

\*Small area within boundary.



# BMAP TIMELINE AND MILESTONES

**2008:** Initial BMAP Adoption

**2025:** BMAP Update

**2023:** Final 2008 BMAP Milestone

**2028:** 100% Milestone



# POLICY AND REPORTING REMINDERS

| Source      | Topic  | Requirement  |
|-------------|--|--|
| Wastewater  | Wastewater Effluent Limits                               | Where the law does not provide effluent limits or a compliance timeframe, new effluent standards <b>will take effect at the time of permit renewal or no later than five years after BMAP adoption</b> , whichever is sooner. See Tables 16 and 17 in the 2025 BMAP document.  |
|             | Connection to Sewer                                      | <b>Beginning February 2026 and every two years thereafter</b> , utilities with sewer lines in BMAPs must provide DEP a list of properties with existing OSTDS where sewer is available (as defined in 381.0065, 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, <b>within two years of BMAP adoption</b> , 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): <b>Due Nov. 27, 2026.</b><br>Final NMP: <b>Due Nov. 27, 2027.</b>  |
|             |              | Golf Course superintendents for <i>publicly-owned</i> courses (those owned/operated by local governments: counties, municipalities, CDDs...) must have obtained UF-IFAS Golf Course Best Management Practices Program certification by <b>Dec. 31, 2026.</b> |
|             |              | Annual reporting begins <b>November 2028- January 2029.</b>  |



# 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 finalizing STAR 2025.
  - Projects reported through Dec. 31, 2025.

Florida Department of Environmental Protection Statewide Annual Report 2024  
Basin Management Action Plans

| Introduction | Total Maximum Daily Loads | Basin Management Action Plans | Alternative Restoration Plans | Minimum Flows & Water Levels | Recovery & Prevention Strategies | Contacts & Project Data |
|--------------|---------------------------|-------------------------------|-------------------------------|------------------------------|----------------------------------|-------------------------|
|--------------|---------------------------|-------------------------------|-------------------------------|------------------------------|----------------------------------|-------------------------|

How to Use This Report | What is the STAR? | Reductions & Legislati... | What Are Nutrients? | What Are FIB? | What Are BMAP Projects?

Nutrient BMAPs | Fecal Indicator Bacteria BMAPs | BMAP Projects | Project Table

Lower St. Johns River Main Stem Basin Management Action Plan

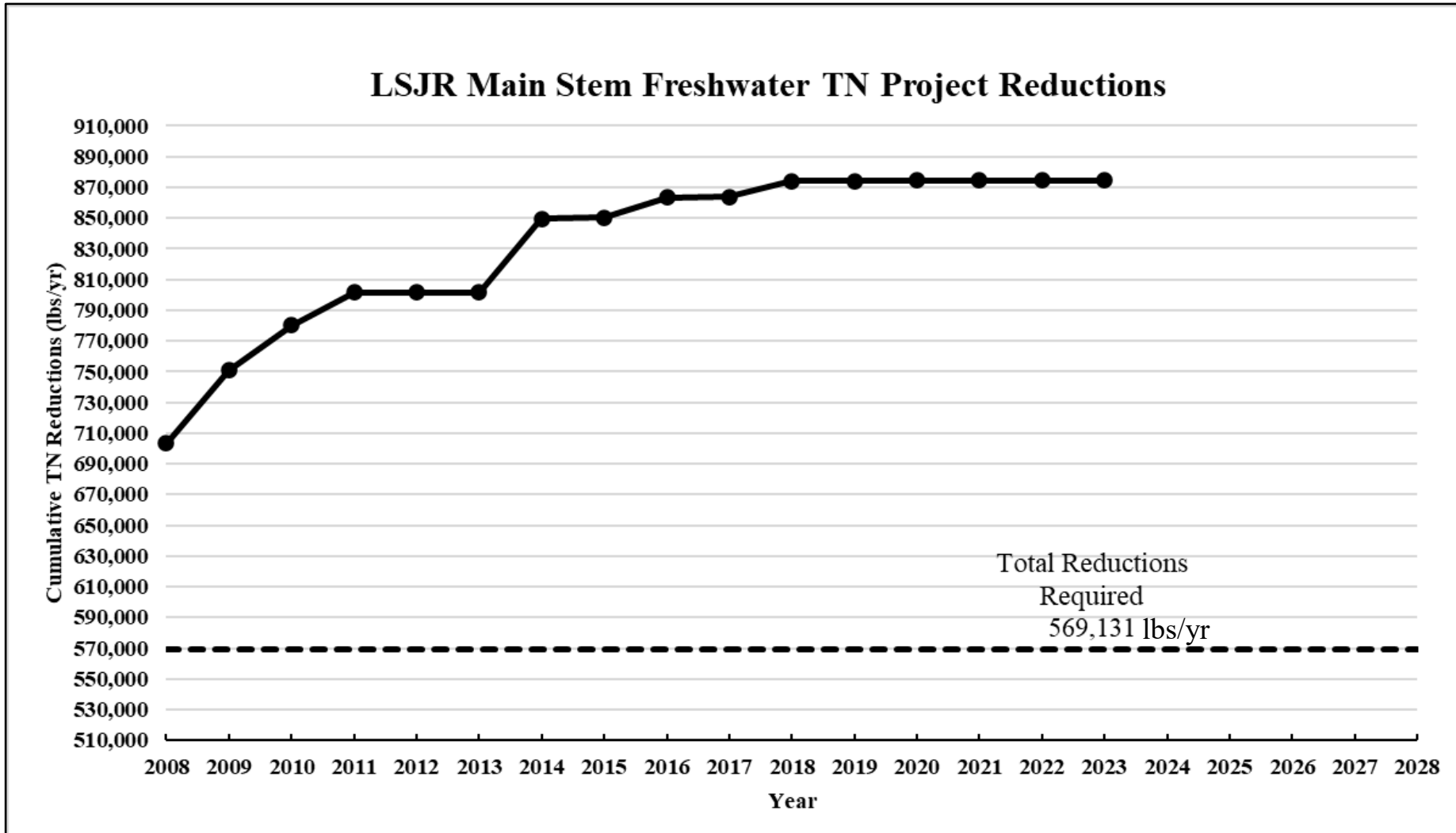
Waters in the Lower St. Johns River Main Stem Basin Management Action Plan (BMAP) are impaired for total nitrogen.

<https://floridadep.gov/STAR>



# PROGRESS THRU DEC. 31, 2025 (DRAFT)

## FRESHWATER SECTION

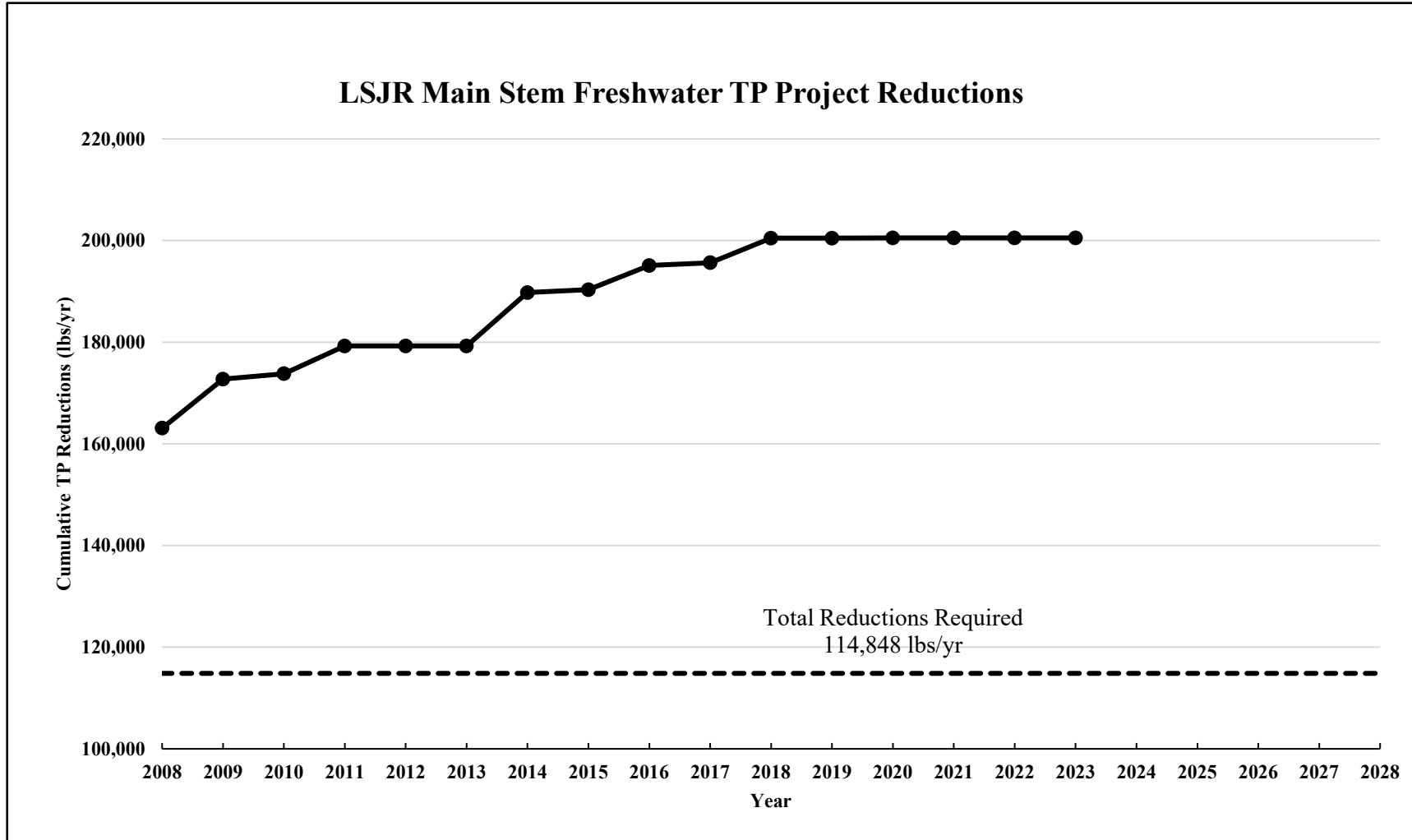


lbs/yr = pounds/year



# PROGRESS THRU DEC. 31, 2025 (DRAFT)

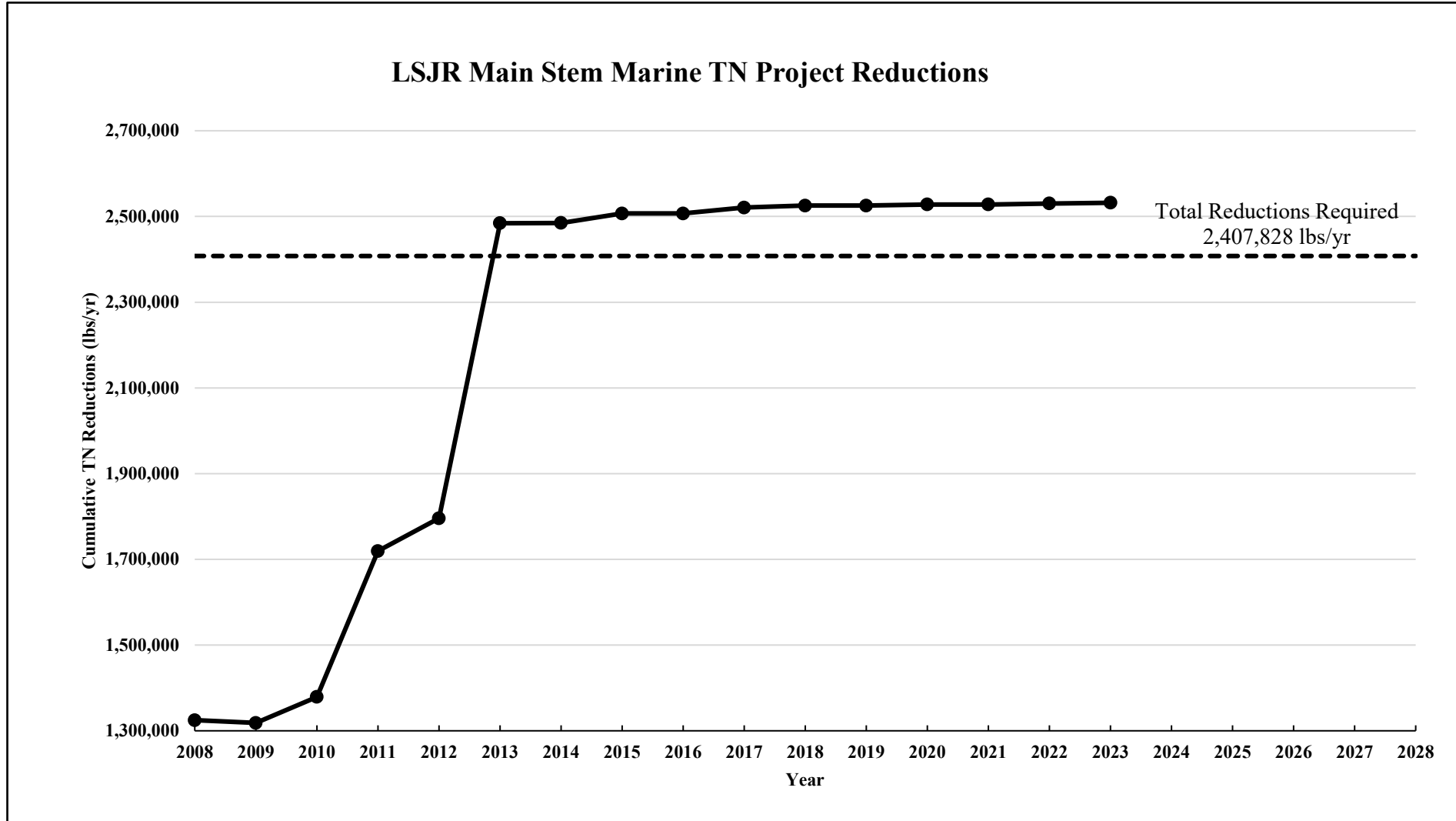
## FRESHWATER SECTION





# PROGRESS THRU DEC. 31, 2025 (DRAFT)

## MARINE SECTION





# PROGRESS THRU DEC. 31, 2025 (DRAFT)

| Lead Entity                      | Number of Completed and Ongoing Projects | Number of Planned and Underway Projects |
|----------------------------------|--|---|
| American Water Military Services | 1  | 2                                       |
| Anheuser Busch                   | 1  | 0                                       |
| Camp Blanding Non-MS4            | 4  | 0                                       |
| CCUA Aggregate                   | 12                                       | 1                                       |
| City of Atlantic Beach MS4       | 8  | 1                                       |
| City of Atlantic Beach WWTF      | 3  | 0                                       |
| City of Crescent City            | 0  | 2                                       |
| City of Green Cove Springs       | 4  | 2                                       |
| City of Green Cove Springs MS4   | 5  | 0                                       |
| City of Jacksonville Beach MS4   | 2  | 0                                       |
| City of Jacksonville Beach WWTF  | 3  | 1                                       |
| City of Neptune Beach MS4        | 3  | 0                                       |
| City of Neptune Beach WWTF       | 2  | 0                                       |
| City of Palatka Non-MS4          | 6  | 1                                       |
| City of Palatka WWTF             | 8  | 0                                       |



# PROGRESS THRU DEC. 31, 2025 (DRAFT)

## CON'T.

| Lead Entity              | Number of Completed and Ongoing Projects | Number of Planned and Underway Projects |
|--------------------------|--|---|
| Clay County MS4          | 15                                       | 3                                       |
| Clay County Non-MS4      | 7  | 0                                       |
| COJ/DOT MS4              | 175                                      | 14                                      |
| DACS                     | 4  | 0                                       |
| Georgia-Pacific          | 1  | 0                                       |
| JEA Aggregate            | 19                                       | 0                                       |
| Putnam County Non-MS4    | 12                                       | 7                                       |
| Seminole Electric        | 1  | 0                                       |
| SJRWMD                   | 4  | 0                                       |
| Smurfit-Stone Container  | 4  | 0                                       |
| St. Johns County MS4     | 4  | 1                                       |
| St. Johns County Non-MS4 | 16                                       | 0                                       |
| Town of Hastings Non-MS4 | 4  | 0                                       |
| Town of Orange Park MS4  | 2  | 1                                       |
| Town of Orange Park WWTF | 2  | 1                                       |
| Town of Welaka Non-MS4   | 2  | 3                                       |
| Turnpike Enterprise      | 2  | 0                                       |
| U.S. Navy Aggregate      | 4  | 0                                       |
| U.S. Navy MS4            | 1  | 0                                       |
| <b>Grand Total</b>       | <b>341</b>                               | <b>40</b>                               |



**QUESTIONS?**



# DISSOLVED OXYGEN (DO) ATTAINMENT

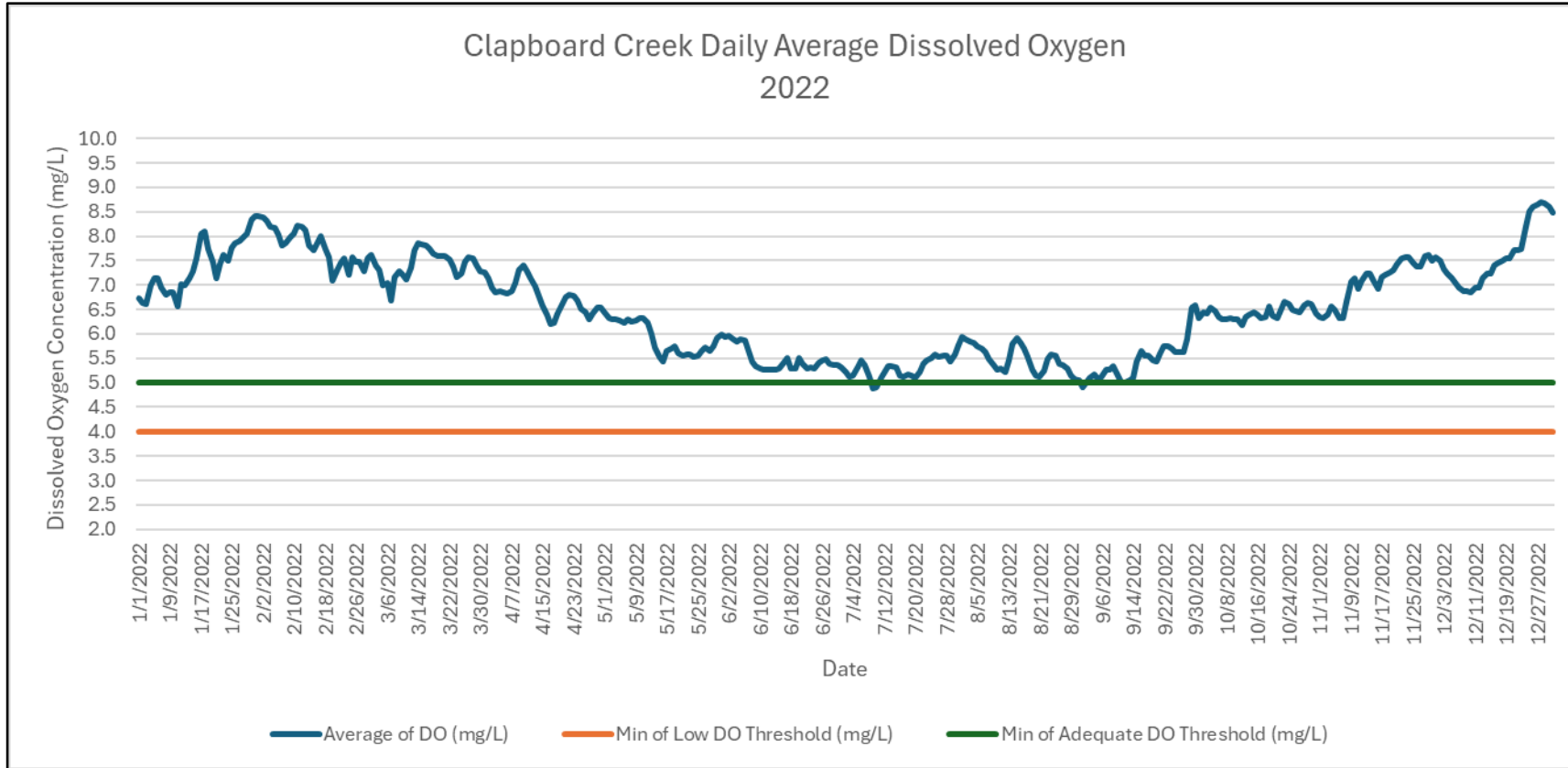
- DO attainment in marine segment is assessed based on a site-specific alternative criterion (SSAC).
  - This SSAC requires  $DO \geq 4.0$  mg/L and a total fractional exposure (TFE)  $\leq 1.0$  over an annual period.
  - TFE = sum of fractions representing days when DO drops into defined low-oxygen ranges.
  - Each fraction = (Days in DO range)  $\div$  (Maximum days allowed for that range).
  - DO ranges and max. days: 4.0–<4.2 (16), 4.2–<4.4 (21), 4.4–<4.6 (30), 4.6–<4.8 (47), 4.8–<5.0 (55).
  - Annual requirement =  $TF \leq 1.0$ .



Source: [Mike Roess Gold Head Branch State Park](#) | [Florida State Parks](#)



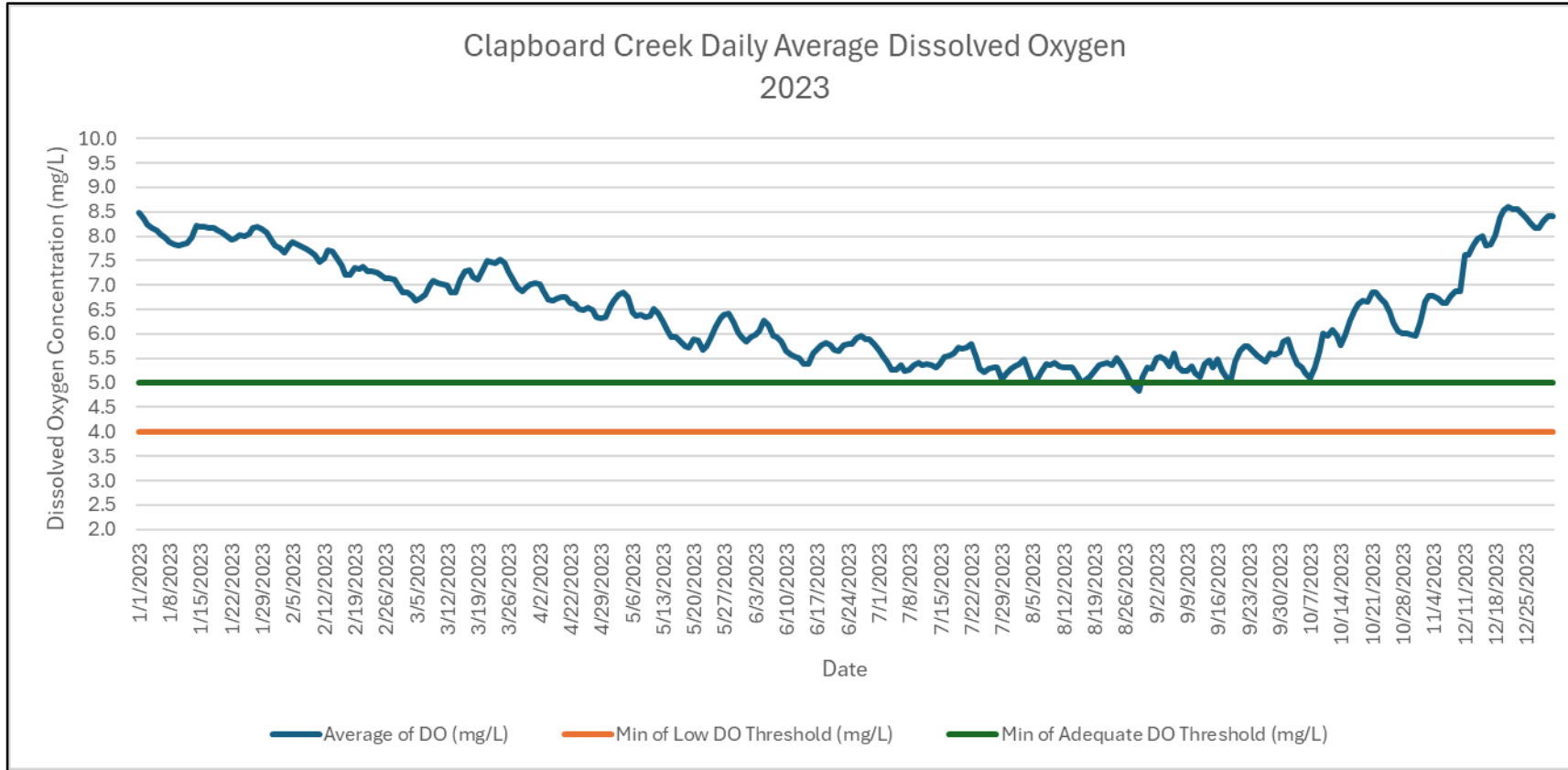
# 2022 DO ATTAINED THE SSAC - CLAPBOARD



|                             | Number of Days DO 4.0- <4.2 | Number of Days DO 4.2- <4.4 | Number of Days DO 4.4- <4.6 | Number of Days DO 4.6- <4.8 | Number of Days DO 4.8- <5.0 | Fractional Exposure |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| <b>2022 Clapboard Creek</b> |                             |                             |                             |                             |                             |                     |
| Daily Average All           | 0                           | 0                           | 0                           | 0                           | 5                           | 0.091               |



# 2023 DO ATTAINED THE SSAC - CLAPBOARD

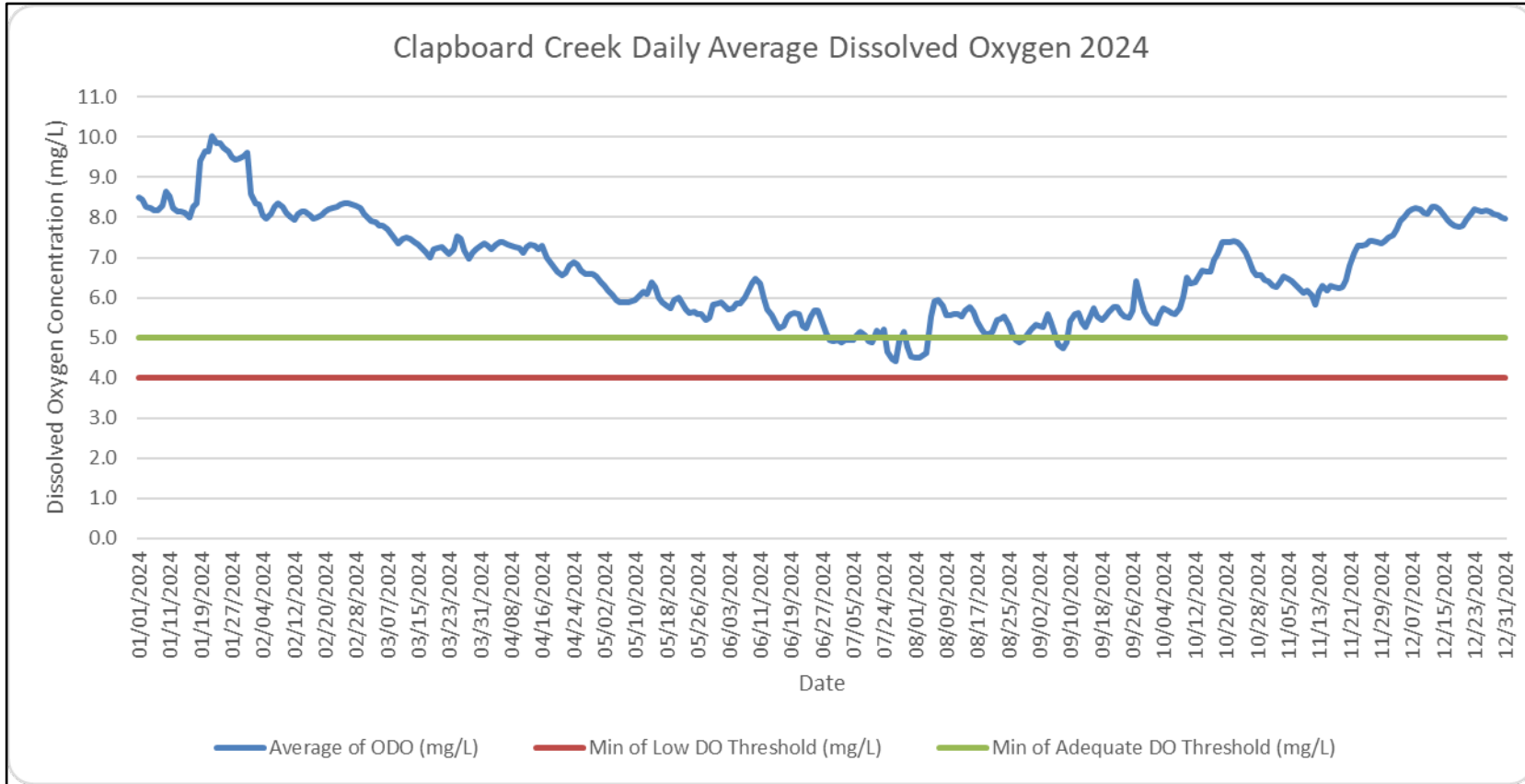


|                             | Number of Days DO 4.0- <4.2 | Number of Days DO 4.2- <4.4 | Number of Days DO 4.4- <4.6 | Number of Days DO 4.6- <4.8 | Number of Days DO 4.8- <5.0 | Fractional Exposure |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| <b>2023 Clapboard Creek</b> |                             |                             |                             |                             |                             |                     |
| Daily Average All           | 0                           | 0                           | 0                           | 0                           | 2                           | 0.036               |



# 2024 DO ATTAINS THE SSAC - CLAPBOARD

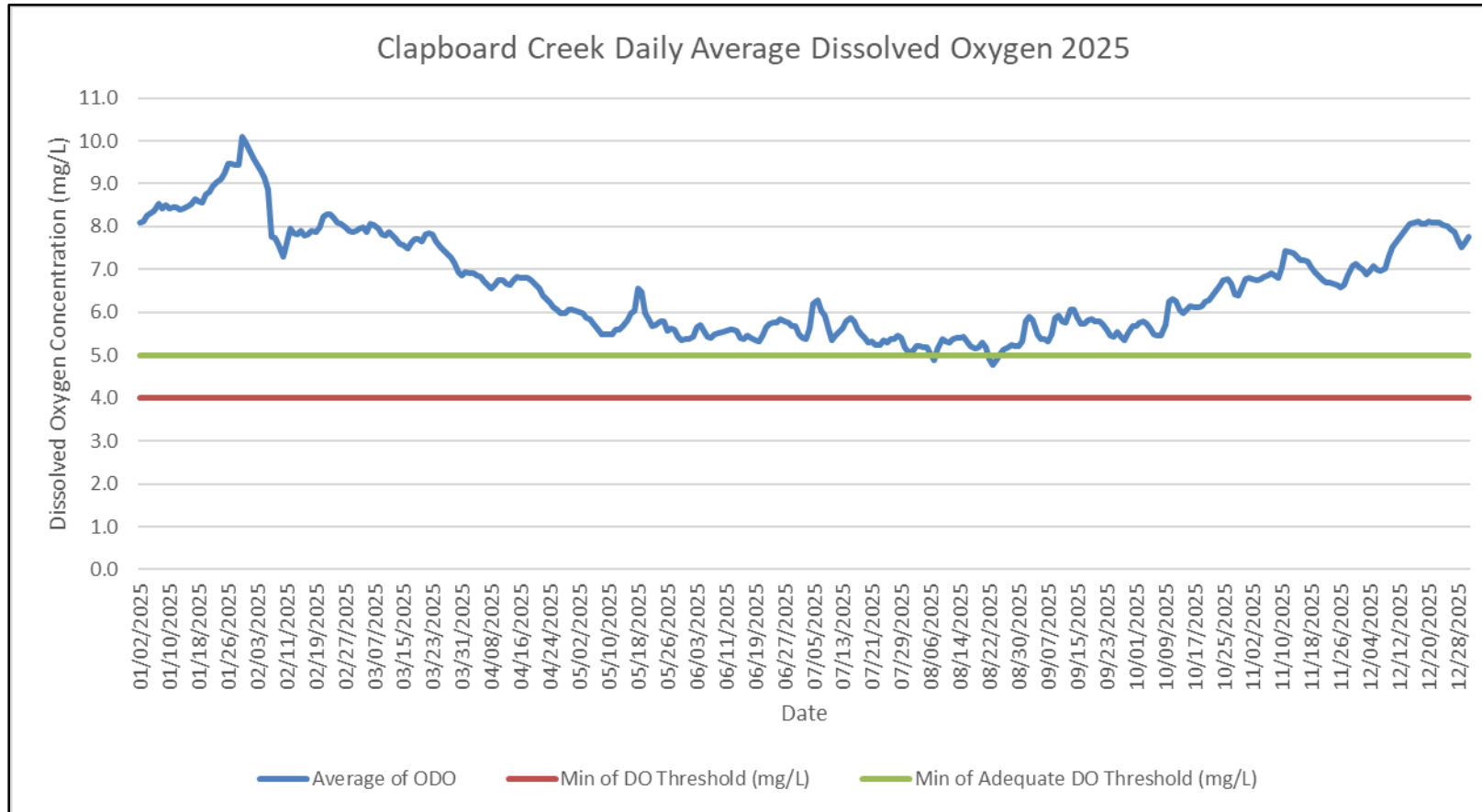
## Updated Through Dec. 31, 2024



| 2024 Clapboard Creek | Number of Days DO 4.0- <4.2 | Number of Days DO 4.2- <4.4 | Number of Days DO 4.4- <4.6 | Number of Days DO 4.6- <4.8 | Number of Days DO 4.8- <5.0 | Fractional Exposure |
|----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Daily Average All    | 0                           | 0                           | 6                           | 4                           | 15                          | 0.551               |



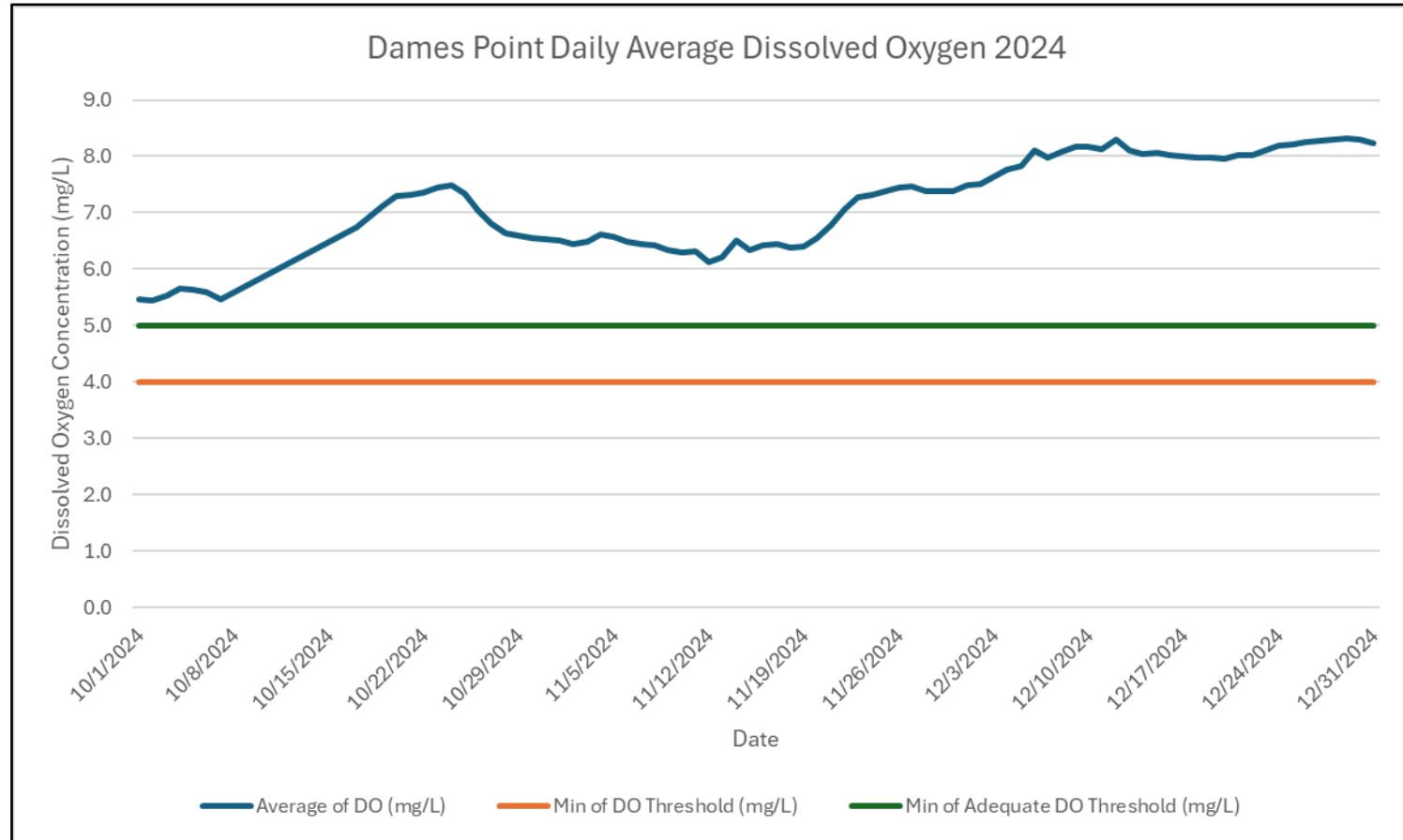
# 2025 DO ATTAINS THE SSAC - CLAPBOARD



|                      | Number of Days DO 4.0- <4.2 | Number of Days DO 4.2- <4.4 | Number of Days DO 4.4- <4.6 | Number of Days DO 4.6- <4.8 | Number of Days DO 4.8- <5.0 | Fractional Exposure |
|----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| 2025 Clapboard Creek |                             |                             |                             |                             |                             |                     |
| Daily Average All    | 0                           | 0                           | 0                           | 1                           | 3                           | 0.076               |



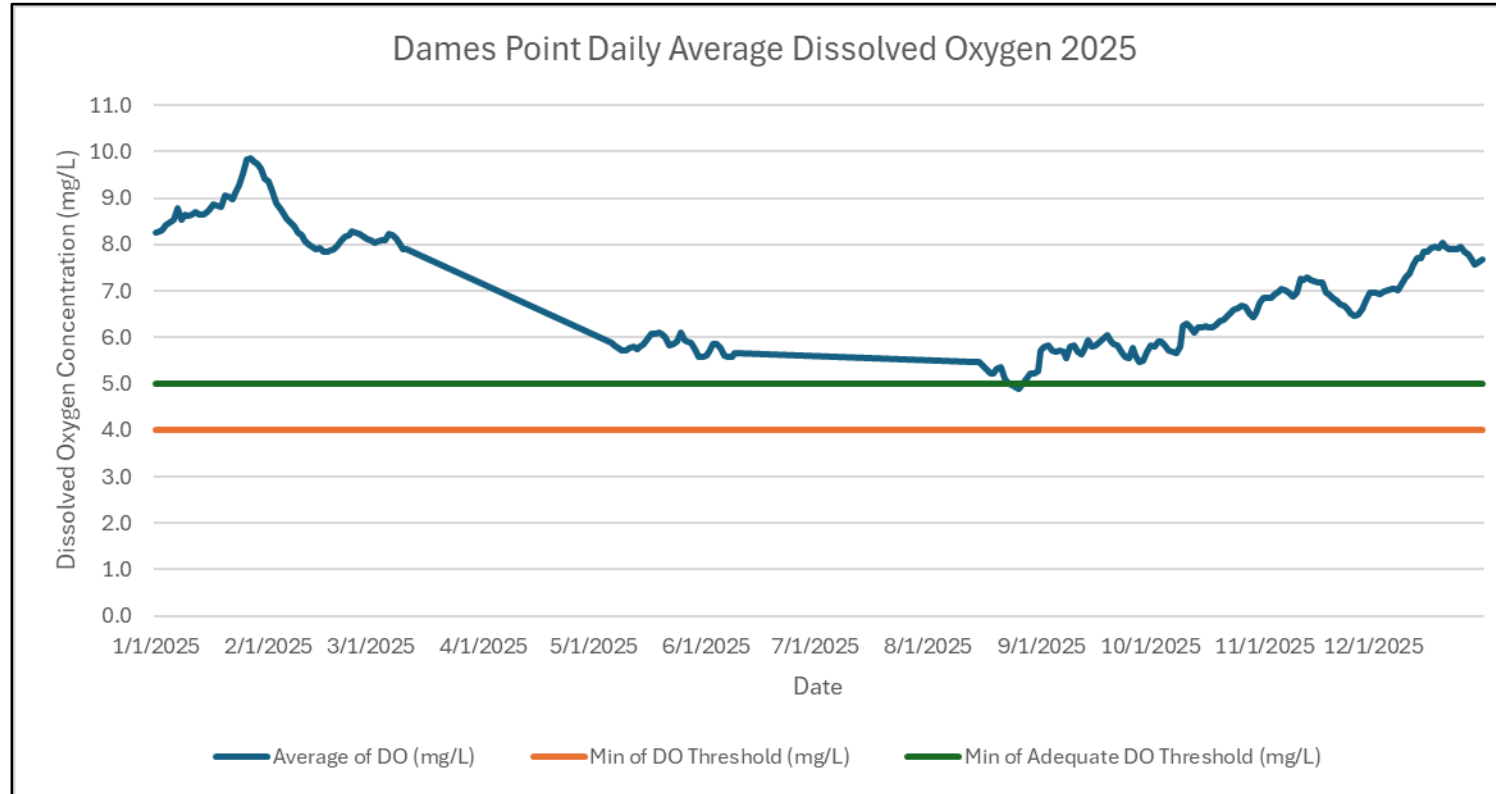
# 2024 DO ATTAINS THE SSAC – DAMES POINT (OCT. 1 TO DEC. 31, 2024)



| 2024 Dames Point<br>(Oct. 31-Dec.31) | Number<br>of Days<br>DO 4.0-<br><4.2 | Number<br>of Days<br>DO 4.2-<br><4.4 | Number<br>of Days<br>DO 4.4-<br><4.6 | Number<br>of Days<br>DO 4.6-<br><4.8 | Number<br>of Days<br>DO 4.8-<br><5.0 | Fractional<br>Exposure |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|------------------------|
| Daily Average All                    | 0                                    | 0                                    | 0                                    | 0                                    | 0                                    | 0.000                  |



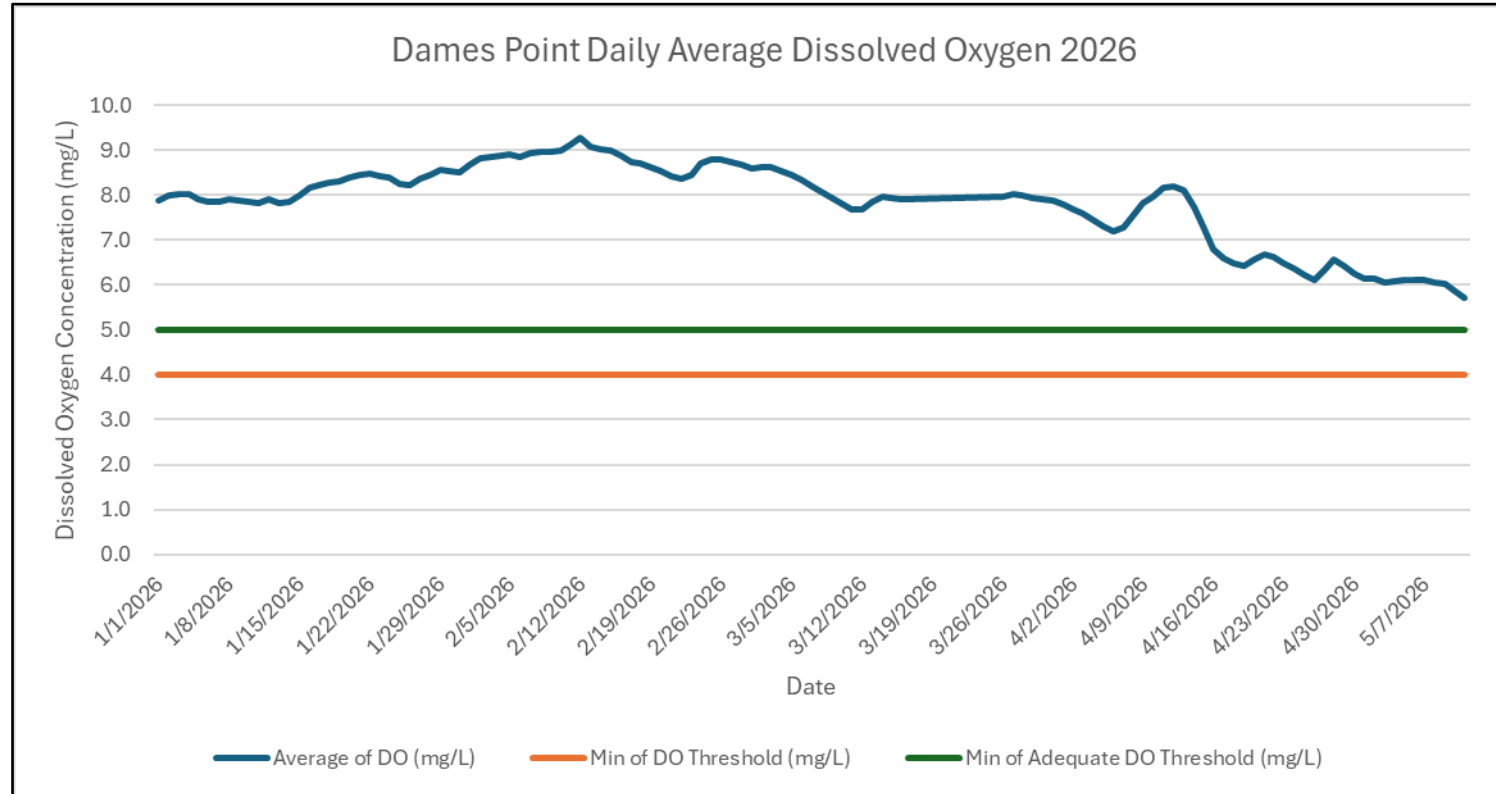
# 2025 DO ATTAINS THE SSAC – DAMES POINT (JAN. 1 TO DEC. 31, 2025)



| 2025 Dames Point (Jan. - Dec.) | Number of Days DO 4.0- <4.2 | Number of Days DO 4.2- <4.4 | Number of Days DO 4.4- <4.6 | Number of Days DO 4.6- <4.8 | Number of Days DO 4.8- <5.0 | Fractional Exposure |
|--------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|
| Daily Average All              | 0                           | 0                           | 0                           | 0                           | 3                           | 0.055               |



# 2026 DO TO DATE – DAMES POINT (JAN. 1 TO MAY 11, 2026)



| 2026 Dames Point<br>(Jan. 1 - May 11) | Number<br>of Days<br>DO 4.0-<br><4.2 | Number<br>of Days<br>DO 4.2-<br><4.4 | Number<br>of Days<br>DO 4.4-<br><4.6 | Number<br>of Days<br>DO 4.6-<br><4.8 | Number<br>of Days<br>DO 4.8-<br><5.0 | Fractional<br>Exposure |
|---------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|------------------------|
| Daily Average All                     | 0                                    | 0                                    | 0                                    | 0                                    | 0                                    | 0.000                  |



# RESOURCES

## BMAP WEBSITE AND STORYMAPS

### Basin Management Action Plans (BMAPs)

[Home](#) » [Divisions](#) » [Division of Environmental Assessment and Restoration](#) » [Water Quality Restoration Program](#) » Basin Management Action Plans (BMAPs)

#### Water Quality Restoration Program Quick Links

[Basin Management Action Plans \(BMAPs\)](#)

[Statewide Annual Report](#)

[Water Quality Grant Opportunities 2024-25](#)

[BMAP Public Meetings](#)

[Impaired Waters, TMDLs and Basin Management Action Plans Interactive Map](#)

[Tools and Guidance for Calculating Total Nitrogen \(TN\) and Total Phosphorus \(TP\) Reductions](#)

[Florida Water Quality Credit Trading](#)

### What is a Basin Management Action Plan?

A BMAP is a framework for water quality restoration that contains a comprehensive set of solutions to achieve the pollutant established by a TMDL. Examples include permit limits on regulated facilities, urban and agricultural best management wastewater and stormwater infrastructure, regional projects and conservation programs designed to achieve pollutant established by a TMDL. A BMAP is developed with local stakeholders and relies on local input and commitment for successful implementation. BMAPs are adopted by Secretarial Order and are legally enforceable. BMAPs use an adaptive manager that allows for incremental load reductions through the implementation of projects and management strategies, while monitoring and conducting studies to better understand the water quality and hydrologic dynamics. Progress is tracked project implementation and water quality analyses. DEP continues to work with local and regional partners to identify projects necessary to meet reduction milestones to achieve the TMDLs and inform funding priorities.

### What's New: Upcoming Meetings and BMAP Progress

#### July 1, 2025 BMAP Update Progress

As required by the Clean Waterways Act, DEP must prepare updates to its nutrient BMAPs by July 1, 2025. The [July 1, 2025 Update Progress](#) dashboard provides a visual representation of progress towards the completion of each of the required sub-tasks leading up to the July 1, 2025 updates. Please visit the [BMAP Public Meeting Calendar](#) to find out about meetings and subscribe to meeting notices.

#### All BMAP Documents



A BMAP is a framework for water quality restoration that contains a comprehensive set of solutions to achieve the pollutant reductions established by a TMDL.

#### NEEPP BMAPs



The Northern Everglades watersheds include the Lake Okeechobee watershed and the Caloosahatchee and St. Lucie River watersheds and estuaries.

#### Springs BMAPs



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.

#### Nutrient BMAPs



Nutrient BMAPs contain a comprehensive set of solutions, such as permit limits on wastewater facilities, urban and agricultural best management practices designed to achieve pollutant reductions established by a TMDL.

#### Indian River Lagoon BMAPs



The Indian River Lagoon (IRL) is a 156-mile-long estuary along Florida's east coast. The impaired portions of the IRL are directly adjacent to lands in only Volusia, Brevard, Indian River, and St. Lucie counties.

#### Fecal Indicator Bacteria BMAPs



Bacteria 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](https://www.floridadep.gov/Funding)





# SUBSCRIBER PAGE

## HOW TO CONTACT US



[BMAPPprogram@FloridaDEP.gov](mailto:BMAPPprogram@FloridaDEP.gov)



# THANK YOU

**Moira Rojas Homann**

Water Quality Restoration Program

Division of Environmental Assessment and Restoration

Florida Department of Environmental Protection

Contact Information:

850-245-8460

[Moira.Homann@FloridaDEP.gov](mailto:Moira.Homann@FloridaDEP.gov)

# 2025 Lower St. Johns River Basin Management Action Plan (BMAP) Update

Riley Timbs  
Environmental Scientist IV  
Bureau of Environmental Sciences  
Water Quality Section

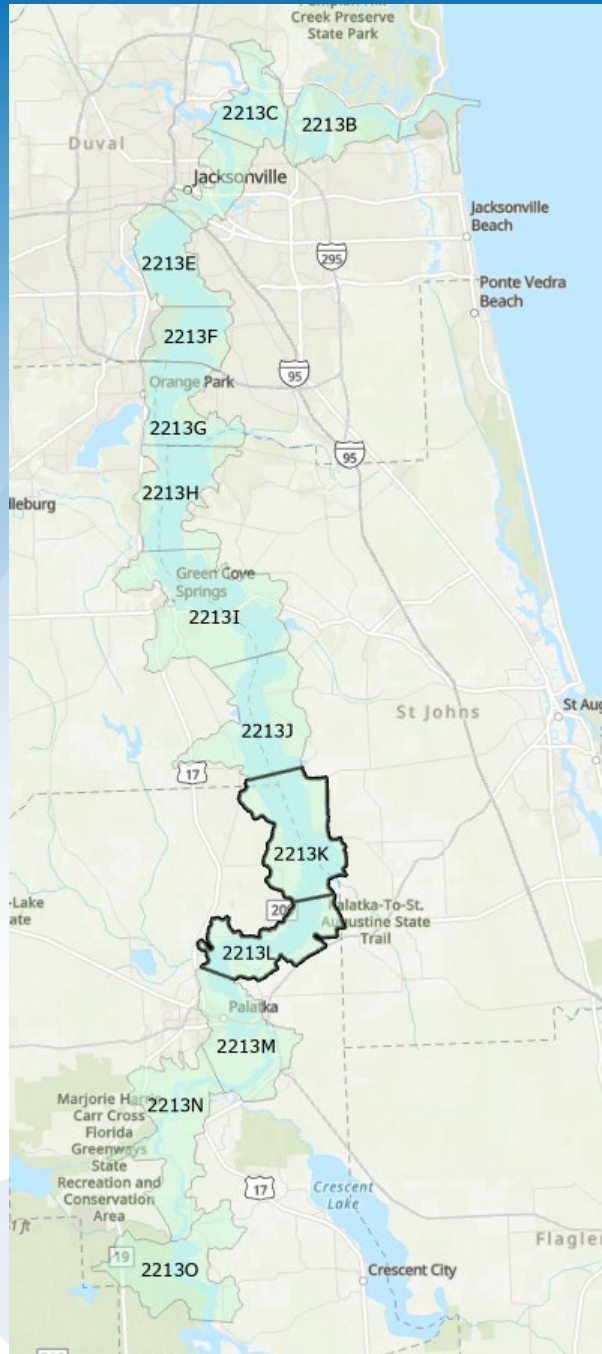


**St. Johns River**  
Water Management District

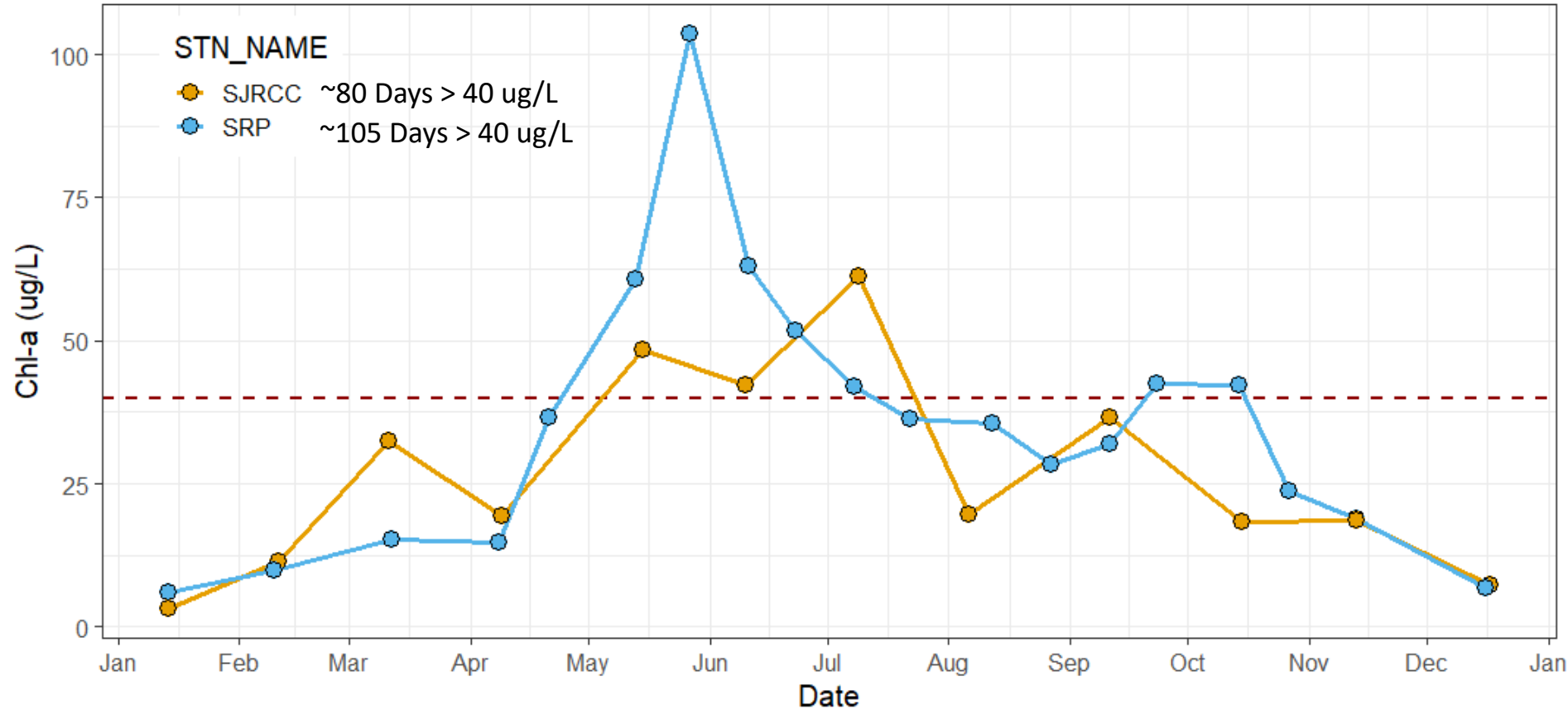


# Lower St. Johns River Freshwater Reach Target

**Worst case WBIDS - K and L**  
**Goal = 40  $\mu\text{g/L}$  for 40 days**

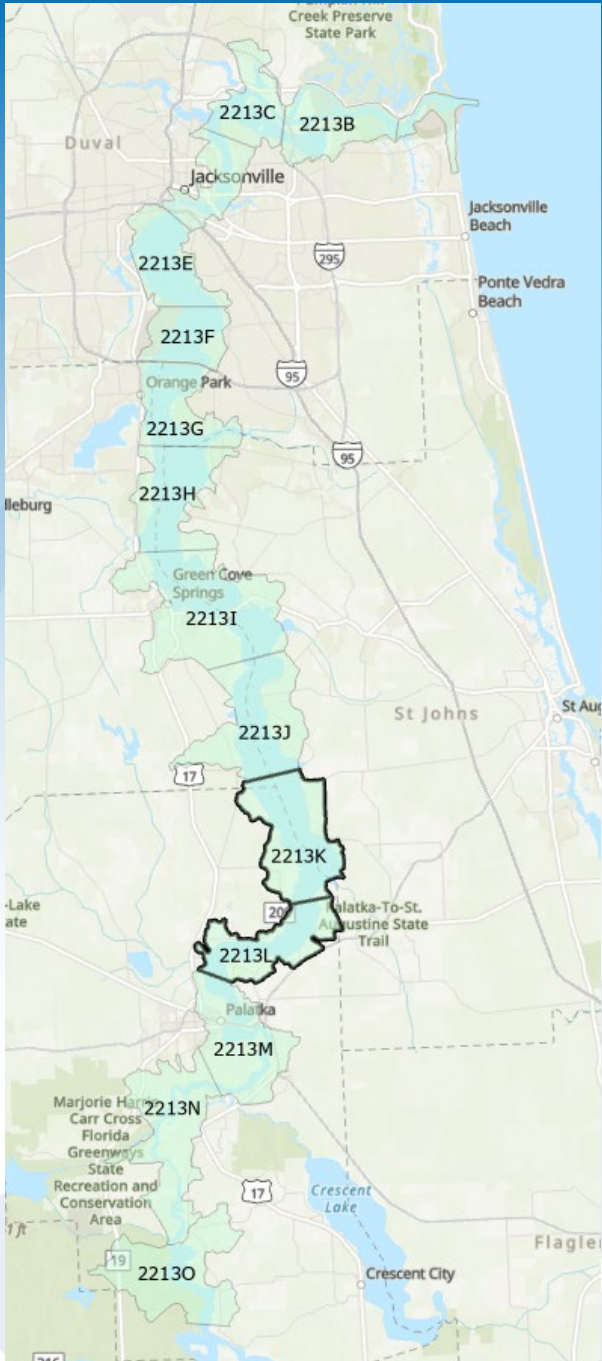
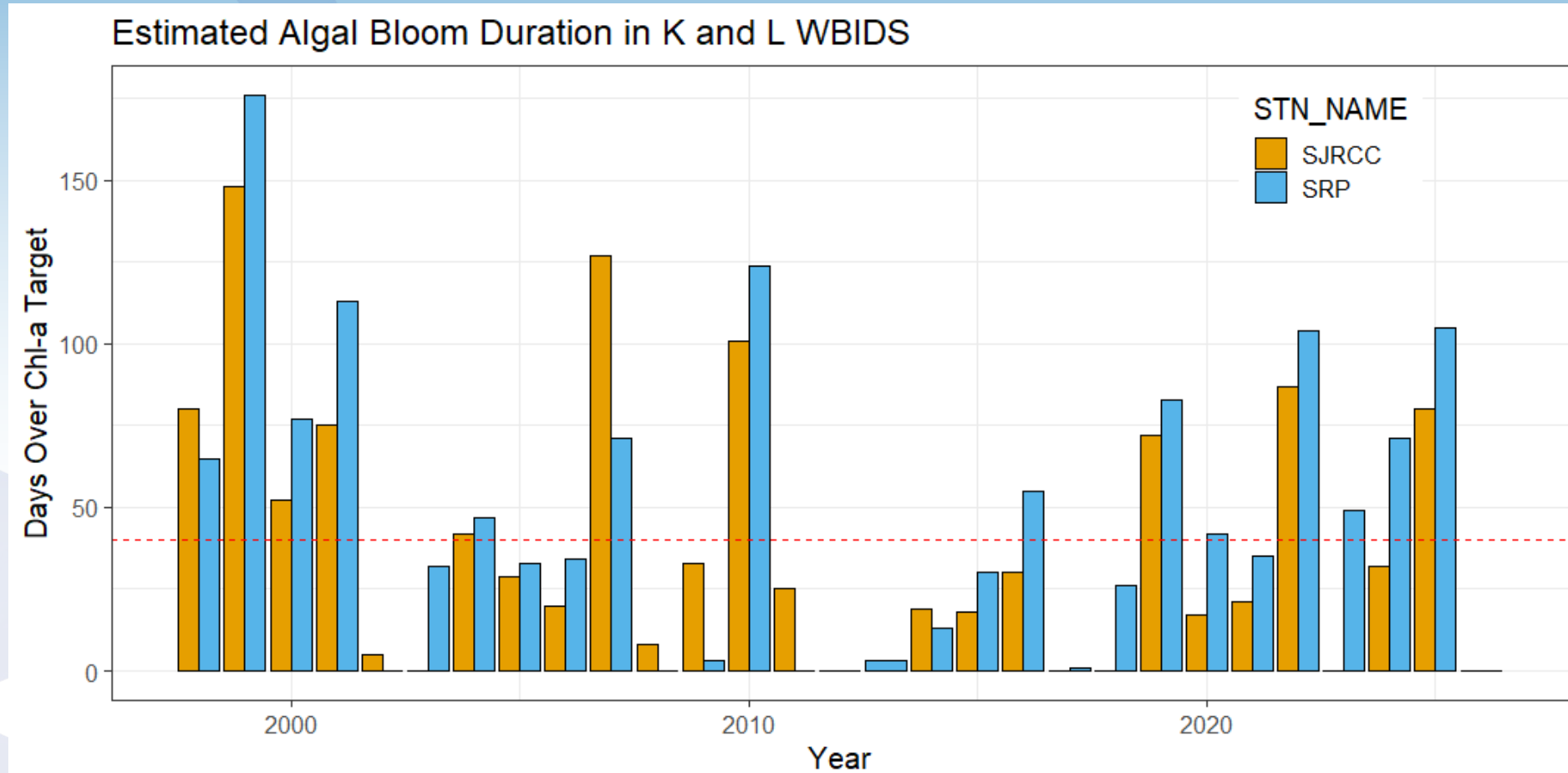


2025 Chlorophyll Concentrations at K and L WBIDS



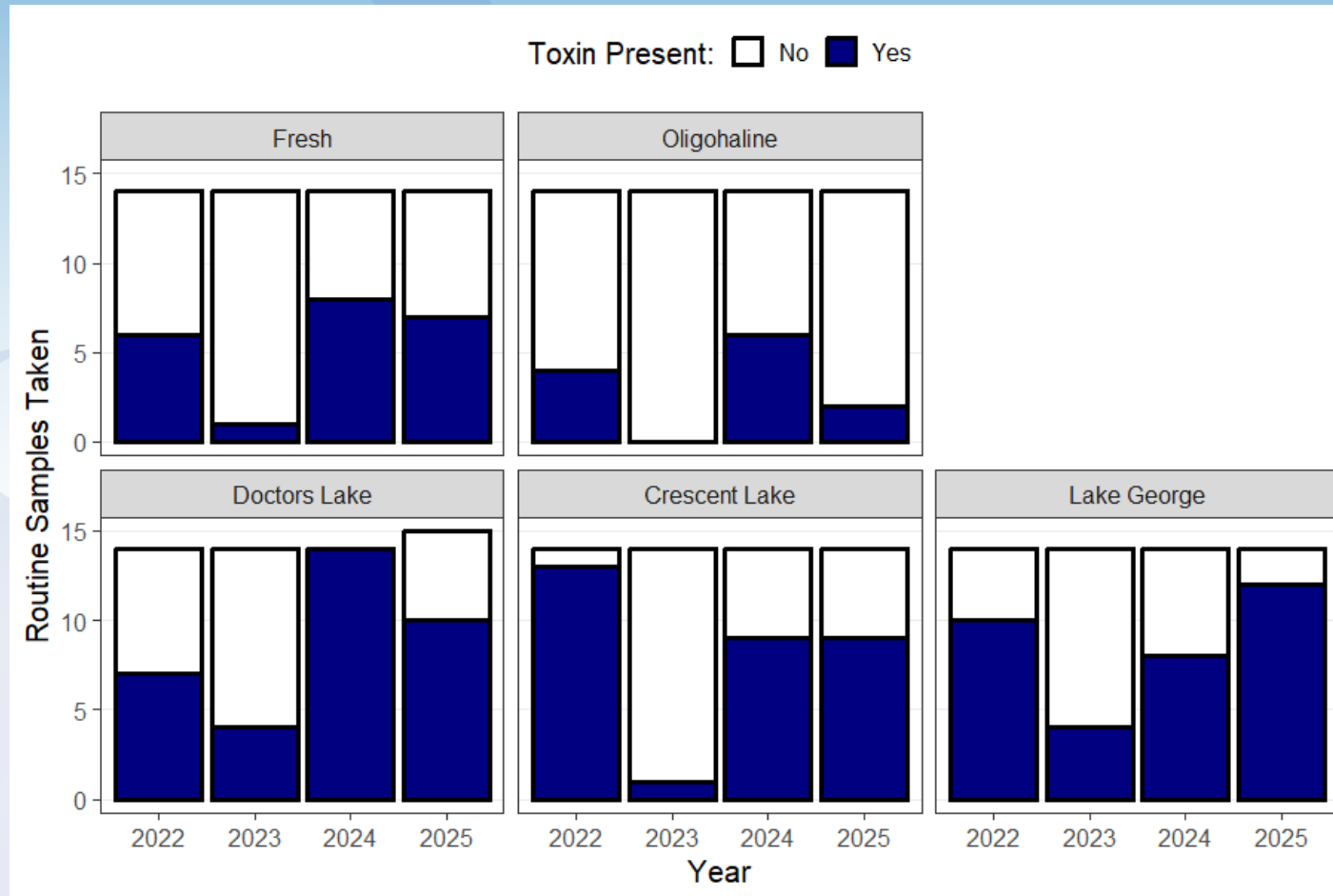
# Lower St. Johns River Freshwater Reach Target

- Long-term decline in estimated bloom duration.
- 2025 Bloom duration longer than 2024 in both WBIDS
- Likely exceeded TMDL target
- Installed continuous optical Chl-a sensor at Racy Point (K WBID)



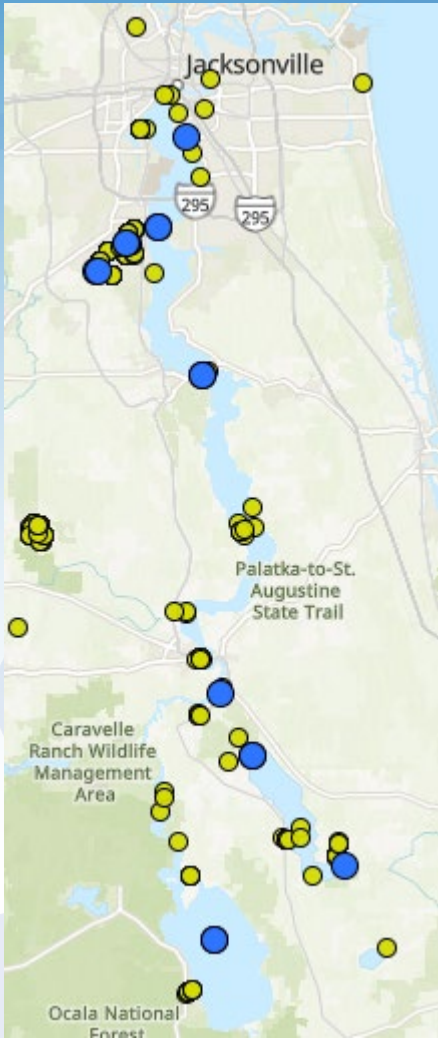
# Harmful Algal Bloom Monitoring: Routine Sites

- Lake George 2025 had more frequent toxin presence than 2024
- Other sites lower or equal frequency



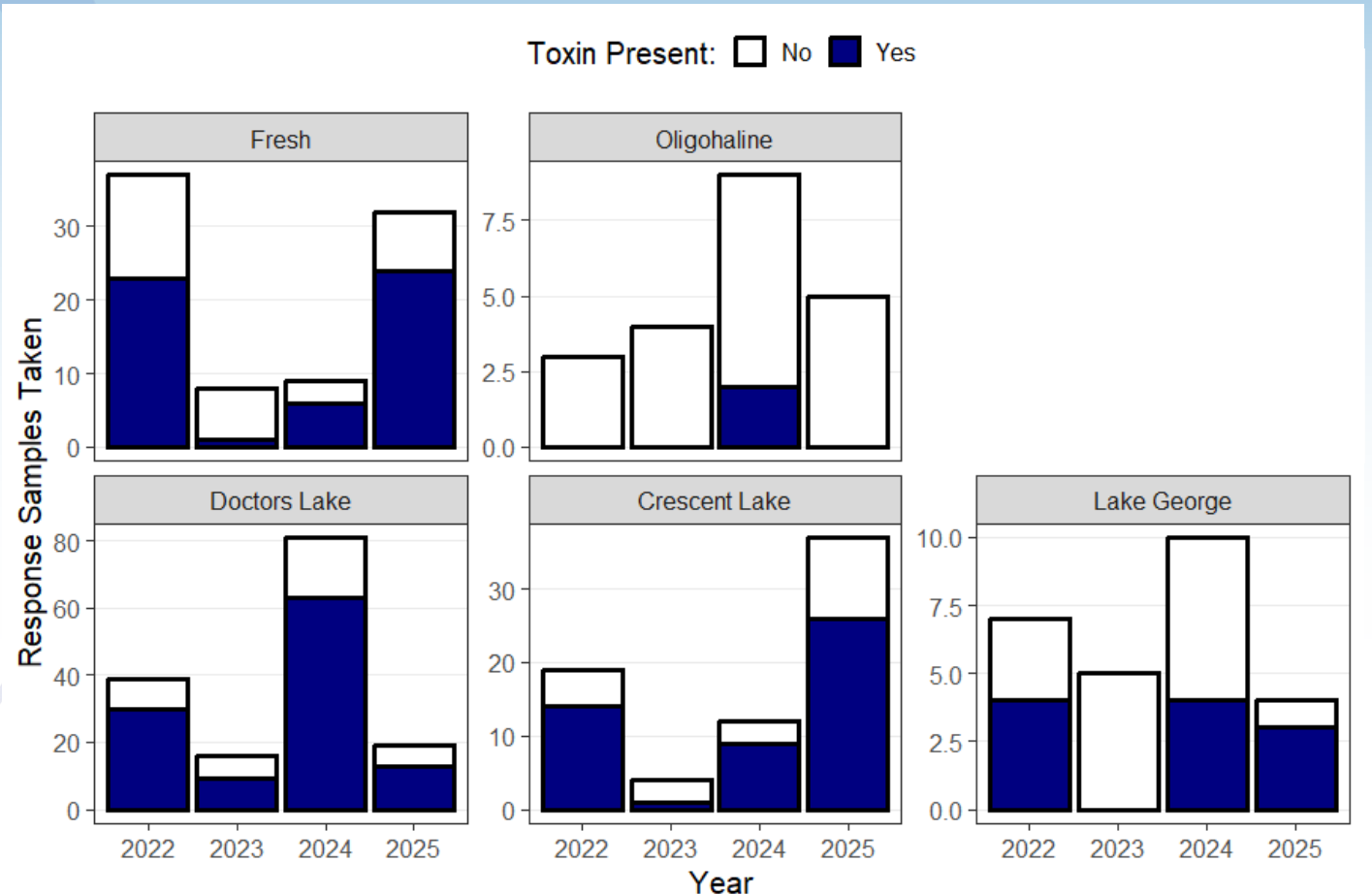
# Harmful Algal Bloom Monitoring: Response Sites

## Sample Locations



Credit: FDEP Algal Bloom Dashboard

- More response samples taken in the fresh section and Crescent Lake than in 2024
- Fewer in George, Doctors, Oligohaline



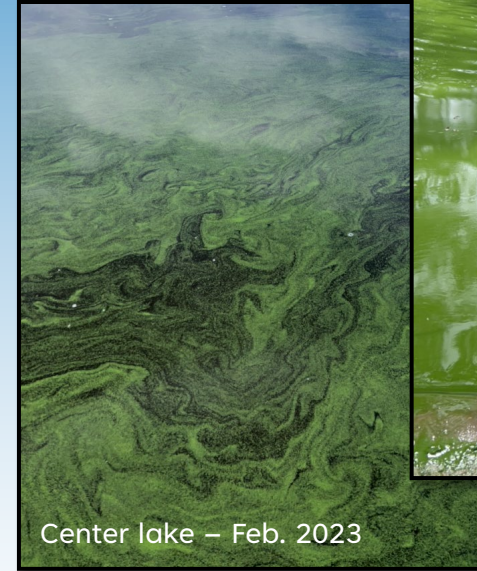
# New HAB “Hotspot” – Georges Lake (Florahome, Putnam Co.)

- Significant *Microcystis* blooms in Nov 2022 – Mar 2023
  - Feb. 2023:  $>100 \mu\text{g L}^{-1}$  MCs at boat ramp and  $49 \mu\text{g L}^{-1}$  at center of lake
- DEP-SJRWMD Microbial Source Tracing (MST) study
- Verified impaired for nutrients and on DEP TMDL priority list
- *Microcystis/Aphanizomenon* bloom Dec 2025 – spring 2026
  - $0.51\text{-}24 \mu\text{g L}^{-1}$  MCs
  - No toxins in March sampling, but bloom conditions were still observed
- Added as a new routine HAB monitoring site for 2026

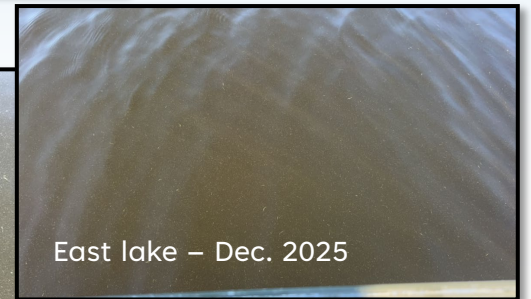
Boat ramp – Feb. 2023



Center lake – Feb. 2023

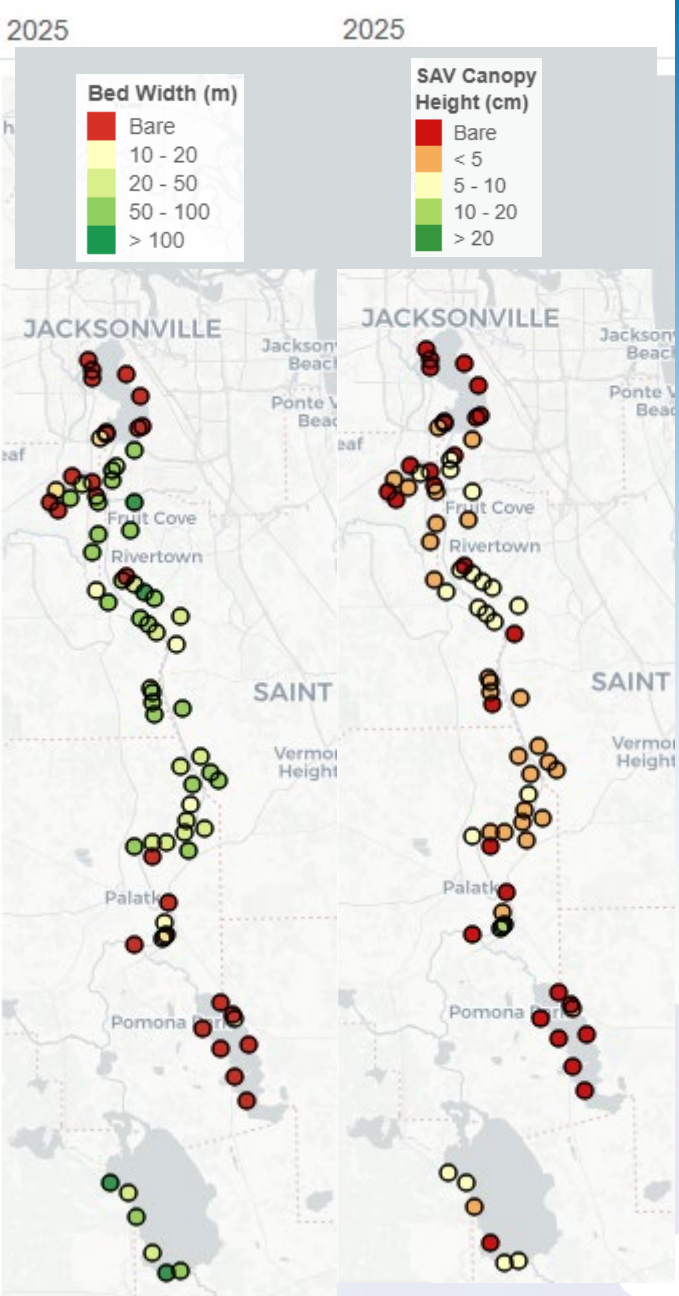


East lake – Dec. 2025



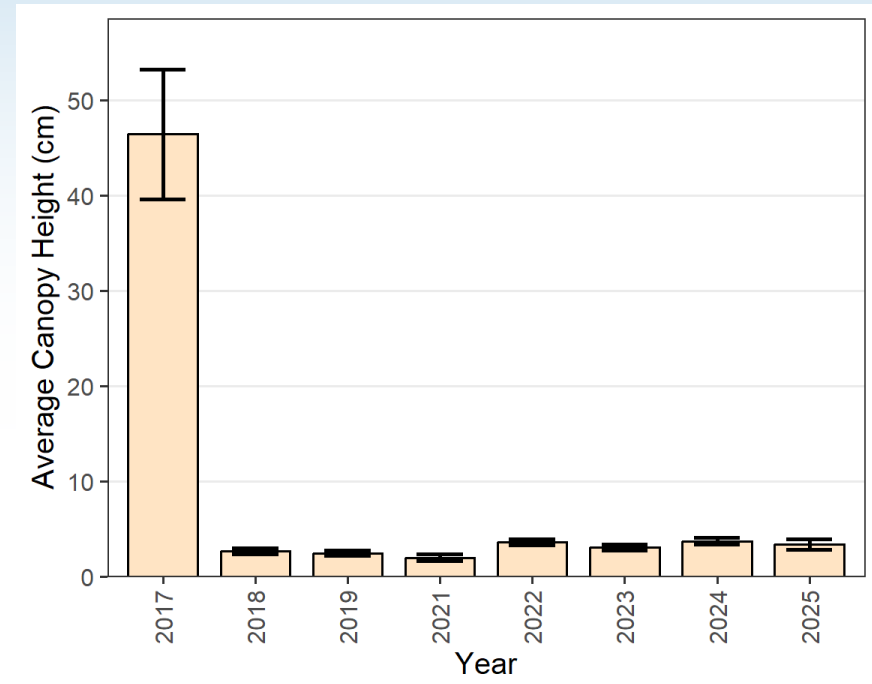
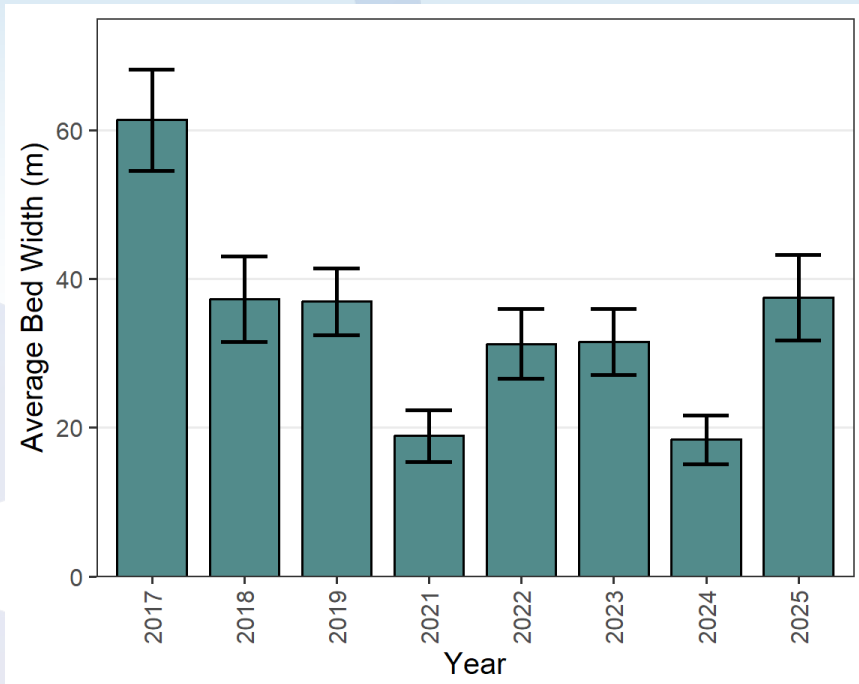
Center lake – Dec. 2025





# Submerged Aquatic Vegetation

- Canopy height, percent cover still low after Irma
- Bed width, percent occurrence lower than 2023
- High water levels potentially the cause
- 2025 SAV dashboard online



# Summary

- Freshwater chlorophyll-a goal potentially exceeded
  - Installed continuous sensor to provide higher resolution data
- Harmful algal blooms persist
  - Samples indicate more severe bloom season than 2024
- Submerged aquatic vegetation persists
  - Canopy heights remain short compared to pre-Irma



# Questions?



**St. Johns River**  
Water Management District

# ***Lower St. Johns Mainstem (LSJM) BMAP Annual Meeting - Tri-County Agricultural Area (TCAA) Update***

*June 2<sup>nd</sup>, 2026*

Gus Francisco

Florida Department of Agriculture and Consumer Services

Office of Agricultural Water Policy



# Overview

- Enrollments within the Lower St. John Mainstem (LSJM) BMAP
  - Agricultural Land Summary
  - Agricultural Acres Enrolled by Commodity
- TCAA Overview
  - History of the TCAA
  - TCAA-WMP Cost Share
  - Agricultural Enrollment within the TCAA
- Annual Report on the Status of Implementation of Agricultural Nonpoint Source Best Management Practices



# Enrollments within the LSJM BMAP

- 44% of all agricultural acres are enrolled in the BMP program
  - Total Ag Acres: 141,775
  - Enrolled Ag Acres: 62,864
- 78% of all irrigated agricultural acres are enrolled in the BMP program
  - Total Irrigated Ag Acres: 40,577
  - Enrolled Irrigated Ag Acres: 31,670



BMP enrollment as of Dec. 2025 and the 12<sup>th</sup> Florida Statewide Agricultural Irrigation Demand ([FSAID](#)) Geodatabase

# Agricultural Land and BMAP Enrollment within the LSJM BMAP

Table 1

| Non-Agricultural Acres | Agricultural Acres | Enrolled Agricultural Acres | Unenrolled – Unlikely Enrollable Acres* | Unenrolled – Potentially Enrollable Acres** |
|------------------------|--------------------|-----------------------------|---|---|
| 1,665,618              | 141,775            | 62,864                      | 44,699                                  | 34,233                                      |

\*This value includes acres within state-owned properties and/or surface water project areas

\*\*This value only includes acres that would be enrolled in the FDACS OAWP BMP Program, it does not include Aquaculture and Forestry acres

Figure 1

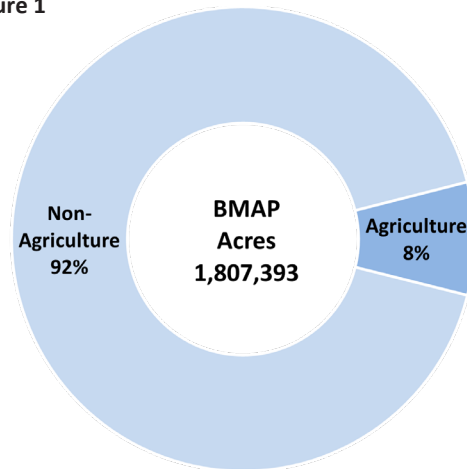
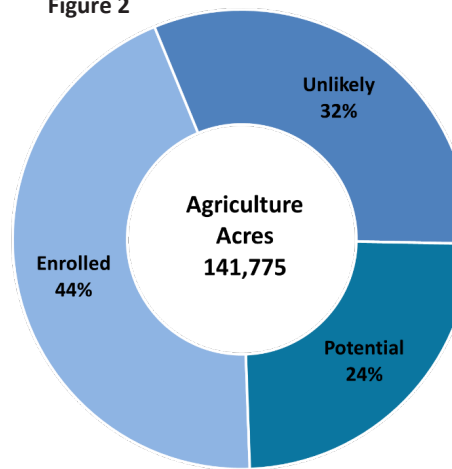


Figure 2



BMP enrollment as of Dec. 2025 and the 12<sup>th</sup> Florida Statewide Agricultural Irrigation Demand ([FSAID](#)) Geodatabase



# Potentially Enrollable Parcels & Agricultural Acres Enrolled by Commodity in the LSJM BMAP (As of Dec. 2025)

| Ag Acres within Parcel | Parcel Count | Total Ag Acres* |
|------------------------|--------------|-----------------|
| < 1                    | 99           | 57              |
| 1 - < 25               | 1,544        | 13,151          |
| 25 - < 50              | 191          | 6,444           |
| 50 - < 250             | 107          | 10,043          |
| ≥ 250                  | 8            | 4,537           |

| BMP Manual           | Acres         |
|----------------------|---------------|
| Cattle               | 17,596        |
| Citrus               | 16            |
| Equine               | 126           |
| Multiple Commodities | 16,939        |
| Nursery              | 1,336         |
| Fruit/Nut            | 494           |
| Sod                  | 1,889         |
| Row/Field Crop       | 24,467        |
| <b>Total</b>         | <b>62,864</b> |

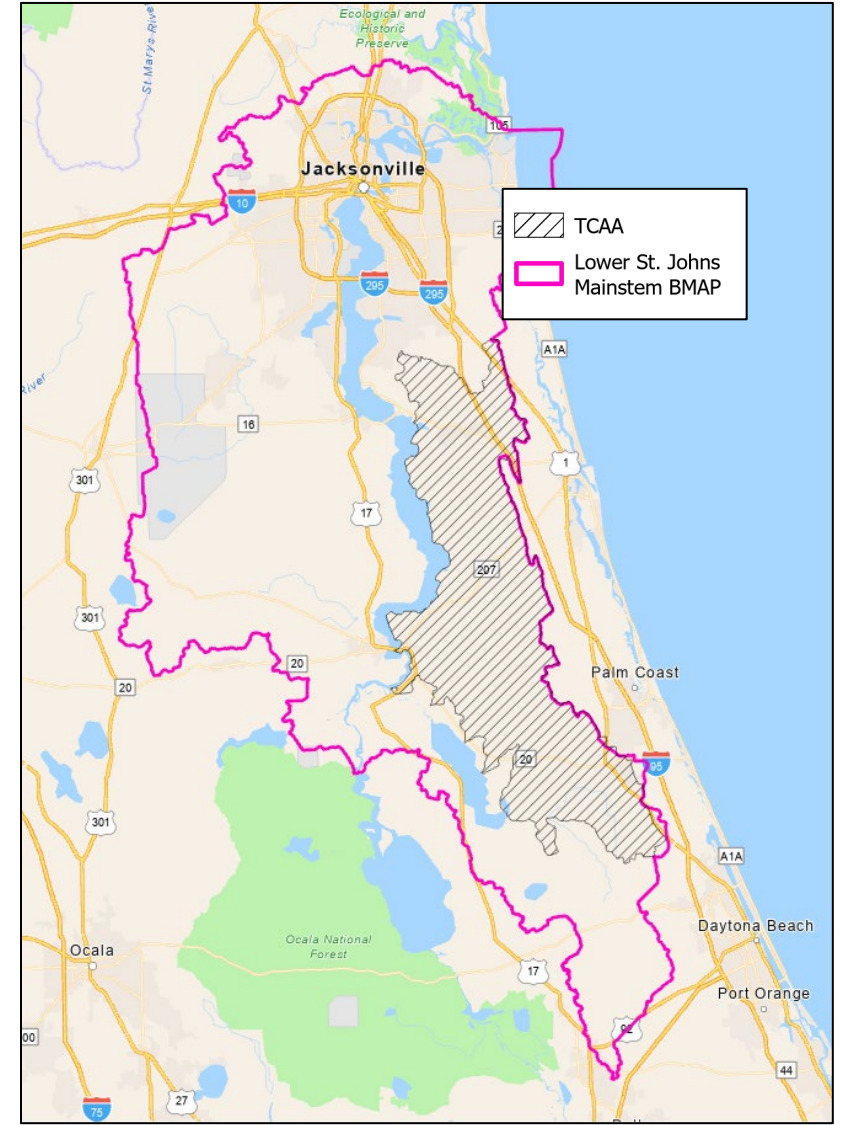
\* Total Ag Acres reflects those ag acreages that are potentially enrollable



BMP enrollment as of Dec. 2025 and the 12<sup>th</sup> Florida Statewide Agricultural Irrigation Demand ([FSAID](#)) Geodatabase

# History of TCAA within LSJM BMAP

- The Tri-County Agricultural Area (TCAA) is located in Flagler, Putnam, and St. Johns counties.
- In 2000, SJRWMD established the TCAA Water Quality Protection Program
- A voluntary cost-share program designed to reduce nutrient loading to the river from agricultural sources by encouraging the voluntary implementation of nutrient and water management BMPs.
  - In 2008, FDEP adopted the LSJM BMAP containing actions to reduce pollutant loadings to the river
  - In 2011, Tri-County Agricultural Area - Water Management Partnership (TCAA-WMP) is formed

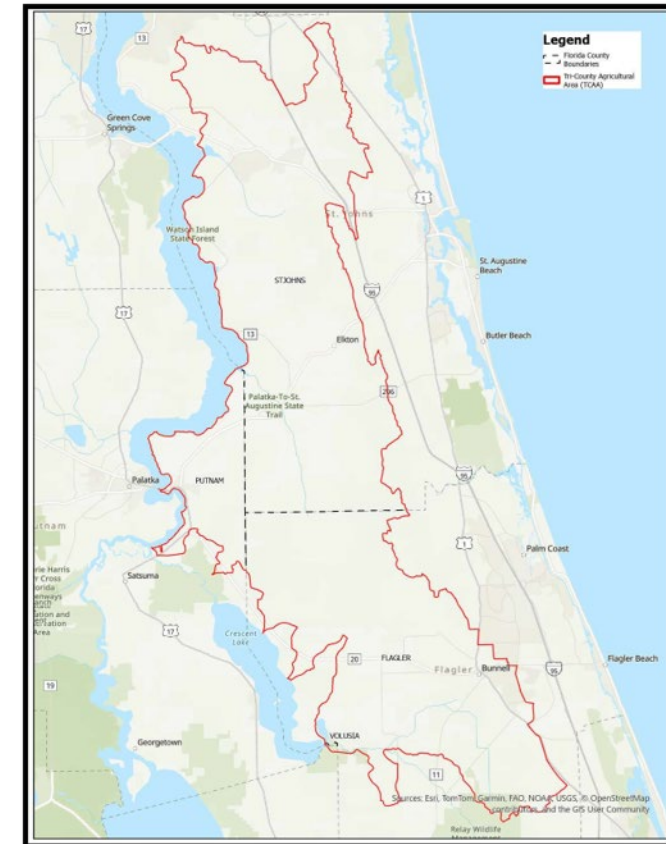


# Tri-County Agricultural Area – Water Management Partnership (TCAA-WMP)

- Member organizations and funding partners:



- The TCAA-WMP provides cost-share funding to help producers implement verified Best Management Practices (BMPs) that improve water conservation, reduce runoff, and enhance water quality while maintaining productive, profitable farming.
- The primary resource concern is the movement of phosphorus off farmlands into the LSJR and its tributaries along with nitrogen movement.



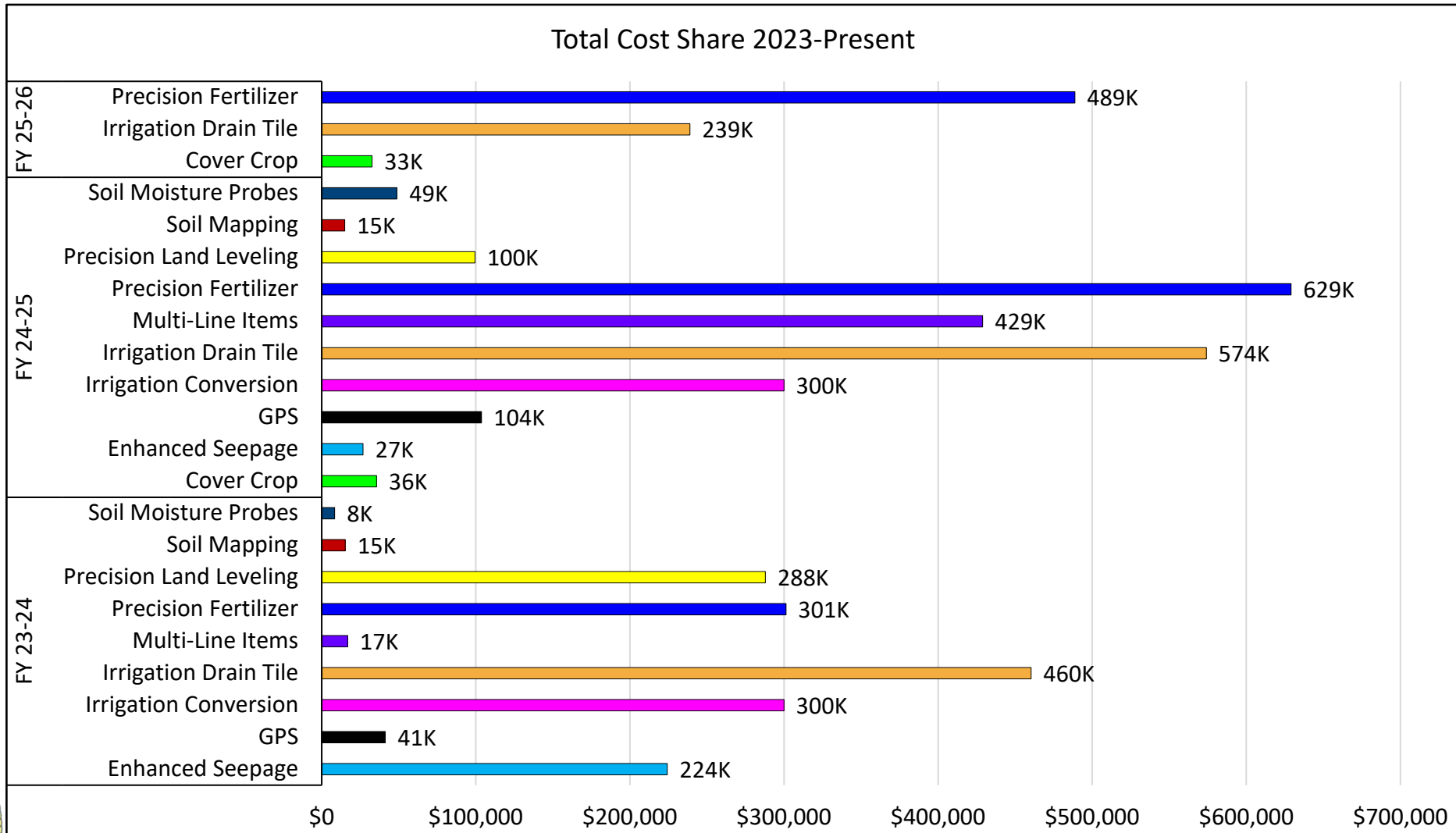
# TCAA-WMP Annual Cycle



- Conducts two cost-share application cycles annually:
  - Spring Cycle (applications announced in January)
  - Fall Cycle (applications announced in June)
- Cost-share applications remain open for approximately one month during each cycle.
- Partnership agencies collaboratively:
  - Review submitted applications and evaluate project eligibility
  - Determine which agency will administer each project/application
- Site visits are scheduled, as needed, to:
  - Meet with producers to discuss proposed projects
  - Verify project feasibility prior to agreement development
- Hosts two producer meetings annually:
  - Spring Producer Meeting (March/April)
  - Fall Producer Meeting (October)



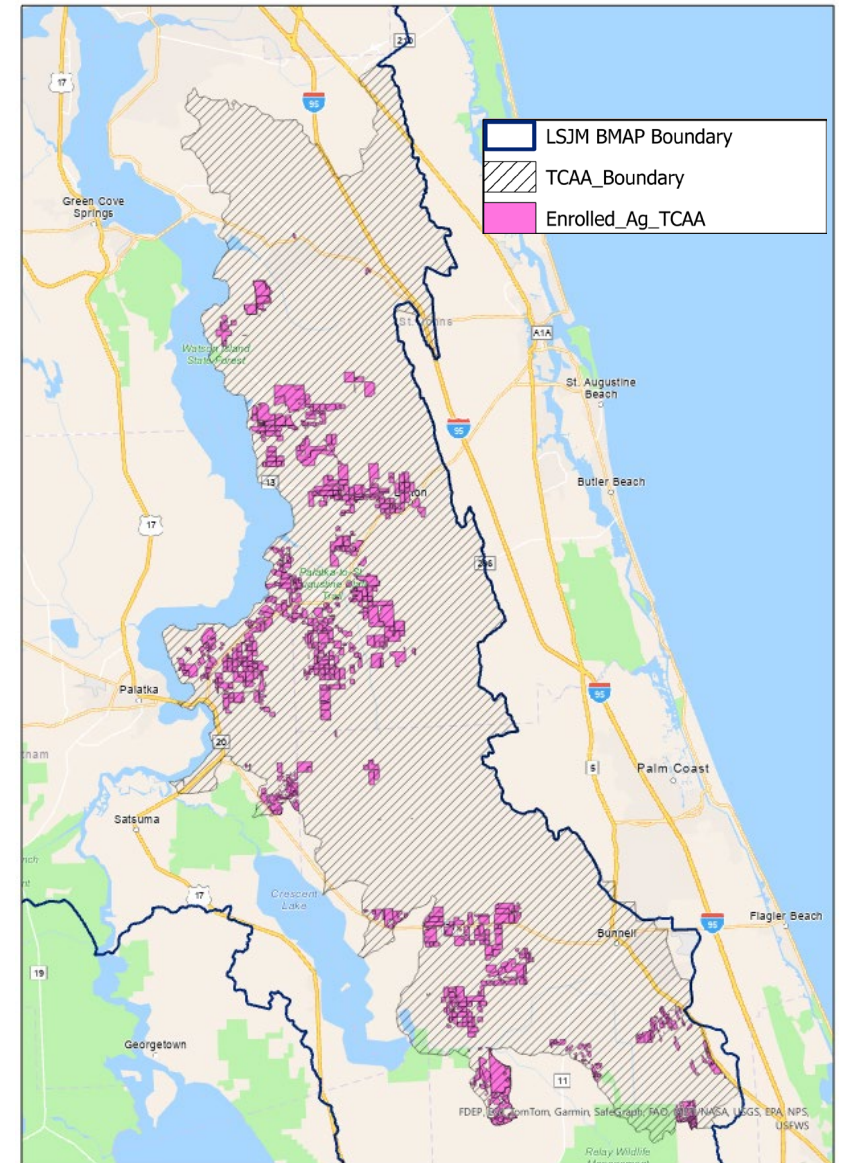
# TCAA Ag Cost Share Overview FY 23-26



# Agricultural Acres Enrolled in the TCAA as of 2025

| BMP Manual           | Acres         |
|----------------------|---------------|
| Cattle               | 5,252         |
| Equine               | 9             |
| Multiple Commodities | 7,061         |
| Nursery              | 13            |
| SFN                  | 11            |
| Sod                  | 1,527         |
| VAC                  | 22,608        |
| <b>Total</b>         | <b>36,481</b> |

BMP enrollment as of Dec. 2025 and the 12<sup>th</sup> Florida Statewide Agricultural Irrigation Demand ([FSAID](#)) Geodatabase



# 2025 FDACS Legislative Annual Report – Available July 1, 2026



## Florida Department of Agriculture and Consumer Services Office of Agricultural Water Policy



### Status of Implementation of Agricultural Nonpoint Source Best Management Practices

July 1, 2026

Report to the Governor, the President of the Senate, and the Speaker of the House  
Pursuant to Section 403.0675(2), F.S.

Publication No: FDACS-P-01924 Rev. 07/26

### Status of Implementation of Agricultural Best Management Practices (BMPs) Lower St. Johns River Basin Mainstem

Table 1

| Non-Agricultural Acres | Agricultural Acres | Enrolled Agricultural Acres | Unenrolled – Unlikely Enrollable Acres* | Unenrolled – Potentially Enrollable Acres** |
|------------------------|--------------------|-----------------------------|---|---|
| 1,665,618              | 141,775            | 62,864                      | 44,699                                  | 34,233                                      |

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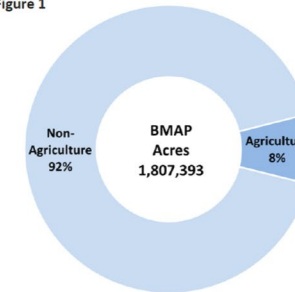


Figure 2

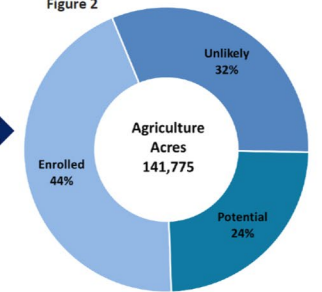


Figure 3

Potentially Enrollable Parcels Agricultural Acres

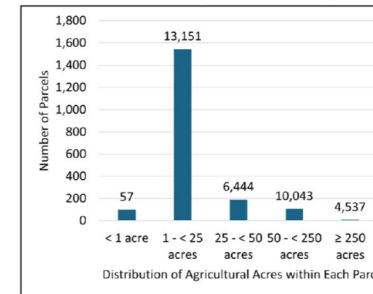


Table 2

Enrolled Agricultural Acres by Manual

| BMP Manual           | Acres         |
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| Citrus               | 16            |
| Equine               | 126           |
| Multiple Commodities | 16,939        |
| Nursery              | 1,336         |
| Fruit/Nut            | 494           |
| Sod                  | 1,889         |
| Row/Field Crop       | 24,467        |
| <b>Total</b>         | <b>62,864</b> |

# Thank You!

<https://www.fdacs.gov/Divisions-Offices/Agricultural-Water-Policy>

Gus Francisco, Environmental Consultant

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(850) 273-0654



Florida Department of Agriculture and Consumer Services



# ST. JOHNS RIVER MODEL UPDATE- Lower Basin

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

June 2, 2026



# AGENDA

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

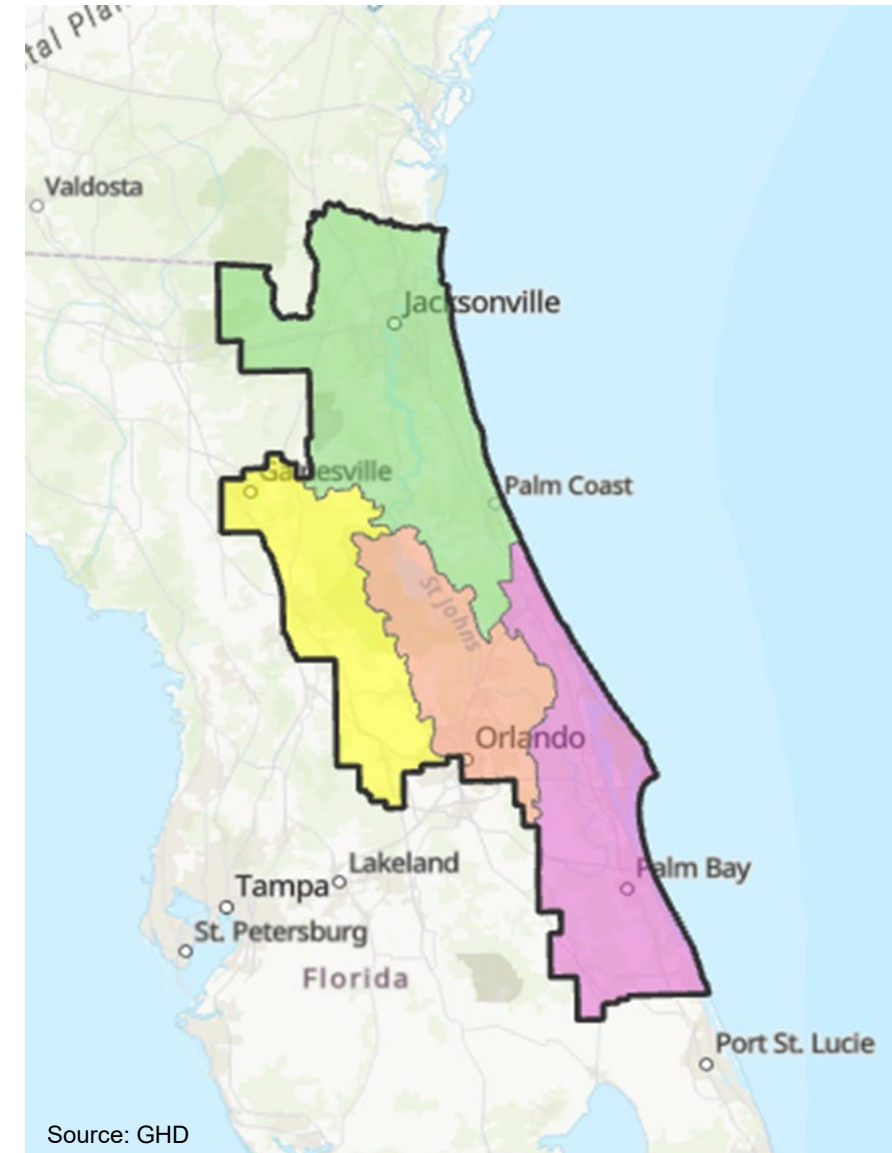




# PROJECT BACKGROUND: OVERVIEW

## 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.





# PROJECT SCHEDULE

**Completed:**  
Modeling  
Document/Quality  
Assessment (QA)  
Plan

**July 2026:**  
Update EFDC  
Model

**July 2026:**  
Update HSPF  
Model

**July 2027:**  
Build 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 & 2020 |
| 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  |

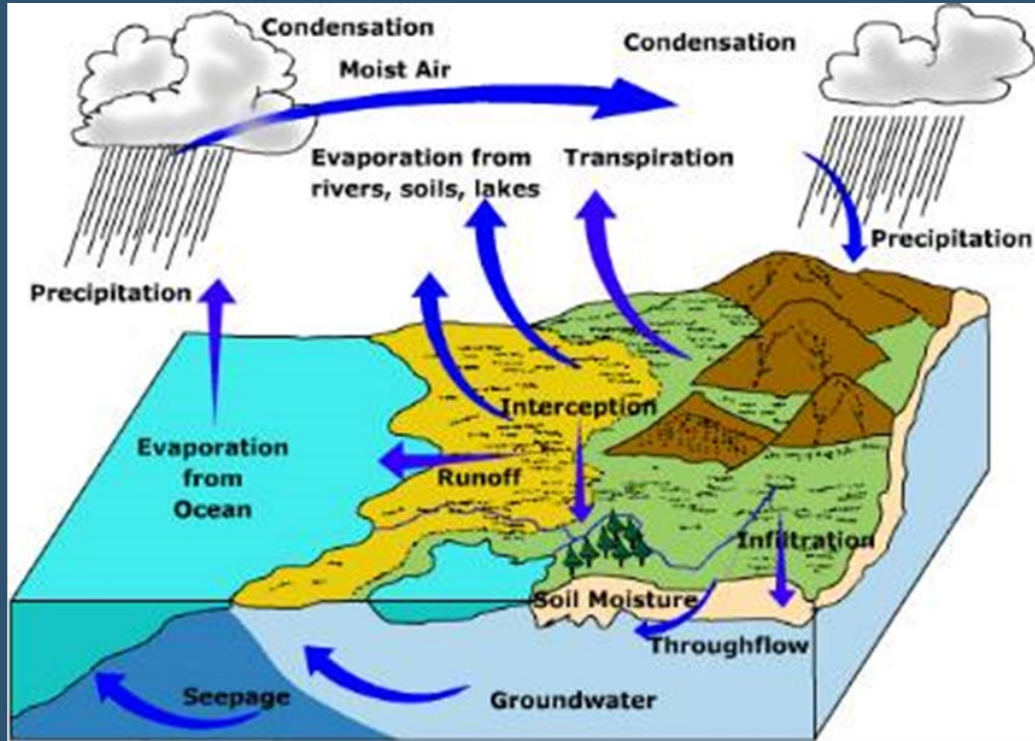
NCDC: National Climatic Data Center

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*.

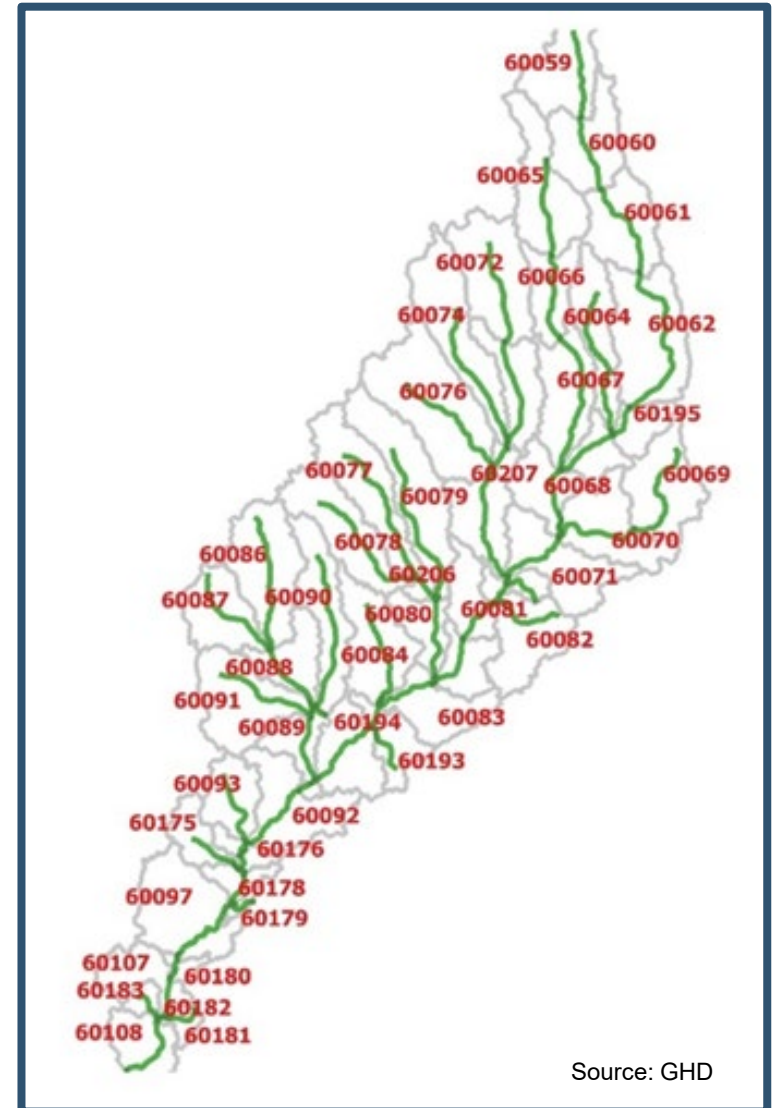
*This Photo* by Michael Ritter is licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

- 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.
  - Temperature, total nitrogen (TN), total phosphorus (TP), carbonaceous biochemical oxygen demand (CBOD), dissolved oxygen (DO), sediment



# 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.

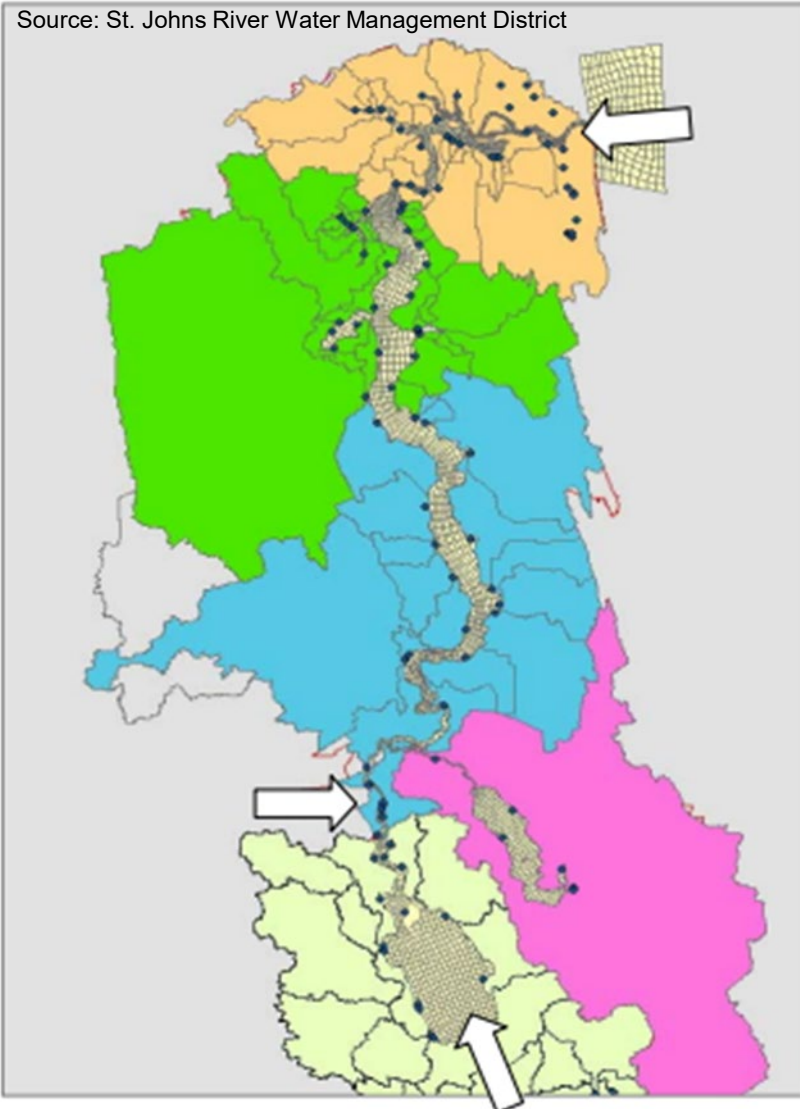


Source: GHD



# EFDC HYDRODYNAMIC MODEL

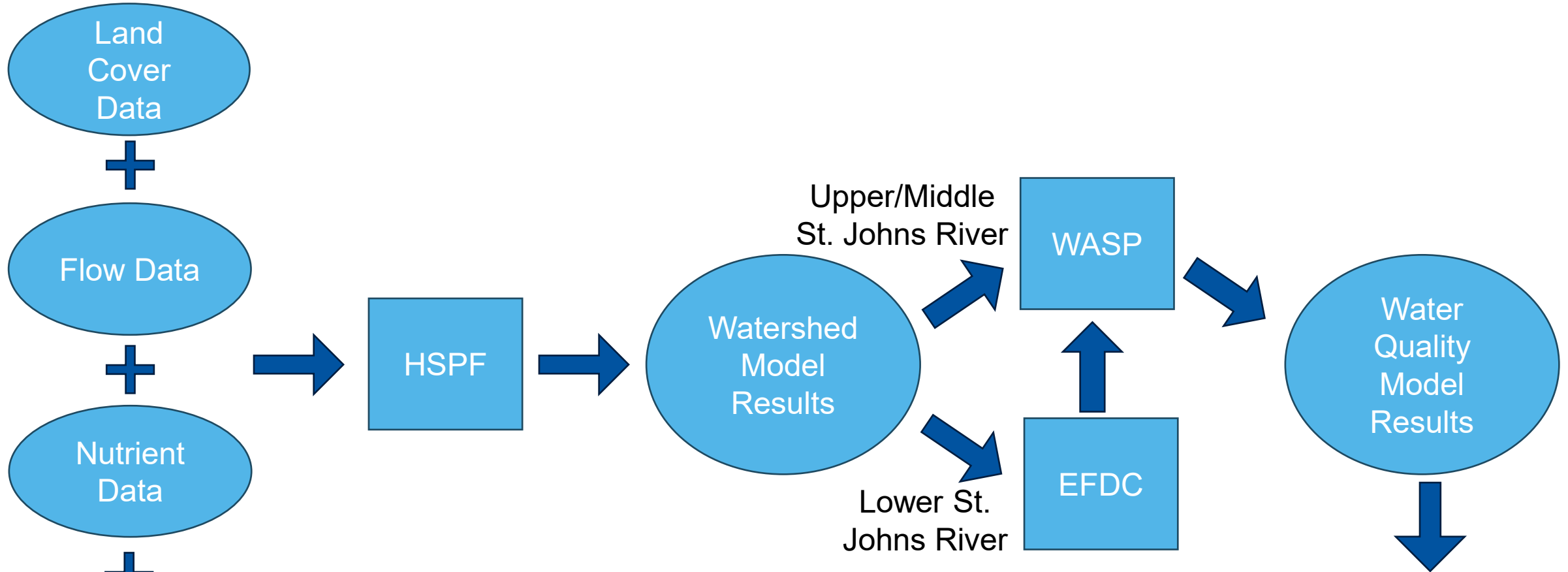
Source: St. Johns River Water Management District



- Evaluated SJRWMD version of EFDC.
  - Updated to current version of EFDC.
- Extended EFDC through 2023.
- Add point source contributions.
- Update flows and loads from HSPF/WASP models from the upstream basins.



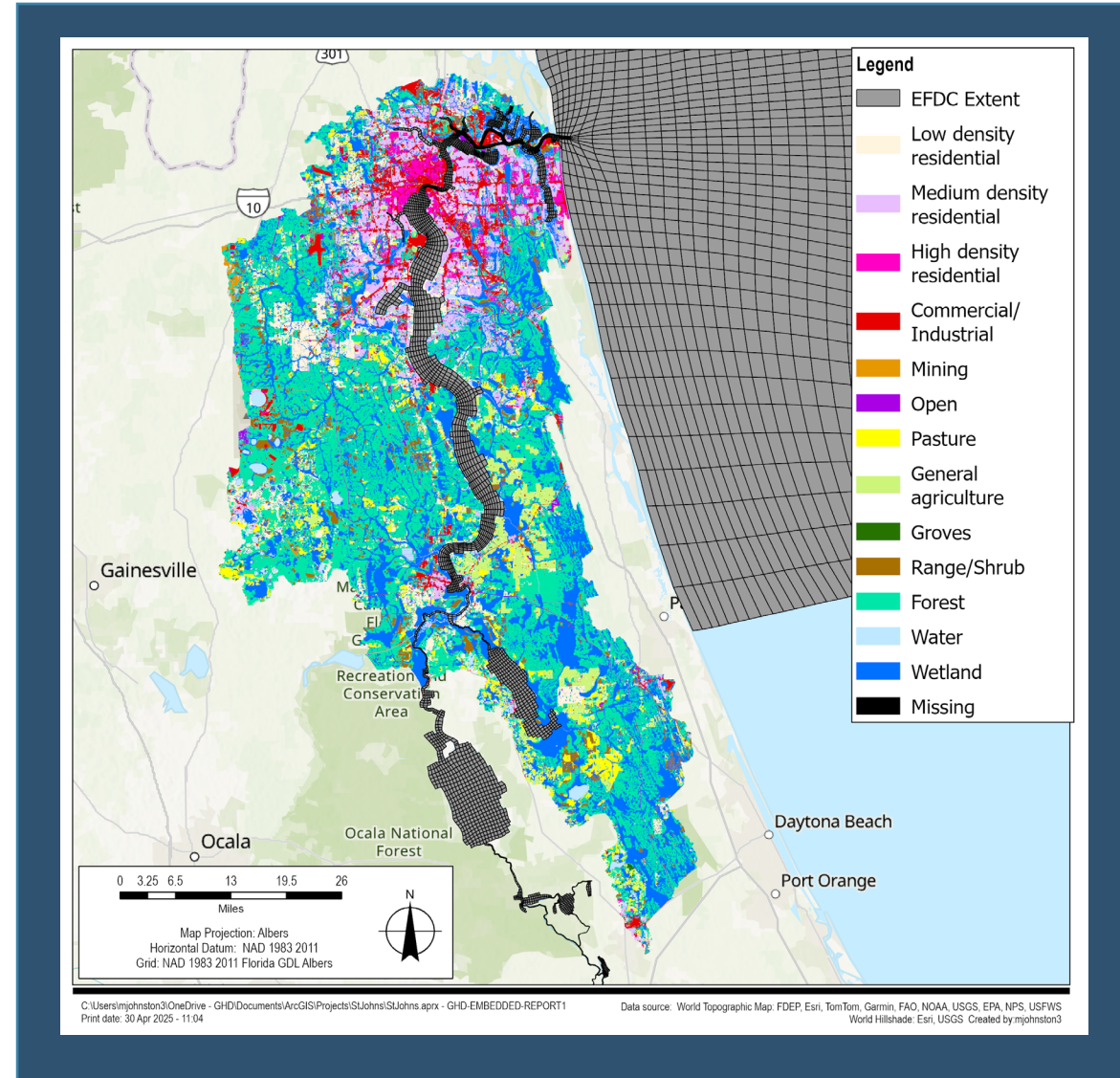
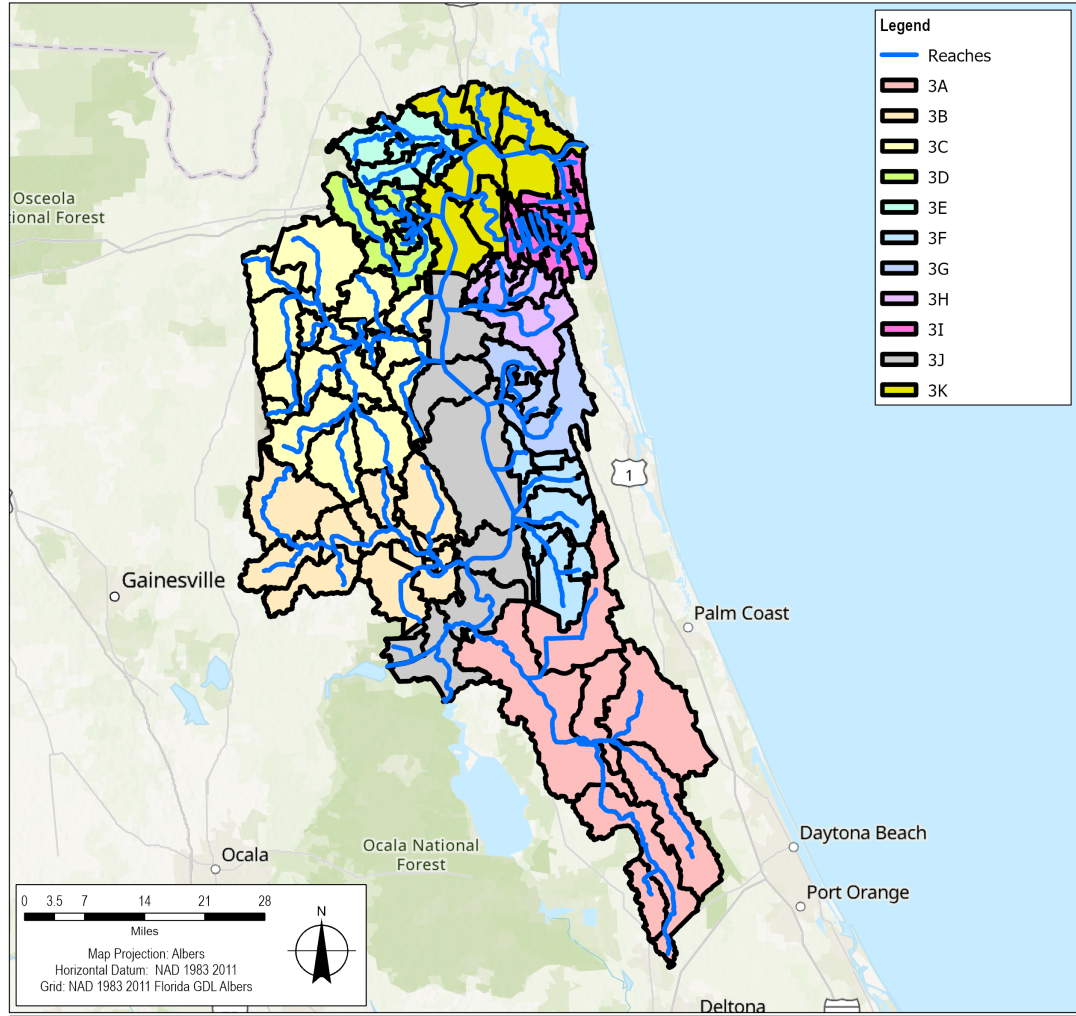
# MODELING WORKFLOW



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



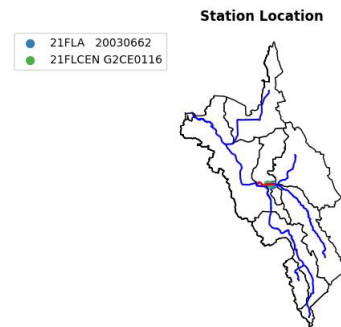
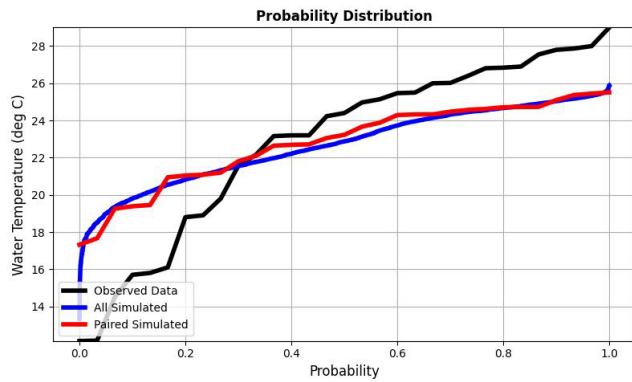
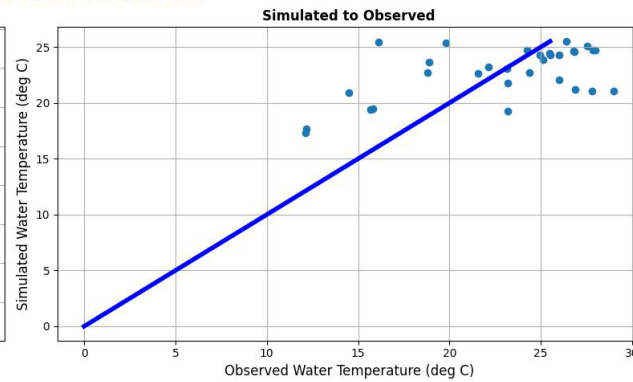
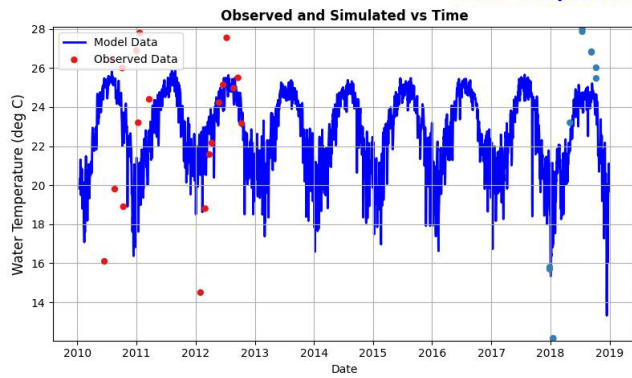
# LOWER BASIN



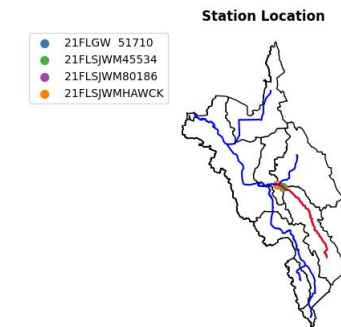
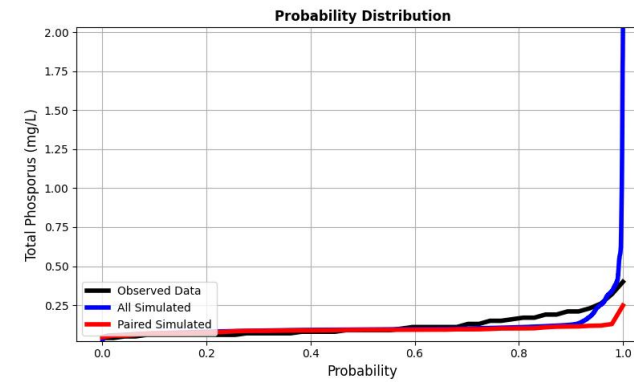
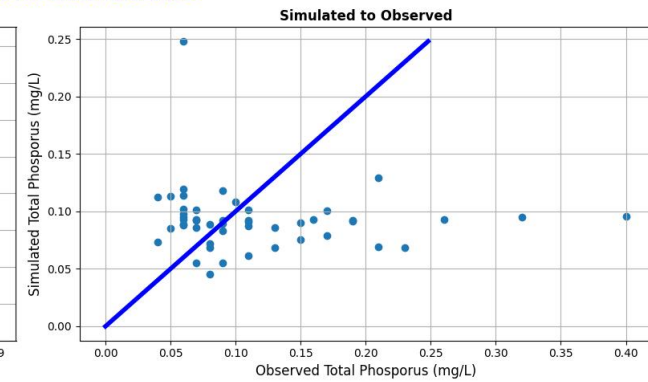
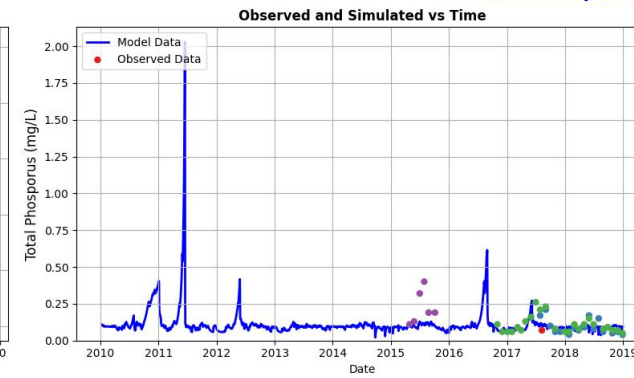


# LOWER BASIN- HSPF RESULTS

### Water Temperature vs. Observed 3A-5



### Total Phosphorus vs. Observed 3A-3





**QUESTIONS?**

# THANK YOU



**Ray Pribble**  
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**Megan Johnston**  
GHD  
[Megan.Johnston@ghd.com](mailto:Megan.Johnston@ghd.com)

**Moira Homann**  
Division of Environmental Assessment and Restoration  
Department of Environmental Protection  
[Moira.Homann@FloridaDEP.gov](mailto:Moira.Homann@FloridaDEP.gov)



**QUESTIONS?**



**Annual Meeting Summary – Lower St. Johns River Main Stem Basin Management Action Plan (BMAP)**

**Florida Department of Environmental Protection (DEP)**

**June 2, 2026, via GoToWebinar**

**10:00 am – 11:38 am**

## Attendees

|   |  |
|---|--|
| Soraya Aidinejad, St. Johns Riverkeeper       | Scott Jones, UNF                                   |
| Cora Aosse, DEP                               | Chandler Keenan, DEP                               |
| Lisa Bally, Geosyntec                         | Duane Kent, St. Johns County                       |
| Janelle Barriero, FL Senate                   | Dana Klueppel, ETM                                 |
| Todd Blaudow, Citizen                         | Natalie Kraft, FPL                                 |
| Phillip Brown, City of Jacksonville Beach     | Tricia Kyzar, Data Minions                         |
| Jazmyn Broxton, DEP                           | Maureen Long, Citizen                              |
| Pauline Buford, Town of Welaka                | Melissa Long, City of Jacksonville                 |
| Tiffany Busby, Wildwood Consulting            | Ashlee Lozano, City of Jacksonville                |
| Stacy Cecil, SJRWMD                           | Celeste Lyon, RES                                  |
| Carolin Ciarlariello, DEP                     | Tom Mayton, SJRWMD                                 |
| Jonathon Colmer, U.S. Navy                    | Lori McCloud, SJRWMD                               |
| Carol Combs, Citizen                          | Sarah Menz, DEP                                    |
| Ed Cordova, JEA                               | Jessica Mostyn, DEP                                |
| Letuzia De Oliveira, FDACS                    | Jordan Myers, City of Palm Coast                   |
| Rob Drumheller Jr, UF                         | Mark Nelson, Jones Edmunds                         |
| Chris Farrell, Audubon Society                | David Northrup, UES                                |
| Jessica Fetgatter, DEP                        | Nicolas Pisarello, ATM                             |
| George Folles, CGA Solutions                  | Ray Pribble, ESA                                   |
| Agustin (Gus) Francisco, FDACS                | Raulie Raulerson, Florida Farm Bureau Federation   |
| Nick Gagliano, Clearstream Wastewater Systems | Amber Robert, Citizen                              |
| ST Gladin, Citizen                            | Mikayla Rogers, Florida Fruit and Vegetable Assoc. |
| Roxanne Groover, FOWA                         | Samantha Russo, SJRWMD                             |
| Madeline Hart, FDACS                          | Rachael Santana, JEA                               |
| Cori Hermle, SJRWMD                           | Katherine Sayler, Defenders of Wildlife            |
| Charlie Hillyer, CIRE First Coast             | Guillermo Simon, HALFF                             |
| Moira Homann, DEP                             | Brandon Smith, FDOT                                |
| Reagan Hughes, Clay County                    | Lucy Sonnenberg, JU                                |
| Justin Isaacs, City of Flagler Beach          | Steve Swann, City of Atlantic Beach                |
| Megan Johnston, GHD                           |  |

The Florida Channel  
Deborah Thompson, DKT Consultants  
Riley Timbs, SJRWMD  
Jimmy Tomazinis, DEP

Zoe Tressel, St. Johns Riverkeeper  
Mark Troilo, HALFF  
Michael Woodside, Citizen

## Questions and Answers (Q&A)

### Lower St. Johns River Main Stem BMAP Updates

**Comment:** For those attendees who represent golf courses with new BMAP requirements, please note that this BMAP was adopted on November 27, 2025. Some BMAPs for other areas were adopted earlier in the year and therefore have earlier due dates for their draft nutrient management plans (NMPs). For the Lower St. Johns River Main Stem Basin, the NMPs are due by November 27, 2026; for some other basins, they are due this month. Similarly, the requirements in springs BMAPs for superintendent certification in the Institute of Food and Agricultural Sciences (IFAS) Golf Course Best Management Program are more extensive than in our basin, where the requirement only applies to publicly-owned golf courses. So be aware as you speak to your counterparts in other areas, their due dates and/or their requirements may be slightly different than the ones that apply to your golf course. Recordings of the two DEP webinars on golf course requirements and other materials are available on the [DEP website](#).

**Q:** What is protocol for homeowners in BMAPs requiring nitrogen-reduction systems who are taking cancer and/or human immunodeficiency virus (HIV) medications?

**A:** The BMAP is focused on nitrogen and phosphorus inputs. If you have questions about potential pharmaceutical sources from septic systems, you can contact the DEP Onsite Sewage Treatment Program. The program at [OSTDS\\_Feedback@FloridaDEP.gov](mailto:OSTDS_Feedback@FloridaDEP.gov) or at [david.fraday@floridadep.gov](mailto:david.fraday@floridadep.gov).

### St. Johns River Water Management District (SJRWMD) Updates

**Q:** Is the submerged aquatic vegetation (SAV) monitoring averaged for an entire year? We typically see peak growth in April, then it is wiped out by salinity shifts in May and June.

**A:** The SJRWMD SAV survey sites are performed annually by measuring SAV transects in the June through August timeframe. In the estuarine section of the river north of Black Creek, they do observe higher salinities. The SJRWMD also has some quarterly SAV sites they monitor. An example of one of the quarterly sites is near the Buckman Bridge, which is the northernmost site. The quarterly site data were excluded from the graphs shown in the presentation. Those graphs represent the means based on the annual monitoring sites. The purpose of the quarterly monitoring is to capture seasonal variation. It was noted that in this BMAP, the SAV conditions are not part of the BMAP compliance measurements.

**Q:** Could the algal bloom persistence be related to the lack of canopy?

**A:** We know that algal blooms are detrimental to SAV, so that is one of the reasons to control the blooms with nutrient reductions. However, the Lower Basin is a blackwater system that contains a lot of dissolved organic matter in the water that give the river its tea-like color. The dissolved organic matter is created by huge wetland systems upstream, particularly the large wetlands in the Upper St. Johns River Basin and Middle St. Johns River Basin. In the freshwater section, that blackwater color drives most of the light attenuation in the Lower Basin and limits SAV growth.

Interestingly, there is a long-term correlation between *higher* chlorophyll-a levels and *more* SAV growth. In the freshwater section, when there is less color in the water the clarity allows more chlorophyll-a to form and also promotes SAV growth. Less water color is associated with low rainfall and thus less wetland dissolved organic matter inputs to the river. So, the influence of water color dwarfs the influence of algal growth represented by the chlorophyll-a concentration.

In the marine section, the situation is different. In the marine part of the river, the clearer water is ocean water traveling upstream on incoming tides. SAV are sensitive to higher salinity, despite the relative clarity of ocean water, and high salinity will cause SAV die offs. When we have drought conditions and less freshwater pushing out the ocean water towards the river mouth, we lose SAV in the marine section. If you review the annual rainfall conditions from year to year, you see the patterns of SAV recovery and die off tend to the opposite in the freshwater compared to the marine section. Dry conditions improve water clarity in both sections, but for different reasons. The clarity helps SAV in the freshwater section and limits it in the marine section. Wet conditions increase color and limit SAV in the freshwater section while helping to lower salinity and promote SAV growth in the marine section.

**Q:** Thoughts on water quality issues – we are likely exceeding chlorophyll-a even though we have been greatly exceeding BMAP reduction goals via projects. Do we have a disconnect somewhere?

**A:** As Riley Timbs presented today, we are seeing some chlorophyll-a concentrations above 40 micrograms per liter the freshwater section of the Lower St. Johns River Basin. Excess nutrient loading may be related to two main issues—that the loading from the freshwater section needs to be further reduced by additional management actions and/or the loads from upstream are contributing excessive loads to the Lower Basin. To address the first item of whether we have excessive loads within the freshwater section, we are going to hear today a presentation on the modeling updates that DEP is funding to obtain a more current loading assessment of each section of the St. Johns River—that process is incomplete but underway. In terms of upstream loads, we also need the watersheds and upstream BMAP areas to meet their own nutrient total maximum daily loads (TMDLs). We know we need progress (load reductions) upstream as well. The need for upstream progress includes the Crescent Lake Basin, which is part of the Lower

Basin BMAP, but was not originally modeled for the 2008 BMAP and has its own nutrient impairments. Stay tuned for the upcoming presentation by Ray Pribble and Megan Johnston on the modeling efforts underway.

## Florida Department of Agriculture and Consumer Services (FDACS) Tri-County Agricultural Area (TCAA) Update

No questions.

## St. Johns River Model Update

**Q:** In the watershed model, which land use do roadways fall under?

**A:** Roadways fall under the commercial/industrial land use types in the watershed model.