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

St. Johns River Water Management District
Governing Board Room – Administration Building
4049 Reid St.
Palatka, FL 32217

December 12, 2024
2:00 PM EST

Agenda

- Lower St. Johns River Main Stem Basin Management Action Plan (BMAP) Background.
- Annual Progress Update—SJRWMD & DEP.
- 2025 BMAP Update—Additional BMAP Provisions.
- Next Steps.

Please note the FTP site for documents pertaining to the Lower St. Johns River Main Stem BMAP:
https://publicfiles.dep.state.fl.us/DEAR/BMAP/Lower_St_Johns/Main%20Stem/
For more information on the Lower St. Johns River Main Stem BMAP, contact: Tiffany Busby, 904-797-2721, TLBusby@wildwoodconsulting.net

LOWER ST. JOHNS RIVER (LSJR) MAIN STEM BASIN MANAGEMENT ACTION PLAN UPDATES

Moira Homann, Program Administrator
Division of Environmental Assessment and Restoration/
Florida Department of Environmental Protection

Palatka | Dec. 12, 2024

Pellicer Creek

AGENDA

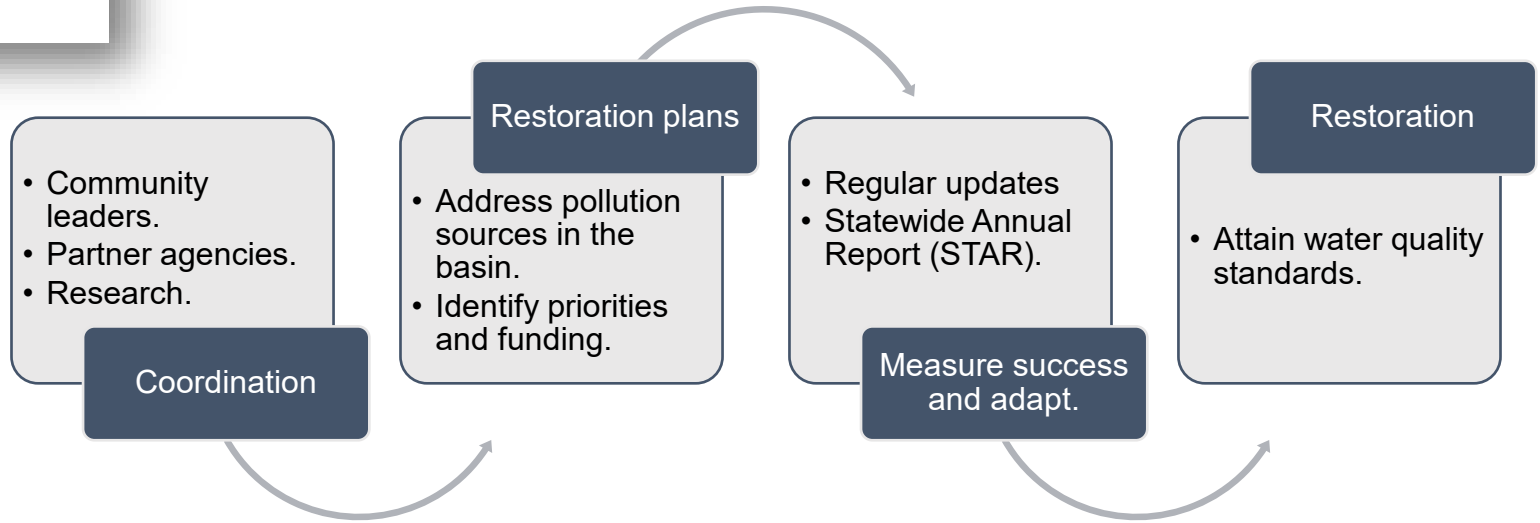
- BMAP Background.
- Annual Progress Update.
  - St. Johns River Water Management District.
  - Florida Department of Environmental Protection (DEP).
- 2025 BMAP Update.

BASIN MANAGEMENT ACTION PLANS (BMAPs)

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

BMAPs are:

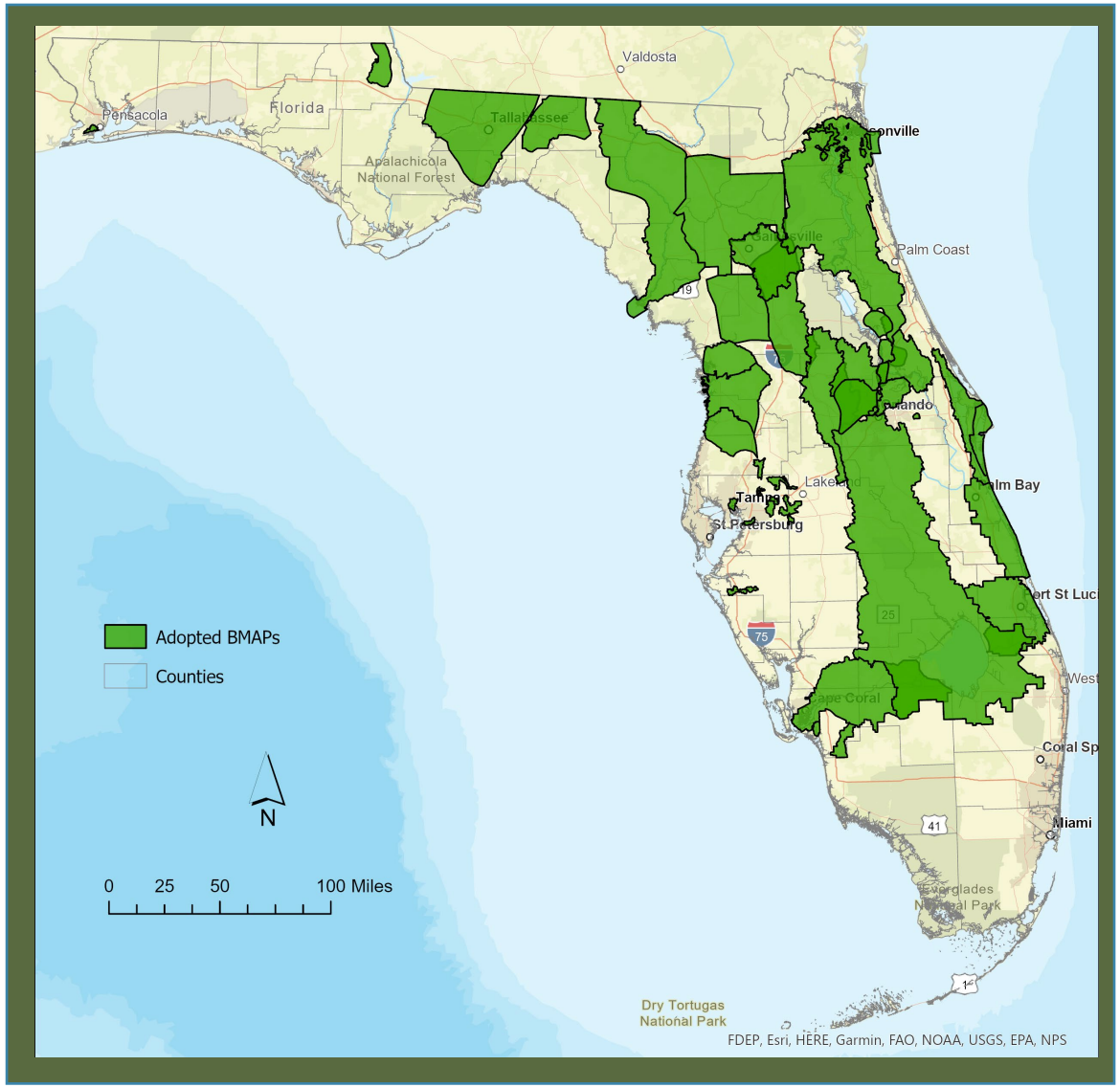
- Developed with stakeholder input.
- Adopted by DEP Secretarial Order.
- Enforceable.
- Implemented through a phased approach.
- Reported on annually.
- Updated regularly.



BMAPS ACROSS THE STATE

33 BMAPs

- 19 Surface Water BMAPs:
  - Seven “Other Nutrient” (e.g., LSJR).
  - Three Northern Everglades and Estuaries Protection Program (NEEPP).
  - Three Indian River Lagoon.
  - Six Bacteria.
- 14 Springs BMAPs.



KEY BMAP COMPONENTS

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

Projects to meet the TMDL:

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

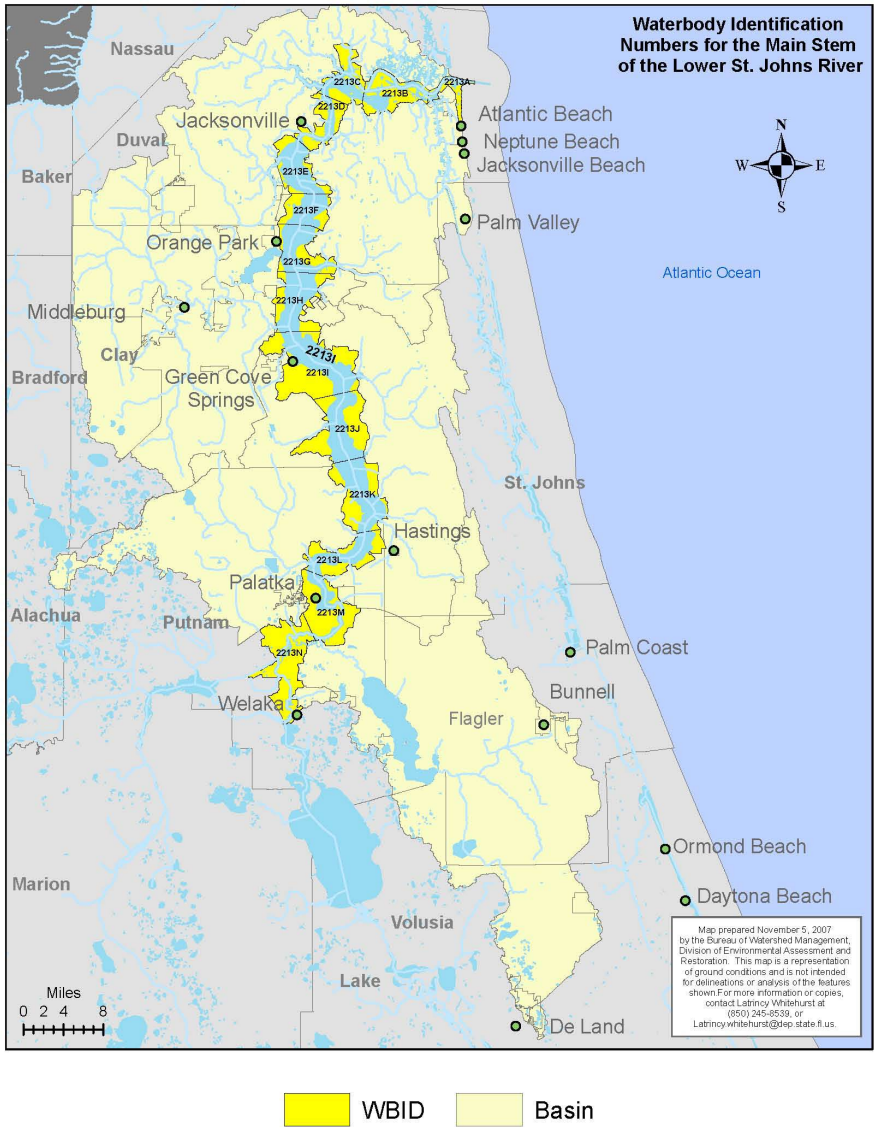
Process to assess progress toward achieving the TMDL:

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

STAKEHOLDERS AND GEOGRAPHIC AREA

- Stakeholder involvement was a key component in developing this BMAP.
- BMAP includes the marine section and freshwater section, with individual TMDLs.
- The BMAP process includes up to the Crescent Lake Basin, which was previously considered an upstream load and did not receive specific allocations.

Source: 2008 Lower St. Johns River Main Stem BMAP.



NEW STAKEHOLDERS

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

*Small area within boundary.

LSJR MAIN STEM BMAP

LSJR Main Stem Adopted TMDLs

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

* Includes a percent reduction from NPDES stormwater sources.

Source: 2008 Lower St. Johns River Main Stem BMAP.

STAR
PROJECT REPORTING

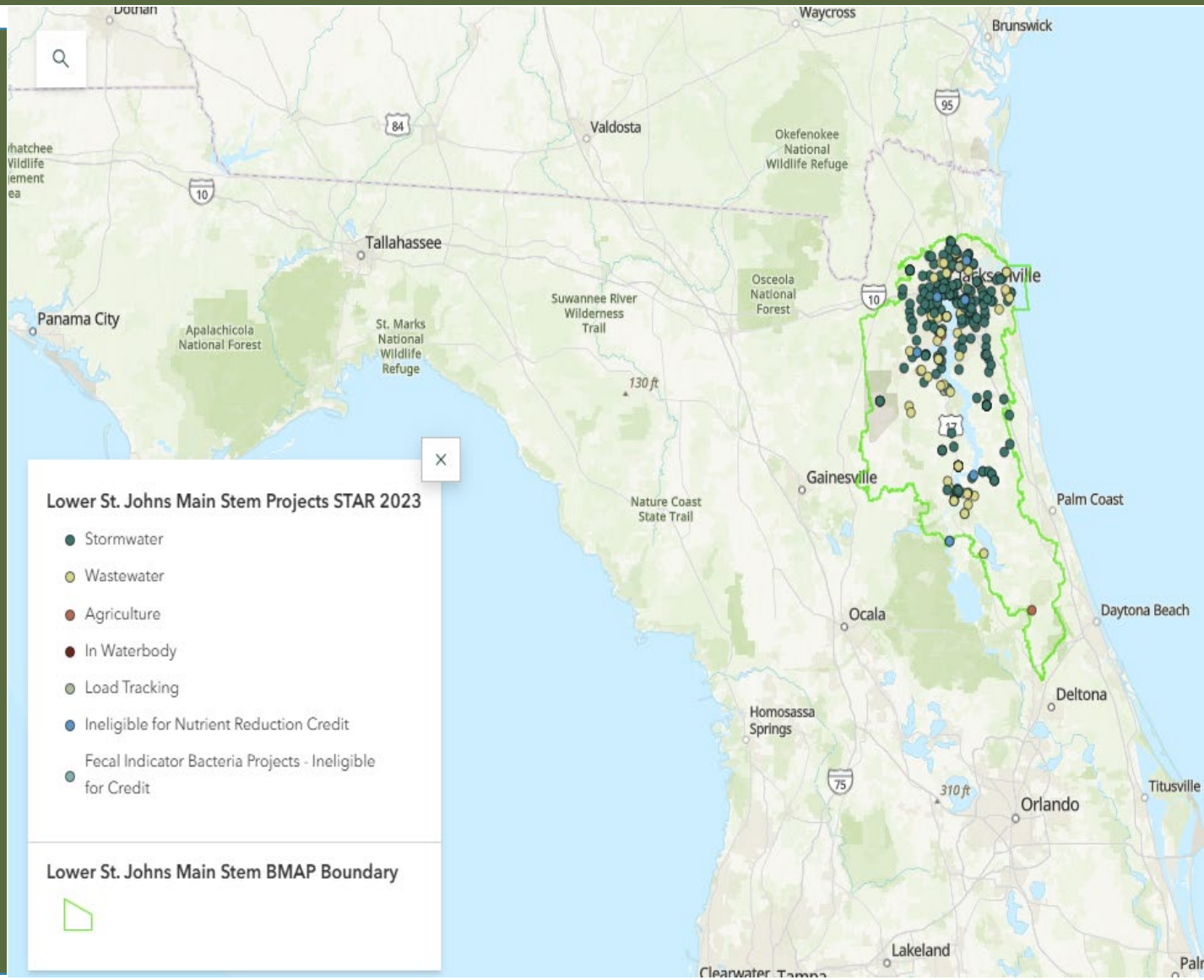
What is the STAR?

- Summarizes accomplishments in the BMAPs statewide.
- Reports on restoration projects and management strategies.
- Published July 1 of each year.
- STAR 2023 reports on project updates through Dec. 31, 2023.

[STAR 2023 Intro (arcgis.com)]

2023 MAIN STEM PROJECTS SUMMARY

- Planned – 19.
- Underway – 23.
- Ongoing – 23.
- Completed – 297.
- Canceled – 57.

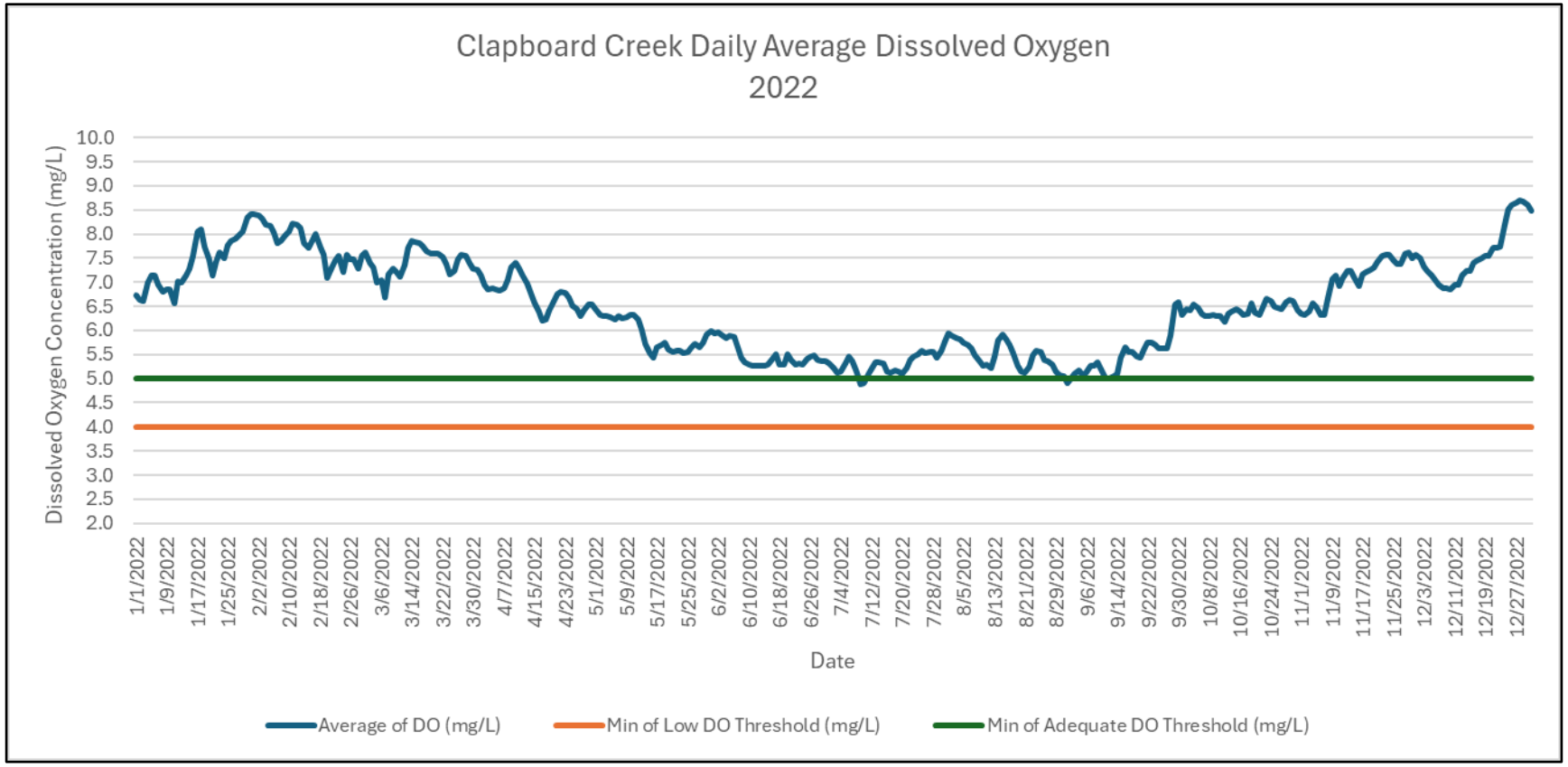


DISSOLVED OXYGEN (DO) ATTAINMENT

- Marine section compliance = DO concentration.
- Targets are based on a site specific alternative criterion (SSAC).
- 5.0 milligrams per liter (mg/L) or higher = healthy conditions for aquatic animals.
- Avoid concentrations below 4.0 mg/L.
- Concentrations from 4.0 - 5.0 mg/L are evaluated based on their duration.
- DEP uses an annual fractional exposure calculation to measure attainment.
- Annual Goal = Fractional exposure < 1.0.

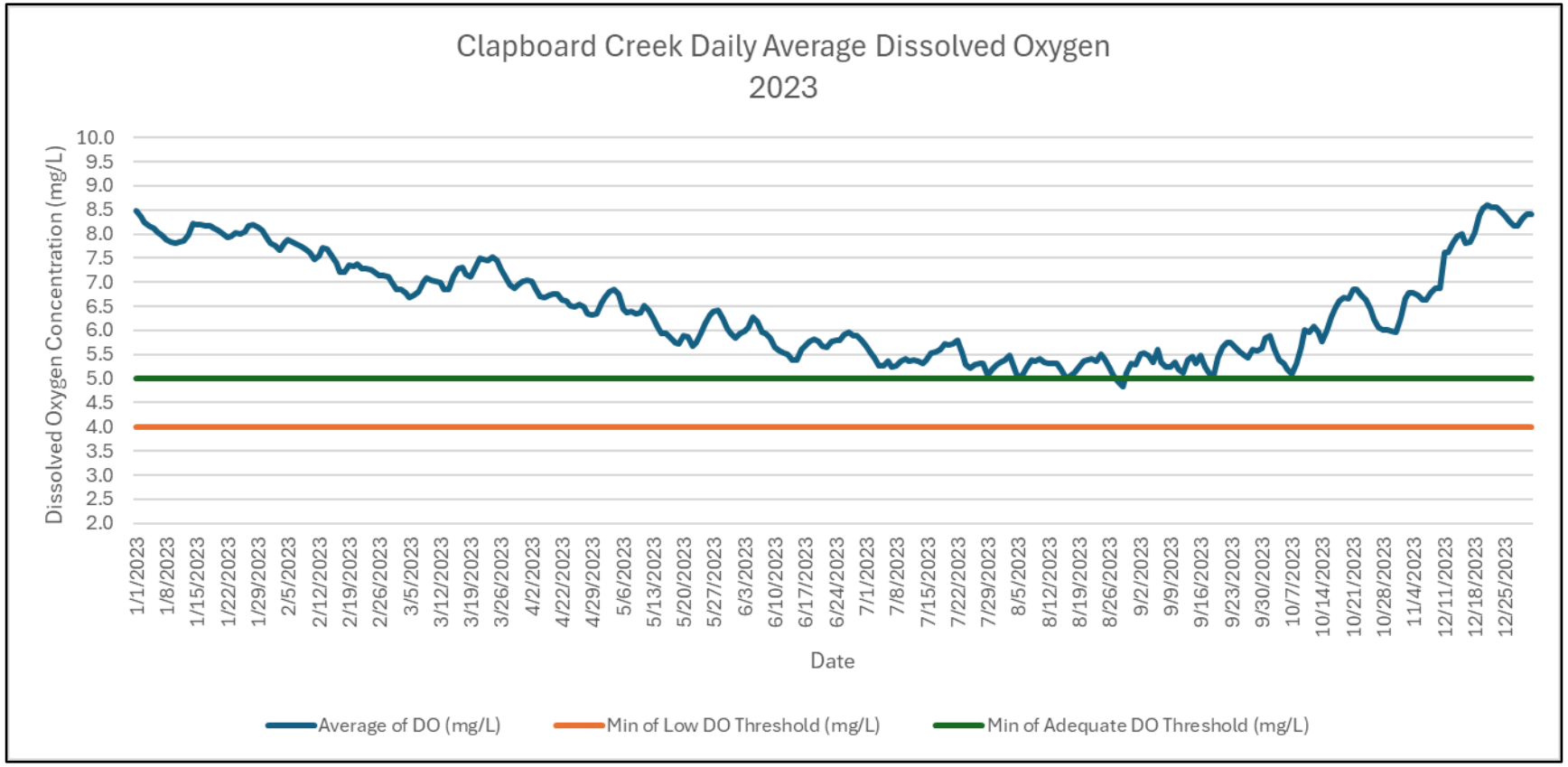
Source:
Big Talbot Island State Park | Florida State Parks

2022 DO ATTAINED THE SSAC



2022 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	0	0	5	0.091

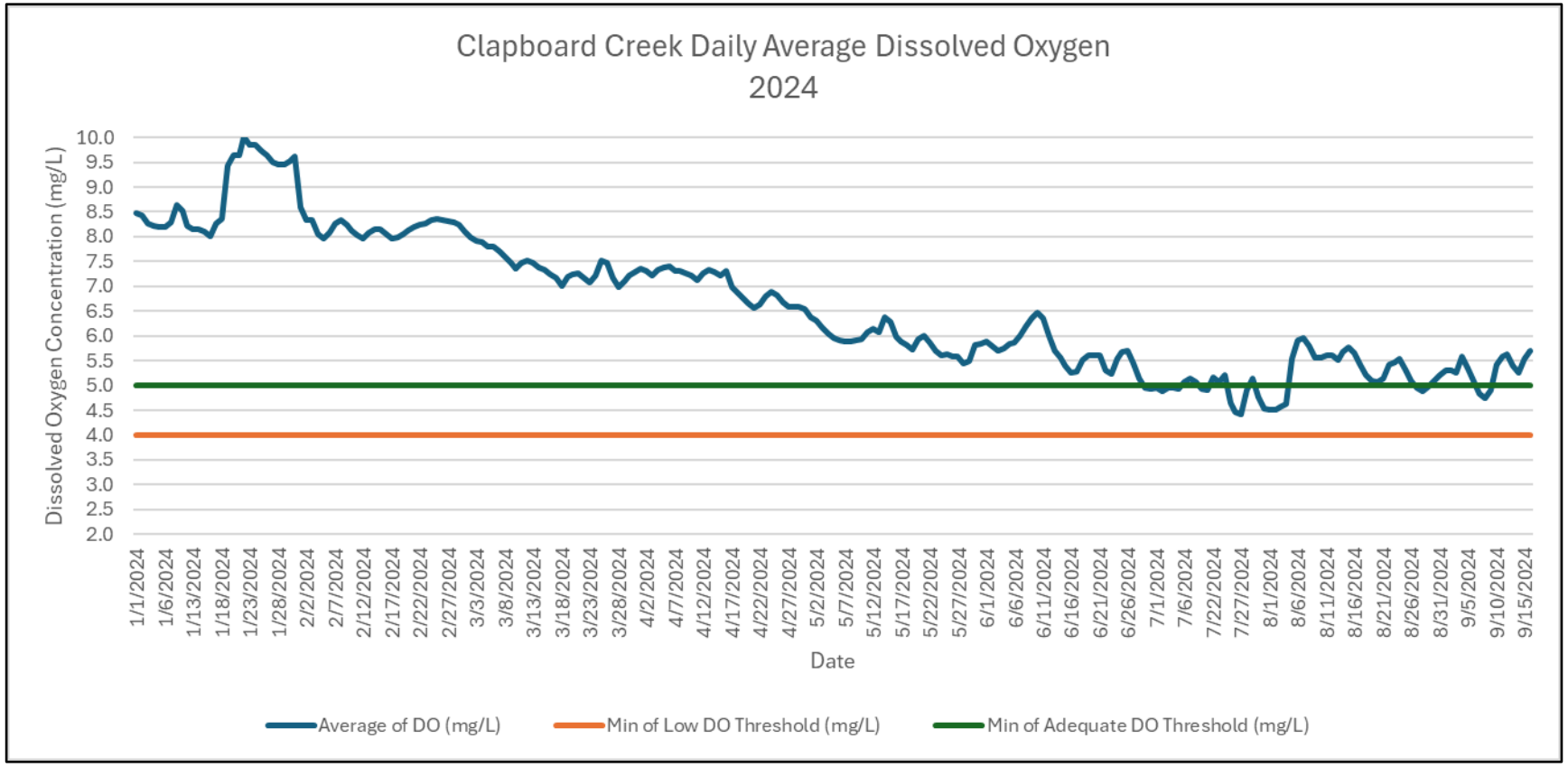
2023 DO ATTAINED THE SSAC



2023 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	0	0	2	0.036

2024 DO ATTAINS THE SSAC

THROUGH SEPTEMBER 16



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-Thru Sept. 16	0	0	6	4	15	0.551

HOT SPOT ANALYSIS DEVELOPMENT

OVERVIEW

Purpose:

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

Analysis is NOT intended to determine BMAP or TMDL compliance.

HOT SPOT ANALYSIS DEVELOPMENT

COMPONENTS OF THE HOT SPOT INDEX

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

- Total Nitrogen (TN) or Total Phosphorus (TP) concentration average.
- TN or TP 90th percentile.
- TN or TP standard deviation (SD).
- TN or TP percent frequency of samples over threshold.

Used Threshold Concentrations:

- TN – 1.16 mg/L.
- TP – 0.05 mg/L.

HOT SPOT ANALYSIS DEVELOPMENT

INDEX RANKING APPROACH

Station Concentration Average Rank

Compare to BMAP Threshold and overall BMAP average.

Rank 0: Station average below BMAP threshold.

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

Rank 2: Station average 2x above BMAP average.

Percentiles Rank

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

Rank 0: Station average below BMAP threshold.

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

Rank 2: Station average above 90th percentile.

SD Rank

Compare to overall BMAP SD.

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

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

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

Frequency Rank

Compare to BMAP Threshold.

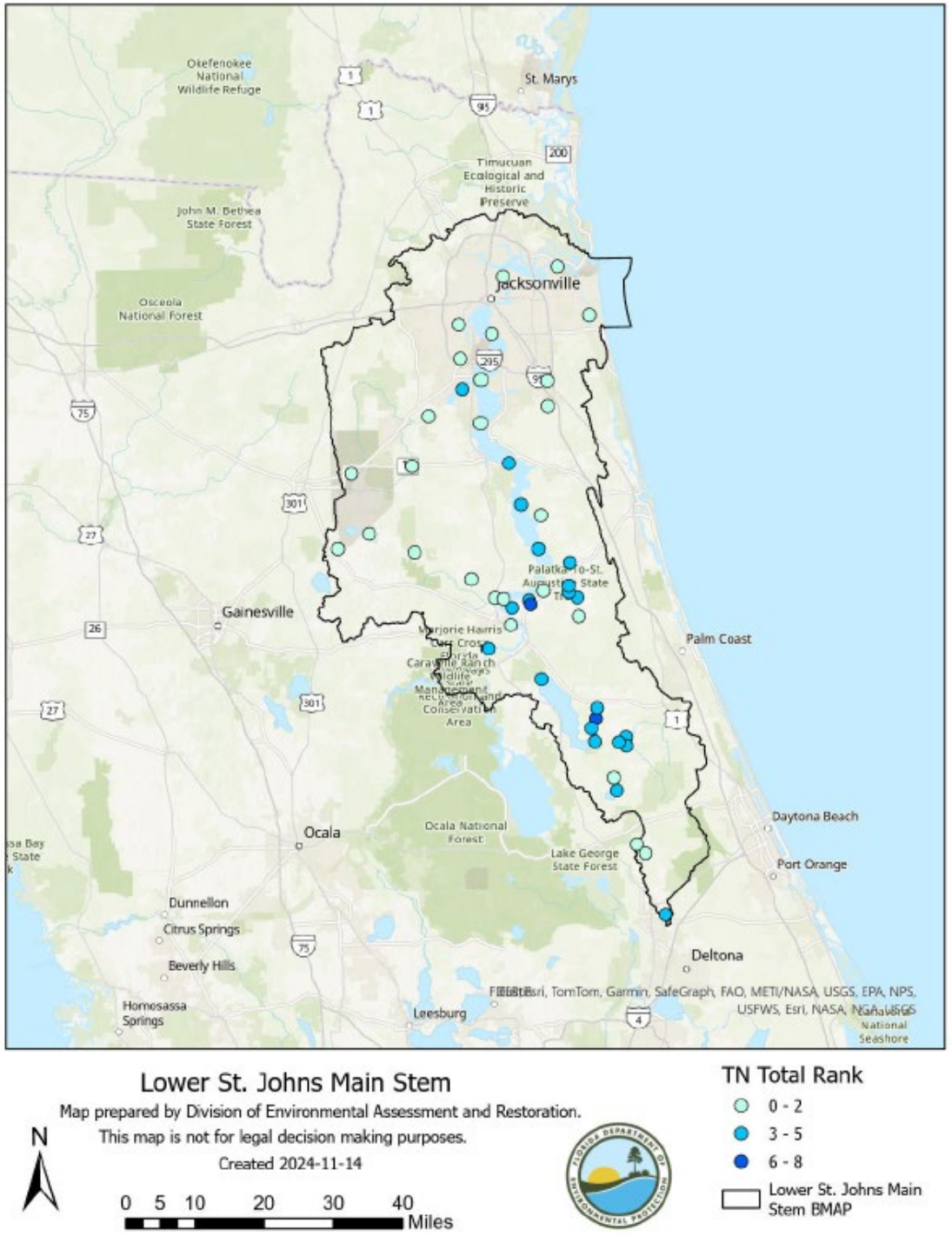
Rank 0: Station percent exceedance below 5% of samples.

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

Rank 2: Station exceedances over 50% of samples.

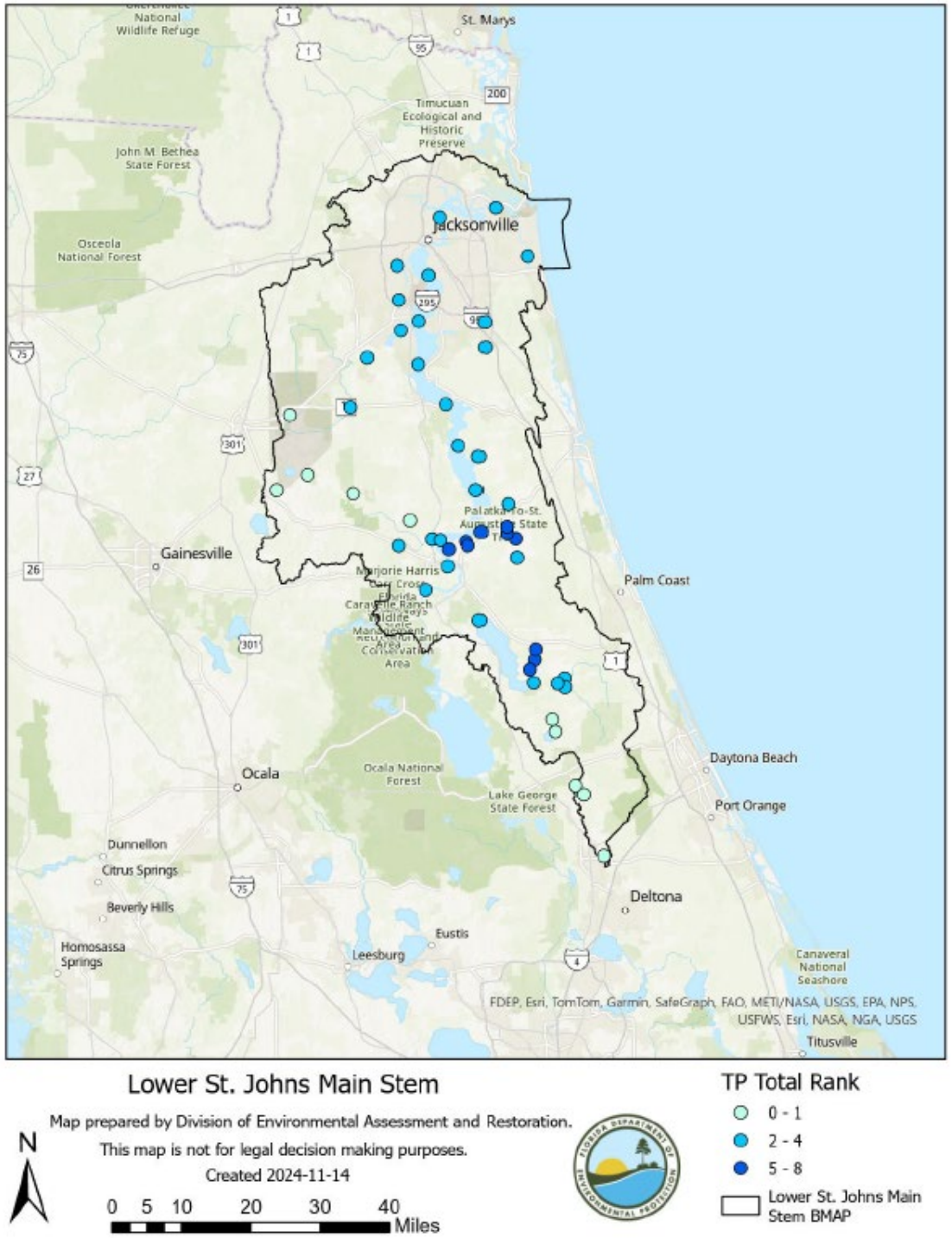
HOT SPOT ANALYSIS RESULTS

TN - LOWER ST. JOHNS RIVER MAIN STEM



HOT SPOT ANALYSIS RESULTS

TP - LOWER ST. JOHNS RIVER MAIN STEM



BILLS AND LEGISLATION

- Florida Watershed Restoration Act, section 403.067, Florida Statutes (F.S.).
- 2020 Senate Bill (SB) 712, Clean Waterways Act.
- 2023 House Bill (HB) 1379.
- 2024 HB 1557.

LEGISLATION HIGHLIGHTS
2020 CLEAN WATERWAYS ACT

- Promotes resilient wastewater infrastructure and utilities and looks at future growth.
- Requires local governments within a BMAP to develop wastewater treatment plans and/or onsite sewage treatment and disposal system (OSTDS) remediation plans that will be incorporated into the 2025 BMAP updates.

Source: South Florida Water Management District (SFWMD)

LEGISLATION HIGHLIGHTS

2023 HB 1379

- Requires BMAPs to be assessed and updated every five years as needed to include implementation milestones and other requirements.
- Requires a list of projects and strategies that will achieve the five-year implementation milestones to meet TMDLs.
- Requires agricultural cooperative regional water quality improvement elements.
- Requires domestic facilities discharging to a waterbody impaired for nutrients or subject to a BMAP or reasonable assurance plan (RAP) area to upgrade to advanced waste treatment (AWT) within 10 years.
- Requires applicants for new septic systems serving lots of one acre or less within BMAPs and RAPs to connect to central sewer if available, or if unavailable, to install an enhanced nutrient-reducing system or other wastewater system that achieves nitrogen reduction of 65%.
- Requires local governments to include BMAP projects in their comprehensive plans so these projects can be prioritized to achieve restoration benefits.
- Expands grant opportunities to accelerate project implementation.

LEGISLATION HIGHLIGHTS

2024 HB 1557

- Requires advanced waste treatment standard for reclaimed water within BMAPs if DEP determines that it is necessary.

- Requires domestic facilities (including private) to provide information to local governments developing wastewater treatment plans and OSTDS remediation plans within BMAPs or other restoration areas.

Photo Credit: SJRWMD

PROJECTS

2023 HB 1379 requires responsible entities to report on projects that meet the required five-year milestones.

- Where entity allocations and milestones do not already exist, they will be added in a future BMAP update after completion of model updates. Interim management strategies will be included in the 2025 update for these BMAPs.
- It is critical for each BMAP that entities plan for and report projects and project updates to the state through the STAR process.
- All projects should be included in the STAR report, even if a funding source has not been identified.
- Reporting projects in the STAR allows the state to evaluate funding needs and prioritize projects to promote maximum environmental benefit and to meet milestones.

INTERIM MANAGEMENT STRATEGIES
EXAMPLES

Stormwater Treatment - Traditional and Green Stormwater Best Management Practices (BMPs): Nutrient credit applies only to the portion above and beyond permit requirements.

Community Education and Outreach: Nutrient credit is available for implementing the Florida Yards and Neighborhood program; local codes and ordinances for fertilizer, landscaping, irrigation, and pet waste management; and public service announcements, informational pamphlets, stormwater website, and inspection program; and call-in number for illicit discharges.

Sports Turf: Owners/operators will be required to follow the upcoming Sports Turfgrass BMP manual to ensure fertilizers are managed responsibly.

Wastewater Treatment Facilities: Facilities must provide a plan with a list of projects to meet the Clean Waterways Act requirements, which includes upgrading to advanced waste treatment standards based on facility size and discharge method, including reuse distribution.

OSTDS: provide and implement a remediation plan to connect existing OSTDS where sewer is made available or upgrade to enhanced nutrient-reducing (ENR) systems. New development with lots of one acre or less may not install conventional OSTDS and must be connected to sanitary sewer or install ENR or other wastewater system that achieves 65% reduction in TN.

Golf Courses: Golf courses will be required to provide a nutrient management plan (NMP.) and implement BMPs.

BMAP UPDATE COMPONENTS

ADOPT BY JULY 1, 2025

- Management strategies.
- Future growth update.
- Incorporate the 2020 Clean Waterways Act, 2023 HB 1379, and 2024 HB 1557 requirements.
- Incorporate regional projects.
- Water quality data evaluation:
  - Evaluation of the monitoring networks.
  - Water quality trend analyses.
- Evaluate OSTDS provisions.
- Evaluate the need for AWT or other more stringent effluent limits for domestic wastewater facilities.


Source: SFWMD

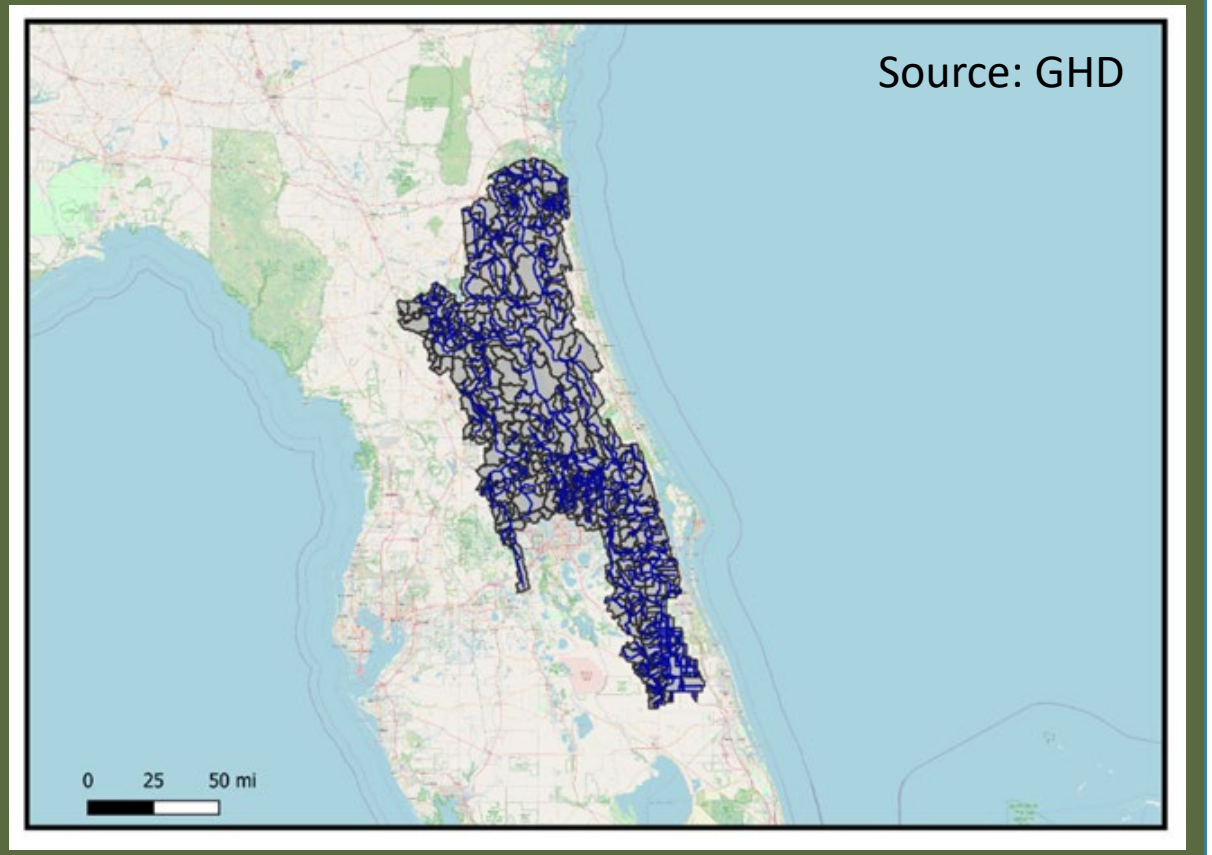

Source: SFWMD


Source: SFWMD

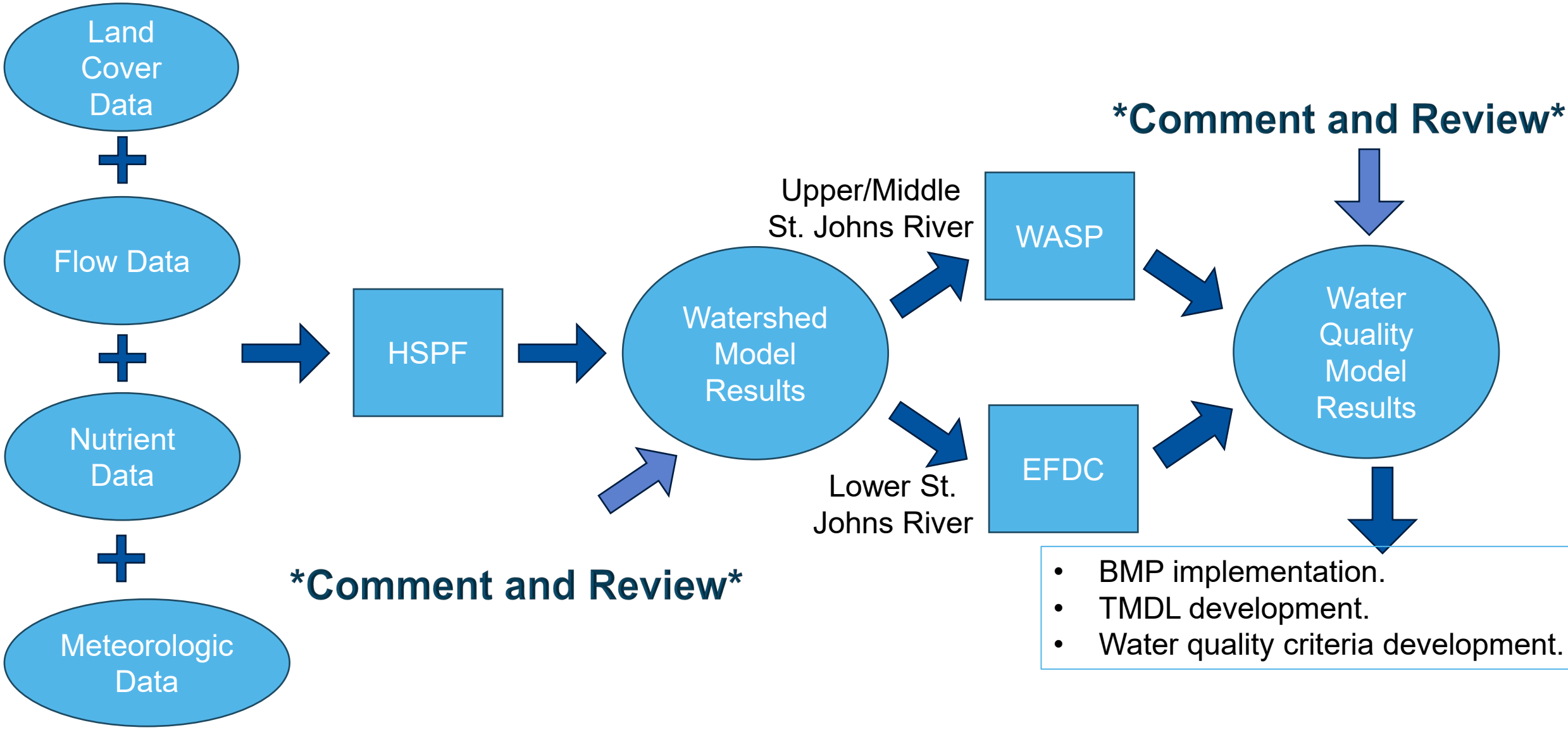
LSJR MAIN STEM MODELING

Modeling Update Effort Underway.

- Entire St. Johns River Basin.
- Updated Input Data.
- Watershed Model: Hydrological Simulation Program–FORTRAN (HSPF).
- Receiving Waterbody Model: Water Quality Analysis Simulation Program (WASP).
- Hydrodynamic Model: Environmental Fluid Dynamics Code (EFDC).



MODELING WORKFLOW



MODEL UPDATE SCHEDULE

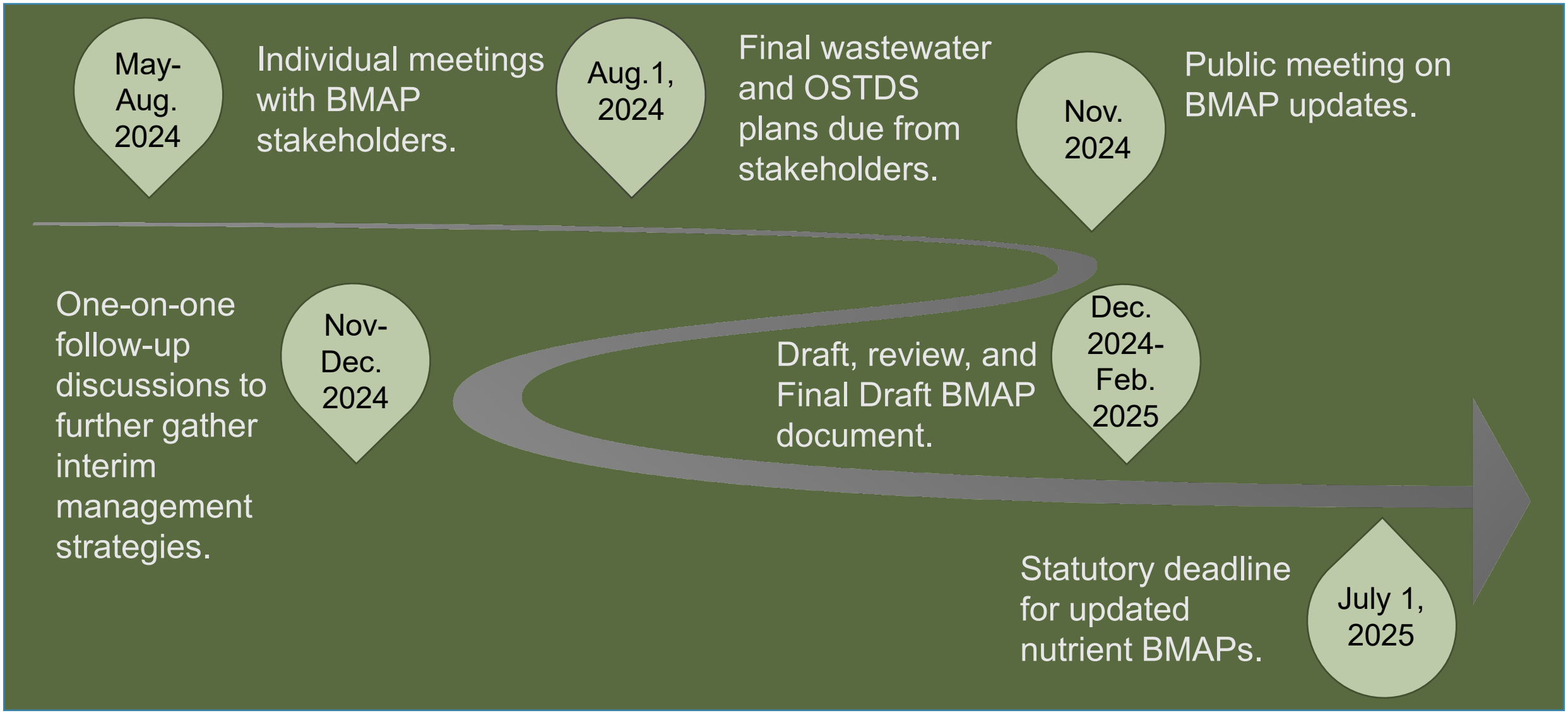
April 2024:
Modeling Document/Quality Assessment Plan

March 2025:
HSPF Model

July 2025:
EFDC Model

June 2026:
WASP Model

BMAP UPDATES TIMELINE



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

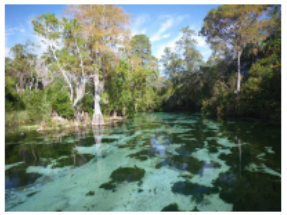
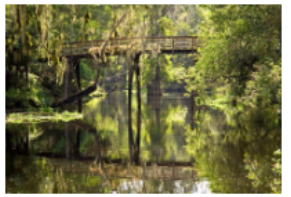
What is a Basin Management Action Plan?

A BMAP is a framework for water quality restoration that contains a comprehensive set of solutions to achieve the pollutant reductions established by a TMDL. Examples include permit limits on regulated facilities, urban and agricultu wastewater and stormwater infrastructure, regional projects and conservation programs designe established by a TMDL. A BMAP is developed with local stakeholders and relies on local input and implementation. BMAPs are adopted by Secretarial Order and are legally enforceable. BMAPs use that allows for incremental load reductions through the implementation of projects and manager monitoring and conducting studies to better understand the water quality and hydrologic dynam project implementation and water quality analyses. DEP continues to work with local and regiona projects necessary to meet reduction milestones to achieve the TMDLs and inform funding priorit

What's New: Upcoming Meetings and BMAP Prog

July 1, 2025 BMAP Update Progress

As required by the Clean Waterways Act, DEP must prepare updates to its nutrient BMAPs by July **Update Progress** dashboard provides a visual representation of progress towards the completio related sub-tasks leading up to the July 1, 2025 updates. Please visit the **BMAP Public Meeting Ca** meetings and subscribe to meeting notices.

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]

SUBSCRIBER PAGE

HOW TO CONTACT US

BMAPProgram@FloridaDEP.gov

THANK YOU

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Water Quality Restoration Program
Florida Department of Environmental Protection

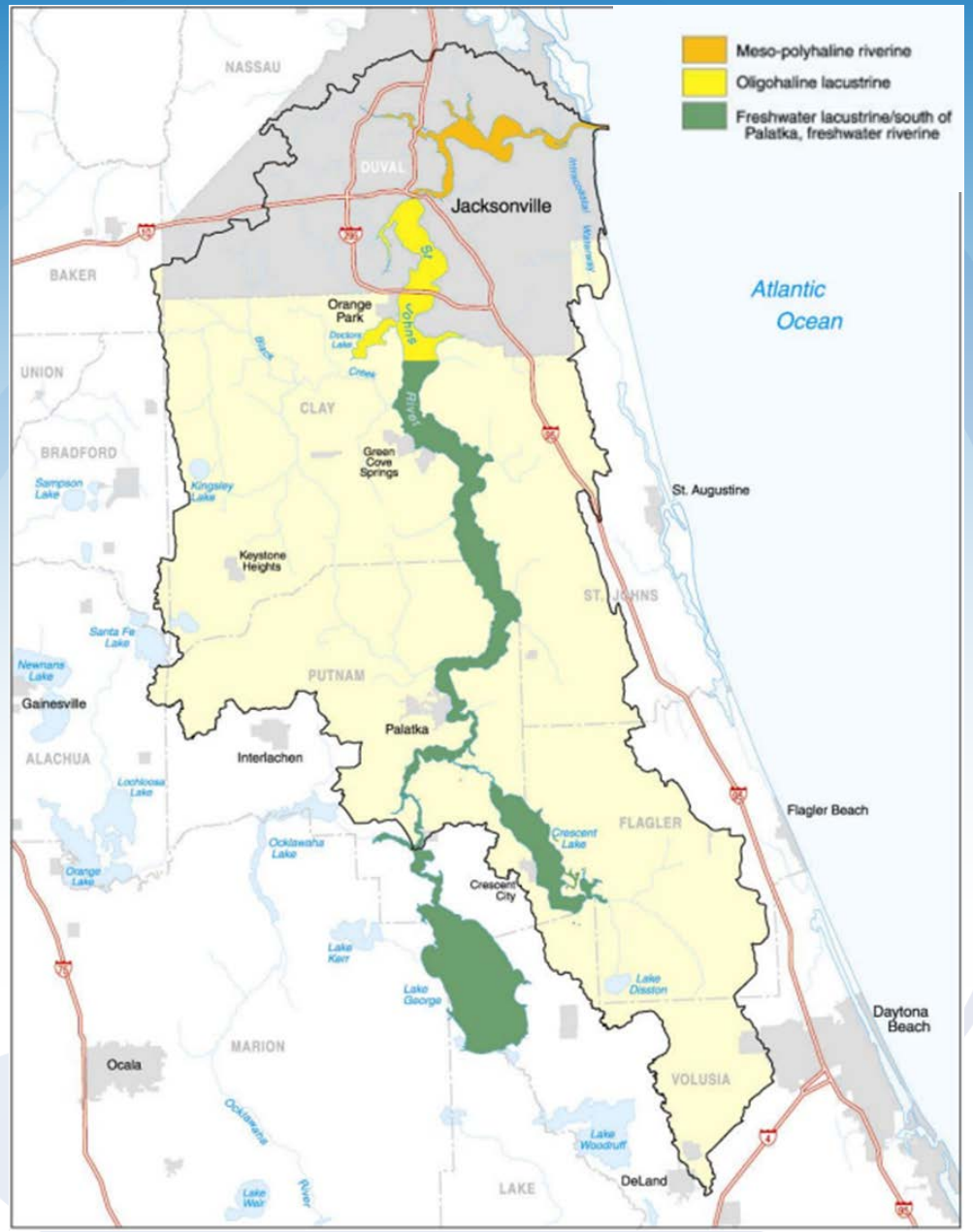
Contact Information:
850-245-8460
Moira.Homann@FloridaDEP.gov

2024 Lower St. Johns River Basin Management Action Plan (BMAP) Update

Lori McCloud
Supervising Environmental Scientist
Bureau of Environmental Sciences

St. Johns River
Water Management District

Lower St. Johns River Freshwater Goal

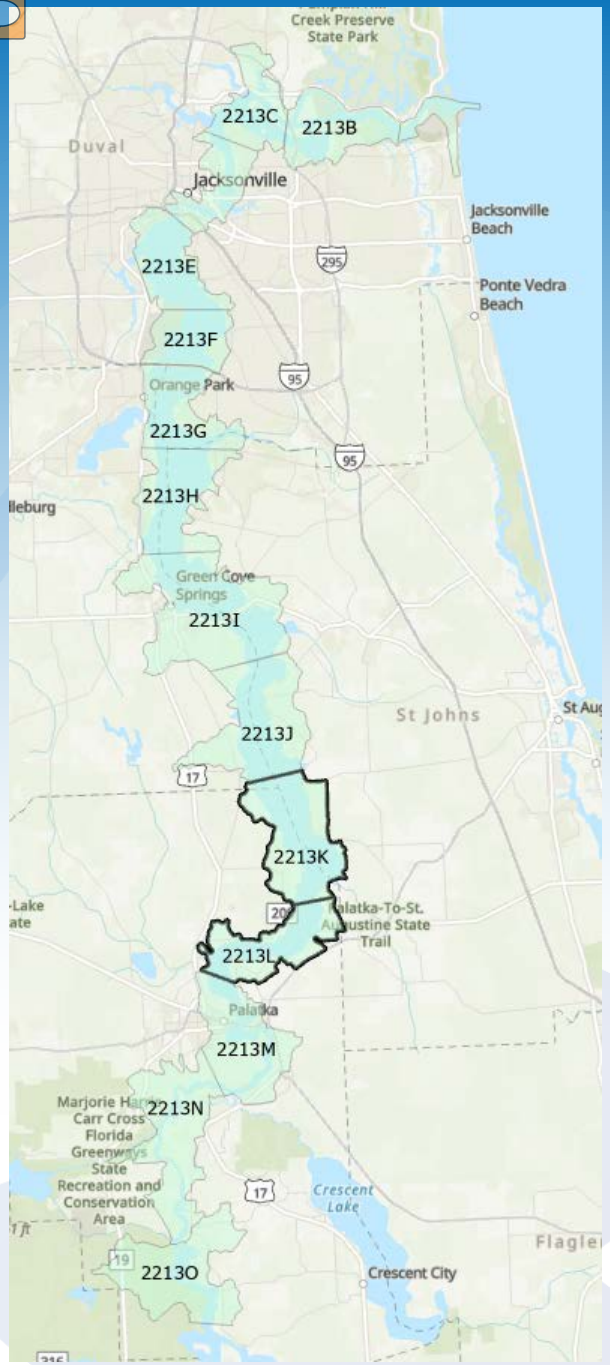


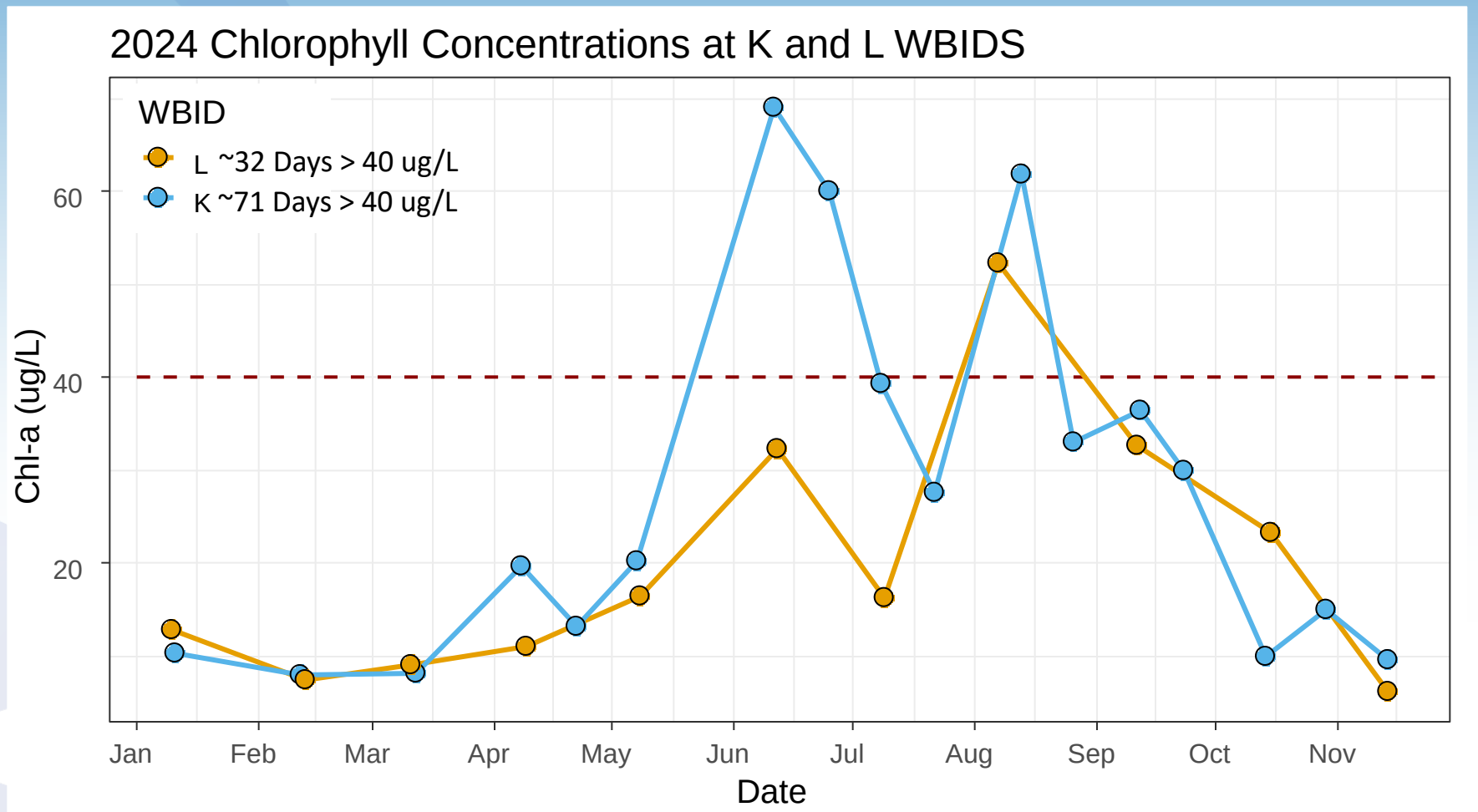
- When chlorophyll-a > 40 µg/L, algal blooms tend to be dominated by cyanobacteria
- Cyanobacteria are nutritionally poor, and potentially toxic
- Bad for food webs, bad for people
- Goal: Limit duration of chlorophyll-a concentrations > 40 µg/L to < 40 days in worst case WBIDS
- **40 µg/L for 40 days**

Lower St. Johns River Freshwater Reach Target

Worst case WBIDS - K and L

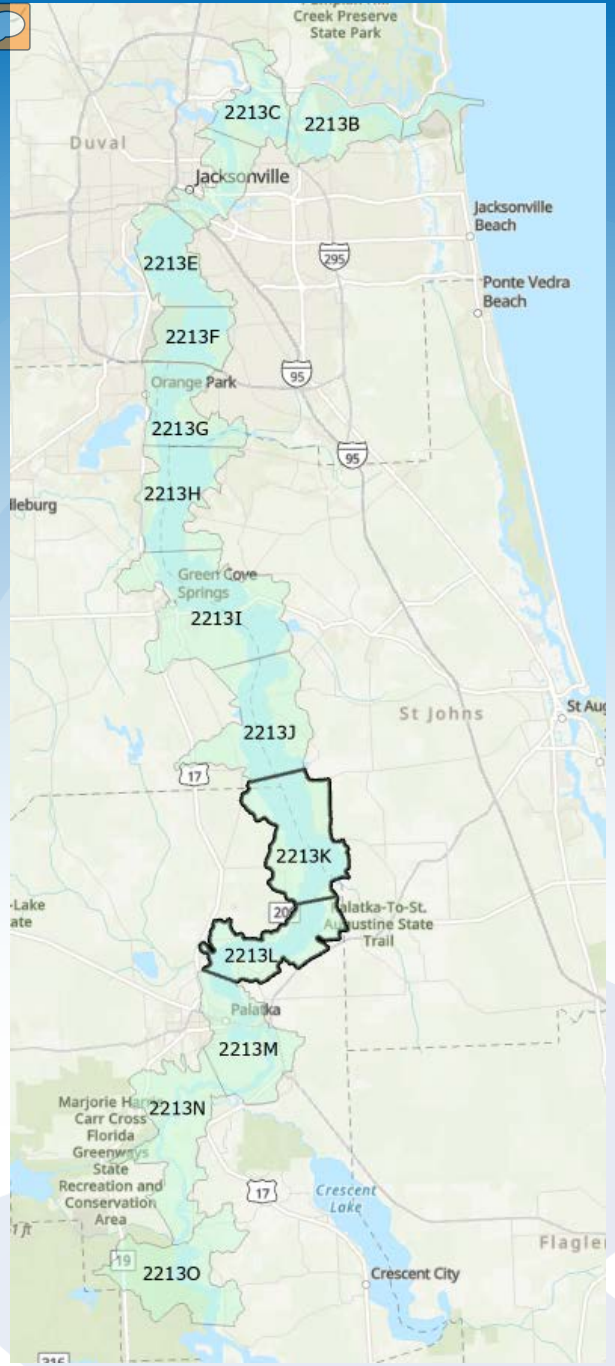
Goal = 40 µg/L for 40 days

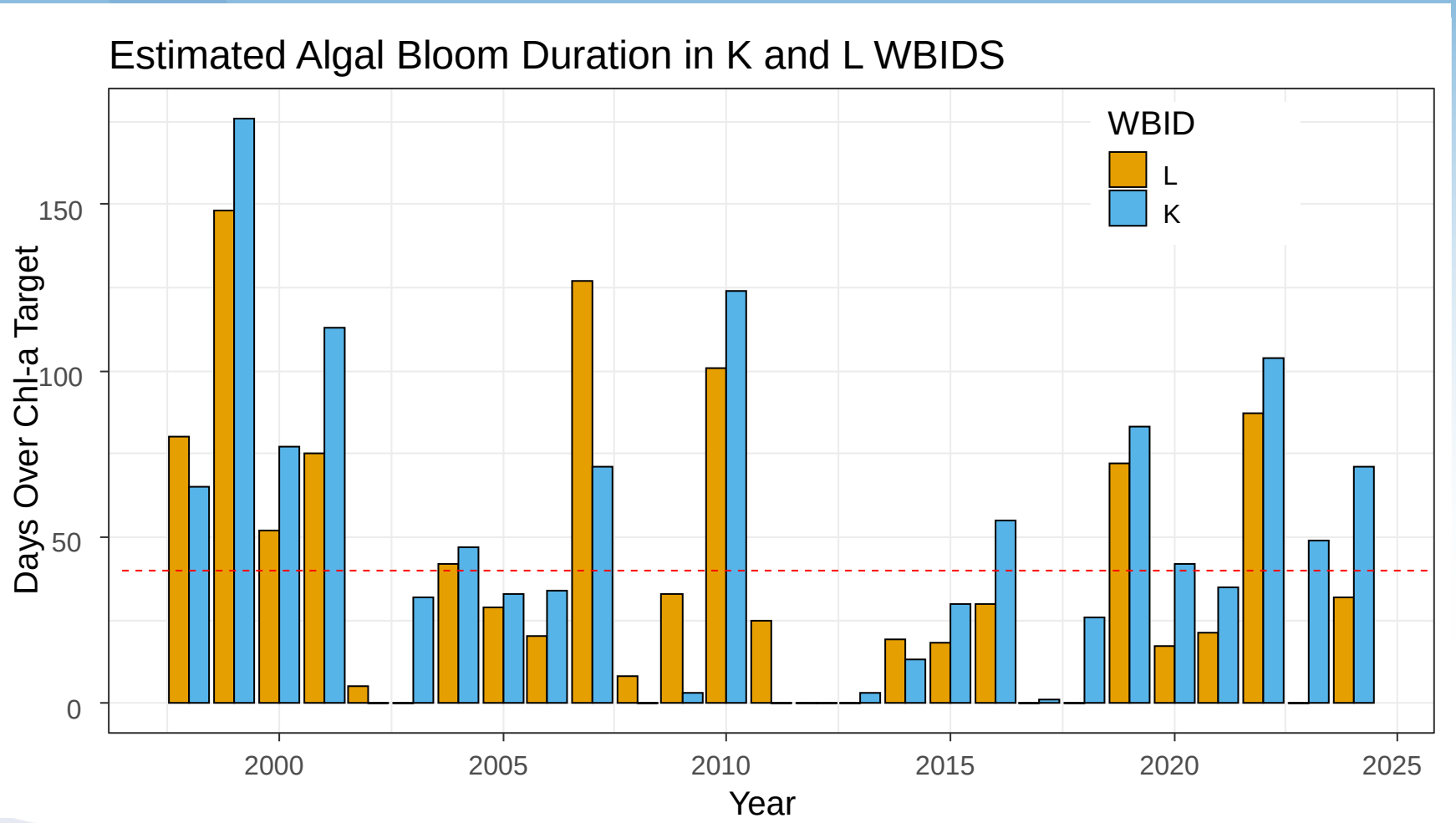




Lower St. Johns River Freshwater Reach Target

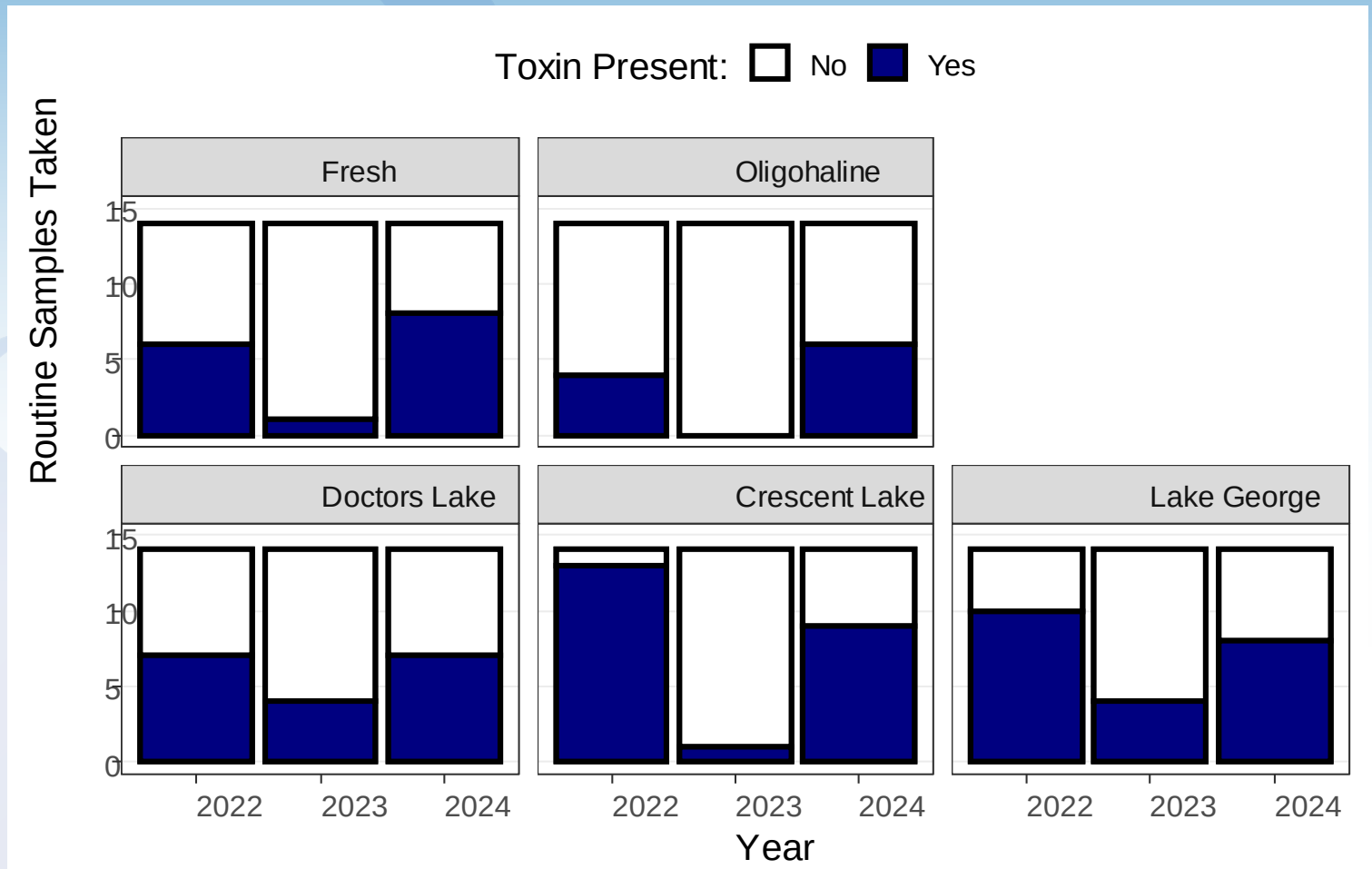
- Long-term decline in estimated bloom duration.
- 2024 Bloom duration longer than 2023 in both WBIDS
- Likely exceeded TMDL target





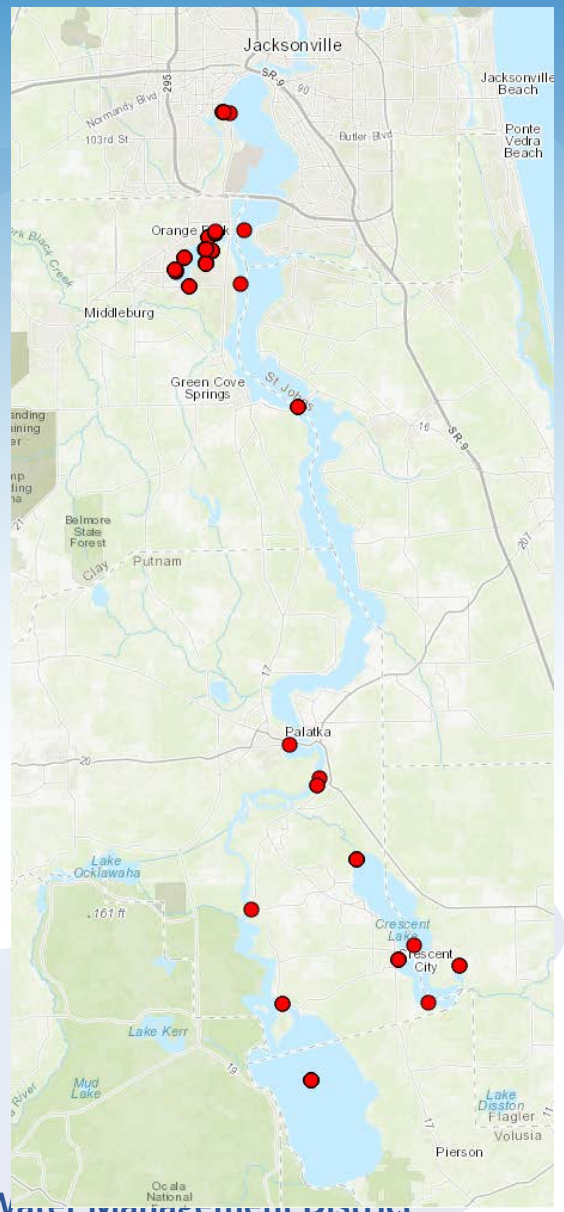
Harmful Algal Bloom Monitoring: Routine Sites

- More cyanobacteria dominant in 2024 than 2023
- More producing toxins in 2024 than 2023

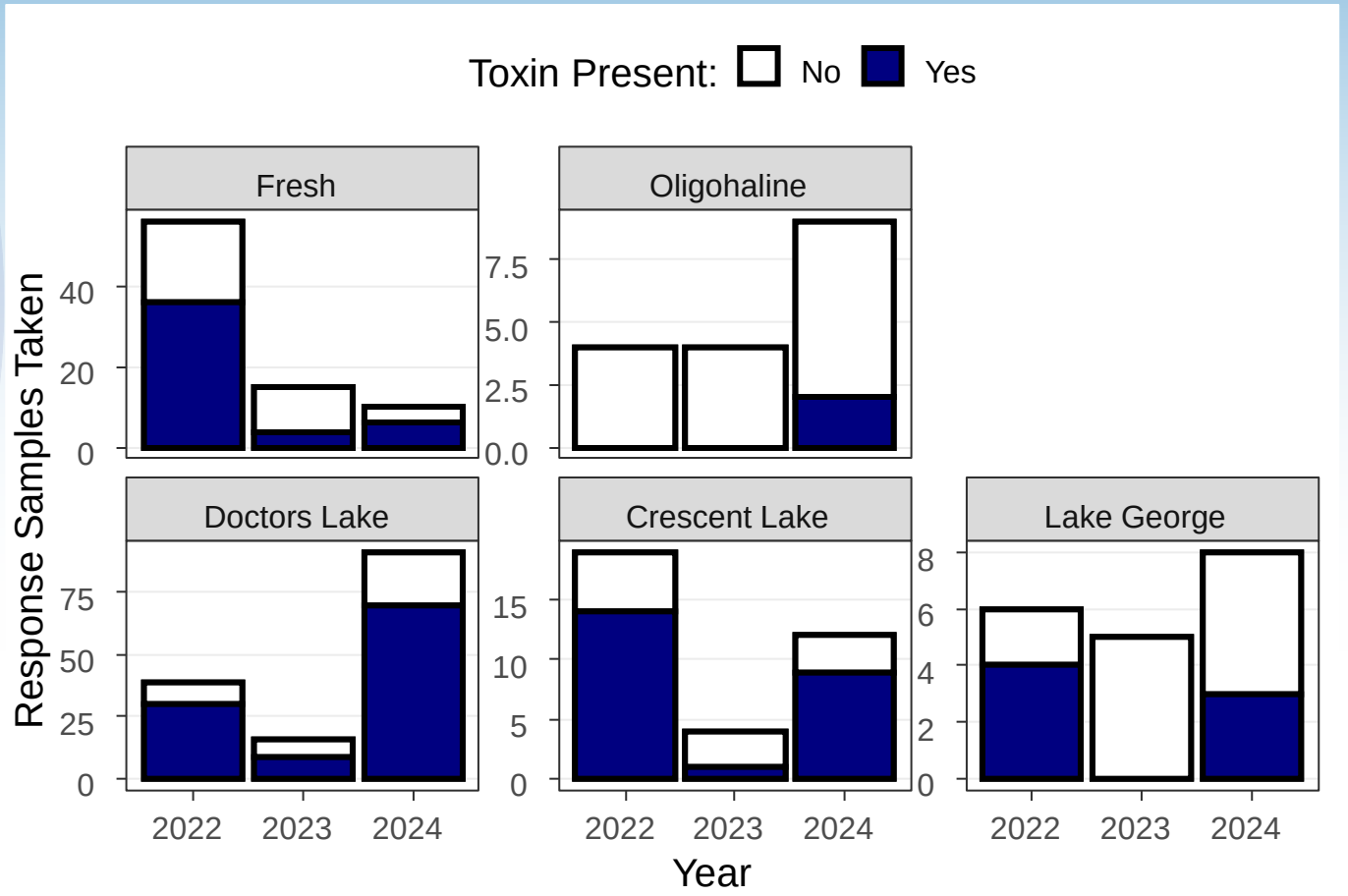


Harmful Algal Bloom Monitoring: Response Sites

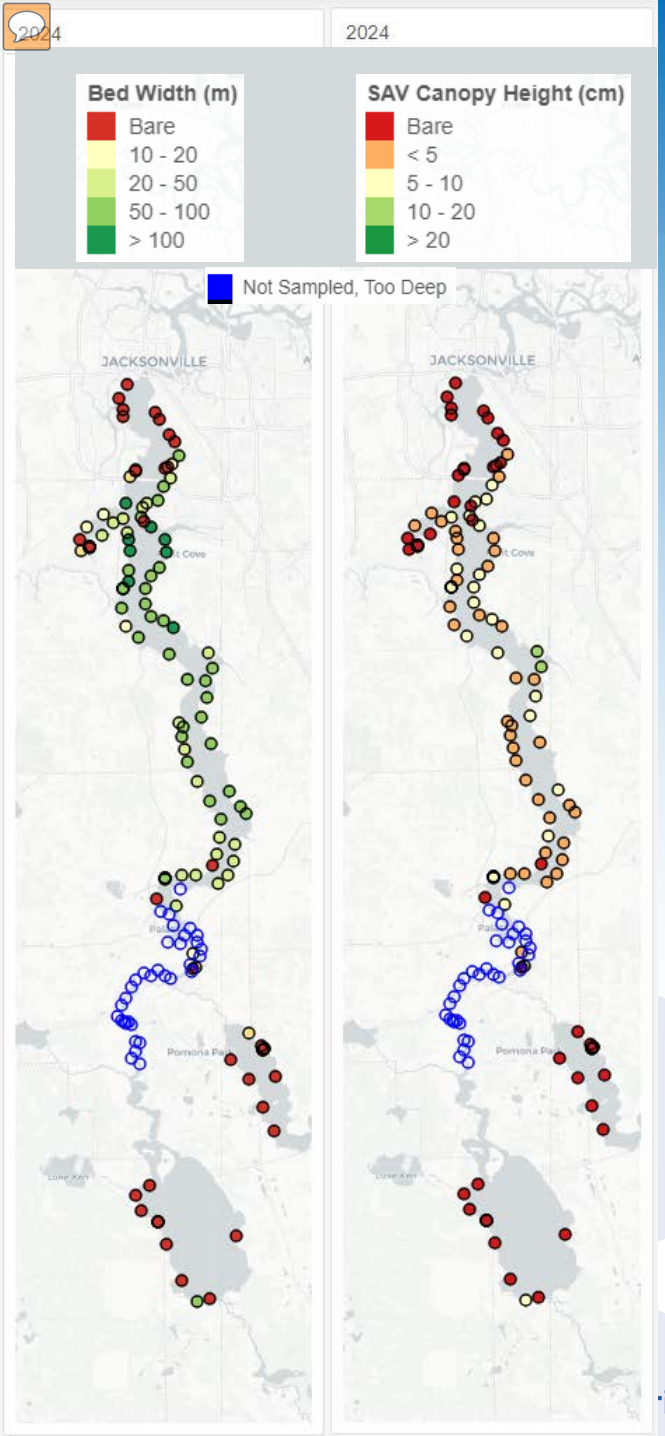
2024 Response Sample Locations



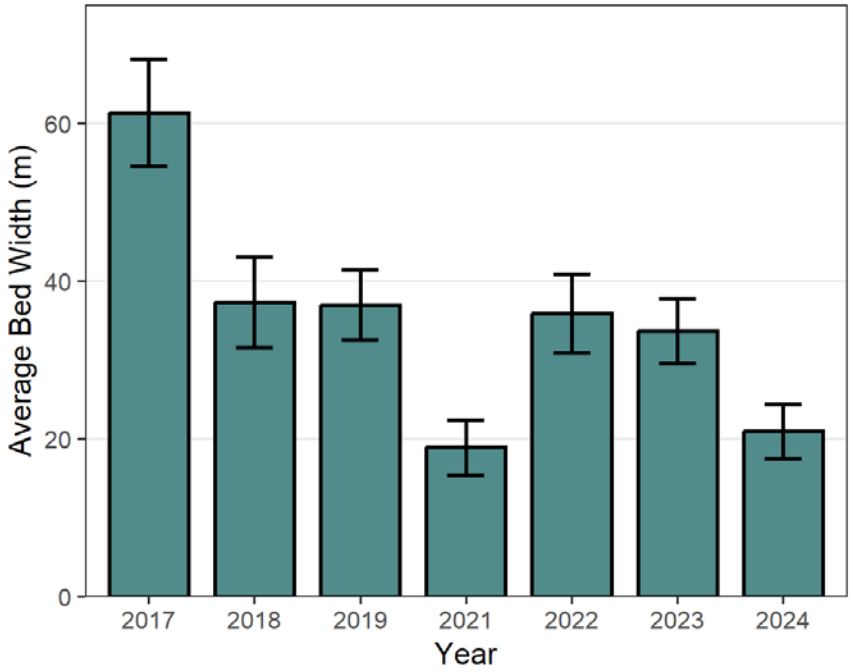
- More response samples taken in the oligohaline section and lakes in 2024 than 2023

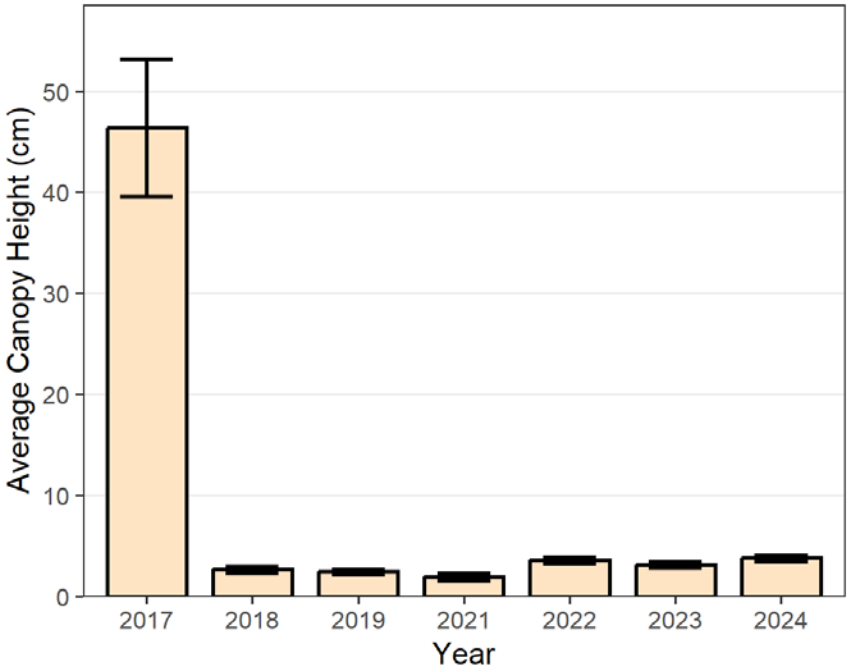


Submerged Aquatic Vegetation



- Canopy height, percent cover still low after Irma
- Bed width, percent occurrence lower than 2023
- High water levels potentially the cause
- 2024 SAV dashboard online

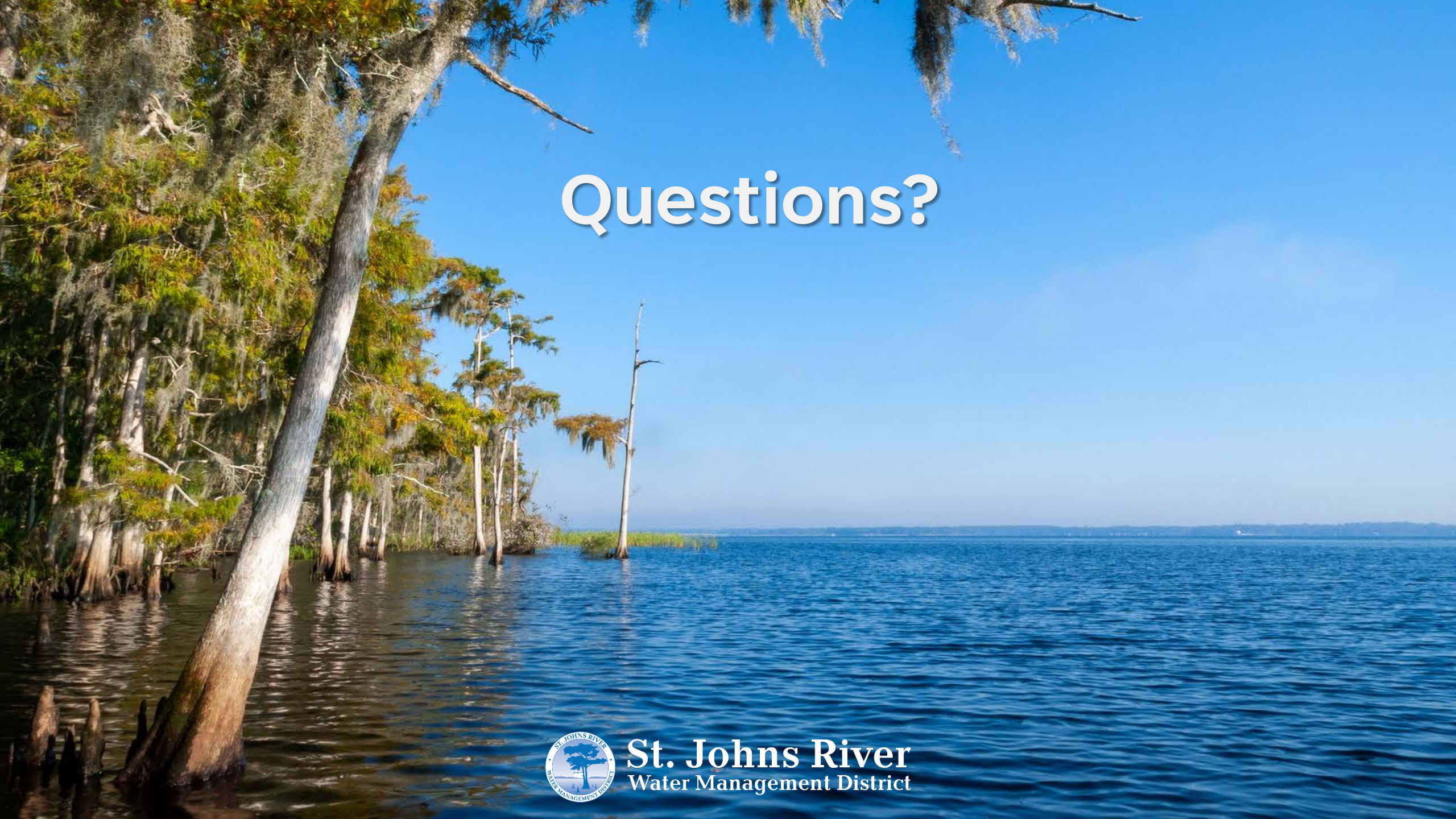




Summary

- Freshwater chlorophyll-a goal potentially exceeded
- Harmful algal blooms persist
  - Samples indicate more severe bloom season than 2023
- Submerged aquatic vegetation persists
  - Decline in bed width from 2023
  - Canopy heights remain short compared to pre-Irma

St. Johns River
Water Management District


Questions?
St. Johns River
Water Management District

Florida Department of Environmental Protection (DEP)
Lower St. Johns River Main Stem Basin Management Action Plan (BMAP)
Annual Meeting
December 12, 2024
SJRWMD Governing Board Room
4049 Reid Street, Palatka, FL

Attendees

Lisa Bally, Geosyntec
Tiffany Busby, Wildwood Consulting
Andy Canion, SJRWMD
Stacy Cecil, SJRWMD
Ed Cordova, JEA
Katie Craver, DEP-NED
Tony Cubbedge, SJCU
Dean Dobberfuhl, SJRWMD
Chris Farrell, Audubon Florida
Agustin Francisco, FDACS
Tom Frick, SJRWMD
Alexa Graf, ETM
Sanna Hodge-Butler, DEP-NED
Moira Homann, DEP
Chris Kurtz, DEP
Melissa Long, COJ
Celeste Lyon, RES
Erich Marzolf, SJRWMD
Shannan McAskill, SJRWMD
Lori McCloud, SJRWMD
Ray Pribble, ESA
Tim Rauch, U.S. Navy
Cassidy Reichert, COJ
Laura Savage, Georgia-Pacific
Jimmy Tomazimis, DEP
Corian Yandel, Naventure

Welcome and Introductions

The meeting started at 2:00 pm. Tiffany Busby welcomed everyone and thanked the St. Johns River Water Management District (SJRWMD) for the use of their meeting room and facilities. She noted that Moira Rojas Homann, the administrator of the BMAP Program, is also the DEP point of contact for the Lower St. Johns Main Stem BMAP and would be presenting. Lori McCloud will also be presenting from the SJRWMD.

Lower St. Johns River Main Stem Basin Management Action Plan (BMAP) Background

Moira Homann gave a PowerPoint presentation. She gave an overview of the BMAP process and implementation. She showed a map of the BMAP area, including the Crescent Lake Basin. The Crescent Lake Basin was not part of the original modeled and allocated area, so it was considered an upstream load although it is part of the BMAP. In the future, that area will be modeled and should expect to receive allocations. Allocating to the Crescent lake Basin means that there will be new responsible stakeholders as part of the BMAP; Moira showed a list of those entities. Some jurisdictions have exceedingly small areas within the boundary and, therefore, may not be large sources of loading.

Moira noted that both responsible parties and interested organizations are listed in the BMAP. If anyone would like for their organization to be listed as an interested party who was not previously listed, please contact DEP and we can add you to the list for the upcoming BMAP update, scheduled for 2025.

Moira reviewed the total maximum daily loads (TMDLs) and showed a map of the freshwater section and the marine section.

Moira summarized the annual reporting process called the Statewide Annual Report or "STAR" for short. She reviewed the number of projects reported through the end of 2023. The reporting process for 2024 is currently underway and project updates on 2024 activities are due by January 15, 2025.

Since the 2008 BMAP adoption, there have been 297 completed projects and 23 ongoing projects through 2023. These projects are mapped on the StoryMap related to the STAR.

There were no questions on these topics.

SJRWMD Annual Progress Update

Freshwater Chlorophyll-a Target

Lori McCloud gave a PowerPoint presentation. She reviewed the freshwater chlorophyll-a goals based on the TMDL. The goal is to limit the duration to less than 40 days of chlorophyll-a concentrations greater than 40 micrograms per liter (ug/L) in the worst case waterbody identification areas (WBIDs). The two worst case freshwater main stem WBIDs are the ones ending in K and L (WBIDs 2213K and 2213L).

Lori reviewed the 2024 results of the measured chlorophyll-a concentrations. WBID L had around 32 days of concentrations over 40 ug/L, so that WBID met the criterion. However, WBID K (Racy Point) had around 71 days of concentrations over 40 ug/L, so the freshwater target was not met in 2024.

Taking a step back to look at a longer time series, Lori showed a figure that showed the estimated number of days the target was exceeded since 1998; typically, WBID K experiences longer blooms than L, but overall, we see a long-term decline in bloom duration for both WBIDs. That said, 2024 experienced longer blooms than 2023, and we have exceeded the chl-a target every year in WBID K since 2018.

Algal Sampling/Harmful Algal Blooms

Lori also reviewed the results of the algal sampling that the SJRWMD performed in partnership with DEP on four sites in the Lower St. Johns, plus an additional site in Lake George. The sites are sampled every two weeks during the active bloom season (April through October). Overall, there were more cyanobacteria dominant in 2024 than 2023 and more producing toxins in 2024 than in 2023.

The district also conducts algal response sampling based on reports from the public or staff on observed blooms. Lori showed the results of the 2024 response samples. The oligohaline portion of the river had more response samples taken this year (particularly in Doctors Lake), as well as more toxins present in collected samples.

Submerged Aquatic Vegetation

Lori reported that the SJRWMD staff completed their annual SAV summer survey this past summer for the Lower Basin, and sites visited are displayed with results on maps. The blue circles on the figures were sites that were too deep to sample, and there is a very low likelihood of SAV at these sites. The map on the left is bed width, color coded from red--which is bare--to green--where bed width is over 100 meters (m). The next map showed canopy height in centimeters (cm), again with red showing bare areas and green showing those sites that had canopy height over 20 cm; both bed width and canopy height metrics continue to be low following the 2017 Hurricane Irma.

Lori added that the bar graphs only represent the freshwater reach, where you can see 2024 bed width was significantly lower than 2023, and not a lot of change in canopy height. Water levels have continued to be high throughout the basin, and in fact most of the river, and the 2024 hurricanes have exacerbated that

issue even more. The SJRWMD has deployed their 2024 SAV dashboard online, which can be found at https://www.sjrwmd.com/static/waterquality/SAV_Dashboard_Simplified_v2_2024.html.

Tiffany asked if there is information about why the water levels have continued to be high in the basin over multiple years. Is that because the ocean height is higher and is stacking water up or is it because the upstream areas are wetter and releasing more water downstream into the Lower Basin? Lori responded that the upstream areas are releasing more water and keeping the water levels high.

DEP Annual Progress Update

Marine Section Dissolved Oxygen Compliance

Tiffany reviewed the dissolved oxygen analysis results for the marine section. She noted that the Clapboard Creek station is a continuous station that is labor-intensive to maintain. The DEP Regional Operations Center (ROC) and Katrin Villanger specifically manages and maintains the site as well as uploads the data. As a continuous sensor, the site generates a great deal of data. Tiffany expressed her appreciation for Katrin and the ROC's support for this site and the difficulties of maintaining an oxygen sensor in a saline and dynamic environment.

She noted that the goal of the marine section TMDL and the BMAP is to maintain healthy oxygen conditions for aquatic animals that are most sensitive to low oxygen conditions. Dissolved oxygen concentrations above 4.0 milligrams per liter (mg/L) but below 5.0 mg/L are specifically calculated for their duration, with less tolerance for lower concentrations. This fractional exposure measure should remain below 1.0 for the calendar year.

Tiffany showed the results at the Clapboard Creek site and the continuous monitoring station there maintained by DEP. In 2022, the site had five days under 5.0 mg/L with a fractional exposure level of 0.091, which met the TMDL. In 2023, the site had two days with low dissolved oxygen for an annual fractional exposure of 0.036, which met the TMDL. In 2024, the site had 20 days of low dissolved oxygen, including six days in the 4.4 to less than 4.6 concentration and 4 days in the 4.6 to less than 4.8 concentration. The fractional exposure for 2024 through September 16, 2024, was 0.551, which met the TMDL if there were not significant additional days of low dissolved oxygen in the remainder of the year. Historically, the low dissolved oxygen conditions occur in the warmest months.

Hot Spot Analysis

Tiffany reported that DEP has been performing a hot spot analysis across all the nutrient BMAPs using similar methodologies. The analysis is *not* intended to determine BMAP or TMDL compliance. It is designed to highlight areas where projects might have stronger results or to promote additional investigation. Tiffany thanked DEP and Jessica Fetgatter specifically for their support in running the analysis.

Tiffany reviewed the four statistics that are calculated for the BMAP overall and used to compare against the station average. If there are nutrient TMDL concentrations, those are used to compare to the station average. Since the Lower St. Johns Main Stem TMDLs are load-based and not concentration-based, the hot spot analysis used the Crescent Lake TMDL TN and TP concentrations for the purpose of the analysis. Those concentrations were 1.16 mg/L for total nitrogen (TN) and 0.05 mg/L for total phosphorus (TP). Use of these proxy concentrations should make clear that the hot spot analysis is *not applicable for any sort of compliance measure*—it is intended to highlight sites with the areas of relatively high nutrient concentrations compared to others in the basin.

Two maps were shown with the stations color-coded for how they ranked in the results. The sites with the highest concentrations for TN varied from the areas of highest concentration for TP. However, most of the sites with the highest ranks were in the freshwater section.

Chris asked if there were enough data to perform the analyses. Tiffany responded that when performing these kinds of analyses, the process is very data hungry, and more sites and more frequent sampling are always welcome. However, in the initial run of the hot spot analysis, more limited sites were used and the SJRWMD identified numerous additional ambient sites that had enough data and frequency of samples to add to the analysis. DEP then modified the analysis to include those additional sites. We are grateful to the SJRWMD for their sampling network and their contributions to the effort. DEP did have enough data to perform the analysis, but we welcome even more spatial information, particularly in the various tributaries of which there are many in the Lower Basin. Dean Dobberfuhl added that the SJRWMD has targeted its efforts to get the critical data needed. Given the number of tributaries, it is unlikely that all the inflows could be regularly monitored.

Melissa asked for clarification of why the Crescent Lake TMDL concentrations were used in the hot spot analysis and expressed concern that others might see the analysis and be tempted to use the concentrations as compliance measures. Tiffany responded that the nature of the analysis required TN and TP concentrations with which to compare the station concentrations. Since the TMDLs for our BMAP are loads, it was decided that the most straightforward approach was to use the Crescent Lake TMDL concentrations. If we used the generic lake and freshwater stream numeric nutrient criteria (NNCs), that might imply they were compliance measures, which is not appropriate. Also, the NNCs for estuaries were developed individually, and the unique nature of the Lower St. Johns River means that there is no matching estuary NNC to apply. This analysis could be rerun with any TP or TN concentration, so the Crescent Lake concentrations seemed like the most efficient way to run the stations without adding unneeded complexity to a hotspot analysis--not a compliance measurement.

2025 BMAP Update—Additional BMAP Provisions

Moira summarized the recent bills and legislation, including bills in 2020, 2023, and 2024 that directly affect BMAPs and nutrient loads. Moira also reviewed examples of interim management strategies that can be used by the lead entities where and in other BMAP areas in the St. Johns Basin while we await updated model results. Tiffany noted that she hopes everyone will leave the meeting with an understanding that recent legislation has brought significant new regulations to domestic wastewater facility discharges, reuse water, and new onsite sewage treatment and disposal systems (OSTDS), in addition to the new stormwater rules for urban stormwater treatment.

Moira encouraged all the responsible lead entities to continue to report annually and to add projects to the BMAP list in the DEP BMAP Portal. Even where entities are meeting their allocations, implementing the interim measures and new projects will reduce loads to tributary and smaller waterbodies in the Lower Basin, some of which are impaired themselves, and well as assist in reducing loads to the main stem. Also, these efforts will help in abating loads from future growth. While the new stormwater rules are designed to help reduce new loading from new development, loading from site development is still greater than zero.

Moira noted that another meeting is planned to discuss the draft BMAP prior to its adoption. She encourage everyone to sign up for GovDelivery notices for notifications of future BMAP meetings. She also reminded everyone to complete their BMAP reporting by January 15, 2025, when the BMAP Portal will close.

Ed asked about the slide that said DEP could require more than advanced wastewater treatment (AWT) from domestic wastewater facilities—what does that mean and where would that apply? Moira responded that, yes, the revised statutes allow for DEP to require more than AWT if the situation requires it.

Someone asked who pays for OSTDS upgrades—is that born by the homeowner or does the state pay for the upgrades? How are the sites chosen for subsidies? Moira responded that local governments are invited to submit applications for DEP funding to create a local program that subsidizes the cost of OSTDS upgrades. The amount of subsidy is up to the local entities and how they set up their program. We have seen examples where 100 percent of the costs were covered and others where part of the cost is partially subsidized. The sites that are of highest priority based on the statute are parcels of one acre or less. Tiffany added that the local program can determine their priorities and target their funds towards certain areas or sites with certain conditions such as lot size. The local program will determine which sites are eligible for funding and if the funds are available.

Someone asked why the emphasis is on improvements to septic systems—are our rivers really that unhealthy and full of feces? Moira responded that excess nutrients are unhealthy for humans but are unhealthy for aquatic systems at even lower nutrient concentrations. The Lower Basin is a Class III water, so the goal is to have healthy fish and aquatic populations as well as to have the waters be fishable and swimmable for human recreation. The waters here are not meeting that standard due to excess nitrogen and phosphorus. Tiffany added that the concentrations that cause human health problems are higher than those that cause issues on an ecological scale. Moira noted that, as Lori presented, the algal blooms that can be the results of too high nutrient concentrations can also cause human health problems when harmful algal blooms occur, which can make people sick.

Tiffany added that the focus is not just on OSTDS. Today, we have summarized recent legislation that has an important component to reduce loading from new OSTDS. However, as a prior slide showed, we have more than 300 completed and ongoing projects that have addressed loading from many diverse sources. These include the JEA upgrade of the largest single domestic wastewater facility in the basin. The Georgia-Pacific industrial treatment upgrade is included. Many urban stormwater treatment projects are part of the project list. The agricultural producers' requirement for best management practice (BMP) enrollment or monitoring is also part of the management actions. In addition, there is a targeted agricultural cost share program to subsidize advanced agricultural BMPs that producers are not required to fund themselves. So, we have assigned great responsibility and great expense to many nutrient sources. We have only recently had more requirements on OSTDS, so we are talking a lot about that today, but by no means are we achieving restoration solely through reductions in OSTDS loads nor are those the only expenses being outlaid.

Ed asked if DEP has ever reallocated entity assignments in an existing BMAP. Tiffany responded that, yes, DEP has remodeled areas such as Lake Jesup, the Indian River Lagoon, and the Caloosahatchee River and adjusted allocations based on the newer model. Here, we need to consider too the upstream loads and to focus the revised allocations on the internal loads to the Lower Basin, so the process needs to be thoughtful and with local input. Dean added that it will be helpful to have the whole basin modeled, so we have information on the upstream inputs, which we did not previously have in a comprehensive manner.

Stacy asked if DEP has talking points that summarize the new stormwater rule. Moira responded that she expects there will be language in the 2025 BMAP that describes the effects of the new stormwater rule.

Adjournment

The meeting ended at 3:40 pm.

Action Items

All--If anyone would like for their organization to be listed as an interested party who was not previously listed, please contact DEP and we can add you to the list for the upcoming BMAP update, scheduled for 2025.

All—If you are interested, the SJRWMD has deployed their 2024 SAV dashboard online, which can be found at https://www.sjrwmd.com/static/waterquality/SAV_Dashboard_Simplified_v2_2024.html#welcome.