



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



AGENDA

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





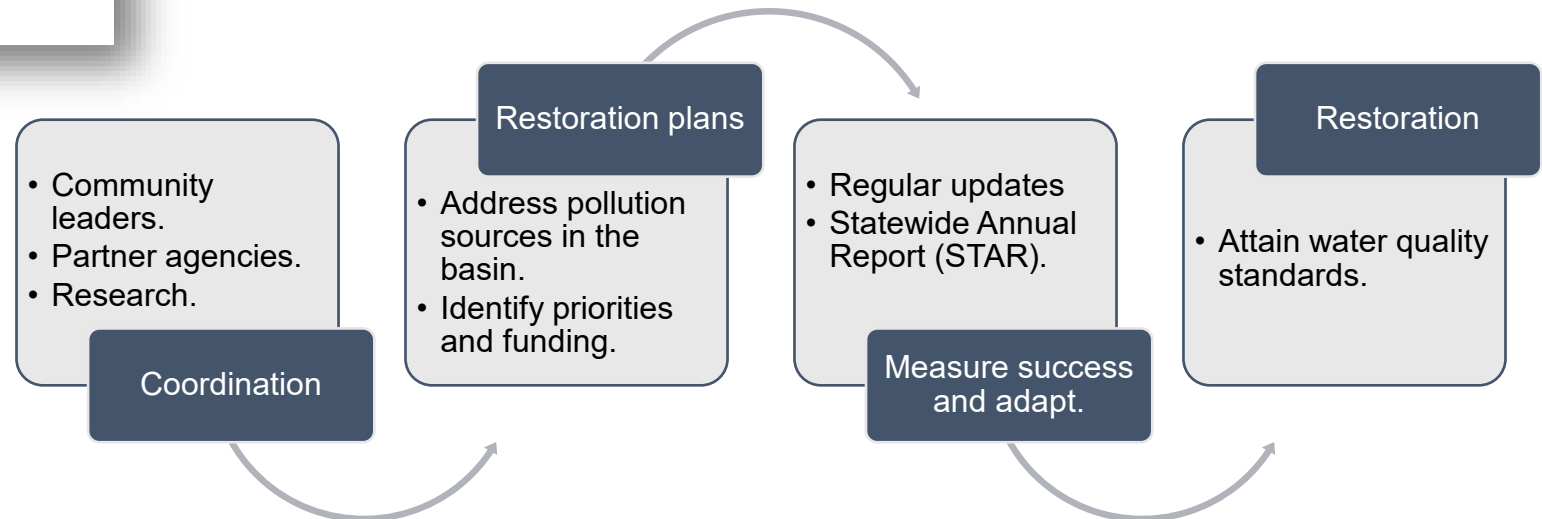
BASIN MANAGEMENT ACTION PLANS (BMAPs)



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.

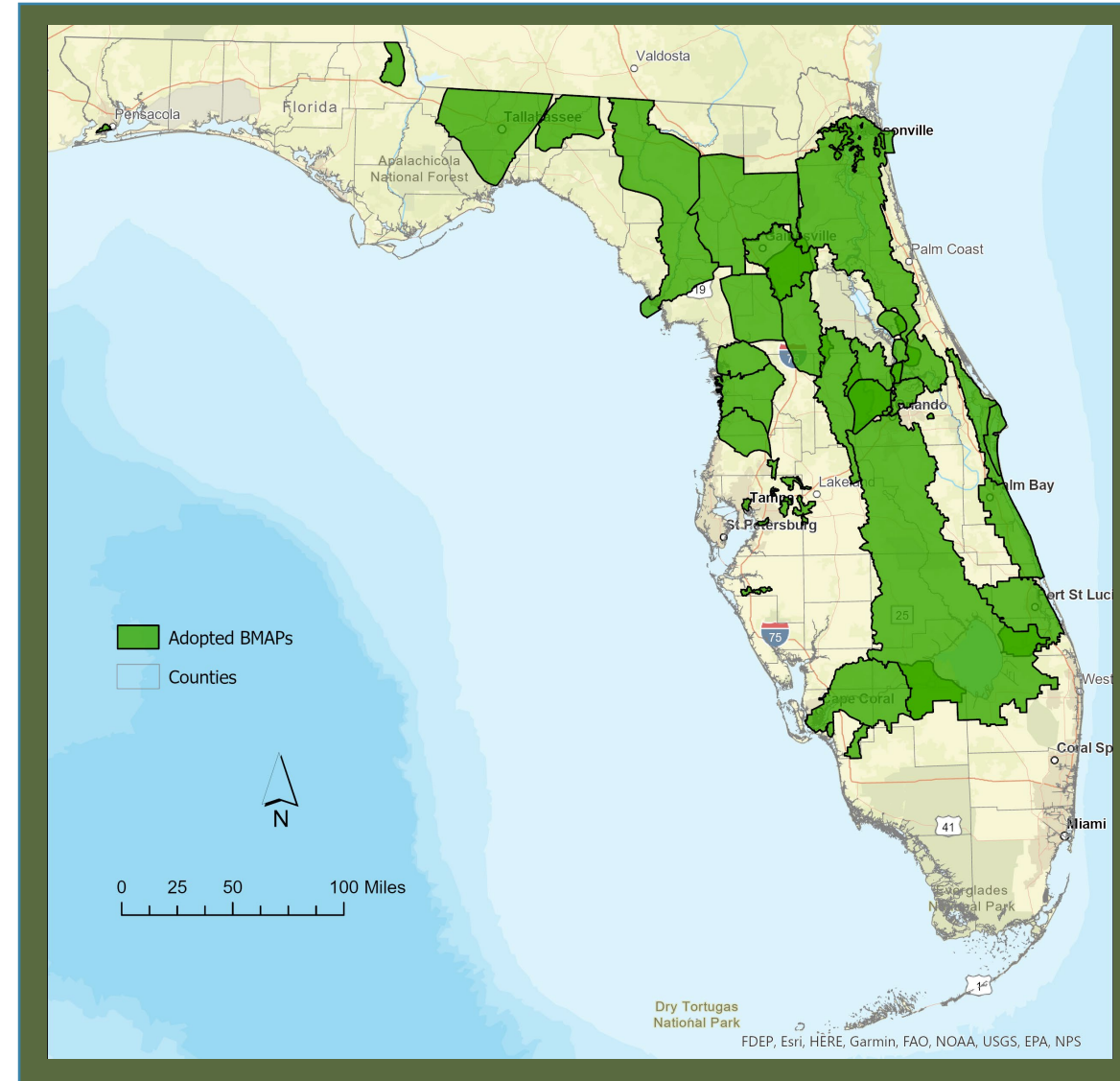




BMAPS ACROSS THE STATE

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:

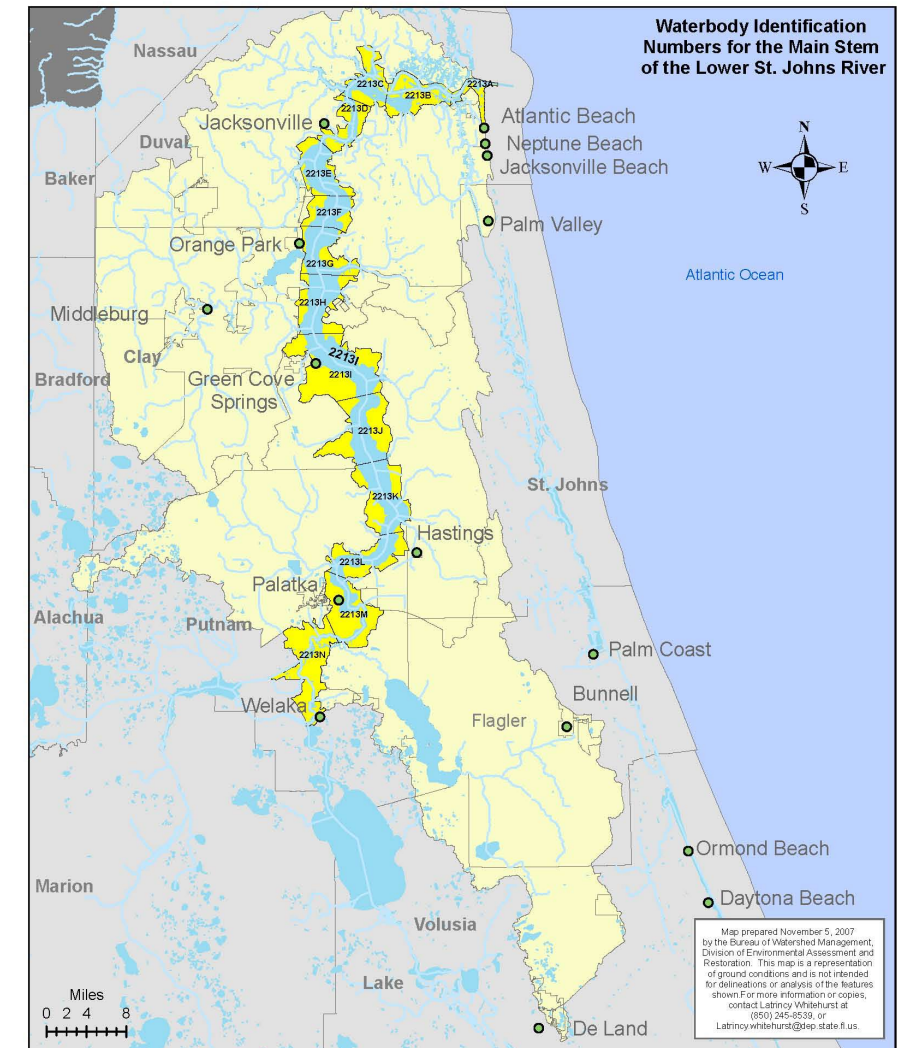
- Monitoring plan.
- Project reporting.
- Periodic follow-up meetings.
- Water quality analyses.



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.



WBID Basin



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.

The Statewide Annual Report 2023					
The state of Florida is prioritizing the protection and restoration of our waterways by implementing sound, science-based solutions to current and future environmental challenges. Under the leadership of Governor Ron DeSantis, the Florida Department of Environmental Protection (DEP) is working with local, state and federal partners on short- and long-term strategies to protect water quality and quantity, including investment in long-term restoration projects. DEP has prepared the 2023 Statewide Annual Report (STAR) to detail the status of many of these strategies in an interactive application format, which is best viewed on a desktop computer screen using Google Chrome or Microsoft Edge. This application does not scale well on mobile devices and is optimized for viewing on larger format screens. As required by section 403.0675, Florida Statutes, and to report on additional restoration efforts, this report updates the status of protection and restoration actions through total maximum daily loads (TMDLs); basin					
Total Maximum Daily Loads	Basin Management Action Plans	Alternative Restoration Plans	Minimum Flows and Water Levels	Recovery and Prevention Strategies	Contacts and Project Data
					

[STAR 2023 Intro \(arcgis.com\)](https://arcgis.com)



-
- Lower St. Johns Main Stem Projects STAR 2023**
- Stormwater
 - Wastewater
 - Agriculture
 - In Waterbody
 - Load Tracking
 - Ineligible for Nutrient Reduction Credit
 - Fecal Indicator Bacteria Projects - Ineligible for Credit
- Lower St. Johns Main Stem BMAP Boundary**



DISSOLVED OXYGEN (DO) ATTAINMENT

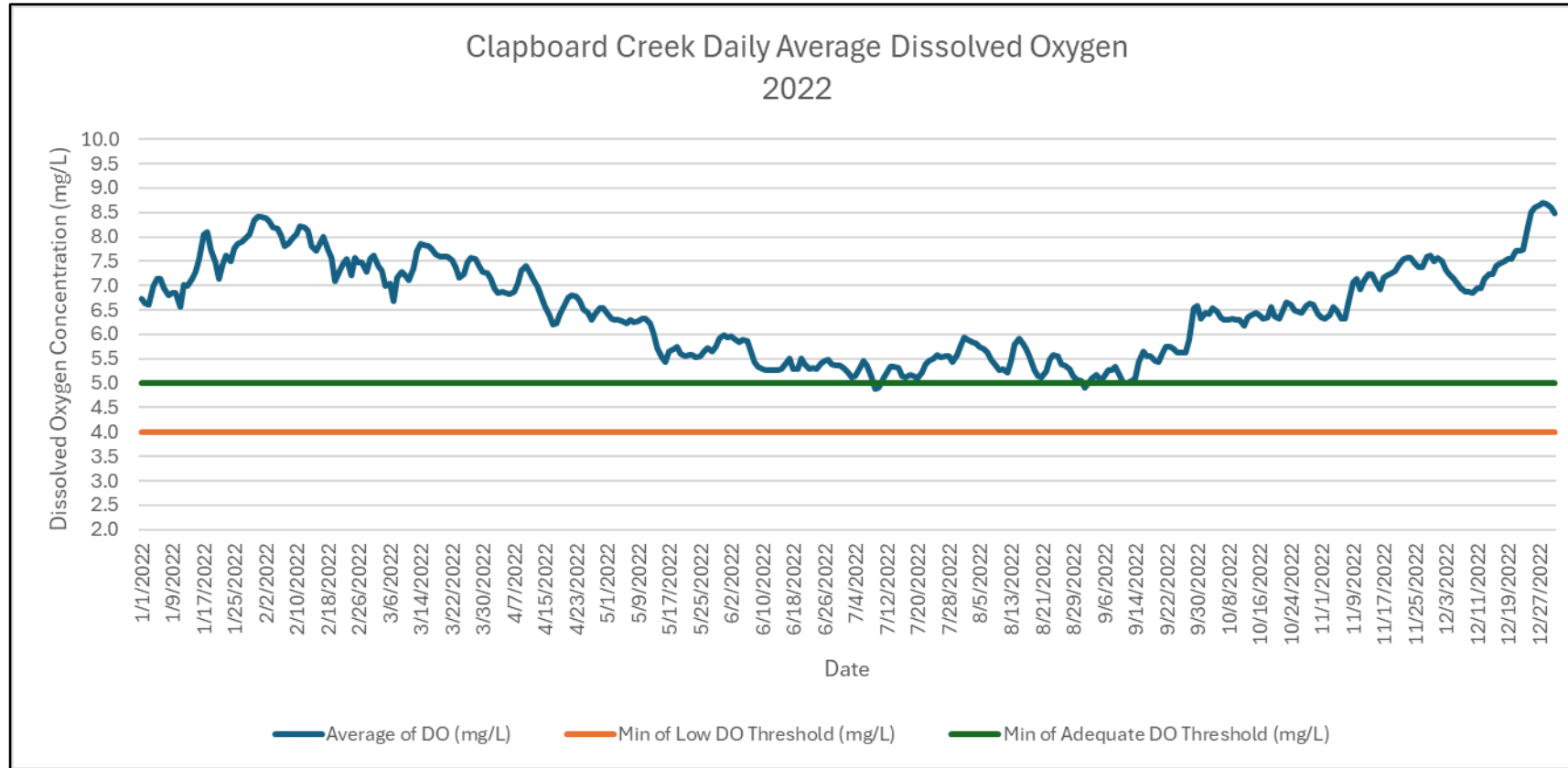
- Marine section compliance = DO concentration.
- Targets are based on a site specific alternative criterion (SSAC).
- 5.0 milligrams per liter (mg/L) or higher = healthy conditions for aquatic animals.
- Avoid concentrations below 4.0 mg/L.
- Concentrations from 4.0 - 5.0 mg/L are evaluated based on 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](#)



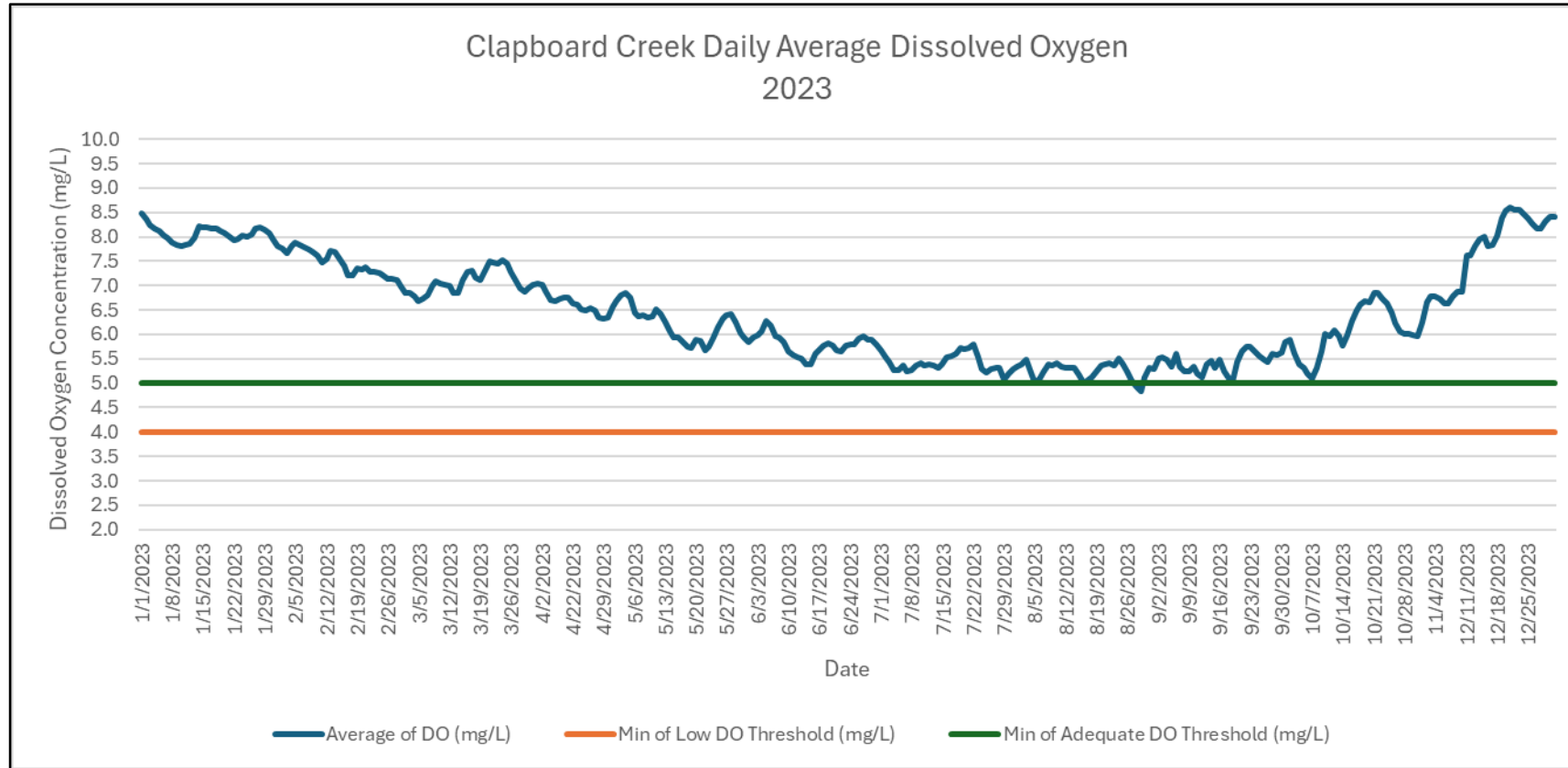
2022 DO ATTAINED THE SSAC



	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
2022 Clapboard Creek						
Daily Average All	0	0	0	0	5	0.091



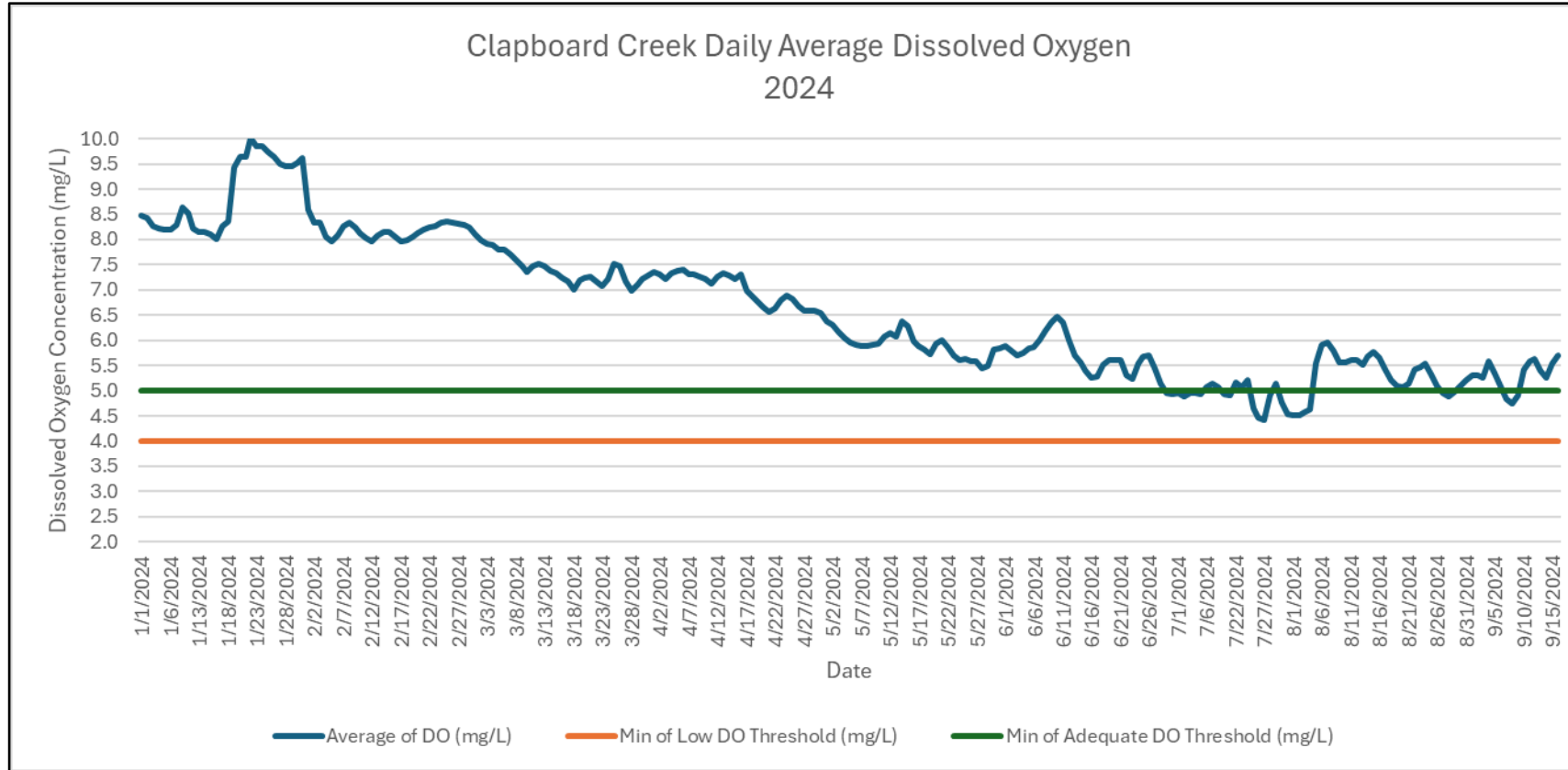
2023 DO ATTAINED THE SSAC



	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
2023 Clapboard Creek						
Daily Average All	0	0	0	0	2	0.036



2024 DO ATTAINS THE SSAC THROUGH SEPTEMBER 16



	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
2024 Clapboard Creek 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.

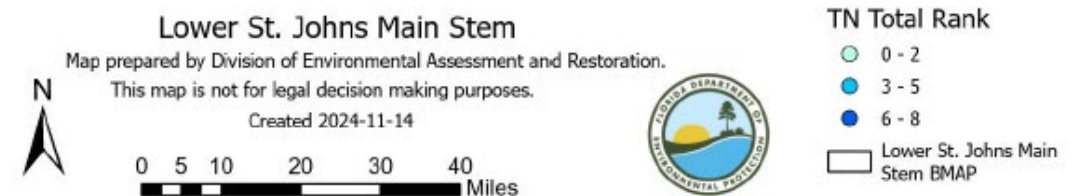
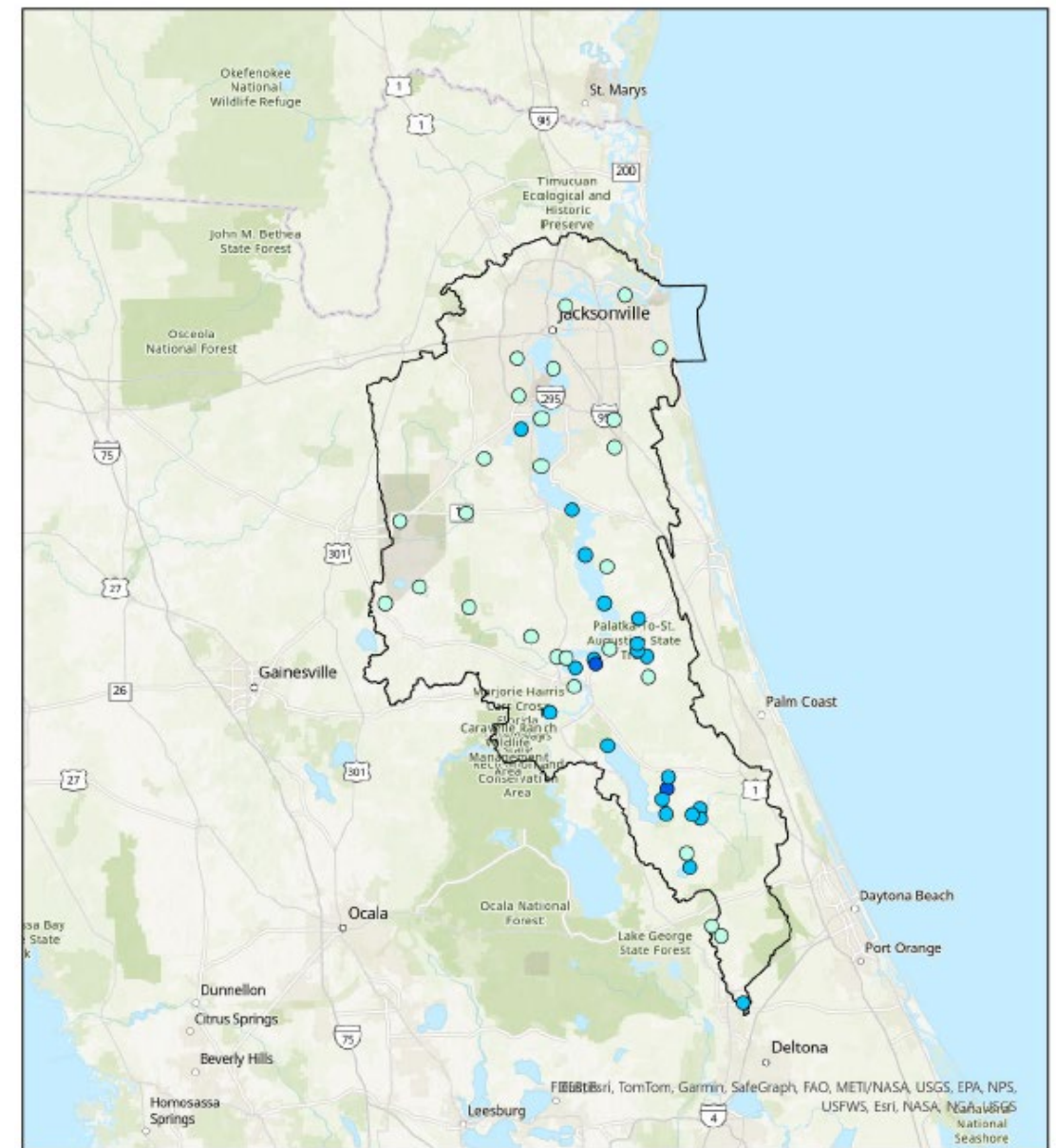
Rank 1: Station exceedances between 5% and 49% of samples.

Rank 2: Station exceedances over 50% of samples.



HOT SPOT ANALYSIS RESULTS

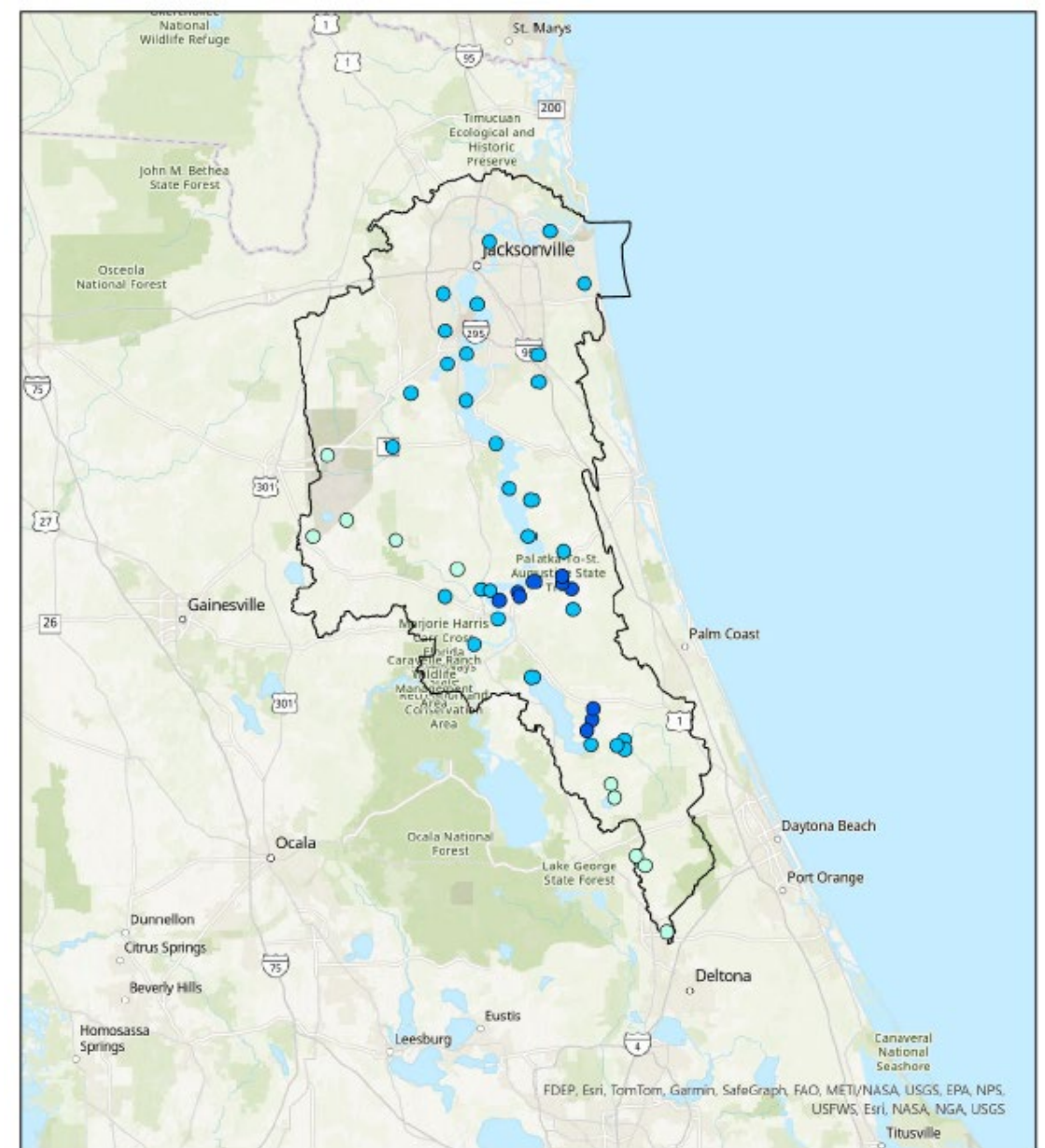
TN - LOWER ST. JOHNS RIVER MAIN STEM





HOT SPOT ANALYSIS RESULTS

TP - LOWER ST. JOHNS RIVER MAIN STEM



Lower St. Johns Main Stem

Map prepared by Division of Environmental Assessment and Restoration.

This map is not for legal decision making purposes.

Created 2024-11-14



0 5 10 20 30 40 Miles



TP Total Rank

0 - 1

2 - 4

5 - 8

Lower St. Johns Main
Stem BMAP



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.

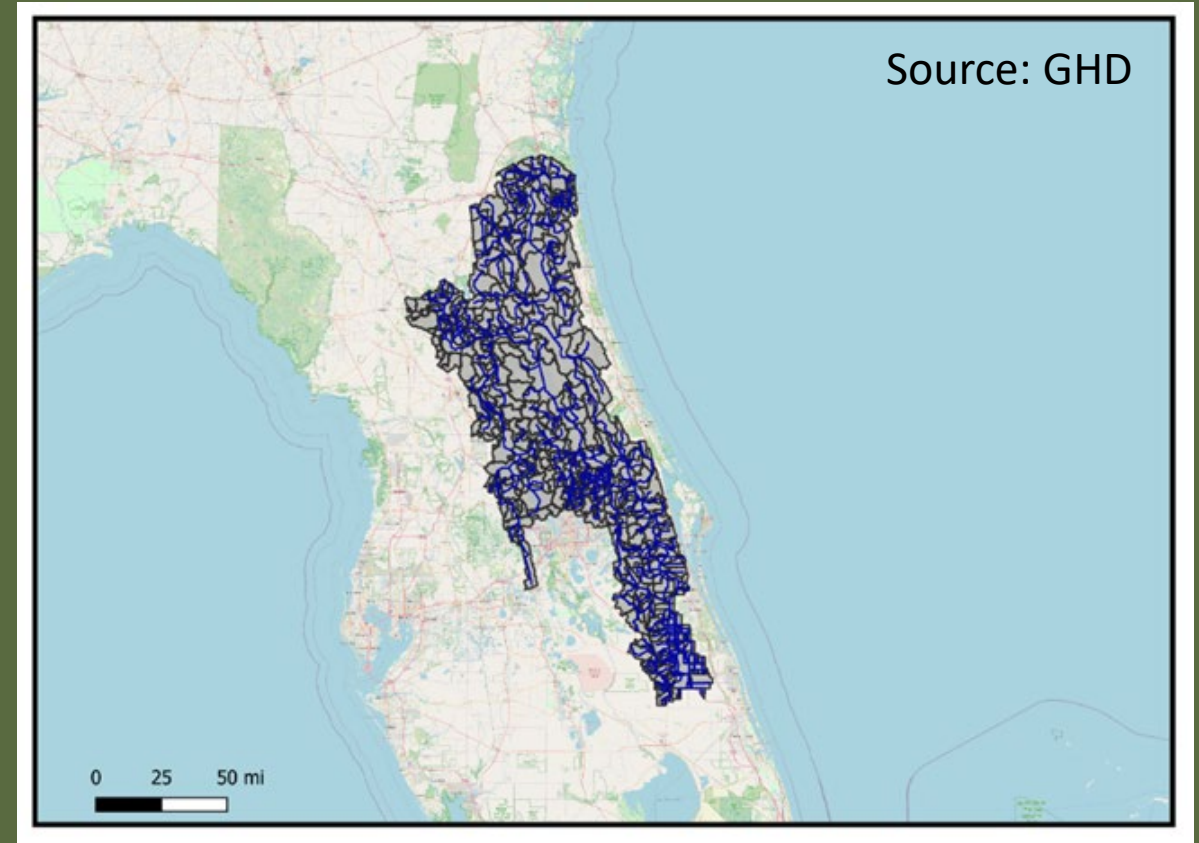


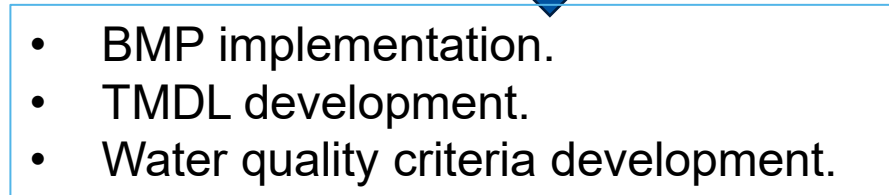


LSJR MAIN STEM MODELING

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).







MODEL UPDATE SCHEDULE

April 2024:
Modeling
Document/Quality
Assessment Plan

July 2025:
EFDC Model

March 2025:
HSPF Model

June 2026:
WASP Model





BMAP UPDATES TIMELINE

May-
Aug.
2024

Individual meetings
with BMAP
stakeholders.

Aug. 1,
2024

Final wastewater
and OSTDS
plans due from
stakeholders.

Nov.
2024

Public meeting on
BMAP updates.

One-on-one
follow-up
discussions to
further gather
interim
management
strategies.

Nov-
Dec.
2024

Draft, review, and
Final Draft BMAP
document.

Dec.
2024-
Feb.
2025

Statutory deadline
for updated
nutrient BMAPs.

July 1,
2025



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 agricultural wastewater and stormwater infrastructure, regional projects and conservation programs designed to reduce pollutant loads 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 dynamic project implementation and water quality analyses. DEP continues to work with local and regional 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 [Update Progress](#) dashboard provides a visual representation of progress towards the completion of related sub-tasks leading up to the July 1, 2025 updates. Please visit the [BMAP Public Meeting Calendar](#) for upcoming meetings and subscribe to meeting notices.

Nutrient BMAPs



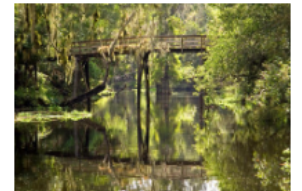
Nutrient BMAPs contain a comprehensive set of solutions, such as permit limits on wastewater facilities, urban and agricultural best management practices, and conservation programs designed to achieve pollutant reductions established by a total maximum daily load

Springs BMAPs



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).

Fecal Bacteria Impaired BMAPs



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

Moira Homann, Program Administrator
Water Quality Restoration Program
Florida Department of Environmental Protection

Contact Information:

850-245-8460

Moira.Homann@FloridaDEP.gov