DEP's Water Quality Restoration Program

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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

About The Florida Department of Environmental Protection

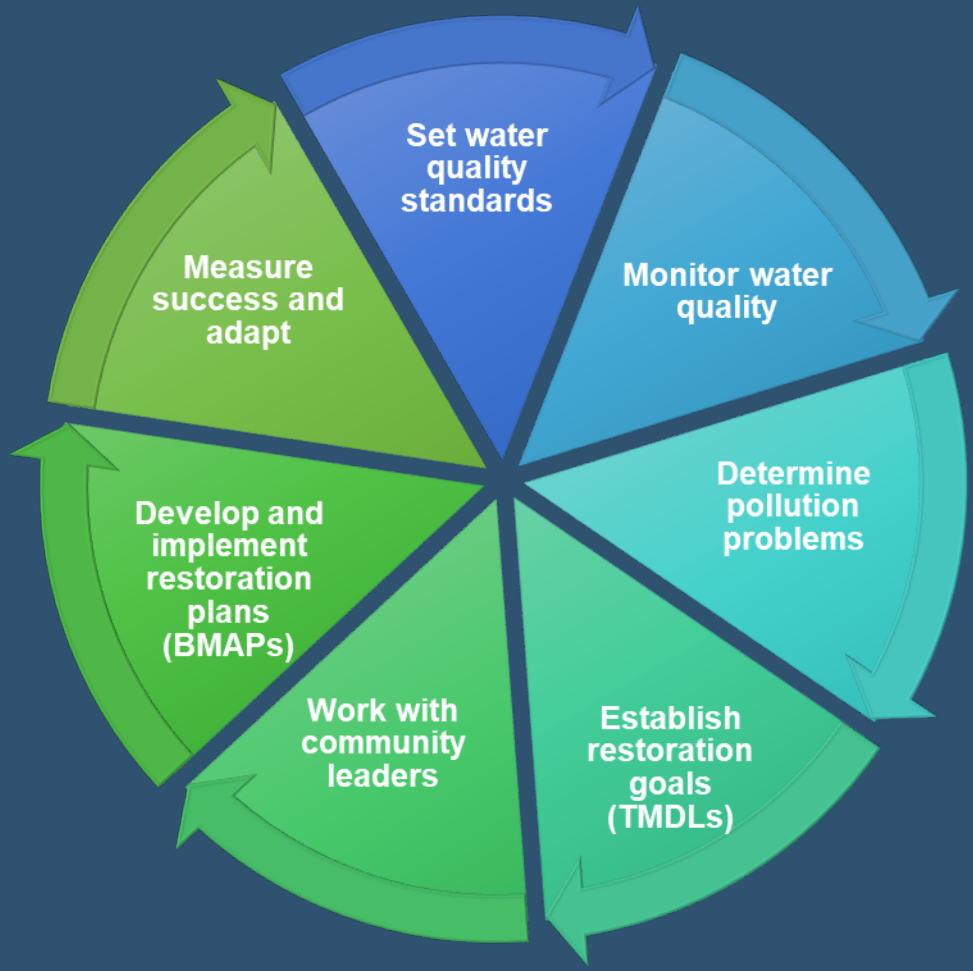
The Florida Department of Environmental Protection (DEP) is the state's lead agency for environmental management and stewardship, protecting our air, water and land. DEP is divided into three primary areas:

- **Land and Recreation.**
- **Regulatory.**
- **Ecosystems Restoration.**

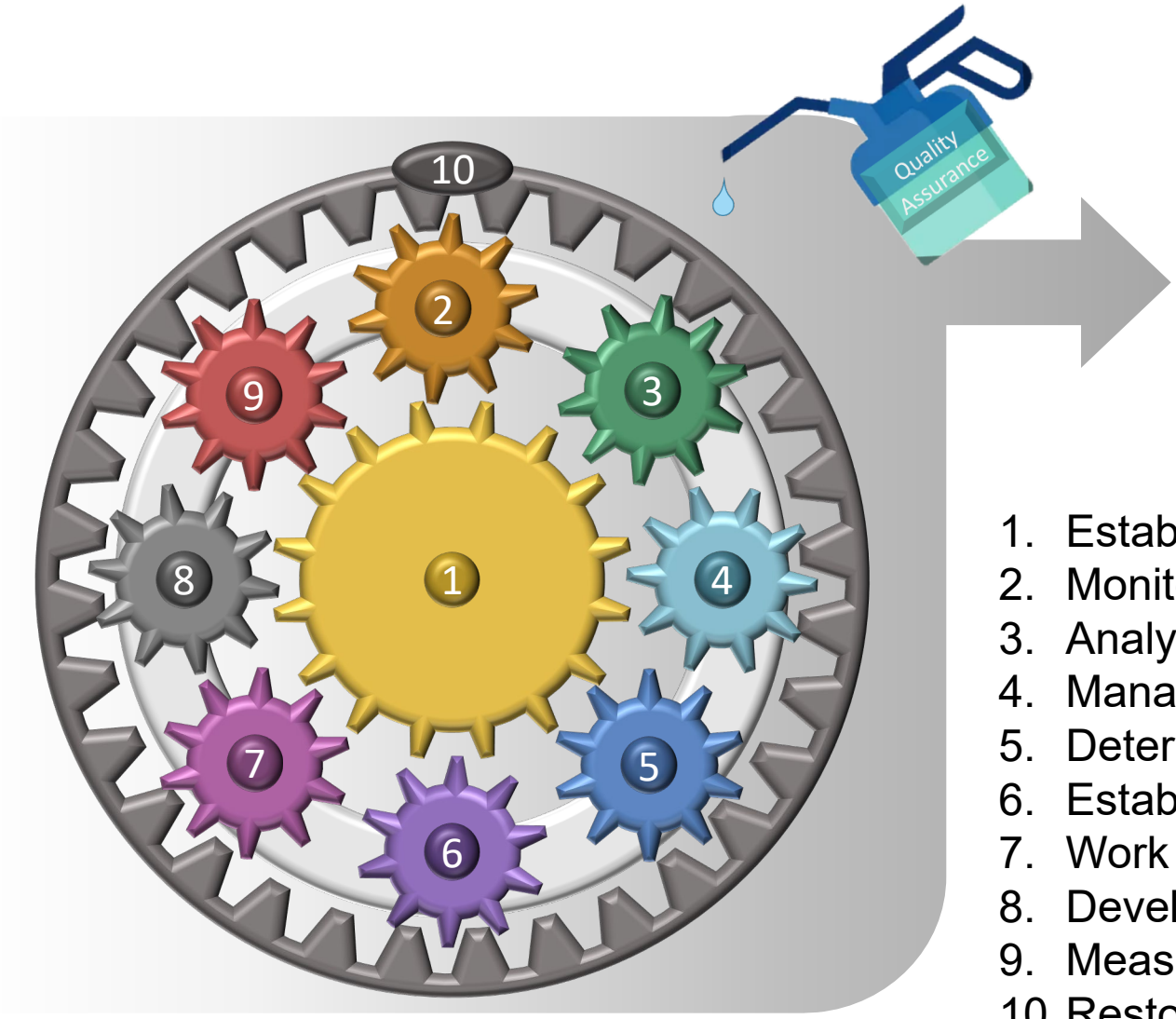
DEP's mission is to protect, conserve and manage the state's natural resources and enforces its environmental laws. DEP's vision is to advance Florida's position as a world leader in protecting natural resources while growing the state's economy. DEP values are leadership, integrity, accountability, communication, innovation and service.

Water Quality Framework

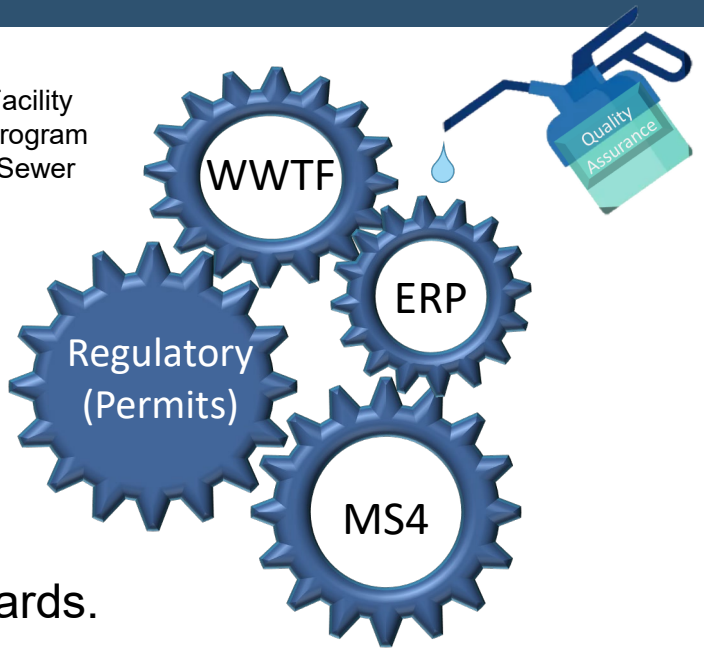
- Standards.
- Monitoring and Assessment.
- Total Maximum Daily Loads (TMDLs).
- Basin Management Action Plans (BMAPs), Reasonable Assurance Plans (RAPs) and Pollution Reduction Plans (PRPs).



PROTECT, ASSESS AND RESTORE



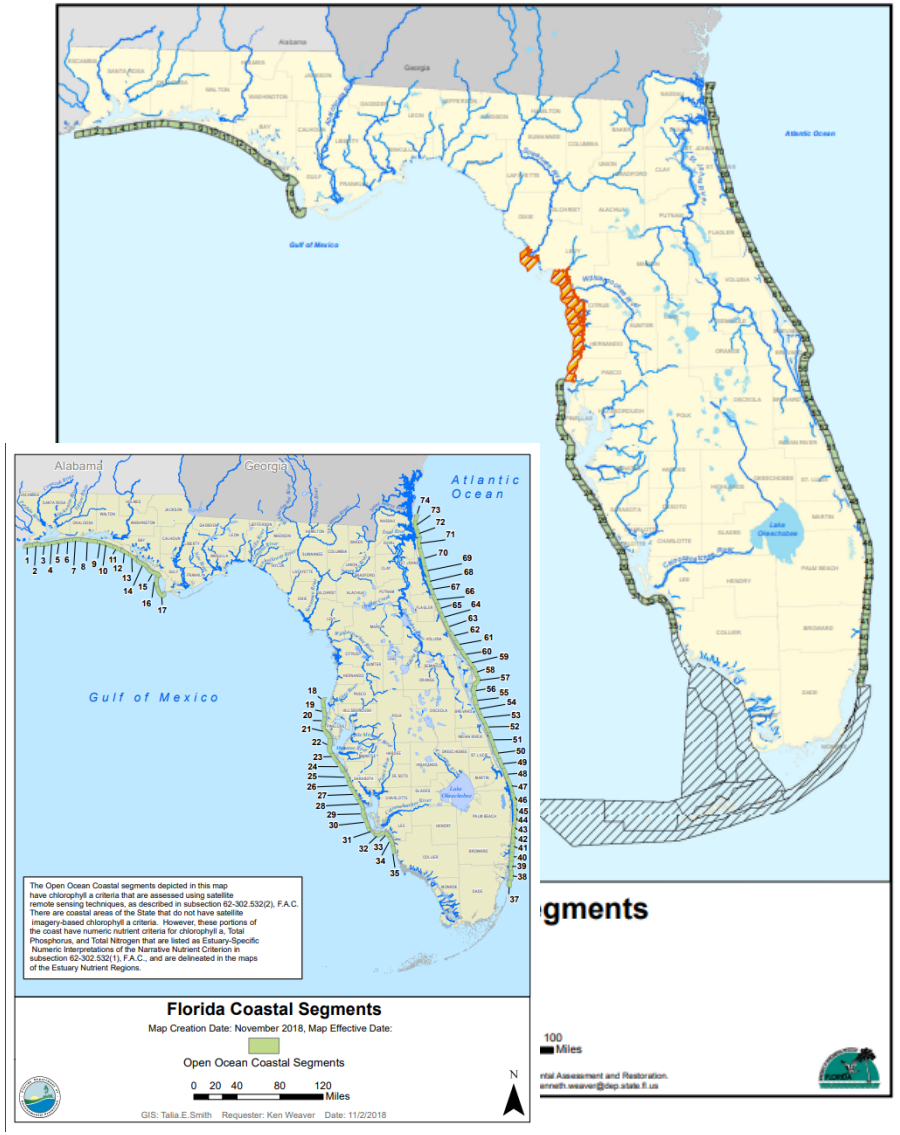
WWTF = Wastewater Treatment Facility
ERP = Environmental Resource Program
MS4 = Municipal Separate Storm Sewer System



1. Establish water quality standards.
2. Monitor waters.
3. Analyze samples.
4. Manage and evaluate data.
5. Determine pollution problems.
6. Establish restoration targets.
7. Work with community leaders.
8. Develop and implement restoration plans.
9. Measure success and adapt.
10. Restoration/attain water quality standards.

WATER QUALITY ASSESSMENT

- Chapter 62-302, Florida Administrative Code (F.A.C.) – Water Quality Standards.
  - Site-specific estuary nutrient criteria for nutrients and chlorophyll *a*.
  - Coastal segments based on remote sensing criteria.
- Chapter 62-303, F.A.C. – Identification of Impaired Surface Waters.
  - Biennial Assessment based on 7.5 years of data.
  - Assess nutrients, nutrient responses and fecal indicator bacteria.
  - Beach advisories based on red tide are excluded.



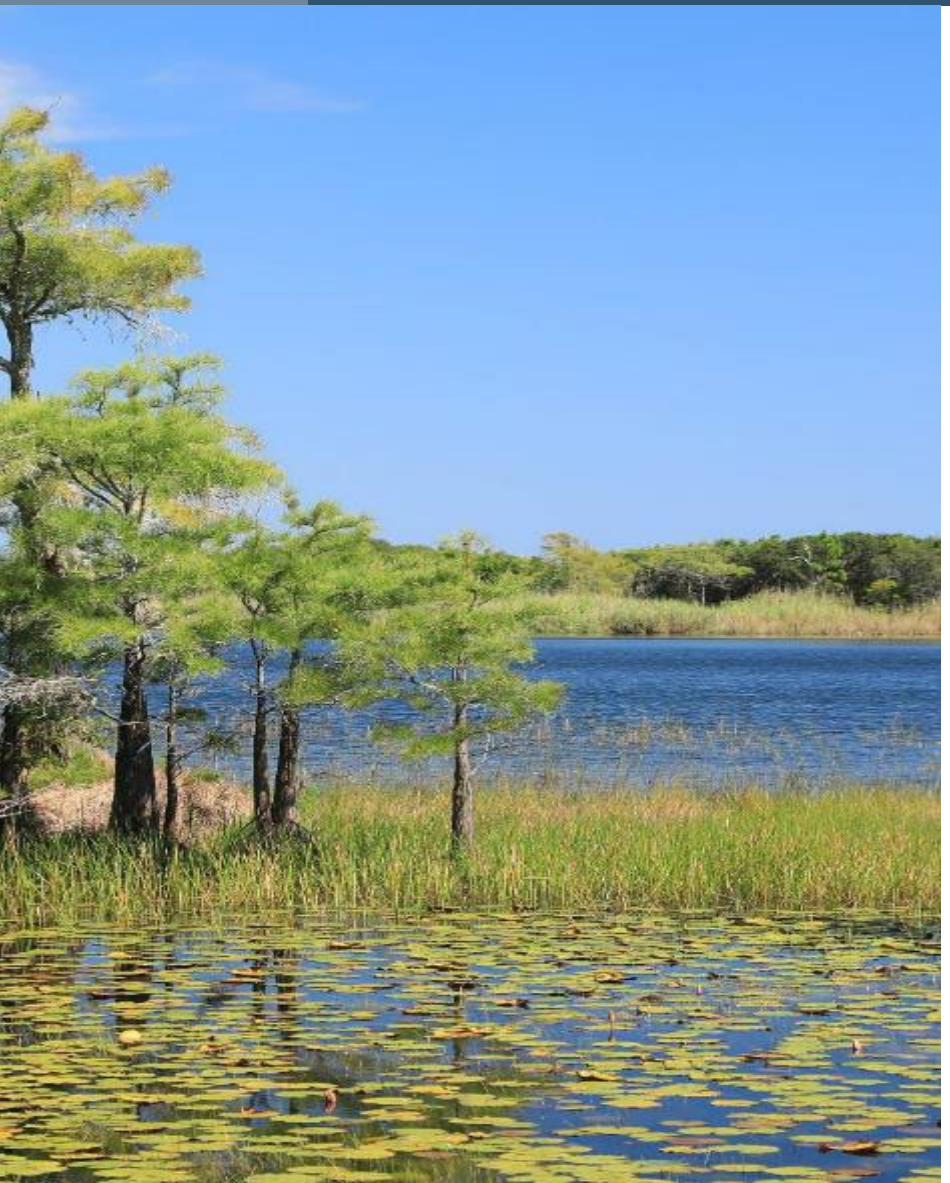
SITE-SPECIFIC RESTORATION TARGETS

- Chapter 62-302, F.A.C. – Total Maximum Daily Loads.
  - Mechanistic modeling or statistically derived targets.
  - Coastal segments based on remote sensing criteria.

- TMDLs are water quality restoration thresholds developed for waterbodies that are “impaired.”
  - The maximum amount of a pollutant that a waterbody can receive and still maintain its designated uses (e.g., drinking water, fishing, swimming and shellfish harvesting).

- TMDLs serve as the legal basis for future restoration action as directed by the federal Clean Water Act and the Florida Watershed Restoration Act, particularly for permitted entities.

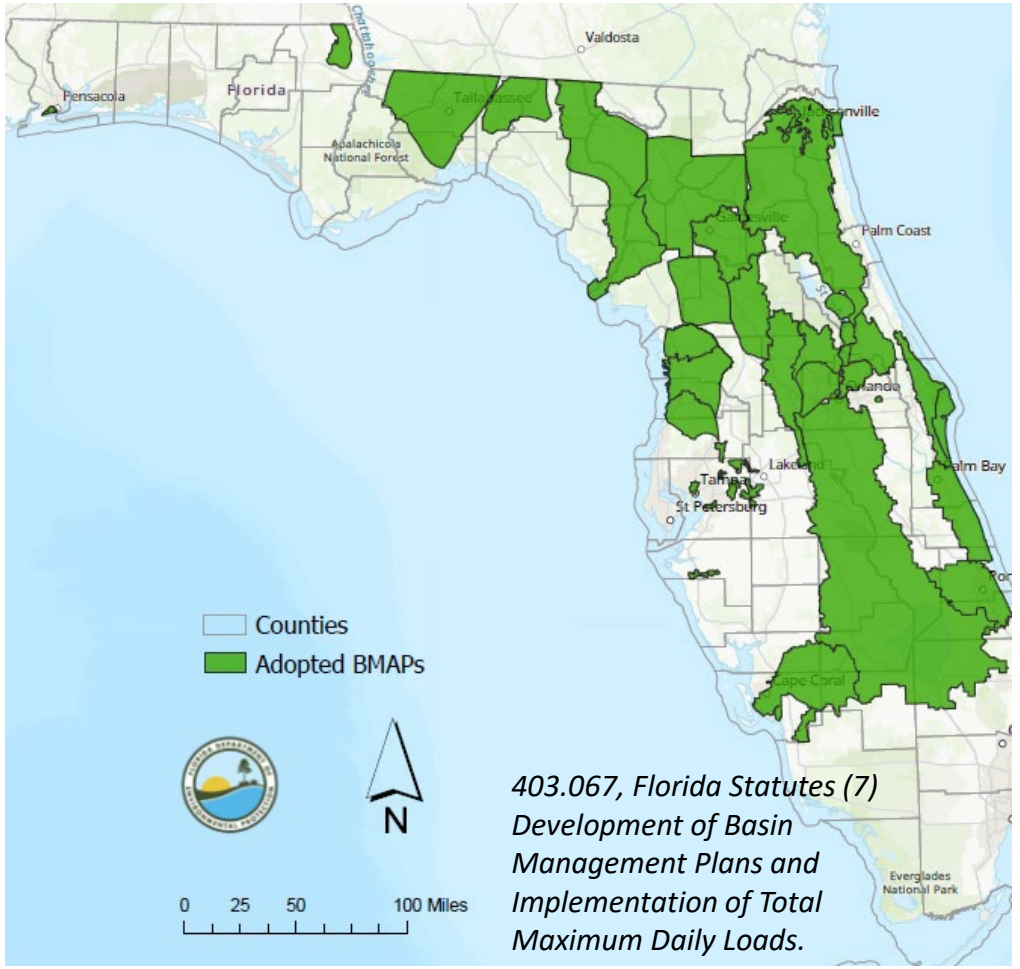
TMDL DEVELOPMENT



- Public Process.
- Significant stakeholder involvement.
- Drafts are submitted for review/public comment.
- State adopts TMDLs.
- Must be approved by the U.S. Environmental Protection Agency.
- TMDLs are adopted into rule.
  - Making changes can be difficult and time consuming.
  - Exempted from ratification process.

Basin Management Action Plans (BMAPs)

- One of DEP's methods for **restoring water quality** in an impaired water body.
- BMAPs are:
  - Developed with stakeholder input.
  - Adopted by DEP Secretarial Order.
  - Enforceable.
  - Implemented through a phased approach.
  - Reported on annually.



403.067, Florida Statutes (7) Development of Basin Management Plans and Implementation of Total Maximum Daily Loads.

https://floridadep.gov/dear/water-quality-restoration/content/basin-management-action-plans-bmaps

BMAP UPDATES

ONGOING AND UPCOMING EFFORTS

- Water quality data evaluation.
- Water quality trend analyses.
- Hotspot analysis.
- Evaluation of the monitoring network.
- Planning and development of regional projects with partner agencies.
- Development/revision of allocations in BMAPs.
- Identification of projects for BMAP milestones.
- Incorporation of Clean Waterways Act requirements.
- Incorporation of House Bill (HB) 1379 and HB 1557 requirements.

Source: SFWMD; Caloosahatche

Source: SFWMD; St. Lucie Estuary

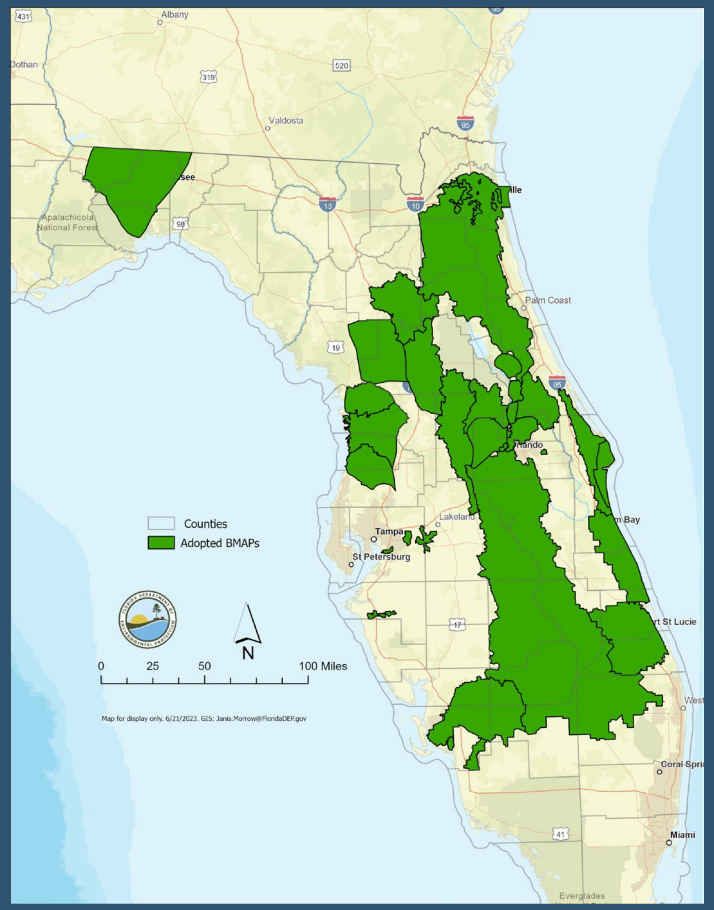
Source: SFWMD; Lake Okeechobee

CLEAN WATERWAYS ACT (2020)
NUTRIENT BMAP UPDATES AND WASTEWATER REQUIREMENTS

Wastewater Treatment Plans

- Inventory of facilities within jurisdiction of local governments.
- Summary of each facility's status, which may include:
  - Permitted capacity.
  - Average discharge.
  - Permitted nutrient limits.
- Summary of capacity analysis for each facility, including future growth.
- Ranking or list of facility upgrades needed to meet requirements.
- Timelines/milestones and funding estimates for all projects.

Nutrient BMAPs



Adopt by July 1, 2025

OSTDS Remediation Plans

- Inventory of OSTDS within jurisdiction of local governments.
- Plan to address OSTDS in the future, which may include:
  - Areas for sewering or enhancements and prioritization of areas.
  - Capacity analysis for wastewater facilities that would accept newly sewered areas.
  - Timelines/milestones and funding estimates for projects.
  - Future growth considerations.

OSTDS = Onsite Sewage Treatment and Disposal System.

HB 1379 (2023) – STRENGTHENING BMAPS

PROJECTS AND MILESTONES

List of Identified Projects:

- Requires BMAPs 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 each identified project to include an estimated amount of nutrient reduction, a planning-level cost estimate and an estimated date of completion.
- Requires DEP to increase coordination with local governments, water management districts and other stakeholders to identify projects.

Agricultural Nonpoint Sources:

- Where agricultural nonpoint sources contribute at least 20% of nonpoint source nutrient discharges, requires a list of cooperative agricultural regional water quality improvement element(s) submitted by the Department of Agriculture and Consumer Services which, in combination with the best management practices, additional measures and other management strategies, will achieve the nutrient reductions established for agricultural nonpoint sources.

IMPROVING DOMESTIC WASTEWATER

HB 1379 (2023) AND HB 1557 (2024)

Wastewater Facility Upgrades:

- Requires all wastewater facilities discharging to an impaired water to upgrade to advanced wastewater treatment (AWT) by 2033.
- Required any facility discharging to a waterbody impaired for nutrients or subject to a BMAP or reasonable assurance plan (RAP) area to upgrade to AWT within 10 years after July 1, 2023 .

More Stringent Wastewater Treatment Standards:

- Authorizes DEP to require a more stringent treatment standard (greater than AWT) if required to meet the TMDL within a BMAP.

OSTDS Requirements:

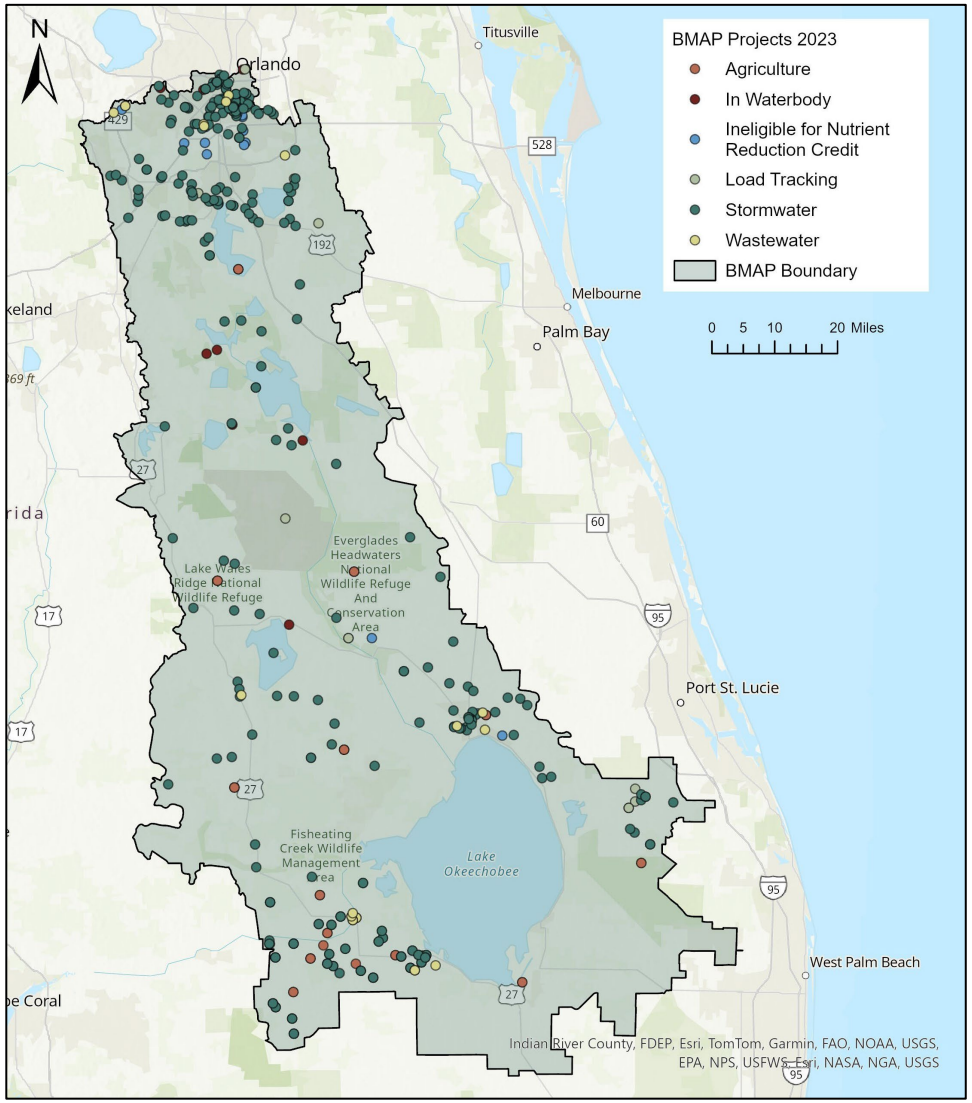
- Requires new OSTDS on lots 1 acre or less within a BMAP to connect to central sewer if available, or if unavailable, to upgrade to an enhanced nutrient-reducing system or other wastewater system that achieves 65% reduction.

Reclaimed Water:

- Requires any wastewater facility providing reclaimed water for commercial or residential irrigation or otherwise land applied within a nutrient BMAP or RAP upgrade to AWT for total nitrogen (TN) and total phosphorus (TP) within 10 years if DEP determines the use of reclaimed water is causing or contributing to the nutrient impairment being addressed by the BMAP or RAP.

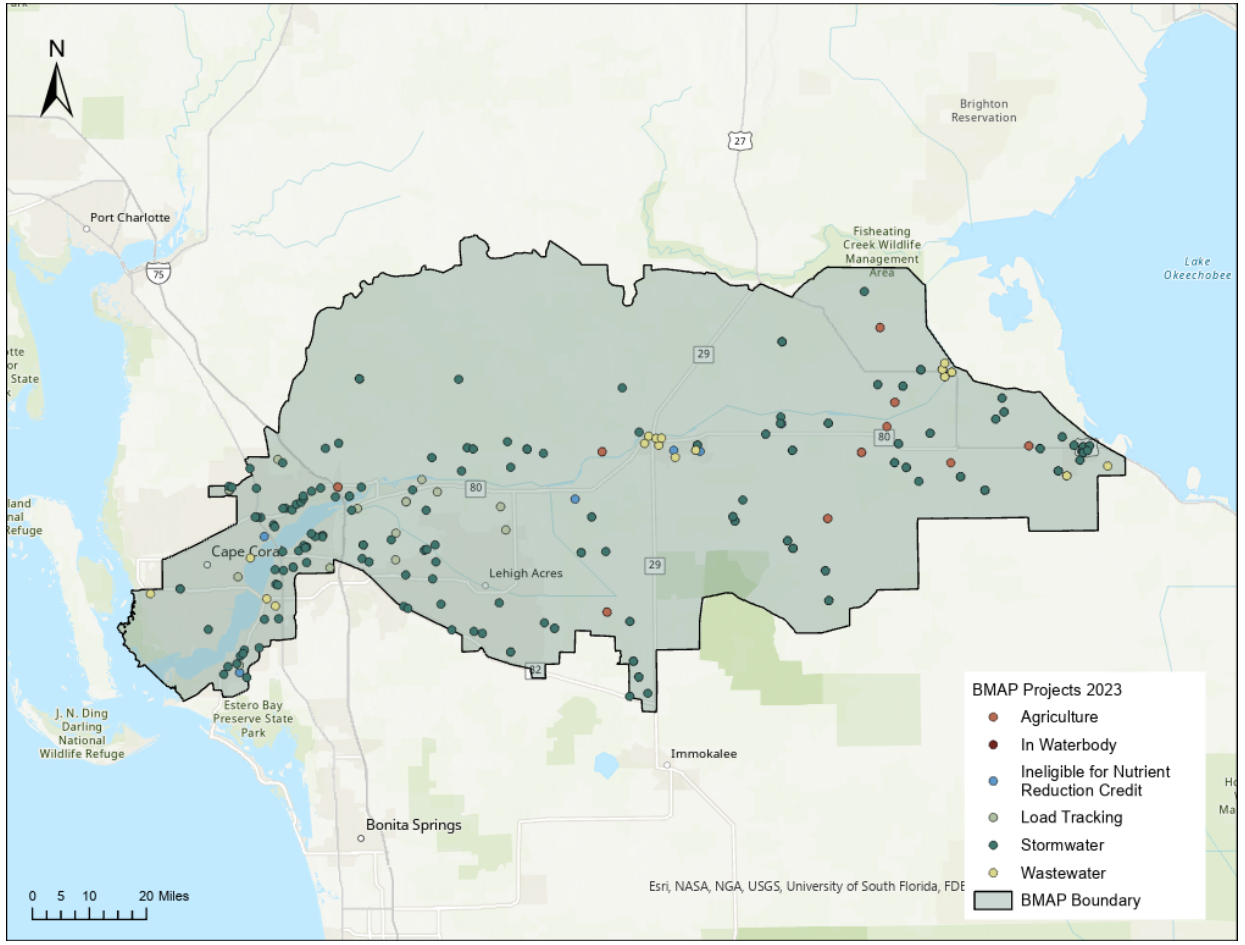
LAKE OKEECHOBEE BMAP

- Originally adopted in 2014.
- Updated per Executive Order (EO) 19-12 in 2020.
- Five-year review 2024.
- Water quality impairment:
  - TP TMDL of 140 metric tons/yr.
- Restoration:
  - Through Dec. 2023, 213 projects were completed, 79 ongoing activities listed and 60 projects are underway or planned.
  - Estimated reductions of 243,895 lbs/yr TP and 1,052,293 lbs/yr TN.

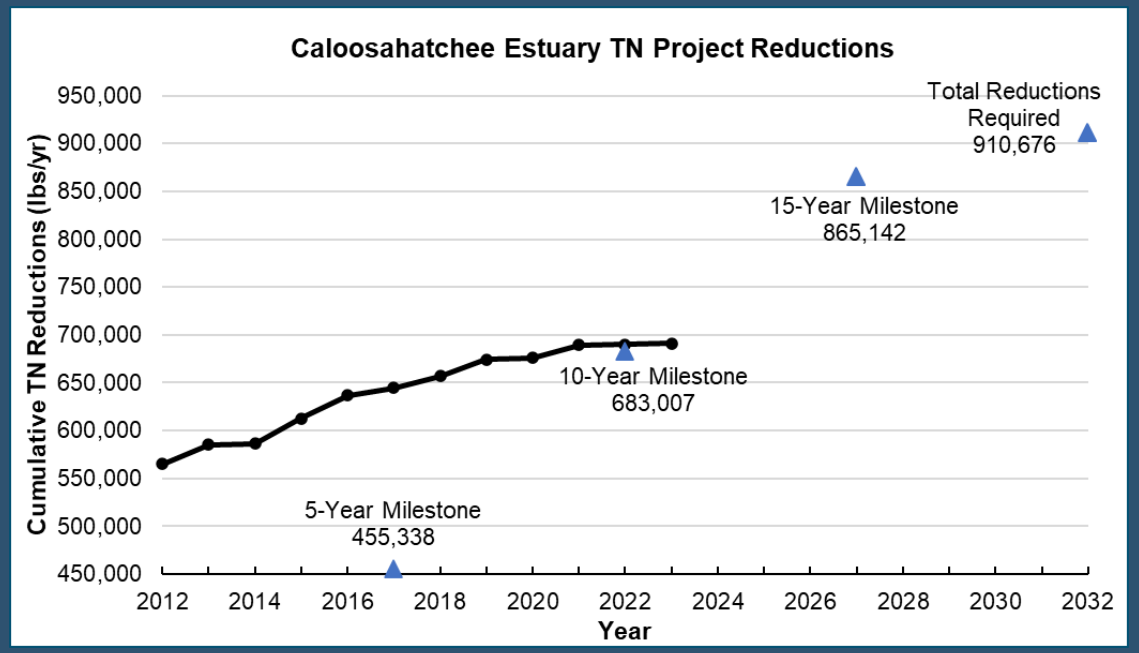


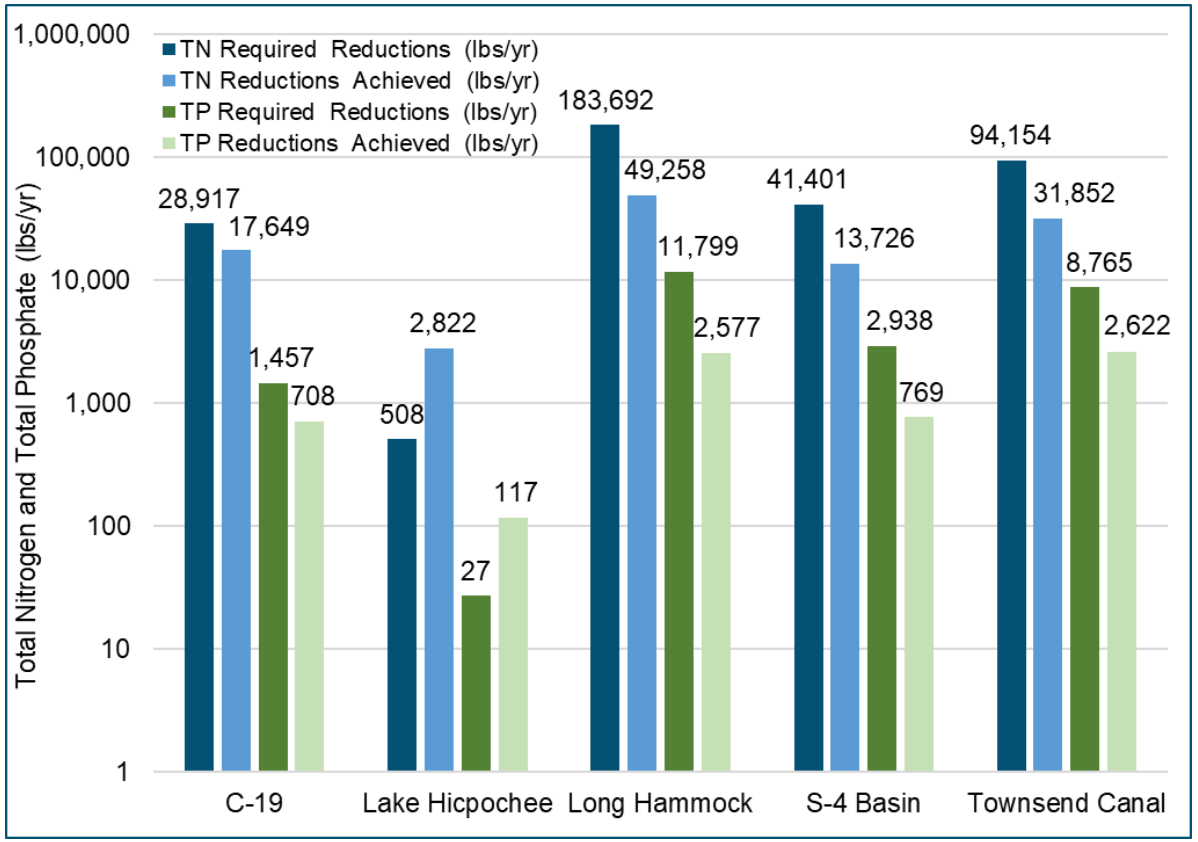
CALOOSAHATCHEE RIVER AND ESTUARY BMAP

- Originally adopted 2012.
- Updated per EO 19-12 in 2020.
- Five-year review 2022.
- Estuary TMDL:
  - TN - 9,086,094 lbs/yr.
- Water quality restoration:
  - Through Dec. 2023, 158 projects were completed, 61 ongoing activities listed and 102 projects are underway or planned.
  - Estimated reductions of 87,292 lbs/yr TP and 848,268 lbs/yr TN.



CALOOSAHATCHEE RIVER AND ESTUARY BMAP

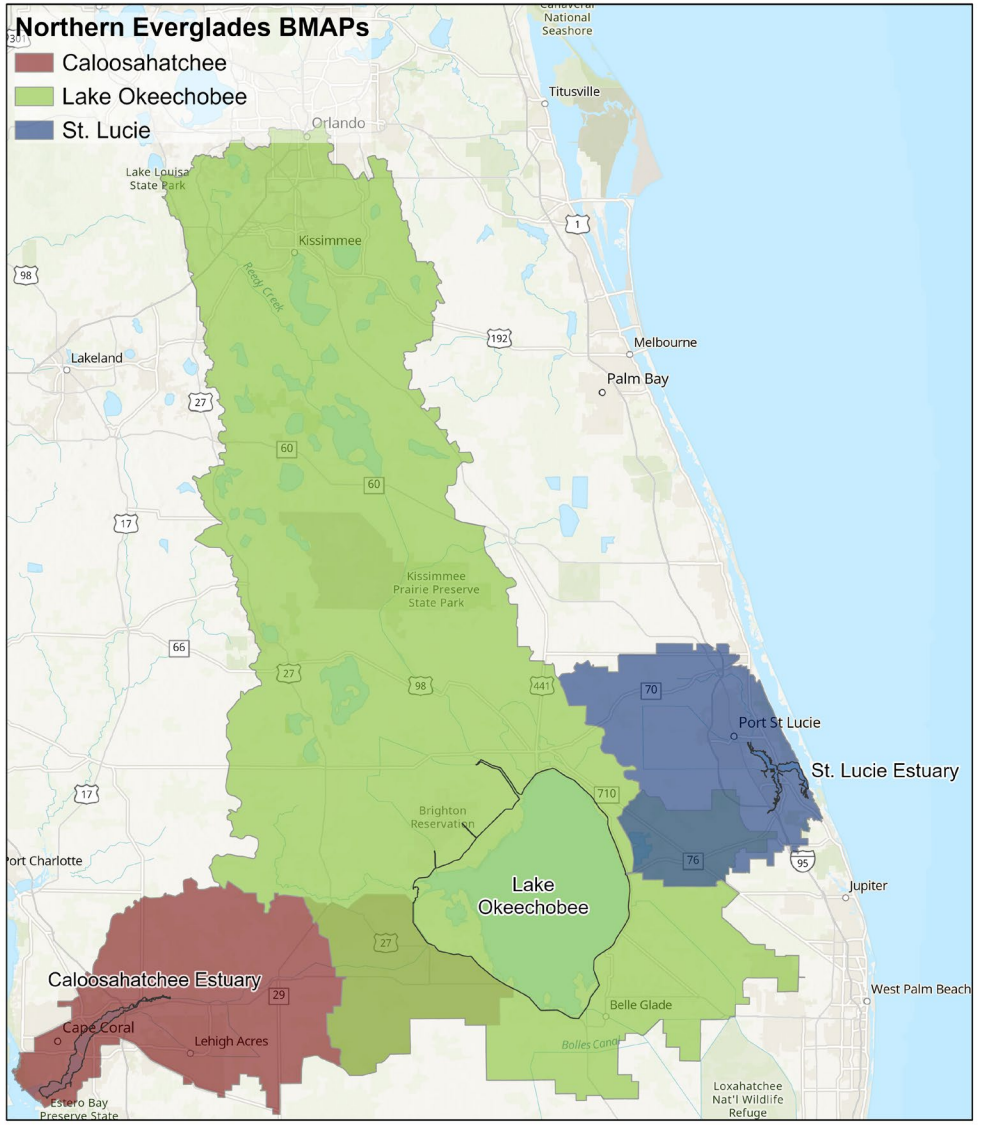




BMAP UPDATES POST-2025

MODEL UPDATES TIMELINES

- Caloosahatchee –
  - Updating 2017 Hydrologic Simulation Program- Fortran (HSPF) model.
  - Anticipate model update will be completed by winter 2025.
- St. Lucie –
  - Building new HSPF model.
  - Anticipate model will be completed by fall 2026.
- Okeechobee –
  - Building new series of HSPF models.
  - Anticipate model will be completed by winter 2027.

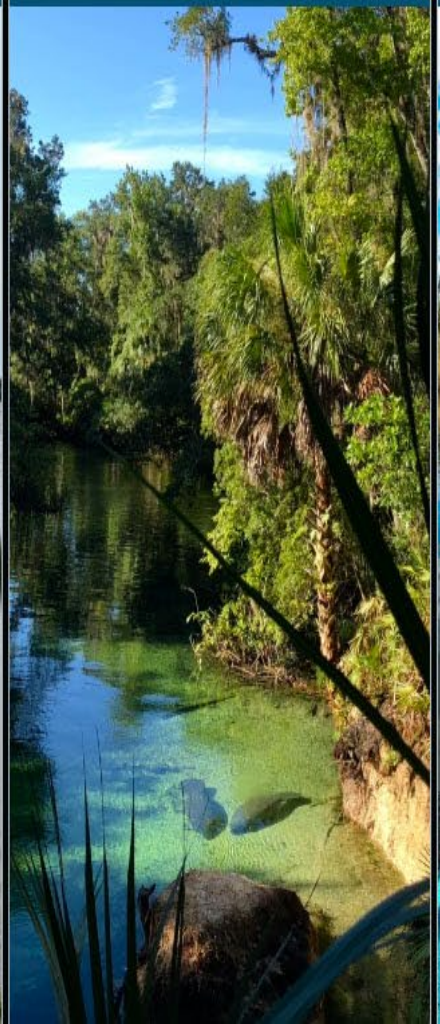


THE STATEWIDE ANNUAL REPORT 2023

Total Maximum Daily Loads

Basin Management Action Plans

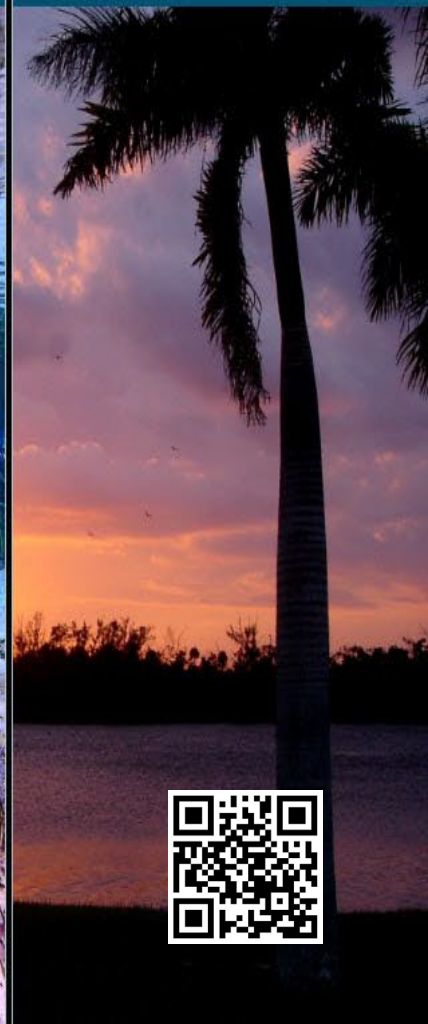
Alternative Restoration Plans



Minimum Flows and Water Levels

Recovery and Prevention Strategies

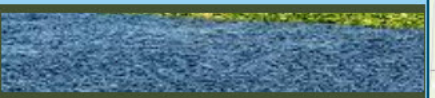
Contacts and Project Data



THE STATEWIDE ANNUAL REPORT 2023

Florida Department of Environmental Protection Statewide Annual Report 2023
Basin Management Action Plans

Sorted by alphabetical o...

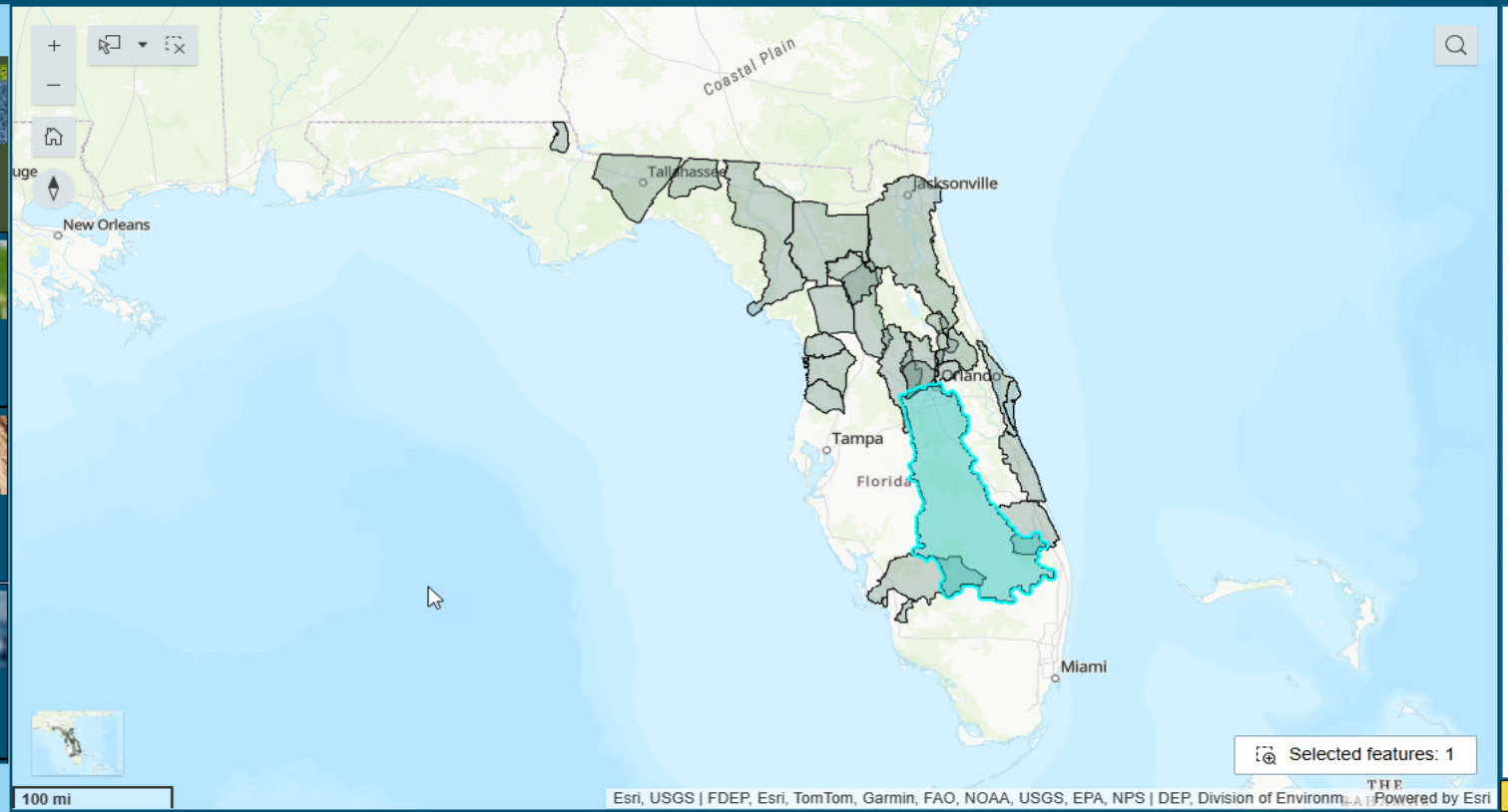


Lake Okeechobee Basin

Banana River Lagoon Basin

Caloosahatchee River and Estuary Basin

Central Indian River Lagoon Basin



Click on an image tile to the left or a watershed in the map to learn more about a BMAP.

Lake Okeechobee Basin Management Action Plan

Waters in the Lake Okeechobee Basin Management Action Plan (BMAP) are impaired for total phosphorus (TP). Progress is primarily assessed by project implementation to reduce sources of the impairment parameter(s).

As of the end of the previous calendar year, verified projects in the BMAP have reduced 243,895 lbs./yr. of total phosphorus towards the 1,086,879 lbs./yr. target and have also reduced 1,052,293 lbs./yr of total nitrogen. Additionally, projects currently planned or underway are not included in the above reduction figure but are viewable in the appended project table.

To advance progress on the BMAP, DEP recommends the following actions:

- Implement source reduction and best management practices for existing and new urban development and agricultural sources to prevent excess nutrient input into impaired waters.
- For existing onsite sewage treatment and disposal systems (OSTDS) upgrade to enhanced nutrient reducing systems, install other wastewater systems or connect to sewer.
- For new OSTDS, install enhanced nutrient reducing systems

For More Info., See Our StoryMap

THE STATEWIDE ANNUAL REPORT 2023

Florida Department of Environmental Protection Statewide Annual Report 2023
Alternative Restoration Plans

Sorted by alphabetical o...

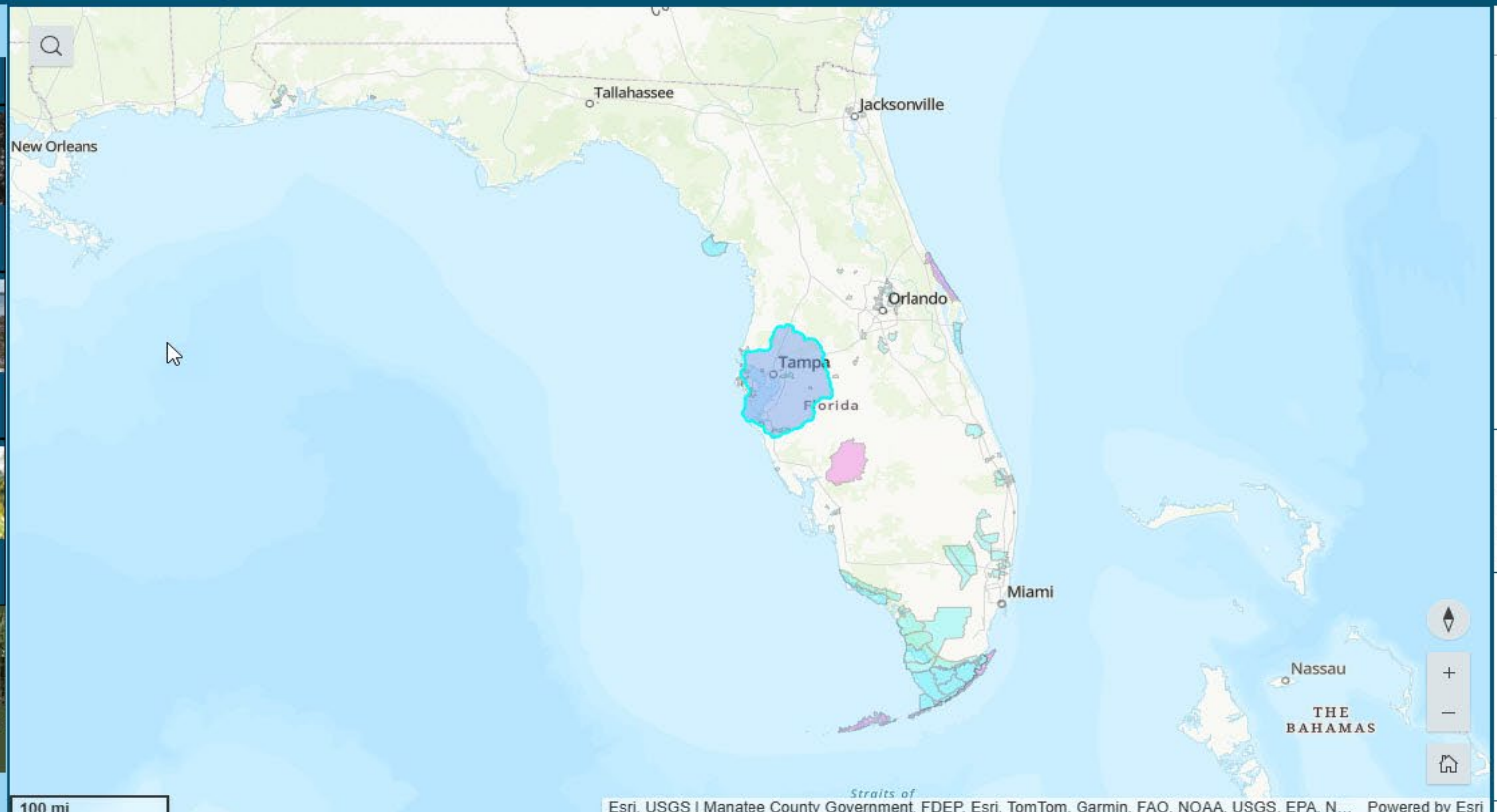
Documentation

Lake Seminole Watershed Reasonable Assurance Plan

Mosquito Lagoon Reasonable Assurance Plan

Shell, Prairie and Joshua Creeks Watershed Management Plan

Tampa Bay Estuary Reasonable Assurance Plan



Tampa Bay Estuary Reasonable Assurance Plan

This RAP was developed by the Tampa Bay Estuary Program (TBEP) and members of the Tampa Bay Nitrogen Management Consortium in cooperation with the U.S. EPA, DEP and other regional stakeholders. The initial reasonable assurance document developed by the TBEP was submitted to DEP in 2002.

Restoration Plan Name	Tampa Bay Estuary Reasonable Assurance Plan
Restoration Plan Type	Reasonable Assurance Plan
Plan Year	2010
Update Year	2022
Parameter	Total Nitrogen

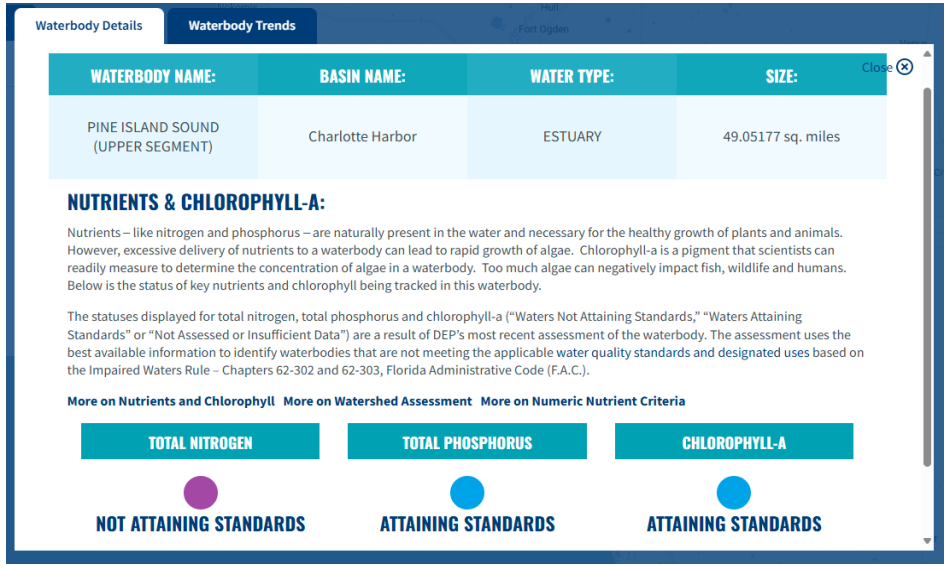
Reasonable Assurance Plan (RAP)

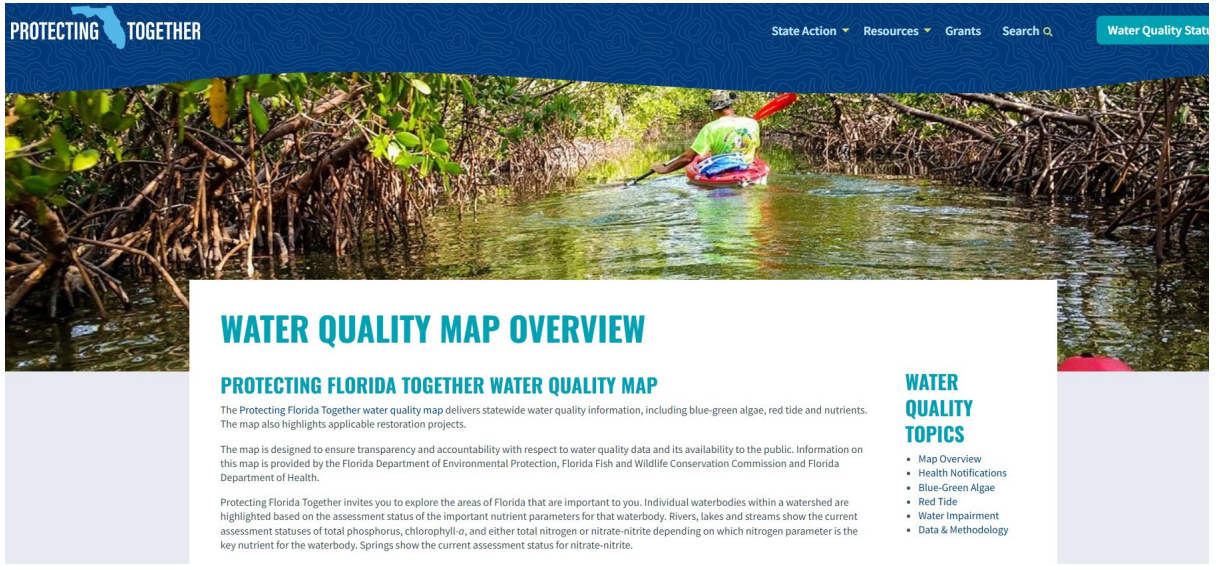
A reasonable assurance plan (RAP) is a stakeholder developed and led restoration plan that replaces a TMDL and BMAP. Plans must include specific elements and be approved by DEP and the U.S. EPA. They must identify restoration activities and projects designed to meet applicable water

Click on a blue shaded area to find out more about a pollutant reduction plan.

PROTECTING FLORIDA TOGETHER

- Provides water quality status map.
  - Shows waters not attaining standards.
  - Restoration projects.
  - Trends for nutrients and *chlorophyll a.*





APPLICABILITY OF THE STATUE OF FLORIDA'S WATER QUALITY FRAMEWORK TO RED TIDE

- The State of Florida's nutrient reduction efforts (BMAPs, RAPs and PRPs) in riverine, coastal and estuarine systems are resulting in significant reductions in nutrient delivery to Florida's nearshore waters.
- These efforts reduce the nutrient pool available to sustain nearshore red tide blooms.
- Future iterations of nutrient reduction plans incorporating additional data and improved modelling will result in enhanced nutrient reductions.

THANK YOU

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