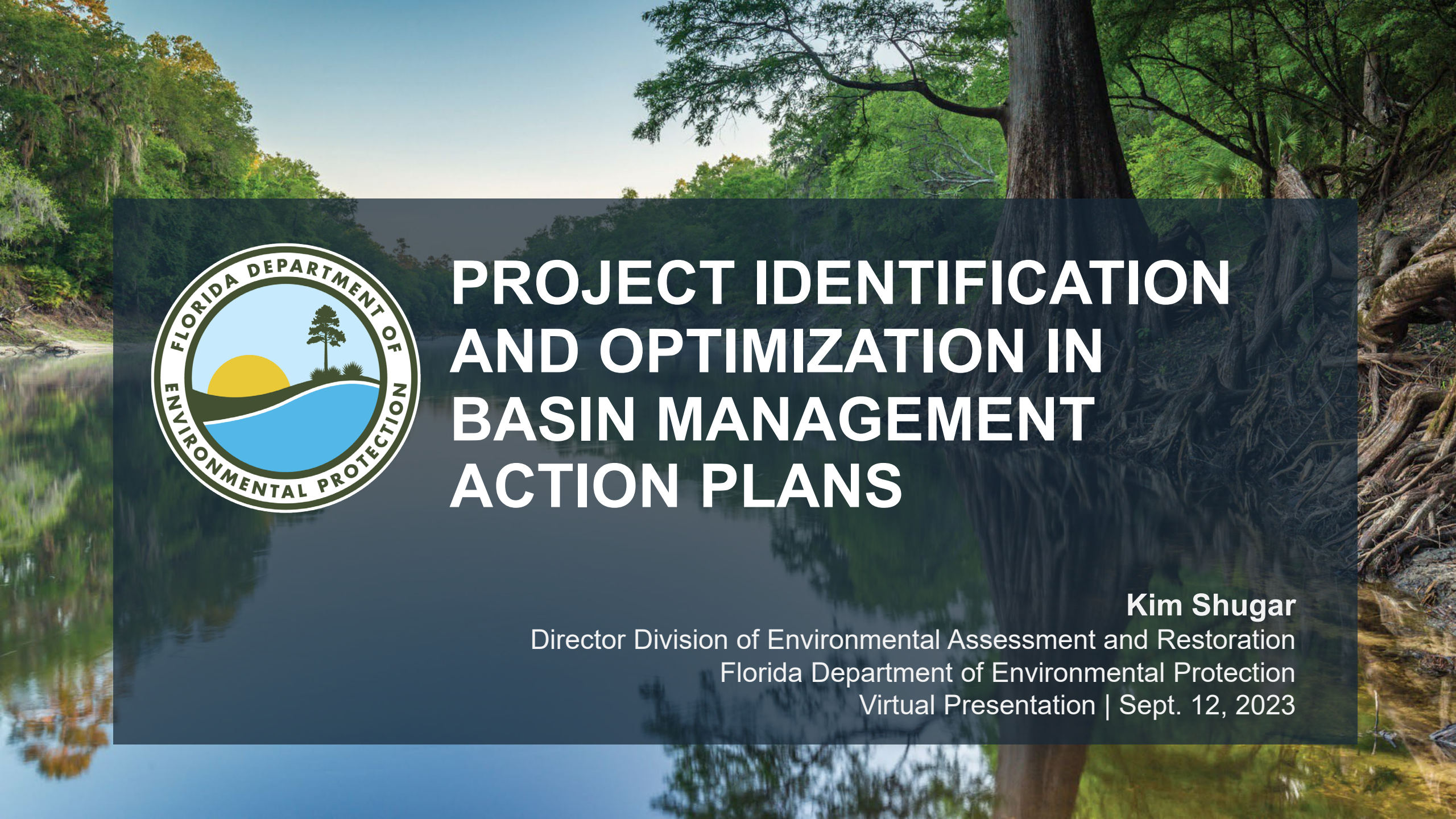


PROJECT IDENTIFICATION AND OPTIMIZATION IN BASIN MANAGEMENT ACTION PLANS

Kim Shugar
Director Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection
Virtual Presentation | Sept. 12, 2023

HB 1379 – STRENGTHENING BMAPS

PROJECTS AND MILESTONES

List of Identified Projects:

- Requires Basin Management Action Plans (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 total maximum daily loads (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 percent 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.

PROJECT IDENTIFICATION AND IMPLEMENTATION

CONSIDERATIONS

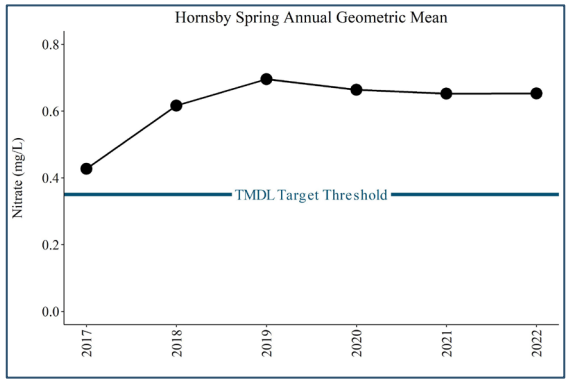
In most cases, all projects identified by stakeholders are needed to meet TMDLs and restoration targets.

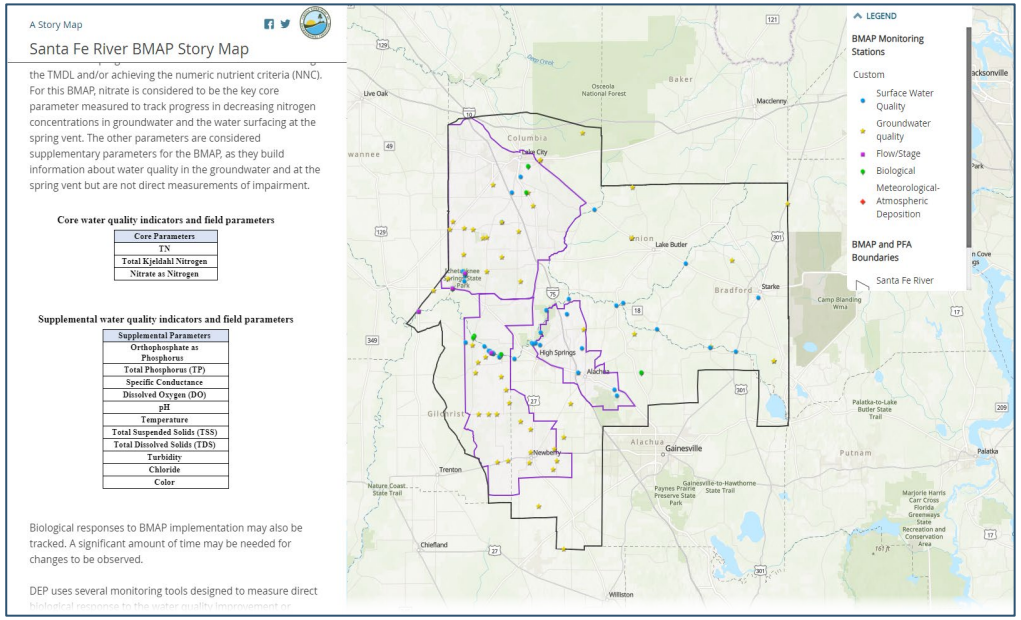
Other key considerations include:

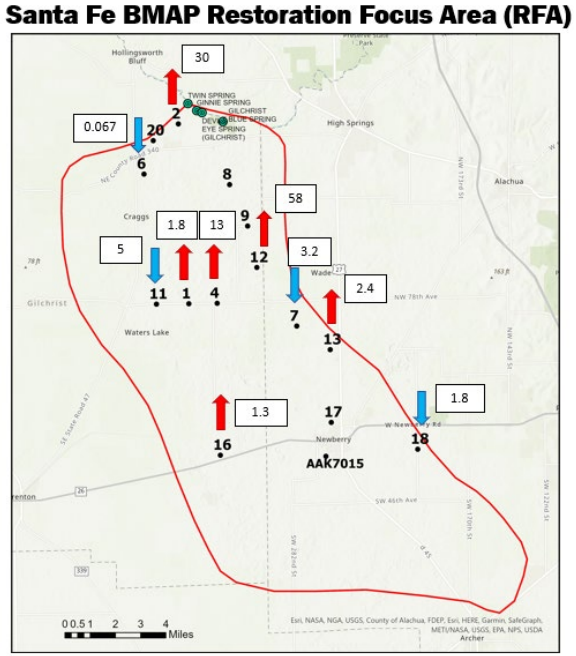
- Uniqueness of Florida's waterbodies and watersheds.
- Ability to strategically locate projects to provide greatest impact.
- Project impact is not always immediately visible.
- Outreach and coordination among stakeholders.
- Tools and information stakeholders need to identify projects that achieve reduction allocations.

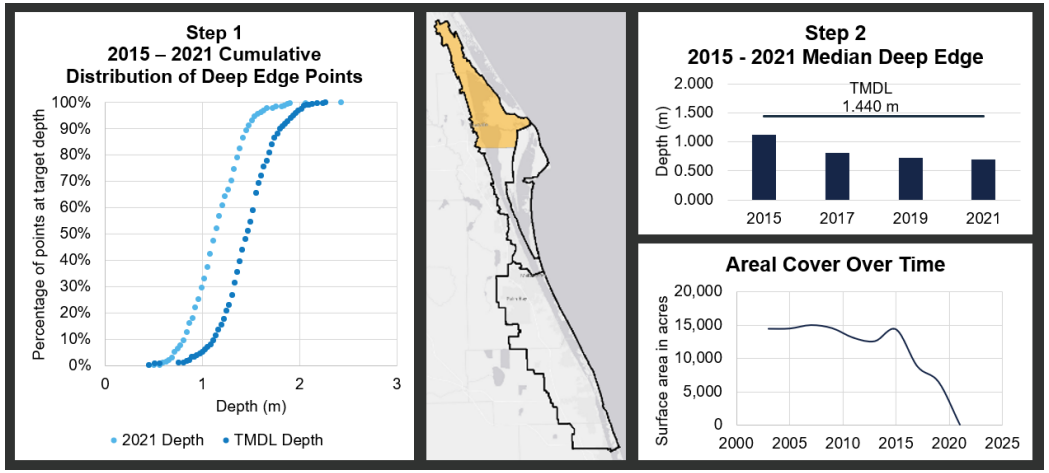
WATER QUALITY PROGRESS

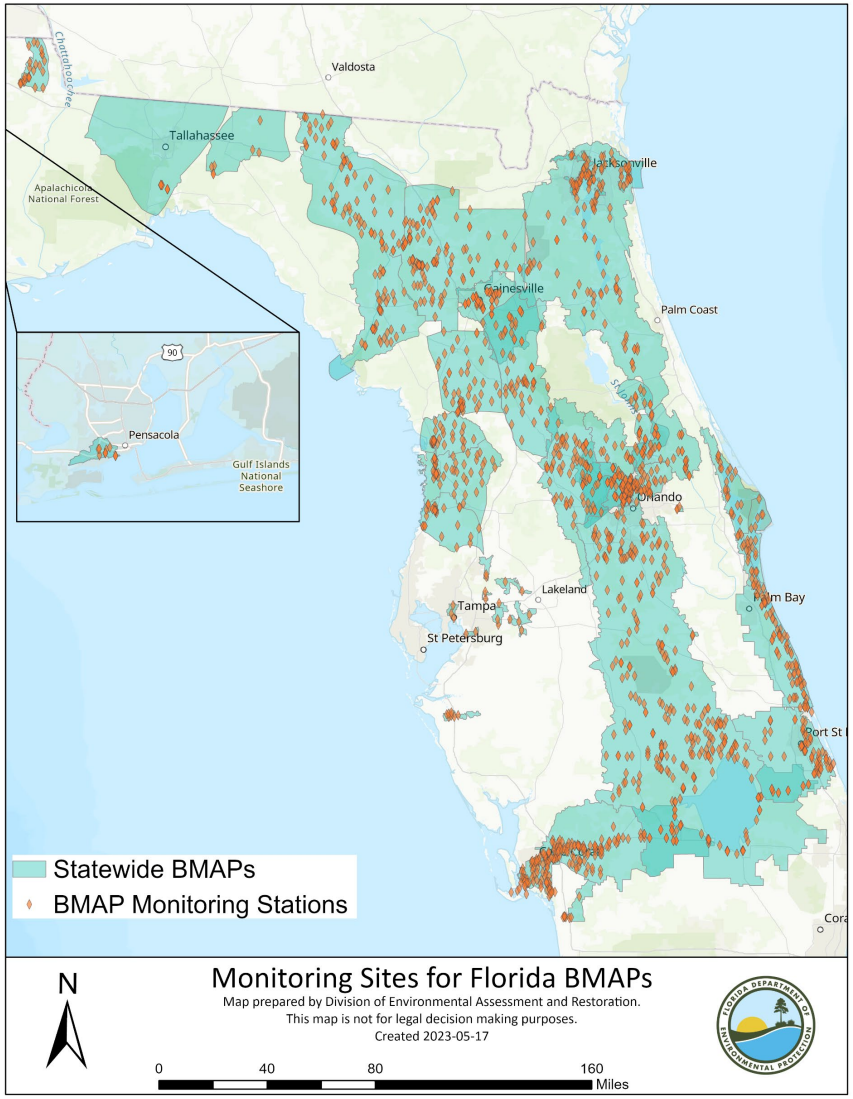
WATER QUALITY MONITORING AND DATA ANALYSIS











EXISTING DATA AND TOOLS

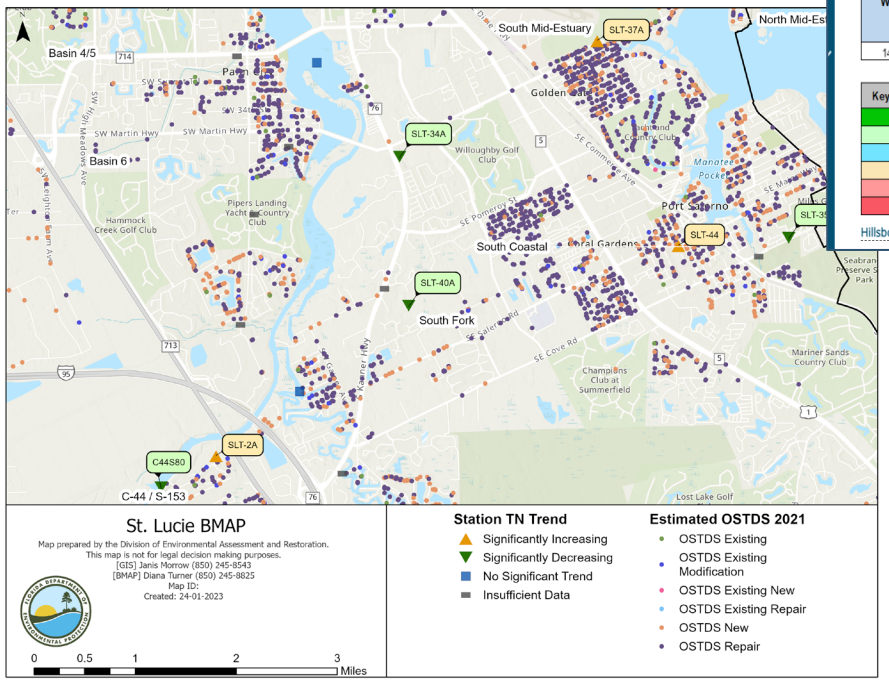
WATER QUALITY TOOLS

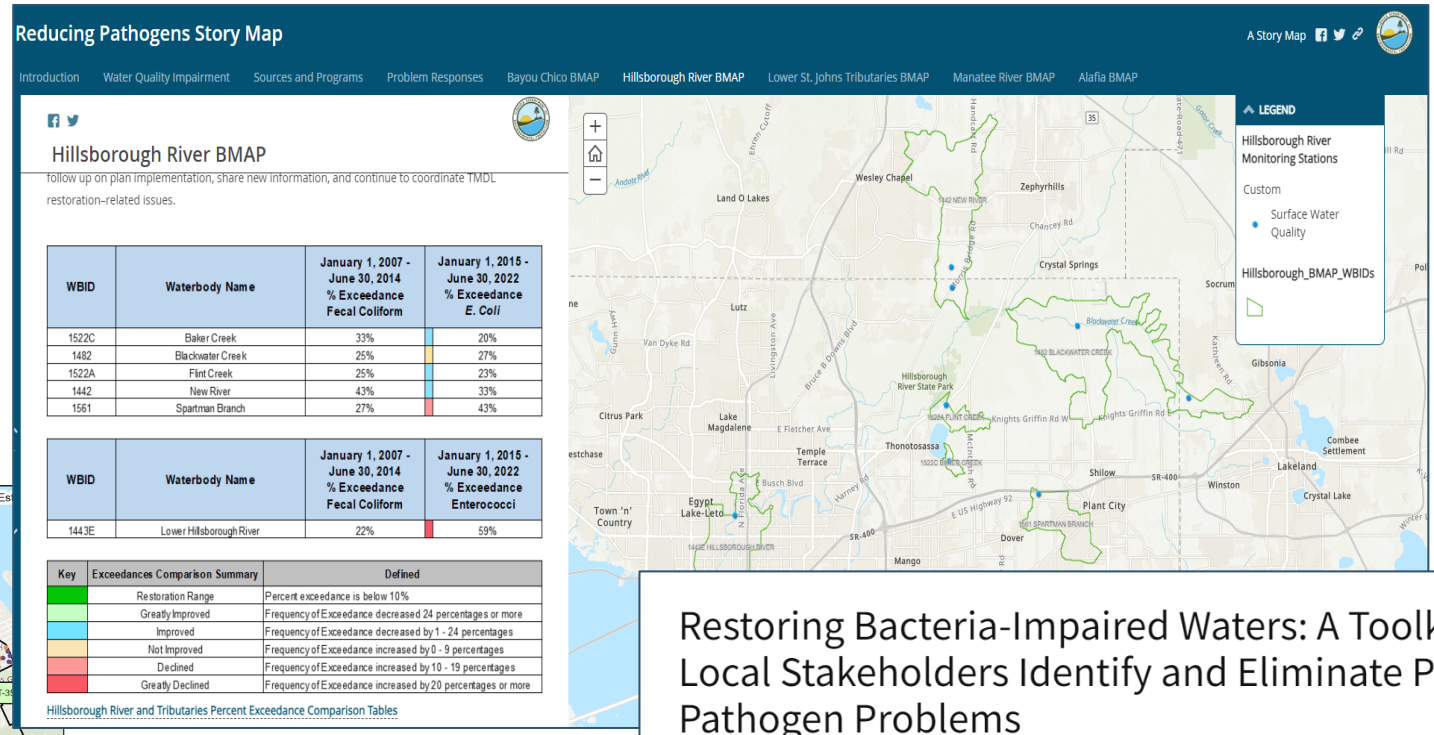
Florida DEP

Nitrogen Source Inventory and Loading Tool (NSILT)

The Groundwater Management Section has developed the Nitrogen Source Inventory and Loading Tool (NSILT) to provide quantitative information on the significant sources of nitrogen in the groundwater contribution areas for nutrient impaired springs. This tool also is being used to estimate nitrogen loads to groundwater in spring areas covered by Basin Management Action Plans (BMAP).

Each BMAP area is evaluated individually and customized based on local practices, land use information, and available data.





WBID	Waterbody Name	January 1, 2007 - June 30, 2014 % Exceedance Fecal Coliform	January 1, 2015 - June 30, 2022 % Exceedance *E. Coli*
1522C	Baker Creek	33%	20%
1482	Blackwater Creek	25%	27%
1522A	Flint Creek	25%	23%
1442	New River	43%	33%
1561	Spartman Branch	27%	43%

WBID	Waterbody Name	January 1, 2007 - June 30, 2014 % Exceedance Fecal Coliform	January 1, 2015 - June 30, 2022 % Exceedance Enterococci
1443E	Lower Hillsborough River	22%	59%

Key	Exceedances Comparison Summary	Defined
	Restoration Range	Percent exceedance is below 10%
	Greatly Improved	Frequency of Exceedance decreased 24 percentages or more
	Improved	Frequency of Exceedance decreased by 1 - 24 percentages
	Not Improved	Frequency of Exceedance increased by 0 - 9 percentages
	Declined	Frequency of Exceedance increased by 10 - 19 percentages
	Greatly Declined	Frequency of Exceedance increased by 20 percentages or more

Hillsborough River and Tributaries Percent Exceedance Comparison Tables

Restoring Bacteria-Impaired Waters: A Toolkit to Help Local Stakeholders Identify and Eliminate Potential Pathogen Problems

Home » Divisions » Division of Environmental Assessment and Restoration » Water Quality Restoration Program » Restoring Bacteria-Impaired Waters: A Toolkit to Help Local Stakeholders Identify and Eliminate Potential Pathogen Problems

Water Quality Restoration Program Quick Links

- Basin Management Action Plans (BMAPs)
- Statewide Annual Report
- Water Quality Grant Opportunities 2023-24
- Meeting Notification and Updates
- Impaired Waters, TMDLs

Document: Restoring_Bacteria-Impaired_Waters_Toolkit_082018.pdf

Document Type: Guidance

Author Name: Anita Nash

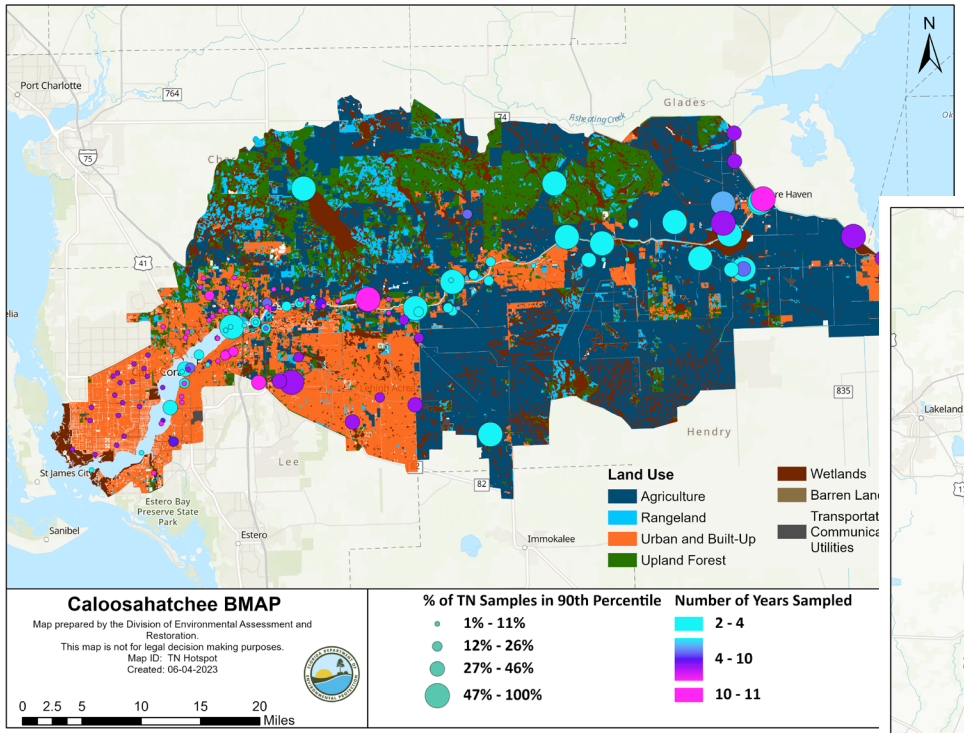
Restoring Bacteria-Impaired Waters: A Toolkit to Help Local Stakeholders Identify and Eliminate Potential Pathogen Problems

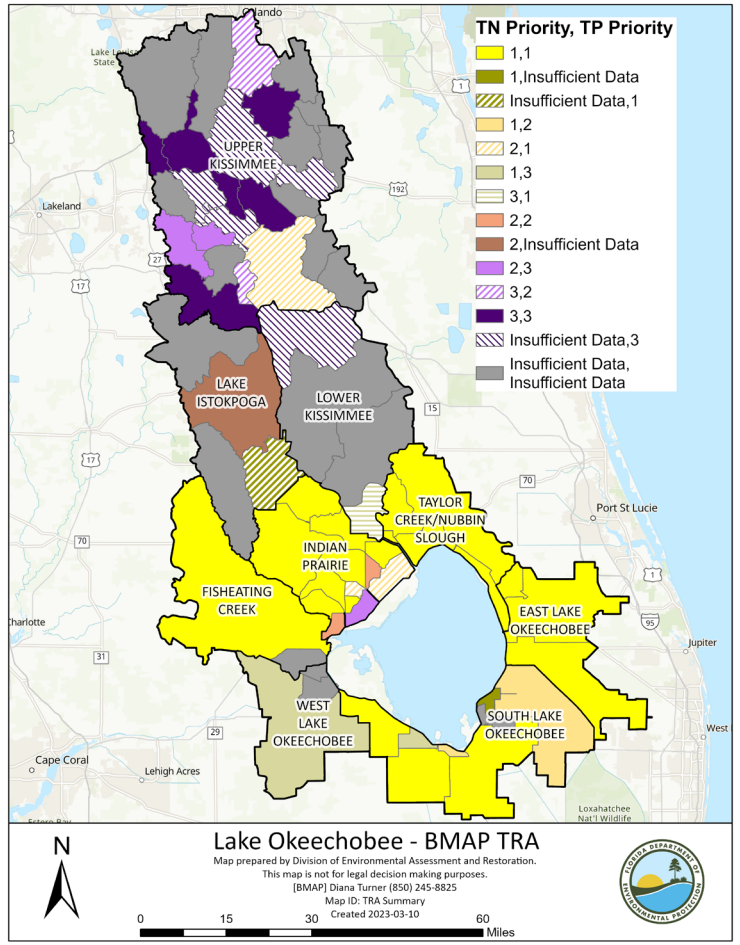
The toolkit is a restoration guide for municipalities, built from the department's experiences across the state in collaborating with local stakeholders on pathogen source identification and elimination efforts. This document provides useful information for identifying sources of fecal indicator bacteria and examples of management actions to address these sources. It is useful during all stages of restoration plan development and implementation, whether the plan is a formal Basin Management Action Plan (BMAP), a Bacteria Pollution Control Plan required by a stormwater permit, or another approach.

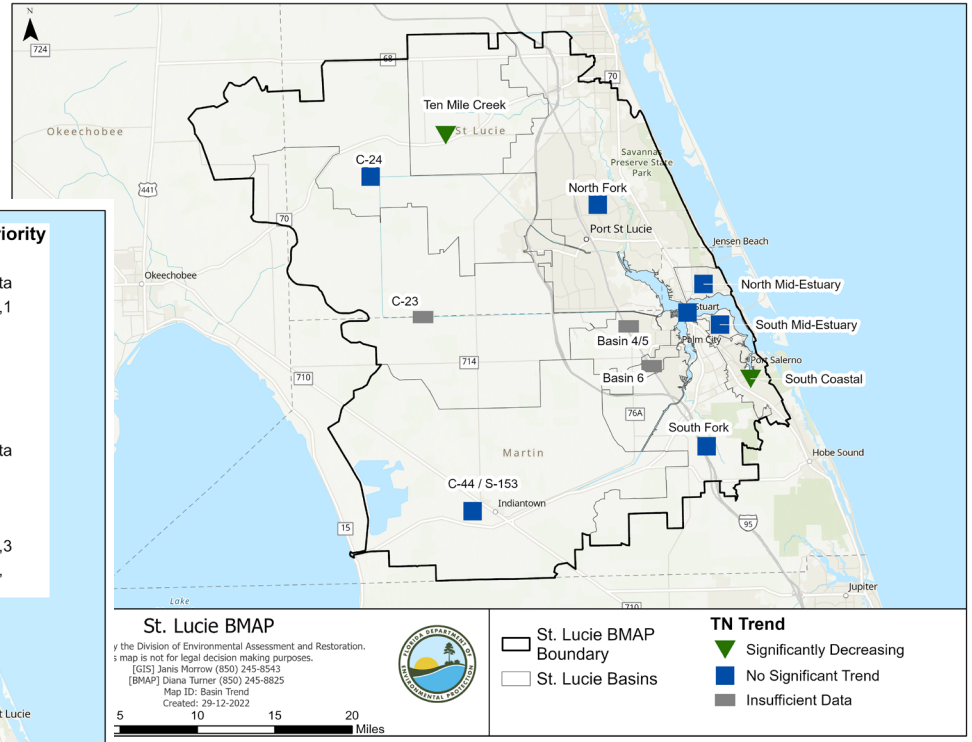
Last Modified: September 1, 2022 - 2:36pm

EXISTING DATA AND TOOLS

WATER QUALITY TOOLS







EXISTING DATA AND TOOLS

EXISTING TOOLS AND INFORMATION FOR STAKEHOLDERS

B18 | Required pieces of information (listed below)*

11/8/2021

BMP Verification Helper

First: Select a BMAP in the orange cell below, for the earliest acceptable start date (year).

BMAP List

Select a project type from pick list in the cell below.	
Select a Project Type by clicking this cell and choosing from this dropdown list.	
Category 1:	Select a project type in cell B10
Category 2:	Select a project type in cell B10
Message about the project type selected:	Definition of the project type selected:
Please select a project type in the yellow cell at the top of this table and have a great day!	Select a project type in cell B10 next to the yellow arrow.
Select a project type in cell B10	*Select a project type in cell B10*
Required pieces of information (listed below)*	Optional pieces of information (listed below)

Instructions:

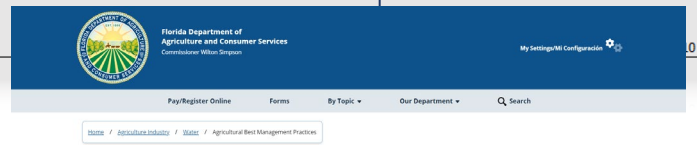
1. Will this project be eligible based on start date? Each BMAP tracks projects starting with a specific year and forward. Projects that began before this date are not typically eligible for credit. Select the BMAP basin in the orange cell, B4. As always, contact your BMAP coordinator if you are unsure.

2. What is the project type? Review the project types table (tab called Project Types) and identify the project type that suits the project you are submitting. Project types are categorized for easier identification (ex. stormwater or wastewater). Click on a project type to read the definition in a pop-up. Pop-ups for project types currently ineligible for credit suggest the reader review definitions for creditable project types with similar names.

3. What information is needed for credit verification? Select the project type from the dropdown list in cell B10 (next to the yellow arrow). Confirm that categories 1 and 2 match your project. Read the message box and the definition to confirm you have selected the best option. If not, select another project type that better matches.

4. Pro… BMP I… Optio… during…

5. If yo…



Home / Agriculture Industry / Water / Agricultural Best Management Practices

Agricultural Best Management Practices

For the purposes of the Florida Department of Agriculture and Consumer Services' Best Management Practices (BMP) program, a BMP is defined by law as a means, a practice or combination of practices determined by the coordinating agencies, based on research, field testing and expert review, to be the most effective and practicable on-location means, including economic and technological considerations, for improving water quality in agricultural and urban discharges. According to Section 373.4595(2)(a), Florida Statutes, BMPs for agricultural discharges must reflect a balance between water quality improvements and agricultural productivity.

Agricultural Best Management Practices

- BMP Research
- BMP Success Stories

Program Resources

- Brochure: What Are Agricultural Best Management Practices? [82.1 kB]
- Nutrient Application Record Form and Instructions [ ]
- Producer Record-Keeping Tool [1.6 MB]
- Producer Portal

Contact Us

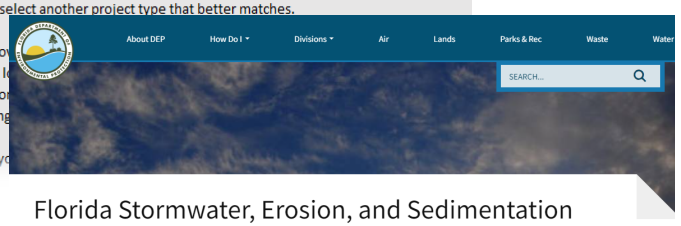
For assistance with BMP enrollment or implementation:
(863) 467-3250
AgBmpHelp@FDACS.gov

What Are Agricultural Best Management Practices?

Categories of practices include:

- Nutrient management to determine nutrient needs and sources and manage nutrient applications (including manure) to minimize impacts to water resources.
- Irrigation management to address the method and scheduling of irrigation to reduce water and nutrient losses to the environment.
- Water resource protection using buffers, setbacks and swales to reduce or prevent the transport of sediments and nutrients from production areas to waterbodies.

The Florida Department of Agriculture and Consumer Services' Office of Agricultural Water Policy (FDACS OAWP) develops and adopts BMPs by rule for different types of agricultural commodities. Florida law provides for agricultural producers to reduce their impacts to water quality through the implementation of applicable BMPs adopted by FDACS.



Florida Stormwater, Erosion, and Sedimentation Control Inspector Training & Certification Program

Home » Divisions » Division of Environmental Assessment and Restoration » Florida Stormwater, Erosion, and Sedimentation Control Inspector Training & Certification Program

Florida Stormwater, Erosion, and Sedimentation Control Inspector Training & Certification Program Quick Links

- Florida Stormwater, Erosion, and Sedimentation Control Inspector Training Certification Program
- FSESCI Manual (External Link)
- FSESCI Classes (External Link)
- All Florida Stormwater, Erosion, and Sedimentation Control Inspector Training & Certification Program Content

The Florida Stormwater, Erosion, and Sedimentation Control Inspector Training & Certification Program

The Water Quality Restoration Program is currently implementing the **Florida Stormwater, Erosion, and Sedimentation Control Inspector (FSESCI) Qualification Program**. The goals of this program are to better educate installers and inspectors on proper Best Management Practice (BMP) selection, installation, layering, and maintenance; and to train and qualify inspectors to correctly inspect BMPs for use during and after construction so that impacts from uncontrolled erosion and sedimentation on the construction site are minimized.

For a list of upcoming classes, or for general questions, please visit our external program website at www.fsesci.com.

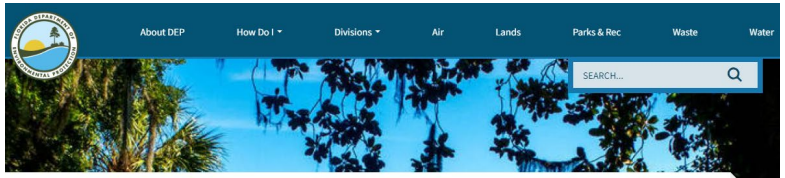
To request a replacement certificate, please visit www.fsesci.com.

You may also verify qualification status at www.fsesci.com/verify/.

The Inspector's Training Program

This program is a two-day class that follows the curriculum provided in the **Florida Stormwater, Erosion and Sedimentation Control Inspector's Manual Tier I, and Tier II**. Upon the completion of the class, a proctored examination is administered and approximately 1 hour is given to complete the exam. In order to obtain the DEP qualification certificate, a minimum passing grade of 70 percent must be made on the exam.

The objectives of this training and qualification program are:



Nonpoint Source Pollution Education

Home » Divisions » Division of Water Restoration Assistance » Nonpoint Source Funds » Nonpoint Source Pollution Education

Nonpoint Source Funds Quick Links

- Contacts
- How to Apply?
- Program Resources
- Frequently Asked Questions (Grants Q&A)
- Nonpoint Source Pollution Education
- Green Infrastructure/Low Impact Development (leaving Nonpoint Source Management website)
- Story Map of Florida's Nonpoint Source Projects (leaving Nonpoint Source Management website)
- All Nonpoint Source Funds Content

DEP's Nonpoint Source Pollution Management Program (NPSM) is committed to educating the public about and helping to prevent nonpoint pollution, which can affect water quality. Nonpoint source pollution is the result of runoff from stormwater picking up and carrying natural and human-made pollutants from diffuse sources and depositing them into lakes, rivers, springs, wetlands, coastal waters and ground water. Common nonpoint source pollution sources include sediment, leaf litter, pet waste, landscape inputs such as fertilizers, herbicides and insecticides, and nutrients from septic systems.

*To sign up for updates on nonpoint source pollution education information, meetings and bulletins, please enter your email address under the **Subscribe** section below.*

The NPSM program offers the following campaigns and resources for educators throughout the state:

Flip My Florida Yard Television Series

The successful DEP-sponsored Flip My Florida Yard (FMFY) television series is funded and overseen by the NPSM program. FMFY is a Florida-based gardening-themed television show that "flips" select Florida yards (in eight hours) to become more Florida-friendly, while the homeowners visit one of the state's award-winning state parks. The show provides public education about and promotion for the Florida-Friendly Landscaping™ (FFL) Program. Two seasons of FMFY have been produced and aired/are streaming on PBS stations and the Discover Florida Channel. Season three of the show is currently underway.

Florida-Friendly Landscaping™ Website

The Florida-Friendly Landscaping™ (FFL) program was established in 1993 as a partnership between DEP and the University of Florida's Institute of Food and Agricultural Sciences. The program teaches environmentally friendly landscaping through nine science-based principals: 1) Right Plant, Right Place; 2) Water Efficiently; 3) Fertilize Appropriately; 4) Mulch; 5) Attract Wildlife; 6) Manage Yard Pests Responsibly; 7) Recycle; 8) Reduce Storm Water Runoff; and 9) Protect the Waterfront. The program's overall goal is to reduce nonpoint source pollution through proper fertilization, irrigation, and pesticide use on residential and commercial landscapes.

Green Stormwater Infrastructure Website

Green Stormwater Infrastructure (GSI) is the use of plants and pervious surfaces to retain and treat stormwater. GSI reduces pollution and treats stormwater by retaining rainfall near its source instead of directing it to a centralized pond or treatment system.

Nonpoint Publication Tool

The Nonpoint Publication Tool is a free resource for state, municipal, nonprofit and other nonpoint educators, with the goal of unified messaging and increased positive behavior change through public outreach publications. This tool empowers individuals to quickly and easily build print-ready PDF files, without the need for professional designers or expensive software. Created files can be stored for repeat use and shared with other members of your team.

EXISTING DATA AND TOOLS

BMAP STORMWATER PROJECTS

LITERATURE-BASED, FLORIDA-SPECIFIC EFFICIENCIES:

- 100% On-Site Retention
- Baffle Boxes 1st Generation
- Baffle Boxes 2nd Generation
- Baffle Boxes 2nd Generation with BAM
- Bioswales
- Dry Detention
- Education Efforts or Regulations, Ordinances, & Guidelines
- Exfiltration Trenches
- Grass Swales with blocks or raised culverts
- Grass Swales without blocks or raised culverts
- Hydrodynamic Separators
- Raingardens
- Tree Boxes/Tree Wells
- Other Low Impact Development Structures
- Off-line Retention BMPs
- On-line Retention BMPs
- Pervious Pavement Systems
- Alum Injection
- BMP Treatment Trains*
- Managed Aquatic Plant Systems (MAPS)*
- Stormwater System Upgrades*
- Vegetated Buffers*

MEASURED EFFICIENCIES:

- BMP Cleanout
- Catch Basin Inserts/Inlet Filter Cleanout
- Constructed Wetland Treatment
- Control Structure
- Creating/Enhancing Living Shorelines
- Denitrification Walls
- Dispersed Water Management (DWM)
- Fertilizer Cessation
- Fertilizer Reduction
- Hydrologic Restoration
- Impoundments
- Regional Stormwater Treatment Areas
- Reuse
- Shoreline Stabilization
- Biological/Bacteria Treatment
- Stormwater Treatment Areas (STAs)
- Street Sweeping

EXISTING DATA AND TOOLS

EXISTING TOOLS AND INFORMATION FOR STAKEHOLDERS

Instructions for BMAP stakeholders for OSTDS Septic to Sewer Projects or Enhancement/65% Treatment or More Projects

1 Projects in springs BMAPs should use the green-colored tabs, not other methods. Use springs calculations for the following BMAPs: Crystal River/Kings Bay; DeLeon; Gemini; Homosassa/Chassahowitzka; Jackson Blue; Rainbow; Santa Fe; Silver; Suwannee; Volusia Blue; Wacissa; Wakulla; Weeki Wachee/Aripeka; and Wekiva.

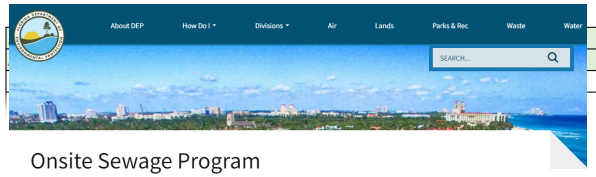
2 Sheets with orange tabs indicate methods for surface waters. Seek guidance from your basin coordinator before using a specific potential method.

3 As more information is known, the methods may change over time.

Brief Q&A to Guide Method Selection

	Question	Answer
1	Is your project in a BMAP springshed?	Use the springs residential property or springs commercial property method, as applicable
2	Are you looking for a nitrogen reduction estimate for a surface water that is not a lake?	Use the NLM or SJRWMD method, or you can use the ArcNLET Model
3	Are you looking a nitrogen reduction estimate for a lake?	Use the TMDL Method, NLM, or SJRWMD methods, or you can use the ArcNLET Model

Springs OSTDS Loading Calcs (Spring BMAPs ONLY)	
Approved for BMAP Springs Credit Calculations	**Advantages**
Point of Contact: Moira Homann, DEP	Consistent use across springs BMAPs.
	Uses census data for the persons per household, which is easy to find (online or in the dropdown options here)



Onsite Sewage Program

Home > Divisions > Division of Water Resource Management > Onsite Sewage Program

Onsite Sewage Program Quick Links

- Program Transfer
- Enhanced Nitrogen Reducing Systems
- Private Provider Inspections
- Contact Us!
- FAQ - Permitting
- Forms and Publications
  - Interoffice Memoranda
- Technical Advisory Committee (OSTDS TAC)
- OSP Rule Development
- Product Listings and Approval Requirements
  - Alternative Repair Methods
  - Additives/Product Composition
- Variances
- Septic Tank Contracting
  - Contractors
  - Contractor

Onsite sewage treatment and disposal systems (OSTDS), commonly referred to as septic systems, are currently used for wastewater disposal by approximately 30% of Florida's population. With an estimated 2.6 million systems in operation, Florida represents 12% of the United States' septic systems.

Proper design, construction and maintenance of systems are important to help protect Florida's ground water, which provides 90% of the state's drinking water. Permitting and inspection of OSTDS is handled by the Environmental Health section of the Florida Department of Health in each county. If you have a question or concern about an issue that is located entirely within one county, versus statewide, please contact your local county health department directly.

Onsite Sewage Program News & Rule Development

- "NEW" OSTDS Permitting of Enhanced Nutrient Reducing Onsite Sewage Treatment and Disposal Systems (ENR-OSTDS), House Bill 1379
- Private Providers of OSTDS Inspections
- DEP 4015 (all pages) are fillable forms as of September 30, 2022
- Current program focus areas: implementation of the July 1, 2022 Private Provider Inspections Legislation and updates on rule development
- Onsite Sewage Rule Updates June 2022 Informational PowerPoint
- Sign up to receive rulemaking updates on 62-6, Florida Administrative Code
- Division of Water Resource Management Rule Development for Onsite Sewage

Program Transfer

Please Note: Some documents are still in the process of being updated to reflect the transfer of the Onsite Sewage Program from the Florida Department of Health to the Florida Department of Environmental Protection and the location of some documents may have changed. If you have questions, please contact OSTDS_Feedback@FloridaDEP.gov.

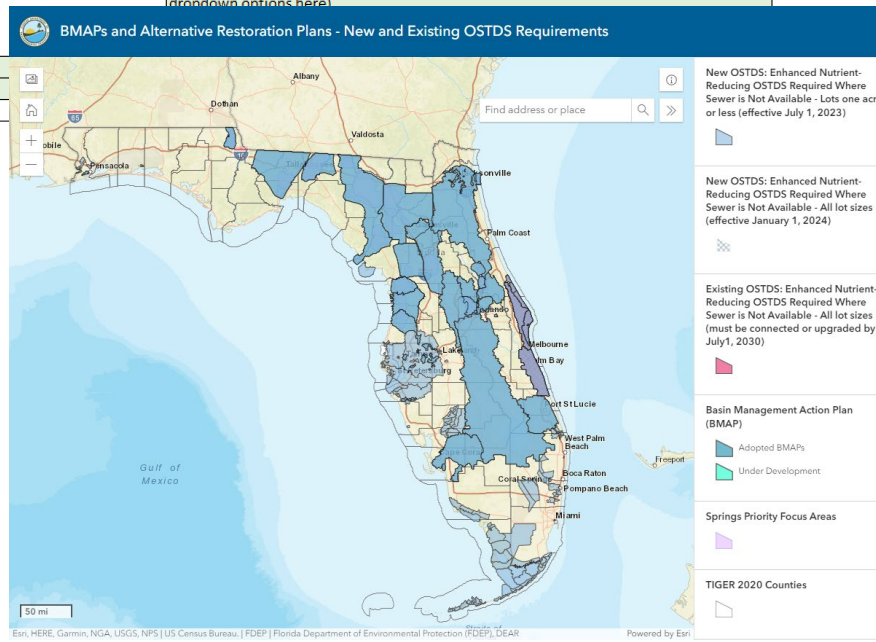
Permitting of Enhanced Nutrient Reducing Onsite Sewage Treatment and Disposal Systems (ENR-OSTDS), House Bill 1379

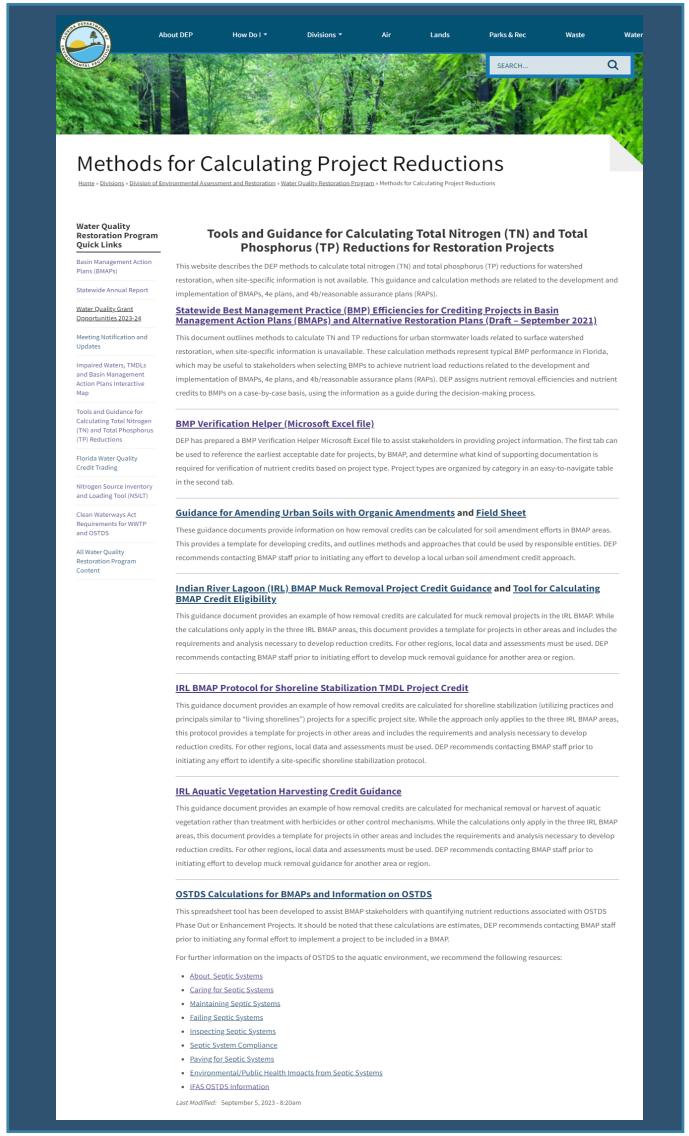
Map: BMAPs and Alternative Restoration Plans - OSTDS Requirements

Springs Protection and Basin Management Action Plans (BMAPs)

Enhanced Nitrogen-Reducing OSTDS to meet requirements of House Bill 1379/ Laws of Florida 2023-169

Nitrogen-Reducing Systems Product List





EXISTING DATA & TOOLS

BMAP WASTEWATER PROJECTS

Modeled and Calibrated with Measured Data:

- Onsite Sewage Treatment and Disposal System (OSTDS) enhancement.
- OSTDS phase out.

Measured Data Pre-Treatment Minus Post-Treatment:

- Wastewater Treatment Facility (WWTF) disposal to Underground Injection Well.
- WWTF disposal to reuse instead of direct surface water discharge.
- WWTF upgrade, e.g. from standard treatment to advanced treatment.

EXISTING DATA & TOOLS

MORE BMAP PROJECTS AND TOOLS

Agricultural Projects:

Commodity specific BMPs:

- Literature based, Florida specific efficiencies.

Cost-share for advanced practices and other technologies:

- Literature-based, Florida-specific efficiencies –(if available).
- Monitoring requirements.

In-Waterbody Projects:

Aquatic vegetation harvesting:

- Measured concentration at removal with Florida-specific literature values on plant uptake.
- Only credit for exotic, invasive species.

Muck removal for restoration dredging:

- Measured pre and post with comparison to waterbody specific literature values.

Load Tracking Tools:

Land use change not accounted for in model.

BMP missing from model.

Non-contributing basin missing from model.

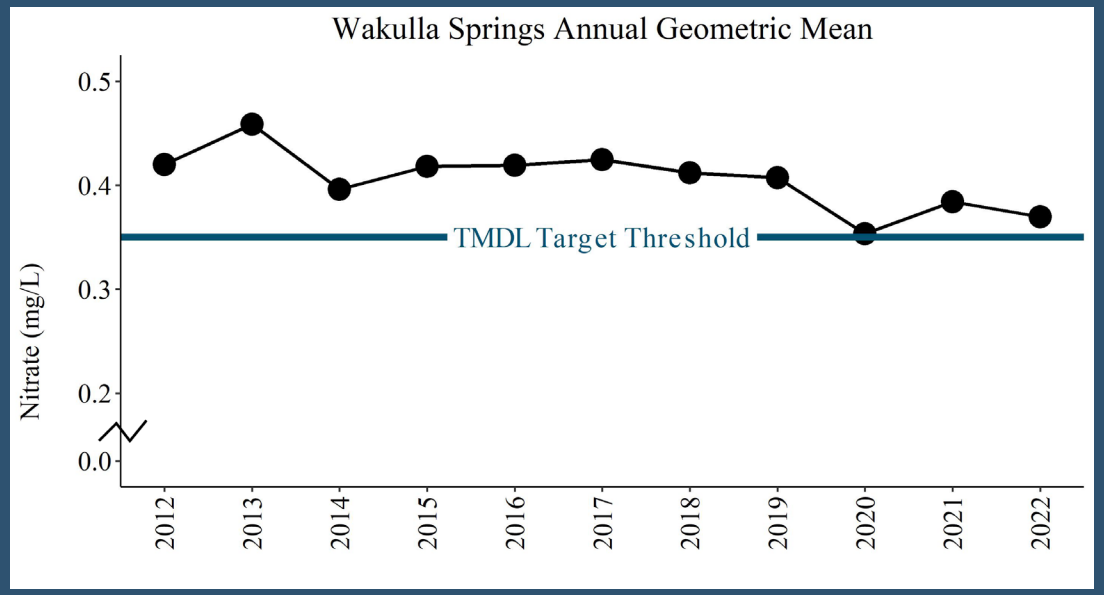
DEVELOPING BETTER DATA & TOOLS

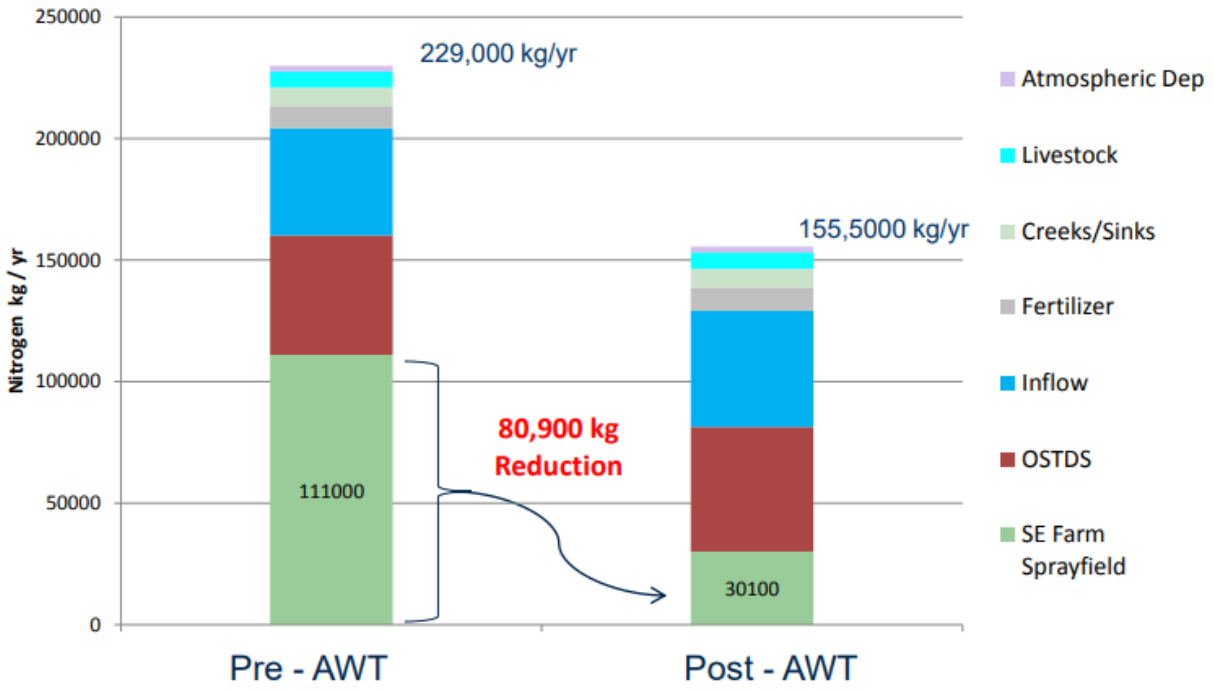
CURRENT AND UPCOMING EFFORTS

- Mapping spring systems to help identify projects closely connected to springs via conduits.
- Identifying priority areas for conventional OSTDS remediation.
- Updating nutrient performance assumptions for OSTDS systems.
- Evaluating hot spots.

DEVELOPING BETTER DATA AND TOOLS

WAKULLA SPRAYFIELD – RIGHT PROJECT, RIGHT PLACE

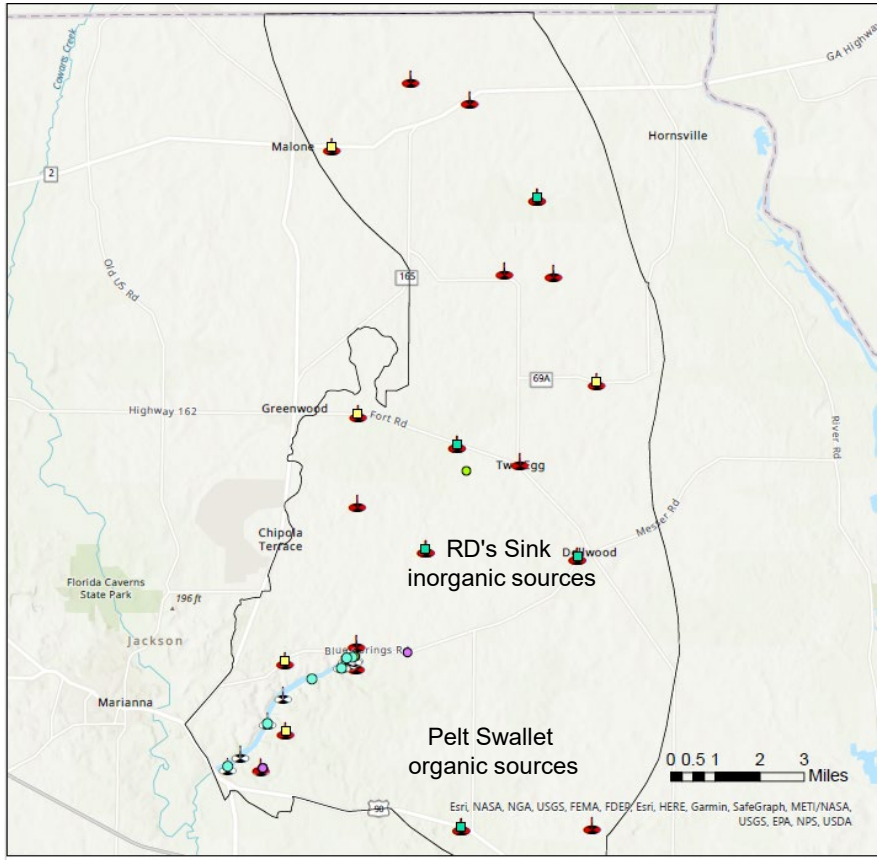




Nitrate Load Management in the Wakulla Springshed presentation by City of Tallahassee, 2012 - http://tinyurl.com/yc3nm9eu.

DEVELOPING BETTER DATA AND TOOLS

JACKSON BLUE DYE TRACE AND WATER QUALITY MONITORING



Jackson Blue Spring Basin Management Action Plan Monitoring Stations and Projects 2023

Legend

Monitoring Stations
- Surface Water

Groundwater Well Type
- Nested
- New

Project Type Category
- Land Acquisition/ Conservation - Ineligible for Credit
- Stormwater
- Wastewater

N

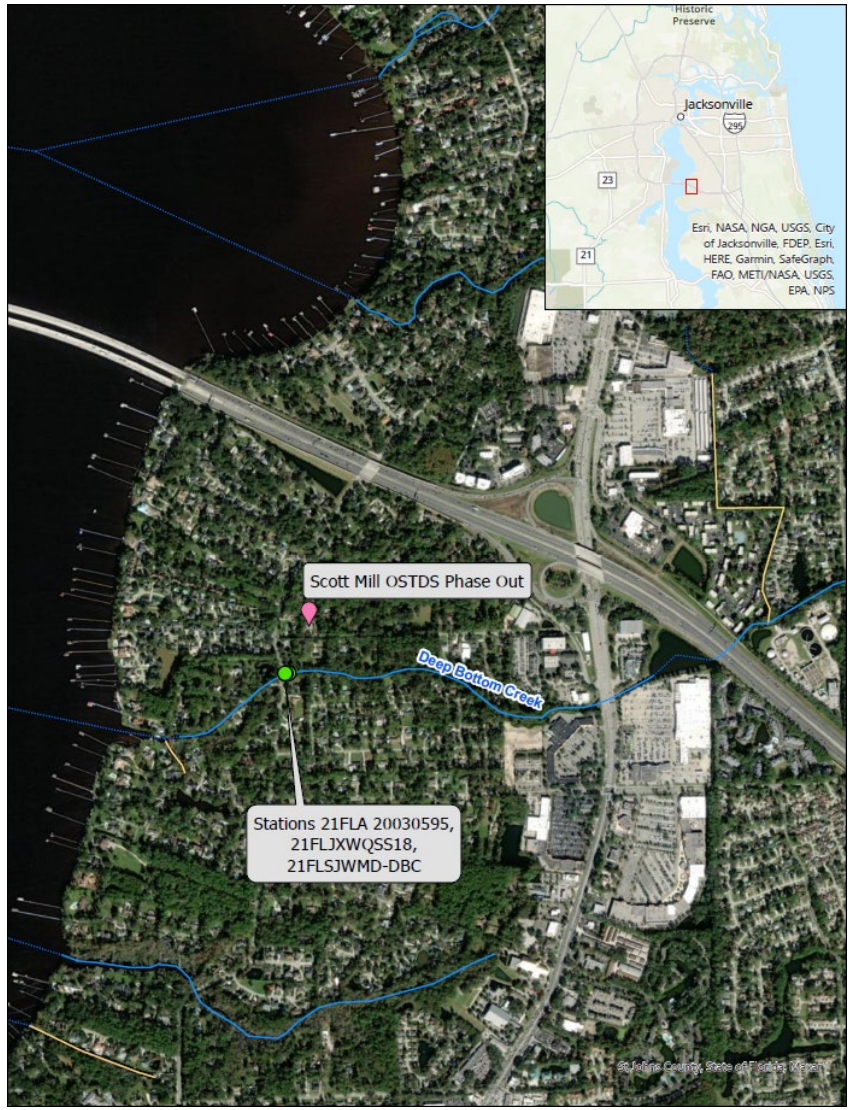
Dye introduced in 2017.

RD's sink (northern site).	Pelt Swallet (southeast site).
Dye detected: Jackson Blue Head Spring and Shangri-La.	Dye detected: Twin Caves and Hole-in-the-Wall.
Isotope study suggests loading from inorganic sources, such as fertilizer.	Isotope study suggests loading from organic sources, such as wastewater (septic).

The data from these different studies are being used to identify project locations and monitoring network design, as well as to help guide management strategies.

DEVELOPING BETTER DATA AND TOOLS

WATER QUALITY IMPROVEMENTS WITH OSTDS REMOVALS



Deep Bottom Creek, near the St. Johns River:

- OSTDS removed in 2012.
- Nitrate-nitrite concentrations have been reduced from a 2005 pre-construction high of 0.33 mg/L total nitrogen to a 2022 post-construction low of 0.051 mg/L.

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HOTSPOT ANALYSIS

DEP is in the process of developing a "hot spot analysis" to better identify areas or stations that exhibit elevated concentrations and/or that exceed ecologically relevant thresholds (e.g., numeric nutrient criteria (NNC)), and therefore, may have an inordinate influence on attainment of the BMAP targets.

The new approach uses both distributional statistics and ecologically relevant thresholds. The ecologically relevant thresholds were developed using the NNC development datasets and represent levels outside the healthy NNC expectations.

Refined hotspot analysis can augment the targeted restoration areas (TRA) approach currently used in the Northern Everglades BMAPs.

Hotspot analysis will be used to:

- Prioritize areas for restoration activities that will provide the greatest potential benefit.
- Identify areas where additional monitoring would be most beneficial to identify nutrient sources.

Benefits over previous approaches:

- The TRA approach was not applicable across all BMAPs due to data limitations such as the lack of flow data.
- The hotspot analysis is connected to ecologically relevant imbalance thresholds (i.e., NNC).

Benefits over previous approaches (continued):

- The hotspot analysis can be conducted at multiple spatial scales.
- The new approach considers the effects of sample size on statistical errors and uncertainty.

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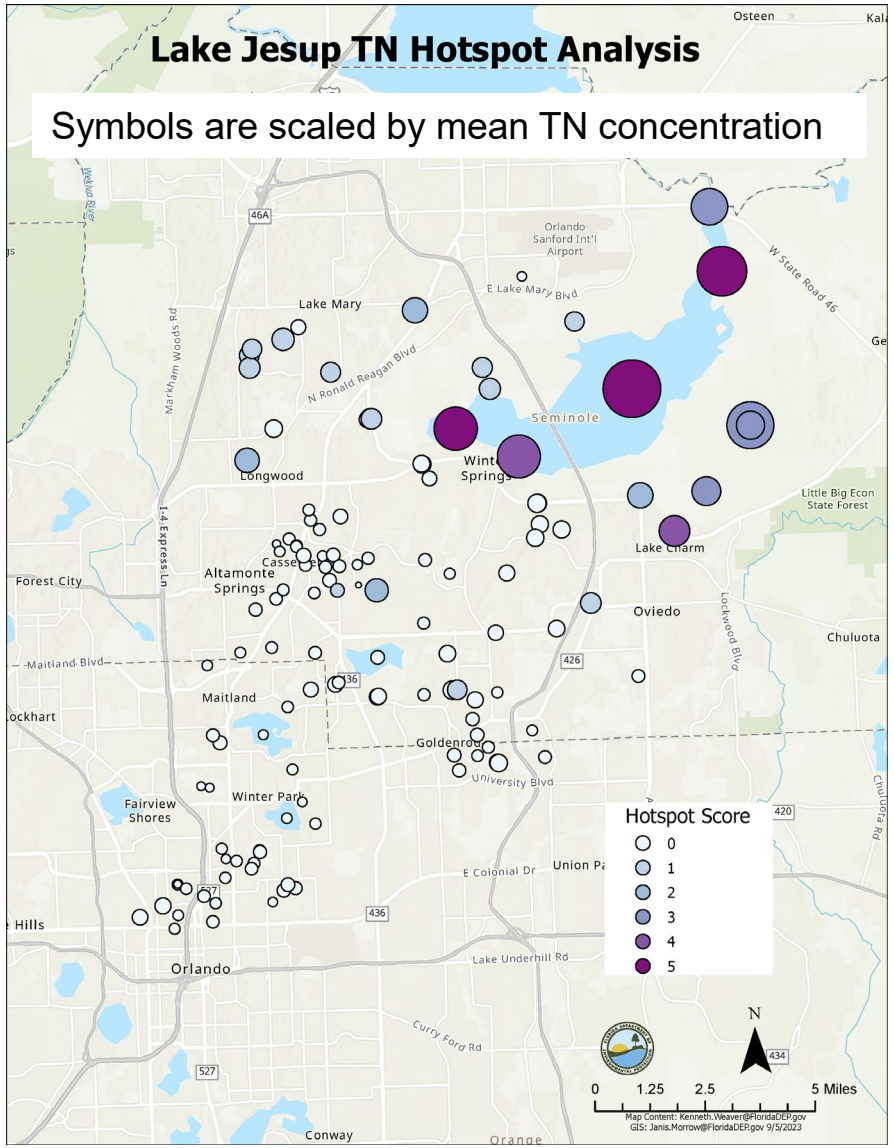
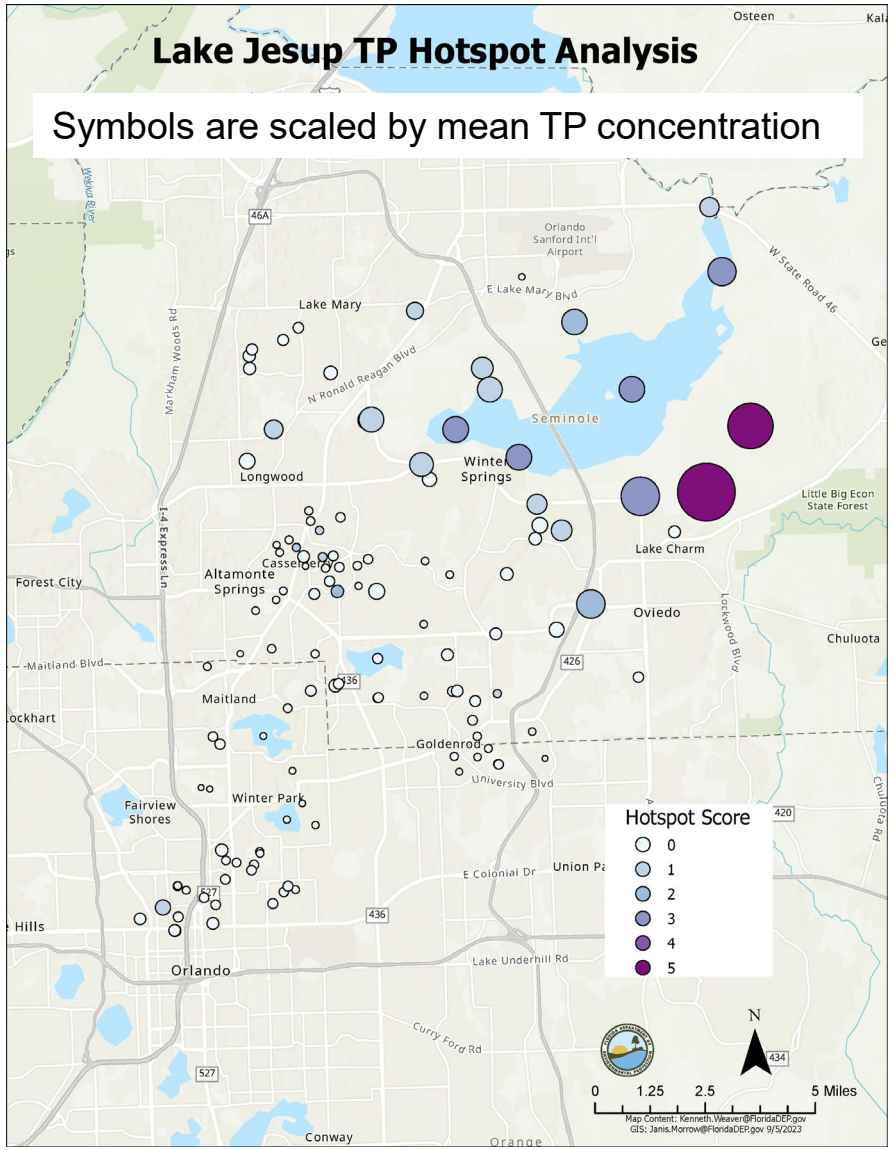
EXAMPLE HOTSPOT ANALYSIS





FEEDBACK FROM BLUE-GREEN ALGAE TASK FORCE

- What factors should we consider in **these current efforts** to develop better data and tools to help stakeholders identify the best projects?
- What **other tools or data sets** might we develop to help stakeholders choose the most effective project for their community?

THANK YOU

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FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION