Basin Management Action Plans (BMAPs) in the Northern Everglades System

July 16, 2020

Agenda

- Background
- Executive Order 19-12
- Modeling Updates
- Restoration Approach Updates
- Requests for Information
- Summary

Background

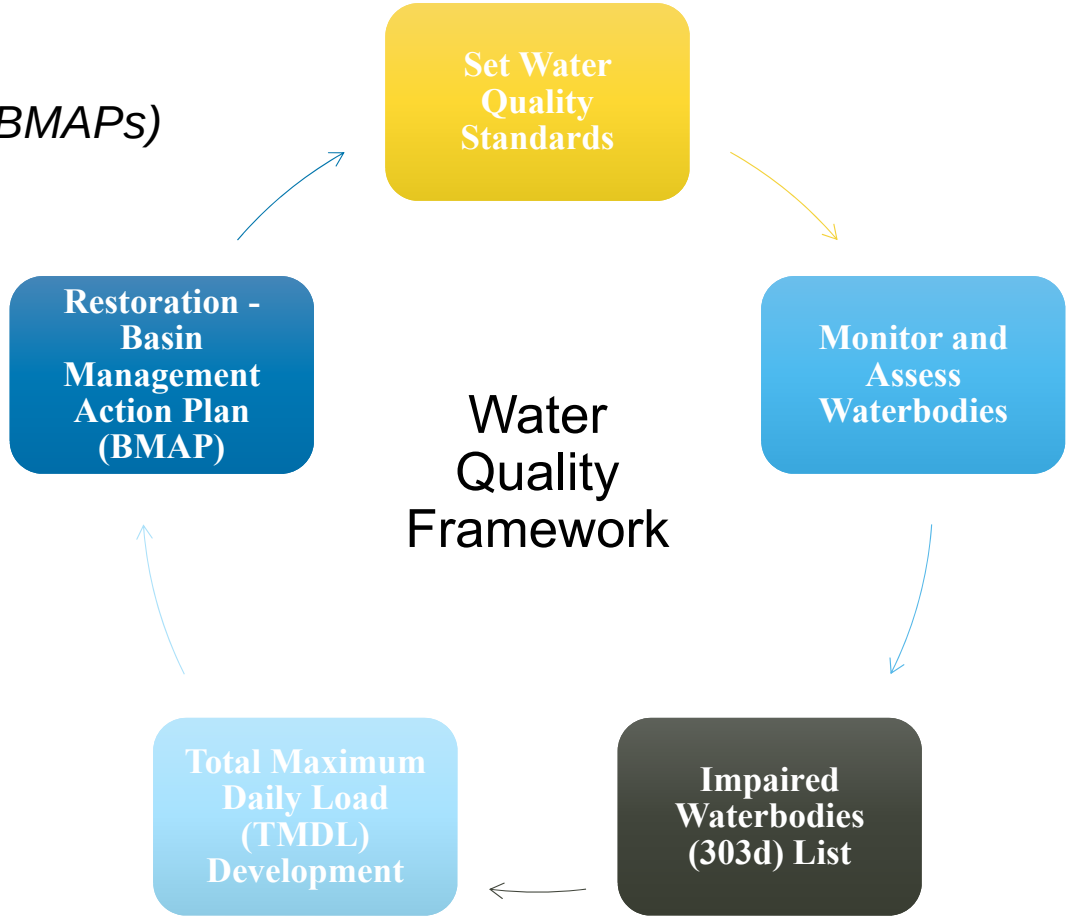
Basin Management Action Plans (BMAPs)

A BMAP:

- is one of the Department of Environmental Protection's (DEP's) methods for **restoring water quality** in an impaired waterbody
- equitably **addresses loads** from all sources
- contains **strategies** to reduce and prevent pollutant discharges
- is **reviewed annually** and updated in phases

Over 30 adopted BMAPs statewide

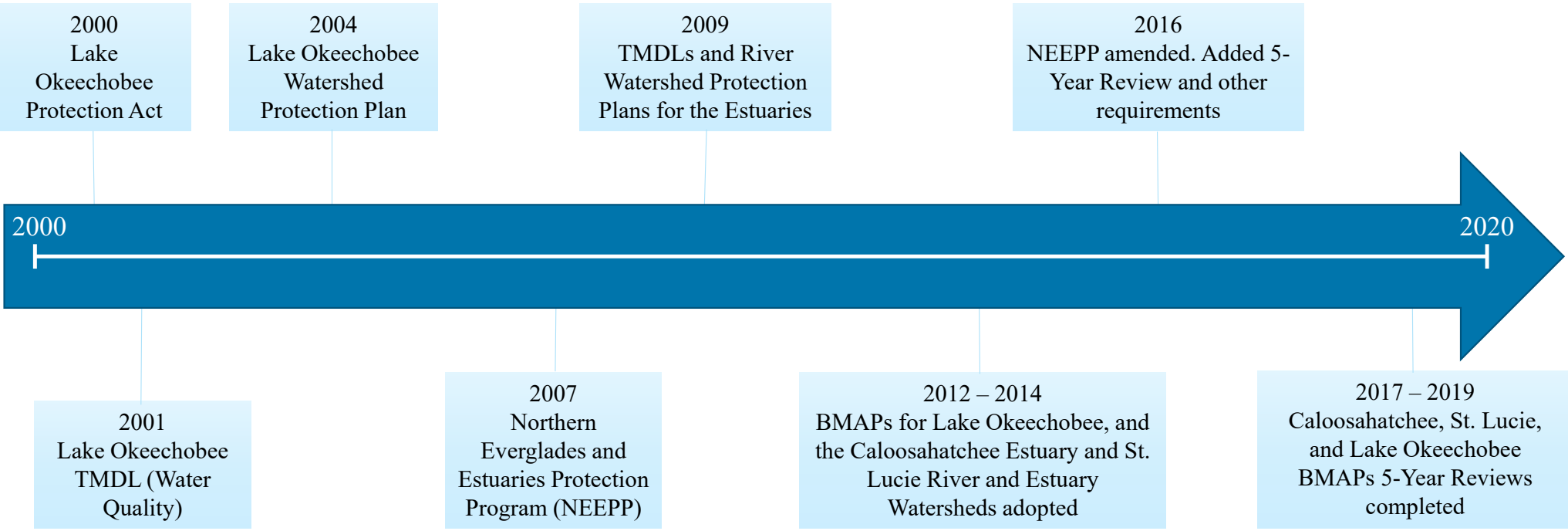
https://floridadep.gov/bmaps



Section 403.067, Florida Statutes (F.S.)

Background

Northern Everglades and Estuaries Protection Program (NEEPP)
Section 373.4595, F.S.



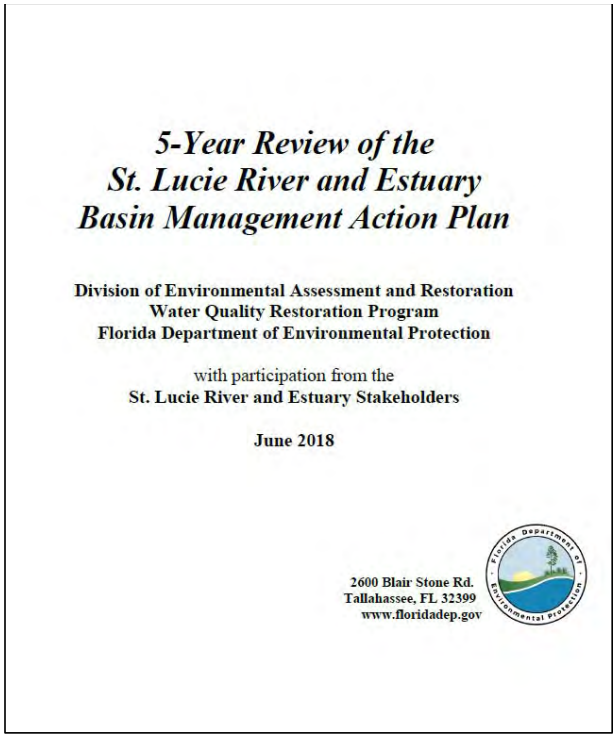
Background

Five-Year Reviews

Caloosahatchee
November 2017

St. Lucie
June 2018

Lake Okeechobee
December 2019



- Adaptive Management Resource
- Reviews include:
  - 5-year milestones towards meeting TMDL(s)
  - Assessment of progress
  - Identification of recommended revisions
    - Model revisions, monitoring network, etc.

Background

Executive Order 19-12: Achieving More Now

BMAP directives:

- Update restoration plans impacting South Florida communities within the year

Other directives:

- Blue-Green Algae Task Force
- Office of Environmental Accountability and Transparency and Chief Science Officer within DEP
- Everglades restoration funding

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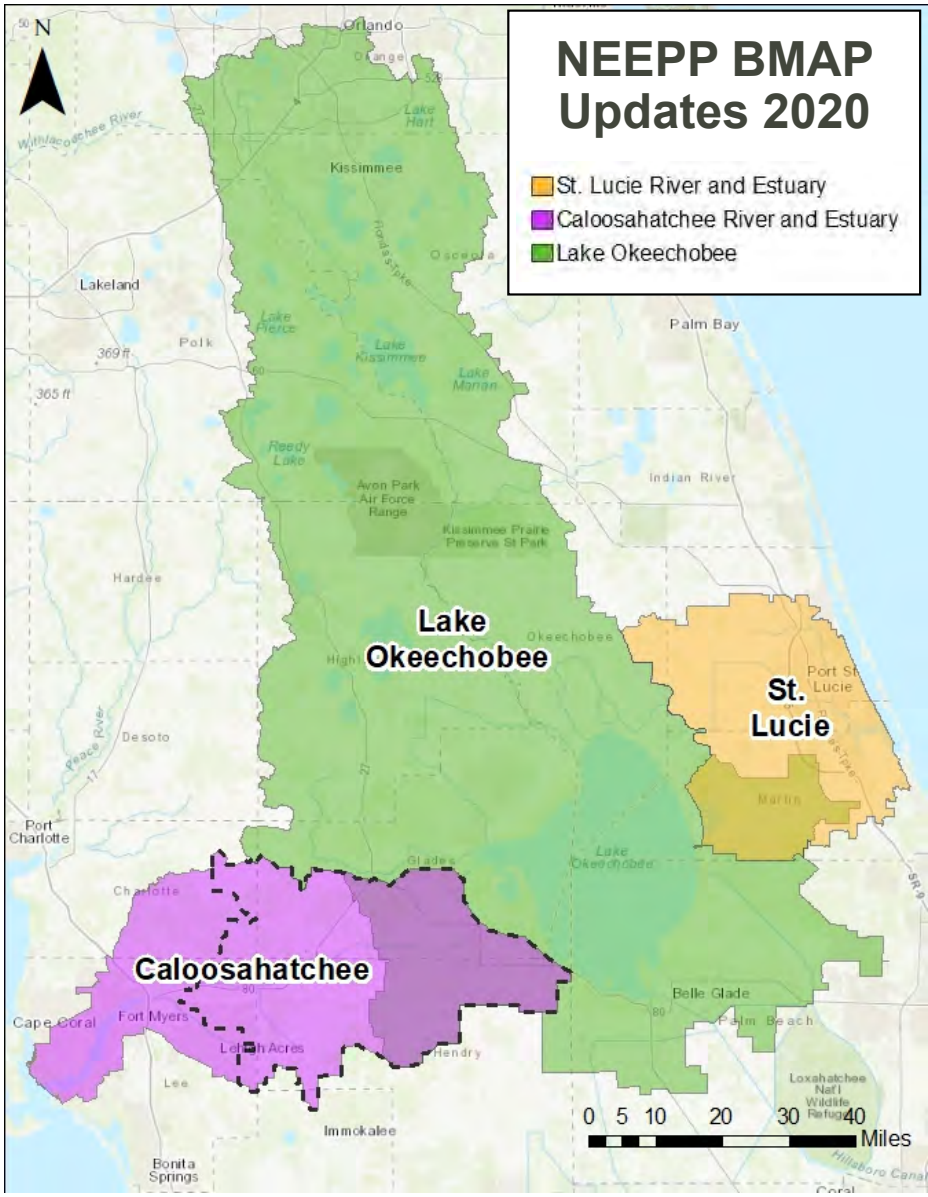
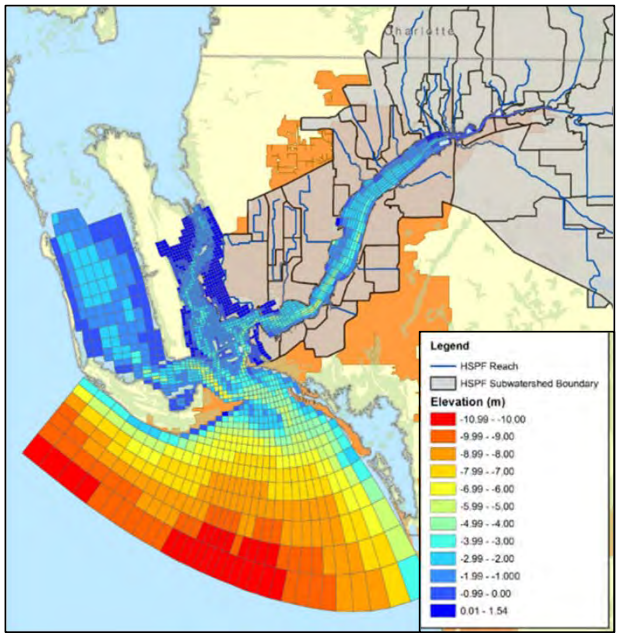


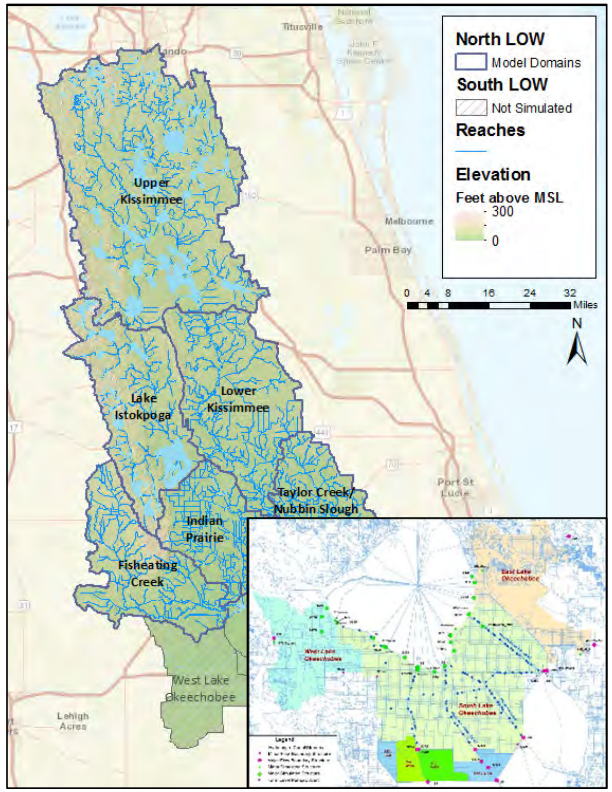
Modeling Updates

Incorporating better data for planning

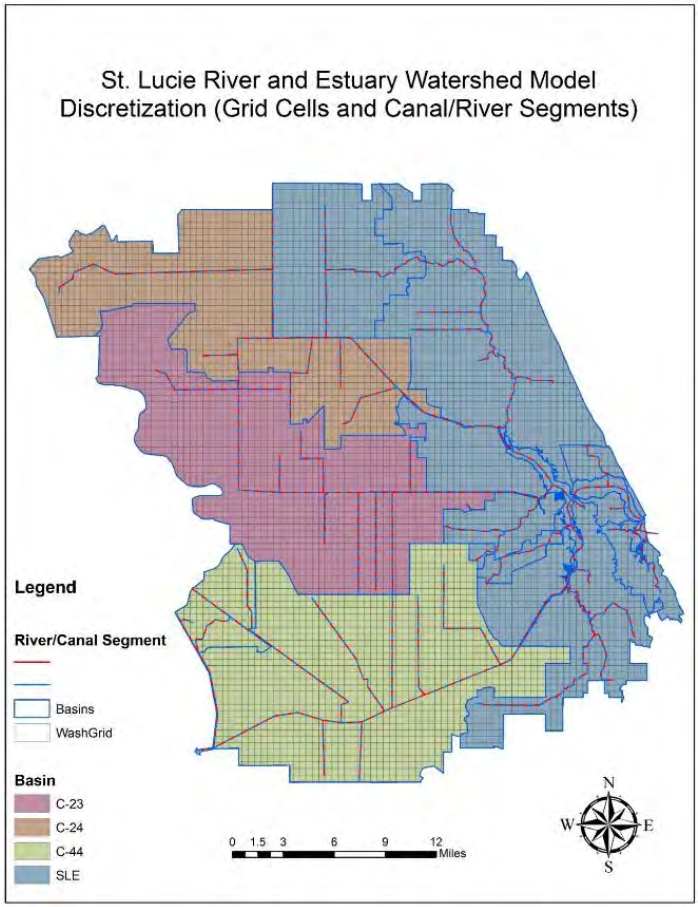
Caloosahatchee



Lake Okeechobee



St. Lucie



Restoration Approach Updates

Components of NEEPP BMAPs

- Targeted Restoration Area (TRA) Approach
- Water Quality Monitoring Network and Objectives
- Basinwide Sources
  - Agriculture
  - Septic Systems
  - Stormwater
  - Wastewater Treatment
- Future Growth

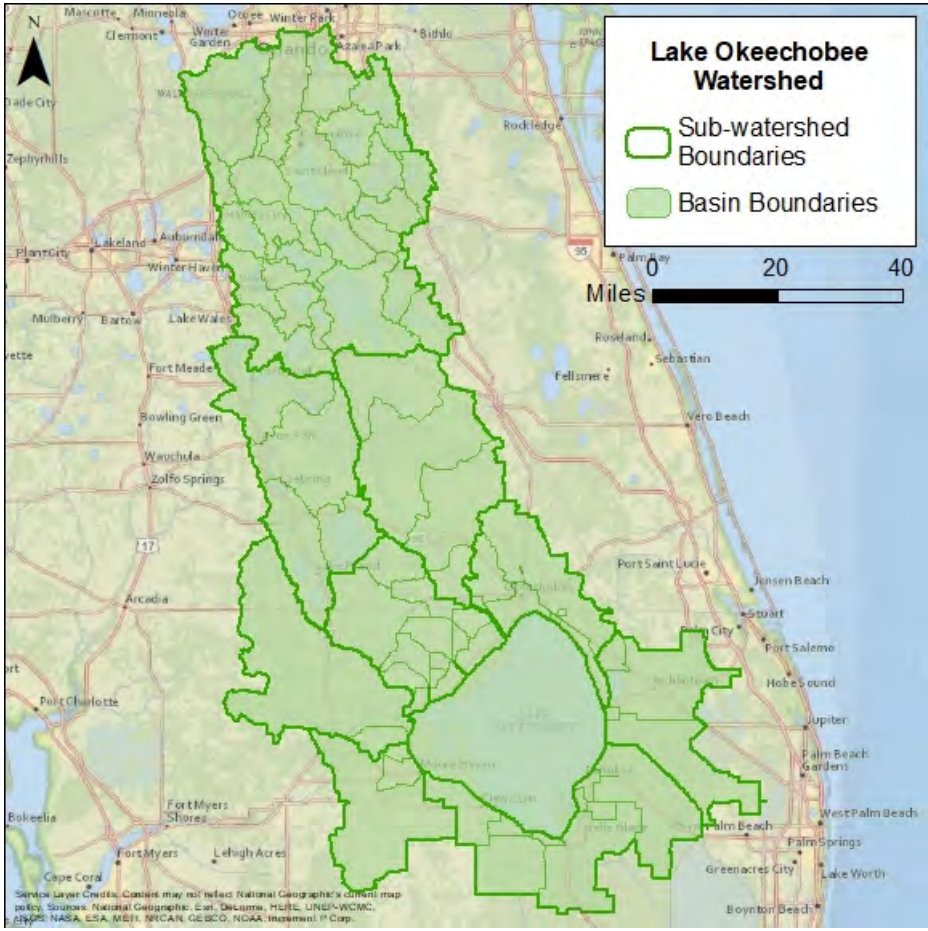
Bessey Creek Hybrid Wetland Treatment Technology Facility (*Source: Martin County*)

Restoration Approach Updates

Targeted Restoration Area (TRA) Approach

Achieving More, Now

- Data-driven approach
- Focusing on smaller subdivisions called "**targeted restoration areas**" in each BMAP
- Evaluating total nitrogen (TN), total phosphorus (TP), and flow in all BMAPs with available **measured data**
- Prioritizing by comparing water quality to appropriate benchmarks



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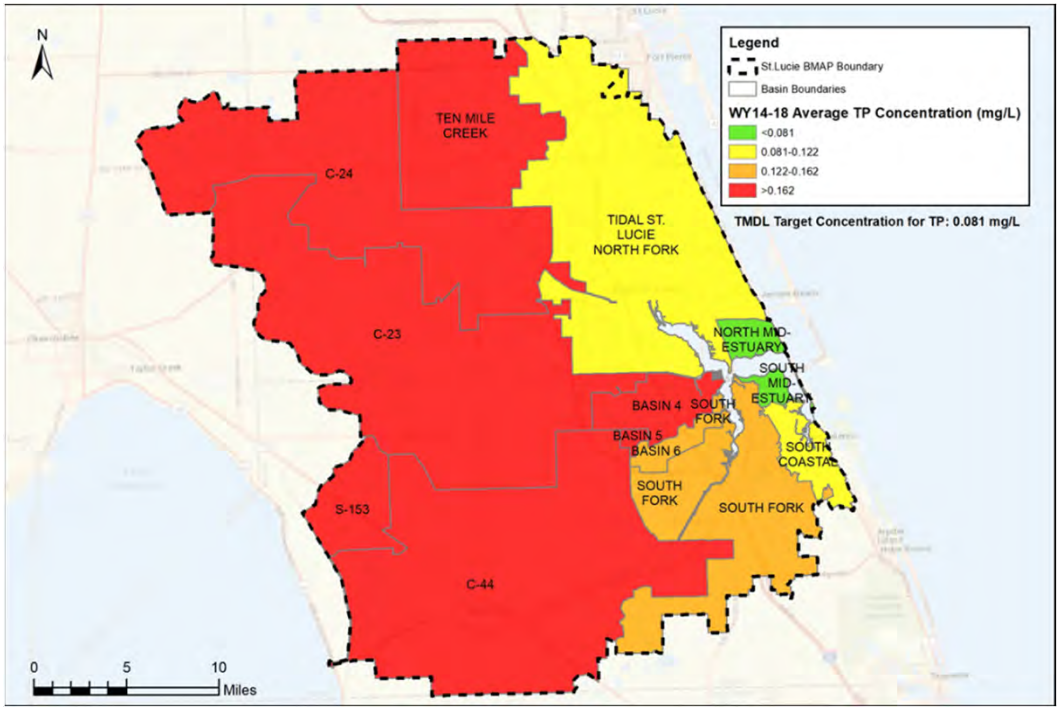
Restoration Approach Updates

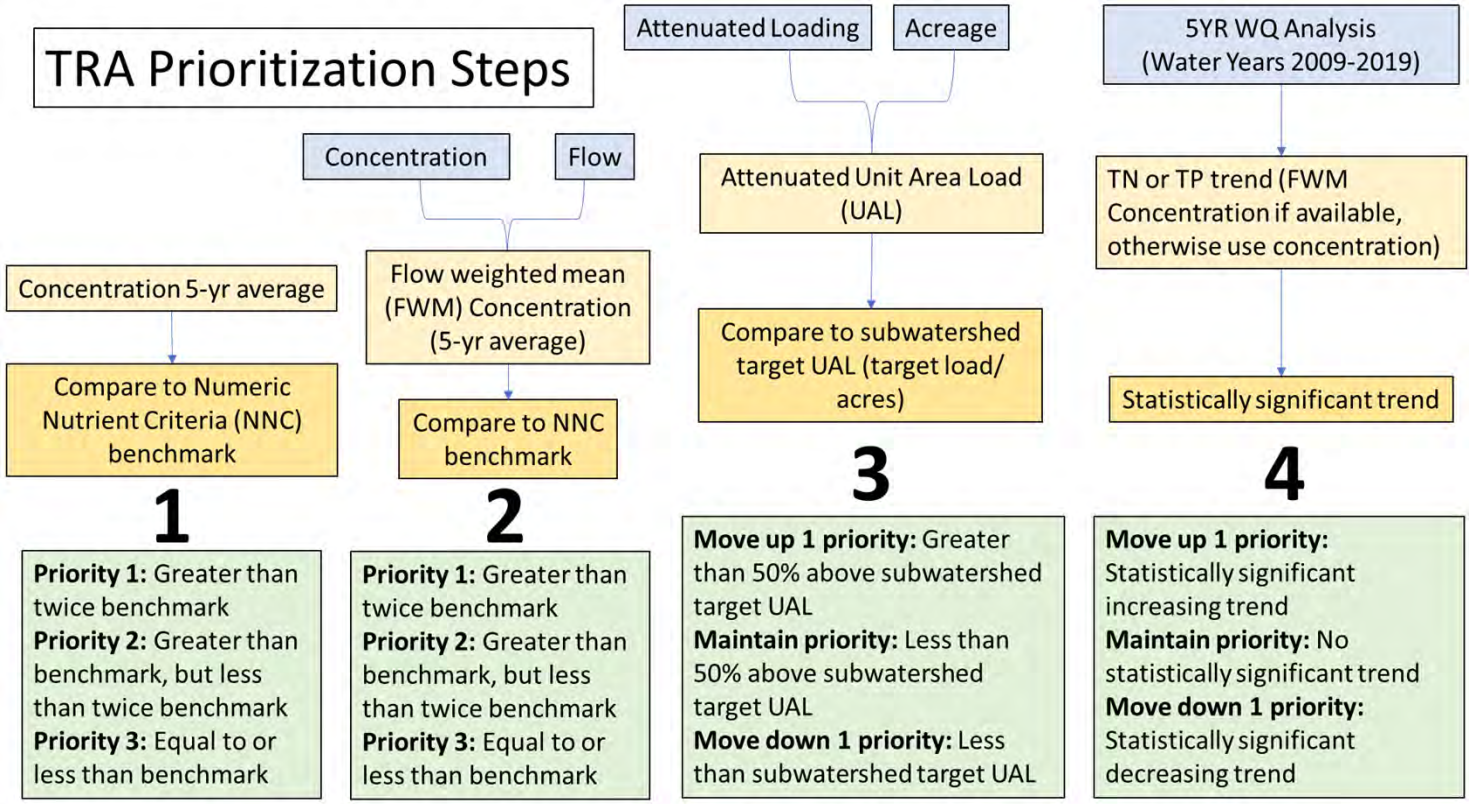
Targeted Restoration Area (TRA) Approach

- Using the latest information from South Florida Water Management District (SFWMD) evaluations, identify projects tailored to each targeted restoration area
- Soliciting stakeholders, local governments, and the public through an RFI for additional projects



Restoration Approach Updates

Targeted Restoration Area (TRA) Approach



Summary of the TRA Prioritization Process, Lake Okeechobee BMAP

Restoration Approach Updates

Water Quality Monitoring Network and Objectives

- Objectives, Parameters, and Frequency
  - Primary Objective: track trends in TP and TN loads and concentrations by subwatershed and basin
- Monitoring Network
  - Stations selected to be representative of basins
  - Identified gaps and established new stations
  - Multi-tiered networks
- Data Management and Quality Assurance
  - Upload regularly to Watershed Information Network (WIN)

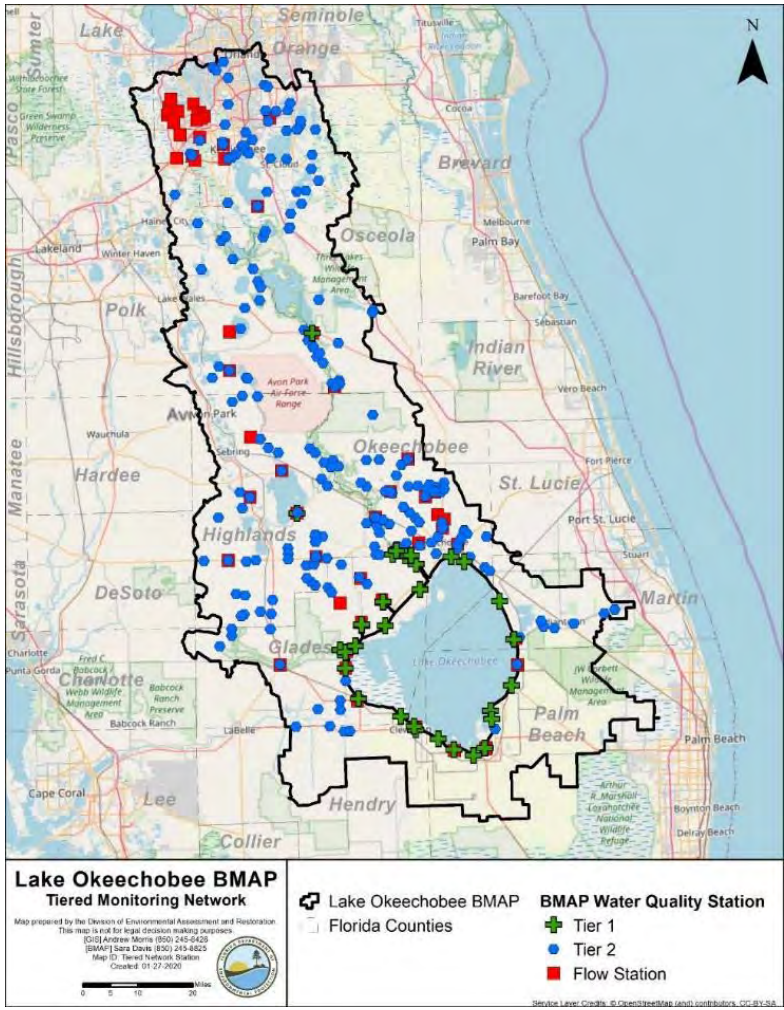


Figure 9. Lake Okeechobee BMAP monitoring network

Restoration Approach Updates

Water Quality Monitoring Network and Objectives

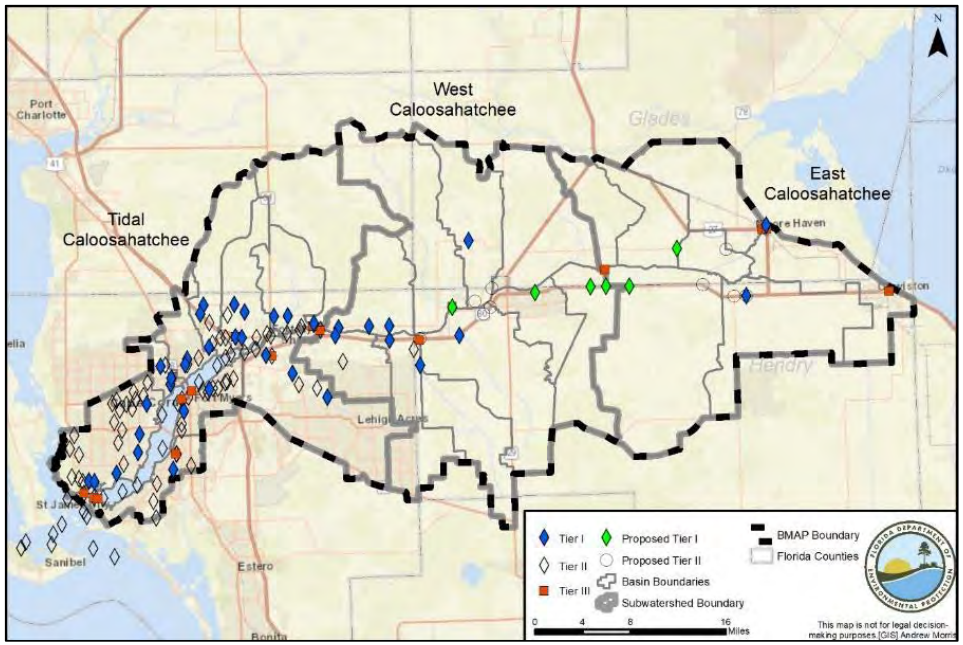


Figure 7. Caloosahatchee River and Estuary BMAP monitoring stations

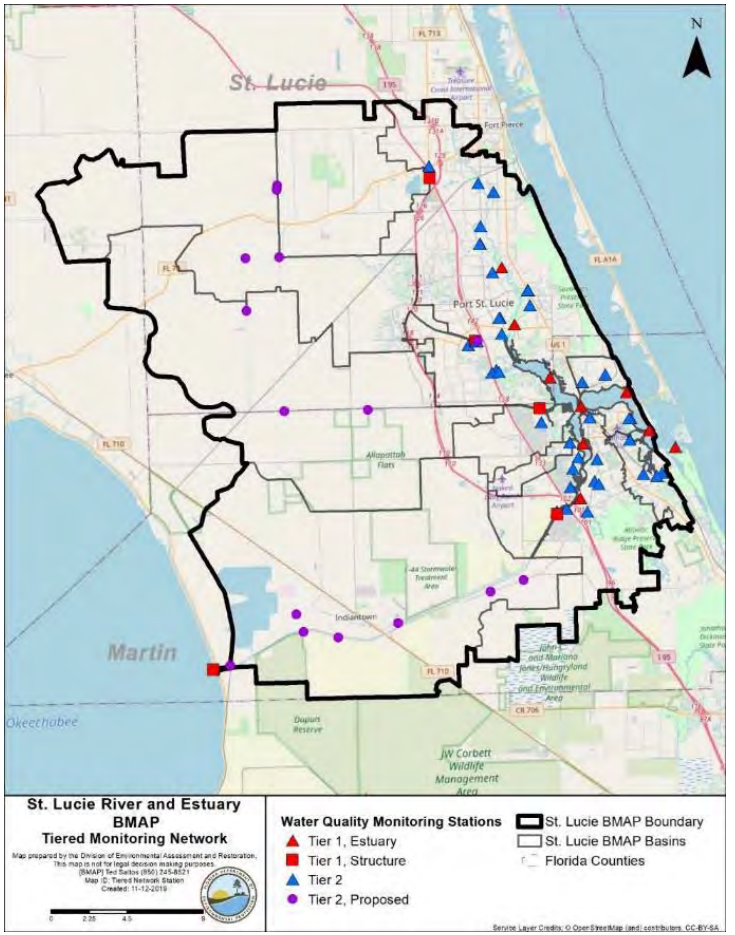


Figure 8. St. Lucie River and Estuary BMAP monitoring stations

Restoration Approach Updates

Basinwide Sources

Addressing nutrients from various source categories through programmatic and policy updates

- Agriculture
- Septic Systems
- Stormwater
- Wastewater Treatment

Source: DEP

Source: FDACS

Restoration Approach Updates

Basinwide Sources

Agriculture

- List of all unenrolled landowners within one year
- Onsite inspections every two years
- BMP manuals updated and reevaluated, and rules revised as necessary within five years
- Additional agricultural projects or practices
- Annual summary of fertilizer use

Table 6. Summary of unenrolled agricultural land use acreage in the Lake Okeechobee BMAP area

Note: Due to geometric variations between shapefiles used in the unenrolled agricultural lands analysis performed by OAWP, the unenrolled agricultural acres differ from subtraction of the FSAID VI Agricultural Acres in the BMAP and the Total Agricultural Acres Enrolled referenced in **Table 5**.

Category	Acres
Unenrolled agricultural acres	393,571
Acres identified within slivers of unenrolled agricultural areas	15,889
Lands without enrollable agricultural activity (e.g., tribal lands, residential development, and parcels with Florida Department of Revenue [DOR] use codes 70-98)	117,299
Total lands with potentially enrollable agricultural activities	**260,384**

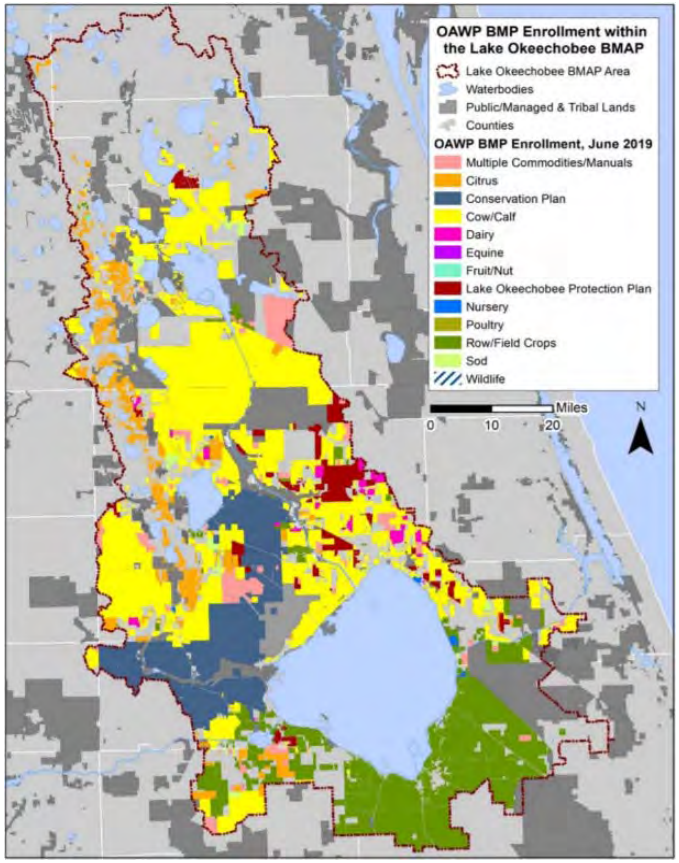


Figure B-1. BMP enrollment in the Lake Okeechobee BMAP area as of June 2019

Restoration Approach Updates

Basinwide Sources

Septic Systems

Local governments and utilities:

- Develop wastewater treatment feasibility analyses
  - Identify specific areas to be sewered
  - Determine how to address septic loads
  - Identify sources of funding
- Analyses to be completed within five years

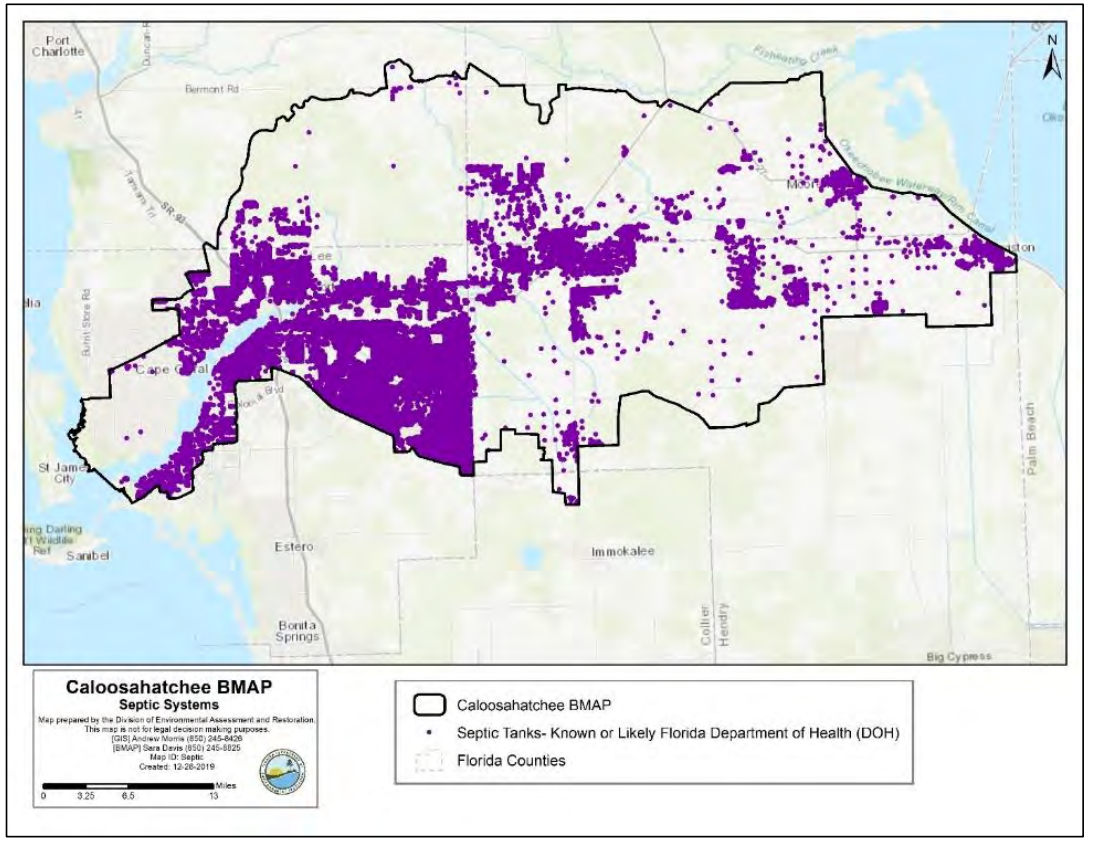


Figure 5. Locations of septic systems in the Caloosahatchee River and Estuary Watershed

Restoration Approach Updates

Basinwide Sources

Stormwater

- National Pollutant Discharge and Elimination System (NPDES) Stormwater Program regulates urban area stormwater through municipal separate storm sewer system (MS4) permits
  - Evaluate entities serving a population of at least 1,000 not currently covered by an MS4 permit within five years of BMAP adoption
  - Designate eligible entities as regulated MS4s
- Update the stormwater design and operation requirements in Environmental Resource Permit rules
  - Incorporate the most recent scientific information available to improve nutrient reduction benefits

Restoration Approach Updates

Basinwide Sources

Wastewater Treatment

- BMAP sets TP and TN effluent limits for individually permitted wastewater facilities and activities
- Reported number of individually permitted facilities or activities in each watershed
  - Also includes any NPDES permits authorizing discharge directly to surface waters

Table 19. TP effluent limits

mgd = Million gallons per day

Permitted Average Daily Flow (mgd)	TP Concentration Limits for Direct Surface Discharge (mg/L)	TP Concentration Limits for RRLA Effluent Disposal System (mg/L)	TP Concentration Limits for All Other Disposal Methods, Including Reuse (mg/L)
Greater than or equal to 0.5	1	1	6
Less than 0.5 and greater than or equal to 0.1	1	3	6
Less than 0.1	6	6	6

Table 20. TN effluent limits

mgd = Million gallons per day

Permitted Average Daily Flow (mgd)	TN Concentration Limits for Direct Surface Discharge (mg/L)	TN Concentration Limits for RRLA Effluent Disposal System (mg/L)	TN Concentration Limits for All Other Disposal Methods, Including Reuse (mg/L)
Greater than or equal to 0.5	3	3	10
Less than 0.5 and greater than or equal to 0.1	3	6	10
Less than 0.1	10	10	10

Restoration Approach Updates

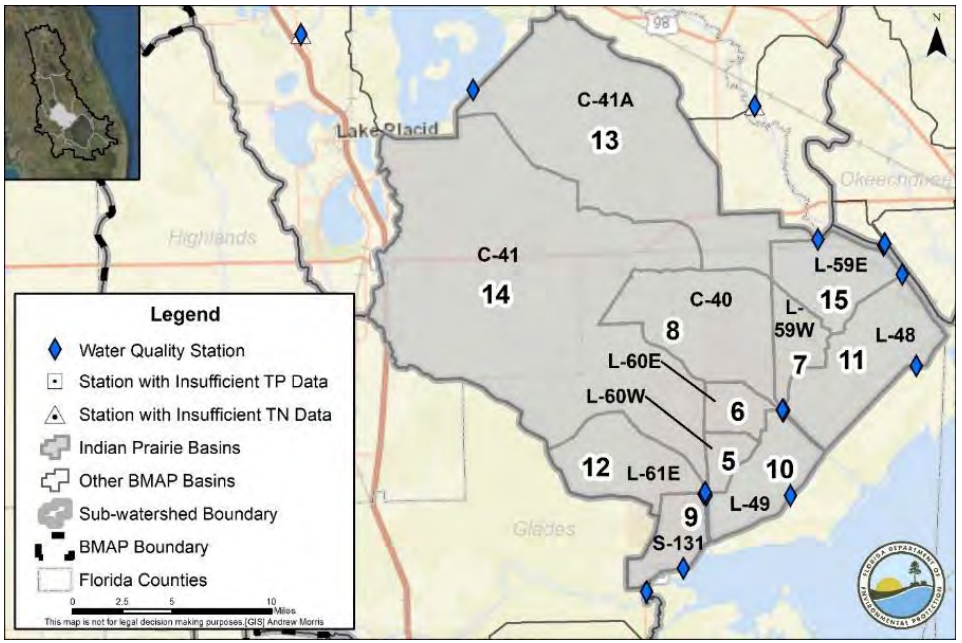
Future Growth

- New development categories
  - Urban
  - Agriculture
- Addressed through a variety of mechanisms as well as other provisions of Florida law
- BMAP-specific elements to address all current and future wastewater effluent, septic systems, and stormwater sources
- Any additional loading will be evaluated during future BMAP review efforts
  - Additional restoration actions may be required to remediate impacts

Requests for Information (RFI)

Background

- Effort to identify any additional restoration projects in the NEEPP BMAP areas
- A component of the "**data-driven**" approach for BMAP updates – targeting specific areas for restoration to assist in the prioritization for funding
- Requested projects that target nutrient reductions and/or restore flow deficiencies
- Open to any entity that can develop and implement a project



Requests for Information

Responses

- Three separate RFIs – initiated in October 2019
- Responses varied from technologies to large scale projects
- Results:
  - Lake Okeechobee – 34 responses
  - St Lucie – 37 responses
  - Caloosahatchee – 33 responses
- Next steps? DEP has all responses on file and may consider projects for implementation as funding becomes available

Summary

Where do we go from here?

- Implications for Restoration
  - Increase information gathering to better target areas for restoration and funding
  - Utilize "**adaptative management approach**" as we get more data and information over the years
  - Continue to target areas with appropriate types of restoration efforts
- Next Steps/Future Efforts
  - Look to identify and fund projects
  - Review BMAPs (update if needed)
  - Continue to monitor legislative directives/initiatives and update as needed
  - Work with stakeholders to achieve goals

Source: DEP

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Questions & Comments


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