



Florida Department of Environmental Protection

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Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

June 29, 2018

The Honorable Rick Scott
Governor of Florida
Plaza Level 01, The Capitol
400 South Monroe Street
Tallahassee, Florida 32399

The Honorable Joe Negron
President, Florida Senate
Room 409, The Capitol
404 South Monroe Street
Tallahassee, Florida 32399-1100

The Honorable Richard Corcoran
Speaker, Florida House of Representatives
Room 420, The Capitol
402 South Monroe Street
Tallahassee, Florida 32399-1300

Dear Governor Scott, President Negron, and Speaker Corcoran:

The Florida Department of Environmental Protection is committed to protecting Florida's water resources, which are vital to Florida's environment, economy and communities. DEP works collaboratively with the Governor and Legislature, Florida's water management districts, our partner state agencies, and local governments and stakeholders to implement projects and programs to protect and restore our state's iconic water resources. The enclosed report, prepared in fulfillment of Section 403.0675, Florida Statutes (F.S.), details the status of many of these key programs, including each total maximum daily load, basin management action plan, minimum flow and minimum water level, and recovery or prevention strategy adopted pursuant to Section 403.067, parts I and VIII of Chapter 373, or Section 373.042, F.S. The Florida Department of Environmental Protection developed this report in conjunction with the Northwest Florida Water

Management District, South Florida Water Management District, Southwest Florida Water Management District, St. Johns River Water Management District, and Suwannee River Water Management District.

Brief backgrounds and statewide summaries for total maximum daily loads, basin management action plans, and minimum flow and minimum water levels in Florida can be found in the attached main report. The appendices containing additional narratives, maps, project tables, and more can be found [here](#).¹

If you have questions regarding this report, please feel free to contact me or Mr. Drew Bartlett, Deputy Secretary for Ecosystem Restoration, at (850) 245–2011.

Sincerely,

Noah Valenstein

Secretary

Enclosures

cc: Brett Cyphers, Executive Director, NFWFMD
Ann B. Shortelle, Executive Director, SJRWMD
Ernie Marks, Executive Director, SFWMD
Brian Armstrong, Executive Director, SWFWMD
Hugh Thomas, Executive Director, SRWMD
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¹ <https://floridadep.gov/STAR>

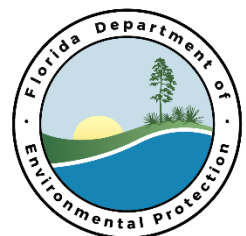
Florida Statewide Annual Report on Total Maximum Daily Loads, Basin Management Action Plans, Minimum Flows or Minimum Water Levels, and Recovery or Prevention Strategies

Florida Department of Environmental Protection

**Division of Environmental Assessment and Restoration
and
Office of Water Policy**

June 2018

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Introduction

Florida has wide-ranging efforts in place to protect and restore the water quality or minimum flows and levels (MFLs) of the state's waters. As required by Section 403.0675, Florida Statutes (F.S.), this report updates the Governor, Legislature, and all Floridians on the status of protection and restoration actions through total maximum daily loads (TMDLs), basin management action plans (BMAPs), minimum flows or minimum water levels (MFLs), and recovery or prevention strategies.

When a river, lake, estuary, or spring does not meet state water quality standards, the Florida Department of Environmental Protection (DEP) determines a water quality restoration goal known as a TMDL that will restore the waterbody so that it meets its standards. TMDLs address a specific impairment for a waterbody; therefore, a waterbody may have multiple TMDLs to address different pollutants. This report describes the status of TMDLs adopted as of December 31, 2017.

DEP may develop a BMAP, in collaboration with local stakeholders, to achieve one or more TMDLs. BMAPs may be developed for surface waters and groundwater-fed springs. The management actions listed in the BMAPs comprise local projects proposed and committed to by counties, municipalities, special districts, private industrial facilities, wastewater utilities, the Florida Department of Transportation (FDOT), commercial agricultural operations, and other stakeholders. The stakeholders provide details of their projects to DEP. This report describes the status of BMAPs adopted as of December 31, 2017. In some cases project information provided by the entity was incomplete or missing.

Section 373.042(1), F.S. defines minimum flows and minimum water levels (MFLs) as the point at which further water withdrawals would be significantly harmful to the water resources or ecology of the area. As a part of fulfilling their mission and statutory responsibilities, the water management districts (WMDs) establish MFLs for priority waterbodies within their boundaries.¹ MFLs are used both in planning for future water uses and in regulating water withdrawals. For waterbodies that are below their minimum flow or level, or are projected to fall below their minimum flow or level within 20 years, the WMD is required to implement a recovery or prevention strategy to ensure the MFL is maintained over the long term.

¹ On request, DEP can also adopt MFLs in accordance with Section 373.042, F.S.

Total Maximum Daily Loads

DEP monitors the quality of waterbodies across the state, assessing their condition against the applicable water quality criteria and listing those that exceed the criteria as "impaired" for one or more pollutants. The Florida Statutes then require TMDLs to be developed for the waterbody or waterbody segments placed on DEP's Verified List of Impaired Waters. A TMDL is a water quality restoration goal that establishes the maximum amount of a pollutant that a waterbody can assimilate without causing exceedances of water quality standards. As such, TMDL development is an important step toward restoring state waters to their designated uses. BMAPs and permits issued for point sources all use TMDLs as the basis for their water quality goals. In Florida, DEP adopts nutrient TMDLs as site-specific water quality criteria, following the procedures outlined in the [Implementation of Florida's Numeric Nutrient Standards](#) (2013)² document. This approach aligns TMDLs and water quality standards, so that multiple conflicting criteria do not apply to a single waterbody. The DEP [TMDL Program](#)³ website contains more detailed information.

In 2014, DEP provided the U.S. Environmental Protection Agency (EPA) with a priority framework document that contained a long-term plan for addressing how to assess waters and develop TMDLs under the Florida Statutes and Section 303(d) of the federal Clean Water Act (CWA). The document focused on Florida's transition from a pace-driven TMDL development schedule to a new approach based on recovery potential screening. In 2015, DEP updated the approach, expanding the planning horizon for TMDL development through 2022. The [Priority Framework document](#)⁴ detailing the approach can be found online.

One important change from previous TMDL priority-setting efforts is a new focus on waters where the TMDL and BMAP approach is the best of the available options for restoration. The long-term plan identifies those impaired waters where DEP expects to develop a site-specific TMDL. The current list of [waters prioritized for TMDLs](#)⁵ is available online. It includes the waterbodies for which TMDLs will be developed between now and 2022.

As of December 31, 2017, DEP has adopted a total of 409 TMDLs (**Figure 1**). Of these, 224 were developed for dissolved oxygen (DO), nutrients, and/or un-ionized ammonia; 179 for bacteria; and 5 for other parameters (iron, lead, and turbidity). In addition, the state has adopted a statewide TMDL for mercury, based on fish consumption advisories affecting over 1,100 waterbody segments. These TMDLs represent areas covering many of the largest watersheds in the state. DEP has many more TMDLs in various stages of development; for the up-to-date locations of TMDLs in Florida, please view the DEP interactive map, [Water Quality Assessments, TMDLs, and BMAPs](#).⁵

² https://floridadep.gov/sites/default/files/NNC_Implementation.pdf

³ <https://floridadep.gov/dear/water-quality-evaluation-tmdl/content/total-maximum-daily-loads-tmdl-program>

⁴ <https://floridadep.gov/sites/default/files/PriorityFrameworkDocument.pdf>

⁵ <http://arcg.is/0jru5e>

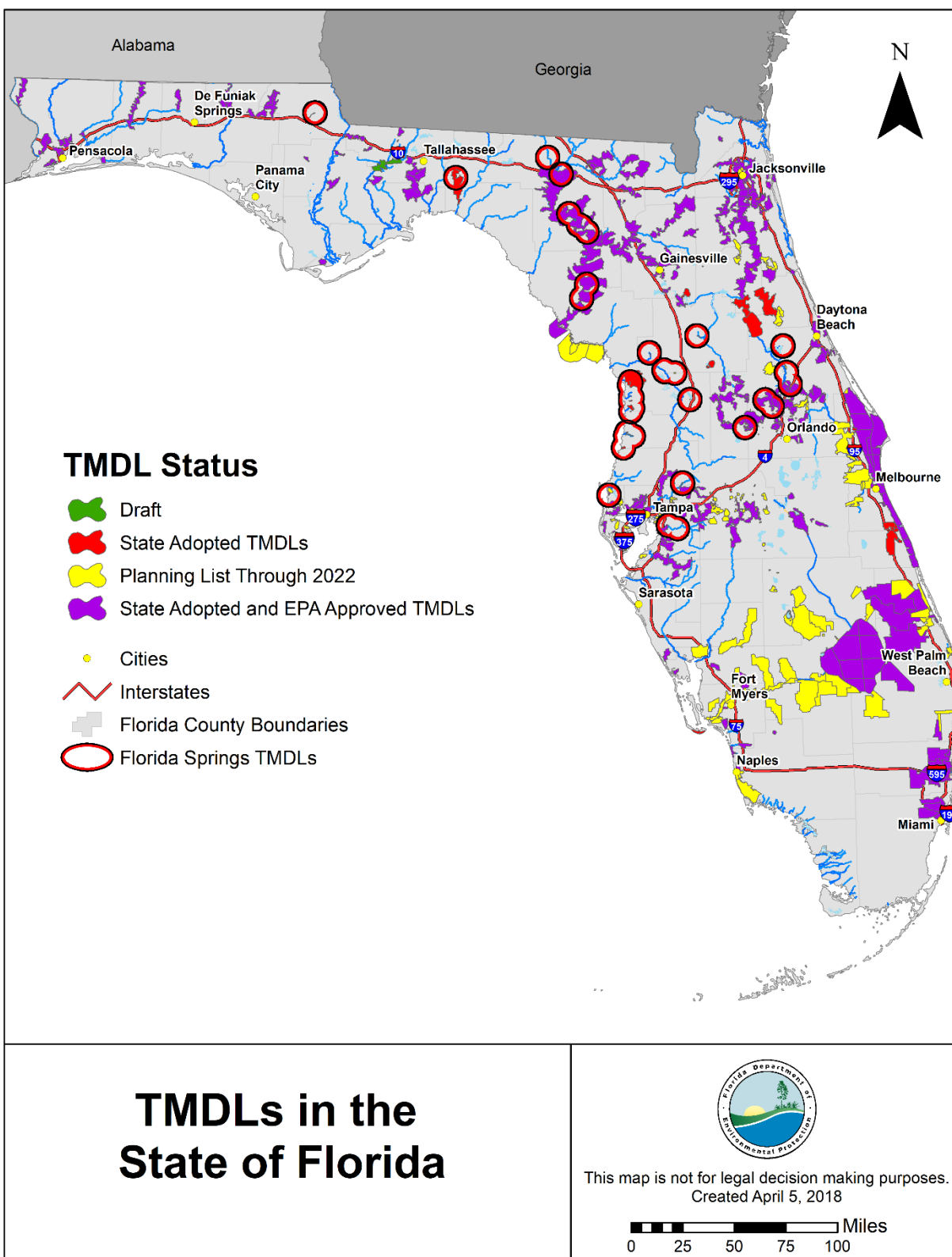


Figure 1. Map of TMDLs in Florida

Basin Management Action Plans

A BMAP is the "blueprint" for restoring impaired waters by reducing pollutants to meet the allowable loadings established in a TMDL. A BMAP contains a comprehensive set of strategies, such as permit limits on wastewater facilities, urban and agricultural best management practices (BMPs), and conservation programs designed to implement the pollutant reductions established by the TMDL. These broad-based plans are developed with local stakeholders and rely on local input and commitment for development and successful implementation. Individual BMAPs are adopted by DEP Secretarial Order and are legally enforceable. As of December 31, 2017, DEP has adopted 25 BMAPs and is developing or updating numerous BMAPs statewide (**Figure 2**).

The management actions listed in the BMAPs comprise local projects proposed and committed to by counties, municipalities, special districts, private industrial facilities, wastewater utilities, FDOT, commercial agricultural operations, and other stakeholders. Throughout 2017, DEP contacted stakeholders in all BMAP areas to request information on the status of projects through December 31, 2017. DEP provided stakeholders with tables to be updated with additional information about existing projects and to add information on any new or planned projects. This information is provided in tables organized by BMAP. As additional details and new management actions provided by local entities are available, the information will be added to the project database. DEP conducted extensive outreach to collect project information from each entity, and details are included for many projects in this report. However, in some cases, the information provided by the entity was incomplete, or no update was provided, or the project was completed some time ago and records cannot be easily obtained by an entity.

In BMAPs, owner-implemented BMPs or water quality monitoring are required for agricultural operations to show compliance with water quality standards. In some BMAPs, load reductions associated with agricultural BMPs have been estimated and are assigned a BMAP project number in the project table for that BMAP. Agricultural enrollment information is provided by the Florida Department of Agriculture and Consumer Services (FDACS) as part of their statewide [implementation assurance \(IA\) report](#)⁶, submitted annually to the Governor and Legislature. The report includes more details on the status of implementation of the agricultural nonpoint source BMPs, and summarizes survey responses, response rates, site inspections, and other methods used to verify implementation of and compliance with BMPs pursuant to BMAPs.

Northern Everglades and Estuaries Protection Program (NEEPP) BMAPs

In 2007, the Florida Legislature created the NEEPP, which expanded the Lake Okeechobee Protection Act (LOPA), created in 2000 (Section 373.4595, F.S.), to include the Caloosahatchee and St. Lucie Rivers and Estuaries. The primary goal of the program is to restore and protect the state's surface water resources by addressing the quality, quantity, timing, and distribution of water to the natural system.

⁶ [FDACS Reptot link here](#)

Section 373.4595, F.S., requires the Northern Everglades BMAPs to include milestones for implementation and water quality improvement, and associated water quality monitoring components sufficient to evaluate whether reasonable progress is being achieved over time. Implementation schedules must include 5-, 10-, and 15-year measurable milestones and targets to achieve the TMDLs addressed by the BMAPs no later than 20 years after BMAP adoption. If restoration within 20 years is not practicable, the schedule must contain an explanation of the constraints that prevent the achievement of the TMDL within 20 years and additional 5-year milestones, as necessary. Further details on the NEEPP BMAPs can be found in **Appendix A**.

Outstanding Florida Springs (OFS) BMAPs

The Florida Springs and Aquifer Protection Act (Part VIII of Chapter 373, F.S.), provides for the protection and restoration of the state's OFS, which comprise 24 first magnitude springs, 6 additional named springs, and their associated spring runs. The act requires DEP to initiate an assessment by July 1, 2016, of any OFS or spring system for which a determination of impairment has not been made under the numeric nutrient criteria (NNC) for spring vents.

In addition to the requirements of Section 403.067, F.S., the act provides specific requirements for OFS BMAPs, including an implementation plan designed with a target to achieve a TMDL no more than 20 years after the adoption of the BMAP. These BMAPs provide for a phased implementation schedule (5-, 10-, and 15-year targets) to achieve incremental reductions in the first 15 years. Further details on the OFS BMAPs can be found in **Appendix B**.

The act further specifies that a BMAP for an OFS must include the following provisions:

- The delineation of priority focus areas (PFAs), to which statutory prohibitions on certain activities will apply.
- The identification of each point source or category of nonpoint sources and estimated pollutant loads in the springshed including, but not limited to, urban turfgrass fertilizer (UTF), sports turfgrass fertilizer (STF), agricultural fertilizer, onsite sewage treatment and disposal systems (OSTDS), which are also referred to as "septic systems" (the terms are used interchangeably throughout this document), wastewater treatment facilities (WWTFs), animal wastes, and stormwater facilities.
- A list of all specific projects and programs identified to implement a nutrient TMDL, including the following:
 - A priority rank, planning-level cost estimate, estimated completion date, and estimated nutrient load reduction for each listed project.
 - The source and amount of financial assistance to be made available by DEP, a WMD, or other entity for each listed project.

- An OSTDS remediation plan if DEP identifies OSTDS as contributors of at least 20 % of the nonpoint source nitrogen pollution within a PFA, or if DEP determines that remediation is necessary to achieve a TMDL, including the following:
 - A list of all specific projects identified in an OSTDS remediation plan.
- A description of BMPs adopted by rule.

Surface Water BMAPs for Nutrients (SWN)

Other BMAPs not in the NEEPP or OFS groups that address nutrient impairments are included in the SWN group. These BMAPs include efforts targeting the restoration of lakes, rivers, and estuaries, many of which are located in the St. Johns River Watershed. Further details on the Surface Water BMAPs for Nutrients can be found in **Appendix C**.

Fecal Indicator Bacteria (FIB) BMAPs

While the majority of BMAPs address nutrient impairments, DEP also has adopted BMAPs that target FIB contamination. As bacteria sources can be both natural and human induced, as well as hard to identify, these BMAPs address the identification of sources so they can be eliminated or reduced. To reduce FIB, these plans have their own, distinct types of projects to address anthropogenic bacteria sources (i.e., sources caused by human activity).

Further details on the types of indicators used, as well as the recent changes to bacteria standards, can be found in **Appendix D**, along with status reports on each of the FIB BMAPs. Projects are listed through each individual BMAP's last annual reporting period. Project reporting is being revised in bacteria BMAPs so that project information will be better focused on the identification, elimination, and prevention of fecal bacteria sources. The reporting periods for FIB BMAPs in the next statewide annual report will all end on December 31, 2018.

Table 1. BMAP reduction costs summary table

lbs/yr = Pounds per year; O&M = Operations and maintenance

¹ Reductions and costs associated with Underway or Planned projects are estimates and have not yet been verified.

Project Status	Cost Estimate	Cost Annual O&M	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)
Completed	\$3,349,848,016	\$39,699,160	5,827,079	756,763
Underway and Planned ¹	\$2,593,574,809	\$4,363,171	1,267,257	237,648
Totals	\$5,943,422,825	\$44,062,331	7,094,336	994,411

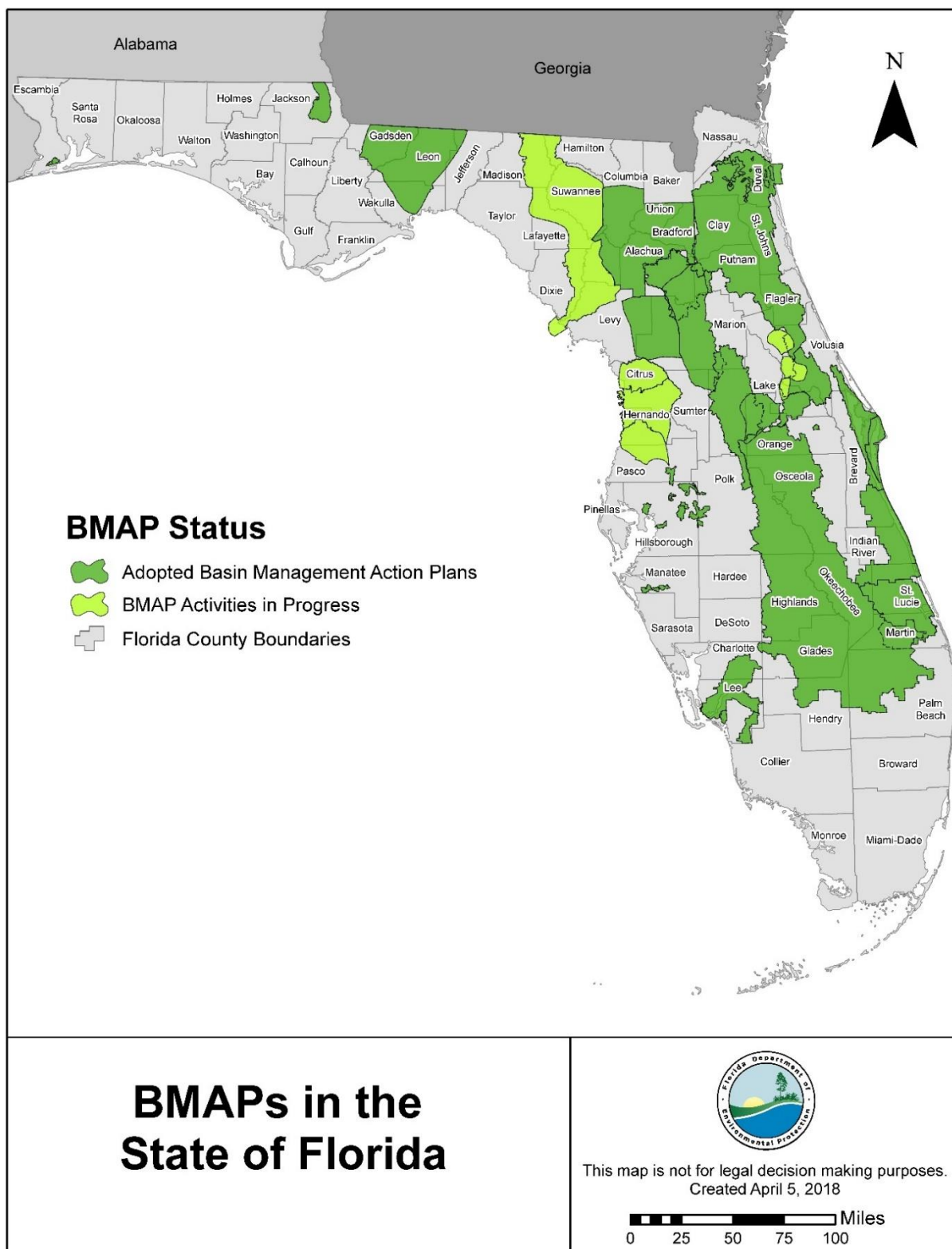


Figure 2. Adopted and pending BMAPs in Florida

Minimum Flows and Minimum Water Levels and Recovery and Prevention Strategies

Florida statutes define minimum flows and minimum water levels (MFLs) as the point at which further water withdrawals would be significantly harmful to the water resources or ecology of the area.⁷ As a part of fulfilling their mission and statutory responsibilities, the WMDs establish MFLs for priority waterbodies within their boundaries.⁸ MFLs are used both in planning for future water uses and in regulating water withdrawals. For waterbodies that are below their minimum flow or level, or are projected to fall below their minimum flow or level within 20 years, the WMD is required to implement a recovery or prevention strategy to ensure the MFL is maintained over the long term.

Status of MFLs and Recovery and Prevention Strategies

As of March 1, 2018, 422 MFLs have been adopted statewide for all waterbody types, including the following:

- 63 springs (27 of which are OFS).
- 235 lakes.
- 39 rivers (16 of which include estuaries).
- 1 estuary.
- 61 wetlands.
- 5 aquifer systems comprising 23 individual MFLs.

For the up-to-date locations of adopted MFLs in Florida, as well as the status of each, please view the DEP interactive map, [Adopted MFLs in the State of Florida](https://tinyurl.com/StatewideAdoptedMFLs).⁹ (Figure 3).

⁷ Subsection 373.042(1), F.S.

⁸ On request, DEP can also adopt MFLs in accordance with Section 373.042, F.S.

⁹ <https://tinyurl.com/StatewideAdoptedMFLs>

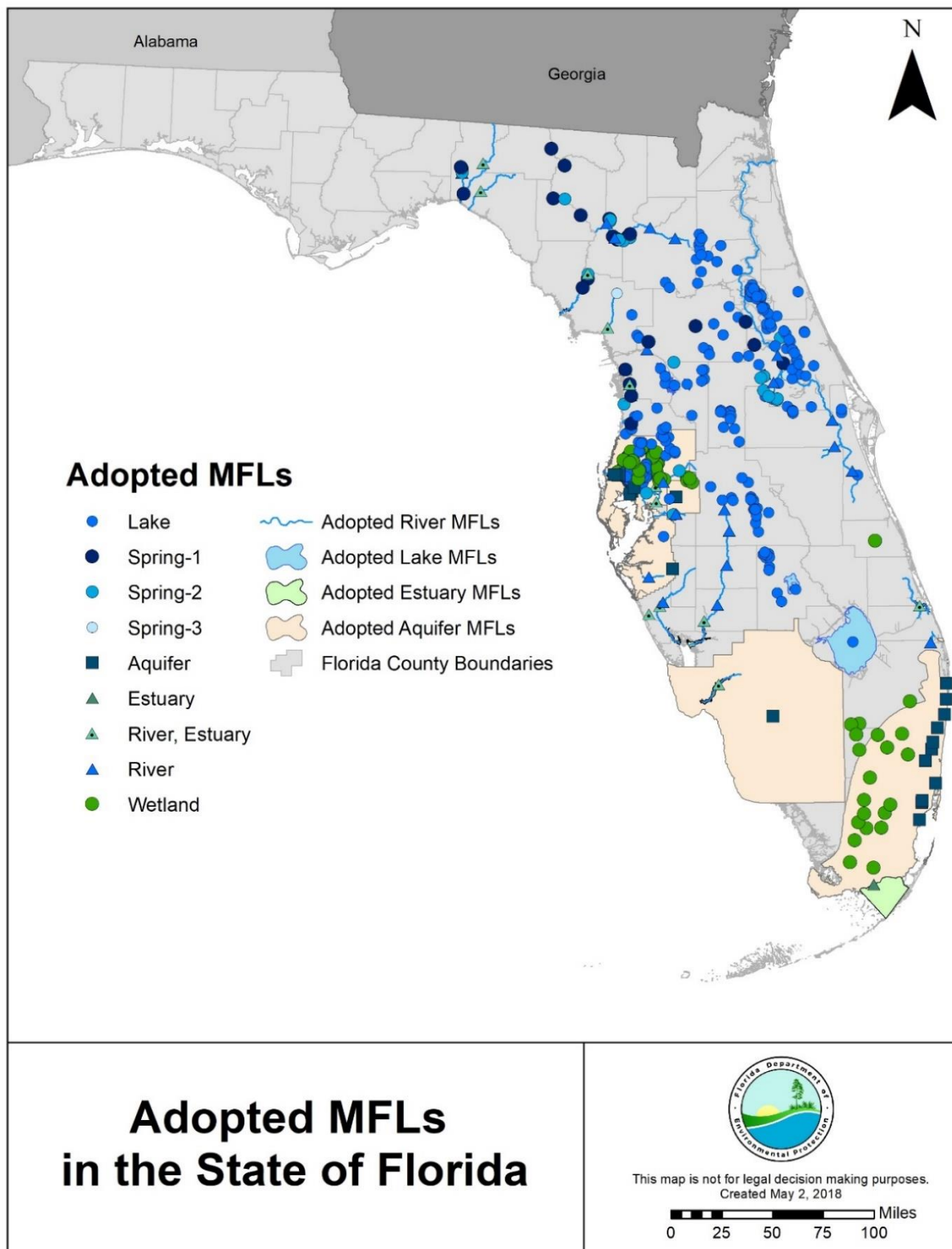


Figure 3. Adopted MFLs in Florida

Of the 422 MFLs adopted to date, 135 are identified as being in either recovery or prevention. To obtain information on waterbody status for this report, each waterbody for which an MFL was adopted was evaluated by the adopting WMD based on the relative magnitude of the MFL violation and rated as close, moderately close, or not close to meeting the MFL. In evaluating this element, the WMDs considered the magnitude of the variance from the MFL, the magnitude of the ecological impact, the time frame for recovery, and the time frame for the completion of the projects.

Each waterbody was also evaluated based on its regional significance and rated as Tier 1, Tier 2, or Tier 3 (with Tier 1 being the highest rating). In evaluating this element, the WMDs considered the waterbody's size and geographical extent, ecological importance, recreational uses, navigation, threatened and endangered species, wildlife use, aesthetics, and historical and archeological significance. **Table 2** describes the status of MFLs and the various classifications for recovery and prevention strategies.

Table 2. Definitions of MFL status and recovery and prevention strategies

Status	Definition
Meeting	This status is assigned for any MFL that was determined to be meeting its MFL at the time of its adoption or during its last status evaluation.
Prevention	This status is assigned if the waterbody is meeting the MFL but is projected not to meet the MFL within 20 years.

Status	Relative Magnitude of the MFL Violation	Regional Significance of Waterbodies in Recovery
Recovery 1	Close	Tier 2 or 3
Recovery 1	Moderately Close	Tier 3
Recovery 2	Close	Tier 1
Recovery 2	Moderately Close	Tier 2
Recovery 2	Not Close	Tier 3
Recovery 3	Moderately Close	Tier 1
Recovery 3	Not Close	Tier 1 or 2

Appendix E contains a complete review of the status of all adopted MFLs and recovery and prevention strategies.¹⁰

Status of Projects Identified to Achieve the MFLs

Recovery and prevention strategies identify project options that may be used to benefit a waterbody with an established MFL (or MFLs) while ensuring adequate sources of water for reasonable-beneficial uses. The projects listed in a recovery or prevention strategy are frequently options that, in total, exceed the volume of water that must be created to meet the MFL(s).

¹⁰ <https://floridadep.gov/STAR/AppendixE>

To date, \$1.8 billion have been invested in projects benefiting an MFL. On completion, these projects will make available 231.3 million gallons per day (mgd) of water (nonreuse) and an additional 221.61 mgd in reuse flow. As listed in **Table 3** for completed projects, the state leveraged over \$7 for each \$1 of state investment.

Projects included in this report are those implemented or underway between Fiscal Year (FY) 2005–06 and FY 2017–18, and those included in a Recovery or Prevention Strategy or Regional Water Supply Plan as a project option identified to achieve the MFLs. **Appendix F** describes the status of each project identified to achieve an MFL.¹¹ The projects include those specifically designed and implemented to achieve an MFL; projects that provide varying levels of ancillary benefits to MFL waterbodies, including those that are meeting their MFLs and those that are in recovery or prevention. **Appendix G** summarizes and lists the status of each recovery or prevention strategy.

Table 3. Summary of the status of projects benefiting an MFL in the Suwannee River, St. Johns River, and Southwest Florida WMDs

Project Status	Quantity of Nonreuse Water Made Available on Completion (mgd)	Reuse Flow Made Available on Project Completion (mgd)	Storage Capacity Created (mg)	Potential Project Projected Funding (in millions)	All State Funding (in millions)	Total District Funding (in millions)	Project Sponsor Match (in millions)	Selected Project Total (in millions)
Complete	131.90	178.50	9,304.14	N/A	\$126.1	\$607.3	\$698.1	\$1,421.2
Construction	52.91	22.06	331.65	N/A	\$64.9	\$96.5	\$77.1	\$290.0
Design	46.47	21.05	508.10	N/A	\$23.5	\$33.1	\$67.1	\$154.8
Potential Project Identified¹²	518.77	184.91	100.00	\$7,599.8	N/A	N/A	N/A	N/A
Grand Total¹³	750.05	406.52	10,243.89	\$7,599.8	\$214.5	\$737.0	\$842.3	\$1,866.0

Projects identified to achieve the MFLs in the South Florida WMD are part of the Comprehensive Everglades Restoration Plan (CERP). Annually, the district provides for the status of these projects as part of its *South Florida Environmental Report* (SFER). **Appendix G** lists the status of the South Florida WMD projects related to its MFLs.¹⁴

¹¹ <https://floridadep.gov/STAR/AppendixF>

¹² The projects identified in this category are options that exceed the volume of water that must be created to meet the MFL(s).

¹³ Total excludes 3 cancelled projects that would have made available 0.25 mgd of reuse flow and .02 mgd of nonreuse water.

¹⁴ <https://floridadep.gov/STAR/AppendixG>

Appendices

Appendix A: Northern Everglades BMAPs

<https://floridadep.gov/STAR/AppendixA>

Appendix B: Outstanding Florida Springs BMAPs

<https://floridadep.gov/STAR/AppendixB>

Appendix C: Surface Water BMAPs for Nutrients

<https://floridadep.gov/STAR/AppendixC>

Appendix D: Fecal Indicator Bacteria BMAPs

<https://floridadep.gov/STAR/AppendixD>

Appendix E: MFLs and Recovery and Prevention Strategies

<https://floridadep.gov/STAR/AppendixE>

Appendix F: Status of Projects Designed to Achieve the MFLs

<https://floridadep.gov/STAR/AppendixF>

Appendix G: Recovery and Prevention Strategies

<https://floridadep.gov/STAR/AppendixG>