SANTA FE RIVER BASIN MANAGEMENT ACTION PLAN (BMAP)

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Water Quality Restoration Program
Florida Department of Environmental Protection

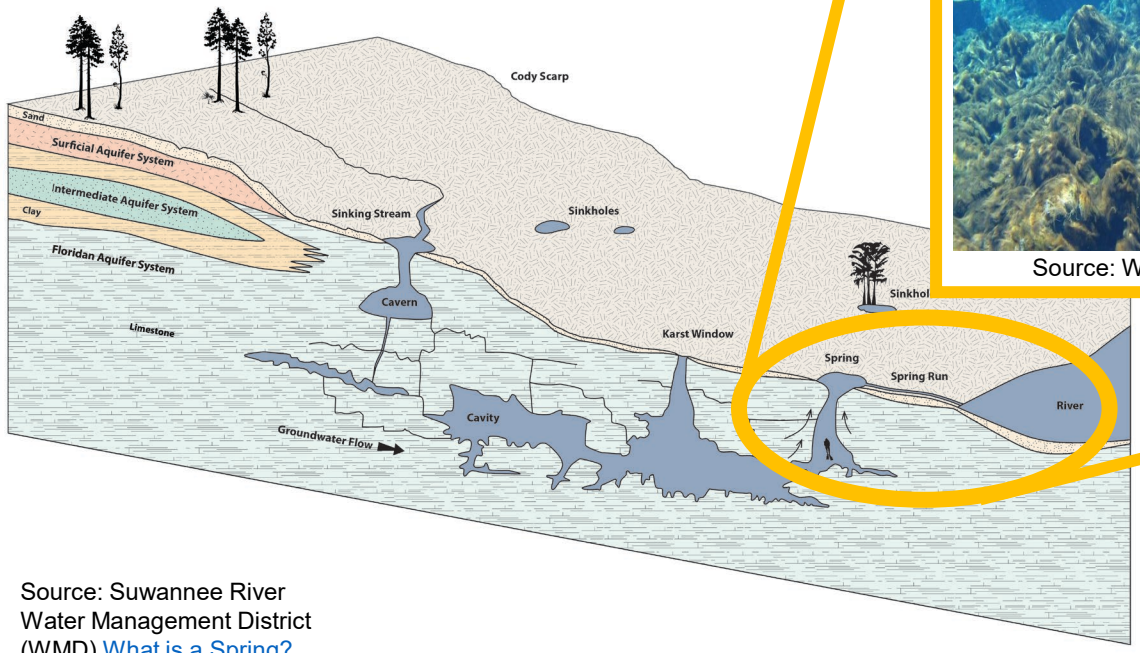
Lake Butler, FL | Oct. 28, 2024

Source: South Florida Water Management District (SFWMD)

AGENDA

- Background.
- Analysis results summary.
- Basin required reductions.
- Entity required reductions.
- Poster session.

BACKGROUND
SPRINGS RESTORATION

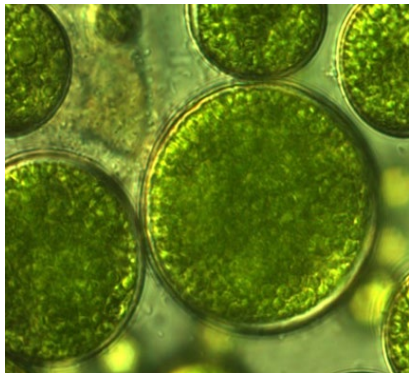


Source: Suwannee River Water Management District (WMD) What is a Spring?

Impairment: Not meeting water quality standards.

Source: Weeki Wachee TMDL

Algae growth can be caused by **excess nutrients.**



Source: Shutterstock

Total maximum daily load (TMDL): The maximum amount of a pollutant that a waterbody can receive and still maintain its designated uses. **This represents the target for restoration.**

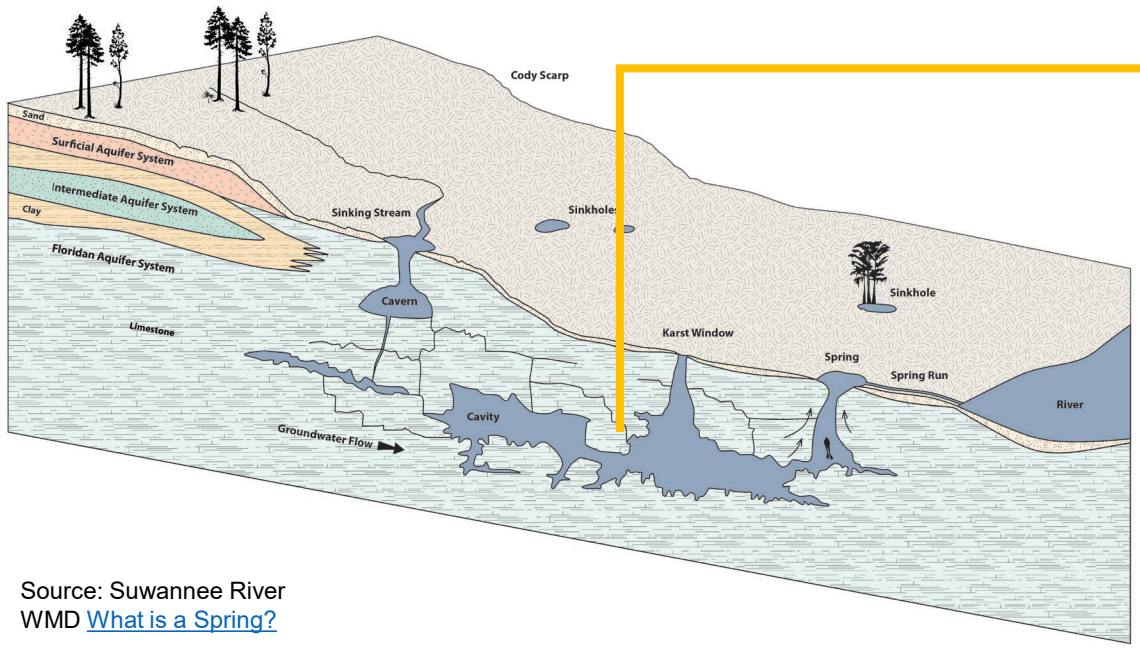
Source: Florida Geological Survey - Rainbow Spring #4

BACKGROUND
SPRINGS RESTORATION

Excess nutrients come from **sources on the landscape.**

Source: Beta Analytics

BMAP Projects: Efforts that result in the reduction or prevention of nutrients to the waterbodies addressed by the BMAP.



Source: Suwannee River WMD [What is a Spring?]

Complex groundwater dynamics lead to variable travel times to the spring vent.

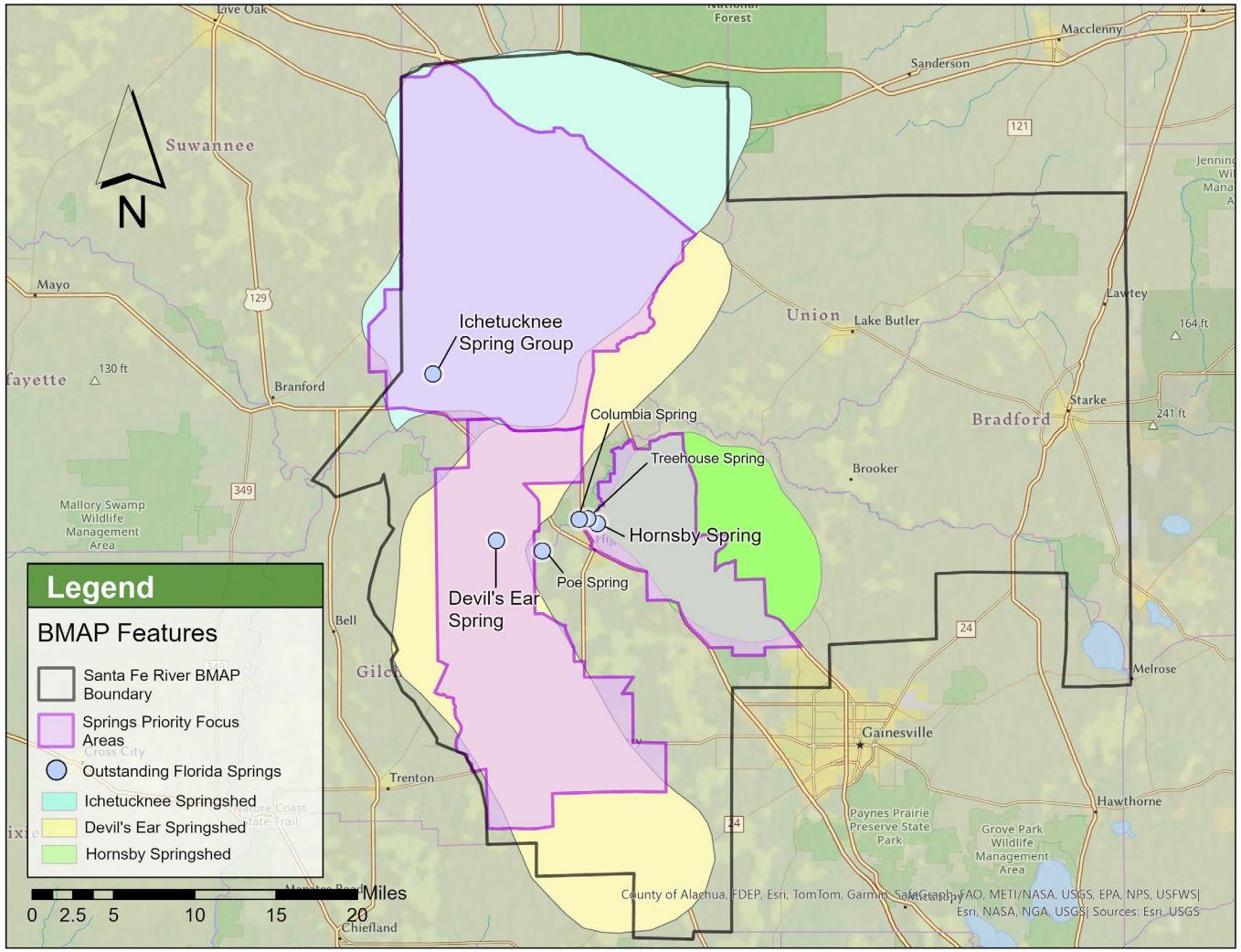
Water quality monitoring is performed through a network of surface water, spring vent and groundwater stations to assess waterbodies and measure progress towards restoration goals.

BMAP: An adaptive framework for water quality restoration that contains a comprehensive set of solutions developed to achieve the pollutant reductions established by TMDL.

Source: Florida Geological Survey - Rainbow Spring #4

BMAP: Basin Management Action Plan

BMAP BACKGROUND



Waterbody or Spring Name	Basin	Waterbody Identification (WBID) Number	Parameter	TMDL (mg/L)
Lower Santa Fe	Lower Santa Fe	3605A, 3605B, and 3605C	Nitrate, monthly average	0.35

Outstanding Florida Springs:

- Ichetucknee – impaired.
- Devil's Ear – impaired.
- Poe.
- Columbia.
- Treehouse.
- Hornsby – impaired.

STAKEHOLDERS

Responsible Stakeholders:

- Alachua County.
- Bradford County.
- City of Alachua.
- City of Archer.
- City of Gainesville.
- City of Hampton.
- City of High Springs.
- City of Lake Butler.
- City of Lake City.
- City of Lawtey.
- City of Newberry.
- City of Starke.
- City of Waldo.
- Columbia County.
- Gilchrist County.
- Suwannee County.
- Town of Brooker.
- Town of Fort White.
- Town of La Crosse.
- Town Raiford.
- Town Worthington Springs.
- Union County.
- Florida Department of Transportation.
- Agricultural producers.
- Private WWTFs.
- Private Golf Courses.

Responsible Agencies:

- Florida Department of Agriculture and Consumer Services (DACS).
- Florida Department of Environmental Protection (DEP).
- Florida Department of Health.
- Florida Fish and Wildlife Conservation Commission.
- Suwannee River Water Management District (SRWMD).

BMAP BACKGROUND
BILLS AND LEGISLATION SUMMARY

- Florida Watershed Protection Act, section 403.067, Florida Statutes (F.S.).
- Florida Springs and Aquifer Protection Act, Part VIII of Chapter 373, F.S.
- 2020 Senate Bill (SB) 712, Clean Waterways Act.
- 2023 House Bill (HB) 1379.
- 2024 HB 1557.

Summary of latest updates:

- No new conventional onsite sewage treatment and disposal systems (OSTDS) on lots one acre or less.
- Wastewater treatment plans and OSTDS remediation plans from local governments.
- List of identified project to meet five-year milestones.
- Agricultural Cooperative Regional Elements (ACE).
- For the spring BMAPs, prohibitions expanded from priority focus area (PFA) to the entire BMAP.
- Advanced waste treatment (AWT) required for more types of effluent, including certain reclaimed water.

ACE

- Cooperative Agricultural Regional Water Quality Improvement elements include a collaborative framework for identifying, prioritizing and implementing regional projects that address nutrient loading from agricultural operations in Florida's waterways.
- Continuous efforts among key stakeholders, including:
  - DEP.
  - DACS.
  - WMDs.
  - Agricultural producers.
  - Local communities.

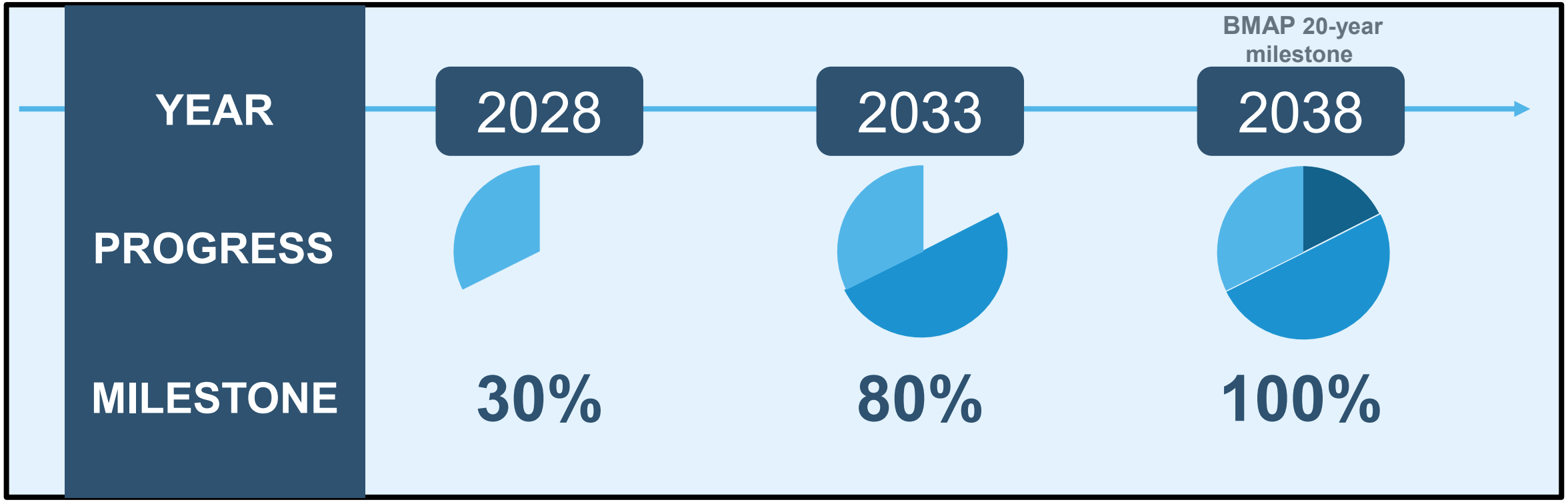
ACE

- Engaging producers in the decision-making process is key to this element and ensures that projects are practical, feasible and tailored to the needs and realities of agricultural operations.

- Partner agencies work in annual cycles to provide technical support, regulatory guidance and funding opportunities, enhancing the implementation and success of regional water quality improvement initiatives.

BMAP MILESTONES

FIVE-, 10-, AND 15-YEAR MILESTONES/REDUCTION SCHEDULE



Assessment of progress toward these milestones must be conducted every five years and revisions to the plan must be made as appropriate. BMAPs use an adaptive management approach that allows for incremental load reductions through the implementation of projects and management strategies; however, the restoration target – the TMDL – remains the same.

BASIN ANALYSES
DRAFT LOADING SUMMARY

	Ichetucknee Nitrogen Loads (lbs-TN/yr)	Devils Ear Nitrogen Loads (lbs-TN/yr)	Hornsby Nitrogen Loads (lbs-TN/yr)	Source
Total Load at Spring Vents (October 2023)	347,612	2,249,219	652,823	Upper 95% confidence interval - nitrate and flow data from 2012 to 2022.
TMDL Load	177,042	617,388	474,374	TMDL target is 0.35 mg/L and using the same flow data from 2012-2021.
Percent Required Reductions	**49%**	**73%**	**27%**	
Total NSILT Load (October 2023)	**949,121**	**939,017**	**284,383**	2023 NSILT.
Required Reductions	**465,725**	**681,266**	**77,736**	Proportional decrease in NSILT load.

cfs: Cubic feet per second
mg/L: milligram per liter

REDUCTIONS

DRAFT SPRINGSHED REQUIRED REDUCTIONS

Nitrogen Source	Ichetucknee		Devils Complex		Hornsby	
	Allocations by Source (lb-N/yr)	Percent of Total Reduction	Allocations by Source (lb-N/yr)	Percent of Total Reduction	Allocations by Source (lb-N/yr)	Percent of Total Reduction
Atmospheric Deposition*	49,464	10.62%	60,018	8.80%	5,104	6.56%
Onsite Sewage Treatment and Disposal System	105,326	22.62%	69,739	10.23%	7,312	9.40%
Wastewater Treatment Facility	1,808	0.39%	4,012	0.59%	960	1.23%
Farm Fertilizer (BMP Enrollment)	59,527	12.78%	85,732	12.58%	28,592	36.74%
Livestock Waste-NonCAFO (BMP Enrollment)	13,886	2.98%	16,780	2.46%	3,734	4.80%
Livestock Waste-CAFO (BMP Enrollment)	0	0.00%	0	0.00%	0	0.00%
Other Agriculture	189,454	40.68%	433,893	63.65%	29,985	38.53%
Urban Turfgrass Fertilizer	40,592	8.72%	11,389	1.67%	1,768	2.27%
Sports Turf-Golf	4,919	1.06%	0	0.00%	331	0.43%
Sports Turf-Other	412	0.09%	113	0.02%	28	0.04%
Regional Projects*	338	0.07%	0	0.00%	0	0.00%
Total	465,725	100.00%	681,676	100.00%	77,814	100.00%

- The spring vent percentage was used to determine the required reduction for most categories.
- For Wastewater Treatment Facilities, reduction was determined based on the BMAP effluent standards.
- For agricultural sources, an estimated reduction of 15% will be achieved when crop producers are enrolled in the DACS Best Management Practice (BMP) program and implement BMPs, and a reduction of 10% is estimated when all livestock producers enroll in the DACS BMP program and implement BMPs. The remaining allocated reduction to agricultural will be addressed through a combination of regional projects, ACE, innovative technologies and cost-share projects.

BASIN ANALYSES

DRAFT SURFACE WATER LOADING ESTIMATES

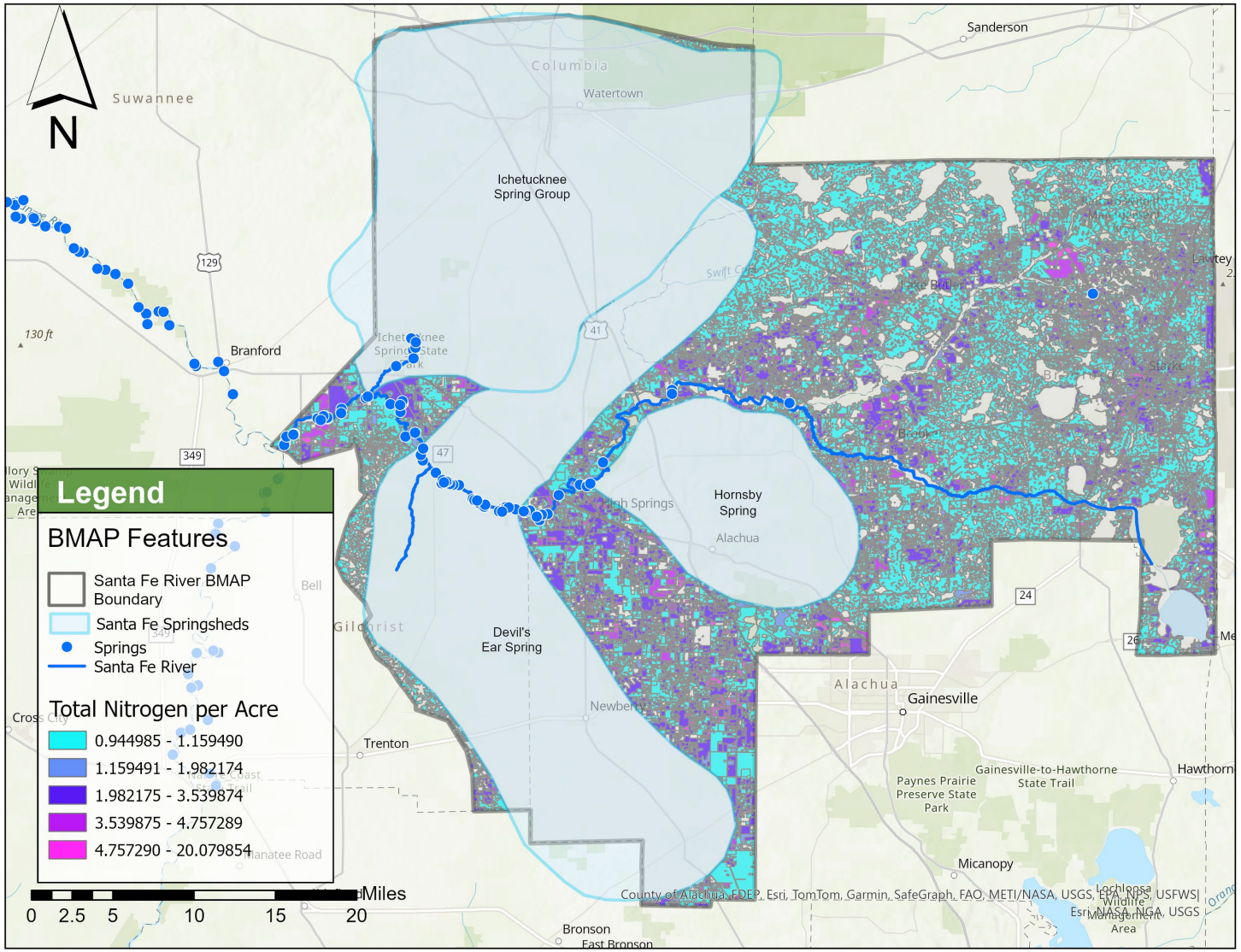
Areas outside the springshed were treated as surface waters. Loading was calculated using a similar approach to the Pollutant Load Screening Model (PLSM).

- Statewide Land Use Cover Data- Level 2 Codes.
- Event Mean Concentrations (EMCs).
- Runoff Coefficients (ROCs).

Land use data was clipped to each jurisdictional boundary and total loading for all relevant land uses were summed.

- Loading from natural lands are not allocated.
- Loading from agriculture, dairies or golf courses allocated to the industry.
- State roads and right-of-ways allocated to Department of Transportation (DOT).

The reductions needed for the surface water are 50%.



REDUCTIONS

DRAFT ENTITY REQUIRED REDUCTIONS

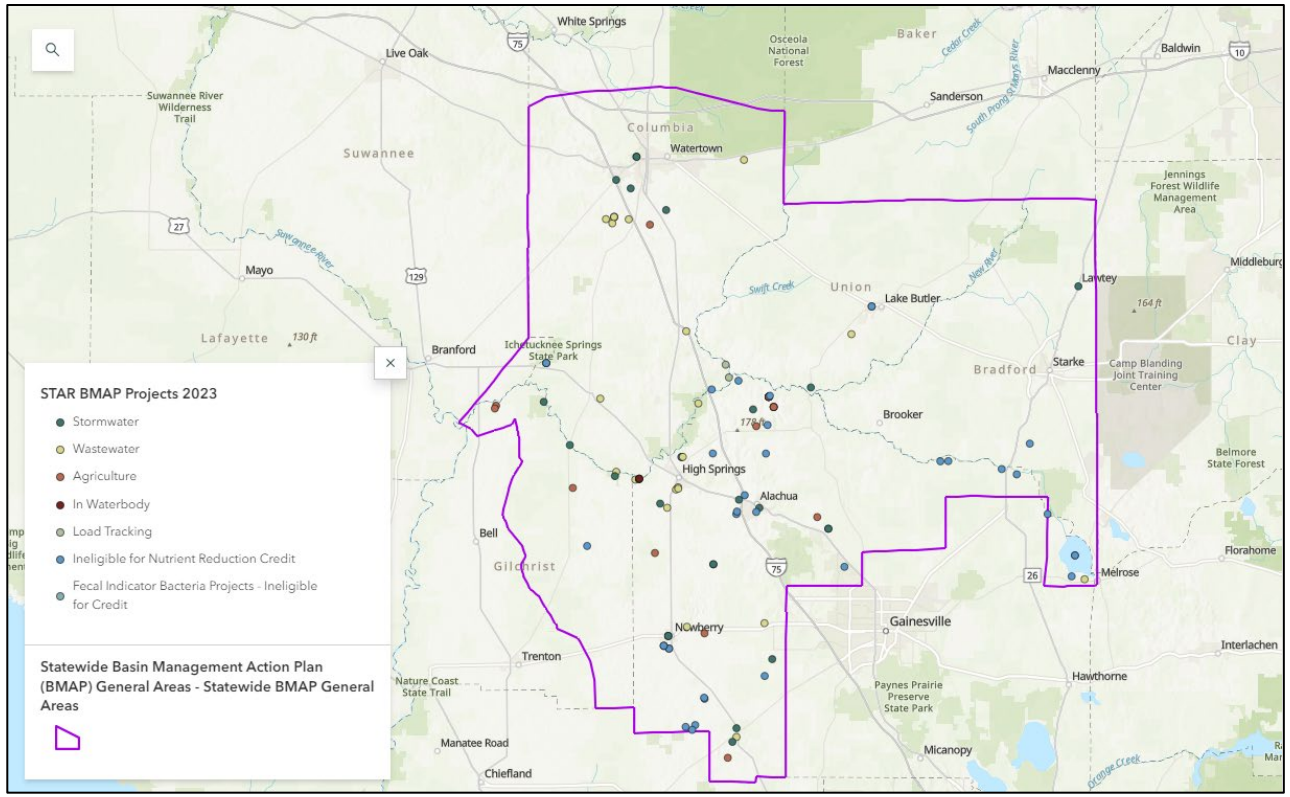
- All local municipalities are allocated reduction targets based on the loading estimated to occur under their jurisdiction from wastewater, septic systems and urban fertilizers.

- Reductions in this table reflect overall allocated reductions across subbasins. Many entities will have responsibilities in multiple springsheds or in the springs and surface water portions of the basin.

Entity	2028 Milestone (30%)	2033 Milestone (80%)	2038 Milestone (100%)
Alachua County	12,150	40,499	50,624
Bradford County	5,575	18,585	23,231
City of Alachua	1,205	4,016	5,020
City of Archer	880	2,932	3,665
City of Gainesville	1,043	3,477	4,346
City of Hampton	76	252	315
City of High Springs	1,486	4,954	6,193
City of Lake Butler	383	1,277	1,596
City of Lake City	2,296	7,653	9,566
City of Lawtey	126	420	525
City of Newberry	1,220	4,068	5,085
City of Starke	857	2,855	3,569
City of Waldo	60	201	251
Columbia County	39,135	130,450	163,062
Gilchrist County	6,803	22,676	28,345
Suwannee County	1,012	3,373	4,216
Town of Brooker	42	141	176
Town of Fort White	914	3,048	3,810
Town of La Crosse	48	159	199
Town Raiford	36	120	150
Town Worthington Springs	135	450	562
Union County	3,363	11,211	14,014
FDOT	1,278	4,258	5,323
Agriculture	230,871	769,569	961,961
Private WWTFs*	256	854	1,068
Private Golf Course*	1,288	4,293	5,366

*Reductions for these entities will largely be tracked through permits and compliance actions.

PROJECTS



HB 1379 (2023) requires responsible entities to report on projects that demonstrate how they intend to meet their five-year milestones.

- Entities are required to plan and report projects to the state through the Statewide Annual Report (STAR). All projects needed to fulfill milestones should be added, 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.

UPCOMING SCHEDULE

May-Aug. 2024

Individual meetings on allocations and milestones with BMAP stakeholders.

Aug.1, 2024

Final wastewater and OSTDS plans due from stakeholders.

Aug. - Nov. 2024

BMAP Portal opened early for project collection. Public meetings on allocations.

Technical analyses, project identification and BMAP document drafting.

June - Dec. 2024

Final draft BMAP document and public meetings.

Dec. 2024-Jan. 2025

Statutory deadline to update nutrient BMAPs.

July 1, 2025

RESOURCES
BMAP WEBSITE AND STORY MAPS

Florida Springs Basin Management Action Plans (BMAPs)

Welcome to the Florida Springs Basin Management Action Plan (BMAP) StoryMap

The springs BMAPs are developed with specific provisions for the protection and restoration of the state's Outstanding Florida Springs. This story map focuses on the springs-related BMAPs; for more details about other BMAPs or more information about the BMAP program in general, visit https://floridadep.gov/bmaps.

* The story map will display differently depending on the screen size and resolution being used. Story map best viewed in Chrome or Firefox.

Overview

The Florida Springs and Aquifer Protection Act (Part VIII of Chapter 373, F.S.) provides for the protection and restoration of the state"s Outstanding Florida Springs (OFS), which comprise 24 first magnitude springs, 6 additional named springs, and their associated spring runs. The act provides specific requirements for OFS BMAPs beyond those


1 Legislative Requirements


2 Crystal River - Kings Bay BMAP StoryMap


3 DeLeon Spring Story Map


4 Gemini Springs Story Map

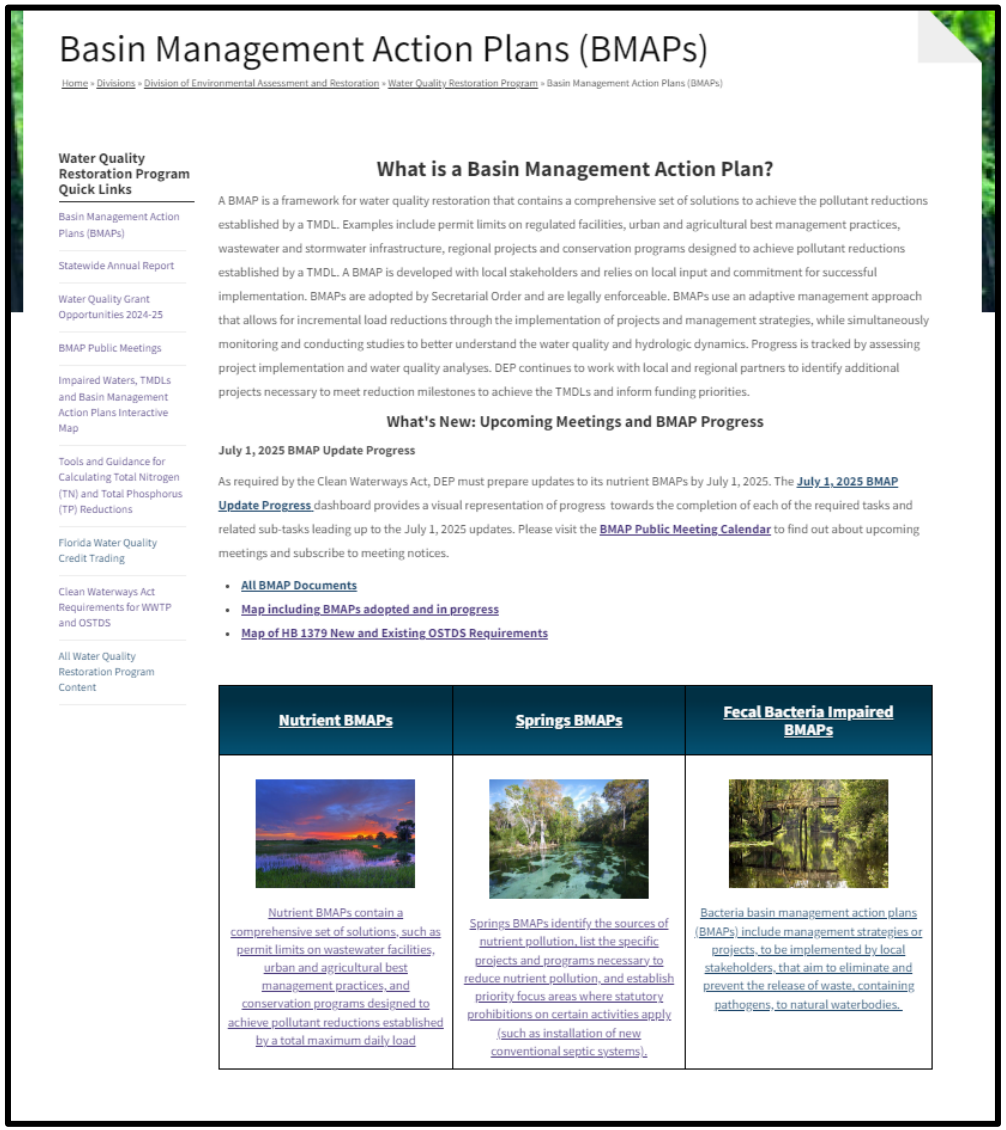

5 Homosassa and Chassahowitzka Springs...


6 Jackson Blue and Merritts Mill Pond BMAP Story Map


7 Rainbow Springs Group and Rainbow Springs Group Run...


8 Santa Fe River BMAP Story Map


9 Silver Springs and Upper Silver River BMAP Story Map



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THANK YOU

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