

# Weeki Wachee SWIM Plan

## Steering Committee Final Draft

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Southwest Florida  
*Water Management District*



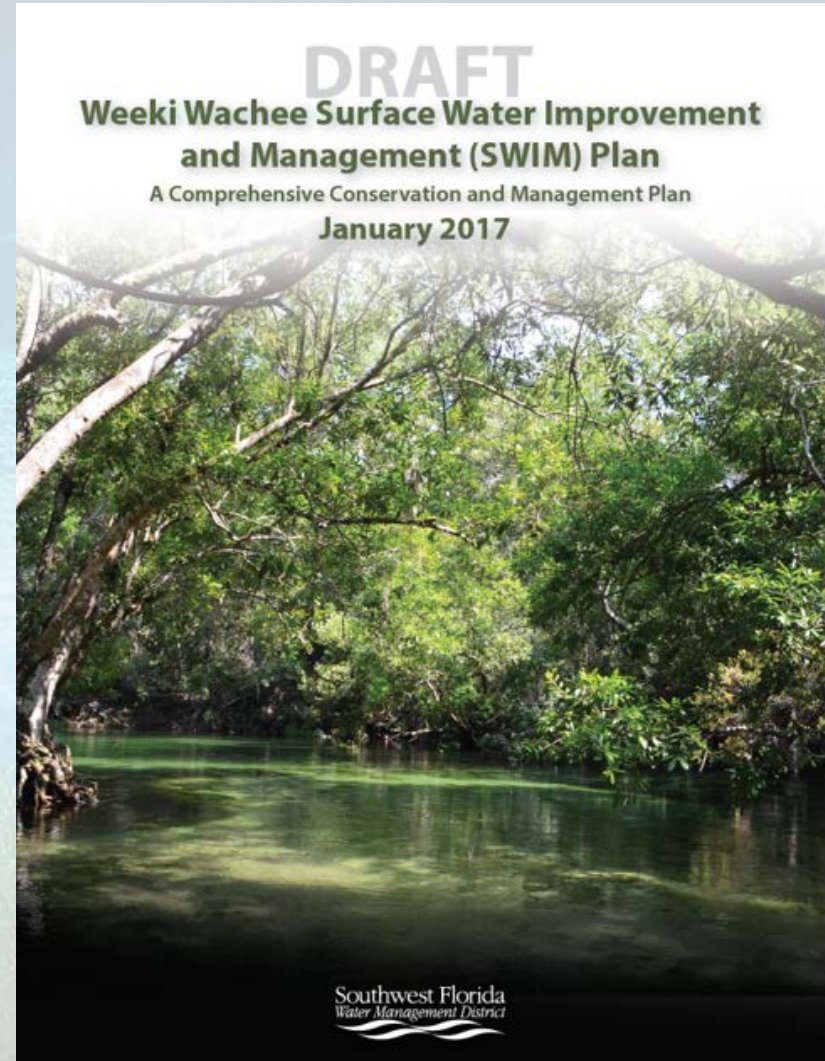


# Action Item

- Approve Weeki Wachee River SWIM Plan

# Weeki Wachee River SWIM Plan

- Executive Summary
- Introduction
- Issues and Drivers
- Management Actions
- Projects and Initiatives
- References
- Appendices





# Focus Areas

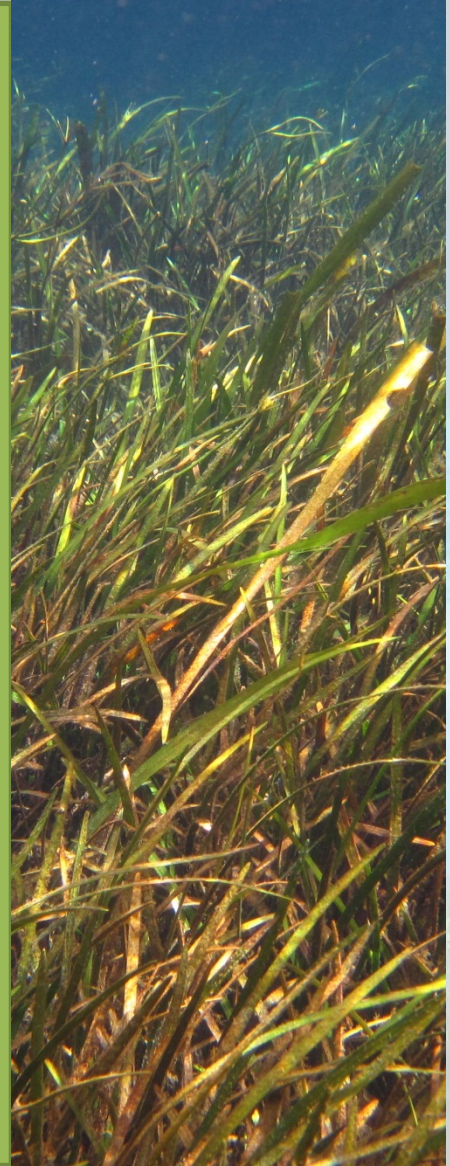
## WATER QUALITY



## WATER QUANTITY



## NATURAL SYSTEMS





# Introduction

- The Springs Coast
- SCSC & SCMC
- SCSC Technical Working Group
- The SWIM Act & SWIM Priority Water Bodies
- What Makes a Healthy Spring?
- System Description
- Historical Context
- Land Use



# Weeki Wachee SWIM Plan Summary

	Water Quality	Water Quantity	Natural Systems
PRIMARY ISSUE	<ul style="list-style-type: none"> <li>Nitrate Enrichment</li> </ul>	<ul style="list-style-type: none"> <li>Potential Decrease in Historical Flows</li> </ul>	<ul style="list-style-type: none"> <li>Altered Aquatic Vegetation</li> <li>Sedimentation</li> </ul>
QUANTIFIABLE OBJECTIVE	<ul style="list-style-type: none"> <li>Water Clarity</li> <li>Nitrate Concentration</li> </ul>	<ul style="list-style-type: none"> <li>Minimum Flow for the River System</li> </ul>	<ul style="list-style-type: none"> <li>Coverage of desirable submerged aquatic vegetation in the river</li> <li>Coverage of invasive aquatic vegetation (including filamentous algae) in the river</li> </ul>
PRIORITY MANAGEMENT ACTION	<ul style="list-style-type: none"> <li>Septic Tanks</li> <li>Urban/Residential Fertilizer</li> <li>Agriculture Operations</li> </ul>	<ul style="list-style-type: none"> <li>Conservation</li> <li>Alternative Water Supply</li> </ul>	<ul style="list-style-type: none"> <li>Habitat Restoration</li> <li>Recreation Management</li> </ul>
PROJECTS	<ul style="list-style-type: none"> <li>Ongoing (19)</li> <li>Proposed Priority(11)</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing (23)</li> <li>Proposed Priority (5)</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing (6)</li> <li>Proposed Priority (10)</li> </ul>

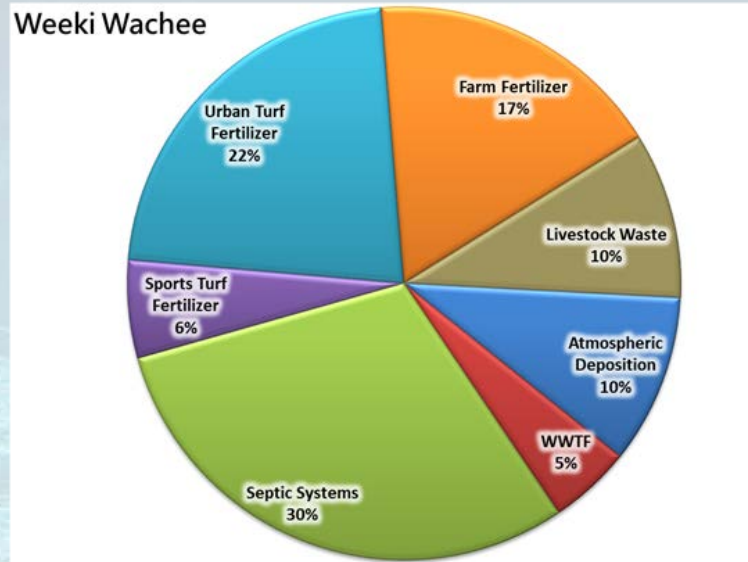
# Issues and Drivers

## Primary Issues:

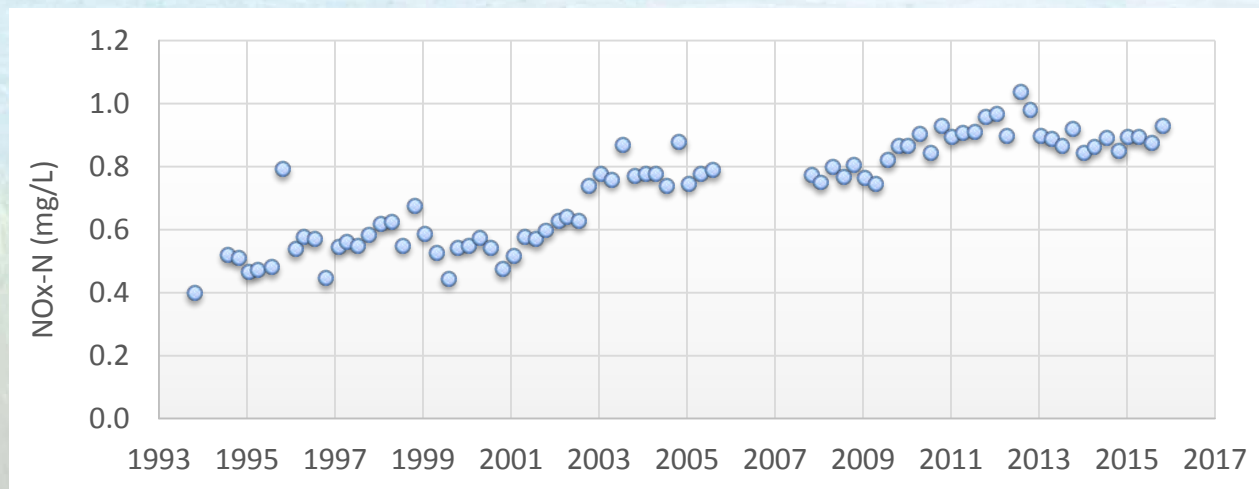
- Nitrate Enrichment
- Potential Decrease in Historical Flows
- Altered Aquatic Vegetation & Sedimentation



# Primary Issues: Nitrate Enrichment



*From FDEP draft estimate 2016*

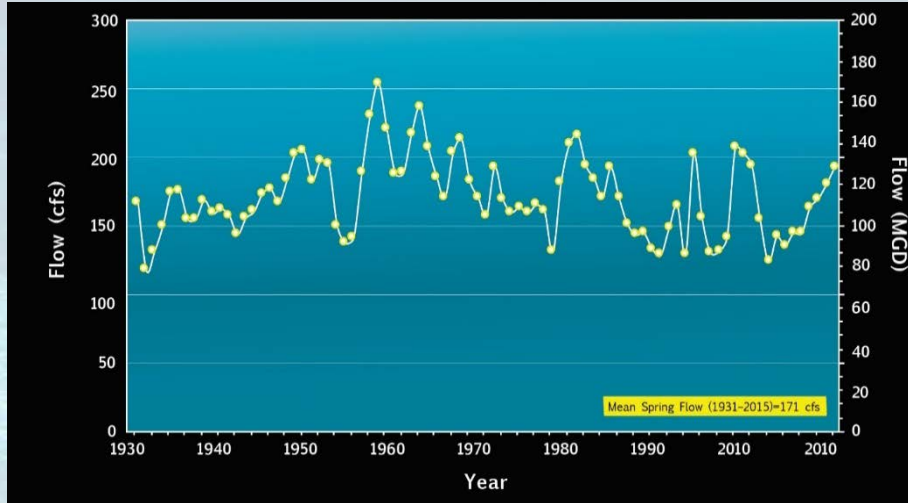


**Nitrate Changes in the Weeki Wachee River**

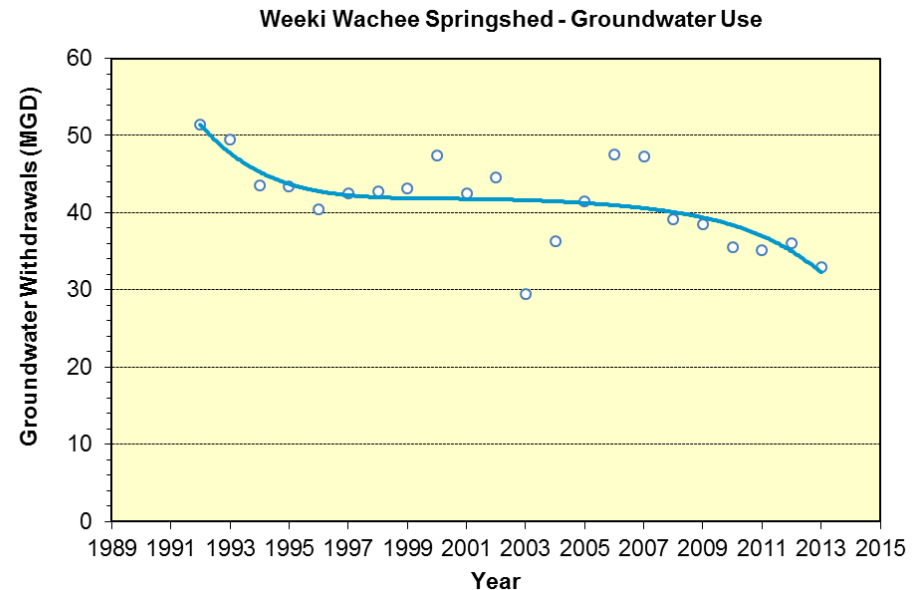


# Primary Issues:

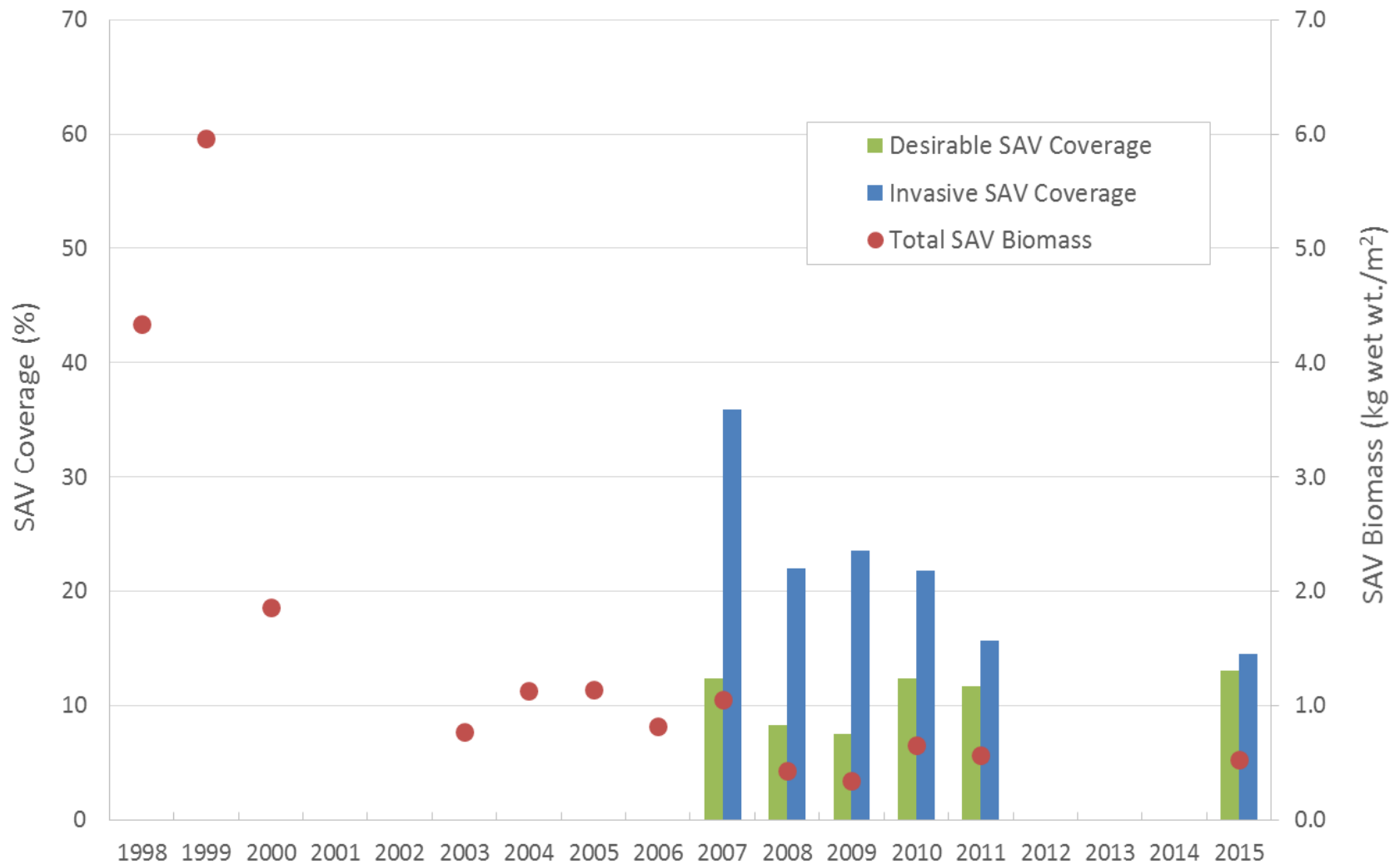
## Potential Decrease in Historical Flows



Average Annual Flow Observed in the Weeki Wachee River



# Primary Issues: Altered Aquatic Vegetation



**SAV Coverage and Biomass in the Weeki Wachee River**



# Primary Issues: Sedimentation



**Aerial Comparison of the Weeki Wachee River**

# Quantifiable Objectives

Water Quality	Target
Water clarity – river average	>50 feet
Water clarity – near the headspring	>120 feet <sup>1</sup>
Nitrate concentration in the river	<0.20 mg/L <sup>2</sup>
Water Quantity	
Minimum flow for the river system	> 90% natural flow <sup>3</sup>
Natural Systems	
Coverage of desirable submerged aquatic vegetation in the river	>40% <sup>4</sup>
Coverage of invasive aquatic vegetation (including filamentous algae) in the river	<10% <sup>4</sup>

<sup>1</sup> Based on data presented in Figure 15

<sup>2</sup> Dodson and Bridger 2014 – Nutrient TMDLs for Weeki Wachee Spring and Weeki Wachee River (WBIDs 1382B and 1382F)

<sup>3</sup> SWFWMD 2008 – Weeki Wachee River Recommended Minimum Flows and Levels

<sup>4</sup> Based on data presented in Figure 21



# Weeki Wachee River SWIM Plan

## WATER QUALITY



### Management Action Categories

Monitoring & Research

**Agricultural Operations**

**Septic Tanks**

**Urban/Residential Fertilizer**

Wastewater Treatment Facilities

Stormwater

Septic/Sewage Solids Disposal

Atmospheric Deposition

“The SCSC recognizes that Septic Tanks, Agricultural Operations, and Urban/Residential Fertilizer are the priority Water Quality Management Action categories for Weeki Wachee River”

# Weeki Wachee River SWIM Plan

## WATER QUANTITY



### Management Action Categories

Monitoring & Research
<b>Conservation</b>
<b>Alternative Water Supply</b>
Regional Water Supply Planning
Regulatory
Minimum Flows and Levels

“The SCSC recognizes that Conservation and Alternative Water Supply are the priority Water Quantity Management Action categories for Weeki Wachee River”



# Weeki Wachee River SWIM Plan

## NATURAL SYSTEMS



### Management Action Categories

Monitoring & Research

Habitat Conservation

**Habitat Restoration**

Invasive Species Management

**Recreation Management**

“The SCSC recognizes that Habitat Restoration and Recreation Management are the priority Natural Systems Management Action categories for Weeki Wachee River”



# Projects and Initiatives

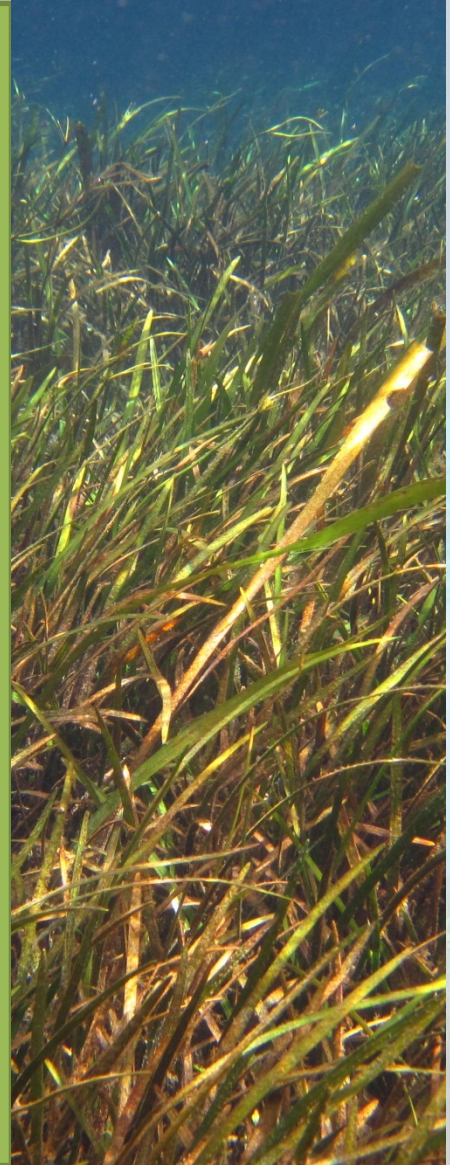
## WATER QUALITY



## WATER QUANTITY



## NATURAL SYSTEMS





# Proposed Priority Projects

## Monitoring and Research

- Hernando/Pasco Aquifer Vulnerability Assessment

## Septic Tanks

- Community Outreach and Education Campaign for Wastewater Solutions
- Update GIS Map of Drinking Water Source and Wastewater Disposal for Areas of Concern
- **Shady Hills Septic Tank Abatement (addition)**

## Urban/Residential Fertilizer

- Develop a Springs Coast Model Fertilizer Ordinance

## Wastewater Treatment Facilities

- Advanced Wastewater Treatment Plant Study
- City of Brooksville Package Plant Connection
- Wastewater Disposal Soil Amendment Pilot Project

## Stormwater

- **Buccaneer Bay Impervious Surface Reductions Project (addition)**
- Main Parking Area Stormwater Retrofit
- Roof Stormwater Capture Project

Ongoing	19
Proposed	11

# Proposed Priority Projects

## Conservation

- Adopt Landscape Irrigation Design and Maintenance Standards Similar to Florida Water Star Certification
- Domestic Self-Supply Indoor Water Conservation Pilot Project
- Springshed Water Conservation Incentive Program and Projects

## Alternative Water Supply

- City of Brooksville Reclaimed to Hernando Oaks Golf Course
- Potential Reclaimed Water User Study

Ongoing	23
Proposed	5



# Proposed Priority Projects

## Monitoring and Research

- Aquatic Vegetation Mapping Evaluation

## Habitat Conservation

- Establish the Nature Coast Aquatic Preserve
- Mud Spring Property Acquisition
- Springs and Related Waterway Law Enforcement
- Weeki Wachee Adjacent Land Acquisition
- Wilderness Spring Conservation Easement Acquisition

## Habitat Restoration

- Oyster and SAV Enhancement
- Weeki Wachee River Restoration Feasibility Study

## Recreation Management

- Recreation Carrying Capacity Project
- Weeki Wachee River Recreation Education

Ongoing	6
Proposed	10

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