

# **Stephen M. Suau, P.E.**

## **Watershed Management, Hydrology, Soil Biology**

- **40 Years Experience in Public, Private, and Not-for-Profit Sectors**
- **Sarasota County Center for Watershed Management Director**
- **Sarasota County Growth Management Executive Director**
- **Water Advisor to the Florida Century Commission**
- **Statewide Stormwater Rule Technical Advisory Committee**
- **Sarasota Bay Estuary Program Technical Advisory Committee**
- **Coastal Heartland National Estuary Partnership Technical Advisory Committee**
- **Sarasota Sustainable Agricultural Technical Advisory Committee**
- **Sarasota County Environmental Stormwater Advisory Committee**

# The Florida “Water Management” Experience Over Drain and Over Pump



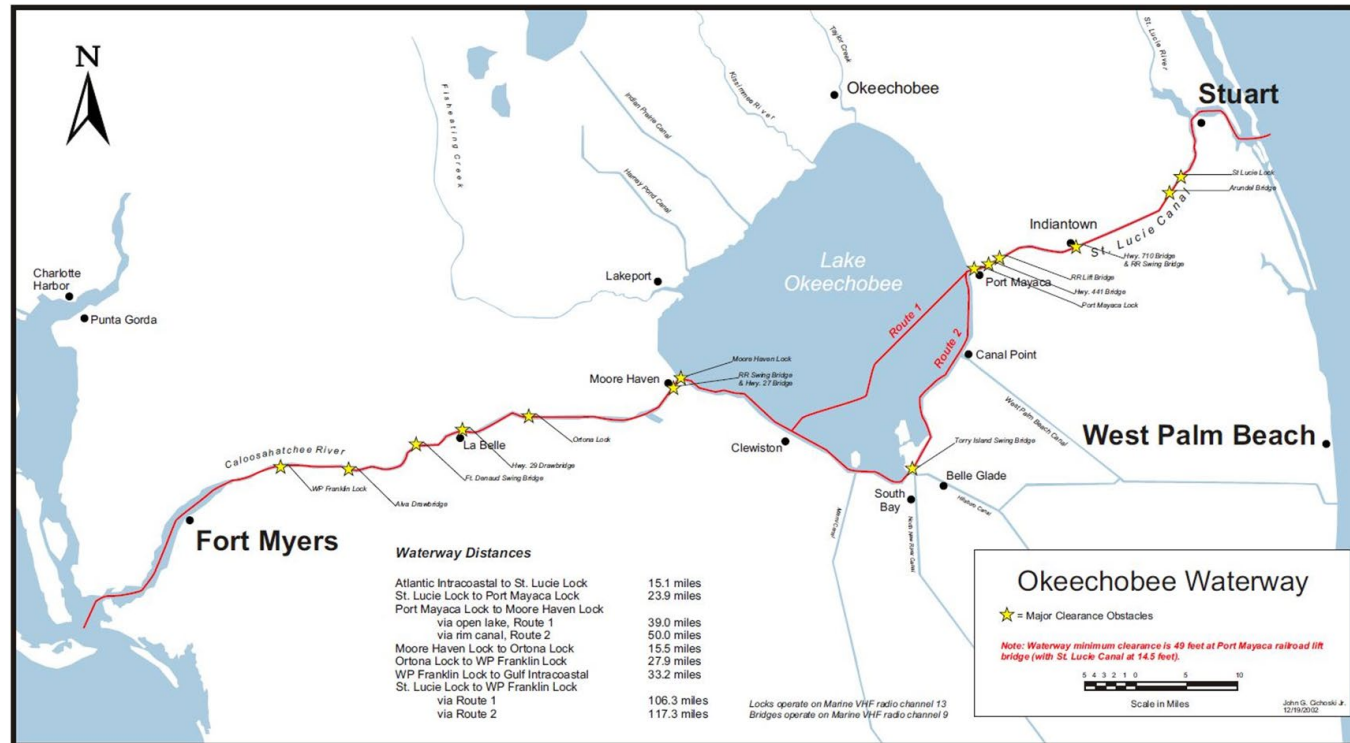
*George Gaylord Simpson / State Library And Archives Of Florida*

# **Kissimmee River : 20<sup>th</sup> Century Land Reclamation**

***Transformed the 103-mile natural, meandering river and floodplain to 52-mile canal***

# Lake Okeechobee and the Everglades FKA the River of Grass (and the “Everglades Agricultural Area”)

## The Manipulation of Lake Okeechobee



# Unintended (but predicable) Consequences

Florida Bay

Dire **need** for Freshwater

Indian River Lagoon

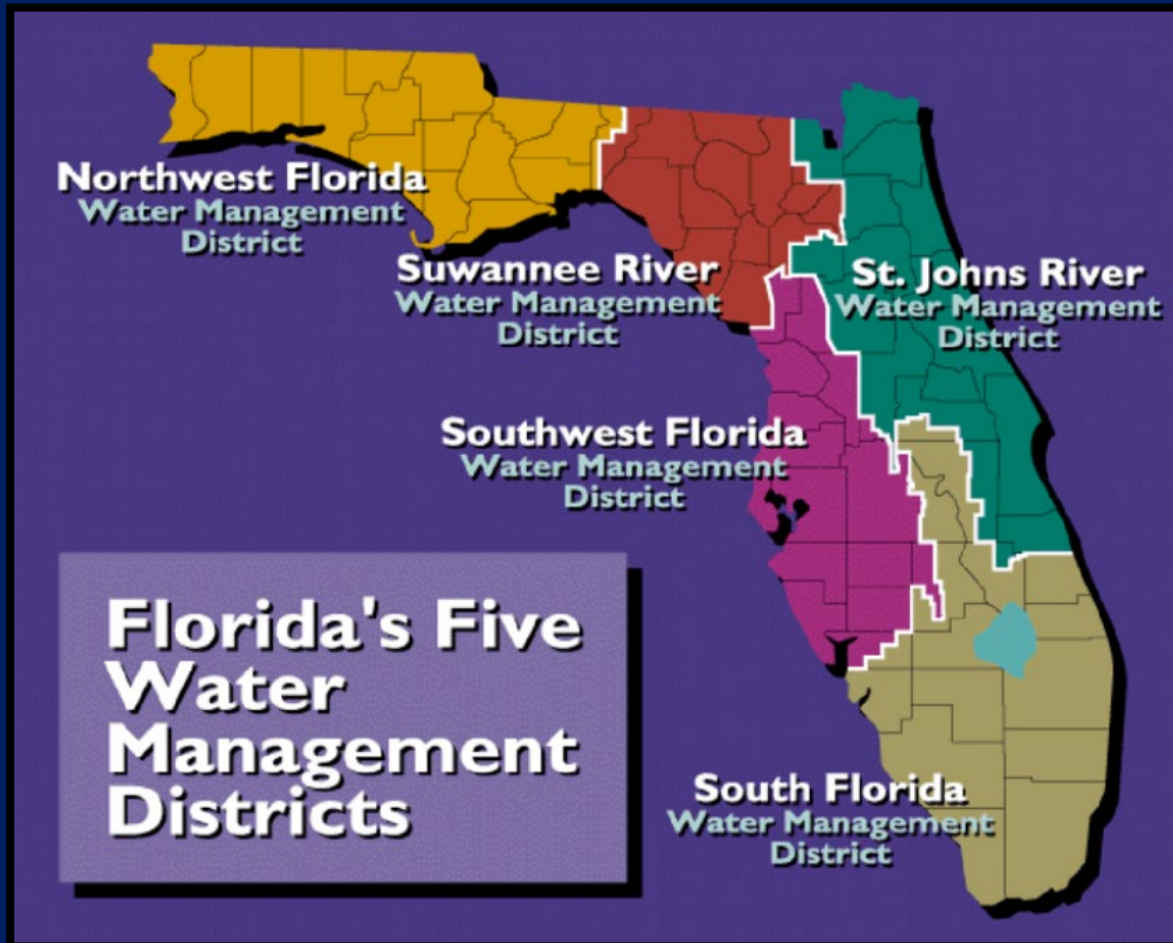
Blue **Green** Algae

Gulf of Mexico

**Red** Tide

# Water Management in Florida

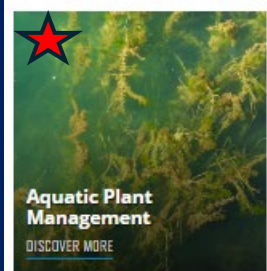
The Florida Water Resources Act of 1972 (Chapter 373, F.S.), establishes that all water in Florida, on the surface or in the ground, is a public resource managed by the Florida Department of Environmental Regulation through designation to five Water Management Districts (WMDs).



- Regulation, Monitoring, Land Acquisition & Restoration, Infrastructure Investment
- Watershed Management: Natural Systems, Water Quality, Flood Protection, and Water Supply
- Annual Revenue based upon percentage of real estate taxes
- NFWMD = \$115,393,656
- SRWMD = \$71,634,090
- SJWMD = \$373,001,634
- SWFWMD = \$224,800,464
- SFWMD = \$1,226,876,797



# Water Management District Programs



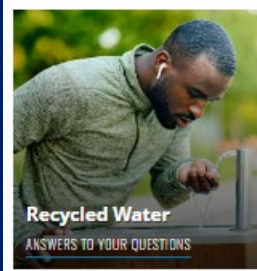
**Aquatic Plant Management**  
[DISCOVER MORE](#)



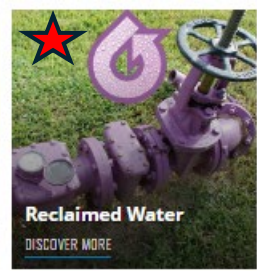
**Aquifer Recharge at Flatford Swamp**  
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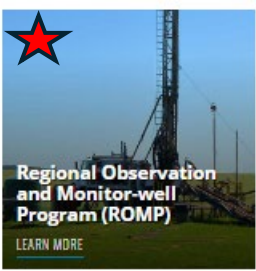
**Clam Bayou Habitat Restoration & Stormwater Treatment**  
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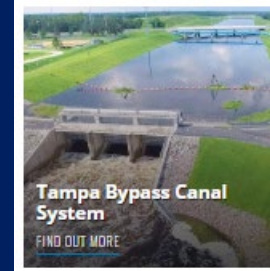
**Recycled Water**  
[ANSWERS TO YOUR QUESTIONS](#)



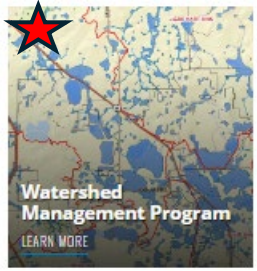
**Reclaimed Water**  
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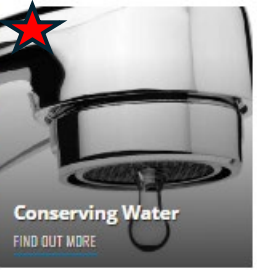
**Regional Observation and Monitor-well Program (ROMP)**  
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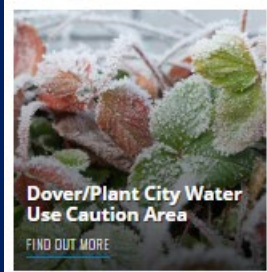
**Tampa Bypass Canal System**  
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**Watershed Management Program**  
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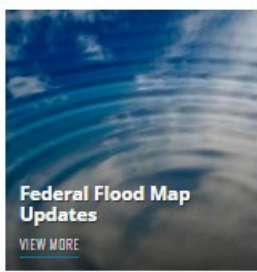
**Conserving Water**  
[FIND OUT MORE](#)



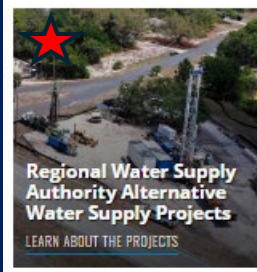
**Dover/Plant City Water Use Caution Area**  
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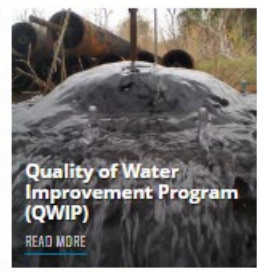
**Facilitating Agricultural Resource Management Systems (FARMS)**  
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**Federal Flood Map Updates**  
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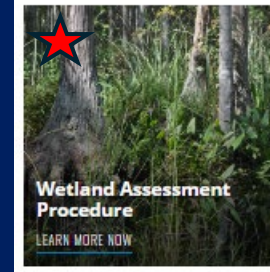
**Regional Water Supply Authority Alternative Water Supply Projects**  
[LEARN ABOUT THE PROJECTS](#)



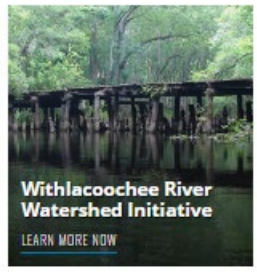
**Quality of Water Improvement Program (QWIP)**  
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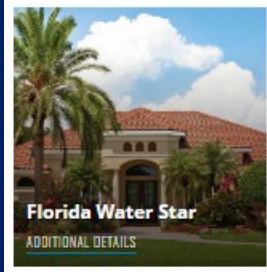
**Southern Water Use Caution Area (SWUCA)**  
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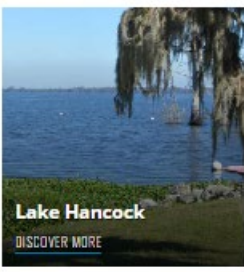
**Wetland Assessment Procedure**  
[LEARN MORE NOW](#)



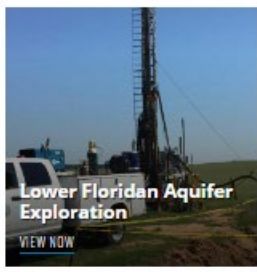
**Withlacoochee River Watershed Initiative**  
[LEARN MORE NOW](#)



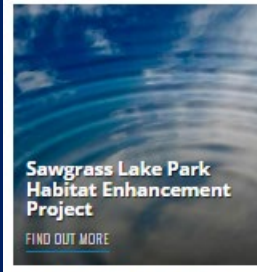
**Florida Water Star**  
[ADDITIONAL DETAILS](#)



**Lake Hancock**  
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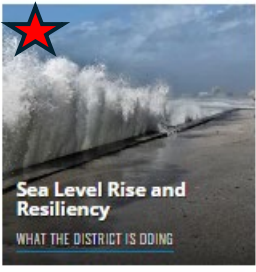
**Lower Floridan Aquifer Exploration**  
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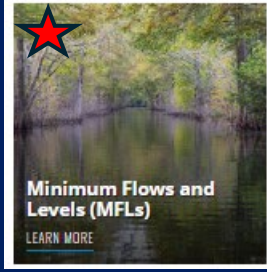
**Sawgrass Lake Park Habitat Enhancement Project**  
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**Sawgrass Lake Restoration Project**  
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**Sea Level Rise and Resiliency**  
[WHAT THE DISTRICT IS DOING](#)



**Minimum Flows and Levels (MFLs)**  
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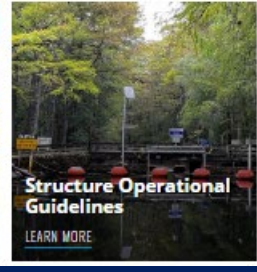
**Northern Tampa Bay Water Use Caution Area**  
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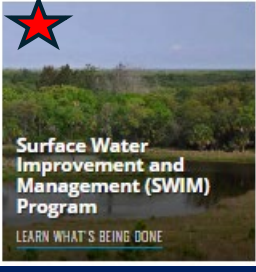
**Old Tampa Bay Water Quality & Habitat Assessment**  
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**Springs in West-Central Florida**  
[DISCOVER #MYSPRINGS](#)



**Structure Operational Guidelines**  
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**Surface Water Improvement and Management (SWIM) Program**  
[LEARN WHAT'S BEING DONE](#)

# Coordinate, Plan, and Fund Regional Water Supply

Surface Water

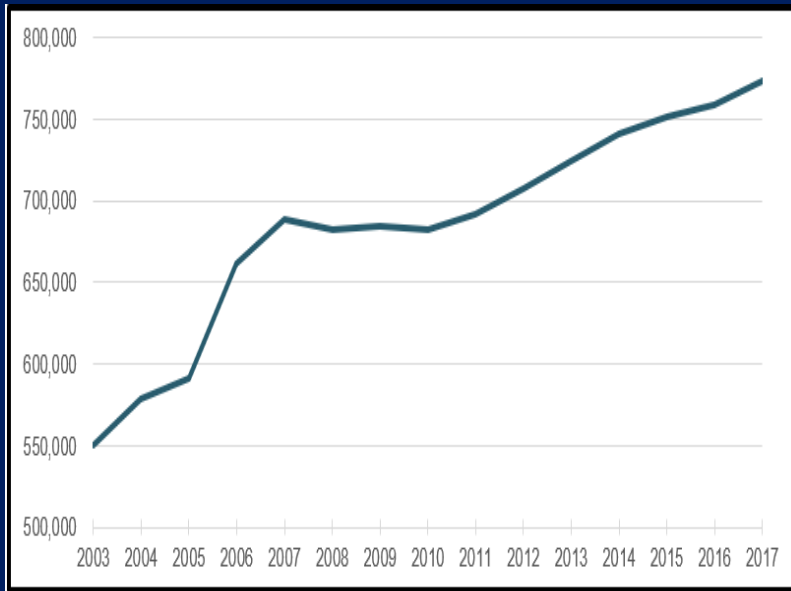
Ground Water

New Surface

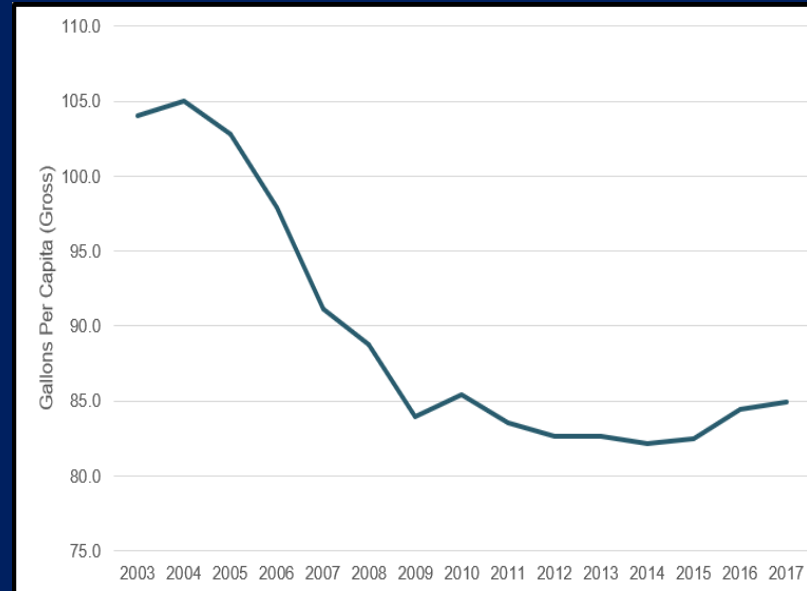


# Effective Strategies: Right Water for the Right Use

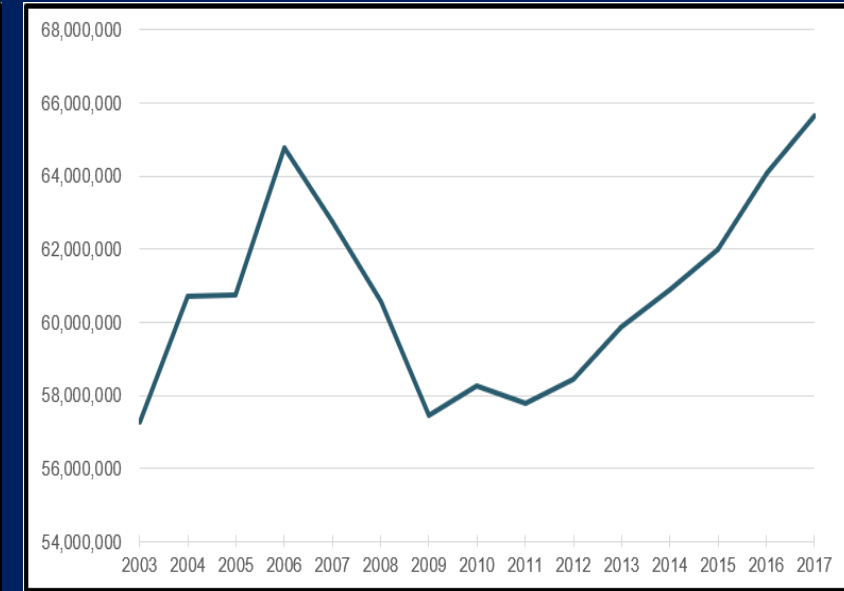
- Non-Potable Water for Outdoor Irrigation
- Use of Water Efficient Fixtures for Indoor Potable Water
- Tiered Water Rate Structures



**Population Served/Year**  
**550,000 to 770,000 (+40%)**

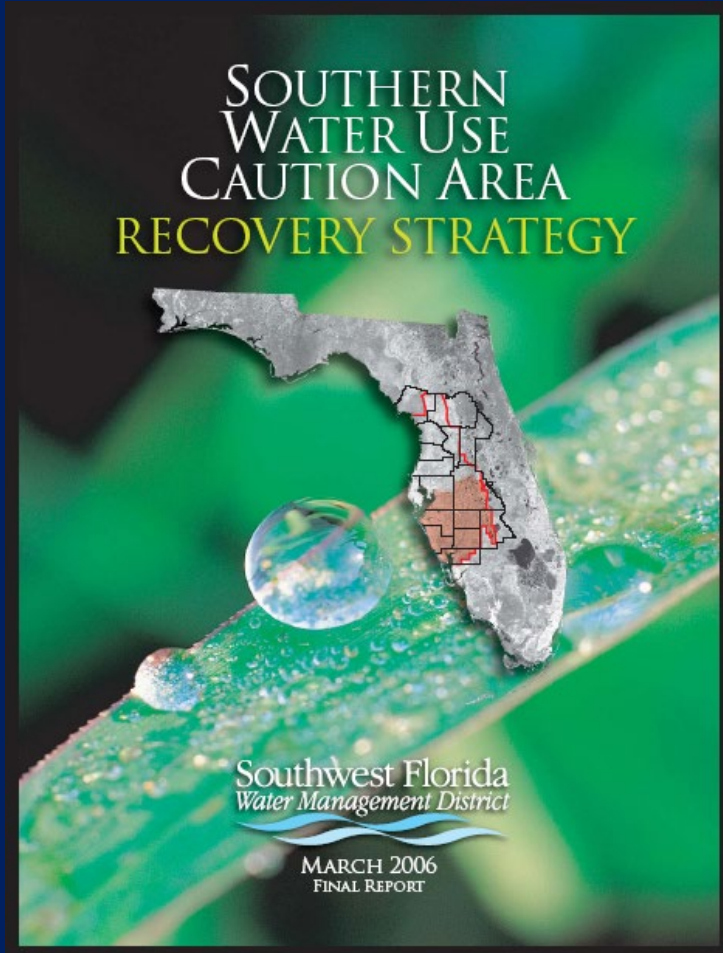


**Annual Per Capita Water Use**  
**105 to 85 gallons per person (-19%)**



**Total Water Use/Year**  
**58 to 66 mgd (+20%)**

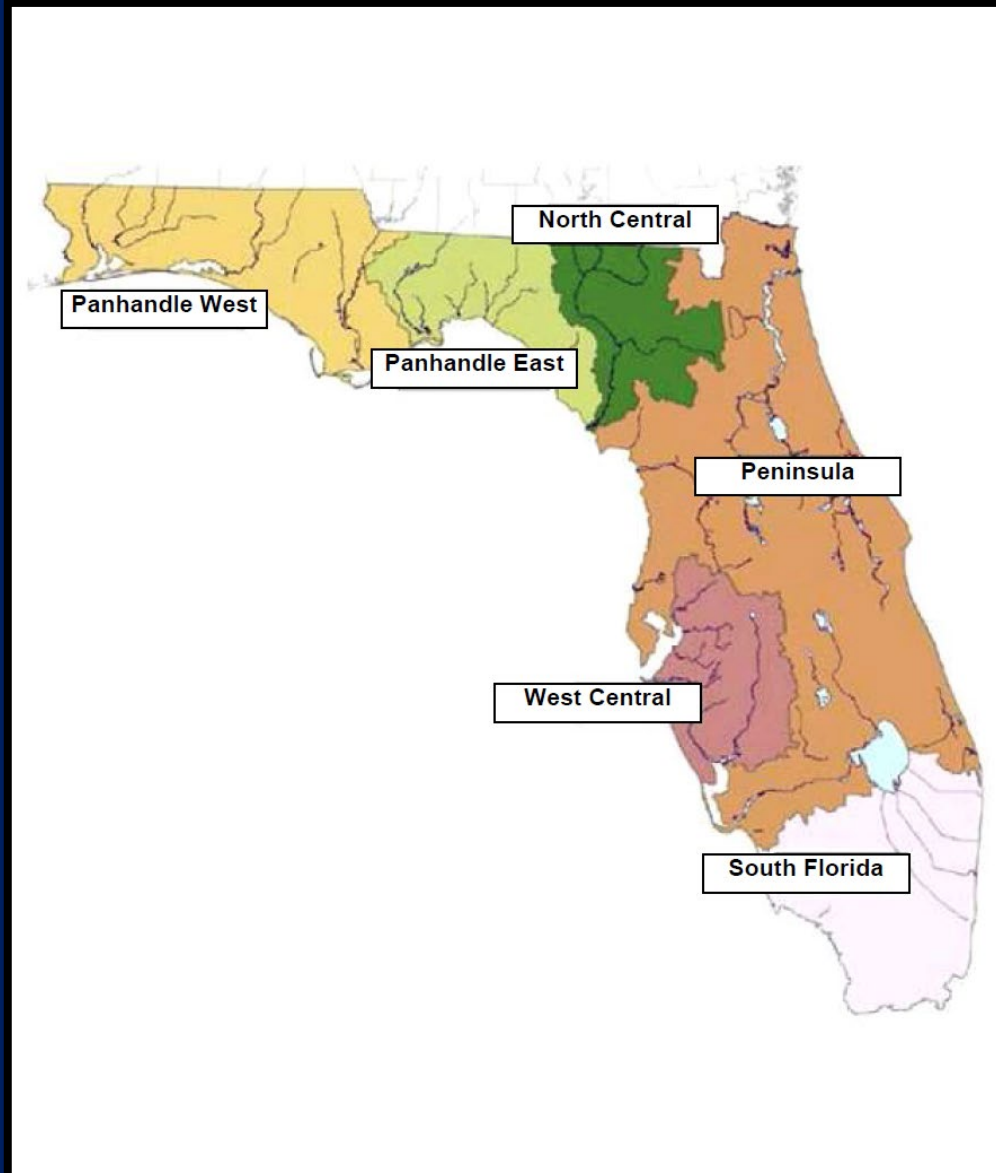
# Cost Share with Agriculture



**FARMS is a private/public partnership developed by the SWFWMD and the Florida Department of Agriculture and Consumer Services as a cost-share reimbursement program for agricultural projects that reduce groundwater withdrawals from the Upper Floridan aquifer through conservation and other alternative water supply best management practices (BMPs). Water quality and natural systems improvement BMPs may also be cost-shared in priority areas.**

**20 years, 240 FARMS Projects, Water Conserved = 20 million gallons per day**

# Water Quality : Florida Nutrient Criteria



## West Central Region Numeric Nutrient Criteria for Freshwater Streams:

Total Nitrogen = 1.65 mg/L

Total Phosphorus = 0.49 mg/L

## Peninsula Region Numeric Nutrient Criteria for Freshwater Streams:

Total Nitrogen = 1.54 mg/L

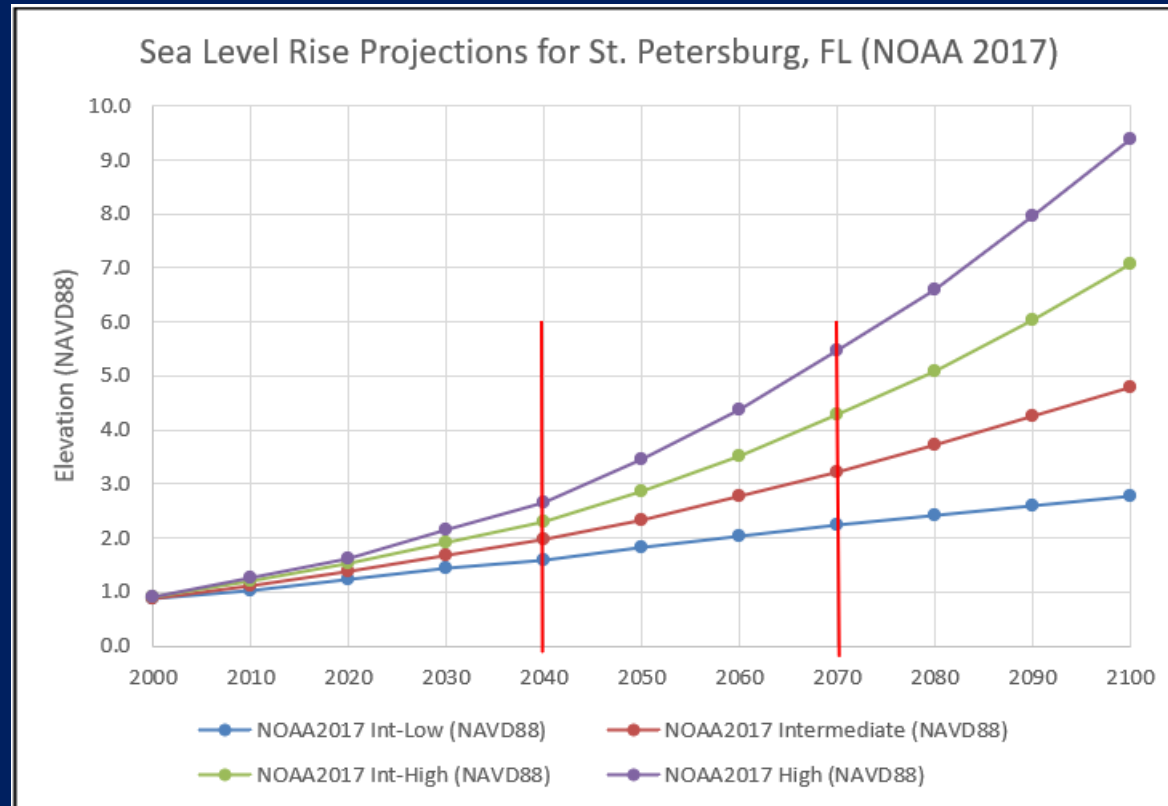
Total Phosphorus = 0.12 mg/L

## Narrative Numeric Criteria:

*The discharge of nutrients shall continue to be limited as needed to prevent violations of other standards contained in this chapter. Man-induced nutrient enrichment (total nitrogen or total phosphorus) shall be considered degradation in relation to the provisions of Rules 62-302.300, 62-302.700, and 62-4.242, F.A.C. **In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna.***

# Sea Level Rise Resiliency (Sunny Day Flooding)

Chapter 380.093, Florida Statutes requires a vulnerability assessment for critical assets be conducted based upon NOAA projections for Intermediate-Low and Intermediate-High and Planning Horizons of 2040 and 2070.





# Lake Okeechobee and the Everglades

**“I have an idea that might solve all our problems. Why don’t we just buy you out? If Sugar is polluting the Everglades, and we are paying to clean the Everglades, why don’t we just get rid of Sugar?”**

**Florida Governor Crist to U.S. Sugar Corporation (2007).**

**In November 2014, about 75% Florida voters approved an amendment to the state constitution which requires one third of documentary stamp revenue to be placed into the Land Acquisition Trust Fund and spent on a variety of environmental programs and initiatives.**

**What is the obstacle to restoring the Florida Everglades,  
Coastal Estuaries, and Florida Bay?**

**BIG SUGAR**