Surface Water Improvement and Management (SWIM) Plan Update

Apalachicola River and Bay Watershed

April 20, 2017

Surface Water Improvement and Management (SWIM) Program

Created through passage of the Surface Water Improvement and Management Act in 1987; Sections 451-459, Florida Statutes.

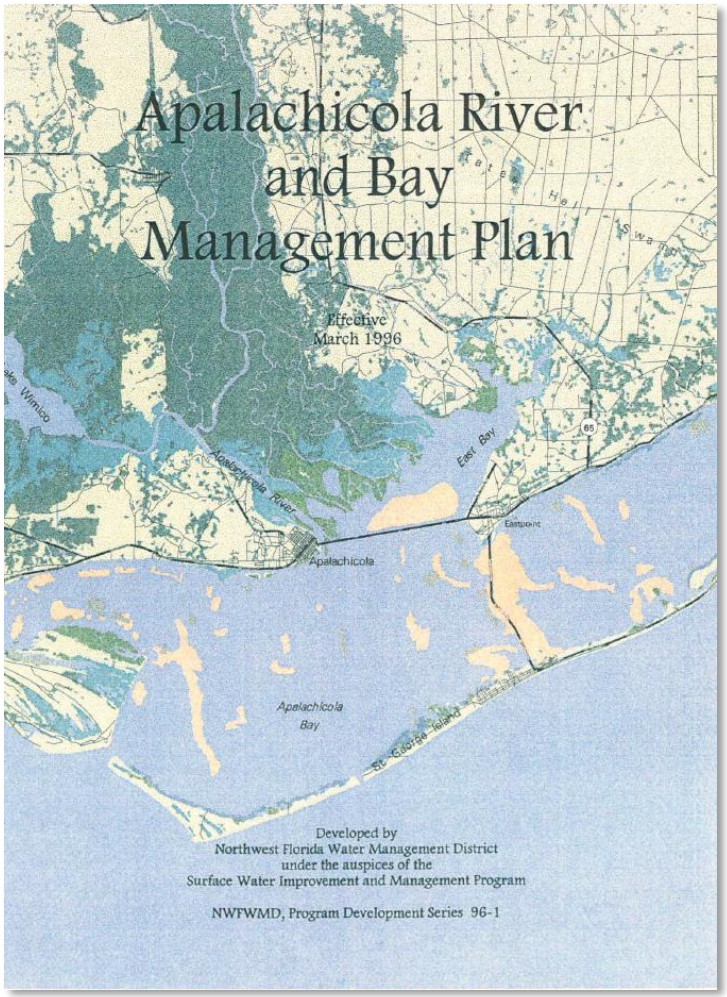
Purpose: Developed to address major watershed (coastal/ surface water) issues throughout the State.

Plans will provide:

- Watershed description;
- Assessment of watershed and water resource conditions;
- Evaluation of accomplishments and improvements since previous SWIM Plan;
- Project plan to address identified watershed needs and challenges; and
- Estimate funding needs and funding alternatives.

SWIM in Northwest Florida

Watershed	Most Recent Plan/Update
Apalachicola	1996
Pensacola	1997
Choctawhatchee	2002
St. Marks	2009
St. Andrew Bay	2000
Lake Jackson	1997
Perdido	Draft 2011
Ochlockonee	Draft 2012

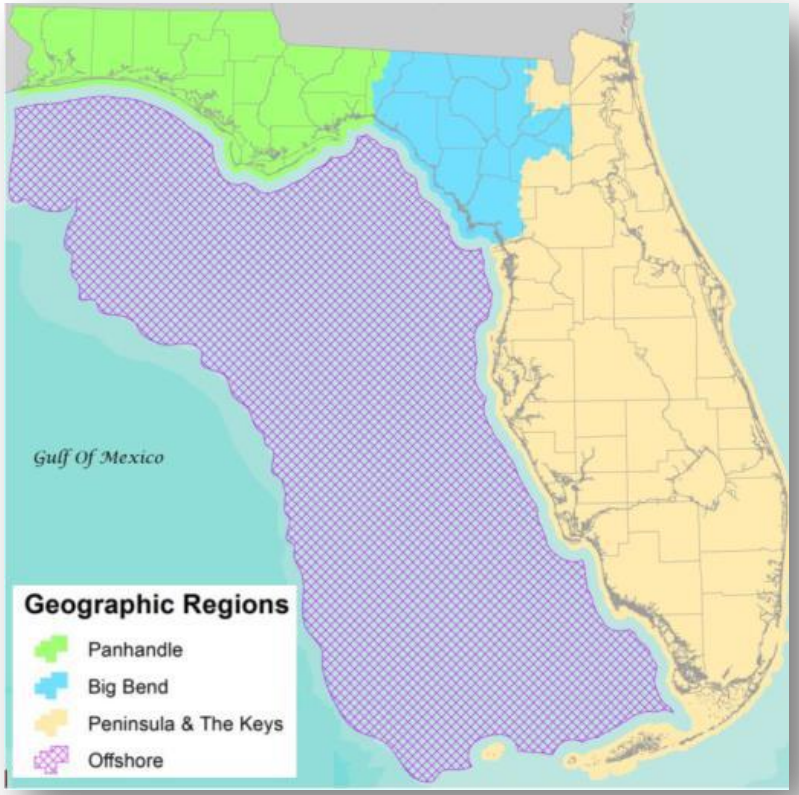


Gulf Environmental Benefit Fund (GEBF)

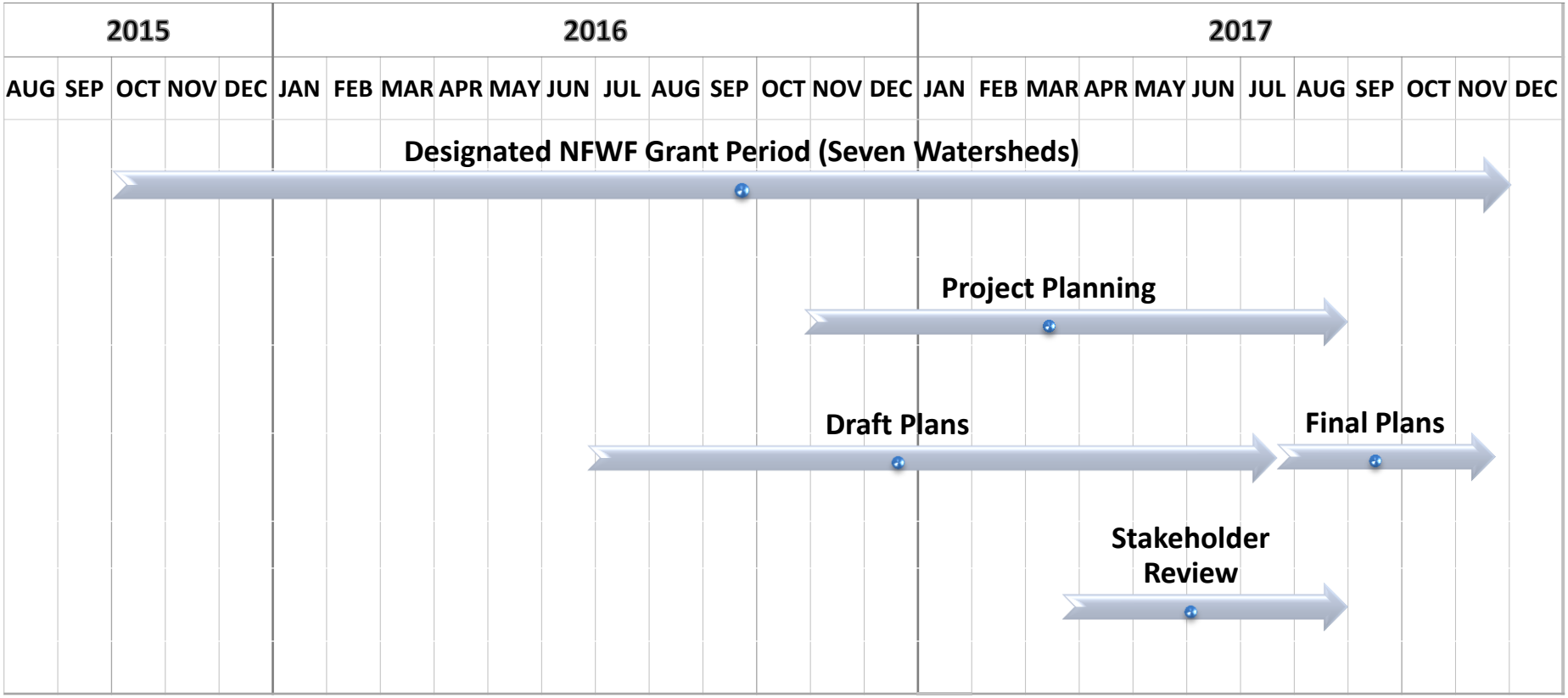
GEBF Restoration Strategy:

- SWIM Plan Updates (NWF & Suwannee WMDs).
- Seagrass Assessment (Fish and Wildlife Research Institute).

Goal: Prioritized Project List



Apalachicola SWIM Plan Update – Schedule



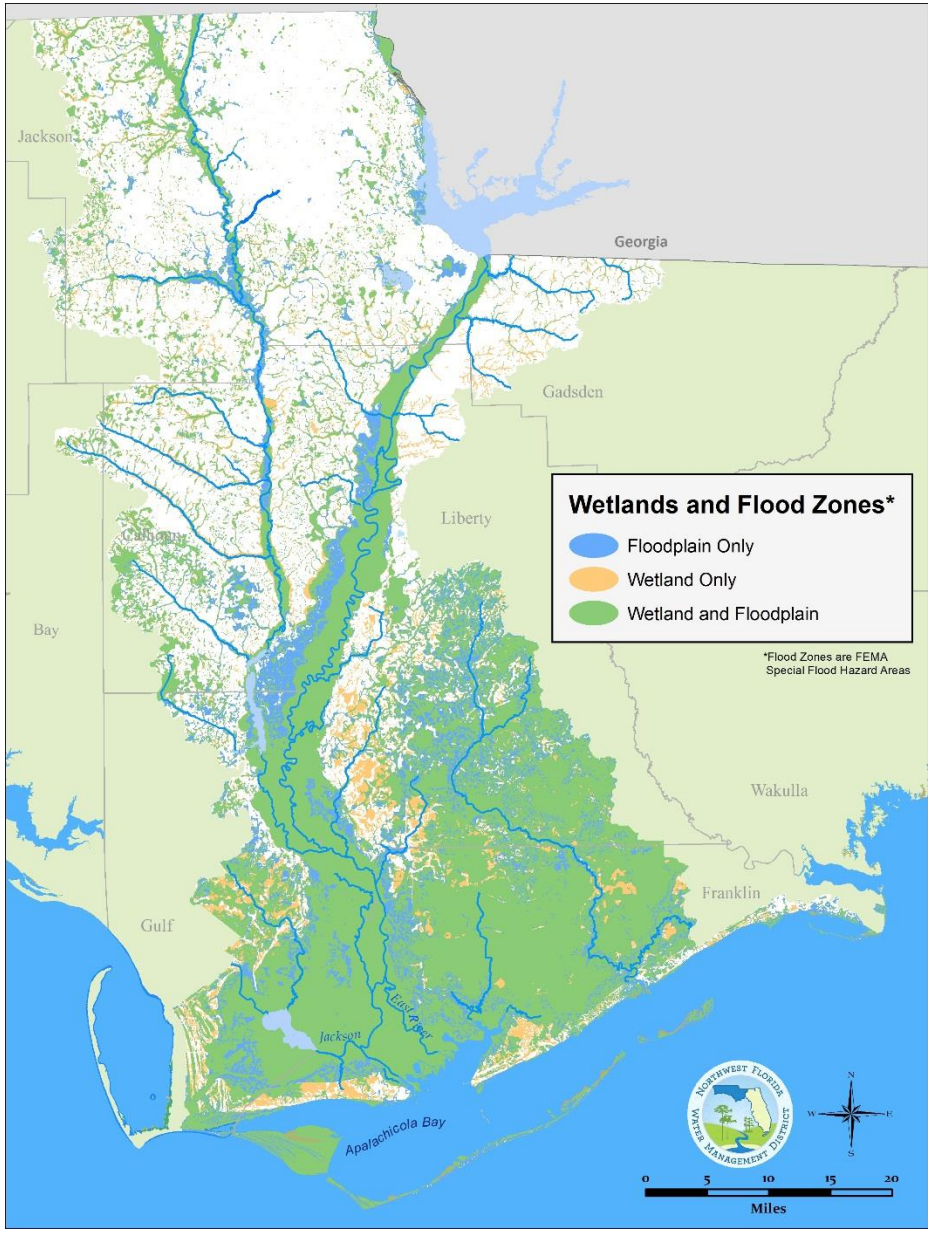
Apalachicola River and Bay Watershed

Apalachicola River and Bay Watershed

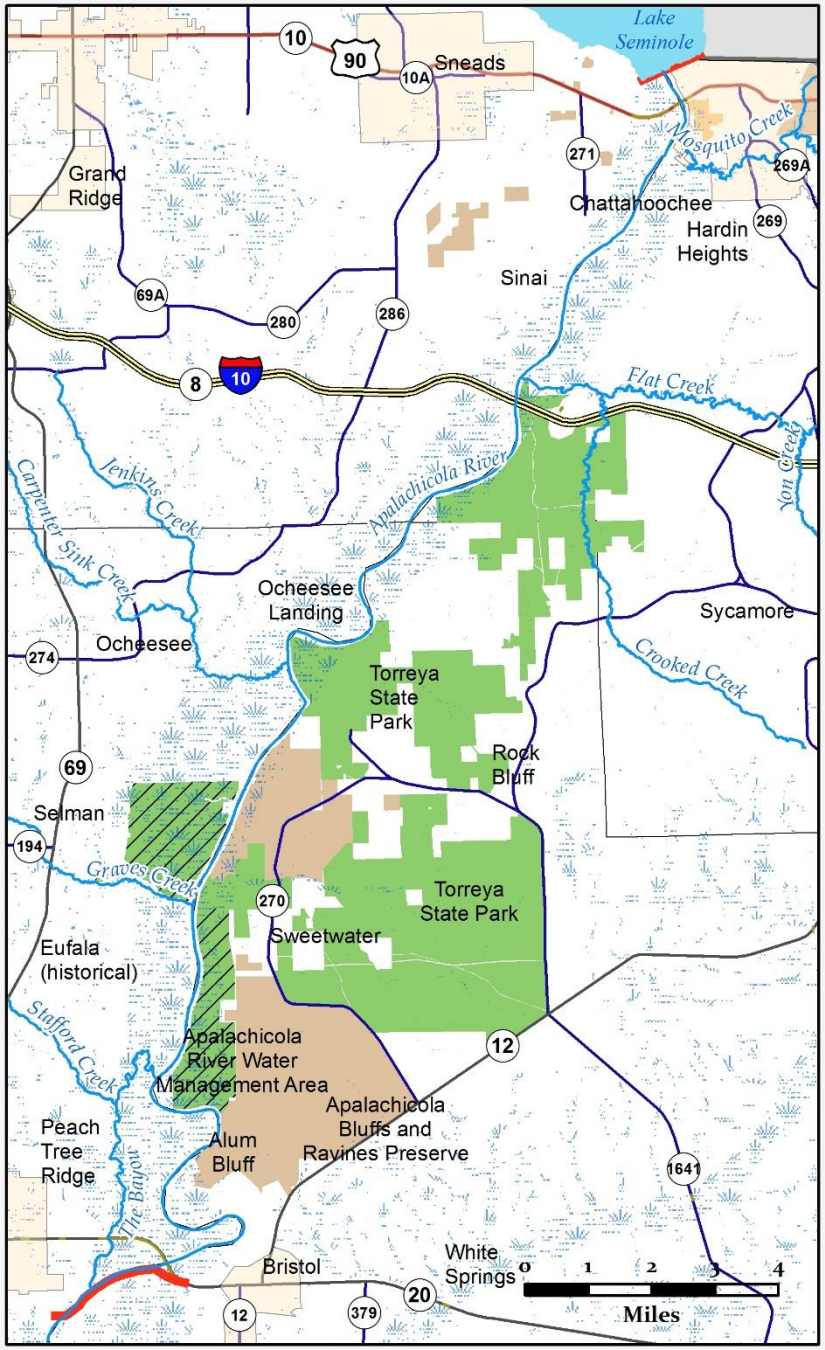
- Main channel begins at the confluence of the Chattahoochee and Flint Rivers at Lake Seminole
- Florida portion of the watershed covers approximately 2,600 square miles
- Florida's largest river in terms of flow
- Largest forested floodplain in Florida
- Approximately 212 square mile estuary

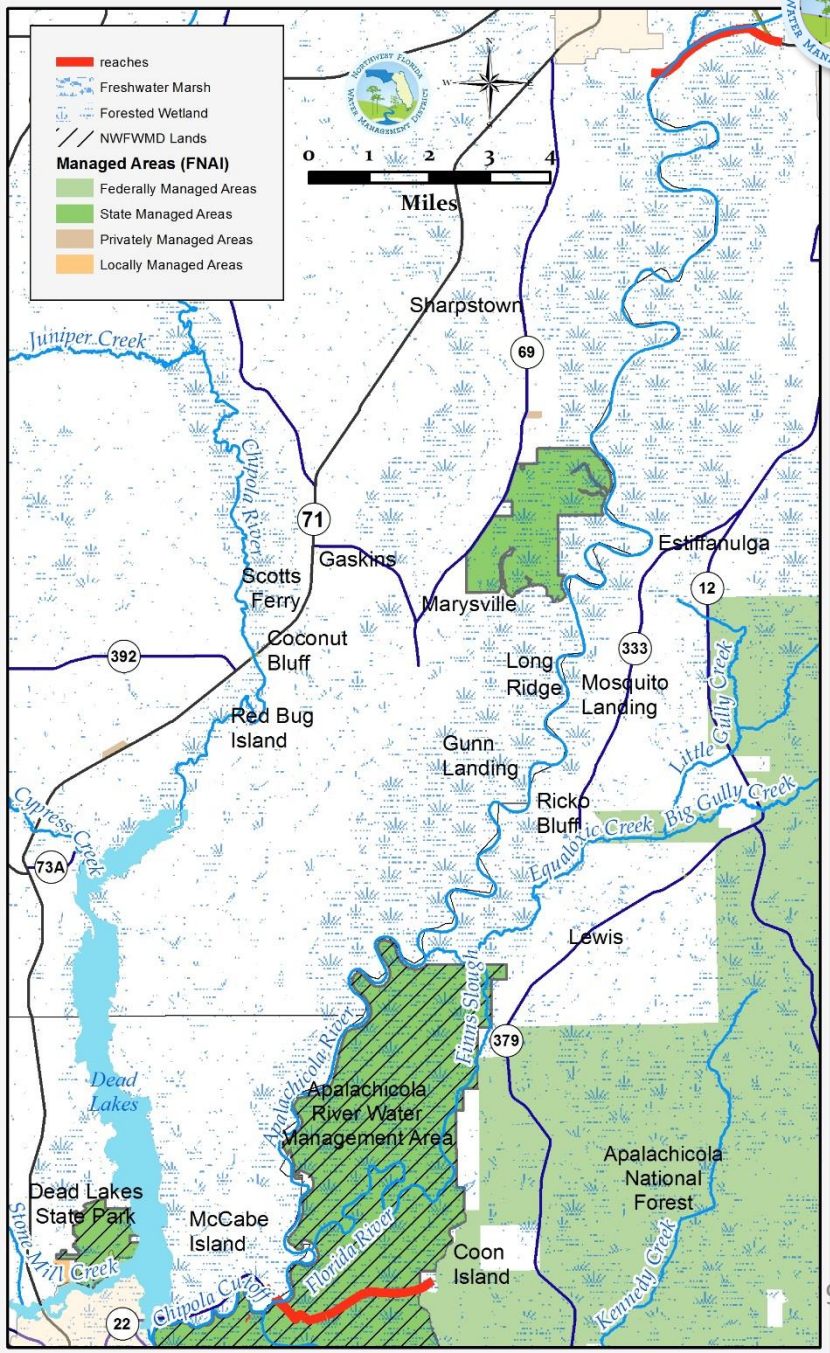
Apalachicola River and Bay Watershed

- Over 600,000 acres of public conservation lands
- Apalachicola National Estuarine Research Reserve
- Two aquatic preserves
- Historically supported the largest oyster harvesting industry in Florida
- Expansive alluvial floodplain
- Extensive tidal and non-tidal wetlands
- Nearly 15,000 acres of seagrass (2010)



NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT





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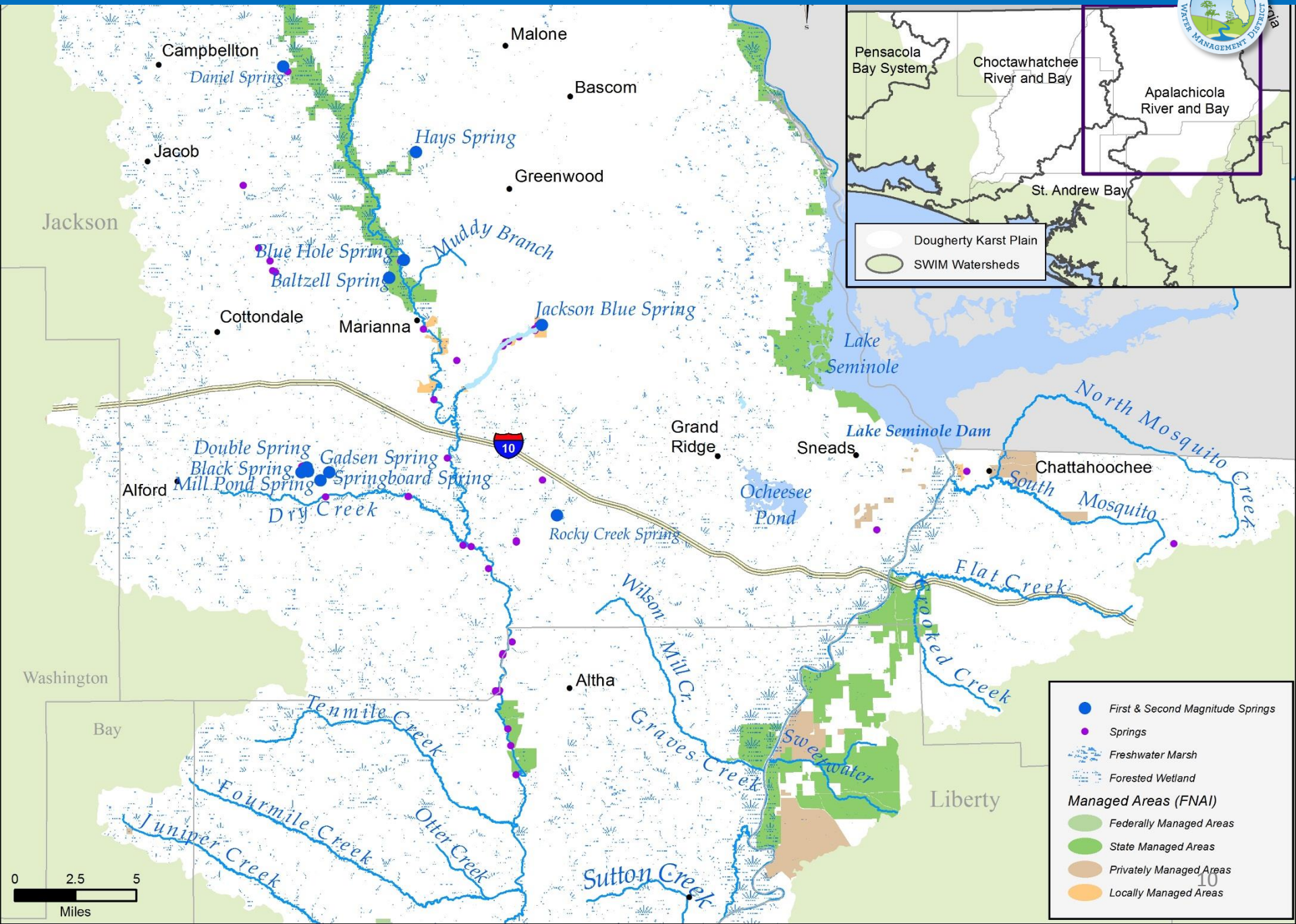

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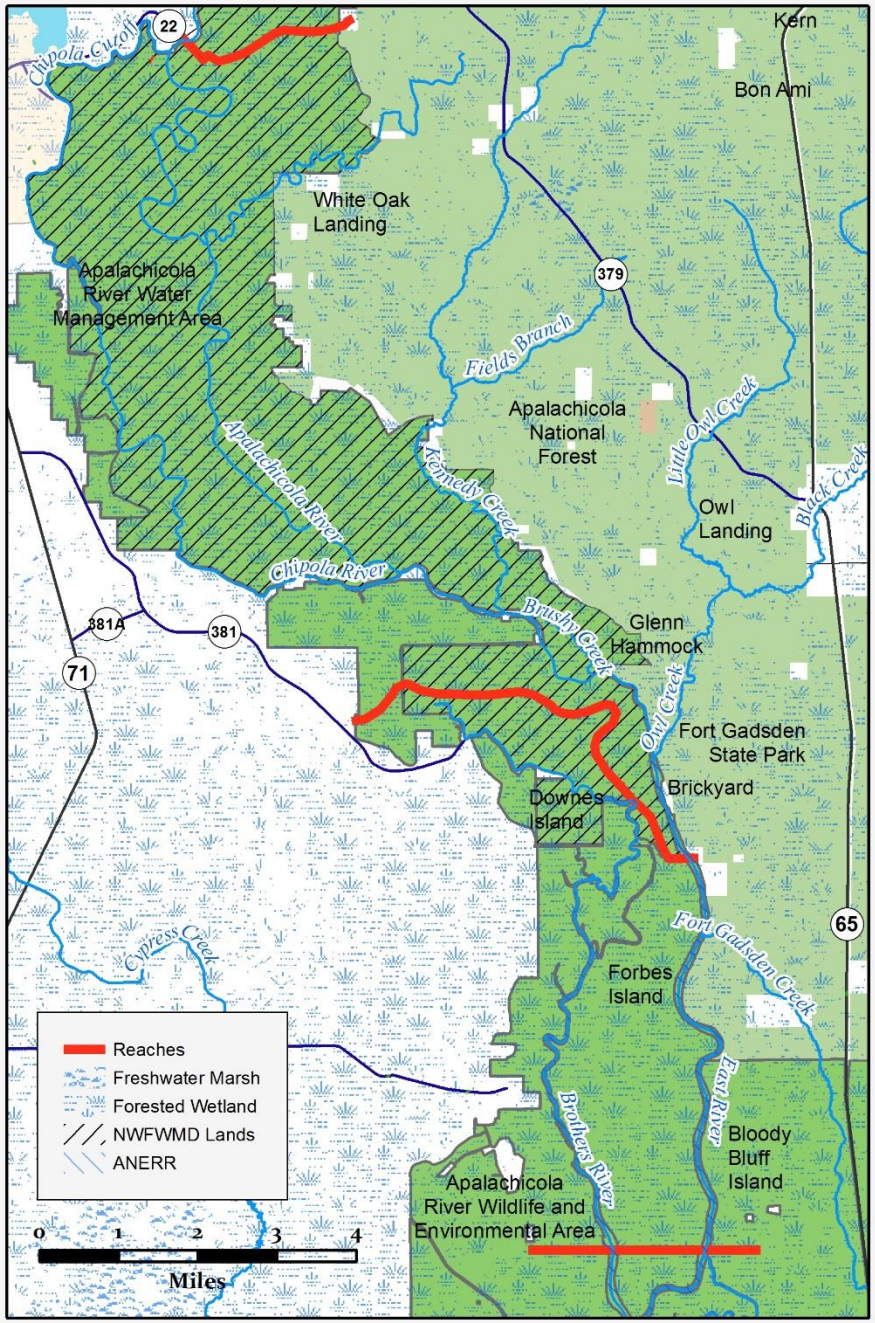

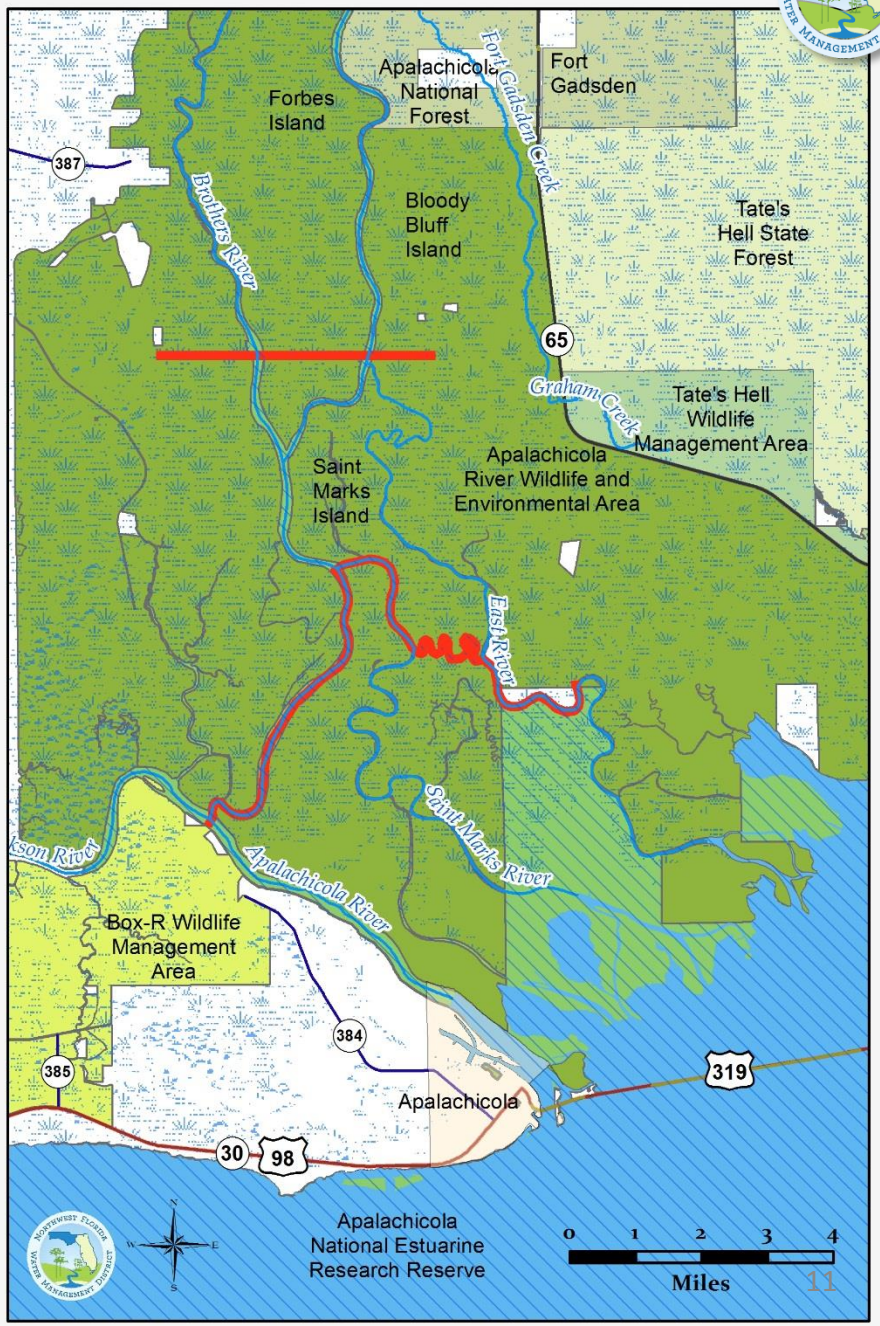

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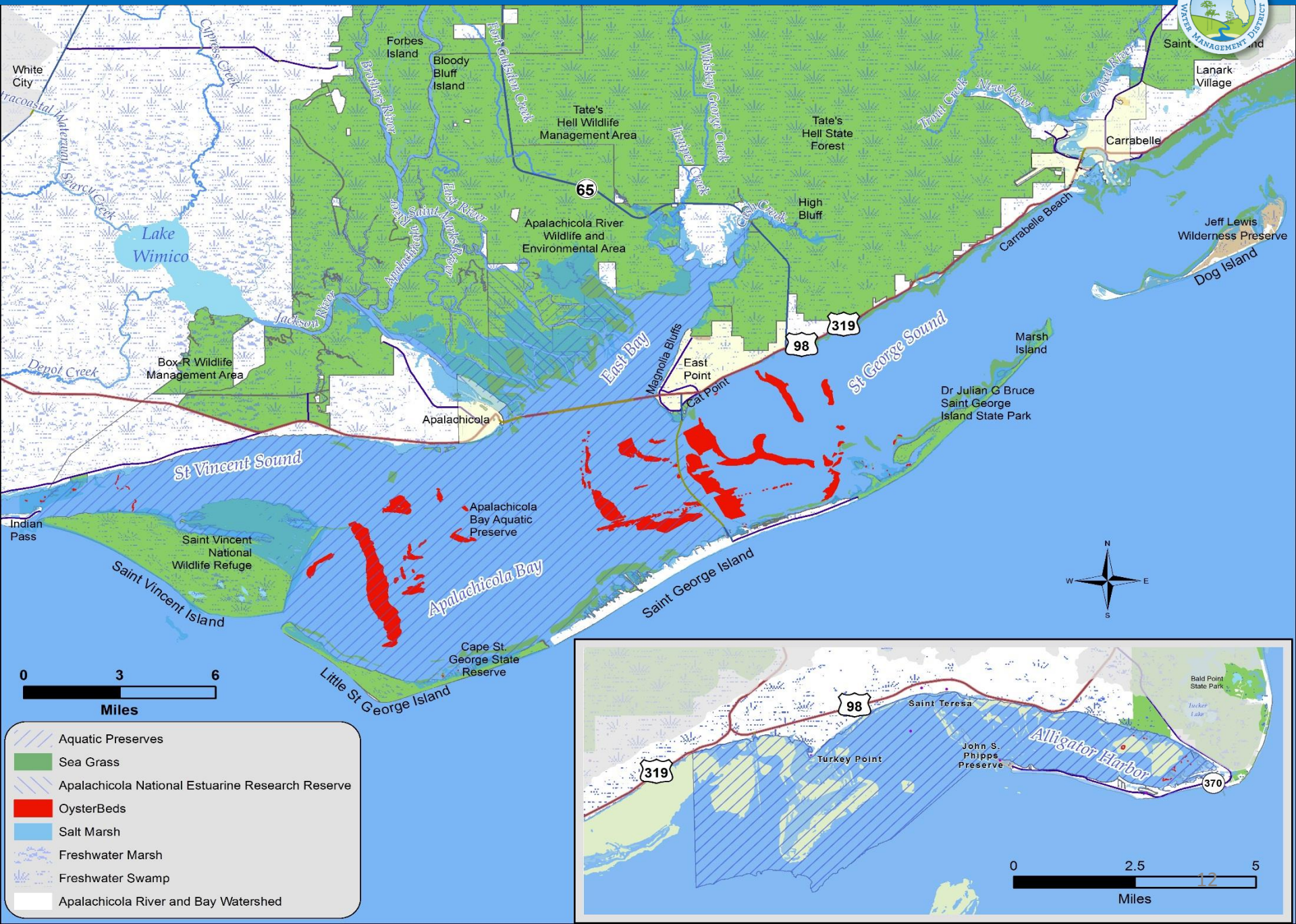
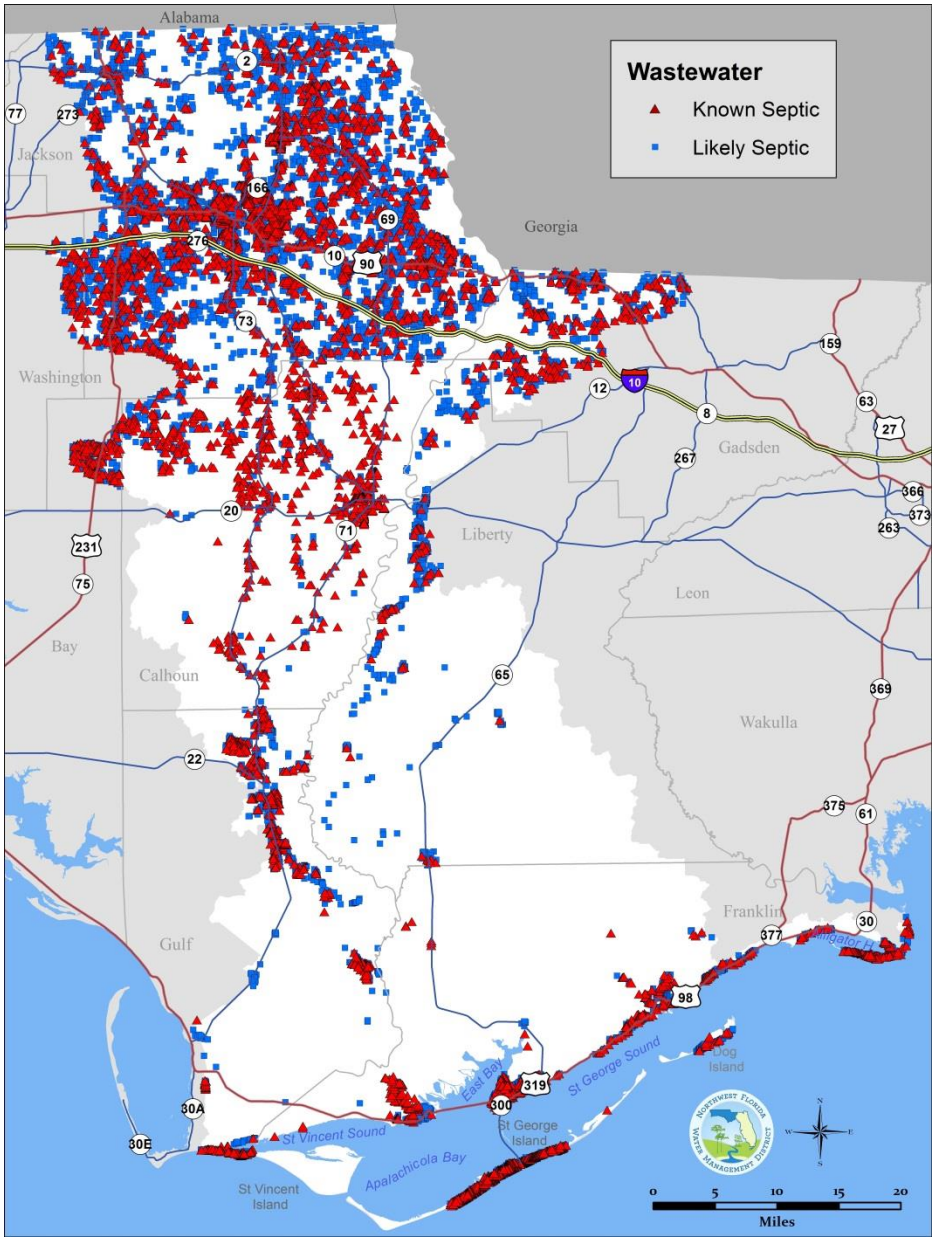


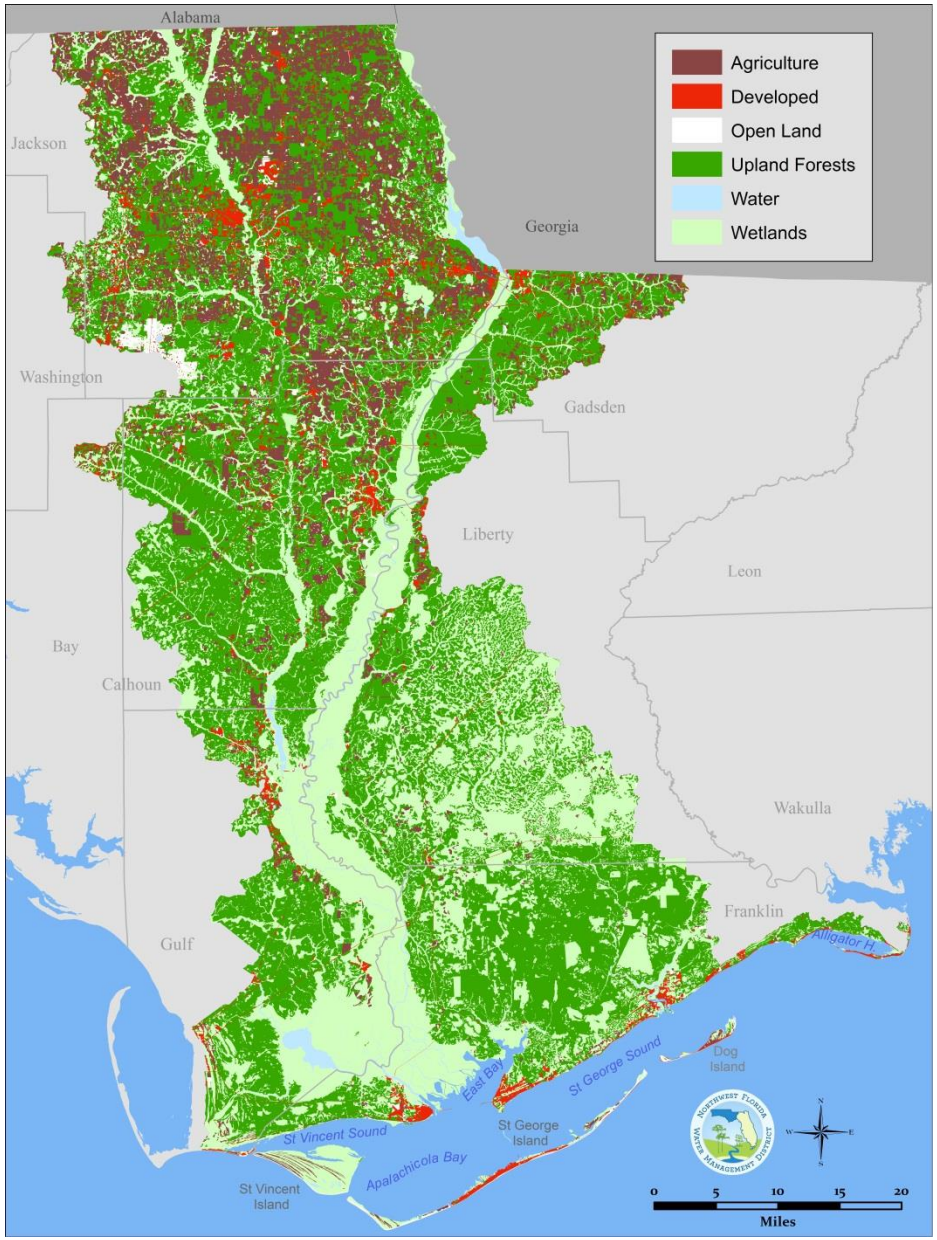
Watershed Challenges

Watershed Challenges

- Water quality
  - Over 22,000 known or likely septic systems identified within the Florida portion of the watershed in 2012 (FDOH Inventory data)
  - Nonpoint source pollution from agricultural and silvicultural land uses, urban runoff and construction sites
  - Sedimentation from unpaved roads, streambank erosion, and other erosion sites
  - Domestic wastewater facilities; potential to develop additional water reclamation and reuse

Watershed Challenges





Watershed Challenges

Established Total Maximum Daily Loads

Bacteria	Nutrients	Dissolved Oxygen
Flat Creek	Jackson Blue Spring	Little Gully Creek
Sweetwater Creek	Merritts Mill Pond	
Huckleberry Creek	Little Gully Creek	
Otter Creek		

- Verified impairments for fecal coliform, nutrients, iron and lead variously affect Apalachicola, Chipola, and New rivers; Apalachicola Bay and East Bay; Cash and West bayous; tributary streams; and public swimming beaches
- Basin Management Action Plan (BMAP) for Jackson Blue Springs - nutrients

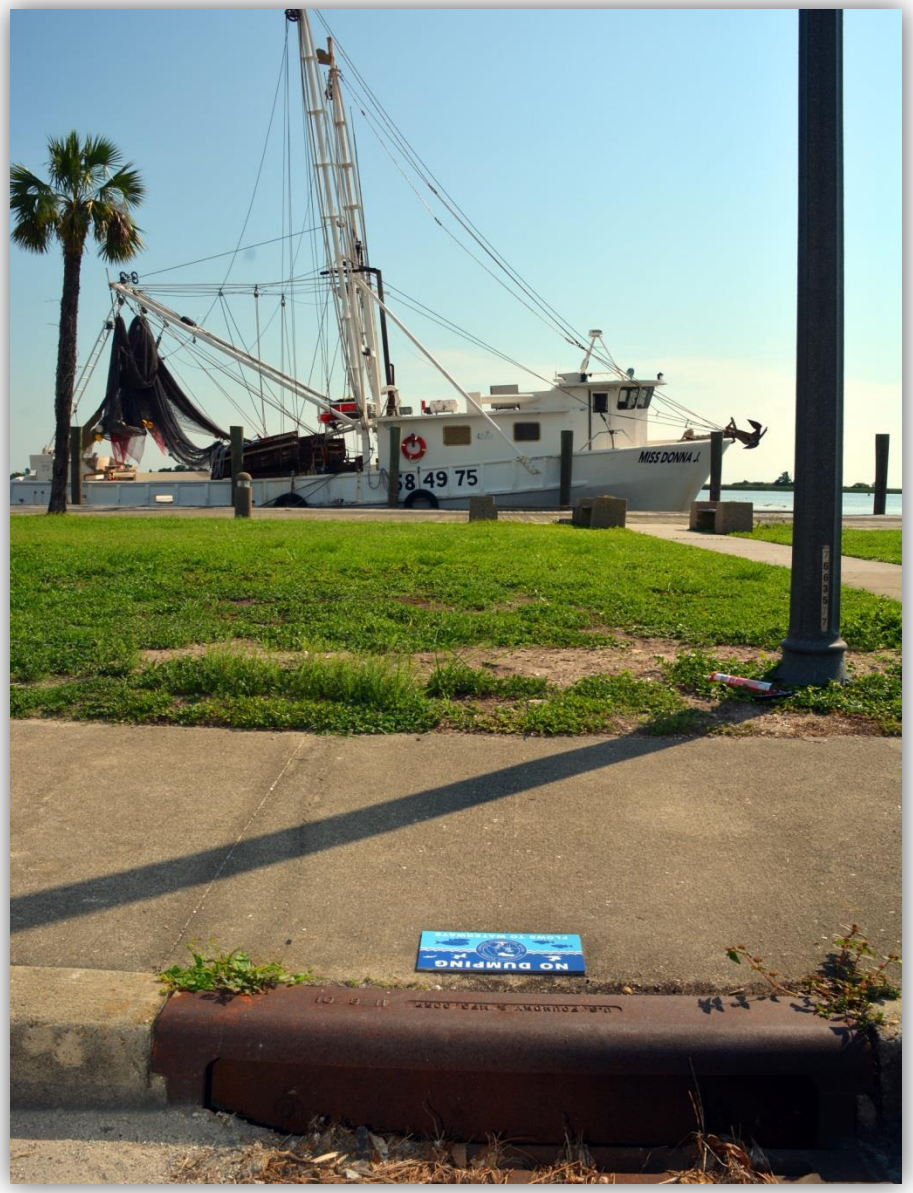
Watershed Challenges

- Habitat quality
  - Hydrologic impacts to major wetland systems
  - Physical impacts to the Apalachicola River floodplain
  - Disconnected floodplain habitats

Watershed Challenges

- Aquatic and wetland habitat quality
  - Major oyster habitat losses
  - Elevated nutrient levels within Jackson Blue springs with resulting ecosystem impacts
  - Recent seagrass losses, particularly within Alligator Harbor (FWC 2016 SIMM report)
  - Sedimentation within the watershed
  - Coastal development affecting littoral habitats and coastal water quality

Restoration and Management



Watershed Specific Priorities and Objectives

Priority Issues	Conceptual Objectives
Water Quality • Nonpoint source pollution – urban stormwater runoff; agricultural nonpoint sources; erosion and sedimentation • Pollutant export from septic tanks • Domestic and industrial wastewater • Impacts to specific waterbodies: – Jackson Blue Spring (nutrients) – Apalachicola Bay (fecal coliform)	• Retrofit stormwater infrastructure to improve water quality treatment • Continue to invest in agricultural and silviculture BMPs; including cost-share and technical assistance • Address unpaved roads and erosion sites to reduce sedimentation • Connect residences and businesses to central sewer • Make advanced passive onsite sewage treatment and disposal systems available for areas not practical for central sewer • Support wastewater collection and treatment improvements

Watershed Specific Priorities and Objectives

Priority Issues	Conceptual Objectives
Hydrologic Impacts • Expansive areas of hydrologic alteration and disruption – including Tates Hell Swamp and M.K. Ranch • Physical impacts to the Apalachicola River floodplain • Disrupted connectivity between floodplain and main river channel • Impacted sloughs, streams, and other tributaries that serve as critical habitat for fish and wildlife, including protected species • Sedimentation impacts from unpaved roads, borrow pits, spoil sites, and other erosion sites	• Restore wetland and floodplain function and connectivity • Continue hydrologic restoration of Tate's Hell State Forest • Implement hydrologic restoration for MK Ranch property • Develop effective and scalable project approaches for slough restoration and floodplain reconnection and restoration • Address unpaved roads and erosion sites to reduce sedimentation

Watershed Specific Priorities and Objectives

Priority Issues	Conceptual Objectives
Aquatic and Wetland Habitat • Extensive impacts to shellfish beds • Seagrasses generally stable, but recently reported losses in Apalachicola Bay and Alligator Harbor • Sedimentation and physical impacts from unpaved roads, erosion, construction sites, and other sources • Elevated nutrients and algae within Jackson Blue Spring; associated TMDL and BMAP • Impacts to riverine fish and shellfish habitat	• Work with state and federal agencies, local governments, and private stakeholders to restore oyster beds • Reduce nutrient loading within spring groundwater contribution areas • Preserve sensitive riparian, wetland, and floodplain habitats • Reduce NPS pollutant loading • Restore floodplain and hydrologic function • Support management efforts to control and eradicate invasive species • Address unpaved roads and erosion sites to reduce sedimentation

Watershed Specific Priorities and Objectives

Priority Issues	Conceptual Objectives
Public Awareness and Education • Need for community engagement opportunities, including participation with resource management decision-making • Support and expand public awareness of basis for management programs and projects	• Expand watershed resource awareness and understanding through innovative, hands-on community-based restoration • Build upon efforts to establish long-term partnerships among stakeholders, including government, academic, non-governmental, businesses, residents, and others, to maximize effectiveness of project implementation and funding

Project Planning

Identify “umbrella” projects addressing priority issues and objectives and encompassing known specific project priorities.

- Priority Issues
- Proposed Objectives
- Proposed Approaches and Projects

Project Planning

Identify “umbrella” projects addressing priority issues and objectives and encompassing known specific project priorities.

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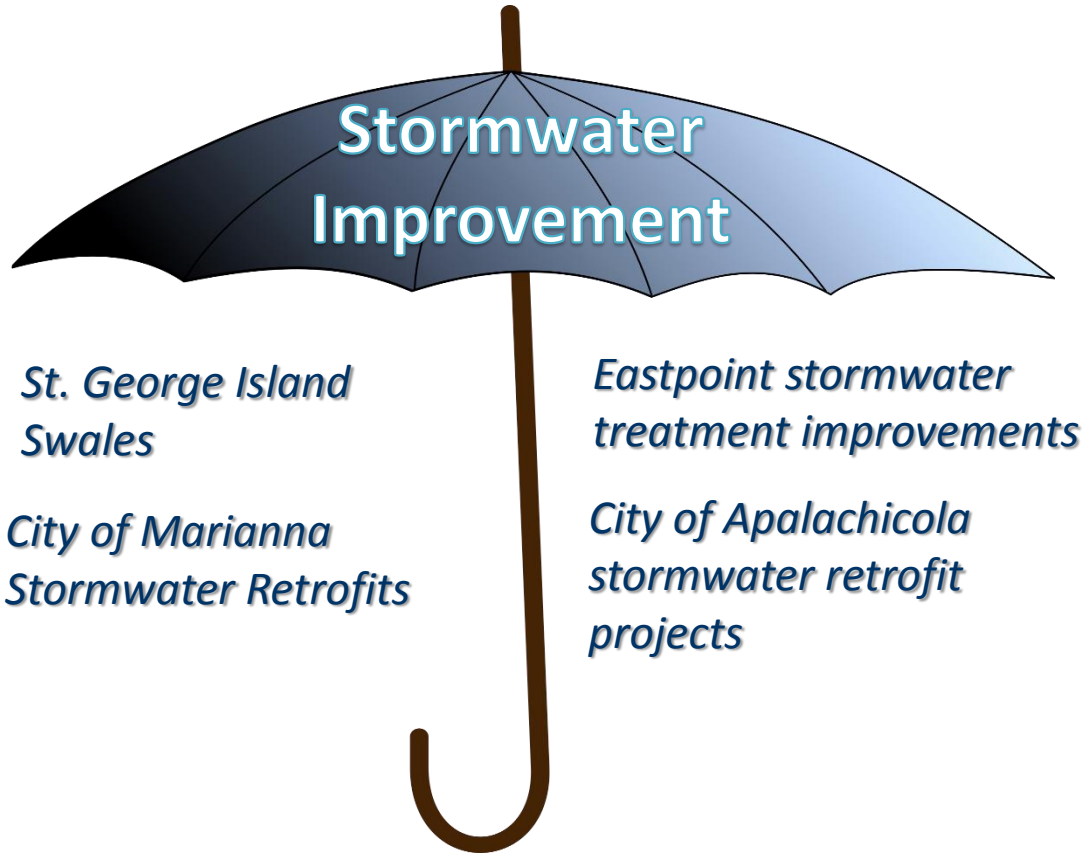


An Array of Funding Resources

RESTORE Bucket 1 County MYIPs	**NFWF** Gulf Environmental Benefit Fund	**Florida Legislature**
RESTORE Bucket 2 Gulf Coast Ecosystem Restoration Council	**Florida Springs Restoration Funding**	**US EPA** Section 319 Grants
RESTORE Bucket 3 Florida Gulf Consortium	**NRDA** Natural Resource Damage Assessment	**Triumph Gulf Coast Inc.**
RESTORE Bucket 4 NOAA Science Program	**Florida Land Acquisition Trust Fund**	**TMDL Water Quality Restoration Grants**
RESTORE Bucket 5 FL Inst. of Oceanography	**Clean Water State Revolving Fund**	**FL Coastal Mgt Program**

Conceptual Projects and Management Practices

Project/Practice	Objectives	Lead Entities
Urban Stormwater Retrofits	• Water quality improvement • Flood protection • Aquatic habitat restoration and protection *Example stormwater retrofit projects:* - *City of Apalachicola* - *City of Marianna* - *City of Carrabelle* - *City of Sneads* - *City of Chattahoochee* - *Eastpoint* - *St. George Island Swales*	• Local governments • NWFWMD • FDEP
Basinwide Sedimentation Abatement	• Watershed assessment of impacts from unpaved roads and other erosion sites • Prioritize sites • Support implementation	• Local governments • NWFWMD • FDEP • USFWS

Conceptual Projects and Management Practices

Project/Practice	Objectives	Lead Entities
Agricultural Best Management Practices (BMPs)	• Water quality protection • Water use efficiency *Supporting and building upon technical assistance and cost share initiatives* *Includes Sod-Based Crop Rotation BMPs and Agricultural Irrigation Retrofits*	• FDACS • NRCS • Private producers • NWFWMD • UF IFAS
Silviculture BMPs	• Water quality protection • Habitat protection *Building on Florida's Silviculture BMP program (FDACS); cooperative effort between public agencies and private landowners*	• FDACS • FWC • Private landowners • Public landowners
Riparian Buffer Zones	• Water quality protection • Shoreline Stability • Habitat creation • Enhance resiliency through biodiversity and natural adaptation enhancement	• Private landowners • Local governments

Conceptual Projects and Management Practices

Project/Practice	Objectives	Lead Entities
Hydrologic Restoration	• Restoration of natural wetland, floodplain, and estuarine hydrology • Stream channel restoration • Enhance resiliency through biodiversity and natural adaptation enhancement *Tates Hell Swamp Hydrologic Restoration* *MK Ranch Hydrologic Restoration*	• Florida Forest Service • FFWC • NWFWMD • Local governments • ANERR
Wetland Restoration	• Restore wetland functions: fish and wildlife habitat, floodwater storage, discharge regulation, water quality protection, aquifer recharge, and more • Enhance resiliency through biodiversity and natural adaptation enhancement	• FFWC • NWFWMD • Local governments • ANERR • State and federal resource agencies
Estuarine Habitat Restoration	• Oyster reef establishment • Seagrass restoration	• ANERR • FDACS • FFWC • Local governments

Conceptual Projects and Management Practices

Project/Practice	Objectives	Lead Entities
Wastewater System Upgrades	• Incorporate advanced wastewater treatment • Address inflow and infiltration	• Utilities • Local governments • FDEP
Water Reclamation and Reuse	• Protect water quality through improved treatment and reduced discharges • Water conservation/demand management • Conserve potable water sources	• Utilities • NWFWMD • Local governments
OSTDS to Central Sewer Connections	• Connect areas served by OSTDS to central sewer systems • WWTF/WRF Improvements *City of Apalachicola* *City of Carrabelle* *Coastal Franklin County*	• Utilities • Local governments • NWFWMD
Advanced Technology OSTDS	• Implement affordable, new technology passive OSTDS in areas where connection to central sewer is not cost-effective *For areas that are remote from central sewer*	• NWFWMD • Local governments • FDOH • FDEP

Conceptual Projects and Management Practices

Project/Practice	Objectives	Lead Entities
Living Shorelines	• Shoreline habitat restoration • Implementation of alternative method of shoreline protection that enriches littoral and aquatic habitat and productivity • Enhance resiliency through biodiversity and natural adaptation enhancement *Little St. George Island near Marshall House;* *ANERR Living Shoreline Restoration Program* *Cat Point Breakwater Marsh*	• Local governments • State and federal resource agencies • ANERR • FDACS • FFWC

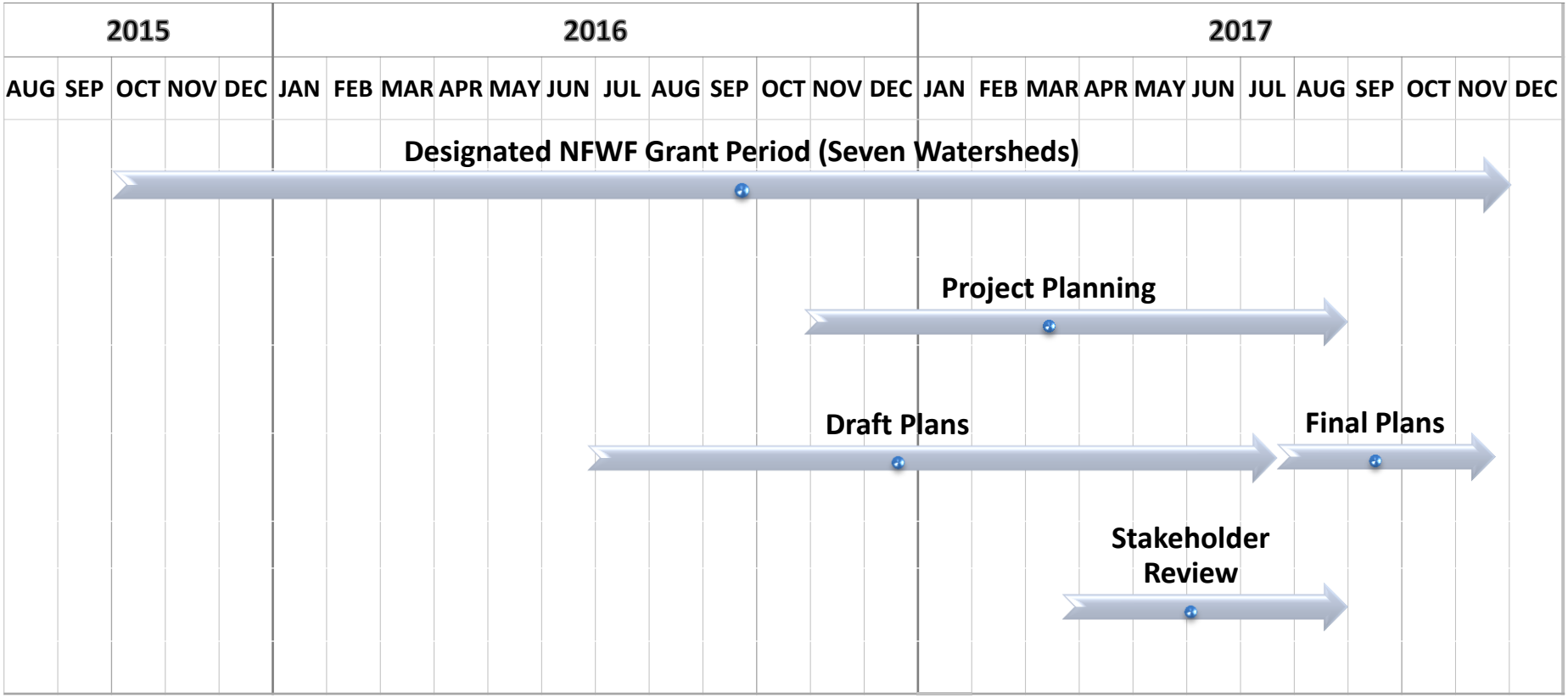
Conceptual Projects and Management Practices

Project/Practice	Objectives	Lead Entities
Watershed Stewardship Initiatives	Build citizen engagement opportunity and capacity, including: • Citizen science • Monitoring • Training and outreach • Habitat enhancement • Urban and Marina BMPs *ANERR education programs* *ANERR Living Shoreline Restoration Program*	• ANERR • NWFWMD • FDEP • FDACS • Local Governments • U.S. Forest Service • Private and nonprofit initiatives
Strategic Land Acquisition and Conservation	• Water resource protection for water quality, floodplain, and aquatic and wetland habitat protection • Compatible public access and use	• Local governments • Private and nonprofit initiatives • FDEP

Criteria for Project Planning and Evaluation

- Infrastructure projects (stormwater and wastewater)
  - Projects should have responsible parties that will implement, own, operate, and maintain the facilities
  - Responsible parties should have dedicated funding source for operation and maintenance
- Restoration and habitat enhancement
  - Completed project should be naturally self-sustaining; not requiring frequent human intervention
  - Restoration should reflect ecosystems or habitats that are naturally supported in the watershed and physical environment
  - Completed restoration sites should be adaptable to natural change and variability – short-term and long-term

Apalachicola SWIM Plan Update – Schedule



Thank you!

Please provide comments, recommendations, and questions by May 20, 2017

For more information or to submit comments:

Paul Thorpe
Chief, Bureau of Environmental and Resource Planning
Northwest Florida Water Management District
(850) 539-5999
Paul.Thorpe@nwfwater.com