



Technical Advisory Committee

April 27, 2016

Ochlockonee River & Bay Watershed
St. Marks River & Apalachee Bay Watershed



ecology and
environment, inc.
Global Environmental Specialists



Goals for Today

- ✓ Introduce the SWIM program and plan development process
- ✓ Summarize a technical review process
- ✓ Request your participation and assistance



Surface Water Improvement and Management (SWIM) Program

Created through passage of the Surface Water Improvement and Management Act in 1987; Sections 373.451-459, Florida Statutes

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

Plan provides:

- 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

The District developed SWIM plans for all major watersheds/waterbodies; two (Perdido and Ochlockonee) remain in a draft status.

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

SWIM Implementation to Date

- Local partnerships and cooperative funding:
 - Stormwater retrofit projects;
 - Sediment assessment;
 - Biological resource evaluations; and
 - Water quality monitoring.
- Multiple State, Local, and Federal funding sources
- Need your help in documenting implementation.



Other Related Initiatives

It is important that SWIM Plan updates fit within and help guide the larger set of related Deep Water Horizon and State restoration initiatives:

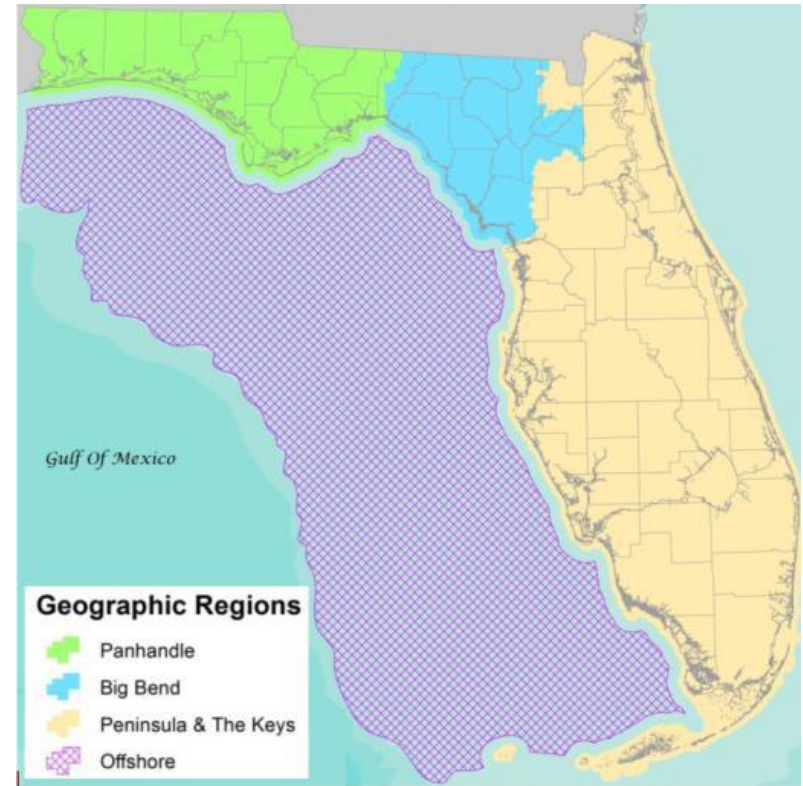


Gulf Environmental Benefit Fund (GEBF)

GEBF Restoration Strategy:

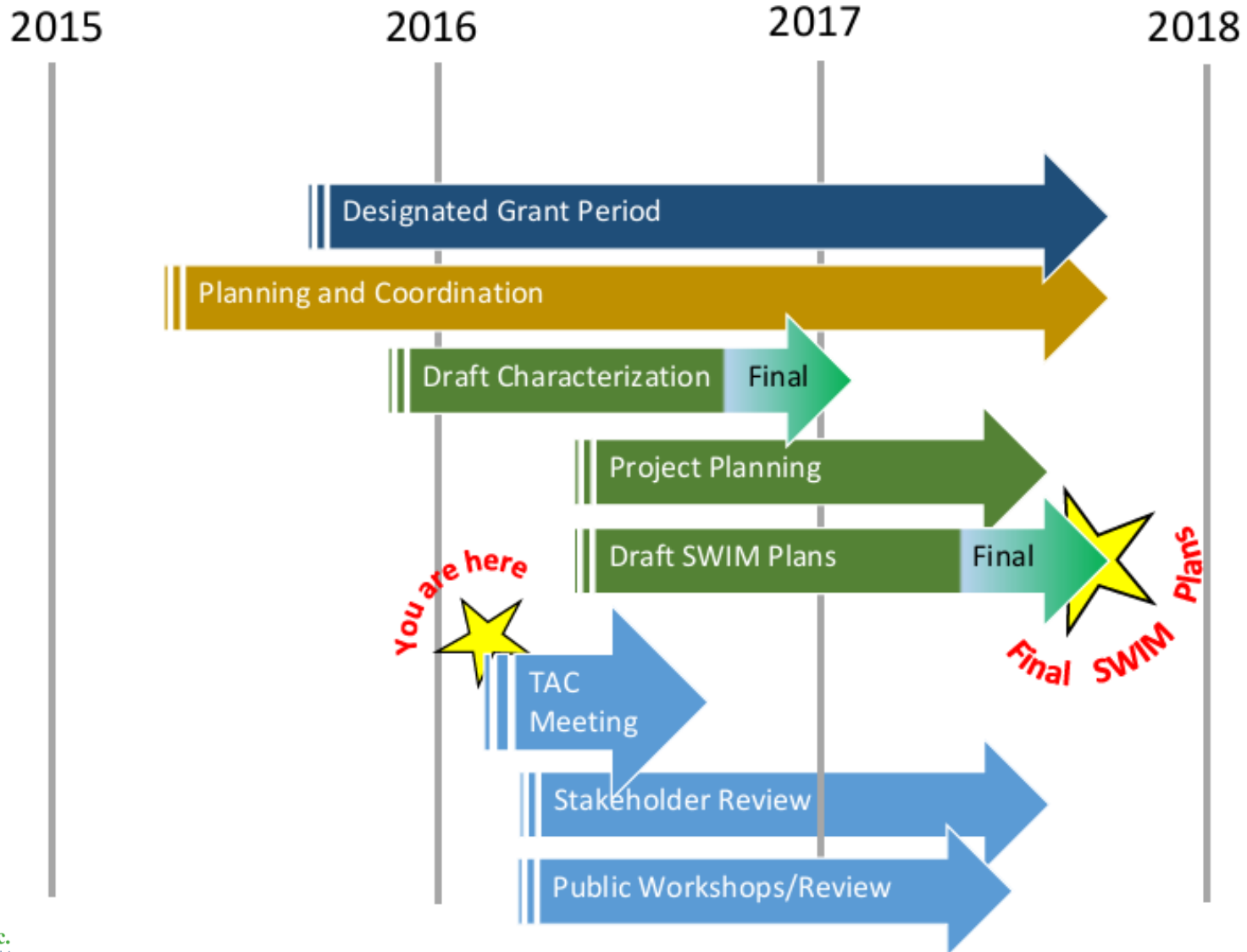
- SWIM Plan Updates (NWF & Suwannee River WMD)
- Seagrass Assessment (FWC Fish and Wildlife Research Institute)

Goal: Prioritized Project List



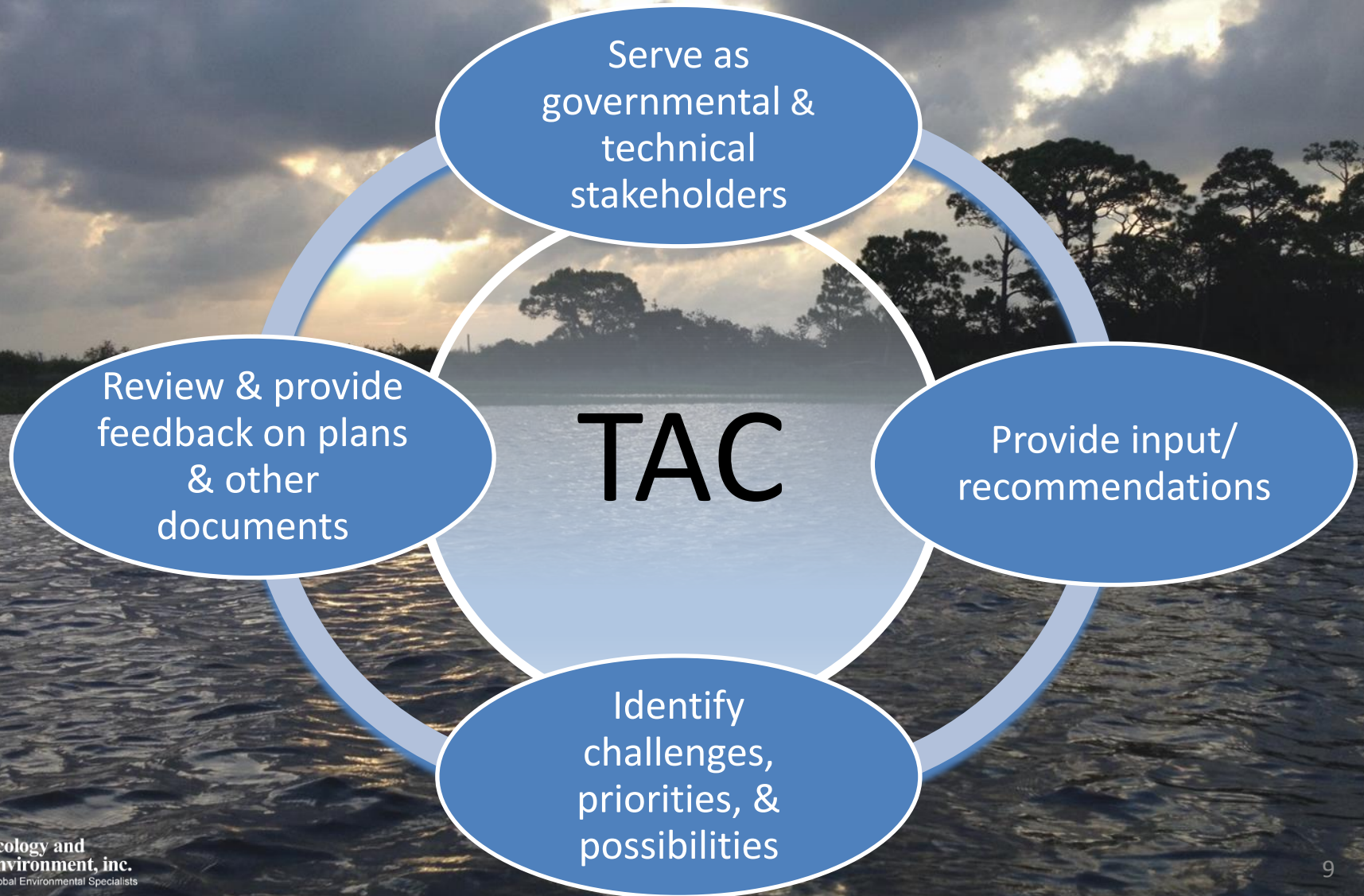


Plan Development Schedule



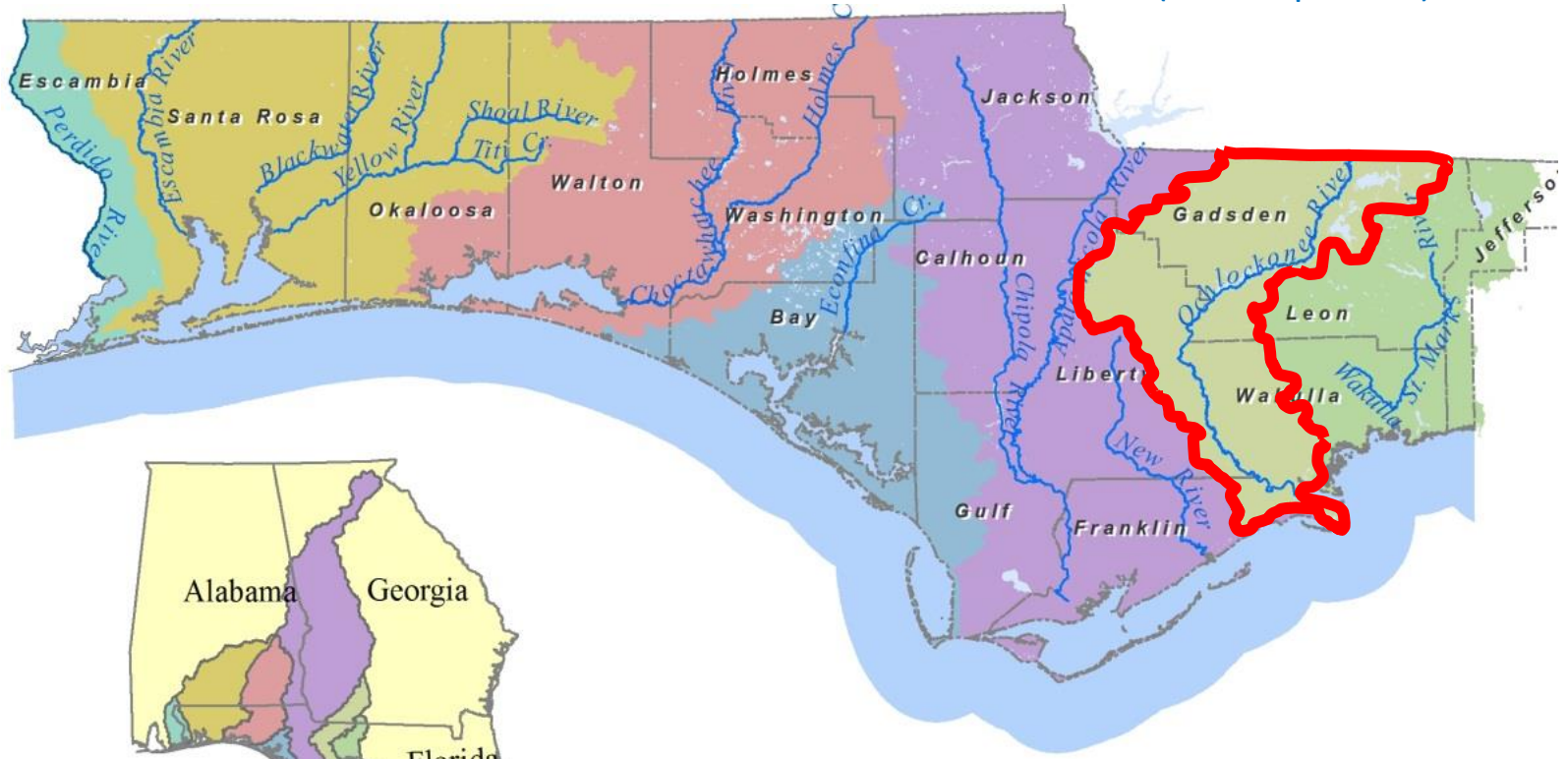


Requested Functions of the TAC





Ochlockonee Watershed (Florida portion)



- Perdido River and Bay
- Pensacola Bay System
- Choctawhatchee River and Bay
- St. Andrew Bay
- Apalachicola River and Bay
- Ochlockonee River and Bay
- St. Marks River and Apalachee Bay



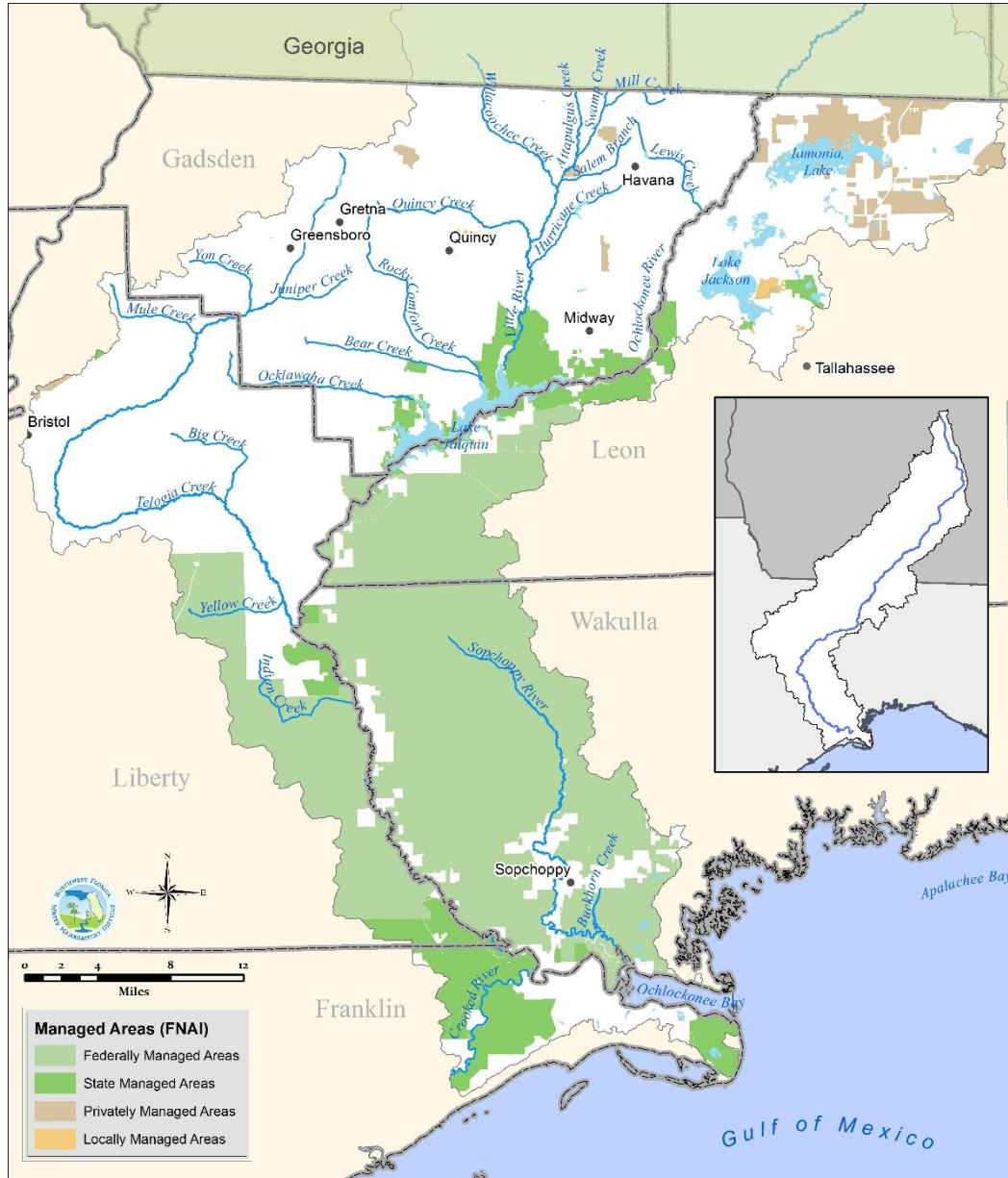
Ochlockonee River and Bay

Physical Characteristics

- Approximately 2,400 square mile watershed
- 53% of the watershed occurs in Florida, including portions of 5 counties
- 47% of the watershed occurs in Georgia, including portions of 6 counties
- All Florida counties within the watershed have projected population increases
- 116 miles of the 216 mile Ochlockonee River occur in Florida's portion of the watershed
- Over 300 lakes (man-made and natural) in the watershed
- Nearshore karst features, springs, and seeps



Ochlockonee River and Bay





Ochlockonee River and Bay

Unique Attributes

- Over 317,000 acres of conservation land
- 45% of Florida's portion of the watershed is delineated as a Special Flood Hazard Area
- Extensive floodplains connect major rivers to forest habitats during flood events, increasing fish and vegetative community diversity
- 40% of the watershed consist of wetlands (NWI)
- Lake Talquin, a 10,000 acre impoundment of the Ochlockonee River, provides hydropower to the City of Tallahassee
- Substantial mining industry: 21 mines or borrow pits in Florida's portion of the watershed
- Extensive oyster beds at mouth of Ochlockonee Bay and seagrass communities in adjoining Apalachee Bay.



Major Challenges: Ochlockonee

“Global” Issues

- Urban stormwater runoff and nonpoint source pollution
- Sedimentation
- Nutrient enrichment
- Increased coastal/ shoreline development
- Sea level rise

Watershed Specific Issues

- Historical pollution from Grady County, Georgia and the City of Cairo
- Outdated and failing septic systems
- Stormwater, nutrient, and sediment impacts lakes, rivers and streams
- Coastal water quality concerns (Mashes Sands)



Water Quality Impairments

- 25 of 252 (10%) waterbody segments in the **Ochlockonee River and Bay** watershed, are verified impaired (data through June 2013)
 - 20 for **bacteria** – fecal coliforms, beach advisories, or shellfish harvesting classification
 - 6 for **nutrients** – Ochlockonee River N (WBID 1297B), Lake Jackson (WBID 582B), Lake Talquin (WBID 1297C and D), Tallavanna Lake (WBID 540A), and Lake Monkey Business (WBID 546C)
 - 5 for **dissolved oxygen** – Lake Jackson (WBID 782B), Harbinwood Estates Drain (WBID 746A), Lake Talquin (WBID 1297C), Salem Branch (WBID 480), and Hammock Creek (WBID 879)
 - 3 for **iron** – Ochlockonee River (WBID 1297B), Quincy Creek (WBID 1303A), and Harbinwood Estates Drain (WBID 746A)
- ❖ Note: Water quality results reported only for waterbody segments with sufficient data



Water Quality Consequences

- Ochlockonee River and Bay watershed
 - 2 waterbody segments verified impaired for **bacteria** based on **shellfish classifications** issued by DACS:
 - Ochlockonee Bay (WBID 1248A) and Ochlockonee Bay/Gulf of Mexico (WBID 8025)
 - 1 beach segment verified impaired for **bacteria** based on **beach advisories** issued by county health department:
 - Mashes Island (WBID 8025B)

❖ Note: Water quality results reported only for waterbody segments with sufficient data

Source: DEP 2014



St. Marks River and Apalachee Bay Watershed





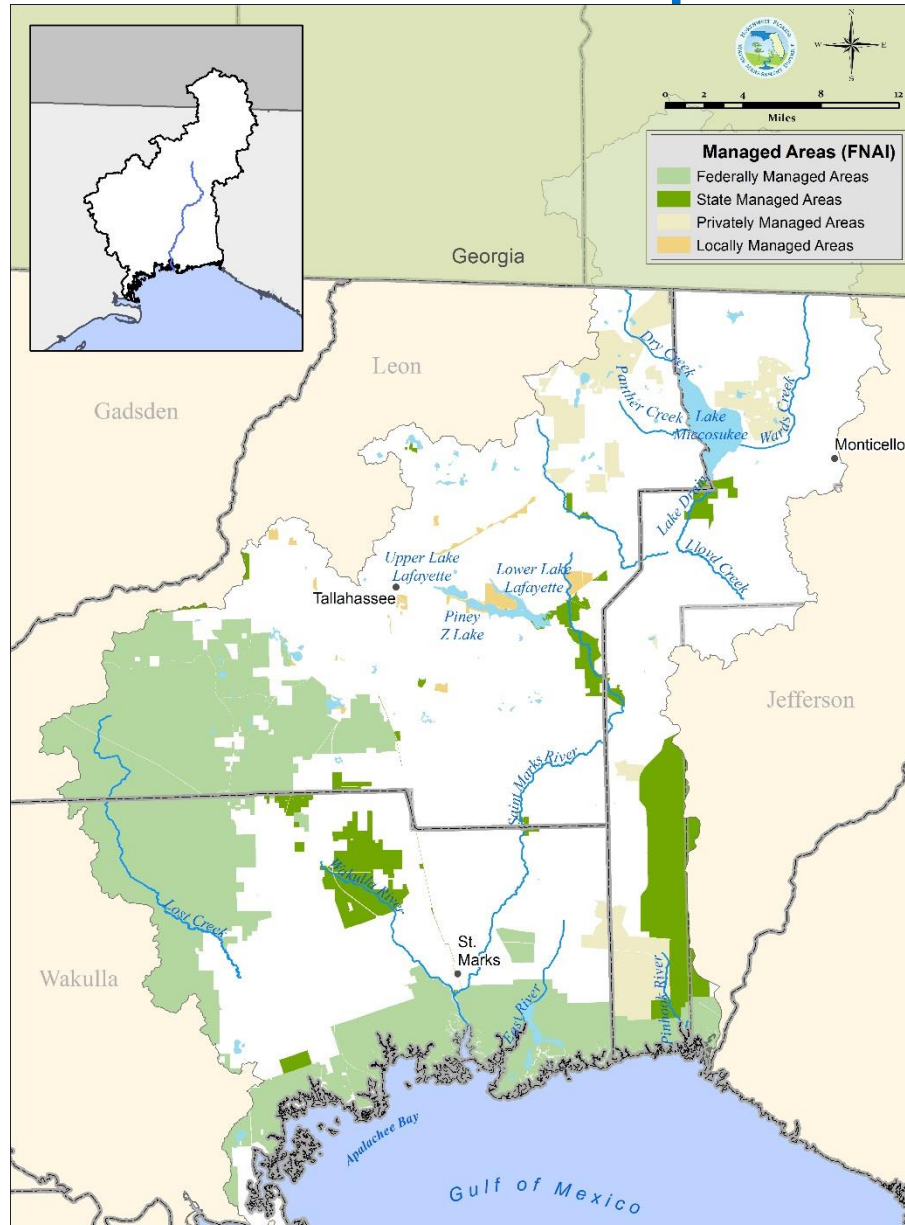
St. Marks River and Apalachee Bay

Physical Characteristics

- Watershed covers approximately 748,800 acres (1,170 square miles)
- 91% within the Florida Panhandle, 9% in Georgia
- Spans 3 Florida counties and 1 Georgia county
- Populations for all counties within Florida's portion of the watershed are projected to increase
- Major rivers include Wakulla and St. Marks, primarily groundwater driven
- 329 lakes in the St. Marks watershed, totaling 11,892 acres
- Significant interaction between surface and ground water due to karst geology



St. Marks River and Apalachee Bay





St. Marks River and Apalachee Bay

Unique Attributes

- Extensive seagrass and oyster beds in Apalachee Bay
- First major oyster farming operation in state (Oyster Bay/Spring Creek)
- 42 sinkholes north of the Cody Scarp, 232 sinkholes and 66 springs below the scarp – significant 1st magnitude springs
- 30% of the watershed consists of wetlands (NWI)
- Wakulla Springs is one of the largest and deepest freshwater springs in the world
- Over 220,000 acres of conservation land, most along the coast and west central portions of watershed
- Disappearing lakes of Leon County drain into sinkholes



Major Challenges: St. Marks

“Global” Issues

- Urban stormwater runoff and nonpoint source pollution
- Sedimentation
- Shoreline armoring; loss of littoral habitat
- Increased coastal/ shoreline development
- Sea level rise

Watershed Specific Issues

- Significant ground/ surface water connections in Woodville Karst Plain
- Outdated septic systems and non-point pollutant drainage in Woodville Karst Plain
- Insufficient wastewater treatment facilities in some coastal/ recharge areas



Water Quality Impairments

- 32 of 101 (32%) waterbody segments in the **St. Marks River and Apalachee Bay** watershed, are verified impaired (data through June 2013)
 - 23 for **bacteria** – fecal coliforms, beach advisories, or shellfish harvesting classification
 - 12 for **dissolved oxygen** – Alford Arm, Lake Piney Z, Lower Lake Lafayette, Lake Lafayette Drain, Tom Brown Tributary, Munson Slough above and below Lake Munson, Lake Munson, and Black Creek (Lost Creek), Black Creek (St. Marks), Lake Weeks, and Copeland Sink Drain
 - 4 for **nutrients** – Lake Piney Z, Lower Lake Lafayette, Lake Munson, and Munson Slough below Lake Munson
 - 1 for **ammonia** – Munson Slough
 - 2 for **turbidity** – Lake Munson and Godby Ditch
 - 1 for **lead** – Munson Slough

❖ Note: Water quality results reported only for waterbody segments with sufficient data



Water Quality Consequences

- St. Marks and Apalachee Bay watershed
 - 6 waterbody segments verified impaired for **bacteria** based on **shellfish classifications** issued by DACS:
 - Coastal Apalachee Gulf West (WBID 8026), Direct runoff to Bay (WBID 1176), Dickerson Bay (WBID 1223), Direct runoff to Bay (WBID 1239), GOM Wakulla County (WBID 8027), St. Marks River South (WBID 793A)
 - 1 beach segment verified impaired for **bacteria** based on **beach advisories** issued by county health department:
 - Shell Point (WBID 8026B)
- ❖ Note: Water quality results reported only for waterbody segments with sufficient data

Source: DEP 2014



Seagrass Trends

Seagrasses in Northern Big Bend Region in 2010			
Indicators and Stressors	Status	Apparent Trend	SIMM Assessment; Potential Causes
Seagrass cover		Update needed	Likely declining
Seagrass density	Red	Declining	Reduced water clarity
Water clarity	Orange	Reduced	River runoff, phytoplankton blooms
Natural events (storms, etc.)	Orange	Significant impacts	Tropical storms Debby and Andrea 2012-13
Propeller scarring	Yellow	Localized	St. Marks, Keaton Beach, Steinhatchee

Additional research may be needed to distinguish long-term trends from event-driven impacts

Source: Seagrass Integrated Mapping and Monitoring (SIMM) program, FWC, 2015



It's Your Turn

- Each of you will have time to share your thoughts regarding:
 - Watershed conditions and challenges; and/or
 - What are today's major issues and opportunities?
- *Please share more details with us in writing following the meeting*

Take a break!





Restoration/Management

Multiple Benefits and Partners

- Natural Resource Damage Assessment (NRDA)
 - **The Bald Point State Park Recreation Area** (Franklin County, \$470,800)
 - construct picnic pavilions, boardwalks, floating dock, and a restroom with an associated aerobic treatment system and drain field.
 - **Wakulla Mashas Sands Park Improvements** (\$1,500,000) – construction observation platforms, boardwalks, walking paths, and canoe/kayak launch; improvements to boat ramp area and picnic areas; and renovation of parking area and restroom facility.
 - **Shell Point Beach Nourishment** (\$882,750) – renourishment of Shell Point Beach in Wakulla County; 15,000 cubic yards of sand over one mile of beach.
 - **City of St. Marks Boat Ramp Improvements** (\$50,006) – addition of boarding dock to the existing City of St. Marks one-lane boat ramp.



Restoration/Management

TNC Community-Based WMP

- 13 projects to address 7 major goals:
 - Protect, restore, create and/or manage natural habitat and resources and increase buffer areas;
 - Increase cooperation and coordination for management, monitoring, funding, implementation, outreach, enforcement;
 - Reduce impacts to groundwater and ensure adequate fresh water availability;
 - Reduce and treat stormwater;
 - Reduce nutrient loading;
 - Reduce sedimentation; and
 - Increase economic diversification.



It's Your Turn

- Each of you will have time to share your thoughts regarding:
 - Restoration and resource management needs;
 - What is missing? What is highest priority?
- *Please share more details with us in writing following the meeting*



Open Discussion

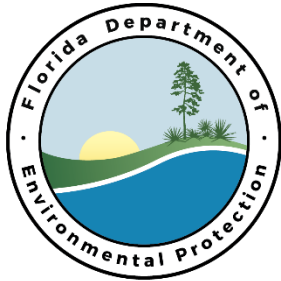


The Path Ahead

- Next Steps
- Public workshop
- NFWFMD - SWIM Plan Website for TAC/ Public input communication
- Let us know about new data, publications, or studies that your organization has done!



Additional Resources:



FDEP – Deep Water Horizon Oil Spill

<http://www.dep.state.fl.us/deepwaterhorizon/>



NOAA – Gulf Spill Restoration

<http://www.gulfspillrestoration.noaa.gov/>



NFWF

NFWF – Gulf Environmental Benefit Fund

<http://www.nfwf.org/gulf/Pages/home.aspx>



Gulf Coast Ecosystem Restoration Council

<https://www.restorethegulf.gov/>



Thank You

For more information and to submit questions, comments, and recommendations:

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Additional Points of Contact:

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