

# Meeting Minutes

## June 2023 Steering Committee Meeting

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Eastern Delta Watershed Management Plan

12:00, June 22, 2023, Historic Blakeley State Park

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### Attendees

Shannon McGlynn	Alabama Department of Environmental Management (ADEM)
Jennifer Barker	ADEM
Anjala Chandrasoma	ADEM
Will Underwood	Alabama Department of Conservation and Natural Resources (ADCNR)
Ryan Peele	Alabama Forestry Commission
Sarah Ballard	Anchor QEA, LLC
Rob Howell	Anchor QEA
Webb Jackson	Anchor QEA
Tim Thibaut	Barry A. Vittor & Associates, Inc.
Clair Dorough	City of Bay Minette
Cody Ledet	City of Spanish Fort
Robin Delaney	Delaney Company
Lee Walters	Goodwyn Mills Cawood (GMC)
Ashtyn Walmsley	GMC
Brandon Bias	GMC
Mike Bunn	Historic Blakeley State Park
Missi Shumer	Harris Miller Miller and Hanson Inc.

### Meeting Minutes

- A presentation of the Eastern Delta Watershed Management Plan (WMP) Characterization was given by Lee Walters. The presentation is provided in Attachment 1.
- The following items were discussed during the presentation:
  - Public access areas
    - Historic Blakeley Park is interested in looking at more public access (possibly for motorized water vehicles).
    - The City of Spanish Fort purchased property on Bay Minette Basin (which is currently waiting to be annexed), with plans to add public access, boat launch, recreational area.
      - There are also Civil War trenches present on the property.

- The purchase is state (GOMESA) funded.
- Bartram Canoe Trail/canoe/kayak near the Five Rivers Delta Center
- GMC is to check if the Kids Park in Spanish Fort is in this watershed.
- There are Section 303(d) of the Clean Water Act impaired water bodies: Bay Minette Creek is listed for atmospheric mercury.
  - There is concern that several creeks in the watershed may become affected by siltation based on recent field reconnaissance.
- The purpose of these meetings/WMP is to identify concerns and projects we can implement through the Mobile Bay National Estuary Program (MBNEP).
  - D'Olive Watershed creeks are listed for sediment as a result of topography, rain, and development, combined with lack of proper stormwater (SW) management practices.
  - Joe's Branch restoration was so successful that the stream is no longer Section 303(d) listed.
- Spanish Fort wish list projects in the RESTORE/BP portal included Canby Canyon and Confederate Canyon.
- Field work was conducted at the following sites as part of the Eastern Delta WMP:
  - Canby Canyon erosion mitigation
    - Bay Minette Bay (Spanish Fort Estates northern portion)
    - Some riprap installed to slow rate of erosion
    - Vegetation: coming in and holding earth (not an active erosion area)
    - Erosion: historically strong but has stabilized
    - Utility infrastructure: present
  - Confederate Canyon erosion mitigation
    - Spanish Fort Estates
    - Blakeley River to the west
    - In new southern portion of our WMP
    - Drainage area of 0.1 square mile (Stream should be 2 to 3 feet deep and 10 feet wide.)
    - Canyon: 25 to 30-plus feet deep and 40 feet wide
    - Sediment: washes downstream, fills wetlands, and, eventually, enters Blakeley River
  - Lackawanna
    - Predominant in 2016
    - Tremendous amount of riprap to slow the erosion down
    - Riprap: has been placed in the stream; uncertain placement details
    - Miniature headcut (2 to 3 feet deep)
  - Spanish Fort Branch (Spanish Main)
    - Major bank erosion

- 20 feet deep, taking trees and vegetation with it
  - Exposed utility line across the creek (Stream is approximately 1.5 to 2 feet below utility line)
- Turberville Lane (Boggy Branch)
  - Baldwin County is doing work to stabilize this one to keep access to houses.
  - Stream has headcut back to the road, affecting access for property owners to their homes.
  - Depth is 25 to 30 feet, with vertical banks.
- Unnamed Tributary Boggy Branch (Wakefield)
  - Road in subdivision was soon to be compromised.
  - Baldwin County installed Flexamat (to allow vegetation growth), pipe, and riprap.
  - Problem is on the backside of the work that was done.
  - Huge headcut starts at back part of step pool/pond.
  - Step pool/pond has filled in completely with sand.
  - Lots of trees are down.
  - There is access to widen the area to raise stream elevation or clear the floodplain to allow the stream to meander and enter the floodplain, which would slow it.
- Downstream, the tributary to Boggy Branch and Boggy Branch are getting completely choked from the sediment coming out of the gulleys.
  - There is 5 to 8 feet of sand deposited in/on stream.
- Unnamed tributary to Sibley Creek (Wildflower Trail/Rayne)
  - Headcuts: lots of erosion
  - Early stages of erosion issues
- After the presentation, the following items were discussed:
  - Are there other locations for us to look at in the field?
    - Please tell us, email us, or call us.
  - Will Underwood: ADCNR funded a project for the City of Spanish Fort to look at Lackawanna Canal.
    - The City should have a SW management plan.
  - Underwood: ADCNR would be interested in seeing how much of this is happening related to installation of subdivisions or topographic relief/highly eroded soils. Are some of these problems directly related to installation of housing developments, were the problems pre-existing to any urbanization activities, or is there a combination of both?
    - Streams on undeveloped parcels look healthy.
    - Walters: There is a combination of development with no SW management regulations in place (i.e., Spanish Fort Estates was developed before SW management regulations were in place).

- Underwood/ADCNR: When you are designing these, is there any consideration given to full buildout of developments?
  - Walters: Yes. We are required to look at full buildout and design for it. Municipalities are starting to require designs for more frequent storms than a 100-year storm.
  - Both smaller and larger flows must be accounted for.
  - A lack of best management practices is a constant problem.
- Mike Bunn/Blakeley State Park: There is lot of sand, with canyons forming in two to three places, and there is no development causing it.
  - Will this study teach us how to control erosion and help sedimentation issues and maintenance?
  - Walters: We can provide information on stabilization techniques in or out of the plan. Walters is to meet with Bunn to look at the areas in the field.
  - Part of the plan is to help identify costs and funding sources for entities to implement/maintain projects.
  - There is concern about maintenance now versus major efforts in the future.
  - Part of our plan will also talk about what will happen if nothing is done to correct issues that have been identified.
  - Bunn would like to know what is really a concern.
- Clair Dorough/City of Bay Minette: Will comparison of impacts resulting from development or natural causes be in the WMP to help municipalities justify strengthening sediment/erosion/SW requirements/regulations for stream buffers?
  - Walters: Yes. We look at impervious surface standards in the WMP and make recommendations. If you have specific concerns or language you need us to include to help in planning and regulations, please let us know.
- Robin Delaney: Does the new area in the WMP include Shell Bank right off the causeway?
  - No. This one is in the Tensaw WMP.
- As part of the WMP, we will prioritize projects. Not all projects that will be included in the WMP will be stream stabilization projects.
- Multiple funding avenues are available (more RESTORE funds, ADEM 319 grant funds, Alabama Coastal Impact Assistance Program, and GOMESA funds). Funding sources, along with cost estimates to implement projects, will be part of the plan.



## Attachment 1

### Watershed Characterization Presentation

# WATERSHED CHARACTERIZATION

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Lee Walters, PWS - GMC





# What is Characterization?

- » Description of the physical and natural characteristics of the Eastern Delta Watershed
- » Geology, Topography, Soils, Surface Water, Groundwater, Habitat/Biological, History/Culture, etc.
- » Developed based on review of:
  - » Available literature and past studies
  - » Geographic Information System (GIS) data
  - » Field reconnaissance



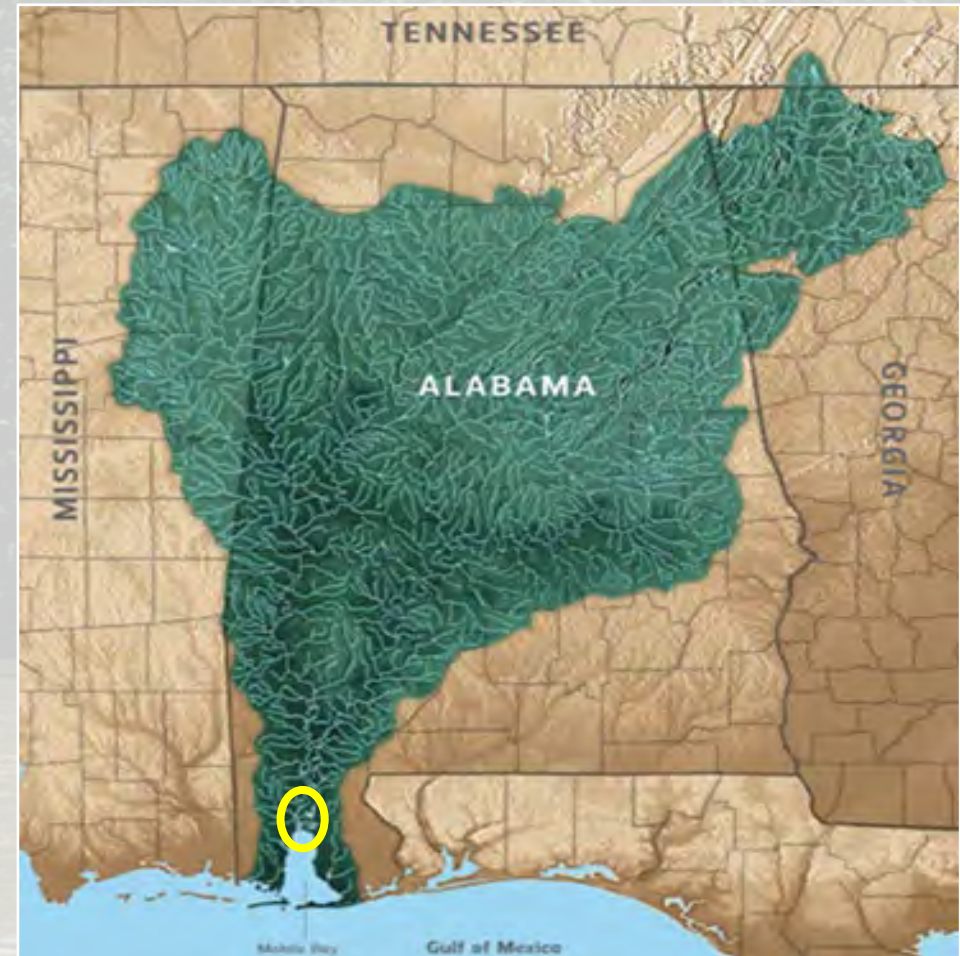
# Watershed Boundary

## Mobile Bay Watershed

- » Downstream endpoint of Mobile Bay Watershed
- » Drains  $\frac{3}{4}$  of the State of Alabama and parts of GA, MS and TN
- » 4<sup>th</sup> largest watershed in the US in terms of volume of flow
- » Accounts for 20% of freshwater supply in the US
- » 6<sup>th</sup> largest watershed based upon drainage area

## Eastern Delta Watershed:

- » Area specifically studied as part of this Watershed Management Plan
- » Includes parts of Baldwin County
- » Discharges into the northeastern portion of Mobile Bay
- » Made up of 3 subwatersheds originally, though a small portion of 1 additional subwatershed was also included since it was not captured in previous WMPs



Source: MBNEP



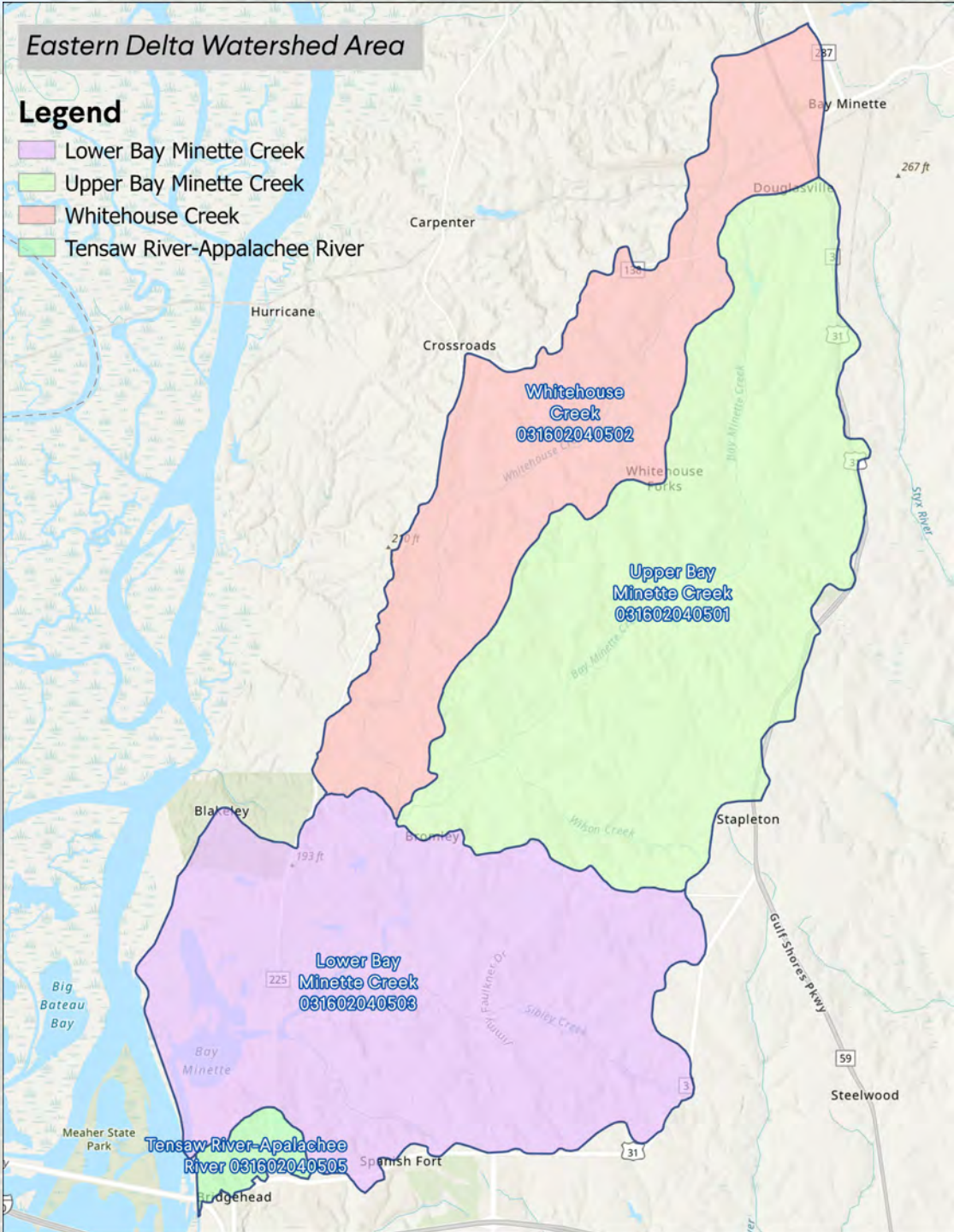
# Eastern Delta Watershed

- » The Eastern Delta is located in one of the most biologically diverse ecosystems on the North American continent.
- » Habitats include cypress swamps/swamp forests, bottomland forests, pine savanna, and marshes.
- » The Eastern Delta Watershed lies within the Mobile Bay Estuary, a transitional zone where freshwater from inland rivers mixes with tidally influenced marine waters from Mobile Bay.
- » The Mobile Bay Estuary has great environmental and economic significance due to its tremendous biological diversity and productivity.
- » The Eastern Delta Watershed contains important commercial activity as well as a rich cultural and historical heritage.



# Watershed Boundary

	Area (Square Miles)
Whitehouse Creek	18.0
Upper Bay Minette Creek	30.2
Lower Bay Minette Creek	28.6
Tensaw River-Appalachee River	1.2
TOTAL	78.0





## Legend

-  Airports
-  Railways
-  State Road
-  Highway
-  Interstate
-  Eastern Delta Watershed

# Transportation

## Significant Transportation Routes:

- » US Hwy 31
- » State Route 225
- » State Route 59
- » L&N Railroad (CSX)



# Surface Water

» ~60 miles of named Creeks

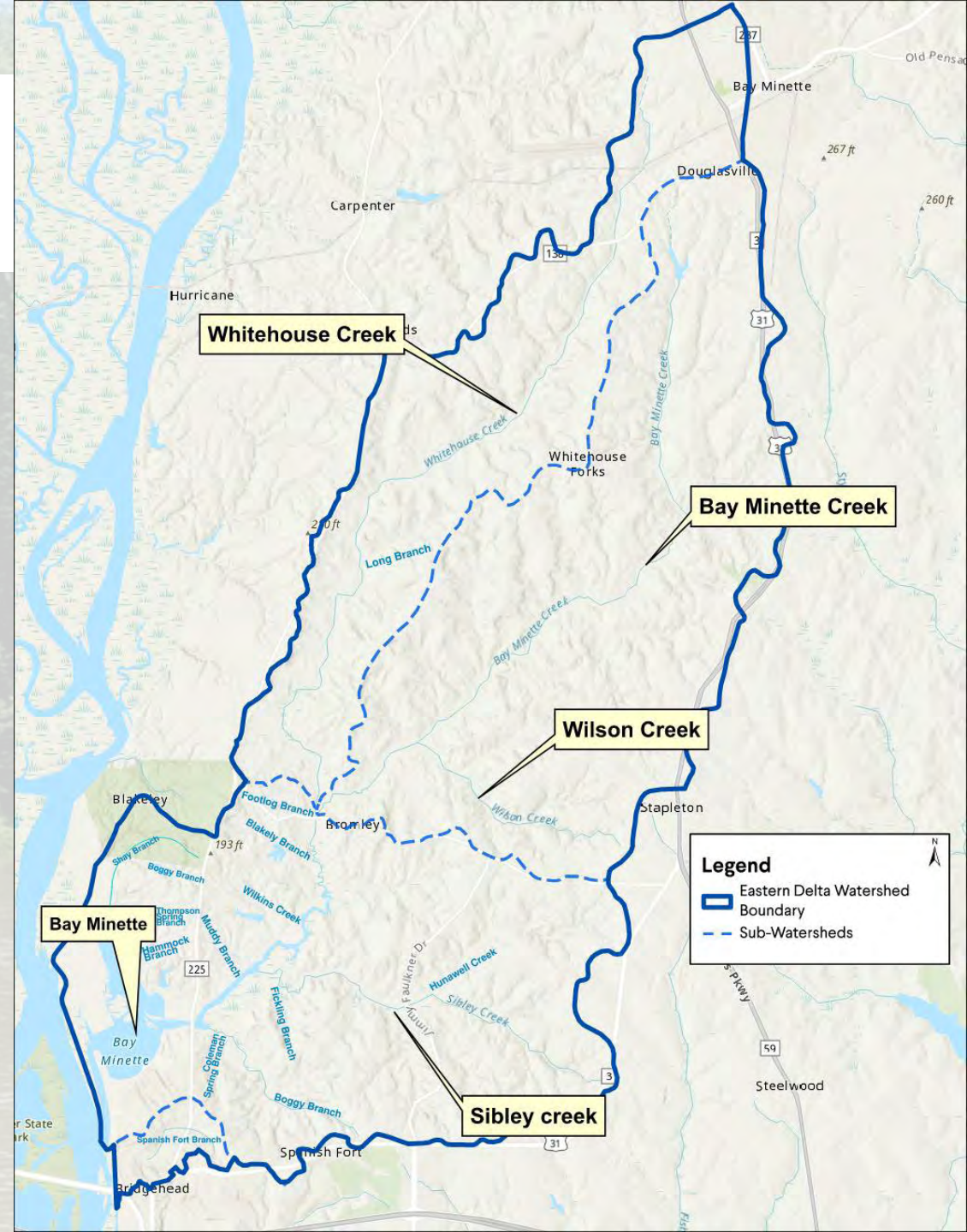
Creeks	Length (miles)	Creeks	Length (miles)
Whitehouse Creek	13.0	Fickling Branch	0.9
Bay Minette Creek	17.0	Boggy Branch	3
Hunawell Creek	3.1	Coleman Spring Branch	1.1
Sibley Creek	6.0	Muddy Branch	1.1
Long Branch	1.3	Hammock Branch	0.9
Footlog Branch	0.8	Thompson Spring branch	1.2
Wilson Creek	3.5	Shay Branch	2.1
Blakely Branch	1.4	Spanish Fort Branch	1.4
		Wilkins Creek	1.4

## Lakes/Bays

Foxfire Lake

Bay Minette

Lauperouse Lake

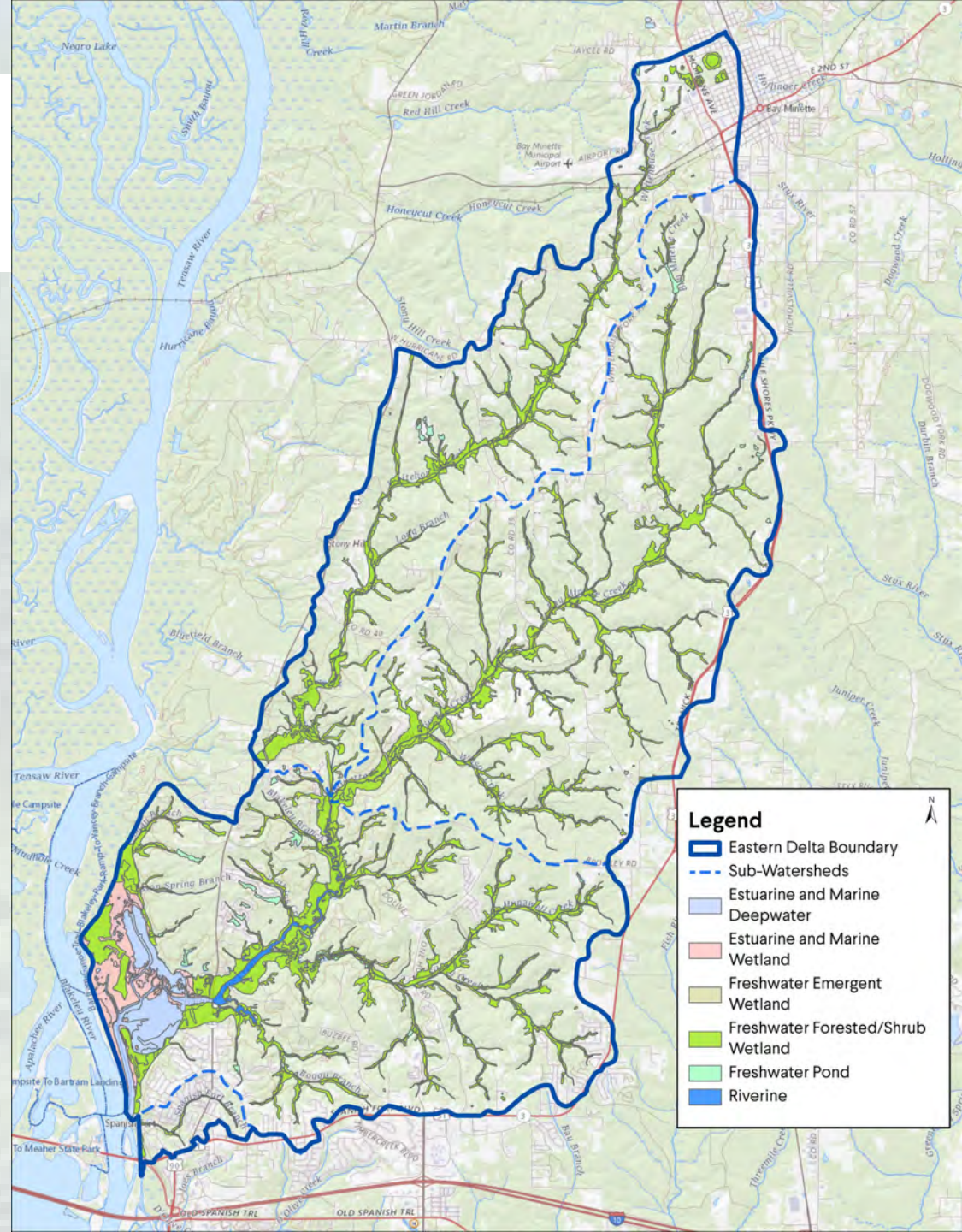




# Wetlands and Habitats

» Wetland habitat comprises ~16% of the Eastern Delta Watershed

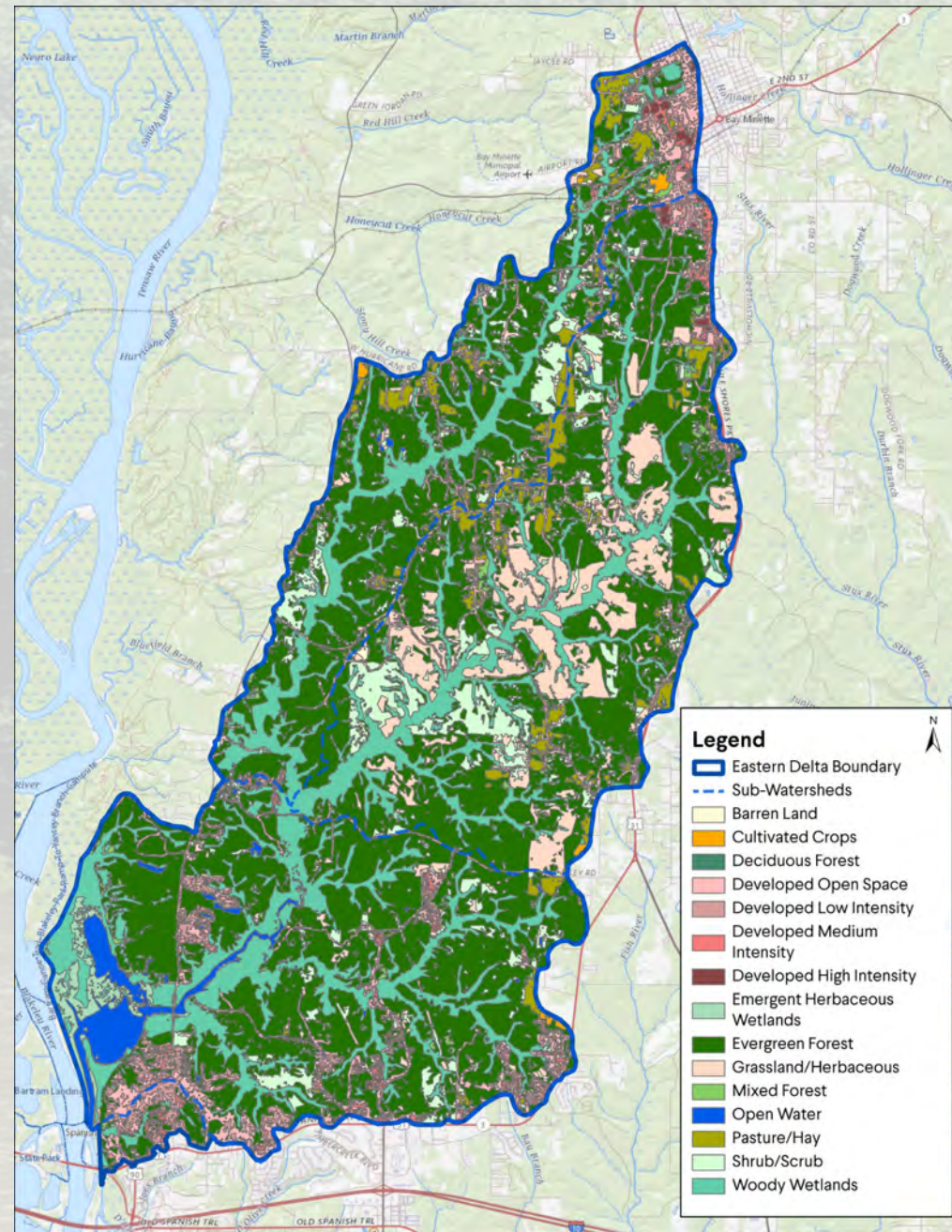
Wetland Type	Square Miles	Percent of Watershed
Estuarine and Marine Deepwater	1.1	1.4%
Estuarine and Marine Wetland	1.0	1.3%
Freshwater Emergent Wetland	0.1	0.1%
Freshwater Forested/Shrub Wetland	9.3	11.9%
Freshwater Pond	0.3	0.4%
Riverine	0.8	1.0%
Upland Urban	6.3	8.1%
Upland Forest & Scrub / Shrub	59.1	75.8%
<b>Total</b>	<b>78.0</b>	<b>100%</b>





# Land Cover

Use	Square Miles	Percent
Open Water	1.5	1.9%
Developed Open Space	4.6	5.9%
Developed Low Intensity	2.9	3.7%
Developed Medium Intensity	1.1	1.5%
Developed High Intensity	0.3	0.4%
Barren Land	0.1	0.1%
Deciduous Forest	0.1	0.1%
Evergreen Forest	37.1	47.6%
Mixed Forest	1.1	1.5%
Shrub/Scrub	4.8	6.2%
Grassland/Herbaceous	5.7	7.3%
Pasture/Hay	2.7	3.5%
Cultivated Crops	0.2	0.2%
Woody Wetlands	14.8	18.9%
Emergent Herbaceous Wetlands	1.1	1.4%
<b>TOTAL</b>	<b>78.0</b>	<b>100%</b>



Source: 2021 ESRI's Online Living Atlas



# Flora and Fauna

The following list summarizes the approximate numbers of animal (fauna) and plant (flora) species documented in the Eastern Delta Watershed:

- » 32 Amphibians
- » 197 Birds
- » >25 Fishes
- » 811 Insects
- » 43 Arachnids
- » 19 Mammals
- » 78 Reptiles
- » 13 Mollusks
- » 661 Plant Species
- » 198 Fungi

Source: iNaturalist; eBird

Photo Source: Patsy Russo



# Federally Listed Threatened and Endangered Species

- » 1 Bird
- » 3 Reptiles
- » 1 Fish
- » 1 Marine Mammal
- » 1 Plant
- » 1 Insect

*American Chaffseed*



*Alligator Snapping Turtle*



*Alabama Red-bellied Turtle*



Photos Source: NWF

Photos Source: USFWS (ECOS)

*West Indian Manatee*



*Monarch Butterfly*



*Gulf Sturgeon*



Photo Source: iPaC (ECOS)

*Eastern Indigo Snake*



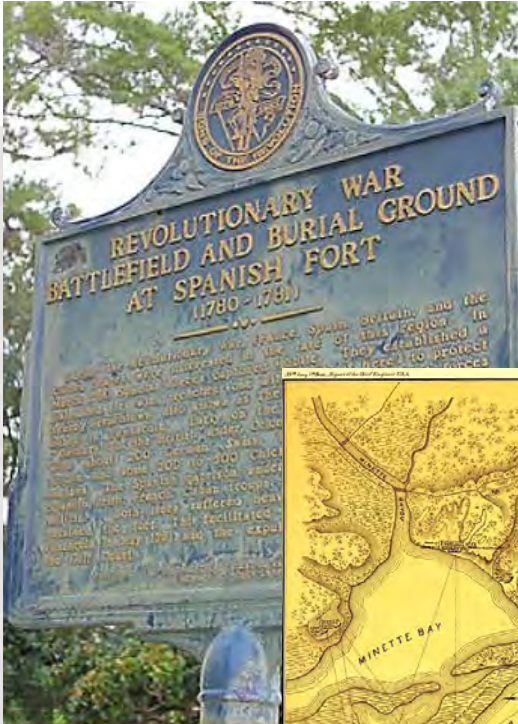
*Eastern Black Rail*



Photo Source: Lee Walters



# History



The Battle of Spanish Fort  
Source: Encyclopedia of Alabama



Fuller Site shell midden  
Source: Alabama  
Indigenous Mound Trail



Bay Minette Water Tower  
Source: North Baldwin  
Chamber of Commerce



The Battle of Fort Blakeley  
Source: Encyclopedia of Alabama

Removal of the County Seat  
from Daphne to Bay Minette  
Source: Hilton Leech;  
Encyclopedia of Alabama





# Culture

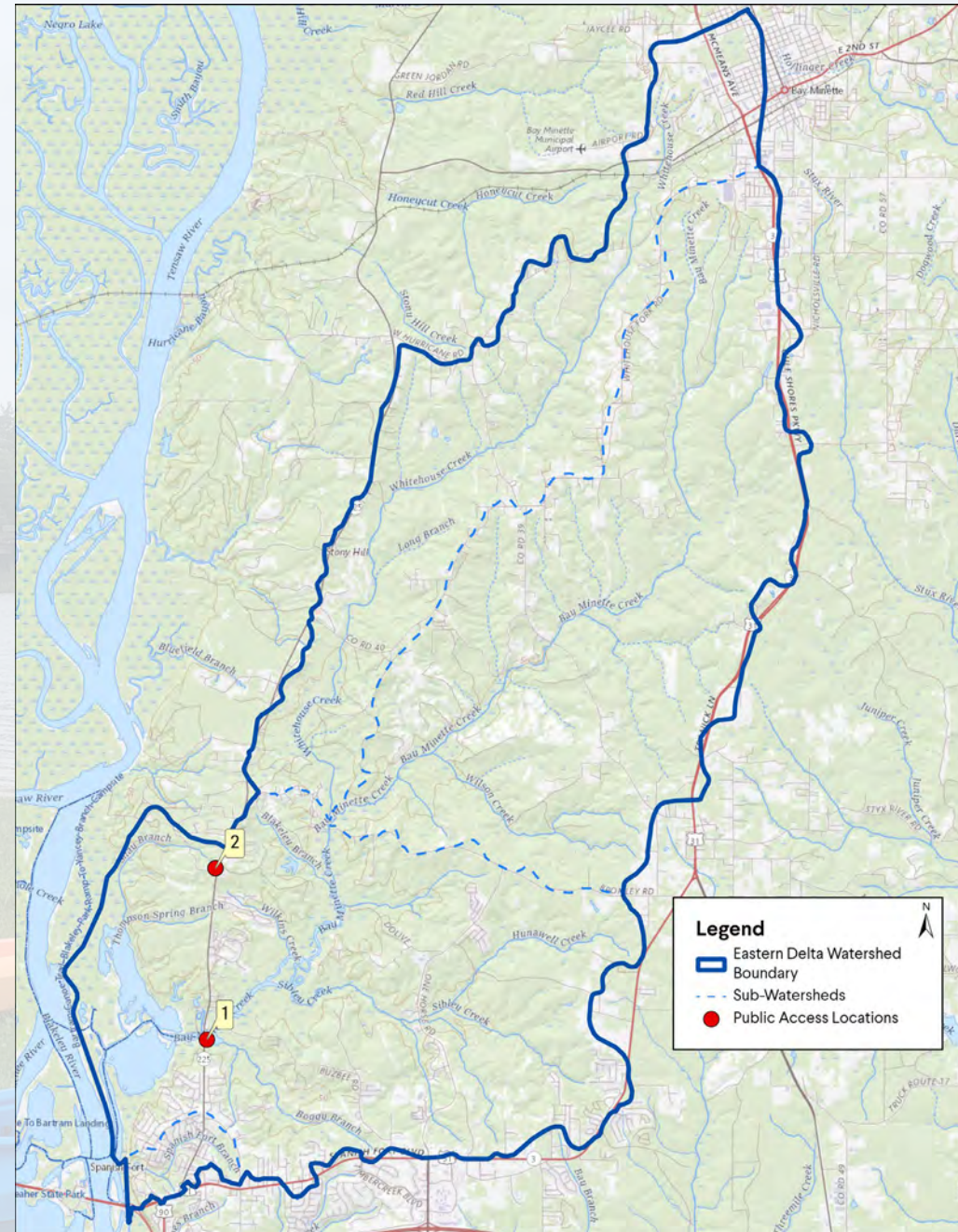
Generations of locals growing up in and around the rich biodiversity of the Delta

- » Fishing
- » Crabbing
- » Boating/Canoeing
- » Birdwatching
- » Eco-Tourism
- » Forestry/timber



# Public Access

ID	Name (Boat Launch)
1	Buzbee Landing Boat Launch
2	Historic Blakeley State Park*





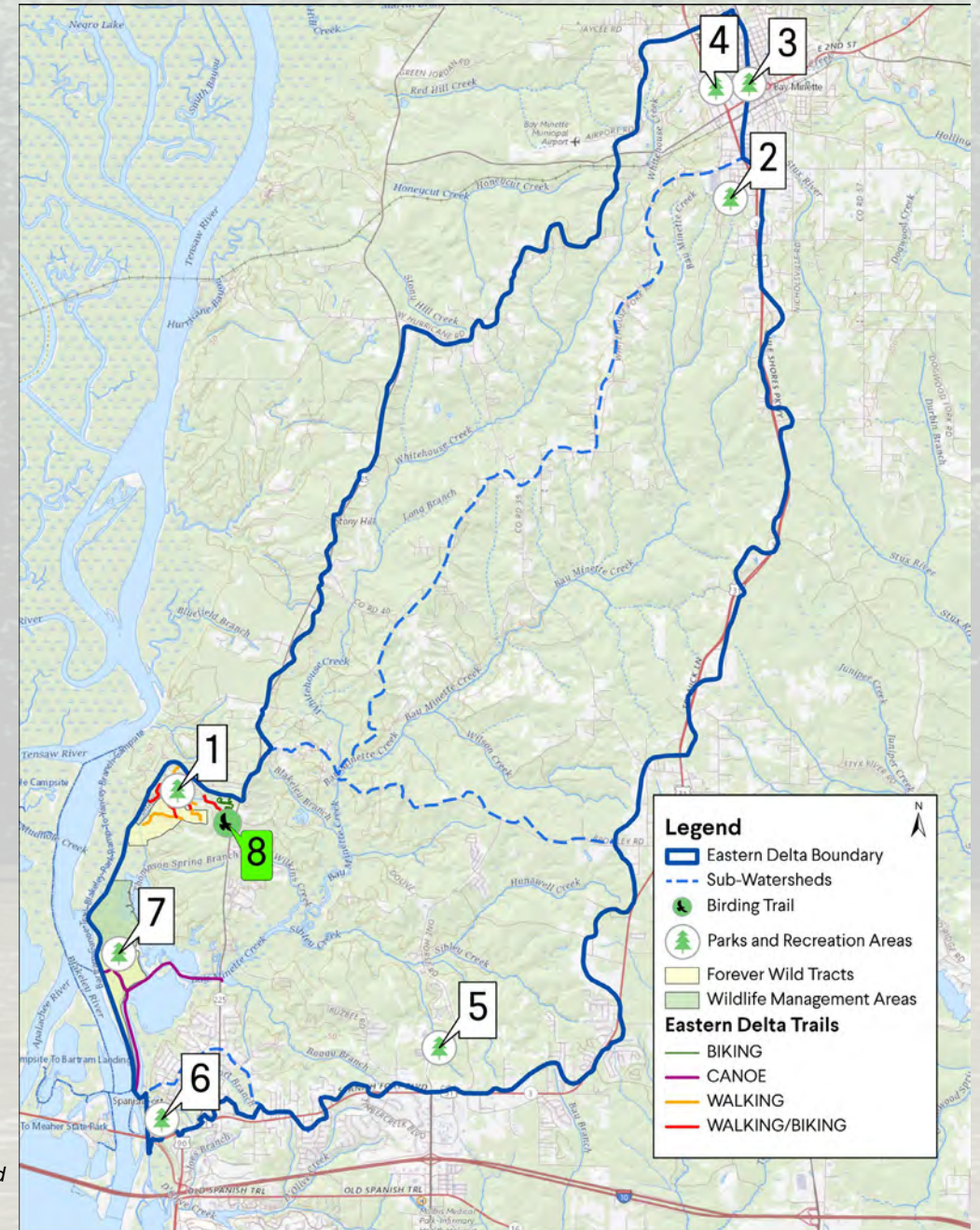
# Parks, Trails and Recreational Areas

Map ID	Parks & Recreational Areas
1	Historic Blakeley State Park
2	Ulmer Park
3	Bay Minette Kids Park
4	George B Halliday Park
5	Integrity Park
6	Fort McDermott Confederate Memorial Park
7	Yancey Branch Campsite

Forever Wild Tract Name	Square Miles
FW 49 - Mobile - Tensaw Delta - Coastal Land Trust Tract Additions	0.4
FW 8 - Blakeley Addition Tract	0.4

Map ID	Trail Name	Miles	Designation
-	Cannonball Run	1.5	Biking
-	Stebbins Trail	0.3	Walking
-	Hallet's Trail	0.5	
-	Capt. Rice Trail	0.3	
-	Skirmish Line Trail	0.7	
-	Squirrel's Nest Lane	3.4	
-	Gen. Garrard's Trail	0.7	Walking/Biking
-	17th Ohio Battery Trail	0.5	
-	Shay Branch Headwaters Trail	0.5	
-	Col. Rinaker Trail	0.4	
-	Union Battery Loop	0.2	
-	Old Apalachee Trail	0.6	Canoe/Kayak
-	Bartram Canoe Trail	4	
8	Historic Blakeley State Park	No data	Birding

» Miles/lengths are approximate and relate only to segments/area found within the boundary of the Watershed





# Conditions Assessment Documented Areas of Concern



Formerly the site of Union Army encampments and fortifications during the Siege of Spanish Fort, the last battle of the Civil War, “Canby Canyon” has become a significant gorge measuring approximately 60 feet deep by 200 feet wide for a distance of around 2500 linear feet. Located in the heart of the Spanish Fort Estates subdivision, “Canby Canyon” directly affects 72 residential properties, an estimated \$16.2 million in real property value according to the Baldwin County Revenue Department. The City of Spanish Fort has investigated numerous reports of erosion including the toppling of large trees and significant loss of land, the exposure of a sewer line, and the threat to real property including swimming pools, a detached garage, and at least two homes. The erosion issues have reduced property values and made it nearly impossible for some to sell their homes. In addition, sedimentation in the Bay Minette Basin has become a major issue as well, filling known boating channels and cutting access to local wharfs. The full environmental effects of sedimentation in Bay Minette are unknown at this time. Daphne Utilities has attempted to stabilize the erosion and protect its sewer line; however, the stabilization project has since failed and is in need of significant repairs. Because the problem can be attributed to both public discharges from the rights-of-way surrounding the canyon and discharges from private residential properties, the proposed project would include a comprehensive study of the sources of water contributing to the erosion, along with a number of projects aimed at stabilizing the bluffs. Additional deliverables could include water quality monitoring results to evaluate the effectiveness of reducing sedimentation into the Bay Minette Basin; education materials; a comprehensive plan for homeowners to collectively address stormwater runoff on their properties, which could involve a variety of strategies including Low Impact Development and Green Infrastructure; and regulatory recommendations the City could implement to combat erosion issues within its jurisdiction.

## Project ID No. 311

### Canby Canyon Erosion Mitigation

#### Location:

Spanish Fort Estates between  
General Canby Drive and Bugle  
Retreat

**Size:** 15 acres

**Watershed:** Tensaw-Apalachee River

#### Areas Affected:

- Multiple Private Homeowners
- Health and welfare of residents in Spanish Fort Estates
- Boating, Fishing, and Wildlife in Bay Minette Basin
- Wetland habitats along Bay Minette Basin
- Critical habitat along Blakely River
- Total ecological effects to Bay Minette Basin still unknown at this time

#### Valuation of Property Affected:

Estimated at \$16,200,000.00

**Est. Repair Timeframe:** 18 Months

**Est. Cost of Repair:** \$4,700,000.00

## Project ID No. 456

### Confederate Canyon Erosion Mitigation

#### Location:

Spanish Fort Estates  
114 Confederate Drive

**Size:** 1.5 acres

**Watershed:** Tensaw-Apalachee River

#### Areas Affected:

- Multiple Private Homeowners
- Health and welfare of residents in Spanish Fort Estates
- Boating, Fishing, and Wildlife in Blakely River
- Wetland habitats along Bay Blakely River
- Critical habitat along Blakely River
- Total ecological effects to Blakely River still unknown at this time

#### Valuation of Property Affected:

Estimated at \$1,293,700.00

**Est. Repair Timeframe:** 18 Months

**Est. Cost of Repair:** \$1,100,000.00



Located within the shadows of Fort McDermott, a significant fortification during the Siege of Spanish Fort, the last battle of the Civil War, “Confederate Canyon” has become a significant gorge measuring approximately 50 feet deep by 100 feet wide for a distance of around 600 linear feet. Nestled in the heart of the Spanish Fort Estates subdivision, “Confederate Canyon” directly affects several properties. The City of Spanish Fort has investigated numerous reports of erosion including the toppling of large trees and significant loss of land, loss of accessory structures, and the threat to real property including swimming pools, and at least two homes. The erosion issues have reduced property values and made it nearly impossible for some to sell their homes. In addition, sedimentation in the Bay Minette Basin has become a major issue as well, filling known boating channels and cutting access to local wharfs.

The full environmental effects of sedimentation in Bay Minette are unknown at this time. Because the problem can be attributed to both public discharges from the rights-of-way surrounding the canyon and discharges from private residential properties, the proposed project would include a comprehensive study of the sources of water contributing to the erosion, along with a number of projects aimed at stabilizing the bluffs. Additional deliverables could include water quality monitoring results to evaluate the effectiveness of reducing sedimentation into the Bay Minette Basin; education materials; a comprehensive plan for homeowners to collectively address stormwater runoff on their properties, which could involve a variety of strategies including Low Impact Development and Green Infrastructure; and regulatory recommendations the City could implement to combat erosion issues within its jurisdiction.



# Conditions Assessment Fieldwork Confederate Canyon





# Conditions Assessment Fieldwork Confederate Canyon





# Conditions Assessment Fieldwork Lackawanna





# Conditions Assessment Fieldwork Lackawanna





# Conditions Assessment Fieldwork Canby Canyon





# Conditions Assessment Fieldwork Canby Canyon



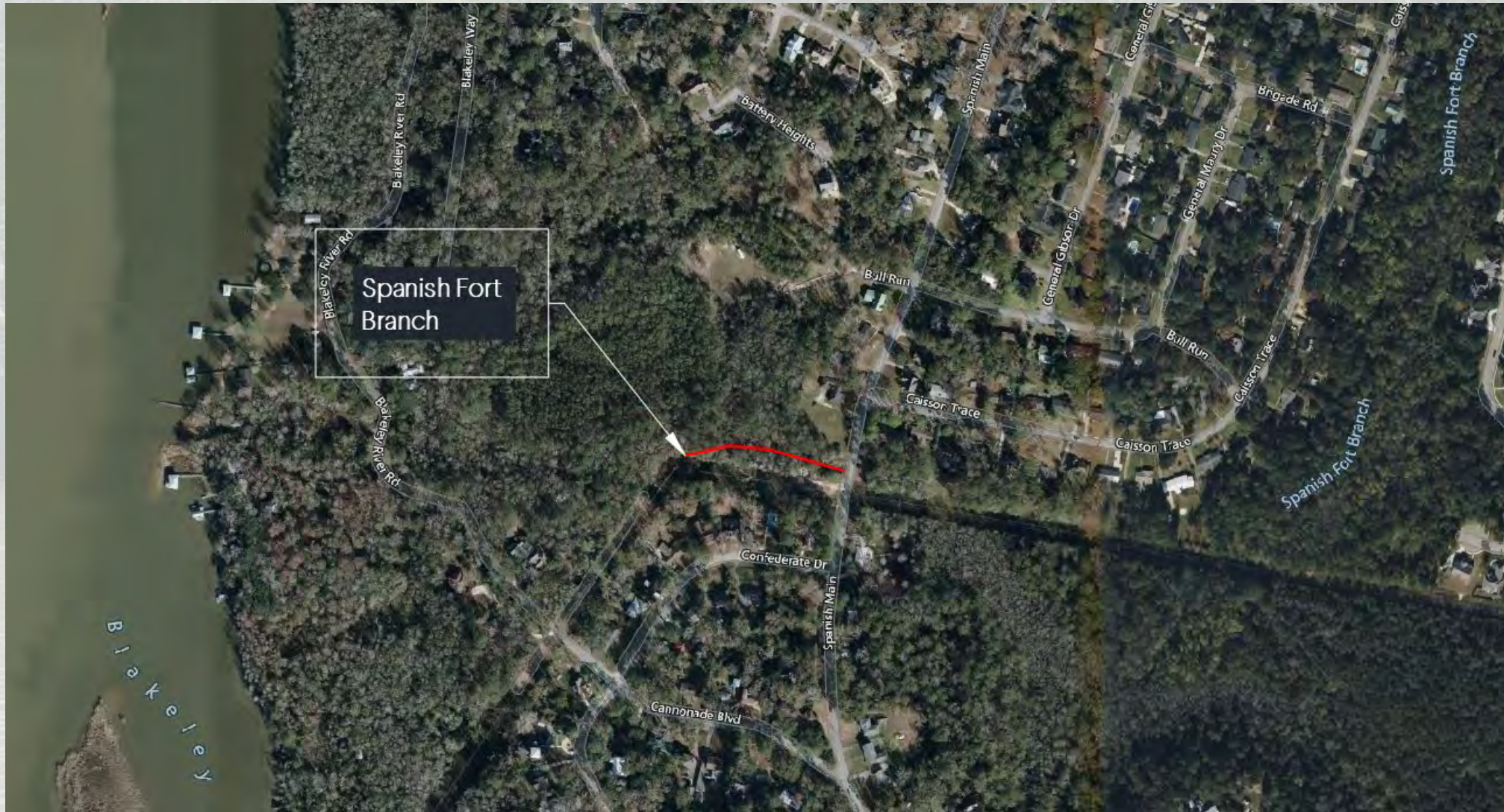


# Conditions Assessment Fieldwork Canby Canyon





# Conditions Assessment Fieldwork Spanish Fort Branch (Spanish Main)



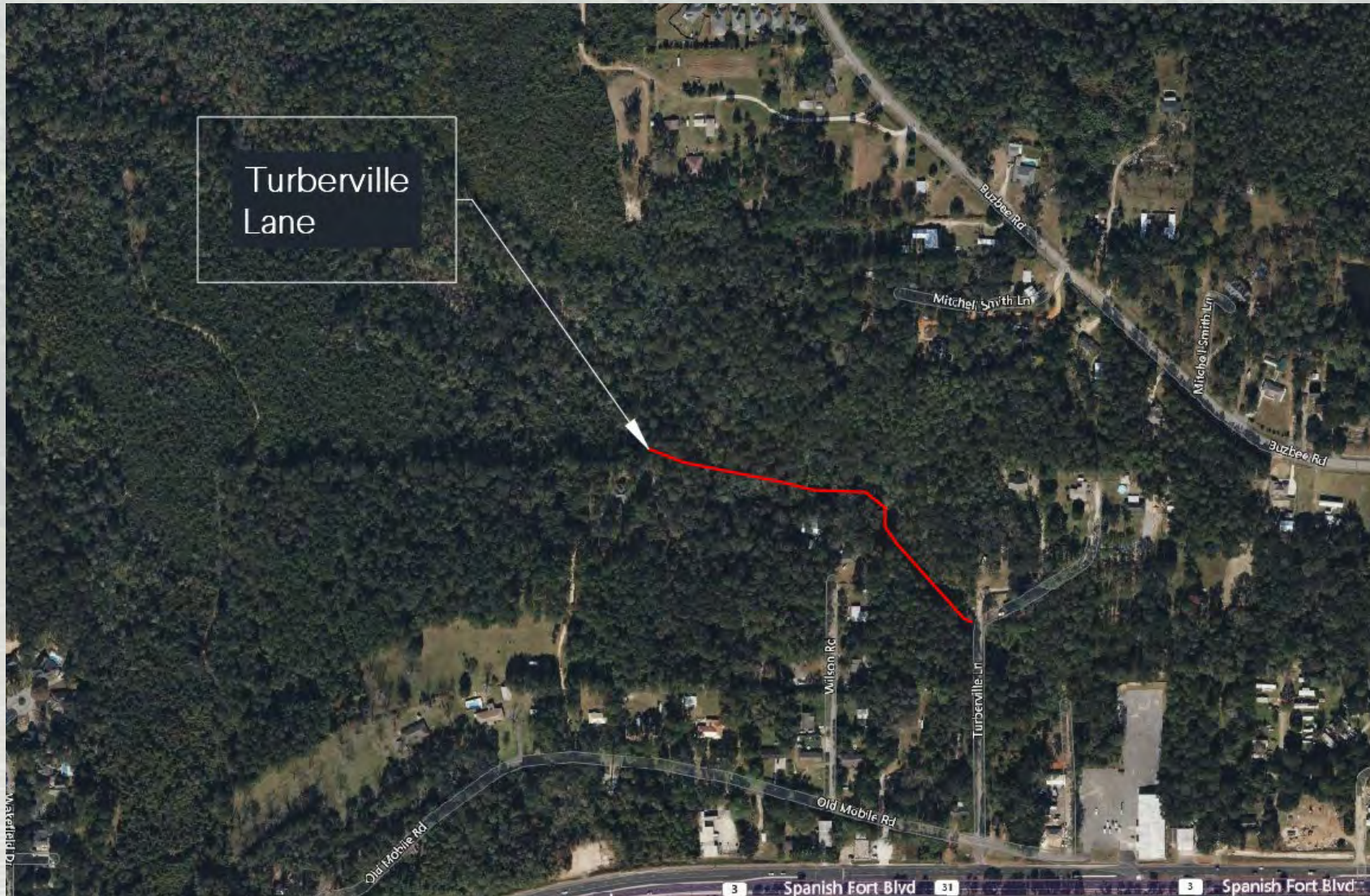


# Conditions Assessment Fieldwork Spanish Fort Branch (Spanish Main)





# Conditions Assessment Fieldwork Boggy Branch (Turberville Lane)





# Conditions Assessment Fieldwork Boggy Branch (Turberville Lane)



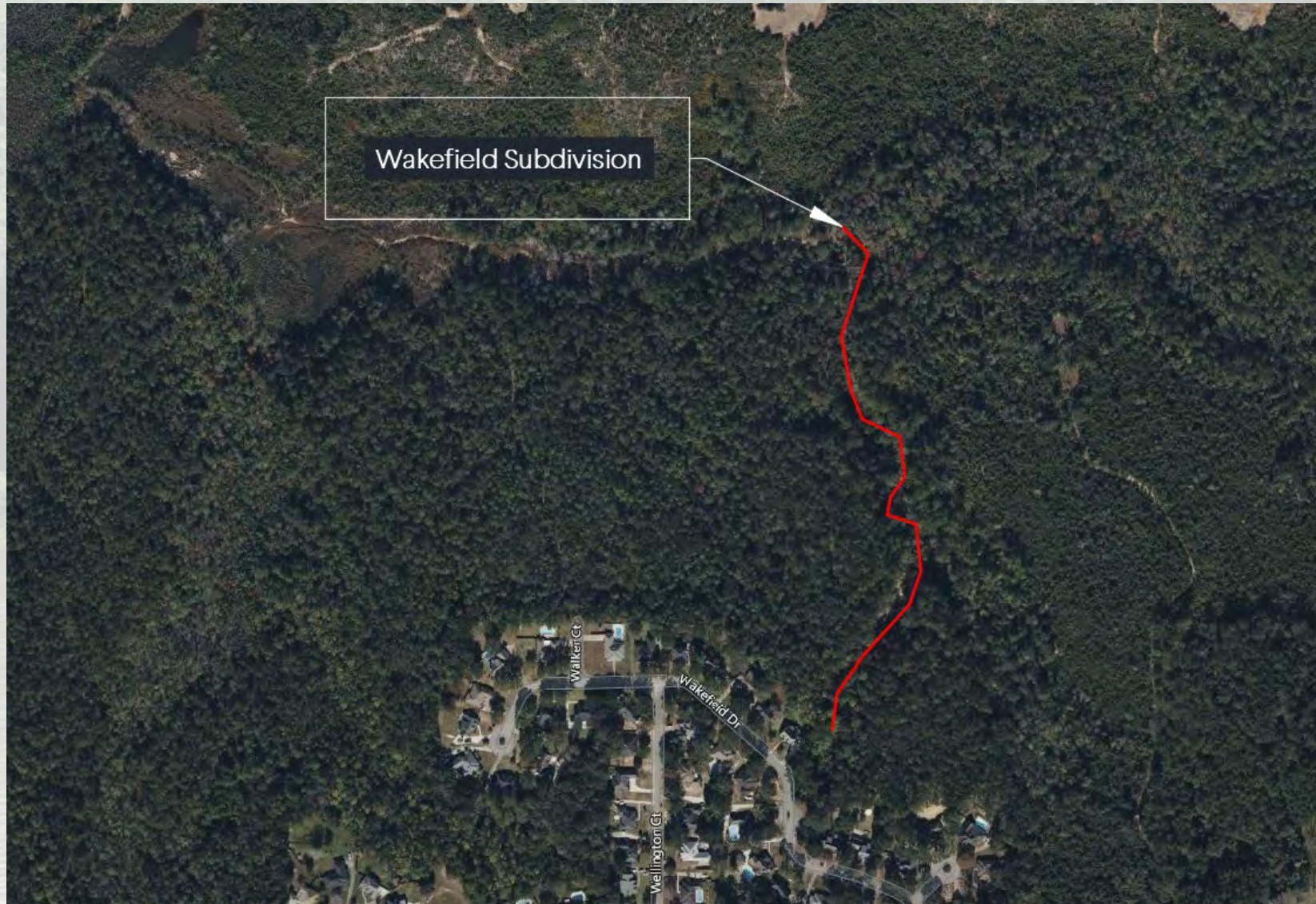


# Conditions Assessment Fieldwork Boggy Branch (Turberville Lane)





# Conditions Assessment Fieldwork UT to Boggy Branch (Wakefield)



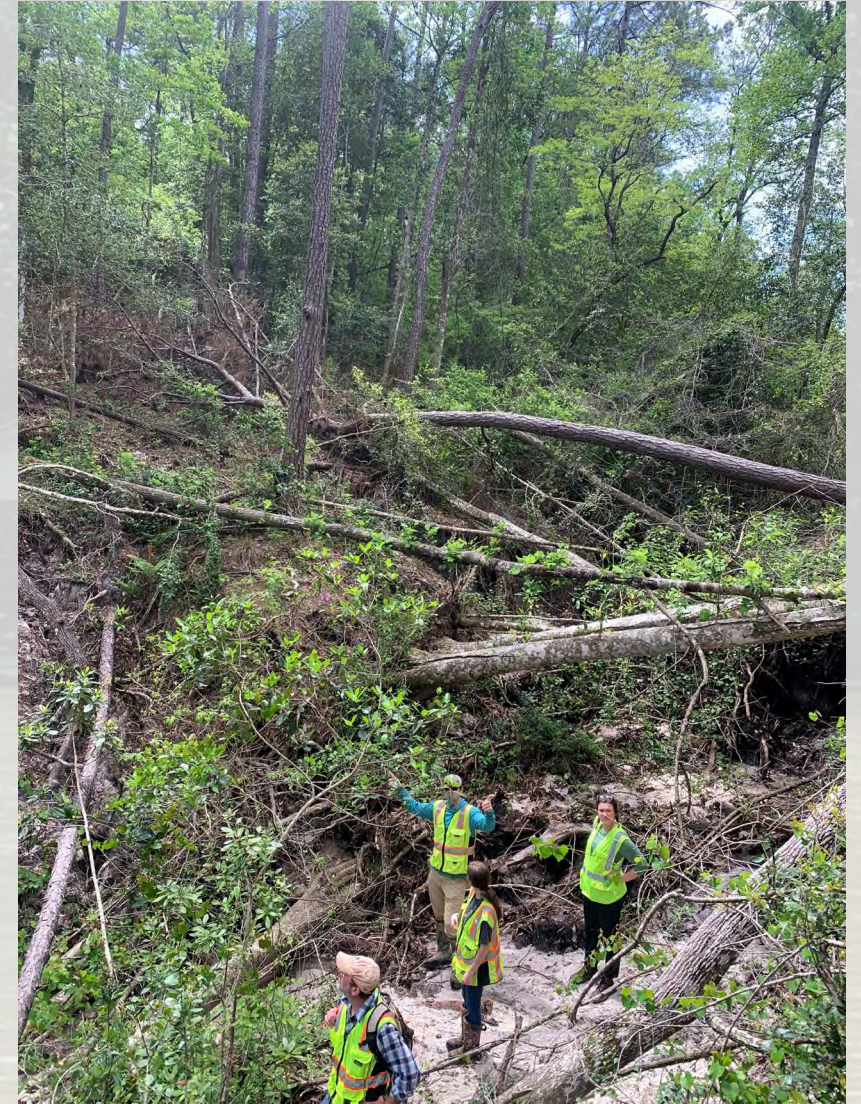


# Conditions Assessment Fieldwork UT to Boggy Branch (Wakefield)





# Conditions Assessment Fieldwork UT to Boggy Branch (Wakefield)





# Conditions Assessment Fieldwork Boggy Branch (Turberville Lane)



Tributary to Boggy

Boggy Branch





# Conditions Assessment Fieldwork UT to Sibley Creek (Wildflower Trail/Rayne)





# Conditions Assessment Fieldwork UT to Sibley Creek (Wildflower Trail/Rayne)





# Questions?



Photo Source: Lee Walters