Apalachicola River and Bay Sub-Basin Work Plan

Northwest Florida Watersheds Partnership Program
Apalachicola River and Bay Watershed
January 2026

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
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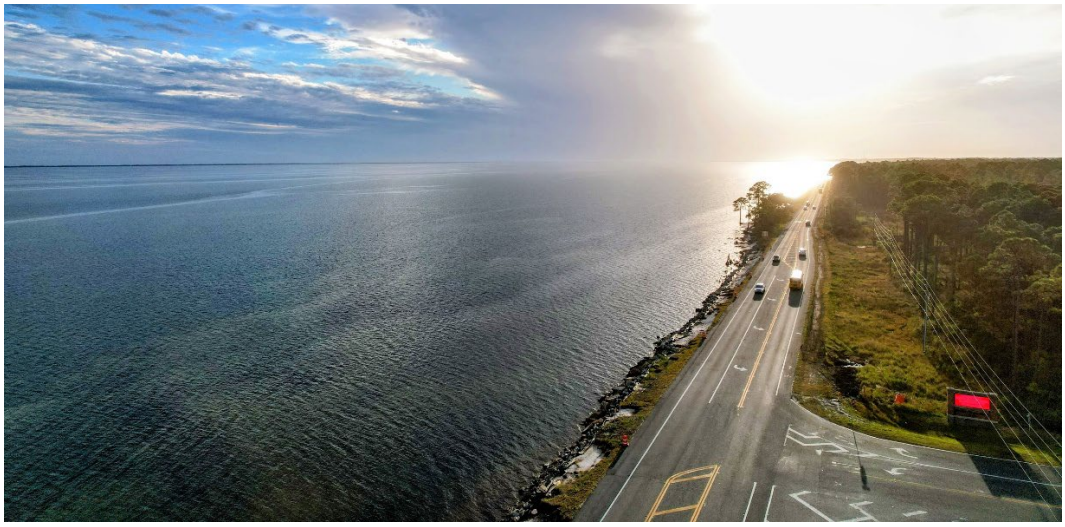
EXECUTIVE SUMMARY

The **Northwest Florida Watersheds Partnership Program (Program)** is a collaborative, multi-party initiative to proactively address critical water resource issues within priority sub-basins of the Northwest Florida Water Management District (District). The Program is being implemented in coordination with local and county governments, regional entities, and other interested parties to maximize effectiveness.

The Apalachicola River and Bay sub-basin is the priority sub-basin within the Apalachicola Bay Watershed. The work plan describes the sub-basin, the critical water resource issues, and strategies and proposed projects that can be implemented to address these issues. The sub-basin encompasses approximately 246,790 acres of the southernmost portion of the greater Apalachicola watershed. The area is characterized by extensive lands and waters remaining in natural conditions which are protected and managed by federal and state agencies. As a result, the area contains extensive aquatic-based resources making recreation such as fishing (commercial and recreational), boating, and tourism important to the local culture and economy. The sub-basin includes the City of Apalachicola, Eastpoint, St. George Island, Apalachicola Bay, and the lower Apalachicola River. The goal of the work plan is to provide an integrated framework for a multi-year collaborative effort to improve the environmental resources, ecological functions, and public benefits of the Apalachicola River and Bay sub-basin. Approximately 3% of the sub-basin is developed and in 2020 the population was 6,887. The population is estimated to grow by 12% in 2045 with a population estimated at 7,726.

The Apalachicola River and Bay Sub-basin is experiencing numerous issues and challenges. Alterations to natural habitats including the loss of oyster habitat, floodplains, seagrasses, etc. are of concern in the sub-basin. Storm-water drainage is a concern for portions of Eastpoint. Septic tanks are present throughout the sub-basin which may be contributing to water quality issues. Sedimentation is a primary issue affecting the hydrology and ecosystems of Apalachicola River floodplains. Water supply is an issue in the sub-basin with supply wells being susceptible to storm surge, sea level rise, hydrogen sulfide, and saltwater intrusion. In addition, aging and/or outdated infrastructure may be an issue for some utilities.



Shoreline Erosion Along Highway 98 in Fraklin County

Water quality impairments are present throughout the sub-basin with portions of the sub-basin being impaired for total nitrogen, metals, dissolved oxygen, bacteria, and biological impairments. Successful restoration and protection of the Apalachicola River and Bay Sub-basin will involve restoring oyster and other natural habitats, addressing sources of water quality impairments, improving and protecting water supply resources, septic tank abatement. These efforts are likely to be bolstered by improving coordination and cooperation between restoration partners and increasing monitoring activities to track and evaluate progress.

Addressing critical water resource issues will require a multi-year effort. Future projects, in addition to those identified within this work plan, will likely be needed to fully address water resource issues and challenges within the Apalachicola River and Bay sub-basin. Currently proposed projects are detailed in the plan and some provide multiple water resource benefits. As of January 2026, seven projects have been proposed by partners within the sub-basin. Two of these projects have estimated costs associated with them with a combined estimate of **$2.9 million**. Cost estimates for the remaining five projects are to be determined.

Project types include:

- Habitat Restoration
- Septic to Sewer Conversion
- Water Supply Infrastructure Enhancement
- Stormwater system enhancements
- Living shoreline projects

The following document provides an introduction to the Northwest Florida Watersheds Partnership Program (Section I), overview of the Perdido Bay Watershed (Section II), details the characteristics of the Elevenmile Creek sub-basin (Section III), discusses the current issues and challenges (Section IV), the proposed management strategies and projects (Section V), and monitoring, metrics and next steps (Section VI).

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I. INTRODUCTION

The **Northwest Florida Watersheds Partnership Program (Program)** is a collaborative, multi-party initiative to proactively address critical water resource issues within priority sub-basins within the Northwest Florida Water Management District (District). While shovel-ready projects will be a high priority for implementation, funding is also anticipated to be available for design, feasibility studies, planning, and, where needed, data collection to determine causes of water resource issues or to track improvements. For the first year of the program, efforts will focus on one priority sub-basin within each of the District's seven major watersheds. The program is being implemented in coordination with local and county governments, regional entities, and other interested parties to maximize effectiveness. Partners include the Florida Department of Environmental Protection; Florida Department of Agriculture and Consumer Services; the Florida Fish and Wildlife Conservation Commission; the Choctawhatchee Basin Alliance; and the three Panhandle Estuary Programs: Pensacola and Perdido Bays, Choctawhatchee Bay, and St. Andrew and St. Joseph Bays.

To select priority sub-basins, objective criteria were developed using best-available geographic information system (GIS) datasets and applied to evaluate and rank the 114 sub-basins within the District's seven major watersheds. Evaluation criteria focused on water quality, aquatic habitat restoration, and water supply and considered factors such as water quality impairments, established total maximum daily loads, population growth, and location within a Water Resource Caution Area or Area of Resource Concern. The highest-ranked candidate sub-basins within each watershed were presented at a series of six public workshops held in October 2025. Input received during the workshops and through on-line surveys, together with information regarding proposed projects, was also utilized in the evaluation process to select a single priority sub-basin within each major watershed. Additional details regarding evaluation process can be found in Appendix A.

The Apalachicola Priority Basin was selected as the priority sub-basin within the Apalachicola River and Bay watershed (Figure 1). This sub-basin encompasses the lower portion of the Apalachicola River downstream of the confluence with the Chipola River and extends through much of Apalachicola Bay. The city of Apalachicola, Eastpoint, and much of St. George Island are included in the sub-basin. St. Vincent Island, St. Vincent Sound, East Bay (portion of Apalachicola Bay), Brothers River, and other Apalachicola River distributaries and sloughs are also included. This work plan describes the sub-basin's characteristics, critical water resource issues, and strategies and proposed projects that can be implemented to address these issues.

The goal of this work plan is to provide an integrated framework for a multi-year collaborative effort to improve the environmental resources, ecological functions, and public benefits of Apalachicola Priority Basin.

Specific objectives of the Program and this work plan include:

- Describe critical water resource issues, with a focus on water quality, aquatic habitat, and water supply needs,
- Determine strategies and projects needed to address the most critical issues including project costs and funding needs,
- Provide an integrated and holistic approach framework that recognizes and incentivizes projects with multiple resource benefits,

- Secure and leverage funding and associated resources needed to implement priority strategies and projects,
- Protect and improve the quality of waters directly influenced by the Apalachicola River and Bay Sub-basin area, as well as within the larger Apalachicola River and Bay watershed,
- Enhance, protect and sustain aquatic and wetland habitats with the Apalachicola River and Bay Sub-basin, together with their economic, recreational, and other societal benefits for the community and for natural systems,
- Enhance the resilience and sustainability of aquatic habitats and water supplies,
- Track project implementation metrics and trends in environmental conditions to monitor and evaluate success and inform an adaptive management approach to enhance strategies and maximize the program's effectiveness.

Accomplishing these ambitious objectives will require extensive collaboration and coordination among state and local government agencies, federal agencies, nonprofit organizations, and the private sector to maximize synergy between projects and achieve lower overall restoration costs.

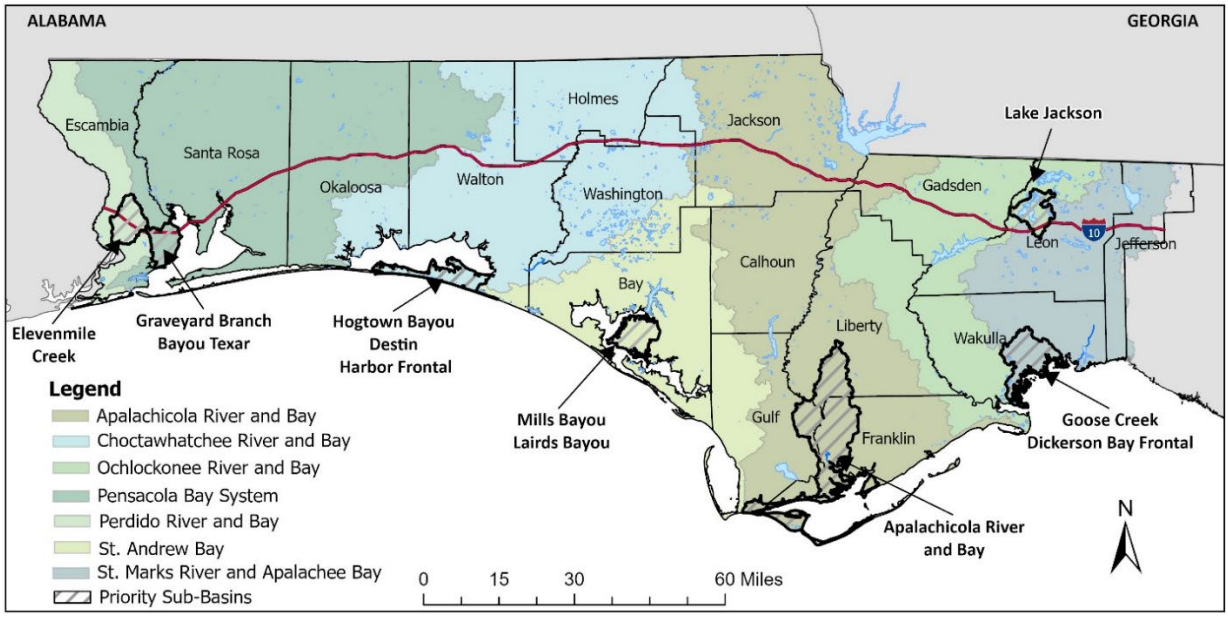

Figure 1. Major Watersheds and Priority Sub-Basins for the Northwest Florida Watersheds Partnership Program

II. OVERVIEW OF APALACHICOLA RIVER AND BAY WATERSHED

The Apalachicola River and Bay sub-basin is located within the larger Apalachicola River and Bay watershed, one of seven priority watersheds of the Northwest Florida Water Management District (District or NWFWMD) (Figure 1). A surface water improvement and management (SWIM) plan for the Apalachicola River and Bay Watershed was prepared by the District in 1992, with updates in 1996 and 2017. The Apalachicola River and Bay watershed constitutes the most downstream portion of the combined Apalachicola, Chattahoochee, and Flint (ACF) rivers basin (Figure 2). The ACF basin encompasses approximately 20,149 square miles across three states: Georgia (72 percent), Florida (14 percent), and Alabama (14 percent).

The Apalachicola River and Bay watershed is composed of streams, creeks, and rivers with numerous dams within the system. The surface hydrology of the Apalachicola River and Bay watershed is dominated by the Apalachicola and Chipola rivers. However, other streams, creeks, and rivers are present within the watershed. The Apalachicola River is formed from the combined flows of the Chattahoochee and Flint rivers. Flows within the Apalachicola River are significantly affected by flow releases from numerous dams present along the Chattahoochee River. The Jim Woodruff Dam represents the upstream boundary of the Apalachicola River. The major receiving water bodies along the Florida coast include Apalachicola Bay, St. Vincent Sound, and St. George Sound.

The Florida portion of the ACF watershed encompasses approximately 2,850 square miles including all or part of eight counties (Franklin, Gulf, Calhoun, Liberty, Gadsden, Washington, Bay, and Jackson). Municipalities within the watershed include, but are not limited to, the cities of Apalachicola, Carrabelle, Wewahitchka, Blountstown, and Marianna. Multiple state and regional agencies have jurisdiction over portions of the watershed and/or conduct data collection and projects within the watershed including the Florida Department of Environmental Protection of Florida (DEP), Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and Consumer Services (FDACS), and the District. Federal agencies include the U.S. Army Corps of Engineers (COE), U.S. Fish and Wildlife (USFWS), National Oceanographic and Atmospheric Association (NOAA), and the U.S. Environmental Protection Agency (EPA). Additional entities active within the watershed include the ACF Stakeholders (ACFS), Riparian County Stakeholders Association (RCSC), Apalachicola National Estuarine Research Reserve (ANERR), Apalachicola Bay Aquatic Preserve (ABAP), and numerous universities including Florida State University.

Multiple management plans have been prepared for the Apalachicola River and Bay watershed. Plans include, but are not limited to: ANERR Management Plan (ANERR 2024), Apalachicola River and Bay SWIM (NWFWMD 2017), Florida Department of Environmental Protection Basin Management Action Plan for Jackson Blue Spring and Merritts Mill Pond (FDEP 2016), ACF Stakeholders Sustainable Water Management Plan (ACFS 2015), and the Apalachicola River Wildlife and Environmental Area 10-Year Management Plan, Franklin and Gulf Counties (FWC 2025). Within Franklin and Gulf counties, the FWC prepared a managed plan for 78,010 acres of the Apalachicola River Wildlife and Environmental Area (ARWEA 2025).

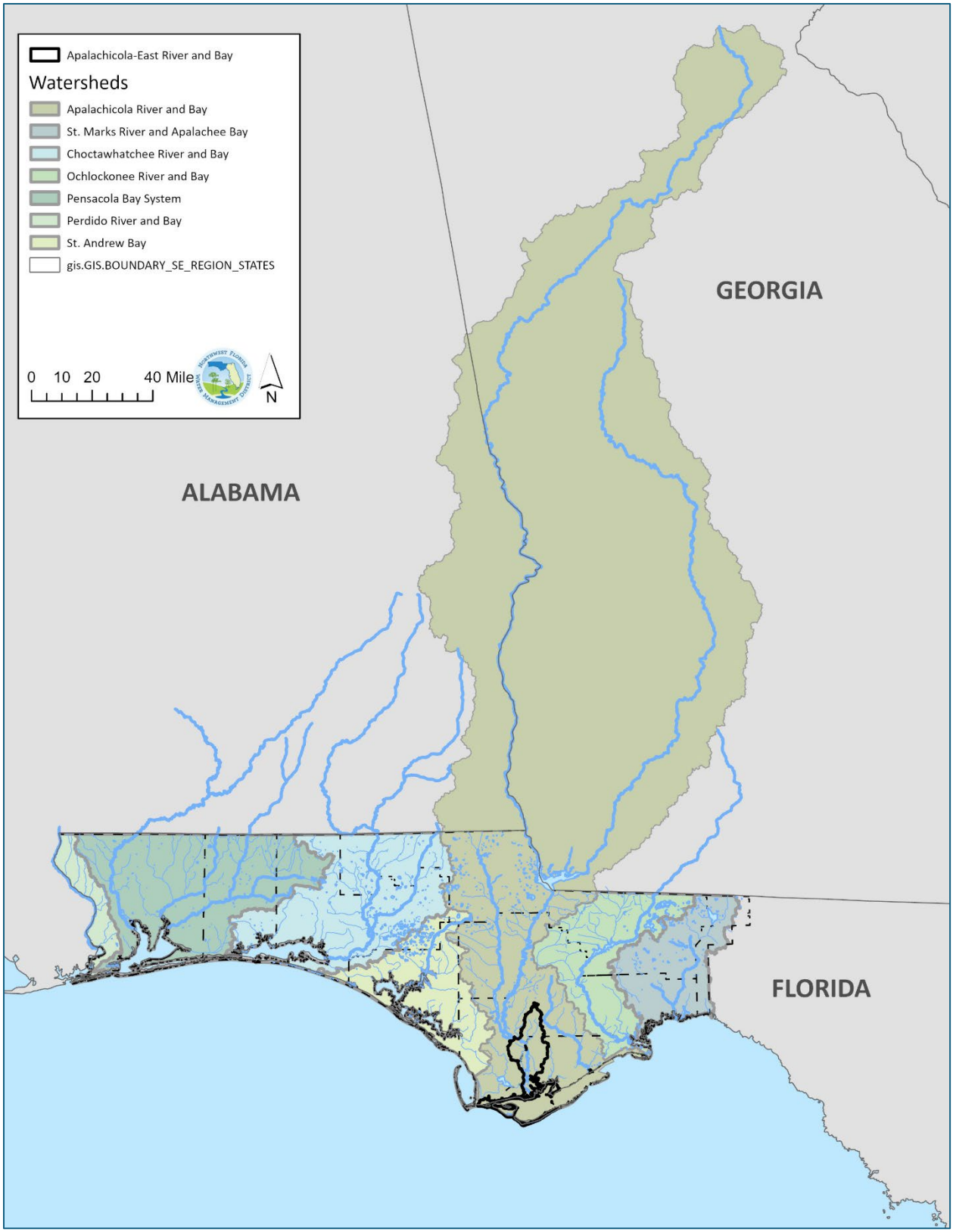

Figure 2: Location of Apalachicola River and Bay Sub-basin within the Apalachicola, Chattahoochee, and Flint Rivers (ACF) basin.

III. APALACHICOLA RIVER AND BAY SUB-BASIN CHARACTERISTICS

This sub-basin is located primarily within Franklin County, with lesser parts in Liberty and Gulf counties (Figure 3). Local municipalities located within the priority basin include the city of Apalachicola, Eastpoint, and St. George Island. The city of Apalachicola is a relatively small community located near the mouth of the Apalachicola River where the river meets the bay. In 2025, the estimated population of Apalachicola was 2,491 individuals (World Population Review 2025). Eastpoint is a small community located on the east side of Apalachicola Bay. St. George Island is a beach community located on a barrier island forming the southern boundary of Apalachicola Bay. The St. George Island community is largely a recreational, beach community drawing tourists from around the globe.

Multiple state and regional agencies have jurisdiction over and operate in Apalachicola Bay. The Florida Department of Environmental Protection is the state's lead agency for environmental management and stewardship, protecting our air, water and land (DEP 2025). The three primary areas of responsibility for DEP include ecosystems restoration, regulatory, and land/recreation. The Northwest Florida Water Management District is a regional agency tasked with managing the water resources in the Florida panhandle (NWFWMD 2025). The four core missions of the District are water supply, water quality, flood protection, and natural resource protection. The Florida Fish and Wildlife Conservation Commission is responsible for managing fish and wildlife resources for their long-term well-being and the benefit of people (FWC 2025). The Florida Department of Agriculture is responsible for "supporting and promoting Florida agriculture, the environment, consumers, and ensuring the safety and quality of food. Within the Apalachicola priority basin, they are primarily responsible for regulating aquaculture (i.e. oyster) and the numerous apiaries producing tupelo honey in the Apalachicola River floodplain (FDACS 2025).

Multiple interested parties operate within the Apalachicola River and Bay priority sub-basin. The Apalachicola National Estuarine Research Reserve (ANERR) is part of the National Estuarine Research Reserve System and is aimed at protecting the reserve for long-term research, monitoring, education, and coastal stewardship (ANERR 2025). ANERR operates under the Department of Environmental Protection and encompasses much of the priority basin in addition to portions of the Apalachicola River extended north of Wewahitchka and St. George Sound. The Apalachicola Riverkeeper was founded in 1998 to "provide stewardship and advocacy for the protection of Apalachicola River and Bay, its tributaries and watersheds, in order to maintain its environmental integrity and to preserve the natural, scenic, recreational, and commercial fishing character of these waterways" (Apalachicola Riverkeeper 2025). The Partnership for a Resilient Apalachicola Bay is a group designed to provide a forum for agencies and stakeholders to work collaboratively to recommendations on the management of the bay (Partnership 2025).

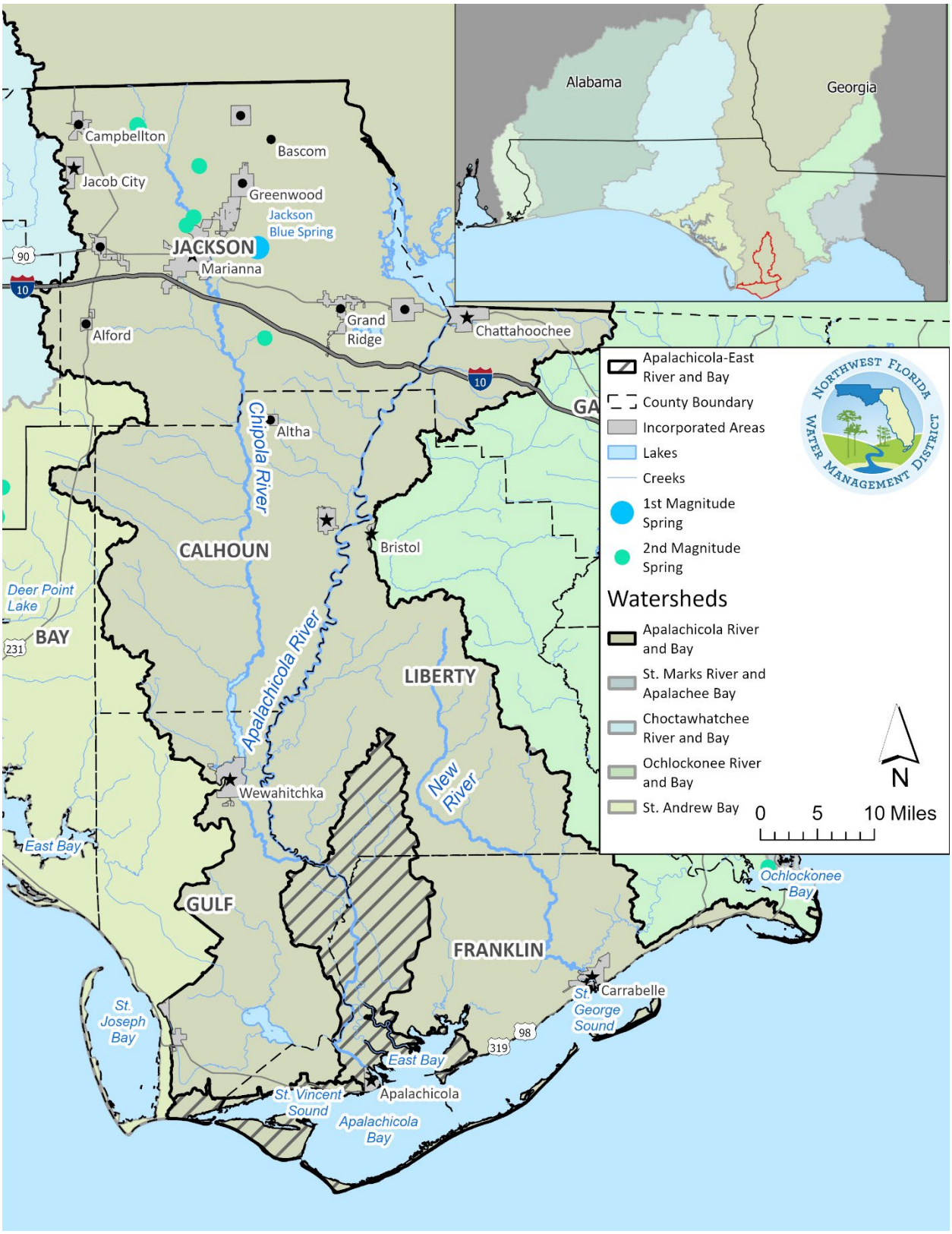

Figure 3. Apalachicola River and Bay Sub-basin

Sub-basin Functions, Benefits, and Uses

The communities present in the basin display considerable historical charm not found in many other areas of Florida. Much of the culture in the basin revolves around the bay with a long history of maritime activities. Outdoor recreation abounds in the basin with popular activities including fishing, kayaking, boating, hiking, biking, and wildlife viewing.

St. George Island is a 22-mile barrier island separating Apalachicola Bay from the Gulf of America. The island is considered one of the best beaches in Florida for its clear waters, unspoiled beaches, and relatively undeveloped nature. Vacation rentals are numerous on the island, making it the most popular location within the basin for lodging.

Commercial and recreational fishing have long been one of the primary economic drivers of the areas surrounding Apalachicola Bay. Historically, Apalachicola Bay produced approximately 10 percent of all oysters commercially harvested within the U.S. and 90 percent of all oysters harvested in Florida (Pine et al. 2015). However, oyster populations significantly declined in 2012, resulting in a Federal Fisheries Disaster designation in 2013 and a five-year closure of wild oyster harvest in 2020. The State of Florida has invested heavily in oyster restoration in the bay and a limited reopening of wild oyster harvest is planned to begin in 2026. Oyster aquaculture is a growing industry within the basin.

Recreational fishing is a primary activity occurring in the Apalachicola River and Bay Priority Basin. Numerous estuarine species such as tarpon (*Megalops atlanticus*), redfish (*Sciaenops ocellatus*), spotted seatrout (*Cynoscion nebulosus*), and Florida pompano (*Trachinotus carolinus*) are popular quarry for countless anglers on both private and for-hire (i.e. charter) boats. In the freshwater portions of the basin, largemouth bass (*Microptera salmoides*) and many sunfish species are popular gamefish.

Extent and Topography

The Apalachicola River and Bay Priority sub-basin encompasses approximately 246,790 acres. This priority basin is located in the southernmost portion of the Apalachicola River and Bay watershed and includes the lower Apalachicola River and Apalachicola Bay (Figure 3). Land elevations range from at or below sea level to approximately 69 ft NAVD88 (Figure 4). Most areas around the Apalachicola River, St. Vincent Island, and St. George Island are low elevation. Areas such as the city of Apalachicola and Eastpoint are found at higher elevations. Elevations continue to increase moving to the northeast and away from the Apalachicola River.

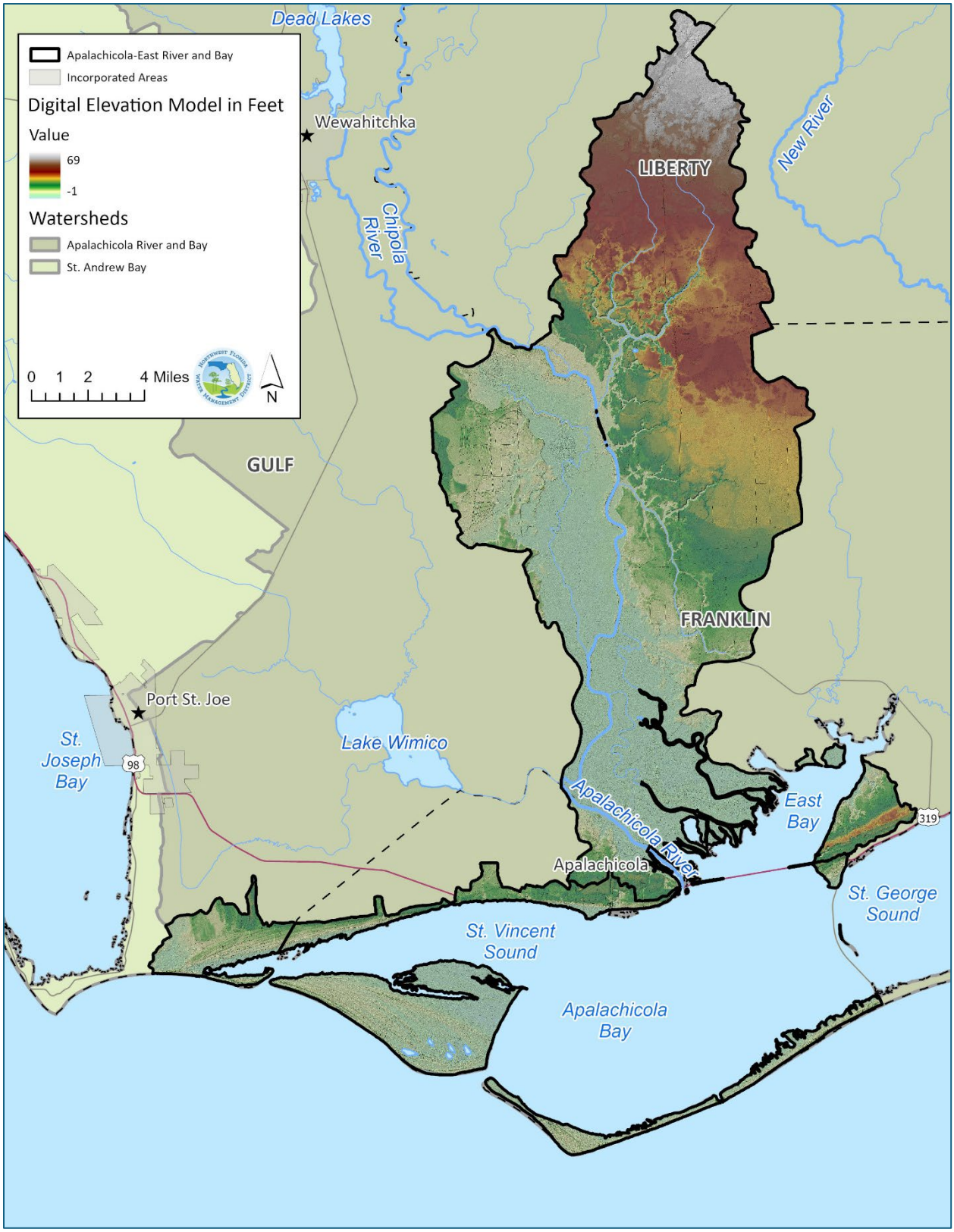

Figure 4: Land Surface Elevations in the Apalachicola River and Bay Sub-basin

Hydrology

The Apalachicola River is the most significant freshwater input to Apalachicola Bay and, in terms of flow, is the largest river in Florida. Within the basin, the Apalachicola River begins just downstream of the Chipola River/Apalachicola River confluence. Flow measured at the USGS Apalachicola River near Sumatra station is estimated to average 23,496 cubic feet per second (cfs) (USGS 2025). These flows are measured near the most upstream portion of the sub-basin and are the best representation of river flows into Apalachicola Bay.

Flows into the Apalachicola River are significantly affected by the U.S. Army Corps of Engineers, which maintains and operates numerous water control structures/dams located upstream along the Chattahoochee River. The Apalachicola River flows south, where it merges with the Chipola River south of Wewahitchka. The Apalachicola River continues flowing south to Apalachicola Bay (including East Bay) through multiple distributaries north of the U.S. Highway 98 bridge. These distributaries include the East River, St. Marks River, and Cypress Creek. In addition, Whiskey George Creek and Cash Creek flow into the East Bay portion of Apalachicola Bay.

Apalachicola Bay encompasses approximately 212 square miles where river and creek flows mix with coastal, marine waters of the Gulf of America. The priority sub-basin includes East Bay, St. Vincent Sound, and Apalachicola Bay.

Land Use

Natural land cover (wetlands, upland forests, and water) dominates the land use within the sub-basin, covering approximately 92 percent of the basin. Wetlands comprise the dominant land-use category, covering 96,211 acres and approximately 39 percent of the sub-basin (Figure 5, Table 1). Open water covers 79,791 acres and comprises about 32 percent. Upland forest covers 55,124 acres and approximately 22 percent.

The extensive natural land-use cover present within the sub-basin is due in large part to many publicly owned and managed lands including, but not limited to: the St. Vincent National Wildlife Refuge, the Apalachicola River Wildlife and Environmental Area, the Cape St. George State Reserve, Box R Wildlife Management Area, Apalachicola National Forest, and Tate's Hell State Forest. Publicly owned and managed lands within the basin total approximately 137,041 acres or 82 percent of the sub-basin, excluding open water (Figure 6). Approximately half of the public lands are managed by the state of Florida, half by federal agencies, and less than one percent by local governments.

Urban and built-up areas in the sub-basin, including the city of Apalachicola (Figure 7), Eastpoint, and portions of St. George Island, comprise a relatively minor portion of the land use (5,299 acres, 2.16 percent). Rangeland, barren land, and agriculture cover 5,943 acres (2.42 percent), 1,327 acres (0.54 percent), and 630 acres (0.26 percent), respectively.

Table 1. 2022 Land-Use Estimates for the Apalachicola River and Bay Sub-basin

Land Use Description	Land Use Code	Total Acreage	Percent
Agriculture	2000	630	0.26
Barren Land	7000	1,327	0.54
Rangeland	3000	5,943	2.42
Transportation, Communication, and Utilities	8000	1,464	0.60
Upland Forest	4000	55,124	22.43
Urban and Built Up	1000	5,299	2.16
Water	5000	79,791	32.46
Wetlands	6000	96,211	39.14
Total	N/A	245,790	100.00

Population and Population Growth

Population within the sub-basin is relatively low with 2020 estimated population of 6,887 individuals in the Apalachicola River and Bay sub-basin (U.S. Census Bureau 2022). Population growth in the Apalachicola River and Bay sub-basin has been modest. Between 2010 and 2020, the sub-basin grew by an estimated 738 individuals or 12 percent over the 2010 population of 6,149 individuals (U.S. Census Bureau 2010, 2022). Similarly, future population growth is estimated to increase by 839 individuals by 2045. This represents an increase in population of 12 percent.

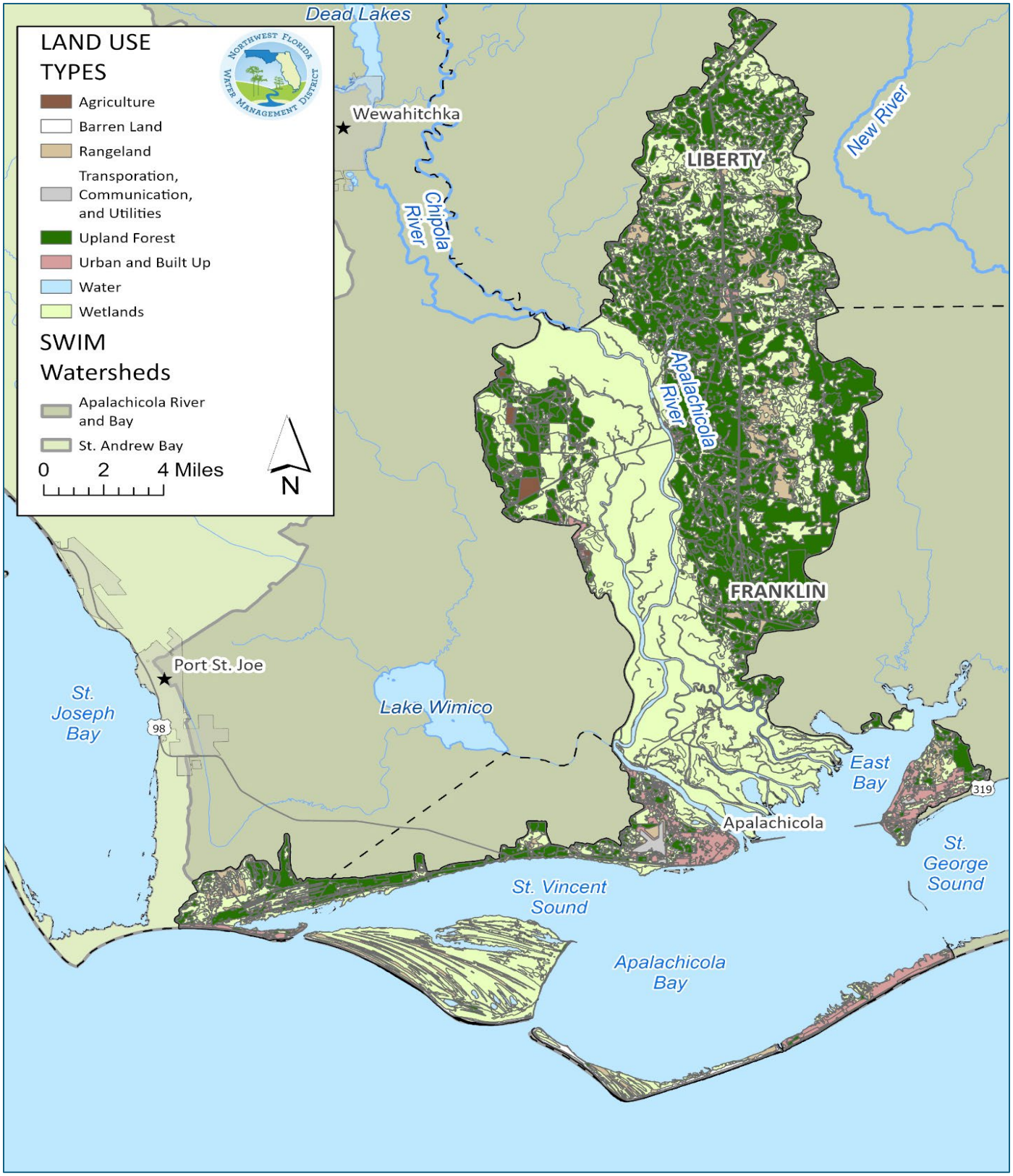

Figure 5. Land Use within the Apalachicola River and Bay Sub-basin

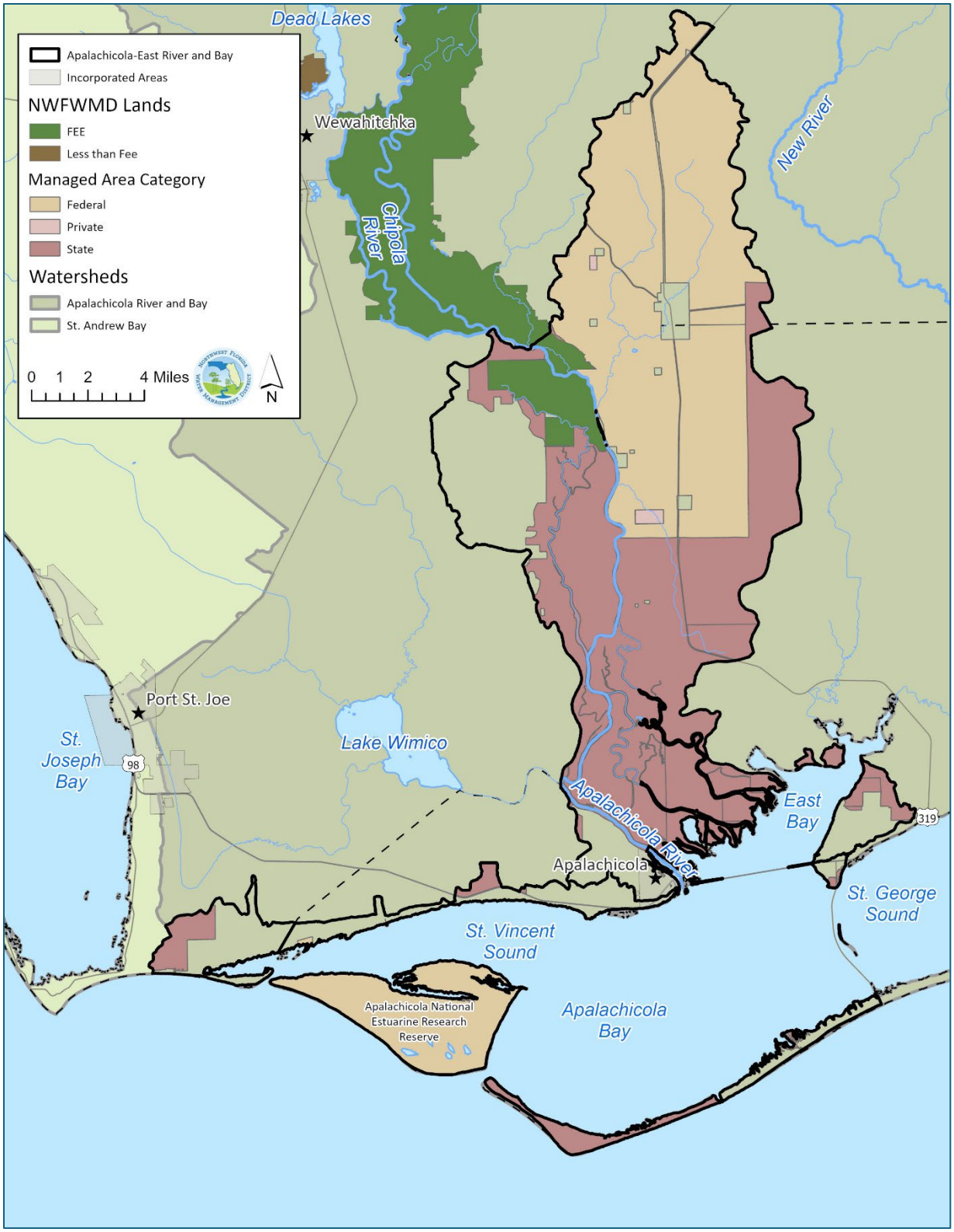

Figure 6. Managed Lands Within the Apalachicola River and Bay Sub-basin

Figure 7. City of Apalachicola and Apalachicola Bay

Floodplains and Flood Protection

Much of the Apalachicola River floodplain remains intact within the sub-basin. Of these habitats, stream and lake swamps (bottomland) are the dominant habitats and are primarily present in the upper portions of the sub-basin along the floodplain. Approaching Apalachicola Bay, this habitat is replaced by saltwater marshes as the primary floodplain habitat. Because of the relatively intact nature of the floodplain and lack of developed areas in upstream areas of the priority basin, riverine flooding associated with high rainfall/river flow events is not of great concern.

Flood zones with at least a one-percent annual chance of flooding (Flood Zones A, AE, AH, and VE) comprise approximately 142,299 acres (222.3 square miles or 84 percent) of the sub-basin (Figure 8, Table 2). Of these zones with at least one-percent chance of annual flooding, Flood Zone A, lands located near a river, stream, or lake, is the largest flood zone encompassing 43,294 acres (67.6 square miles) in terms of acreage. Areas with less than a one percent chance of annual flooding, Flood Zone X, are located in the developed areas (city of Apalachicola, Eastpoint, St. George Island) and northern undeveloped areas of the basin and comprise 26,468 acres or 16 percent of the basin.

Due to the numerous low-lying, coastal areas located within the sub-basin, the primary flooding concerns are associated with river, stream, or lake flooding (Flood Zone A) or storm surge events and the compound effects of sea level rise (Flood Zone VE). The municipalities (Apalachicola, Eastpoint, and St. George Island) are located in coastal areas making them more susceptible to coastal flooding. In

addition, these areas obtain their drinking water from groundwater wells located in the area. Due to the coastal nature of the area, water supply infrastructure is susceptible to damage from coastal flooding in addition to the potential for aquifer contamination from saline water.

Table 2. Flood Zones within the Apalachicola River and Bay Sub-basin

Flood Zone	Description	Acres	Square Miles
A	1% Annual chance of flooding	43,294	67.6
AE	1% Annual chance of flooding, near river, stream, or lake	85,047	133.0
AH	1% Annual chance of flooding, typically ponding with 1 to 3 ft of water	153	0.2
VE	1% Annual chance of flooding, coastal, threat of storm surge	13,805	21.6
X	Less than 1% Annual chance of flooding	26,468	41.4
Total		168,767	263.7

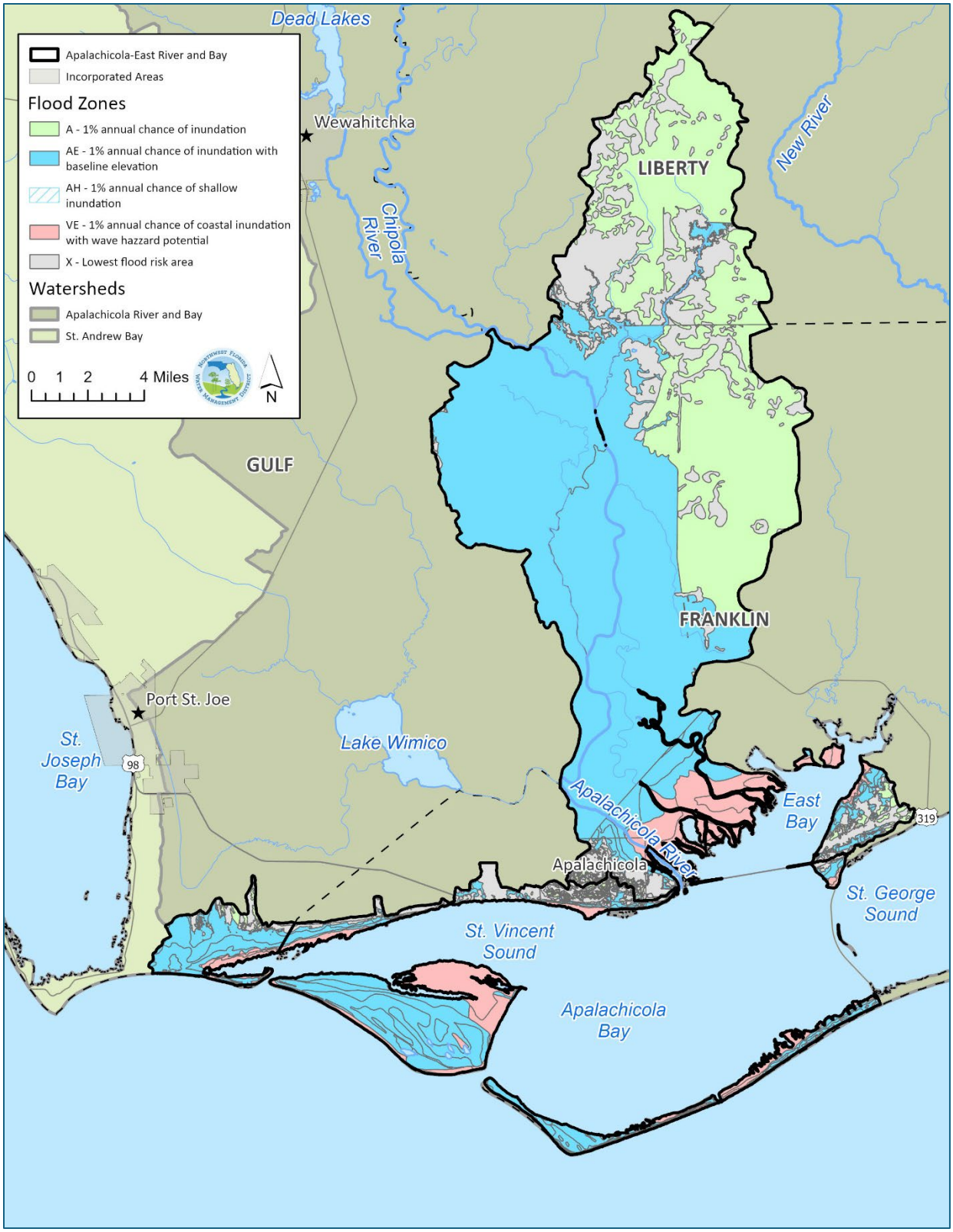

Figure 8. Flood Zones Within the Apalachicola River and Bay Sub-basin

Water Quality

A significant portion of the waterbodies within the sub-basin are described as not meeting water quality standards and are listed as impaired by the Florida Department of Environmental Protection. The East River is listed as impaired for bacteria (Figure 9, Table 3). The Apalachicola River is listed as impaired for total nitrogen (TN), metals, and biology. The Apalachicola River and Bay is listed as impaired for bacteria. The Brothers River is currently listed impaired for TN, biology, and dissolved oxygen (DO). A total maximum daily load (TMDL) has been adopted for bacteria in the Huckleberry Creek WBID (Water Body Identification Number) located near the Apalachicola Municipal Airport (FDEP 2004).

Apalachicola Bay, including St. Vincent Sound and East Bay, is currently not attaining water quality standards for bacteria (Figure 9, Table 3). This area is listed as impaired because the Shellfish Harvest Area Classification Program of the Florida Department of Agriculture and Consumer Services has not fully approved the shellfish harvesting classification. Areas might not be fully approved for multiple reasons including, but not limited to, conditional closures after rain events, proximity to pollution, and water quality violations.

The waters within the sub-basin are affected by threats to water quality common to Florida waters, including stormwater runoff and nonpoint source pollution, and challenges associated with wastewater management and treatment. Nonpoint source pollution is generated by stormwater runoff across the landscape carrying pollutants from diffuse sources to receiving waters. Common pollutants include nutrients, sediments, bacteria, pet and wildlife waste, fertilizers, herbicides, insecticides, oils and greases, effluent from onsite sewage treatment and disposal systems (OSTDS), and litter. Specific sources of water quality impairments are largely unconfirmed but may include residential yards, commercial and industrial sites, streets and parking lots, agricultural areas, construction sites, atmospheric deposition, and erosion sites. The highest rates of pollutant loading, including for nutrients, suspended solids, and biochemical oxygen demand, are typically associated with residential, commercial, industrial, and agricultural land uses (Harper 1999).

Septic tanks are a potential source of water quality impairment to the waters of the Apalachicola River and Bay, potentially contributing nutrients and bacteria to nearby waters. Known septic tanks in the basin are concentrated in developed areas including portions of the city of Apalachicola, Eastpoint, and St. George Island (Figure 9).

Table 3. Impaired Waters within the Apalachicola River and Bay Sub-basin

Waterbody	WBID*	Parameters Not Attaining Standards
Apalachicola Bay	1274	Fecal Coliform (SEAS, Shellfish Environmental Assessment Section - Listed based on change in shellfish harvesting classification (downgraded from approved to conditionally restricted) Iron – May be natural, pending further analysis be DEP Nutrients (Chlorophyll-a) Mercury – Fish tissue
East Bay	1274A	Fecal Coliform - Listed based on change in shellfish harvesting classification (downgraded from approved to conditionally restricted) Iron Nutrients (Chlorophyll-a) Mercury – Fish tissue, TMDL complete
St. Vincent Sound	1274B1	Fecal Coliform (SEAS, Shellfish Environmental Assessment Section - area not fully approved by the FDACS Mercury – Fish tissue
Direct Runoff to Bay	1274C	Fecal Coliform (SEAS, Shellfish Environmental Assessment Section - area not fully approved by the FDACS Mercury – Fish tissue
East River	1275A	Fecal Coliform (SEAS, Shellfish Environmental Assessment Section - area not fully approved by the FDACS Mercury – Fish tissue
East River (Shellfish Portion)	1275B	Fecal Coliform (SEAS, Shellfish Environmental Assessment Section - area not fully approved by the FDACS Mercury – Fish tissue, TMDL complete
Huckleberry Creek	1286	Nutrients (Macrophytes), TMDL established – Per photographs of abundance of invasive plant species
Direct Runoff to Bay	1288	Fecal Coliform (SEAS, Shellfish Environmental Assessment Section - area not fully approved by the FDACS Mercury – Fish tissue, TMDL complete
Money Bayou	1289	Fecal Coliform (SEAS, Shellfish Environmental Assessment Section - area not fully approved by the FDACS Mercury – Fish tissue, TMDL complete
St. Vincent Island	1292	Fecal Coliform (SEAS, Shellfish Environmental Assessment Section - area not fully approved by the FDACS Mercury – Fish tissue
Apalachicola River	375A	Mercury – Fish tissue
Apalachicola River	375B	Mercury – Fish tissue
Apalachicola River	375C	Biology, Stream Condition Index Iron Nutrients (Total Nitrogen) Mercury – Fish tissue
Brothers River	375I	Biology, Stream Condition Index Dissolved Oxygen (Percent Saturation) Iron Nutrients (Total Nitrogen)

*WBID = Water Body Identification Number

Sources: FDEP, Division of Environmental Assessment and Restoration – Impaired Waters, TMDLs, and Basin Management Action Plans Interactive Map
https://floridadep.gov/dear/water-quality-restoration/content/impaired-waters-tmdls-and-basin-management-action-plans

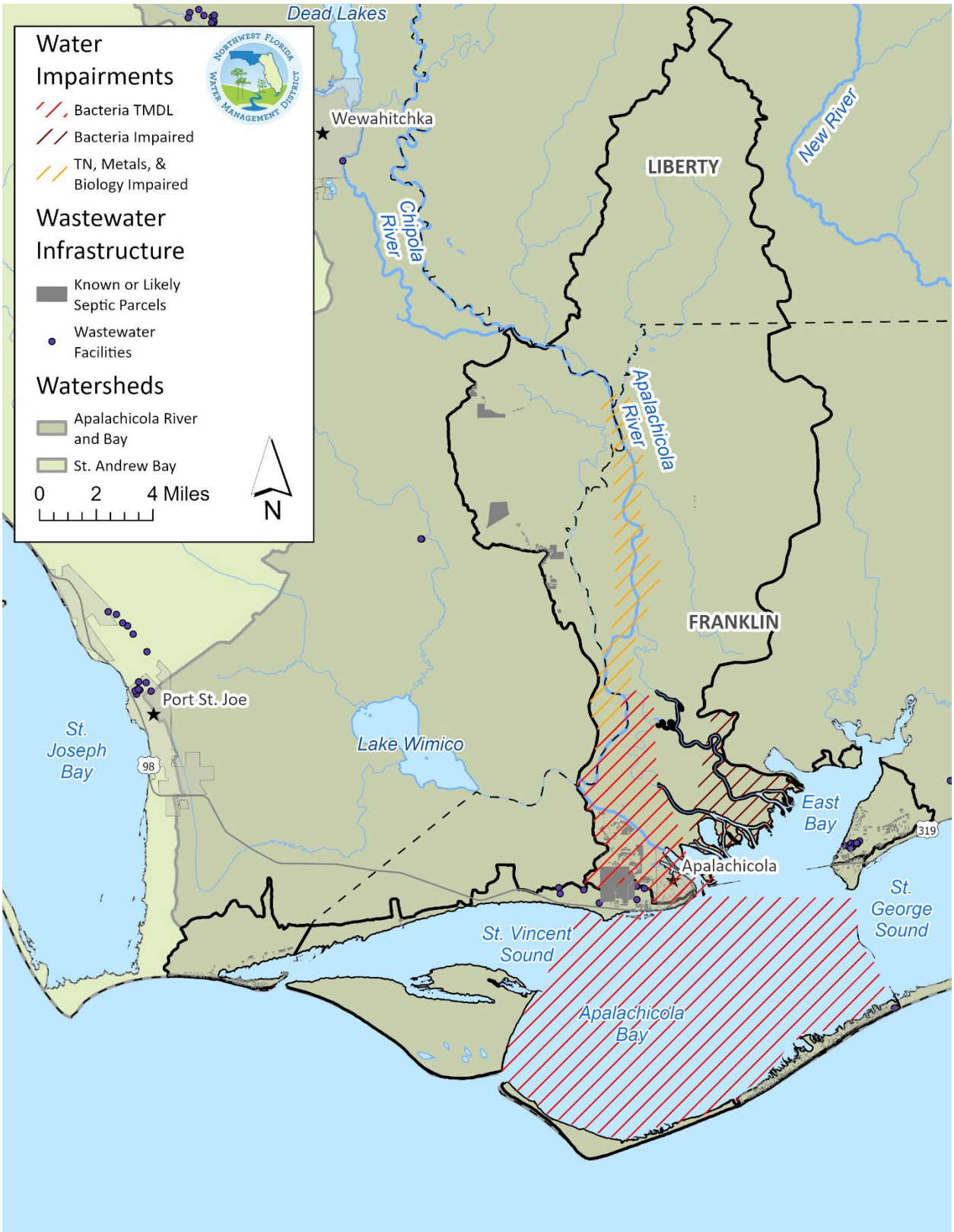

Figure 9. Impaired Waters and Known Septic Tanks in the Apalachicola River and Bay Sub-Basin

Water Supply

Public supply is the largest water use sector in the sub-basin. Public supply utilities include the city of Apalachicola, Eastpoint Water & Sewer District, Water Management Services, and Liberty County (Sumatra Water System). There are also private domestic self-supplied wells. The District estimates water demands for the three public supply utilities within the Franklin County portion of the sub-basin have increased by more than 15 percent in three years, from a total of 1.37 mgd in 2020 to 1.58 mgd in 2023.

This sub-basin is located within the Apalachicola Embayment groundwater region, which is characterized by poor connectivity between ground and surface waters, very low aquifer recharge, low groundwater availability, and decreasing water quality with depth (NWFWMD 2023). The major hydrostratigraphic units that comprise the groundwater flow system within this sub-basin are the surficial aquifer, the intermediate system, and the upper Floridan aquifer. The upper Floridan aquifer is the primary water source. The intermediate system serves as a supply source for domestic wells and some landscape irrigation wells. The surficial aquifer serves as a source for minor uses such as landscape irrigation, particularly on St. George Island (NWFWMD 2023).

The Floridan aquifer system is comprised of carbonate and dolomitic rocks that are more than 2,000 feet thick in southern Franklin County (NWFWMD 2023). The potentiometric surface of the upper Floridan aquifer ranges from a high of approximately 50 feet NAVD88 in Liberty County north of Sumatra to sea level at the coast. Groundwater flows south with offshore discharge to the Gulf of America. The freshwater zone within the upper Floridan aquifer is generally several hundred feet thick, and water quality generally deteriorates with increasing depth which can pose challenges for water supply development. The estimated depth to the bottom of the freshwater zone at Apalachicola Well No. 5 is 657 ft below land surface (NWFWMD 2023).

The low transmissivities of the upper Floridan aquifer in this area result in moderate to large drawdowns relative to the amount of groundwater pumped. When large quantities of groundwater are pumped near the coast, the upper Floridan aquifer potentiometric surface may decline below sea level, creating a gradient that can induce saltwater to slowly migrate toward inland production wells. At McCulloch well #1, located at the southern tip of the East Point peninsula, long-term data show a slight declining trend in aquifer levels and a slight increasing trend in chloride concentrations although water levels are just above sea level. This monitor well is located immediately south of an area of concentrated public supply groundwater withdrawals by Water Management Services and Eastpoint Water & Sewer District. Chloride concentrations in this well averaged approximately 10 mg/L in the 1980s. Data collected since 2008 indicate average chloride concentrations have increased to 65 mg/L with a trend of approximately 0.58 mg/L/year (NWFWMD 2023). Coastal wells may also be vulnerable to impacts from storm surge associated with hurricanes and tropical storms.

IV. CURRENT ISSUES AND CHALLENGES

Numerous issues regarding water quality, habitat quality, and water supply exist in the Apalachicola River and Bay sub-basin. This section describes the current data collection activities, known issues within the basin, knowledge and data gaps, and known risks and vulnerabilities.

Monitoring Stations and Trends

Multiple entities collect data in the Apalachicola River and Bay Priority Basin. Entities collecting data include federal, state, and regional agencies, in addition to other non-agency groups. Key data collection efforts are summarized below but are not comprehensive.

The Apalachicola National Estuarine Research Reserve (ANERR) was created to "provide a stable platform for long-term research on estuarine conditions and relevant coastal management issues" by providing resource mapping, modeling, monitoring, research, and scientific oversight (ANERR 2024). Monitoring conducted by ANERR in support of this mission includes abiotic variables (water quality, nutrients, and meteorology), biotic variables (fisheries data, zooplankton populations, oyster populations, marsh vegetation, seagrass coverage), and the Wetlands and Waterways Module-1 which combines multiple sources of data to help assess how marshes are responding to changes in sea level and climate. Details of ANERR's monitoring program can be found in its 2024 Apalachicola National Estuarine Research Reserve Monitoring Plan. Similar to ANERR, the Apalachicola Bay Aquatic Preserve conducts water quality monitoring, oyster monitoring, seagrass monitoring, benthic community monitoring, shorebird monitoring, sea turtle monitoring, soil analysis, and living shoreline monitoring (ABAP 2025).

The Florida Fish and Wildlife Conservation Commission (FWC) monitors oyster populations in Apalachicola Bay. In 2015, FWC was awarded permanent state funding to develop an oyster monitoring program where populations are monitored on a monthly, quarterly, and semi-annual basis. Additional details regarding the FWC's oyster monitoring in Apalachicola Bay can be found in the Oyster integrated Mapping and Monitoring Program Report (FWC 2019). The FWC Fisheries Independent Monitoring Program has been collecting data on fish abundance and population trends in Apalachicola Bay since 1998 (FWC 2025 FIM). The FWC Trip Interview Program conducts interviews and collects data from commercial fisherman in Apalachicola Bay (FWC 2025 FDM). Fisheries Dependent Monitoring section conducts interviews with recreational fishermen to estimate landings, harvest, and overall recreational fishing effort in Florida.

The NWFWMD has nine hydrologic monitoring locations within the priority basin. All stations monitor groundwater and are located in Eastpoint (n=6), the city of Apalachicola (n=2), and near Sumatra (n=1). Groundwater levels from either the Floridan or surficial aquifers are measured at all stations. One station, in Eastpoint, monitors groundwater quality in the Floridan aquifer. The frequency of groundwater monitoring is variable, from continuous to quarterly. The District currently does not conduct ongoing surface water quality or stage data collection in the sub-basin but does perform random sampling of rivers, small streams, and lakes across the District for FDEP and selected sites within any given year may occur within this sub-basin. In addition, the District does not currently have an active rainfall monitoring station in the sub-basin, but NOAA maintains a weather station in Apalachicola.

The United States Geological Survey, in cooperation with the Northwest Florida Water Management District, collects discharge, water level, and limited water quality data at the Apalachicola River near Sumatra (Station 02359170) located downstream of the Chipola River/Apalachicola River confluence.

Aquatic Habitat

The sub-basin has multiple water resource issues. Perhaps the most visible issue facing Apalachicola concerns oyster habitat and the associated fishery. Historically, Apalachicola was known for harvests of high-quality oysters, however by 2012 populations and associated harvests had declined significantly resulting in the federal government declaring a fishery disaster in 2012 (FWC 2025). Significant research and dedicated funding are focused on Apalachicola Bay to restore oyster populations including oyster population monitoring, shell clutching strategies, and potential restoration locations. The state of Florida has recently awarded approximately $5 million to support oyster reef recovery and water quality projects within Apalachicola Bay. Due to recent successes of restoration efforts for oyster communities, the state is reopening wild oyster harvesting on a limited basis in early 2026 while oyster stocks continue to improve.

Seagrasses comprise an important habitat for juvenile and adult fish and macroinvertebrate species. Seagrasses appear to be relatively limited within the Apalachicola Priority Basin (approximately 7 percent of the ANERR bay bottom) and are restricted to the shallow perimeters of the system (Livingston 1980, Continental Shelf Associates, Inc., 1985, ANERR 2024) (Figure 10). Seagrass limitation in Apalachicola Bay is thought to be a result of high turbidity limiting the photic zone. Dominant sea grass species in the bay have been described as shoal grass (*Halodule wrightii*), turtle grass (*Thalassia testudinum*), and manatee grass (*Syingodium filiforme*) in more saline parts of the bay. Closer to the mouth of the river where fresh water is dominant, widgeon grass (*Ruppia maritima*) and eelgrass (*Vallisneria americana*) are dominant. In many areas around the world and Florida, seagrass habitat has declined in recent years and/or can be highly variable. Losses of seagrass habitat can promote sediment movement and erosion and adversely affect the numerous recreationally and commercially important fisheries that rely on them. Seagrass communities are vulnerable to erosion from severe weather events, overgrazing by herbivores such as sea urchins, and reductions in water quality and clarity.

Extensive fresh, brackish, and saltwater marshes are found in the Apalachicola Priority Basin (ANERR 2024). Salt marshes may also be subject to adverse effects of erosion and sea level rise. These marshes provide important habitat for numerous aquatic and avian species and are critical for shoreline stabilization, particularly during periods of high wave activity. Living shoreline projects have been shown to be highly effective in protecting and helping to restore saltwater marshes. Salt marshes around Apalachicola Bay are dominated by black needlerush (*Juncus roemerianus*), cordgrasses (*Spartina* sp.), and saltgrass (*Distichlis spicata*) (Livingston, 1984a).

The Apalachicola floodplain is dominated by tupelo-cypress with mixed hardwoods forest, which covers approximately 41 percent of the lower river floodplain (ANERR 2024). Mixed hardwood forest is sub-dominant covering approximately 23 percent of the lower river floodplain. Mixed hardwood habitat is dominated by species such as water hickory (*Carya aquatica*), sweetgum (*Liquidambar styraciflua*), overcup oak (*Quercus lyrata*), green ash (*Fraxinus pennsylvanica*), and sugarberry (*Celtis laevigata*). Changes in floodplain forest composition are an additional concern within the sub-basin, particularly in the non-tidal portions of the Apalachicola River. Researchers found that, between 1976 and 2004, Apalachicola River floodplain communities have shifted away from communities requiring wetter conditions and toward communities favoring drier communities (Darst and Light 2008). These changes

have largely been attributed to reductions in flood duration. Drivers of flood duration reductions have been identified as alterations in Apalachicola River flow associated with consumptive uses in the broader ACF basin, the Jim Woodruff dam operation by the COE, and dredging sediment redistribution restricting flows into the numerous sloughs present along the system.

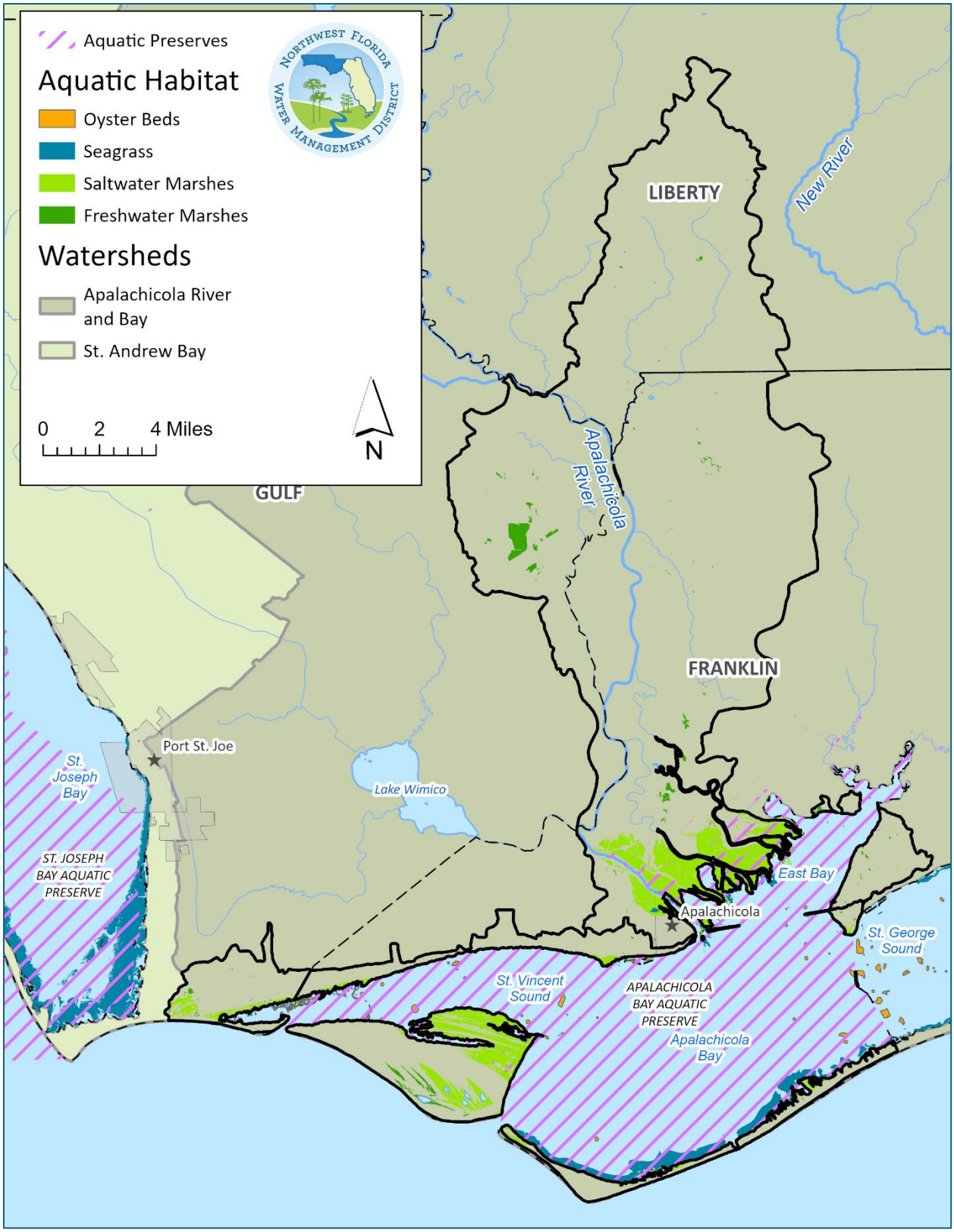

Figure 1010: Aquatic Habitat and Aquatic Preserves within the Apalachicola River and Bay Sub-basin

Water Quality

Maintaining good water quality is important for numerous reasons. Excessive nutrients in a water body can lead to eutrophication which can result in a proliferation of undesirable vegetation and algae with can result in reduced water clarity, dissolved oxygen, and other parameters which can adversely affect the native aquatic communities that residents rely on such as seagrasses and oysters. Water can also become contaminated with fecal waste making water unsafe to swim in and shellfish unsuitable for consumption. When groundwater quality is reduced, it can become unsuitable for human use or require more extensive and costly treatment.

Water quality remains an issue in multiple areas of the Apalachicola River and Bay priority sub-basin. Challenges associated with water quality are described previously and include impairments for total nitrogen, metals, biology, bacteria, and dissolved oxygen. Franklin County has identified stormwater issues in areas of the north part of Eastpoint. These issues reportedly arise due to poor drainage associated with local rainfall events and have the potential to affect water quality in downstream receiving waterbodies.

Sedimentation is also a significant issue in portions of the sub-basin. Sedimentation issues are primarily associated with the redistribution of sediments associated with dredging activities for commercial navigation along the Apalachicola River prior to 2002. During this period, dredging spoils were disposed of on the banks of the Apalachicola River where they would be redistributed downstream during periods of high river flow. These sediments were often redistributed to the mouths of the numerous sloughs and small creeks and rivers where they would reduce the hydrologic connection between the floodplain and river resulting in slough waters with low dissolved oxygen and allowing the encroachment of non-wetland vegetation species into the floodplain. The Apalachicola Riverkeeper recently completed phase I of a restoration project on Douglas Slough and Spiders Cut. Sediment from the East River was also removed to increase flow through this distributary into East Bay. Efforts to prioritize additional sloughs for restoration are underway as phase II of the Apalachicola River Slough Restoration Project.

Changes in floodplain forest composition are an additional concern within the sub-basin, particularly in the non-tidal portions of the Apalachicola River. Researchers found that between 1976 and 2004, Apalachicola River floodplain communities shifted away from communities requiring wetter conditions and toward communities favoring drier communities (Darst and Light 2008). These changes have largely been attributed to reductions in flood duration. Drivers of flood duration reductions have been identified as alterations in Apalachicola River flow associated with the consumptive uses in the broader ACF basin, the Jim Woodruff dam operation by the COE, and dredging sediment redistribution restricting flows into the numerous sloughs present along the system.

Water Supply

Water supply is also an issue within the Apalachicola River and Bay sub-basin. Production wells in this area tend to have low yields and water quality deteriorates with increasing depth. Water supply wells located near the coast are susceptible to storm surge and the long-term effects of sea level rise and saltwater intrusion. Storm surge also has the potential to impact associated water supply infrastructure such as pipelines and pump stations. There are localized water quality issues at some production wells such as the naturally high hydrogen sulfide levels at the city of Apalachicola's wells, which necessitate additional treatment prior to distribution.

Aging and/or outdated infrastructure may also be an issue affecting some water supply utilities. Aging water system pipes can be subject to leakage and infiltration, necessitating repair or replacement. Population growth and new development may also require increased pipe diameters or water line extensions. Associated improvements may include booster pumps, modernized metering and data systems, and looping and sectionalization of water distribution systems.

Lastly, utilities must be responsive as new regulations for drinking water are developed, such as those for lead and copper historically, and new contaminants such as PFAS. PFAS is a category of human-made chemicals that have been widely used in a variety of products and industries, such as firefighting foams, protective coatings, and surfactant applications among many other uses and products (National Groundwater Association, 2025). The public supply utilities within the sub-basin are relatively small and are within a Rural Area of Economic Opportunity, where financial resources to address emerging contaminant issues are limited.

Data and Knowledge Gaps

While a significant amount of data and knowledge concerning the sub-basin basin has been developed, information gaps remain. Often these gaps are associated with newly arising issues in areas historically with few concerns, resulting in data collection being unwarranted to date. In addition, data may become outdated and may no longer be representative of current conditions. In addition, as new issues arise, data may not be available to fully understand the sources, extent, or potential solutions to those issues.

Water Quality – Water quality can be highly variable, depending on precipitation, freshwater inflow, and seasonal conditions. Infrequent sampling may be inadequate for capturing temporal effects of individual events or for evaluating trends over periods of months or years. Additionally, localized conditions may not be reflected by widely distributed monitoring stations. Substantially increasing the temporal and spatial density of water quality monitoring, at least for one-to-two years, would provide new information and an improved assessment of water quality in the sub-basin. Expanding monitoring to a higher temporal resolution can help identify chronically occurring, short term water quality impairments such as increases in fecal coliform or nitrate contamination during periods of high rainfall, population increases with tourism, etc. Such events may not be detectable with annual or bi-annual monitoring efforts.

Sediment Data – Sediment data are indicative of the quality of benthic habitats, as well as potential effects from sedimentation, nutrient enrichment, or contaminants. Sediments integrate processes over time and can therefore be useful in assessing long-term impacts. Legacy sediment quality data published by the Florida Department of Environmental Protection (Seal et al. 1994) indicate a number of stations in the planning area; however, the data might not be representative of current conditions. These legacy sediments and contaminants, while often buried in the sediment, can become distributed in the water column during severe storms (ex. tropical storms and hurricanes) leading to cascading effects after the storm. As a result, recent analysis of sediments and legacy chemicals is imperative to understanding and preserving water quality into the future.

Sedimentation – Sedimentation has been described as the redistribution of sand and sediment during periods of increased flows, rainfall, etc. Unconsolidated sediment had been deposited along the banks of the Apalachicola River for decades until the adverse effects of this sediment being redistributed downstream resulted in the denial of future dredging activities in 2002. The sediment along the banks was moving downstream and blocking the flows from entering the numerous sloughs and distributaries

present along the Apalachicola River. These blockages altered flows in the region resulting in adverse changes to hydrology and ecosystems.

Biological data – Continued updates to evaluations and maps of floodplain vegetation, oyster populations, and seagrass communities would facilitate identifying trends and risks for water quality, habitat quality, and coastal resilience. While these data are often regularly collected, data collection should be continued to monitor trends into the future. These data are also invaluable for assessing potential successes of restoration efforts.

Risks and Vulnerabilities

The Apalachicola River and Bay sub-basin is particularly vulnerable to storm surge, sea level rise, and other impacts associated with coastal development. In addition to physical damage to personal property and businesses from coastal flooding, water supply and wastewater infrastructure can be susceptible. This includes local supply wells, transmission lines, pump stations, and wastewater treatment lines. In many cases, this infrastructure may be aging and unable to meet the needs of residents associated with future growth.

Sediment redistribution is a known challenge in the basin and presents a significant vulnerability to the basin. As stated previously, sediment has been documented to reduce flows into the numerous floodplain sloughs and distributaries feeding the East Bay portion of Apalachicola Bay. This sedimentation has the potential to affect ecological communities within the basin. The Apalachicola River and Bay sub-basin remains vulnerable to future sediment redistribution which can further impair the floodplain connectivity to the Apalachicola River and flow patterns through the distributary network into East Bay. Further sediment redistribution may adversely affect freshwater flows into the bay, reduce detrital transport into the bay, etc., which makes oyster communities, etc., more vulnerable and less resilient.

Numerous natural habitats are also at risk within the Apalachicola River and Bay sub-basin. Floodplain communities have experienced shifts toward more non-wetland species in recent years. These changes are thought to be associated with changes in inundation depth and frequency of the Apalachicola River floodplain. These reductions are thought to be driven by sediment blocking the numerous sloughs supplying the floodplain and reduced flows in the Apalachicola River although more research may be needed.

Oyster reef communities, which are vital to the ecological and cultural communities of the region, have declined significantly and remain vulnerable to changes in freshwater inflows, water quality, and sea level rise. Reduced water flows, lack of suitable substrate for oyster spat to attach, and water quality are thought to be among the primary drivers of the decline in oyster reefs. In addition, the effects of sea level rise on the resiliency of oyster communities in Apalachicola Bay remains poorly understood.

Water quality is not meeting standards in many areas of the basin. While the sources of, and solutions to, these trends may require additional data collection and evaluation, water quality remains a concern for the basin. Adverse effects of unsuitable water quality make the many communities relying on the Apalachicola River and Bay vulnerable to concerns for long-term health and sustainability.

V. MANAGEMENT STRATEGIES AND PROJECTS

The complex and diverse challenges within the sub-basin require a comprehensive strategy and varied solutions to improve conditions in the area. One such strategy is addressing the basin using a watershed management approach This strategy requires a watershed to be considered in its entirety when identifying and implementing solutions to challenges. Table 5-1 below summarizes general management strategies likely to be beneficial in addressing the water resource challenges described for the Apalachicola River and Bay sub-basin. Approaches identified may address multiple issue areas and objectives, reflecting the interrelatedness of water resource attributes and conditions and the fact that most projects can be designed to achieve multiple complementary outcomes.

Proposed Activities and Projects

Following public meetings, consultations with local utilities, municipalities, etc., and requests for potential projects, multiple activities and projects are proposed to address current water resource issues within the Apalachicola River and Bay sub-basin. These activities and projects are described below. Multiple projects and funding needs have been identified to date and are provided in Table 5. These projects and funding needs are likely not exhaustive and it is expected that additional needs will be identified by interested parties as the NWFWPP develops and is implemented.

Improvements to water supply for the Apalachicola Priority Basin are imperative. A regionalization study has been proposed to investigate the benefits and feasibility of a regional water utility. This study will identify alternative locations for groundwater wells to ensure safe drinking water to residents of the Apalachicola Priority Basin with reduced vulnerability to the effects of sea level rise, storm surge, etc. Similarly, the city of Apalachicola has identified the need for a new water supply well to help meet the needs of the community and improve resilience in future years.

Multiple stormwater type projects have been proposed in the Apalachicola Priority Basin. Franklin County has reported flooding for residents in portions of Eastpoint following rainfall events, so this project is aimed at improving local stormwater flooding conditions. In addition, erosion is occurring along the St. George Causeway. The FWC is proposing a living shoreline project to help prevent future erosion to this area as well as create new hardbottom habitat for oysters.

Multiple projects identified Iin the Apalachicola Priority Basin are related to natural habitat restoration. The restoration of sloughs and distributaries by removing sediment arising from COE dredging activities has been initiated by the Apalachicola Riverkeeper, with restoration efforts already being completed in Douglas Slough, Spiders Cut, and the East River. However, numerous other waterbodies within the ACF basin and the Apalachicola Priority Basin have been identified as requiring restoration. The Aquatic Conservation and Restoration Alliance has proposed a project aimed at distributing bivalve (oyster and clam) young throughout Apalachicola Bay in an effort to help restore populations of these commercially, recreationally, and ecologically important species.

Many areas of the Apalachicola Priority Basin have relatively high concentrations of septic tanks which can result in adverse impacts to local water quality. Septic-to-sewer projects, combined with expanding the service area of sewer availability, can result in significant improvements to local water quality. These efforts would be implemented by local utilities in the area.

Table 4: Management Strategies to Address Water Resource Issues Within the Apalachicola River and Bay Sub-basin

Management Strategy	Issue Areas Addressed	Objectives	Description
Stormwater Retrofits	• Water Quality • Aquatic and Wetland Habitats • Flooding and Coastal Resilience	• Improved water quality • Improved flood protection and resilience • Sustained aquatic and wetland ecosystems	Retrofit stormwater systems to incorporate BMPs to improve flood protection and downstream water quality. Identify specific BMPs effective for treating bacteria, suspended solids, and nutrients
Septic Tank Abatement	• Water Quality • Aquatic and Wetland Habitats	• Improved water quality • Sustained aquatic and wetland ecosystems	Connect structures served by OSTDS to central sewer systems. Alternatively, modern nutrient reducing septic systems can be installed. Either approach would require funding to incentivize connections or conversions.
Sanitary Sewer System Improvements	• Water Quality • Aquatic and Wetland Habitats	• Improved water quality • Sustained aquatic and wetland ecosystems	Design, permitting, and construction of retrofits to existing sanitary sewer systems to reduce inflow and infiltration of stormwater.
Improve water supply	• Water Supply	• Improve water supply by improving resiliency and source diversification	Identify additional water supply wells and improve, update, or replace infrastructure. Evaluate the socioeconomic benefits of a regional approach to water supply management and development.
Green Infrastructure	• Water Quality • Aquatic and Wetland Habitats • Flooding and Coastal Resilience	• Improved water quality • Improved flood protection and resilience • Sustained aquatic and wetland ecosystems • Improved public access	Apply "nature-based," green infrastructure methods for multipurpose projects. Projects frequently involve integrating stormwater BMPs, buffer zones, greenways, and living shorelines into public parks and transportation systems.
Reuse of Reclaimed Water	• Water Quality • Water Supply Sustainability	• Improved coastal water quality • Enhanced sustainability of water resources	Construct reclaimed water treatment, storage, transmission, and distribution systems to reduce potable water demand and to reduce wastewater discharges.

Management Strategy	Issue Areas Addressed	Objectives	Description
Monitoring and Assessment	• Water Quality • Aquatic and Wetland Habitats • Flooding and Coastal Resilience	• Improved understanding of current conditions and trends	Intensive water quality monitoring over the course of one-two years will provide a reliable assessment of current conditions and trends. Periodic updates to assessments and maps of seagrasses and oysters will identify trends and risks for water quality, habitat quality, and coastal resilience.
Ecosystem(s) Restoration	• Aquatic and wetland habitats	• Sustained aquatic and wetland ecosystems	Restoration activities include: • Oyster ecosystem restoration • Living shorelines restoration • Seagrass restoration • Wetland restoration

Table 5: Proposed Projects and Funding Needs Identified in the Apalachicola River and Bay Sub-Basin

Project Name	Lead and Project Partners	Water Resource Benefits	Description	Estimated Total Cost	Estimated Funding Need
Stormwater Projects	Franklin County	• Alleviate flooding • Improve water quality	Conceptual projects to alleviate flooding and water quality concerns in Eastpoint associated with stormwater.	TBD	TBD
St. George Causeway Living Shoreline	FWC	• Prevent erosion along the causeway • Creates aquatic habitat • May improve water quality	Living shorelines project to help prevent erosion to the St. George Causeway Island.	TBD	TBD
New Supply Well	City of Apalachicola	• Improve water supply reliability	Construction of a new supply well for the City of Apalachicola.	TBD	TBD
Slough Restoration	Apalachicola Riverkeeper	• Restore hydrology of Apalachicola River sloughs and distributaries • Enhances riparian habitat	Slough and distributary restoration to restore hydrology of Apalachicola River Sloughs.	TBD	TBD
Gulf Coast Drone Bivalve Seeding Project	Aquatic Restoration and Conservation Alliance	• Restore bivalve communities in Apalachicola Bay • Improve water quality	The funding will be used for a project using heavy lift drones to deploy bivalve (clams, oyster and scallop) seed into existing oyster habitat and seagrass meadows with more coverage and density than traditional methods previously used to jump start rejuvenation of depleted areas. The goal is to deploy over 30-40 million 1-6 mm bivalve seeds.	$2,500,000	$2,500,000

Septic to Sewer Conversion	City of Apalachicola Franklin County	• Improve water quality	This funding will help convert septic tanks to sewer for wastewater treatment. Funding may be used to help install infrastructure needed to make connections	TBD	TBD
Water Supply Utility Regionalization Study	NWFWMD	• Optimize water supply efforts	An evaluation to help determine the benefits of a regional water supply utility and potential locations for future water supply development	$350,000	$350,000
Total				$2,850,000	$2,850,000

VI. MONITORING, METRICS AND NEXT STEPS

Setting clear resource protection and restoration goals with associated metrics and monitoring to evaluate progress are essential for achieving the stated objectives. Metrics will be developed cooperatively with local governments and other cooperators to track completion and quantify the benefits of funded projects and monitor trends in environmental indicators. This sub-basin work plan will be updated periodically using adaptive management principles to ensure continued effectiveness.

Examples of metrics for the Apalachicola River and Bay Sub-basin may include:

- Sub-basin-level:
    - Water quality data and trends
    - Areas of mapped oyster habitat suitable for harvest
- Project level:
    - Project status (percent complete)
    - Quantifiable project benefits achieved
    - Project targets/objectives met
- Funding and expenditures:
    - Percent of current budget allocated
    - Percent of budget remaining
    - Total estimated project funding cost
    - Total estimated remaining project funding needs

Maintaining a publicly accessible website for the program will facilitate effective monitoring of work plan implementation, project status and metrics, funding needs, and water quality and habitat trends. Additionally, the website will enhance public awareness regarding water resources within the Apalachicola Priority Basin. The website will include information regarding:

- Project status
- Funding and expenditures
- Water quality trends

During 2026, the District, local governments, and state and regional agencies will work collaboratively to refine and prioritize critical water resource issues, as well as the strategies and projects to address the identified issues within the Apalachicola River and Bay sub-basin. Work plans are anticipated to be finalized by the summer of 2026. As program funding is obtained, the District and project partners will implement the prioritized projects approved by the District's Governing Board.

Work plans will be updated periodically to reflect progress achieved, new information, or additional proposed projects and remaining funding needs. A program website will be created to track project progress, metrics, and expenditures and to share information regarding trends in water quality and aquatic habitat and water supply improvements achieved by program implementation.

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APPENDIX A. SUB-BASIN PRIORITIZATION METHODOLOGY

Overview of Prioritization Process

The District's 114 HUC-10 sub-basins were analyzed for water quality, water supply, and natural areas criteria using multiple different GIS layers. From this initial analysis, the top-ranked basins from each watershed were selected based on a natural break in scores within each watershed. In total, 34 HUC-10 candidate basins were selected from the seven watersheds. The District then hosted public workshops for each watershed to discuss the candidate sub-basins with the public. Online surveys were also created to expand the opportunity for public input on the sub-basins. The District also reviewed planned projects within the 34 candidate sub-basins based on available information from local governments and utilities. The public feedback from the workshops, online surveys, and project information were then scored and added to each sub-basin's GIS analysis scores to create the final overall scores. The top-ranked candidate sub-basin per watershed was then recommended for the development of a sub-basin workplan. The recommended priority sub-basins were presented to and approved by the District Governing Board on December 10, 2025. Additional details regarding the prioritization process are provided below.

Public Input

During October 2025, the District hosted public workshops for each of the seven watersheds to share information about the program and obtain input regarding the prioritization of sub-basins for work plan development. In addition to the public meetings, the District solicited public input regarding the selection of priority sub-basins within each watershed including water resource areas of concern via online surveys. This public input was a major component in the prioritization process. Scoring was based on survey priority rank responses where basins receiving the highest priority votes for their watershed were awarded the highest points.

Consideration of Proposed Projects

The availability of proposed projects within sub-basins was also considered in the prioritization process. The District requested and reviewed information on current and future projects related to water quality improvement, habitat restoration, and water supply from the public, local governments, and utility companies. Scoring was based on project status where basins including shovel-ready projects received the highest points.

Water Quality Criteria

GIS Layers Assessed: FDEP Statewide Basin Management Action Plan (BMAP) General Areas, FDEP Waters Not Attaining Standards (WNAS), FDEP Alternative Restoration Plans, FDEP Total Maximum Daily Load (TMDL), EPA Established Total Maximum Daily Load (TMDL), NWFWMD Drinking Water Facilities, NWFWD Locally Provided Water Infrastructure, NWFWMD Treatment and Pump Stations, FDEM Storm Surge Zones Tiled, FEMA Flood Special Hazard Area

Analysis Process:

GIS layers depicting the features BMAP area, WNAS, Alternative Restoration Plans, FL TMDL, EPA TMDL, and Storm Surge Zones were overlayed on the District HUC-10 layer and inspected to verify what basins contain each target feature. All basins containing the targeted feature were then awarded points for that parameter.

The FEMA Flood Special Hazard layer was queried to isolate areas susceptible to a 1% chance of annual flooding. The new layer was then spatially isolated to the District HUC-10 basin layer. The sub-basins

were then evaluated for total acreage and percent of the sub-basin represented by floodplain and scored using a four-quartile system.

The NWFWMD Drinking Water Facilities, Locally Provided Water Infrastructure, and Treatment and Pump Stations (critical assets) were spatially isolated to the FEMA Flood Special Hazard layer then spatially joined to the District HUC 10 layer. The count of each identified critical asset in the FEMA Flood Special Hazard Layer was then summed per sub-basin and scored using a using a four-quartile system.
Scores for all water quality fields were then summed to create the sub-basins overall water quality score.

Water Supply Criteria

GIS Layers Assessed: NWFWMD Planning Region 2, NWFWMD Water Resource Caution Areas, NWFWMD Areas of Resource Concern, FGS Potentiometric Surface Map, Census Bureau 2010 and 2020 Census Block Points

Analysis Process:

GIS layers depicting the features NWFWMD Planning Region 2, Water Resource Caution Areas, Areas of Resource Concern, and FGS Potentiometric Surface Map were overlayed on the District HUC-10 layer and inspected to verify what basins contain the target feature. The FGS Potentiometric Surface Map was analyzed by identifying all sub-basins intersecting and located south of the zero-contour line. All basins containing the targeted feature were then awarded points for that parameter.

The 2010 and 2020 Census Block points were both joined to the District HUC-10 layer and exported to excel. The difference in population and the percent change from 2010 to 2020 was then calculated and sorted from largest to smallest. Each sub-basin was then scored individually for both parameters where 1 equals the smallest amount of population or percent of population change. The two scores were then averaged together and re-scored using a 1-to-10-point scale where 1 represents the lowest 10% of the averaged population score. Additionally, an estimated future population change was also conducted by analyzing BEBR data. The 2020 Census Block Points were joined with the District counties layer and exported. All exported points were then sorted by county and summed. The percent of the county population was calculated for each point's unique ID number. The determined percentage was then multiplied by the estimated 2045 BEBR County Population Estimate to give each point its estimated 2045 estimated population. Using the points' unique ID number, each point was matched to its sub-basin using the previous join to the District HUC-10 layer. The populations for each sub-basin were then summed. The future estimated population was then assessed using the same process as the one described above for the other population analyses. The sum of both scores was then averaged.
Scores for all water supply fields were then summed to create the sub-basins overall water supply score.

Natural Areas Criteria

GIS Layers Assessed: NWFWMD 2010 Land Use, NWFWMD 2022 Land Use

Analysis Process:

All 6000 level Florida Land Cover Classification System (FLUCCS) codes were isolated for the 2010 and 2022 layers. Both revised layers were then isolated to the District HUC-10 basins. The natural areas exported were then summed by sub-basin. The total acreage difference and percent acreage change was then calculated for each sub-basin and scored on a 1 to point 10 scale where 1 represents the least amount of natural area change. The two scores for each sub-basin were then added together.

Table A.1 GIS Layers Assessed Reference Table

Layer Name	Year Data Updated	Location
FDEP Statewide Basin Management Action Plan (BMAP) General Areas	2025	Statewide Basin Management Action Plan (BMAP) General Areas | Florida Department of Environmental Protection Geospatial Open Data
FDEP Waters Not Attaining Standards (WNAS)	2025	Waters Not Attaining Standards (WNAS) | Florida Department of Environmental Protection Geospatial Open Data
FDEP Alternative Restoration Plans	2025	Alternative Restoration Plans | Florida Department of Environmental Protection Geospatial Open Data
FDEP Total Maximum Daily Load (TMDL)	2025	Florida Total Maximum Daily Load (TMDL) | Florida Department of Environmental Protection Geospatial Open Data
EPA Established Total Maximum Daily Load (TMDL)	2025	EPA Established Total Maximum Daily Loads (TMDLs) | Florida Department of Environmental Protection Geospatial Open Data
NWFWMD Drinking Water Facilities (Isolated from parent data set by District)	2024	Critical Infrastructure | Florida Department of Environmental Protection Geospatial Open Data
NWFWD Locally Provided Water Infrastructure (Isolated from parent data set by District))	2024	Critical Infrastructure | Florida Department of Environmental Protection Geospatial Open Data
NWFWMD Treatment and Pump Stations (Isolated from parent data set by District)	2024	Critical Infrastructure | Florida Department of Environmental Protection Geospatial Open Data
FDEM Storm Surge Zones Tiled	2022	Storm Surge Zones | Florida State Emergency Response Team
FEMA Flood Special Hazard Area	2024	FEMA Flood Zones | Florida Department of Environmental Protection - MapDirect
NWFWMD Planning Regions	2023	Water Supply Planning Regions | NWFWMD - Open Data
NWFWMD Water Resource Caution Areas	2023	Water Resource Caution Area | NWFWMD - Open Data

NWFWMD Areas of Resource Concern	2023	Resource Concern Area | NWFWMD - Open Data
FGS Potentiometric Surface Map (Isolated from parent data set by District)	2025	Upper Floridan Aquifer Potentiometric Surface | Florida Department of Environmental Protection Geospatial Open Data
US Census Bureau 2010 Block Points	2025	USA Census BlockGroup Points - Overview
US Census Bureau 2022 Block Points	2025	USA Census Block Points - Overview
NWFWMD 2010 Land Use	2024	District Land Use 2010 | NWFWMD - Open Data
NWFWMD 2022 Land Use	2024	NWFWMD 2022 Land Use | Florida Department of Environmental Protection Geospatial Open Data