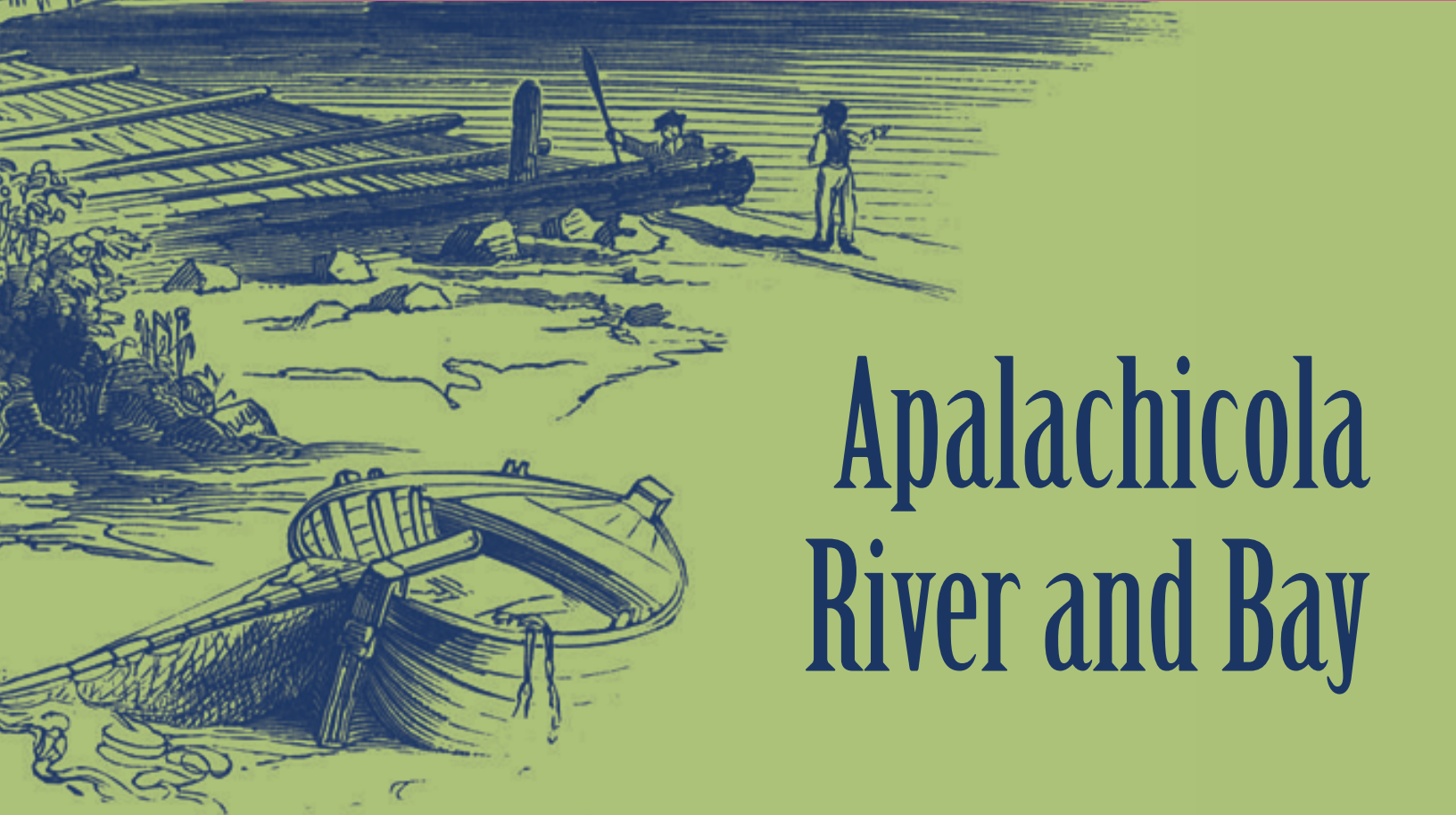


LOOKING AT THE BIG PICTURE



Apalachicola River and Bay

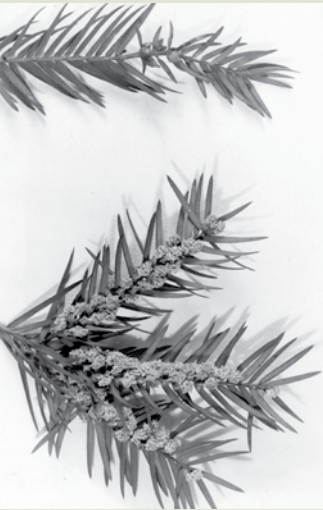
Wild Treasure

The Apalachicola River, Florida's first in flow, has been described as the lifeblood of many basin communities. It has conveyed plants, animals and people along its course from the foothills of the Appalachian Mountains to the Gulf of Mexico. For centuries it has provided sustenance to river societies and connected them to the outside world.

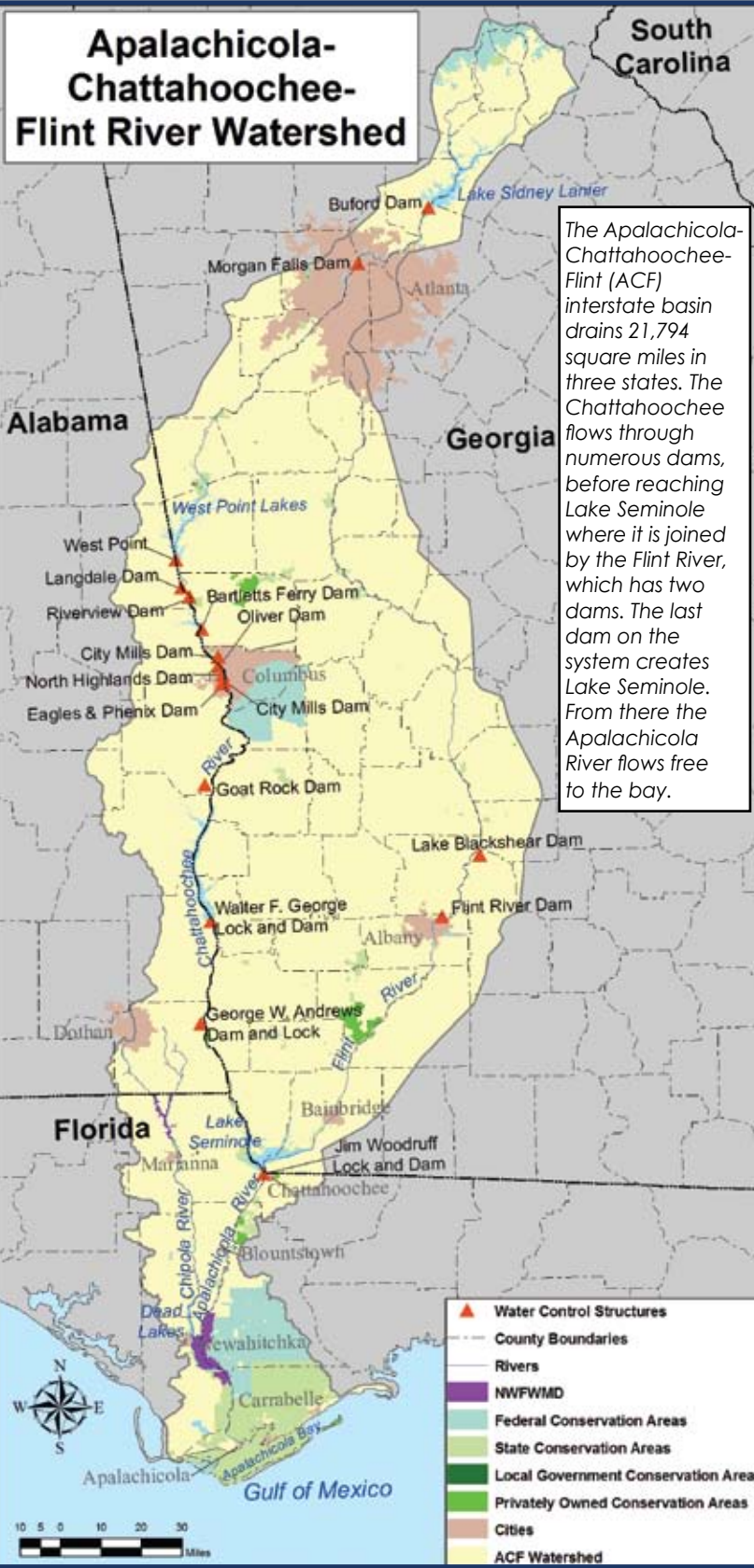
Its vast floodplains, tributaries and upper river spawn a diversity of aquatic life. Its ravines harbor botanical Edens that intermix northern plants with southern plants moving in during climate shifts. Indian traders and Spanish explorers embarked from the Apalachicola on journeys to the Mississippi River and beyond. The river became a frontier of Indian-settler battles and botanists traveled these woods intrepidly, discovering plants new to science.

Steamboats arrived in the 1820s and ran the river for a century carrying cotton, plow points, groceries and cordwood. However, recurring drought shifted cotton transport ever more to rail and road by the 1850s, and cotton was surpassed by logging, turpentine and fishing from the mid-river to the bay. By century's turn, shopping parties to Apalachicola danced on gilded steamboats lit by tungsten that was mined in Liberty County decades before rural electrification lit its first bulbs.

Forests throughout the basin were clear cut and the flood of 1929 devastated towns from Atlanta to Apalachicola. Yet adding more dams could not control the floods of 1936, '48 and '61. Cars, pavement and bridges arrived by the 1920s and '30s and extended commerce ever further, creating international markets for oysters, shellfish and lumber. Shipping interests continued to channelize the river, building more dams and dredging deeper channels until dredge spoil covered a quarter of Apalachicola's banks and spoil dammed productive floodplains. Finally in the early 2000s Florida moved to end dredging and restore the alluvial river's rich bottomlands.



Torrey taxifolia.
Florida Archives



The threatened Gulf sturgeon (a prehistoric species) spawns and finds critical habitat in the Apalachicola system (University of Florida-USFWS study).
Gabby Saluta, USFWS

Wetland Mitigation and Restoration

To facilitate wetland mitigation and restoration opportunities in the Apalachicola watershed, the District has entered an agreement with the US Army Corps of Engineers to employ regionally significant mitigation for unavoidable wetland impacts caused by Florida Department of Transportation (FDOT) projects. Wetland functions are critical for improving surface water quality, attenuating floods that threaten life and property and providing habitat for fish and wildlife. The District has four mitigation areas in the basin:

Cat Point Marsh Restoration created and restored salt marsh habitat in Apalachicola Bay through shoreline and shallow water plantings, and established a breakwater to shelter the salt marsh.



Replanted marsh at Cat Point.



District studies led to transfers of dredge spoil (sand) for beneficial uses. John Crowe

Dead Lakes Park Mitigation Site will restore native wetland species at ponds in Dead Lakes Park.

Doyle Creek Mitigation has restored and enhanced wetlands in the Doyle Creek drainage of western Tate's Hell State Forest.

Site 39, Apalachicola River will remove spoil material and replant a sterile dredge spoil site along the Apalachicola River. Partnering with Gulf County, the District will restore native hardwood bottomland floodplain forest after the county removes dredge spoil for beneficial uses.



District employees assess the sterile acreage of Site 39 dredge spoil area to determine how many tons of sand to remove to reach rich bottomland for replanting hardwood forests.



Content by Faith Eidse. Editorial review by Paul Thorpe, Duncan Cairns, Graham Lewis, Georgann Penson, Lucinda Scott. Photos by James Valentine, John Crowe, Georgann Penson, Faith Eidse, Kris Barrios, Gabby Saluta, Michael Orlando and the Florida Archives. Maps by Ferdouse Sultana. Graphics by Graphic Edge.

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Biodiversity

One of the nation's most ecologically diverse and significant natural areas, the Apalachicola River basin covers about 2,400 square miles within Florida. Habitats vary from rare steephead ravines with the only remaining native *Torreya taxifolia*, to towering limestone bluffs, the state's largest forested floodplain, a vast productive estuary and many miles of barrier islands.

Research indicates that the Apalachicola region of steephead ravines is home to the highest species density of amphibians and reptiles north of Mexico. The region is home to eight plants found nowhere else (the *Torreya*, Florida skullcap, waxweed and yew, Godfrey's blazing star and spiderlily, Apalachicola rosemary and Harper's beauty), as well as 34 rare plants, 16 rare animals and 135 listed species tracked by the Florida Natural Areas Inventory. Among them is the protected Florida black bear.

The eastern watershed from Bristol to Chattahoochee shelters many rare and endangered plants, its steepheads protecting *Croomia* and *Torreya* from climate extremes. Cool ground water vents from the bases of steephead seepage slopes, carrying away sand and carving steep valleys that contain four ecosystems—streams, wetlands, hardwood forests and dry upper-slope forests. *Torreya*, also known as gopher wood, the timber used in Noah's ark, is blighted and no longer blooms or reaches maturity in these steepheads.

The Apalachicola borders Calhoun, Franklin, Gadsden, Gulf, Jackson and Liberty counties and is joined by the spring-fed Chipola River, its major tributary, before entering Apalachicola Bay and the Gulf of Mexico. An alluvial river, it lies in the coastal plain and features floodplain lakes, such as Wimico and Iamonia. It is characterized by variable flow, annual flooding and heavy sediment loads.



*Florida Black Bear.
Michael Orlando*

Natural Resources

The natural resources of the Apalachicola watershed are vital to the region's economy, yet 85 percent of the watershed lies outside Florida's borders. Upstream activities and land uses help define the physical and biological characteristics of the Apalachicola River, home to 131 fish, 315 bird and 52 mammal species, which have been largely protected by the state's forested and rural nature. In Florida, the northern portion of the Apalachicola basin is mainly cropland and pasture, most of it in Jackson and Calhoun counties. The southern portion is forested floodplain where tupelo swamps flourish and beekeepers seasonally set their hives to guarantee the highest grade, non-crystallizing honey.

However, out-of-state land and water use also affects river health, and Alabama and Georgia farms draw large quantities daily from the river system and underground aquifers, returning only small portions. Studies show that these demands, together with metro Atlanta's increased use, plus four large Chattahoochee dams holding 3-4 months rain, deplete the Apalachicola of a third of its flow during low cycles and disconnect floodplains needed for spawning (U.S. Geological Survey).

The river and bay also support a substantial seafood harvest, including oyster, shrimp and numerous finfish. Many species of freshwater fish require inundated floodplains to spawn and survive, studies show, including the Gulf sturgeon and Gulf striped bass. More than 10 percent of the nation's oysters and almost 90 percent of Florida's oysters are harvested from the bay. It is the third largest shrimp harvesting area in Florida, and is used for spawning by many species. The river supports three endangered mussels (the purple bank climber, Chipola slabshell and fat threeridge) and the fire-back crayfish.



*A shrimp boat leaves
Apalachicola for offshore
waters. John Crowe*



Morning shrouds an area fish camp. Kris Barrios



In recent years, fishermen have contended with diminished river flows, red tide events, development pressure, hurricanes and commercial waterfront losses. The 1994 Florida constitutional amendment banning gill nets within three miles of shore was enacted to protect fishing resources for the public. However, a Florida State University study found that recreational catches in 2002 outstripped commercial landings among populations of concern (red snapper, red drum and others) by 64 percent in the Gulf of Mexico.

A portion of the annual oyster harvest was reportedly threatened by reduced freshwater flows, caused by drought, during the late 1990s and 2000s. Government efforts to safeguard natural floodplain and marine habitats have helped preserve these natural resources.

Protection and Recreation

The Apalachicola River and Bay are designated Outstanding Florida Waters and much of the bay is protected as the Apalachicola National Estuarine Research Reserve (ANERR) and an International Man and the Biosphere Reserve. To further preserve these exceptional ecosystems, the State of Florida has acquired more than 300,000 acres over the last 25 years, bringing to 744,000 the number of acres under conservation ownership, the majority in Franklin and Liberty counties.

The Nature Conservancy's Apalachicola Bluffs and Ravines Preserve, Torreya State Park, Apalachicola National Forest, Tate's Hell State Forest, St. Vincent National Wildlife Refuge, Apalachicola River Wildlife and Environmental Area (ARWEA) and the Apalachicola River Water Management Area (WMA) all offer preservation and public access. The District-purchased WMA offers hunting, fishing, boating, hiking and bird-watching over 36,300 acres bordering the river for about 19 miles in

Gulf and Liberty counties. Swallow-tail and Mississippi kites and various hawks can be found here.

The WMA is also part of a larger 582,000 Wildlife Management Area that takes in the Apalachicola National Forest, ARWEA and includes the Florida National Scenic Trail. One hundred miles of paddling trails extend through this area (brochures available at visitflorida.com). Call the Florida Fish and Wildlife Conservation Commission (MyFWC.com), 850-488-5520, or the District, 850-539-5999, for brochures on hunting and recreation that do not harm the resource.

Additionally, the District has partnered with the Florida Division of Forestry (DOF) to restore several tracts in Tate's Hell State Forest to wet savannah and flatwood habitat.





Development Pressure

Much of the remaining river basin is privately-owned and is managed for commercial timber production. Over half a million acres, currently undeveloped, is under private ownership. This is an area larger than all of the Apalachicola National Forest.

Many of these remaining acres may be developed in coming years. This means that state and federal agencies, citizens and local governments are facing numerous planning decisions with environmental and socioeconomic consequences.

The District installed baffle boxes at Eastpoint to treat stormwater runoff in a limited space and improve aquatic habitat in St. George Sound.

Surface Water Improvement and Management

The entire watershed is a priority of the District's Surface Water Improvement and Management (SWIM) program, legislated in 1987 to reduce water resource degradation, as well as protect and preserve natural resources. The District has participated in tri-state negotiations to protect the natural system, to establish an equitable formula for sharing the resource and to sustain the river's natural flow regime. The program has also addressed surface water pollution, restored natural systems, corrected and prevented surface water problems and researched better management of surface waters and natural systems.

The District has expended substantial funds and effort in restoring portions of Tate's Hell hydrology to encourage the return of natural wetland vegetation similar to the swamp that in the 1880s tormented Cebe Tate. Lost in the bog for a week, he was found snake-bitten on the road to Carrabelle, and declared, "My name's Tate and I've just been through hell."



The District helped save these dwarf cypress by restoring Tate's Hell hydrology.



Florida Forever funds helped reduce sediment runoff at Lamb Eddy Road.

Florida Forever Water Resource Improvements

Local governments have received District grant funds to reduce stormwater pollution from unpaved roads leading to the Apalachicola and Chipola rivers and their tributaries. Also, Franklin County was awarded funds to restore habitat and provide stormwater treatment along Apalachicola Bay on St. George Island. Jackson County received funds to stabilize dirt roads and control sediment pollution at tributary crossings.

The District has also partnered with local communities, such as Wewahitchka, Apalachicola, Eastpoint and Port St. Joe to reduce stormwater runoff and improve surface water quality and water supply.

District Mission and Water Supply Planning

It is the District's mission to protect and manage water resources to sustain people and natural systems. Its goals are to promote sufficient water for natural systems and the reasonable benefit of people, to maintain natural floodplain functions and minimize flood damage, to protect and improve water resource quality and to protect and enhance natural systems.

Recently, the District identified up to 9 million gallons a day of alternative supplies to protect coastal wells

from saltwater intrusion and to meet projected needs in Franklin and Gulf counties through 2025. Preferred sources included surface water via the Gulf County Fresh Water Canal (which the District helped purchase), and inland ground water sources in Franklin County. Also recommended were improved infrastructure and increased conservation and reclaimed water use (or reuse).