

UPPER APALACHICOLA RIVER ECOSYSTEM

FLORIDA FOREVER PROPOSAL

CALHOUN, GADSDEN, GULF, JACKSON & LIBERTY COUNTIES, FLORIDA



Photo Credit: George Willson

PROPOSED AND SUBMITTED BY:
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GEORGE WILLSON, Consultant and DAN TONSMEIRE, Apalachicola Riverkeepers

FLORIDA CHAPTER

APRIL 2017



Application to Add New Project to the Florida Forever List

Use of this form is required to propose land for public acquisition under the Florida Forever Program. All of the requested information must be received at the address below by **December 31** or **June 30** for the proposal to be eligible for evaluation during the subsequent 6-month evaluation cycle. Write, call, or e-mail the Office of Environmental Services for further information. When possible, please submit application packages (including maps) on 8.5" x 11" paper and please provide a copy of the completed application and all attachments on a CD in PDF format.

GENERAL INFORMATION

Property Name:

Upper Apalachicola River Ecosystem

City/Town Bristol/Blountstown/Wewahitchka County Liberty/Calhoun/Gulf (and two other counties)

Sponsor (person proposing acquisition):

Name: Richard Hilsenbeck, Wendy Mathews, Jill Fidrych (The Nature Conservancy), George Willson (Consultant) & Dan Tonsmeire (Apalachicola Riverkeepers)

Organization: The Nature Conservancy, Willson Consulting, Apalachicola Riverkeepers

Address: 236 East 5th Avenue, Tallahassee, FL 32303

City

State

Zip Code

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Although see note in bold at the bottom of page 4 of the Text.

SUBMIT COPIES AND ATTACHMENTS TO:

The Office of Environmental Services
Division of State Lands
Department of Environmental Protection
3900 Commonwealth Blvd., Mail Station 140
Tallahassee, FL 32399-3000
PHONE: 850/245-2784 FAX: 850/245-2572
Attention: Paula Allen
Paula.L.Allen@dep.state.fl.us

DO NOT WRITE IN THIS SPACE

(Date Stamp)

DO NOT WRITE IN THIS SPACE - PROJECT NUMBER									

Upper Apalachicola River Ecosystem

A Florida Forever Proposal

Prepared and Submitted by
the Florida Chapter of The Nature Conservancy
April 2017

APPLICATION FORM REQUIRED ATTACHEMNTS

Attachment A General Description

Upper Apalachicola River Ecosystem Calhoun, Gadsden, Gulf, Jackson and Liberty counties

“Ecosystems are not only more complex than we think, they are more complex than we *can* think.” – Dr. E.O. Wilson, Professor Emeritus, Harvard University

“In terms of endemic, rare, endangered and threatened species, it [the Apalachicola River and Bay] are as biologically distinctive as the Everglades” – Dr. Robert J. Livingston, Professor Emeritus, Florida State University

“I’ve worked on some large and significant projects over the years such as the lands that are now the Kissimmee Prairie Preserve State Park where we used to say you could see the curvature of the earth. But I’ve never worked on a project like the Upper Apalachicola River Ecosystem that is so expansive that it crosses two time zones!” – Dr. Richard A. Hilsenbeck, Senior Terrestrial Scientist, The Nature Conservancy

Introduction

The Apalachicola River is at the center of North America’s sixth highest ranked biological diversity “hot spot” and the complex river ecosystem supports more than 1,500 species of native plants and animals, as well as numerous endemic species found only in this region. The river basin has the highest species diversity of reptiles and amphibians in North America (north of Mexico), with more than 40 species of amphibians and 80 species of reptiles, in addition to over 52 species of mammals. The river and the lands along it support such federally listed species as the Gulf sturgeon (*Acipenser oxyrhynchus desotoi*), five mussels including the purple bankclimber (*Elliptoideus sloatianus*) and fat three-ridge (*Amblema neislerii*), red-cockaded woodpecker (*Picoides borealis*), bald eagle (*Haliaeetus leucocephalus*) and the Florida manatee (*Trichechus manatus latirostris*). Additionally the dense floodplain and upland forests along the river provide habitat for over 300 species of avifauna, including many Neotropical migrants such as the swallow-tailed kite (*Elanoides forficatus*) and Mississippi kite (*Ictinia mississippiensis*). The Apalachicola River is literally the economic life-blood of the region and has the largest volume of water flow of any river in Florida, providing vital freshwater inputs to the downstream Apalachicola Bay estuarine system that supports one of the nation’s most productive fisheries and a unique cultural way of life for many of the region’s human residents.

The Apalachicola River and the region traversed by it is a distinctive biotic region of Florida containing a remarkable blend of endemic plants and animals, as well as many species at the southern terminus of their ranges. The Apalachicola River drainage basin owes its unique assemblage of species to the diversity of the physical environment and to the fact that it is the only river in Florida with its headwaters in the southern Appalachians and adjacent Piedmont. The Apalachicola River Basin is formed by the convergence of the Chattahoochee and Flint rivers, of eastern Alabama and western Georgia, at Lake Seminole, located on the Florida-Georgia border. Technically, the Apalachicola River begins at the Jim Woodruff Dam, near Chattahoochee, Florida. This dam became fully operational in 1957 and was designed to improve navigation and generate electric power. From the Woodruff Dam, the Apalachicola River meanders southward 107 miles before flowing in to the highly productive Apalachicola Bay where – until recently – up to 90% of Florida's and nearly 14% of the nation's economically important harvest of oysters occur.

The drainage basin of the Apalachicola River is approximately 22,000 square miles, with nearly 90 percent of this land in Georgia and Alabama and with nearly 80 percent of the Apalachicola's flow originating in these two states. The Apalachicola River and its largest tributary, the largely spring-fed Chipola River, occupy the downstream 10 percent of the drainage basin, which is predominantly in Florida. As such, water resource management in Georgia and Alabama can significantly impact the river and its flows in Florida. Although a discussion of the long-standing water allocation battle between these three states is beyond the scope of this project application, it should be noted that metropolitan Atlanta's population at the headwaters of the Apalachicola River basin has increased from one million people in 1959 to ca. five million in 2007 to over 5.7 million residents today. Because of explosive human population growth and other associated factors, primarily in Georgia, water that might otherwise feed the Apalachicola is diverted through upstream withdrawals from the Chattahoochee and the Flint rivers.

The Apalachicola River is 21st in magnitude of flow volume among the rivers of the coterminous United States and is the largest river in Florida and the fourth largest river in the southeastern United States, in terms of mean annual discharge. The river's flow extends through Apalachicola Bay past several barrier islands (e.g., Dog Island, St. George Island and St. Vincent Island/NWR) and influences the northeastern Gulf of Mexico as far as 160 miles to the south. The almost annual winter floods and inundation of its floodplain have produced a rich array of soils that support diverse Bottomland Hardwood and Floodplain Swamp forest communities. The deep floodplain forest system found along the Apalachicola River is the most extensive in Florida and has long been noted for its high tree species diversity. Upwards of 70 different species of trees have been documented from the Apalachicola River floodplain, which is the largest forested floodplain in Florida with ca. 82,000 acres of non-tidal floodplain forest. Without protection of the river's vast floodplain from which seasonal floods move rich organic debris – a vital source of nutrients essential to the functional integrity of downstream ecosystems – into the river's channel, Apalachicola Bay can only suffer further ecological declines. The Upper Apalachicola River Ecosystem project seeks to provide protection to nearly one half of the entire non-tidal portion of this vital floodplain.

The Lands within Upper Apalachicola River Ecosystem and The Forestland Group Ownership

Background

The existing Apalachicola River Florida Forever Project – on the list since 1991 – was designed to provide both a protective buffer for the renowned Apalachicola River, as well as to preserve the unique natural character and significant resources – including biologically rich bluffs and ravines and restored Sandhills – of the upper portion of the river. Protection of the water quality of the river that feeds the productive and economically important Apalachicola Bay was also a priority goal of the project. As well, the project also sought to connect important conservation lands that include lands and waters important to the Northwest Florida Water Management District (NFWFMD), Torreya State Park and The Nature Conservancy's Apalachicola Bluffs and Ravines Preserve (ABRP). The existing Apalachicola River project consisted of 18,811 acres (although there were numerous boundary modifications that enlarged the scope of the initial project), with 10,986 acres still remaining to be protected – but with 2,475 of those acres within the boundary of herein proposed Upper Apalachicola River Ecosystem project.

Much progress has been made in acquiring some of the most significant tracts in this highly ranked project on the Critical Natural Lands category of the Florida Forever list. For example, nearly 8,400 acres were acquired by both the State of Florida (with The Nature Conservancy [TNC] acting as their intermediary) and by TNC in three, separate and important transactions: The 7,047-acre Sweetwater Creek tract was acquired in early 2002 by the State, while TNC acquired the entire 1,324-acre Aspalaga Landing tract in two deals with the St. Joe Company and Soterra companies in late 2002 (both now in state-ownership). As well, the State of Florida acquired a conservation easement over the 2,100-acre Corbin-Tucker tract in 2004, while the NFWFMD acquired a ca. 1,317-acre tract from Neal Land & Timber Company in 2011 and a conservation easement over the 1,544-acre Trammell tract in 2007. As such, the Apalachicola River project has enjoyed substantial conservation successes and investment by the state and water management district over the past few years. But progress on the protection of what is widely recognized as the most significant ownership along the river, and one that has long been sought – that of Neal Land & Timber – who has owned and managed the forestlands of this project for most of the past century and an equal area of neighboring pineland habitats.

Late last year, Neal Land & Timber concluded a large scale transaction that involved trading much of their Apalachicola River holdings for various pine- and hardwood-dominated uplands in Alabama. The new landowner of these lands flanking the Apalachicola River, The Forestland Group, intends to follow the same successful business and ecological forestry management model developed by Neal, that while providing financial returns also incentivizes ecological, aesthetic, hydrological and recreational values – including for those downstream residents dependent upon a healthy estuary for their livelihoods. So, what appears – from the air, the river or the land – as a mostly intact and productive forest and swamplands ecosystem that thrives in harmony with the river is exactly what exists within the project area. Given the foregoing, the general pattern of land use within the project may be viewed as a high density/high biomass working forest with sustainability and overall

ecosystem health as its core, and one that adheres to current forestry Best Management Practices for long-term resource enhancement and management.

As well, The Forestland Group has been contacted and is a willing seller of a conservation easement over the property described in this application, and that is herein attested to and certified (as specified by the Florida Forever application requirements). Mr. George Willson will serve as the landowner's authorized representative for any communication between the Division of State Lands and The Forestland Group. He may be reached at 850-933-3197 (cell phone) or at WillsonConsult@gmail.com

Descriptive Location and Total Acreage of the Project

The 39,639-acre Upper Apalachicola River Ecosystem project extends from north of I-10 (just south of Chattahoochee and the Jim Woodruff Dam) all the way south to Wewahitchka – encompassing over 80 miles of direct riverine frontage (along both the eastern and western banks) – and is proposed to be protected through the sale of a conservation easement. The property, until recently, was owned by Neal Land & Timber Company and has long been sought for conservation. With The Forestland Group now the landowners of the project area, an excellent opportunity has presented itself to protect these incredible, varied and rich resources along one of the most significant rivers in Florida and the Southeastern United States.

The project spans five counties flanking both banks of the Apalachicola River with the acreage divided among these counties as follows:

Calhoun County -22,594 acres

Gadsden County – 1,877 acres

Gulf County – 2,306 acres

Jackson County – 1,506 acres

Liberty County – 11,356 acres

The lands within the Upper Apalachicola River Ecosystem, while varied, consist predominately of several heavily forested natural community types, with most of those being assignable to the Floodplain Swamp natural community. These forest – although mature, with tall canopies and exhibiting some areas with stands of old-growth trees – consist of mostly secondary growth individuals because they, like virtually all floodplains in the southeastern United States, were heavily logged during the early years of the last century. Under the long ownership and careful stewardship of the previous landowner – Neal Land & Timber Company – the deep floodplain and other forested lands (some of them uplands) within the project have been subject to a philosophy of sustainable forest management with a long-term vision for both profitability and ecologic/hydrologic maintenance of the Apalachicola River and its incredible natural resources. Rather than high grading (cutting the most desirable species from a profit standpoint) their forest resources, Neal initiated a management program focused on small patch clear-cuts with various forest blocks on long rotations that fostered a regeneration of a diversity of tree species.

Tax Assessed Value

The tax assessed value of the Upper Apalachicola River Ecosystem project – as totaled from tax cards assembled electronically from the five counties – is \$8,310,485. These tax cards, and a summary Excel spreadsheet, have been provided to Paula Allen at the Division of State Lands as part of this Florida Forever application. As well, aerial photographs with the tax parcels overlain are provided herein as Figures 2 A-E.

Directions

Because the project is spread out for many miles along both banks of the Apalachicola River, there are many ways to reach various portions of the project. For example, from Tallahassee take I-10 west for about 45 minutes to the CR 270A (Chattahoochee exit) and proceed north to its intersection with CR 269 (about one mile). Then proceed north on CR 269 for ca. 2 miles to the intersection (on the left) with Dolan Road. Travel west on Dolan Road for about three miles to reach the northeastern edge of the project in Gadsden County. As well, portions of the property may be accessed off SR 20, by taking that highway west from Tallahassee for 44 miles to Bristol (Liberty County) or another two miles west (during which one will cross the Apalachicola River) to Blountstown (Calhoun County). Lands within the project spread out both to the north and south of these towns. From Bristol, one may also take CR 12 south for ca. 10 miles to the small settlement of Estiflanulga to reach lands within the project. Also, from Blountstown, one may proceed south on SR 71 for ca. 28 miles to the town of Wewahitchka to begin accessing some lands within the project. But because access to the lands is through a series of locked gates, ARC Liaison staff will have to be accompanied by one or more representatives of The Forestland Group (e.g., Mr. George Willson) that will be available to guide staff during any assessment visits. Additionally, much of the property is best accessed and viewed by boat from the river and boats will be made available by the Apalachicola Riverkeepers during the staff assessment trip.

The general physical, natural resource, biological, hydrological, archaeological and historical characteristics of the project

Regional and Watershed Significance

Besides the river itself (see below), the most notable and striking physiographic features of the Upper Apalachicola River drainage basin are the high bluffs and deep steephead ravine systems found on the eastern side of the upper portion of the river and the broad expanses of Floodplain Swamp found on the western side of the upper river. The Upper Apalachicola River Ecosystem project encompasses all of these features – and more (such as some Upland Glades) – and, as such, is appropriately herein called an “ecosystem” project. Steephead ravines – which most typically support the biologically-rich Slope Forest natural community – are restricted habitats found south of the Cody Escarpment, the dividing line between the clay-rich Miocene soils to the north and the Pleistocene sands of the coastal areas to the south. Steephead ravines are mainly distributed in the panhandle of Florida (although some would argue that a few occur in Clay and Putnam counties such as at Gold Head Branch State Park) in areas where the sandy soils are deep and porous. These geologically unique features are formed where rivers have cut beneath the water table and groundwater seepage flows laterally from the valley walls of the river. The “seeping” water undermines sandy slopes and “steephead” formation ensues and continuously lengthens headward into the sloping

plains. The heads of steephead-induced streams, or Seepage Streams, have permanent spring/seepage flow and erode from the bottom up. According to noted ecologist Dr. Bruce Means, the Apalachicola drainage supports some of the deepest and best developed steepheads in Florida that occur in the small drainages of the river's eastern escarpment between Bristol and Torreya State Park. The steepheads of this region have been somewhat protected from silviculture, agriculture and development mainly because heavy equipment required for these endeavors has difficulty operating on the steep slopes. For this and other reasons (i.e., microclimate), the ecologically intact steepheads contain an extraordinarily high floral and animal biodiversity.

The rivers of the Gulf coast, including the Mobile drainage and separate drainages in Mississippi and the Florida panhandle (including the Apalachicola), are also a globally outstanding center of freshwater biodiversity. The World Wildlife Fund recognizes these freshwater ecosystems as being among the richest in the world. The Nature Conservancy's Southern Region freshwater ecologists include the Mobile basin the other Gulf Rivers in a high priority status, including the Pascagoula, Perdido, Blackwater, Yellow, Chipola and Apalachicola. These rivers also contain part of the largest remaining intact forest type in the Southeast U.S. coastal plain – Bottomland Forests. They provide essential habitat for many rare wide-ranging, large area requiring species, such as black bear and swallow-tail kite. These bottomland forests protect the ecological function and structure of rivers, are indicators of the hydrologic function and health of the river system and provide a wide-range of ecosystem services to the human populations of which they are a part. As can be seen by reference to Figure 3 (overview map of the project area), the Upper Apalachicola River Ecosystem project includes a substantial portion of the Upper (and Central – but all areas are non-tidal) Apalachicola River and a portion of the outstanding, yet poorly protected, Chipola River.

Physiographic Province(s), Soils and Topography

The Apalachicola River lies within the broad Coastal Lowlands physiographic region, which is generally low in elevation compared to other lands within the Southeastern United States. To the immediate east of the north and central portions of the project boundary is the Tallahassee Red Hills physiographic province, while to the west lies the Marianna Lowlands. The climatic setting of the Apalachicola River and its associated drainage basin is humid, temperate and generally mild with a growing season averaging about 270 days. Average annual rainfall is +/- 56 inches, with the highest monthly totals generally occurring in the summer and the lowest totals occurring in the fall, in accord with that experienced by most of Florida.

The Apalachicola River may be described as an alluvial, low-gradient, meandering river. The river surface falls from ca. 41 feet from the its origin at the Jim Woodruff Dam to near sea level at its mouth near the town of Apalachicola. As noted above, the Apalachicola River is about 107 mi long, but the last 20-21 of its downstream miles are often considered tidal (although there is no precise boundary between the tidal and non-tidal reaches depending on a variety of factors at play during any one year or season). The river corridor from Chattahoochee to Blountstown, Florida, cuts through sediments formed during the Miocene age roughly 18 million years ago.

The lands to the west of the Apalachicola River (e.g., Jackson County) are gently rolling with subtle rises as high as 125 feet above Mean Sea Level (MSL) in the Grand Ridge area (please refer to Figure 1). The heavily forested floodplain of the upper western reaches can extend up to two miles in width. In contrast, the eastern side of the upper river (e.g., Gadsden and portions of Liberty counties) is characterized by a fairly narrow, but still heavily forested floodplain. The bluffs represent the western edge of the Tallahassee Hills portion of the Northern Highlands physiographic province and commonly tower over the Apalachicola River 150-200 feet (or more) above its surface. The uplands of this area are characterized by dry, deep sands and thin chalky limestones dissected by many small valleys and steep-sided ravines, thus named steephead ravines.

Elevations within the Upper Apalachicola River Ecosystem project range from near 41 feet above MSL along the low river berms flanking the Apalachicola River (to likely even lower elevations in some of the backwater swamps off the river's main channel), to a high of ca. 265 feet above MSL along the sandy ridge tops, bluffs and rocky outcrops of the high hills along the eastern bank of the river.

As far as soils within the current project are concerned, in 2010 the FFWCC published an extensive list of over 50 soil types within the existing Apalachicola River Florida Forever project. While we realize that a greater number and types of soils likely occur within the larger acreage Upper Apalachicola River Ecosystem project, the FFWCC analysis (as based upon data from the NFWFMD) provides an excellent overview of the kinds of soils that can be expected throughout the current project.

General Pattern of Land Uses

The Upper Apalachicola River Ecosystem supports heavily forested uplands, wetlands and open water features encompassing several natural community types as described in detail below. Most of these lands represent a sustainable working forest as amply noted in the sections above. This mix of natural and forested agricultural land uses supports little to no development, occurs within a highly rural area of Florida's central panhandle and supports an array of forestry-related jobs upstream, and a considerable economy downstream based upon ecotourism and a thriving commercial and sport fishery. A Forest Type of the property map will be shown at the Acquisition and Restoration Council (ARC) meeting in order to provide an overview and classification of the array of forestlands found within the project boundary, but it should be noted that most of the lands within the project consist of various kinds of Floodplain Forest/Swamp communities.

Natural Communities

Natural communities were observed on the property by Richard Hilsenbeck and Wendy Mathews (The Nature Conservancy), George Willson (Consultant), and Dan Tonsmeire (Apalachicola Riverkeepers) during a field and boat assessment of the property on March 1 and 2, 2017. The lands and waters encompassed within the Upper Apalachicola River Ecosystem project – although predominately part of a working forest complex – are largely intact, exhibit native species composition and community structure and are comprised of numerous natural community types, although it should be noted that the majority of the

project area consist of core areas of Floodplain Swamp flanking both sides of the Apalachicola River.

Natural communities observed during the field assessment include Upland Mixed Forest (including areas assignable to Upland Hardwood Forest), Slope Forest, Upland Pine Forest (remnant), Upland Glade, Floodplain Forest, Bottomland Forest, Floodplain Swamp (including off-river creeks, sloughs and lakes), Seepage Stream, Baygall, Spring (Aquatic Cave), Spring-run Stream and Alluvial River. See photographs at the end of this text that show many of these community types, although more will be shown at the ARC meetings where this project is considered for addition to the Florida Forever list.

Upland Mixed Forest (including areas of Upland Hardwood Forest)

Most of the higher slopes, ridges, bluffs and hillsides in the northern and eastern portions of the project are vegetated by good to high quality stands of Upland Mixed Forest natural community (some may even be considered as Upland Hardwood Forest where fewer pines are present and a greater diversity of hardwood trees occurs). The Upland Mixed Forest soils are generally sandy-clays or clayey-sands and often have substantial organic components, as well as evident limestone components. The topography, rolling high hills with often westward facing bluffs to steep slopes and hillsides, and the clayey soils may increase surface water runoff; however, this is counterbalanced by the moisture retention properties of the clays and often thick layer of leaf litter which both assist to maintain soil moisture and create somewhat mesic conditions. The canopy of the UMF forest is often dense and predominately closed, thus creating a fairly high, constant humidity that would rarely or very infrequently burn.

The canopy consists of infrequent short leaf pine (*Pinus echinata*) and loblolly pine (*Pinus taeda*), but with large scattered spruce pine (*Pinus glabra*), but is dominated by several oaks including live oak (*Quercus virginiana*) and laurel oak (*Q. hemisphaerica*), mockernut hickory (*Carya tomentosa*), hophornbeam (*Ostrya virginiana*), southern magnolia (*Magnolia grandiflora*), blackgum (*Nyssa biflora*), Florida maple (*Acer saccharum* subsp. *floridanum*), southern red oak (*Quercus falcata*), an occasional beech (*Fagus grandifolia*), white oak (*Quercus alba*), bluff oak (*Quercus austrina* or *Q. sinuata*?), redbud (*Cercis canadensis*), often very large southern red cedar (*Juniperus virginiana*), scattered needle palm (*Rhapidophyllum hystrix*), persimmon (*Diospyros virginiana*) and sweetgum (*Liquidambar styraciflua*). This community type also includes a smaller tree component consisting of such species as American holly (*Ilex opaca*), red bay (*Persea borbonia*), and occasional flowering dogwood (*Cornus florida*) and redbud (*Cercis canadensis*). Several vines are also present including greenbrier (*Smilax* sp.), crossvine (*Bignonia capreolata*), poison ivy (*Toxicodendron radicans*) and southern fox grape (*Vitis rotundifolia*). An open, diverse midstory occurs that includes horsesugar (*Symplocos tinctoria*), red buckeye (*Aesculus parviflora*), devil's walking-stick (*Aralia spinosa*), sparkleberry (*Vaccinium arboreum*), sassafras (*Sassafras albidum*), buckthorn (*Bumelia lanuginosa*), small-flowered pawpaw (*Asimina parviflora*), saw palmetto (*Serenoa repens*), wax myrtle (*Myrica cerifera*), deerberry (*Vaccinium stamineum*), beautyberry (*Callicarpa americana*) and occasional patches of cane (*Arundinaria gigantea*), but overall forms a rather open layer. The groundcover stratum includes such species as partridge berry (*Mitchella repens*), spike

chasmanthium (*Chasmanthium laxum*), redtop panicum (*Panicum* aff. *rigidulum*), spikegrass, innocence (*Hedyotis procumbens*), wild sarsaparilla (*Smilax pumila*), sedges (*Carex* spp.), violet (*Viola* spp.) and woods grass (*Oplismenus setarius*), among a variety of other species including long-bract wakerobin (*Trillium underwoodii*) and bloodroot (*Sanguinaria canadensis*).

Slope Forest

Floristically, the steephead ravines of Gadsden and Liberty counties (i.e., those within the project) are distinctive from those found farther west, as in Okaloosa, Santa Rosa, Walton and Washington counties. These steephead ravines are thickly forested with a mostly well developed, closed canopied Slope Forest community. The combination of densely shaded slopes and cool, moist microclimate produces conditions that allow for the growth of many species more typical of the northern deciduous forests (i.e., the Piedmont and southern Appalachian Mountains). As mentioned earlier, the Slope Forests of the steephead ravine systems have substantial topographic relief. The soils of these forests are generally composed of deep sands, sandy-clays or clayey- sands. Although the predominance of deciduous trees creates a heavy mulch of leaf litter, which assists in the retention of soil moisture, some of the higher elevations have thinner leaf litter layers and may exhibit nearly xeric soil conditions. North-facing slopes receive less sunlight during the winter, which tends to lower surface temperatures and therefore allows many of the more northern species that require more hours of cold temperatures to survive and thrive in the Slope Forest.

The Slope Forests within the project – although covering relatively few acres – are thickly forested lands with a variety of deciduous tree species, including such overstory species as beech (*Fagus grandifolia*), white oak and laurel oaks (*Quercus alba* and *Q. hemisphaerica*), sourwood (*Oxydendron arboreum*), southern magnolia, spruce pine (*Pinus glabra*), pignut hickory (*Carya glabra*), and sour gum (*Nyssa sylvatica*), among several others. The understory contains numerous species, and, depending on how far downslope one proceeds, may include red maple (*Acer rubrum*), black cherry (*Prunus serotina*), red cedar (*Juniperus virginiana*), hackberry (*Celtis laevigata*), redbud (*Cercis canadensis*), American holly (*Ilex opaca*), Sebastian bush (*Sebastiania fruticosa*), sparkleberry, horse sugar (*Symplocos tinctoria*), flowering dogwood (*Cornus florida*), silverbells (*Halesia diptera*), American beautyberry (*Callicarpa americana*), and witch hazel (*Hamamelis virginiana*), and often abundant needle palm (*Rhapidophyllum hystrix*), among others. Common (i.e., non-rare) herbaceous species are limited, but include Indian pink (*Spigelia marilandica*), bloodroot (*Sanguinaria canadensis*), violets (*Viola* spp.), wild sarsaparilla (*Smilax pumila*), partridge berry (*Mitchella repens*), among a few others. At least two rare plant species Baltzell's sedge (*Carex baltzellii*) and wild ginger or heartleaf (*Hexastylis arifolia*) have been noted, but so far we have not observed any of the following are plant species within the Slope Forest community of the project (although FNAI has Element Occurrence Records for some of these within the project boundary): Florida yew (*Taxus floridana*), Torreya or gopherwood (*Torreya taxifolia*), Ashe magnolia (*Magnolia ashei*), pyramid magnolia (*Magnolia pyramidata*), narrow-leaved trillium (*Trillium lancifolium*) and Croomia (*Croomia pauciflora*), among a few others (see Appendix 1).

Upland Pine Forest (Remnant)

Some of the higher slopes and ridges within the northern portion of the project, many accessible from Dolan Road in Gadsden County, were once likely forested with a variety of upland pine and hardwood communities. Given years of differing ownerships and forest management philosophies, it is difficult to accurately reconstruct the historic native vegetation structure and species composition. But based upon soils, and topography, as well as a knowledge of similar areas in North Florida – although this belies the uniqueness of the lands flanking the Apalachicola River – it appears that, originally, much of what was probably Upland Pine Forest has been replaced with what may be considered off-site slash pine (typically North Florida slash pine - *Pinus elliottii* var. *elliottii*) or loblolly pine (*P. taeda*) silviculture, instead of the original shortleaf pine- (*Pinus echinata*) and/or longleaf pine- (*Pinus palustris*) dominated forest cover. Some areas lack much native groundcover but others exhibit scattered wiregrass (*Aristida stricta*), various native forbs, thickets of sparkleberry (*Vaccinium arboreum*), occasional American beautyberry (*Callicarpa americana*), laurel oaks (*Quercus hemisphaerica*), sweetgum (*Liquidambar styraciflua*), black cherry (*Prunus serotina*), persimmon (*Diospyros virginiana*), catbrier (*Smilax* spp.), southern fox grape (*Vitis rotundifolia*), among others.

Upland Glade

Situated along the northern portion of the Apalachicola River in Gadsden and Jackson counties, Florida, Upland Glades are the only community type that have no protected localities anywhere within the state (except on one state-owned site that is not managed primarily for conservation). Upland Glades, also known as “chalky limestone glades,” are ranked as G1/S1 by the Florida Natural Areas Inventory meaning that they are considered globally and state critically imperiled. With fewer than 15 remaining locations in Florida, this rare community is indeed highly threatened. Although Jackson County on the western bank of the Apalachicola River has a few Glades, the best quality, least disturbed and most diverse (particularly in terms of rare species) Upland Glades are located in Gadsden County. The majority of the “Gadsden Glades” are located south of Chattahoochee in the immediate vicinity of a rural, primarily dirt, road known locally as Dolan Road. At least one, if not more, of these Upland Glades occur within the extreme northeastern boundary of the Upper Apalachicola River Ecosystem project.

Upland Glades are readily identified as small, typically less than five acres in extent, openings in mixed pine and hardwood forests on the sides or crests of hills. Glades are often found as a loosely clumped group of such openings within the same general area, always in association with a series of limestone outcroppings. The hillside sites are usually wet much of the year from seepage, whereas the hilltop sites are more xeric. The Glades are readily apparent upon their approach through the encompassing woodlands. Characterized by a low, open vegetative growth of various grasses, sedges and forbs, the Upland Glades are relatively small, highly localized but distinctive, features on the Upper Apalachicola River basin landscape in Florida.

The alkaline pH of the calcium carbonate-based limestone of the Glades forms an edaphic island in the otherwise acidic soils of the adjacent forests of the region. The calcareous soils are typically poorly developed and lie atop a thin, chalky limestone rock substrate. These

distinctive soils are likely one of the primary factors in the development of the unusual floristic assemblage that is found on the Glades – an assemblage supporting an array of plant species normally associated with prairies, glades and other ecosystems further north and west. The Florida Upland Glades are, overall, similar to glades found in a few other southeastern states, particularly the Cedar Glades of Tennessee and Kentucky and the Black Belt chalky barrens of Alabama and Mississippi.

Upland Glades often support a growth of eastern red cedar (*Juniperus virginiana*) around their margins, while their interior portions have characteristic stands of the black bogrush (*Schoenus nigricans*), an unusual sedge more often found in saline marshes of Central and South Florida. Other tree and shrub species found in, or around, the Glades include white ash (*Fraxinus americana*), persimmon (*Diospyros virginiana*), redbud (*Cercis canadensis*), black cherry (*Prunus serotina*), sweetgum (*Liquidambar styraciflua*), bluff oak (*Quercus sinuata*), winged sumac (*Rhus copallina*), arrowwood (*Viburnum acerifolium*), flame azelea (*Rhododendron austrinum*) and sweetshrub (*Calycanthus floridus* var. *glaucus*), among a few others. Common herbaceous species include innocence (*Hedyotis procumbens*), white-top sedge (*Dichromena colorata*), wiregrass (*Aristida stricta*), pinkroot (*Spigelia marilandica*), Adam's needle (*Yucca filamentosa*), beardgrass (*Andropogon virginicus*), panicgrass (*Panicum flexile*), dropseed (*Sporobolus clandestinus*), diamond flower (*Hedyotis nigricans*), red sage (*Salvia coccinea*), wild rose (*Rosa carolina*), baptisia (*Baptisia alba*), marsh pink (*Sabatia angularis*), rattlesnake master (*Polianthes virginica*) and milkweed (*Asclepias viridis*), among many others.

The large number of species occurring on the Glades that are considered rare in Florida because of their very limited distribution in the state include Eastern purple coneflower (*Echinacea purpurea*), sideoats gramma (*Bouteloua curtipendula*), poppymallow (*Callirhoe papaver*), Carolina larkspur (*Delphinium carolinianum*), small-toothed sedge (*Carex microdonta*), Baldwin's spiny-pod (*Matalea baldwyniana*), shootingstar (*Dodecatheon media*), Mexican hats (*Ratibida pinnata*) little people (*Lepuropetalon spathulatum*), nettleleaf sage (*Salvia urticifolia*), green milkweed (*Asclepias viridiflora*) and crenate hedgenettle (*Stachys crenata*), among a few others. The spectacular flora of the Glades warrants immediate protection and The Nature Conservancy and others (e.g., Mr. Wilson Baker, Dr. Ann Johnson) have been working for several decades not only to better survey and document the Glades, but to bring about the protection of several of the best examples as well. According to FNAI Element Occurrence Record data, at least three of the above rare plant species occur within the project boundary – Baldwin's spiny-pod, Eastern purple coneflower and Carolina larkspur – (see Appendix 1).

There are also several areas within the project that appear to be "incipient glades" that occur near and around the sides of higher hilltops where the thin soils are eroding to reveal chalky limestone outcroppings. These areas have a species composition reminiscent of Glades but also with many species more commonly associated with Upland Mixed Forest areas, although they do include a few species more characteristic of Glades. These areas are also marked by many old-growth red cedar trees that grow well on these limestone-based soils.

Floodplain Forest and Swamp Complex

By far, the largest extent of acreage within the Upper Apalachicola River Ecosystem project consists of a varied Floodplain Forest and Swamp complex that exhibits many intergradations. According to Steve Lightman, Helen Light, Melanie Darst and associated co-authors who have extensively researched and written about the floodplain vegetation and ecological/hydrological dynamics along the Apalachicola River, there are four recognized subsets of Floodplain Swamp vegetation. Describing the complex pattern of the natural communities along and within the floodplain of the Apalachicola River is not an easy task given the variety of juxtaposed and interacting land and water forms, frequency and season of inundation, array of soils, slight but significant variations in topography (many of them formed and re-formed by moving and shifting waters), past human-induced disturbances and a host of other factors. These researchers and authors, however, generally break the plant communities in the floodplain of the Apalachicola River into four kinds of forest habitats corresponding to fluvial landforms along the river: levees, high bottomland, low bottomland and backswamps.

To generally and briefly summarize some of Lightman, Light and Darst's findings and vegetation classification (with indicator species for their recognized community types), the following is offered: On high, infrequently flooded floodplain landforms, sweetgum (*Liquidambar styraciflua*), hackberry (*Celtis laevigata*) and muscledwood or blue beech (*Carpinus caroliniana*) are dominant tree species. In high bottomland, American elm (*Ulmus americana*) and overcup oak (*Quercus lyrata*) qualified as indicators, while low bottomland forest support water hickory (*Carya aquatica*), overcup oak (*Quercus lyrata*), laurel oak (*Quercus laurifolia*), green ash (*Fraxinus pennsylvanica*) and stiff cornel (*Cornus foemina*). At the lowest elevations are the frequently inundated backswamps where bald cypress (*Taxodium distichum*), water tupelo (*Nyssa aquatica*), Ogeechee lime (*Nyssa ogeche*) and pop ash (*Fraxinus caroliniana*) predominate.

While acknowledging and embracing the classification of these researchers, the senior author of this project application – as based upon years of more casual ecological and floristic observations along the Apalachicola River – herein places these four classes into a series of overlapping FNAI-recognized, natural community types. However, because they are all subject to frequent, through a gradient of infrequent inundation and flooding, they may all be broadly recognized as a Floodplain Forest-to-Floodplain Swamp continuum of vegetation subject to varying ecological, hydrological and soil interacting dynamics.

Floodplain Forest (includes River Berm/Levee Forest and High Bottomland Forest)

Along much of the river bank within the project area, there is a pronounced berm or natural levee that intervenes between the traditional floodplain and the river. This community may often be breached by low areas that connect directly to the far more frequently inundated floodplain of the river in times of high water. This community is comprised mostly of hardwoods and occurs on drier soils at slightly higher elevations within the floodplain. The soils of the Floodplain Forest are mixtures of sand, organic material and alluvial materials. Floodplain Forests are inundated by flood waters nearly every year for a portion of the growing season. The organic materials that have accumulated on the forest floor are moved during floods and redistributed. The Floodplain Forests grade directly into either Bottomland

Forest or Floodplain Swamp community vegetation fitting this general description also often occurs on low bluffs directly overlooking the river.

Tree species include loblolly pine (*Pinus taeda*), spruce pine (*P. glabra*), live and laurel oaks (*Quercus virginiana* and *Q. laurifolia*, respectively), swamp blackgum, southern magnolia (*Magnolia grandiflora*), sweetgum (*Liquidambar styraciflua*), planer tree (*Planera aquatica*), ironwood (*Carpinus caroliniana*), hackberry (*Celtis laevigata*) and pignut hickory (*Carya glabra*). The subcanopy and shrub stratum is well populated with swamp bay (*Persea palustris*), American holly (*Ilex opaca*), Florida dogwood (*Cornus florida*), redbud (*Cercis canadensis*), southern red cedar (*Juniperus virginiana*), buckthorn (*Bumelia reclinata*), devil's walking-stick (*Aralia spinosa*), sparkleberry (*Vaccinium arboreum*), red buckeye (*Aesculus pavia*), bluestem (*Sabal minor*), sebastian bush, wax myrtle, saw palmetto (*Serenoa repens*), deerberry (*Vaccinium stamineum*), small-flowered pawpaw (*Asimina parviflora*), horsesugar (*Symplocos tinctoria*), St. Andrew's-cross (*Hypericum hypericoides*) and beautyberry (*Callicarpa americana*), but, overall forms a rather open layer. Several vines such as southern fox grape (*Vitis rotundifolia*), yellow jessamine (*Gelsimium sempervirens*), cross vine (*Bignonia capreolata*), poison ivy (*Toxicodendron radicans*), catbrier (*Smilax bona-nox*) and bamboo-vine (*Smilax laurifolia*) may also occur. The groundcover varies from sparse to dense, consisting of partridge berry (*Mitchella repens*), butterweed (*Senecio glabellus*), cane (*Arundinaria gigantea*), Carolina elephant's-foot (*Elephantopus carolinianus*), redtop panicum (*Panicum* aff. *rigidulum*), spikegrass, innocence (*Hedyotis procumbens*), wild sarsaparilla (*Smilax pumila*) and woods basketgrass (*Oplismenus setarius*), among a few others.

Floodplain Forest/Bottomland Forest (includes High Bottomland Forest (also almost indistinguishable from FNAI's Alluvial Forest community))

Well-developed, virtually closed canopy of the Bottomland Forests within the project area consists predominately of large individuals of several hardwoods including, pignut hickory (*Carya glabra*), swamp chestnut oak (*Q. michauxii*), American elm (*Ulmus americana*), tulip tree (*Liriodendron tulipifera*), overcup oak (*Quercus lyrata*), sycamore (*Platanus occidentalis*), red maple, sweetgum, laurel oak, swamp blackgum, and occasional, large live oaks. Scattered individuals of two conifers, spruce pine and loblolly pine, may also occur. There is a well-developed subcanopy/shrub stratum of smaller trees that typically includes water, diamondleaf and water oaks (*Quercus laurifolia* and *Quercus nigra*), swamp bay (*Persea palustris*), bluebeech (*Carpinus caroliniana*), parsley haw (*Crataegus marshallii*), red buckeye (*Aesculus pavia*) and stiff cornel (*Cornus foemina*). The groundcover is sparse and open with a few species such as little bluestem (*Sabal minor*), southern shield fern (*Thelypteris kunthii*), twinflower (*Dyschoriste humistrata*), spikegrass (*Chasmanthium latifolium*), sensitive fern (*Onoclea sensibilis*), woods basketgrass, savannah panicum (*Panicum* aff. *gymnocarpon*), Eastern gamagrass (*Tripsacum dactyloides*) and cane, among a few others. Depending upon how one wishes to delineate adjacent and closely intergrading communities, there may also be a few needle palms (*Rhapidophyllum hystrix*) in the widely spaced, shrubby stratum of this community – typically on somewhat higher ground or on slightly upslping areas.

Like the Floodplain Forest, soils of the Floodplain Swamp are highly variable mixtures of sand and organic and alluvial materials. During years of regular rain pattern, this community usually remains somewhat wet throughout the year.

Bottomland Forest/Floodplain Swamp (includes Low Bottomland and Backswamp)

Positioned either just behind a pronounced river berm/levee, or at times immediately contiguous with portions of the river, is a well-developed Floodplain Swamp (also part of the low bottomland and backwater swamp of Light and co-authors; also called a “lower terrace” of floodplain swamps by others). This community is characterized by an overstory of bald cypress (*Taxodium distichum*), water tupelo (*Nyssa aquatica*) and Ogeechee lime (*Nyssa ogeche*), often mixed on higher ground (i.e., along low banks and berms) with individuals of swamp blackgum (*Nyssa biflora*), green ash (*Fraxinus pennsylvanica*) and water hickory (*Carya aquatica*), among others. Depending on the density of the canopy, the subcanopy may be either dense or consist of more scattered individuals of several hardwoods, including pop ash (*Fraxinus caroliniana*), Ogeechee lime (*Nyssa ogeche*), swamp cottonwood (*Populus heterophylla*), planer tree (*Planera aquatica*), red maple (*Acer rubrum*), American elm (*Ulmus americanus*), diamondleaf oak (*Quercus laurifolia*), stiff cornel (*Cornus foemina*), black willow (*Salix nigra*), river birch (*Betula nigra*), overcup oak (*Quercus lyrata*), pop ash (*Fraxinus caroliniana*) and an occasional (or in small open stands) sycamore (*Plantanus occidentalis*).

Many of the trees can be described as secondary old-growth, forming a canopy ca. 40-60 feet high with many individuals of both species well buttressed and having good diameters. At several places within the floodplain, often on slightly elevated hummocks or ridges, large – both in height and diameter – individuals of loblolly pine (*Pinus taeda*) also occasionally occur. The groundcover and/or shrub layer is typically poorly developed but may support a few individuals of little bluestem (*Sabal minor*), buttonbush (*Cephalanthus occidentalis*), sebastian bush (*Sebastiania fruticosa*), lizard's tail (*Saururus cernuus*), swamp smartweed (*Polygonum hydropiperoides*), southern cutgrass (*Leersia hexandra*), chainfern (*Woodwardia areolata*) and royal fern (*Osmunda regalis*).

Floodplain Swamp (includes Backswamp)

The vegetation surrounding these features (which are not easily separable from outright Floodplain Swamp community) are often dominated by bald cypress, Ogeechee lime (*Nyssa ogeche*) and pop ash (*Fraxinus caroliniana*) around the immediate periphery, with red maple, sweetgum, water (*Q. nigra*) and diamondleaf oak, stiff cornel (*Cornus foemina*), black willow (*Salix nigra*), and water tupelo (*Nyssa aquatic*) completing the overstory away from the “lake,” creek, slough or more open water edges. There may also be a well-developed shrub layer consisting of titi (*Cyrilla racemiflora*), dog-hobble (*Leucothoe racemosa*), Virginia willow (*Itea virginica*), little bluestem, sebastian bush, wild azalea (*Rhododendron canescens*) and wax myrtle (*Myrica cerifera*). The groundcover is sparse but includes butterwort (*Senico glabellus*), chainfern and rush (*Juncus* spp.) among a few others. The open water areas of these creeks and sloughs may support a few emergent aquatic plants including mud plantain (*Heteranthia dubia*) and spatterdock (*Nuphar luteum*), as well as floating duckweed (*Lemna* aff. *obscura*).

These communities are an important component of the riverine aquatic ecosystem. Besides receiving periodic inputs and flushing of nutrients during times of flooding, the Floodplain Lakes are important breeding grounds for numerous vertebrates, including fishes, amphibians, reptiles, and birds.

Sandy Overwash Plain

This is a poorly described – but low diversity (in terms of plant species) – vegetative community that occurs on sandy banks, spoil areas and point bars along the inner bank of the river opposite from or just downstream from the scouring (eroding) outer bank where the river's flow is stronger. They are dominated by relatively few tree species including black willow (*Salix nigra*), Carolina willow (*Salix caroliniana*) and river birch (*Betula nigra*). Because of frequent overwash, any shrubby understory is usually very sparse, if it exists at all. The few herbaceous species that do sometimes occur include switchgrass (*Panicum virgatum*), boneset (*Eupatorium serotinum*), cyperus (*Cyperus* aff. *brevifolius*), micranthemum (*Micranthemum umbrosum*), mikania (*Mikania scandens*) and whitegrass (*Leersia virginica*). These kinds of open, sandy habitats often make excellent camping spots provided that one has checked river flows and possible dam releases and knows that the river's level is going to be stable during the immediately foreseeable future. Sometimes, however, the sandy-silty sediments of these features are deposited where they block the flow of flood stage waters into important off-river creeks, sloughs, lakes and backswamp habitats.

Seepage Stream (including Baygall)

Each steephead ravine found within the project contains a perennially wet, first-order stream (i.e., Seepage Stream) that issues from the base of the steep, sandy valley walls. Seepage Streams are characterized as perennial or intermittent seasonal watercourses originating from shallow ground waters that have percolated through deep, sandy upland soils. These streams are typically clear – except during flood events – with white, sandy bottoms and maintain a fairly constant temperature of 70° F. Seepage Streams are found along the length of each steephead ravine system. Since Seepage Streams are sheltered by the closed canopy of the Slope Forest, described above, very little in the way of vegetation grows within the confines of the stream itself. However, a forested Baygall natural community is typically well-developed and lines the banks of the Seepage Streams; these forested areas often support a mixture of sweetbay (*Magnolia virginiana*), Florida anise (*Illicium floridanum*), large-fruited gallberry (*Ilex coriacea*), titi (*Cyrilla racemiflora*), Sebastian bush and wax myrtle, among several others.

Spring (Aquatic Cave)

At least one known spring occurs within the boundary of the project, Blue Spring, although at least two other springs associated with White Cave (and White Cave Spring) occur just west of the project boundary (Figure 4). All of these are located along the upper western bank of the river in Jackson County not far south of I-10 (but it should be noted that the Blue Spring within the project should not be confused with Jackson Blue, a 1st Magnitude Spring that feeds Merritt's Mild Pond and the Chipola River that is located further west near Marianna and is not within the project). Little information on these springs is available but it is clear from a literature search that none are 1st Magnitude Springs. Further investigations of all three are warranted, however, but Blue Spring and its Spring-run Stream are cited in

FDEP, NFWMD and FFWCC literature and websites discussing the Apalachicola River Blueway (water) recreational trail system as interesting and mapped stopover points easily accessible from the river (Figure 5).

Spring-Run Stream

From USGS Topographic maps (Figure 4), it is clear that Blue Spring has a short, yet well-developed Spring-run that can be characterized as a FNAI-recognized natural community: a Spring-run Stream. These are described by FNAI (in their Guide to Natural Communities) as “perennial water courses that derive most, if not all, of their water from artesian openings in the underground aquifer. Waters issuing from the aquifer are generally clear, circumneutral to slightly alkaline (pH=7.0-8.2), and perennially cool (66-75°F). These conditions saturate the water with important minerals, allow light to penetrate deeply, and reduce the limiting effects of environmental fluctuations, all of which are conducive for plant growth. Thus, Spring-run Streams are among the most productive aquatic habitats. Typical plants include tapegrass (*Vallisneria americana*), annual wild rice (*Zizania aquatica*), giant cutgrass (*Zizaniopsis miliacea*), arrowheads (*Sagittaria* spp.), southern naiads (*Najas quadalupensis*), pondweed (*Potamogeton* spp.), and chara (*Chara* spp.). Typical animals include mollusks, stoneflies, mayflies, caddisflies, simuliids, chironomids, American alligator (*Alligator mississippiensis*), alligator snapping turtle (*Macrochelys temminckii*)... Florida watersnake (*Nerodia fasciata pictiventris*), and many fishes.” The time required to investigate Blue Spring and its Spring-run Stream were not available during the preparation of this project application, but we look forward to seeing them during the ARC Liaison staff field assessment of the project.

Sloughs, Creeks, Lakes and Creek Swamps

According to Light and co-authors, there are more than 200 miles of off-channel sloughs, streams, and lakes along the ca. 86-mile non-tidal stretch of the Apalachicola River and its floodplain that are directly influenced by fluctuations in the river’s level. These off-channel waterbodies provide extensive habitat for fishes and other aquatic organisms. More than 80% of the freshwater and anadromous fish species found in the Apalachicola River are known to spend at least some part of their life cycle in these floodplain habitats. The typically low banks along these ecologically important systems often support vegetation that would be roughly equivalent to Light and company’s backswamp sub-community (see above).

Some of the well-known and larger slough and lake systems – many of which are revealed by examination of USGS topographic quadrangle maps (see Figures 1 A & B) – as well some of the smaller sloughs that were explored by boat on March 1 and 2, 2017, that occur within the project boundary include (from north to south):

Southern bank and run of Mosquito Creek just south of Chattahoochee
Portion of Spring Branch on west bank of the river in Jackson County
Portion of Flat Creek (including its mouth) on east side of the river just north of I-10
Blue Spring and Blue Spring Run on west bank of the river south of I-10
Much of Ocheesee Creek on west bank of river in Calhoun County

Mouth (at least) of Graves Creek south of the Trammell Tract conservation easement on west side of the river

A portion of The Bayou on the west side of the river near Blountstown

Sutton Lake just south of Blountstown on the west side of the river

Bee Tree Slough on east side of the river in Liberty County

Outside Lake just south of the small settlement of Estifanulga along east side of the river

Old River and Hicks Creek on west side of the river

All of Poloway Cut-Off on the east bank of the river

Most all of the extensive Iamonia Lake on the west side of the river

These slough, creek and lake systems are exceedingly important to the health of the Apalachicola River, Apalachicola Bay and the incredible wildlife and fish populations found along the river. As paraphrased, much of intact, from the FNAI Guide to Natural Communities for Floodplain Swamp this complex of interacting and dynamic community types is important because: "Floodplain swamp along channels may be regularly inundated by flowing aerobic water. However, backswamps are flooded with stagnant water for extensive periods of time, resulting in highly anaerobic conditions. The lack of available oxygen inhibits breakdown of leaf litter and leads to considerable peat accumulation. Anaerobic conditions may contribute to increased nutrient release from sediments through bacterial processes... Floods redistribute detrital accumulations to other portions of the floodplain or into the main river channel. This rich organic debris is essential to the functional integrity of downriver ecosystems such as estuaries, providing a vital source of nutrients. Floodplain swamp may also act as a nutrient sink or transformer depending on local conditions, making these wetlands particularly valuable in disposal of partially treated wastewater...

The topography of alluvial forest and floodplain swamp, particularly in larger alluvial river systems (like the Apalachicola River), is a result of a seasonal flooding pattern which builds levees and point bars, creates scour channels and depressions, and introduces flowing water into backswamps. Old channels and levees left behind by the changing meander of the river itself become part of the complex mosaic.... and the oxbows and backswamps created by meander processes are important breeding grounds for fish when high water connects them to the river... Floodplain swamp communities provide important wildlife habitat, contribute to flood attenuation, and help protect the overall water quality of streams and rivers... Artificial water impoundments on rivers can severely limit the effects of seasonal flooding that maintain the health of these systems, including the stabilization of deposits and flushing of detritus... The natural hydroperiods of swamps promote their high productivity, and drainage of these systems may greatly reduce biomass..."

Alluvial Stream

The Apalachicola River may be characterized as an Alluvial Stream (also known to some as a Whitewater River or Stream – but not because of any rapids along its course). The portion of the Apalachicola River encompassed within the project area supports little in the way of emergent or floating aquatic vegetation. No substantial growth of rooted or submerged vegetation was noted during the field survey and there were no real attempts made to sample any of the benthic species. For the most part, the vegetation that does occur along the river

is closely associated with the shoreline and will be described below under one or more of the terrestrial communities.

As adapted from the FNAI Natural Community Guide for Alluvial Streams, they are “perennial or intermittent seasonal watercourses originating in high uplands... and surface runoff generally predominates over subsurface drainage... Alluvial Stream waters are typically turbid due to a high content of suspended particulates, including clays, silts, and sands, as well as detritus and other organic debris... The most important characteristics of Alluvial Streams are the large range of flow rates and sediment loads encountered... Water depth fluctuates substantially and is generally separated into two distinct stages, a normal or low flow stage and a flood or high flow stage. During the normal low flow stage the water is confined within the stream banks, while during flood stage the water overflows the banks and inundates the adjacent floodplain communities. Flood stages generally occur once or twice each year during winter or early spring and occasionally in summer...

Several important ecological phenomena occur during floodstage along these kinds of rivers. The flood waters transport organic detritus, minerals (in sand, silt and clays) and nutrients from the surrounding uplands to the floodplain communities and beyond. This flushing action removes biological waste materials and simultaneously re-nourishes the floodplain communities. Most importantly, however, the periodic flooding provides a pulse of nutrient-rich water to the estuarine communities which occur where the stream empties into the sea” (or in the case of the Apalachicola River, where it empties into and feeds Apalachicola Bay, East Bay and St. Vincent Sound that are all connected to the Gulf of Mexico).

Vertebrate Wildlife

As noted in the Introduction, the Apalachicola River basin has the highest species diversity of reptiles and amphibians in North America (north of Mexico), with more than 40 species of amphibians and 80 species of reptiles – including Apalachicola alligator snapping turtle (*Macrochelys apalachicolae*), Barbour’s map turtle (*Graptemys barbouri*), Eastern copperhead (*Agkistrodon contortrix*), American alligator (*Alligator mississippiensis*), gopher tortoise (*Gopherus polyphemus*) and Eastern diamondback rattlesnake (*Crotalus adamanteus*), among many others (see Appendix 1). Over 52 species of mammals – including Florida manatee (*Trichechus manatus latirostris*), fox squirrel (*Sciurus niger niger*) and Florida black bear (*Ursus americanus floridanus*) – are also known from, near to, or suspected as being likely within the project.

The river and the lands along it support such federally listed species as the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), five mussels including the purple bankclimber (*Elliptoideus sloatianus*) and fat three-ridge (*Amblema neislerii*), red-cockaded woodpecker (*Picoides borealis*), bald eagle (*Haliaeetus leucocephalus*) and wood stork (*Mycteria americana*). Additionally, the dense floodplain and upland forests along the river provide habitat for over 300 other species of avifauna, including many Neotropical migrants such as the swallow-tailed kite (*Elanoides forficatus*) and Mississippi kite (*Ictinia mississippiensis*) that have been well documented over the years by the project sponsors to heavily utilize the densely forested lands within the project boundary.

Besides numerous Neotropical migratory bird species that utilize the dense hardwood and pine forests along the Apalachicola River, such important game bird species as wild turkey (*Meleagris gallopavo*) and wood duck (*Aix sponsa*) are known to occur within the project. Other important, or rare/FNAI-listed, invertebrate or vertebrate species documented on or near the project include the washboard (*Megaloniaias nervosa* – a mollusk), as well as two fishes, spotted bullhead (*Ameiurus serracanthus*) and bluestripe shiner (*Cyprinella callitaenia*). Anadromous fish species – those that reside most of their lives in saltwater but migrate to freshwater for breeding – include Gulf sturgeon, striped bass (*Morone saxatilis*), Alabama shad (*Alosa alabamae*), Atlantic needlefish (*Stronglyura marina*) and skipjack herring or shad (*Alosa chrysochloris*). It should also be noted that the Apalachicola River is the only river on the Florida Gulf coast to support a substantial striped bass fishery. Catadromous fishes – those that live mostly in rivers but migrate to the gulf or ocean for breeding – include the American eel (*Anguilla rostrata*), hogchoker (*Trinectes maculatus*) and mountain mullet (*Agonostomus monticola*). Open saltwater fish species such as mullet and flounder are also abundant in the river and a lucrative sport fishery within the Apalachicola River is supported by large populations of bass, sunfish, striped bass, and several species of catfish.

Archaeological and Historic Resources

Concerning the archaeological and historic sites on the property, we received this report (including detailed supplemental material enclosed within this application as Appendix 2) from Mr. Mike Wisenbaker, Archaeology Supervisor—Public Lands, Bureau of Archaeological Research, Division of Historical Resources, who researched the Florida Master Site File:

On looking at the Apalachicola River tract (it appeared to be 36 individual tracts based on what we received), there are 67 archaeological sites, 17 archaeological and historical surveys and studies and one historical cemetery currently showing up in the Florida Master Site File within these boundaries. Please see the three attached spread sheets for your records. At this time, we are not showing any resource groups, historic bridges or historic structures on these properties but they also more than likely occur there.

As for the archaeological sites, they range in age from 10,000 years ago to mid-20th Century. The cultures represented thus far include: Early Archaic, Late Archaic, Deptford, Weeden Island, Fort Walton, Lower Creek and Territorial Period to mid-to late 20th Century historic sites (1821-1967). Beyond these cultures, we would expect also to find Paleo-Indian, Middle Archaic, Swift Creek, British and 1st and 2nd Spanish period sites and Seminole. The types of sites recorded thus far include artifact scatters (both ceramic and lithic), prehistoric burial mounds, shell middens, habitations sites, a house site, campsites and historic refuse dumps. Just as with the cultures, more intensive surveys of these tracts most likely would reveal additional types of sites.

Both in prehistoric and historic times, the Apalachicola River was an extremely important transportation corridor for people to move themselves and their goods up and down the river. It also provided a wide array of ecosystems and niches for flora and fauna that could be utilized by both Native Americans and later European and African-American settlers. There

are probably many more archaeological and historical sites to be discovered within this tract. We consider the entire corridor to be an extremely high probability area for containing potentially significant cultural resources.

Human-made Disturbances

Other than ongoing, small-patch clear cuts as part of the long-standing and sustainable forestry practices within the project area, and a small series of woods roads that allow access to portions of the property, there are few other human-made disturbances, structures or impacts to the property. It does appear, however, that at least one large cell tower is situated on a high bluff in the northern portion of the property (east side of the river accessible off Dolan Road in Gadsden County) and several various utilized and constructed, public and non-public, boat ramps also occur.

Invasive Exotics

Three non-native, invasive plant species – Japanese climbing fern (*Lygodium japonicum*), Japanese honeysuckle (*Lonicera japonica*) and Chinese tallow tree or Popcorn Tree (*Sapium sebiferum*) – have been observed within the project boundary.

Any potential recreational activities or other public uses that can be accommodated by the project

Although the lands within the project will remain in private ownership as protected through a conservation easement, there are still a variety of potential recreational activities that can be accommodated on the project. The current hunting leases under the auspices of local hunt clubs will likely continue and those will allow many members of the public – albeit within a private/paying club arrangement – to enjoy recreational access to the lands within the project. Since the lands will remain under private ownership, if liability issues can be worked out it is possible that some limited public access in the form of segments of hiking trails may be possible, although this is yet to be confirmed with the new landowner. Nonetheless, access by canoe, kayak and many sizes of boat along the waters of the Apalachicola River are a mainstay of local and statewide recognized recreational and wilderness experiences for those wishing to enjoy the aesthetic values, natural scenery and abundant wildlife along the river. A recognized Blueway Trail – by DEP, the FFWCC and the NFWFMD – along the Apalachicola River has long been established that provides paddlers and sports fishermen with detailed maps and descriptions of access, stop-over and camping spots along the river, with many of those on or in close proximity to lands within the project. Such various recreational activities as fishing, bird watching, nature photography, swimming (such as in Blue Spring) and camping can all be accommodated at numerous points within the project.

Any known threats or development plans that could harm or diminish the values of the project

There are few direct threats (other than reduced water flows to the Apalachicola River that are beyond the scope or control of this project to remedy) and no known development plans that could harm or diminish the ecological values of the project at the present time.

The Apalachicola Riverkeepers, however, have a list of four main threats to the riverine system at large and while they do not necessarily pertain to any of the lands and waters within

the Upper Apalachicola River Ecosystem project, they are illustrative of the greater threats posed to the river, its floodplain and downstream estuarine system.

From the Apalachicola Riverkeepers website

“At Apalachicola Riverkeepers, we see four fundamental threats to the health, ecological productivity, and biological diversity of the Apalachicola River and Bay, and to the lives and livelihoods of the thousands of people who depend on these resources:

Loss of life-sustaining freshwater

Loss of floodplain and wetland habitat

Point-Source and Nonpoint-Source Pollution

Unrestrained growth and development”

Local resolutions, if any, concerning the potential public acquisition of the project

There are no local resolutions, at this time, concerning the public acquisition of the project but these are to be sought from local governmental bodies shortly. It should be noted, however, that since these lands are proposed to be protected through a conservation easement, they will remain under private ownership and management and on the local property tax rolls. Any local resolutions received will be immediately forwarded to the appropriate ARC staff person for distribution to ARC members and associated public agencies. We anticipate, however, a favorable response to both protect these lands and the local jobs they provide and to keep them in private ownership and management.

A brief, clear statement detailing how the project meets the criteria and furthers the goals and measures of the Florida Forever program

The protection of the Upper Apalachicola River Ecosystem project will conserve valuable timber and other natural resources, wildlife corridors, native habitats and regionally important waters within an area of the state with renowned biodiversity, rare and imperiled species, and significant hydrological and archaeological resources. The project will conserve the deep, forested floodplain habitats along the Apalachicola River that besides providing habitat, recreational opportunities and supplying vital nutrients and flows to downstream estuaries, also serve to increase the overall management efficiency of the suite of contiguous managed areas already protected by the state and NFWFMD. The lands and waters within the project boundary score very highly in many Florida Forever goals and numeric performance measures (see Figures 6-12) including protection of important Strategic Habitat Conservation Areas, rare and imperiled species habitat, landscape connectivity, under-represented ecosystems, natural floodplain functions, surface waters, functional wetlands, recreation/trails, sustainable forestry, and more. As such, the state is now presented with the opportunity to protect lands and waters that will help to maintain water supplies, enhanced water quality, more natural seasonal storage and a wide variety of other indispensable ecosystem services to the residents of North Florida and beyond.

Suggested or Proposed Land Manager

Because the project will be protected through a less-than-fee transaction under the terms and conditions of a conservation easement with accompanying Forest Management Plan, it is suggested that a public agency with expertise in both forestry management and in monitoring conservation easements be assigned as the land manager. It is therefore proposed that either

the Florida Forest Service or the Northwest Florida Water Management District be assigned this role for the State of Florida.

Florida Forever Criteria. 18-24.0021 F.A.C. (*Rulemaking Authority 259.035(1),(4), 259.105(9), (18) FS. Law Implemented 259.035, 259.04, 259.041, 259.045, 259.07, 259.105 FS. History–New 5-1-10, Amended 2-8-17.*)

For acquisition projects, the council shall give weight during project selection and ranking to the following Florida Forever criteria:

(1) The project meets multiple Florida Forever goals described in Rule 18-24.0022, F.A.C.

Yes, and amply so (see detailed information above and below within this application).

(2) The project is part of an ongoing governmental effort to restore, protect, or develop land areas or water resources.

The project area is within the Northwest Florida Water Management District jurisdictional boundary and as part of their mission to protect, restore and maintain water resources in the region, the flows from the Apalachicola River to the downstream Apalachicola Bay are an important priority for them (as noted in their 2016 Work Plan). The Upper Apalachicola River Ecosystem project would certainly enhance the lands and waters already protected along the Apalachicola and Chipola rivers and within the existing Apalachicola River Florida Forever project where over 10,000 acres have already been acquired in fee or protected through conservation easements. As the river with the largest volume of flow of all Florida rivers, the Apalachicola River is a mainstay water resource and numerous ongoing governmental efforts to protect it (including lawsuits) have been underway for many years. The lands within the Upper Apalachicola River Ecosystem project have long been sought for protection and 2,475 acres of the project area are already within the existing Apalachicola River Florida Forever project thereby clearly illustrating that the current project is, and has been, part of a long-standing governmental effort to protect land areas and water resources of North Florida, the Apalachicola River (and Chipola River) and Apalachicola Bay. It should also be noted that the Apalachicola River is also an Outstanding Florida Water as designated by the State of Florida.

(3) The project enhances or facilitates management of properties already under public ownership.

An examination of the “County View” map of the Upper Apalachicola River Ecosystem project (Figure 3) within this application shows well the strategic position of the property in relation to other contiguous or nearby managed areas – e.g., the Torreya State Park complex, conservation easements on Hatcher, Trammell and Corbin-Tucker tracts, a NFWFMD ownership along the river and several others downstream, including the Apalachicola National Forest. While some of these lands (or portions thereof) require prescribed fire for proper management, any time a broad expanse of lands that buffer these areas is protected – such as lands within the current project – allows for a more aggressive and flexible fire management program. As well, control measures for invasive, non-native species on these public lands is enhanced and facilitated by also helping to control invasive exotics on adjacent lands that can become foci for re-infestation of already treated public lands. Water

management and hydrological restoration involving public lands can also be enhanced by possible implementation of similar measures on the current project, especially where creeks, sloughs and other off-river water bodies/flows share a contiguous boundary. And finally, protecting a vast wildlife corridor known to be utilized by numerous species of imperiled vertebrates (especially birds, fishes, amphibians and reptiles) and invertebrates (various are mussels) – and that helps to connect these other protected lands – would certainly seem to facilitate and enhance the management of the array of important properties already under public ownership.

(4) The project has significant archaeological or historic value. The relative significance of the archaeological or historical values for each acquisition project will be determined based on information obtained from the Department of State, Division of Historical Resources.

Yes. The Upper Apalachicola River Ecosystem project has 67 archaeological sites and one historical cemetery currently showing within the Florida Master Site File within its boundaries. The archaeological sites range in age from 10,000 years ago to mid-20th Century. The cultures represented include: Early Archaic, Late Archaic, Deptford, Weeden Island, Fort Walton, Lower Creek and Territorial Period to mid-to late 20th Century historic sites (1821-1967). Beyond these cultures, the Division of Historical Resources states that they would also expect to find Paleo-Indian, Middle Archaic, Swift Creek, British and 1st and 2nd Spanish period sites and Seminole. The types of sites recorded thus far include artifact scatters (both ceramic and lithic), prehistoric burial mounds, shell middens, habitations sites, a house site and campsites, among others.

Although now retaken by native forest land cover with the project, pre-Civil War era cotton fields at Ocheese Landing and the long-ago legislatively vacated Fayette County (FL), whose county seat was Ocheese, was a river boat port site and original location of Torreya State Park's historic Gregory House. As well, there were two battles during the First Seminole War fought along the Apalachicola River within stretches encompassed by the project: Scott's Massacre on November 30, 1817, and The Battle of Ocheese that began on December 15, 1817, and lasted several days.

(5) The project has funding sources that are identified and assured through at least the first 2 years of the project.

There are no firm or absolute funding sources identified and assured through at least the first two years of the project.

(6) The project contributes to the solution of water resource problems on a regional basis. The applicability of the project's contribution to the solution of water resource problems on a regional basis will be evaluated based on information obtained from the water management district within which the project is located.

The Upper Apalachicola River Ecosystem project is part of an interlinked hydrological system, including the headwaters and runs of the Chattahoochee and Flint rivers in Georgia and Alabama, that provides vital and economically important flows to the downstream Apalachicola Bay estuary. Although Florida is engaged in trying to secure more water from these upstream water users to support the Apalachicola River and Apalachicola Bay that it

feeds, the current project cannot directly assist with those efforts. Nonetheless, the protection of a significant portion of the ecologically and hydrologically interconnected floodplain of the Apalachicola River that supports over 200 miles of direct, off-river creeks, sloughs and lakes that furnish both necessary nutrients and freshwater flows to the downstream estuaries can assist with solution of these water resource problems. The project would thereby seem to contribute to and benefit water resources (i.e., water quality and quantity) for an important region of Florida whose protection is imperative to an overall and sustainable economy. The project proposes to sustain forestry land uses which neither use nor pollute surface and ground waters of the Apalachicola River – a major riparian Outstanding Florida Water. The project also would prevent conversion of these rich floodplain lands to more intense agricultural uses as has occurred along large areas bordering other southern rivers.

(7) The project has a significant portion of its land area in imminent danger of development, in imminent danger of losing its significant natural attributes or recreational open space, or in imminent danger of subdivision which would result in multiple ownerships and make acquisition of the project costly or less likely to be accomplished. In reviewing the applicant's information and making a determination concerning the imminent danger of development, subdivision, or loss of natural attributes or recreational open space, the council may utilize information provided by the Division of State Lands, the affected local governments, or the Department of Community Affairs (now the Department of Economic Opportunity).

No, the project does not have a significant portion of its land area in imminent danger of development, in imminent danger of losing its significant natural attributes or recreational open space, or in imminent danger of subdivision under this forestry land use and landowner. Large forest ownerships are routinely subdivided and sold in parts for conversion to other land uses such as agriculture and recreational home sites. As such, this project presents an outstanding opportunity to conserve the largest private-frontage ownership on a major Florida river.

(8) The project implements an element from a plan developed by an ecosystem management team.

The NFWFMD describes their Apalachicola River SWIM plan as the “highest priority of the District’s SWIM program,” a comprehensive, basin-wide management strategy for public and private partners. Watershed preservation to protect and restore watershed resources was a primary element of the current SWIM plan being redrawn now under NFWF-funding to the State and NFWFMD from Gulf of Mexico/Deepwater Horizon BP settlement funds.

(9) The project is one of the components of the Everglades restoration effort. The project's applicability to the Everglades restoration effort will be based on information obtained from the South Florida Water Management District.

The project is not part of, nor does it have any components of or relationship to, the Everglades restoration efforts.

(10) The project may be purchased at 80 percent of appraised value, based on the state's appraised value.

Although efforts can be made to purchase the property for 80% of appraised value, it is far too early in the process for the landowner to commit to this, much less to stipulate in writing that they would do so. It may also be recalled that the current project seeks protection of the land, timber, water and wildlife resources through the purchase of a conservation easement. Because the complex terms and conditions of any well-crafted conservation easement – which among other aspects of the protection of this project may include such factors as the landowner agreeing to the designation of Special Natural Areas (including possible buffers around creek/slough/lake areas with allied purchase of timber rights) and the Easement Documentation Report recording these, discussion of possible restoration of creeks and sloughs (as well as some areas of forestland), possible Sustainable Forest Initiative (SFI) certification, and the adoption of specific Working Forest conservation easement language with an attached forest management plan (and selection of monitor) – are not even at the beginning stage of being negotiated, there is no way to know what kind of value the appraisers will place on the conservation easement. Given these and other future uncertainties, the terms of any such 80% “bargain sale” are subject to the sole discretion of the landowner and their representatives as based on many unknown factors (e.g., appraised value, timing) at this juncture and cannot be guaranteed or assured at this very early stage in the consideration of the project.

(11) The project may be acquired, in whole or in part, using alternatives to fee simple, including but not limited to, tax incentives, mitigation funds, or other revenues; the purchase of development rights, hunting rights, agricultural or silvicultural rights, or mineral rights; or obtaining conservation easements or flowage easements.

Yes, the landowner wishes to entertain the sale of a conservation easement to protect the property. Possible restoration rights per historic U.S. ACOE dredge/fill activities and agency recommendations are also an element of Apalachicola River and Bay restoration considerations.

(12) The project is a joint acquisition, either among public agencies, nonprofit organizations, or private entities, or by a public-private partnership.

Acquisition of the project *may* include participation by one or more of the following: Division of State Lands, Northwest Florida Water Management District, Florida Forest Service, Florida Fish and Wildlife Conservation Commission, U.S. Fish and Wildlife Service, and, perhaps, the use of funding through the Deepwater Horizon Oil Spill settlement agreements/sources including Natural Resource Damage Assessment (NRDA) Payments, RESTORE Buckets 1, 2 and 3, and Environmental Benefit Funds through NFWF. As well, The Nature Conservancy and other NGOs (e.g., Apalachicola Riverkeepers) stand ready to participate in order to facilitate a satisfactory transaction and advise on the terms and conditions of the conservation easement that will result in protection of the property. It should be duly noted, however, that at this application stage there has been no solicitation of or any firm commitment for participation – including no specific or anticipated dollar or funding amounts – by any of these entities, although once the merits of the project are fully appreciated it is likely that potential public partners offering financial contributions to this project will emerge.

Florida Forever Goals and Numeric Performance Measures. 18-24.0022 F.A.C. *(Rulemaking Authority 259.035(1), (4), 259.105(9), (18) FS. Law Implemented 259.035, 259.04, 259.041, 259.045, 259.07, 259.105 FS. History–New 5-1-10.)*

(1) The Florida Forever goals and measures described in this rule apply to all programs that receive Florida Forever Trust Funds pursuant to Section 259.105(3), F.S., or funds deposited into the Land Acquisition Trust Fund pursuant to s. 28(a), Art. X of the State Constitution. Some goals and measures are specific to acquiring land, while others are primarily measures for capital improvement expenditures. Some measures are not directly related to Florida Forever program activities per se, but are general ecosystem function measures that may have an indirect connection or a post-acquisition land management or land use component. Some measures are specific to one or more of the programs funded under Florida Forever pursuant to Section 259.105(3), F.S., while the majority of the goals and measures overlap with several programs.

(2) The council shall employ the following Florida Forever goals and measures when evaluating, selecting and ranking acquisition projects. Numeric values for these measures shall be supplied to the Council pursuant to paragraph 18-24.006(3)(c), F.A.C.:

(a) Enhance the coordination and completion of land acquisition projects, as measured by:

1. The number of acres proposed to be acquired that contribute to the enhancement of essential natural resources (such as retention of biodiversity and water quantity and quality), ecosystem service parcels (such as those that assist in carbon sequestration, flood control and storm surge protection), and connecting linkage corridors, as identified and developed by the best available scientific analysis, and measured under goals paragraphs (2)(b), (c), (d) and (g) of this rule.

The Upper Apalachicola River Ecosystem supports tremendous and nationally recognized biodiversity and supports both water quantity and quality for maintaining the productive and economically important Apalachicola Bay estuarine system. Many kinds of ecosystem services are provided by the project (besides maintenance of biodiversity and water quantity/quality) such as tremendous carbon sequestration in the dense floodplain forests and swamps along the river, and its intact floodplain undoubtedly, and substantially, contributes to flood control for downstream residents. Fiber production through sustainable forestry practices and maintenance of aesthetic and recreation values are also vital ecosystem services supplied by the project. According to data and maps in the Florida Ecological Greenways Network, the Critical Lands and Waters Identification Project (CLIP) and the FNAI Conservation Needs Assessment, the project is also an important connection and landscape linkage (e.g., see Figure 8). The project's riparian corridor fronts an OFW for its entire length and is upstream of: an Aquatic Preserve, a National Forest, the Apalachicola National Estuarine Research Reserve, St. Vincent NWR, the Apalachicola Wildlife and Environmental Area, Tate's Hell State Forest, St. George Island State Park and adjacent State Preserve, TNC's ABRP and other special places depended upon the waters and ecological health of the upper river and floodplain ecosystem functions.

2. The number of acres proposed to be protected through the use of alternatives to fee-simple acquisition.

The entire 39,639 acres of the project area are proposed to be protected through an alternative to fee-simple acquisition, specifically through a conservation easement.

3. The number of Florida Forever acquisition funding partners and partners with other funding sources, including the percent of funding to be derived from partnerships, and the estimated amount of funds to be made available by the funding partners.

Although no funds from acquisition partners are yet available and/or committed to this project (and we cannot estimate how many dollars made be made available by various partners), it is instructive to read about the ongoing efforts and prioritization of the overall project area as stated in the NFWFMD's 2016 Work Plan. Here are a few excerpts with appropriate headings:

Approved Acquisition Areas

"The approved acquisition areas listed below are not presented on a priority basis. For each of these water bodies, it is desirable to acquire both the floodplain and a natural buffer zone to provide further water resource protection." Note: In the table presented by the NFWFMD report the Apalachicola River was listed.

Land Acquisition

"Approximately 50,132 acres have been identified for possible fee acquisition in the Upper Apalachicola River basin. Sufficient lands have been identified to allow for a flexible implementation strategy over at least the next five years. The timing of any given acquisition can depend upon such considerations as: Governing Board policy; threats to the resource; availability of willing sellers; tract size; general market conditions; available staff resources, and availability of funds."

Upper Apalachicola River Basin

"The Apalachicola River begins below Lake Seminole at the confluence of Chattahoochee and Flint rivers. It has the largest floodplain in the state and is widely regarded as one of the state's most important natural resources. The Apalachicola River supports the highly productive fishery in Apalachicola Bay, and more endangered plant species can be found along the river's upper stretches than in any comparably sized river in the state. The District owns 36,823 acres in fee-simple and 1,550 acres in less than fee simple."

Given the foregoing, we can only hope that if the NFWFMD has funds available that it will be able to allocate some of those to the protection of this project.

4. For ranking purposes only, the remaining acres and percent completion of each project on the Florida Forever list.

(b) Increase the protection of Florida's biodiversity at the species, natural community, and landscape levels, as measured by:

1. The number of acres proposed to be acquired of significant strategic habitat conservation areas, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that the majority of the 39,639 acres of the Upper

Apalachicola River Ecosystem project are within Priority 1 (highest ranked) Strategic Habitat Conservation Areas (see Figure 6 for SHCAs recognized by CLIP 4.0).

2. The number of acres proposed to be acquired of highest priority conservation areas for Florida's rarest species, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that the majority of the 39,639 acres of the Upper Apalachicola River Ecosystem project are within Priority 1 (highest ranked) Rare Species Habitat Conservation Priorities (see Figure 7 & 11 for CLIP 4.0 data relevant to this Measure).

3. The number of acres proposed to be acquired of significant landscapes, landscape linkages, and conservation corridors, giving priority to completing linkages, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that the majority of the 39,639 acres of the Upper Apalachicola River Ecosystem project are within Priority 1 (highest ranked = Critical Linkages) and Priority 3 or 4 Landscape Linkages (see Figure 8 for CLIP 4.0 data relevant to this Measure).

4. The number of acres proposed to be acquired of underrepresented native ecosystems, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that several small areas of the 39,639 acres of the Upper Apalachicola River Ecosystem project support the Upland Glade and Upland Hardwood Forest natural community types, with both of these considered as under-represented ecosystems.

5. The number of acres proposed to be acquired that would establish or enhance a landscape-sized protection area of at least 50,000 acres that exhibits a mosaic of predominantly intact or restorable natural communities, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that along with the array of existing managed areas in the region (that this project would be contiguous with) that protection of the 39,639 acre Upper Apalachicola River Ecosystem project would – in and of itself – form a landscape-sized protection area of at least 50,000 acres. It should be noted, however, that the area of the project was not recognized in the original Florida Forever Conservation Needs Assessment as a landscape-sized protection area, but that initial work did not preclude recognizing future areas such as the one now under consideration.

6. The number of imperiled species known or reported to occur on the acquisition project.

There are a large number of listed, rare, threatened, endangered and otherwise imperiled species know from the Upper Apalachicola River Ecosystem project and these are enumerated in the FNAI Element Occurrence Records list that is found as Appendix 1 at the back of this project application. But, a few of those species that are known to occur in or near the project area include: Gulf sturgeon (*Acipenser oxyrhynchus desotoi*), five species of mussels including purple bankclimber (*Elliptoideus sloatianus*) and fat three-ridge (*Amblema neislerii*), Florida manatee (*Trichechus manatus latirostris*), bald eagle (*Haliaeetus leucocephalus*), swallow-tailed kite (*Elanoides forficatus*) and Mississippi kite (*Ictinia mississippiensis*), among others.

(c) Protect, restore, and maintain the quality and natural functions of land, water, and wetland systems of the state, as measured by:

1. The number of acres proposed to be acquired that enhance the management feasibility of existing conservation lands, as documented by the affected agency(ies) that manage or own the existing conservation lands.

This goal/numeric performance measure as addressed above under Florida Forever Criterion 3, but include lands owned, managed and/or monitored (the latter under the terms of conservation easements) by the Division of Recreation and Parks within FDEP and the NFWFMD.

2. The number of acres proposed to be acquired for restoration, enhancement, and management as identified in plans prepared pursuant to Section 373.199, F.S., the management prospectus for an acquisition project prepared pursuant to Section 259.032(9)(d), F.S., or the Florida Ecological Restoration Inventory, which is maintained by the Department of Environmental Protection's Division of Water Resource Management and available at www.dep.state.fl.us/water/wetlands/feri or by writing Florida Wetland Restoration Information Center, 2600 Blair Stone Road, M.S. 3500, Tallahassee, Florida 32399, or by calling (850) 245-8336.

Not applicable to our knowledge but this is being researched.

3. The number of acres proposed to be acquired that protect natural floodplain functions, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that the majority of the 39,639 acres of the Upper Apalachicola River Ecosystem project are within Priority 1 (highest ranked) for protecting natural floodplain function (see Figure 9 for CLIP 4.0 data relevant to this Measure).

4. The number of acres proposed to be acquired that protect surface waters of the state in designated watersheds, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that the majority of the 39,639 acres of the Upper

Apalachicola River Ecosystem project are within Priority 1 (highest ranked) for protecting surface waters of the state (see Figure 12 for CLIP 4.0 data relevant to this Measure).

5. The number of acres proposed to be acquired to minimize damage from flooding, as identified by the Department of Environmental Protection in coordination with the water management districts.

Not sure, but this is being researched.

6. The number of acres proposed to be acquired that protect fragile coastal resources, as identified in the Florida Forever Conservation Needs Assessment. These include those acres that help species and natural communities adapt to climate change.

Not applicable. Over time, however, some of these natural floodplain lands may become intertidal and extensive areas within the project could potentially provide buffers to upland freshwater recharge landscapes and areas of karst geology.

7. The number of acres of functional wetland systems proposed to be protected, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that the majority of the 39,639 acres of the Upper Apalachicola River Ecosystem project are within Priority 1 (highest ranked) for protecting functional wetland systems (see Figure 10 for CLIP 4.0 data relevant to this Measure).

(d) Ensure that sufficient quantities of water are available to meet the current and future needs of natural systems and the citizens of the state, as measured by:

1. The number of acres proposed to be acquired which provide retention and storage of surface water in naturally occurring storage areas, such as lakes and wetlands, consistent with the maintenance of water resources or water supplies and consistent with district water supply plans, as identified by the water management districts in plans prepared pursuant to Section 373.199, F.S.

Because many thousands of acres of the extensive floodplain of the Apalachicola River – the largest forested floodplain within Florida – are within the project, including a portion of the 200 miles of off-river creeks, slough and lakes associated with the river, it is likely that there are many thousands of acres in the project that provide retention and storage of surface water in naturally occurring storage areas, such as lakes and wetlands, consistent with the maintenance of water resources or water supplies and consistent with district water supply plans. Annually, hundreds of thousands of acre feet of water from riparian floods are stored and retained in these vast, natural floodplain forests and interior slough and lake settings and gradually released back to the OFWs of the river and bay.

2. The number of acres proposed to be acquired for a water resource development project, as identified in plans prepared pursuant to Section 373.199, F.S.

Not known, but being researched.

3. The number of acres proposed to be acquired of groundwater recharge areas critical to springs, sinks, aquifers, other natural systems, or water supply, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that the majority of the 39,639 acres of the Upper Apalachicola River Ecosystem project are within Priority 2, 3 and 5 for protection of groundwater recharge areas critical to springs, sinks, aquifers, other natural systems.

(e) Increase natural resource-based public recreational and educational opportunities, as measured by:

1. The number of acres proposed to be acquired that are proposed to be available for potential natural resource-based public recreation or education, as identified by the Department of Environmental Protection in coordination with other agencies.

Although the lands within the project will remain in private ownership as protected though a conservation easement, there are still a variety of potential recreational activities that can be accommodated on the project. The current hunting leases under the auspices of local hunt clubs will likely continue that will allow many members of the public and local communities – albeit within a private/paying club arrangement – to enjoy recreational access to the lands within the project. Since the lands will remain under private ownership, if liability issues can be worked out it is possible that some limited public access in the form of segments of hiking trails may be possible. Nonetheless, access by canoe, kayak and many sizes of boat along the waters of the Apalachicola River are a mainstay of local and statewide recognized recreational and wilderness experiences for those wishing to enjoy the aesthetic values and natural scenery along the river. A recognized Blueway Trail – by DEP, the FFWCC and the NFWFMD – along the Apalachicola River has long been established that provides paddlers and sports fishermen with detailed maps and descriptions of access, stop-over and camping spots along the river, with many of those on or in close proximity to lands within the project. Such various recreational activities as fishing, bird watching, nature photography, swimming (such as in Blue Spring) and camping can all be accommodated at numerous points within the project.

2. The miles of trails that are proposed to be made available for public recreation, giving priority to those that provide significant connections including those that will assist in completing the Florida National Scenic Trail, as identified in the Florida Forever Conservation Needs Assessment.

There is a well-publicized and utilized aquatic (riverine/waterway) recreational trail along the river referred to by FDEP, the NFWFMD and the FFWCC as the Apalachicola River Blueway that is available for public recreational experiences as enumerated directly above.

3. For ranking purposes only, the population served within 100 miles of the acquisition project.

Approximately 2 million residents.

(f) Preserve significant archaeological or historic sites, as measured by:

1. The number and relative significance of archaeological sites identified on the acquisition proposal, as reported by the Department of State's Division of Historical Resources in the Florida Master Site File.

This goal and numeric performance measure was well addressed in Florida Forever criterion 4. above, but to reiterate, there are 67 archaeological sites within the project as recorded in the Florida Master Site File (refer to Appendix 2 at the back of this application).

2. The number and relative significance of historic sites identified on the acquisition proposal, as reported by the Department of State's Division of Historical Resources in the Florida Master Site File.

The Upper Apalachicola River Ecosystem project appears to support 67 archaeological sites, 17 archaeological and historical surveys and studies and one historical cemetery currently showing up in the Florida Master Site File within these boundaries. Both in prehistoric and historic times, the Apalachicola River was an extremely important transportation corridor for people to move themselves and their goods up and down the river. It also provided a wide array of ecosystems and niches for flora and fauna that could be utilized by both Native Americans and later European and African-American settlers. There are probably many more archaeological and historical sites to be discovered within this tract. The Division of Historical Resources considers the entire project area to exhibit an extremely high probability for containing potentially significant cultural resources.

(g) Increase the amount of agricultural and forest land available for sustainable management of natural and agricultural resources, as measured by:

1. The number of acres proposed to be acquired that are potentially available for sustainable forest management and could provide economic return utilizing multiple-use management, as identified in the Florida Forever Conservation Needs Assessment.

Although FNAI will perform a detailed GIS-based analysis of the project as part of the overall ARC and Florida Forever assessment, it appears from an examination of the Florida Forever Conservation Needs Assessment that the majority of the 39,639 acres of the Upper Apalachicola River Ecosystem project are within Priority 2, 3 and 5 for forestlands available for sustainable forest management and that could provide economic return utilizing multiple-use management.

Furthermore, the property will likely be managed along the multiple use concepts set forth by the Florida Forestry Service. Florida defines multiple use as a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources including, but not limited to, recreation, range, sustainable timber management, minerals, watershed, fish and wildlife, and natural scenic, scientific and historic values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment.

2. The number of acres of forestland proposed to be acquired that will serve to maintain natural groundwater recharge functions, as identified by overlaying data from measures subparagraphs (2)(d)3. and (g)1. above.

Much of the project area – but we do not have an exact acreage figure as that will have to await FNAI analysis during the assessment phase – consists of forestland that will serve to maintain natural groundwater recharge functions.

3. For ranking purposes only, the number of acres of improved agricultural lands proposed to be protected, as verified by the Department of Agriculture and Consumer Services in coordination with the landowner.

There are no improved agricultural lands within the project except for scattered areas of small food plots for wildlife enhancement and some small areas of planted pine.

4. For ranking purposes only, the number of acres of unimproved agricultural lands proposed to be protected, as verified by the Department of Agriculture and Consumer Services in coordination with the landowner.

The majority of the lands in the project may be considered a working forest, and so may qualify as unimproved agricultural lands. Consultation with the Florida Forest Service about this measure seems warranted and the project sponsors and landowner look forward to such a discussion.

5. The number of development units proposed to be acquired, as verified by the landowner through the approved local government comprehensive plan.

To be determined, and in accord with, the yet to be negotiated terms and conditions of a conservation easement for this property.

(h) Increase the amount of open space available in urban areas, as measured by:

1. The number of acres proposed to be purchased of open space within urban service areas.

Not Applicable.

2. The number of linear feet proposed to be acquired to protect working waterfronts, as defined in Sections 380.503(18)(a) and (b), F.S.

Not Applicable.

(3) For capital improvement project proposals the following goals and measures are applicable:

(a) Protect, restore, and maintain the quality and natural functions of land, water and wetland systems of the state, as measured by:

1. The number of acres of publicly owned land identified that are proposed to be restored or enhanced.

Not applicable, although the landowner may undertake some ecological and forest enhancements on the property – but these would likely not draw upon capital improvement funds of the State of Florida nor is this project a capital improvement proposal. The project would enhance wildlife conservation, and in-stream, floodplain and water resource values

within and adjacent to hundreds of thousands of acres of public land and waters downstream and thus enhance prior public lands, wildlife management and fisheries investments.

2 The proposed percentage completion of targeted capital improvements in surface water improvement and management plans created pursuant to Section 373.453(2), F.S., regional or master stormwater management system plans, or other adopted restoration plans if such project were funded.

Not applicable.

3. The number of acres of public conservation lands in which upland invasive, exotic plants are proposed to be treated to bring them under maintenance control.

There are a few exotic plants within the project and although the land will remain private under the terms and conditions of a conservation easement the landowner may welcome public assistance to treat and control these species. No acreage number is yet available, however.

(b) Ensure that sufficient quantities of water are available to meet the current and future needs of natural systems and the citizens of the state, as measured by the quantity of water proposed to be made available through Florida Forever expenditures for water resource development.

This criterion may apply since the project will help to provide for sufficient quantities of water to be made available for the current and future needs of natural systems and citizens of the state (i.e., Apalachicola Bay and the citizens of the City of Apalachicola), but we are unsure if these may be enhanced or made further available through Florida Forever expenditures for water resource development. But it is clear that downstream water users, both natural and human-made, benefit by preservation of large areas of upstream, forested floodplain that capture untold acre-feet of annual river floods in natural settings that cleanse and gradually release these waters back to the river and estuarine system.

(c) Increase natural resource-based public recreational and educational opportunities, as measured by the number of new resource-based recreation facilities, by type, proposed to be made available on public land.

This goal and numeric performance measure has been partially addressed above but while the lands within the project will remain private under the terms and conditions of a conservation easement, at a minimum resource-based public recreational and educational opportunities will be available through canoeing, kayaking, boating and fishing activities that will continue to take place along a conserved and aesthetically pleasing stretch of the Apalachicola River. Any actual or new resource-based recreational facilities envisioned or sought will have to be negotiated at the time the conservation easement is being formalized, but will be at the discretion of the landowner.

(4) The following list includes Florida Forever performance measures that may not directly relate to land acquisition selection or capital improvement expenditures, but are general ecosystem function measures that may have an indirect connection or measures that have a post-acquisition, land management or land use component that was not captured in subsections (2) and (3) above:

(a) Protect, restore, and maintain the quality and natural functions of land, water, and wetland systems of the state, as measured by:

1. The number of acres of publicly owned land identified as needing restoration, enhancement, and management, acres undergoing restoration or enhancement, acres with restoration activities completed, and acres managed to maintain such restored or enhanced conditions; the number of acres which represent actual or potential imperiled species habitat; the number of acres which are available pursuant to a management plan to restore, enhance, repopulate, and manage imperiled species habitat; and the number of acres of imperiled species habitat managed, restored, enhanced, repopulated, or acquired.

Lands within the project will likely be subject to various forms of forest management and potential natural resource enhancements. Little, if any, actual restoration is needed, but some sand spoil removal and restoration of creek and slough openings that allow better entry of water into the floodplain of the property are currently being examined by FWC fisheries staff, the University of Florida and the Apalachicola Riverkeepers, and might be undertaken by public entities with the consent of the landowner. Many thousands of acres of habitat for imperiled species will be protected and managed (the latter privately) through this project.

2. The percentage of water segments that fully meet, partially meet, or do not meet their designated uses as reported pursuant to Section 259.105(4)(c)2., F.S.

This is being researched.

3. The percentage completion of targeted capital improvements in surface water improvement and management plans created under Section 373.453(2), F.S., regional or master stormwater management system plans, or other adopted restoration plans.

Not applicable at least that we are aware.

4. The percentage of miles of critically eroding beaches contiguous with public lands that are restored or protected from further erosion.

Not applicable, although it is possible that large volumes of sand spoil from years of U. S. ACOE dredging could be recovered from areas of the floodplain and barged downriver to coastal settings, thereby enhancing the natural system of gradual river transport of sediments to the Gulf of Mexico.

5. The percentage of public lakes and rivers in which invasive, nonnative aquatic plants are under maintenance control, as reported by entities that manage state conservation lands.

There are ongoing efforts by FDEP and the FFWCC across the state, but we are uncertain if any of these are directed at the segments of the Apalachicola River encompassed by the project.

6. The number of acres of public conservation lands in which upland invasive, exotic plants are under maintenance control, as reported by entities that manage state conservation lands.

This is to be determined likely in consultation with the Florida Forestry Service, the NFWFMD, FDEP, and possibly others.

(b) Ensure that sufficient quantities of water are available to meet the current and future needs of natural systems and the citizens of the state, as measured by the quantity of water made available through the water resource development component of a district water supply plan for which a water management district is responsible.

The NFWFMD considers protection of the Apalachicola River a priority and will have to be consulted further to better address this measure.

(c) Increase natural resource-based public recreational and educational opportunities, as measured by the number of new resource-based recreation facilities, by type, made available on public land.

There is a designated and mapped Blueway recreational trail on the Apalachicola River for canoeing, kayaking and boating that already utilizes, and will likely continue to utilize, many areas and miles of river frontage within the project area for public recreational opportunities.

(d) Preserve significant archaeological or historic sites, as measured by the increase in the number and percentage of historic and archaeological properties that are in state ownership.

See sections within the project application detailing the large number of archaeological and historic sites documented from the project that will be protected through this project. Further consultation with Division of Historical Resources will have to be undertaken to better address this question in terms of increase and percentage.

(e) Increase the amount of agricultural and forest land available for sustainable management of natural and agricultural resources, as measured by:

1. The number of acres of state-owned forestland managed for economic return in accordance with current best management practices, as verified by the Department of Agriculture and Consumer Services in coordination with land managers, conservation easement monitors, and the landowners.

Thousands of acres of forest lands are being made available to continue sustainable management of natural and working forest resources through this project, as protected under a conservation easement. The entire project is a sustainable, working forest conservation easement proposal. It is expected that examination of the property during the conservation easement process will lead to some lands being removed from timber harvests and designated as Special Natural Areas, stream buffers and other common conservation easement protection terms and conditions.

2. The percentage and number of acres identified for restoration actually restored by reforestation, as verified by the Department of Agriculture and Consumer Services in coordination with land managers, conservation easement monitors, and the landowners.

Outside of possible prescribed fire or thinning of the small Upland Glade habitats in Gadsden County, little to no restoration or reforestation is needed or required on the project. Small patch clear cuts, as practiced on the lands within the project area, are typically allowed to naturally regenerate with a diversity of hardwood and coniferous tree species. But coordination between the Florida Forest Service, FDEP, the NFWFMD and the landowner will be sought.

(f) Increase the amount of open space available in urban areas, as measured by:

1. The percentage of local governments that participate in land acquisition programs and acquire open space in urban service areas as defined in Sections 163.3164(29) and 163.3177(14), F.S.

Not Applicable.

2. The number of parks and open space projects proposed to be acquired within urban service areas as defined in Sections 163.3164(29) and 163.3177(14), F.S.

Not Applicable.

(5) For program expenditures to acquire lands or implement capital improvements that achieve one or more of the measures listed above in subsection (2), (3) or (4), each program funded under Section 259.105(3), F.S., shall report its accomplishments to the Department of Environmental Protection's Division of State Lands by January 15 of each year. Fund recipients shall also report on those measures that are not directly related to Florida Forever expenditures but are applicable to their program component as described in subsection (4).

(6) Statewide, uniform data sets shall be developed for each geographic-based numeric performance measure that is a component of the Florida Forever Conservation Needs Assessment. Each geographic-based data set shall attempt to identify and establish priorities for each performance measure.

It should also be noted that there are no military implications associated with this project.

A clear statement of whether the project is proposed for fee simple or less-than-fee acquisition and why. If a less-than-fee acquisition is proposed, include a brief description of any known activities or property rights proposed to be acquired by the state and those proposed to be retained by the property owner.

The property is proposed for less-than-fee purchase of a conservation easement. Because the terms and conditions will have to be carefully negotiated between the landowner, the State of Florida, and their respective attorneys, it is far too early in the Florida Forever process to discuss any potential details of the provisions of the conservation easement at this time. It is likely, however, that the landowner is willing to sell the vast majority of their development and more intensive agricultural conversion rights while agreeing to maintain the property in

sustainable forestry uses (including retaining hunting rights) under a well-crafted forest management plan. The reason that the project is proposed as less-than-fee is because the landowner, The Forestland Group, wishes to retain, manage and derive a sustainable, forestry-based income from this long-held private property whose past – and present – ownership and stewardship is at the foundation of their timberlands business, heritage and tradition.

Upper Apalachicola River Ecosystem

Florida Forever Proposal

April 2017

Site Photographs

Photographs taken by George Willson, Consultant



Large red cedar on high bluff overlooking the Apalachicola River Floodplain



Aerial view looking across Torreya State Park (at the Torreya Elbow) toward The Forestland Group property flanking Ocheesee Landing



Looking across Liberty County into Calhoun County (just below Blountstown) with both sides of Apalachicola River and Floodplain in the project boundary



Just north of Torreya State Park in floodplain of the project that connects to Apalachicola River in times of high water



Floodplain slough showing high-water cut in River Berm/Levee Forest subtype of Floodplain Forest



Predominately hardwood-lined slough through Floodplain Swamp (Low Bottomland subtype)



Floodplain Swamp with mixed hardwoods and bald cypress



*Needle Palms in ecotone between Bottomland Forest
grading up to Upland Hardwood Forest*



Open Upland Hardwood Forest above Floodplain Swamp



River flowing into Bee Tree Slough through River Berm/River Levee Floodplain Forest



*Main channel of Outside Lake Slough – lined with bald cypress and tupelo –
along southern edge of small settlement of Estiffanulga*



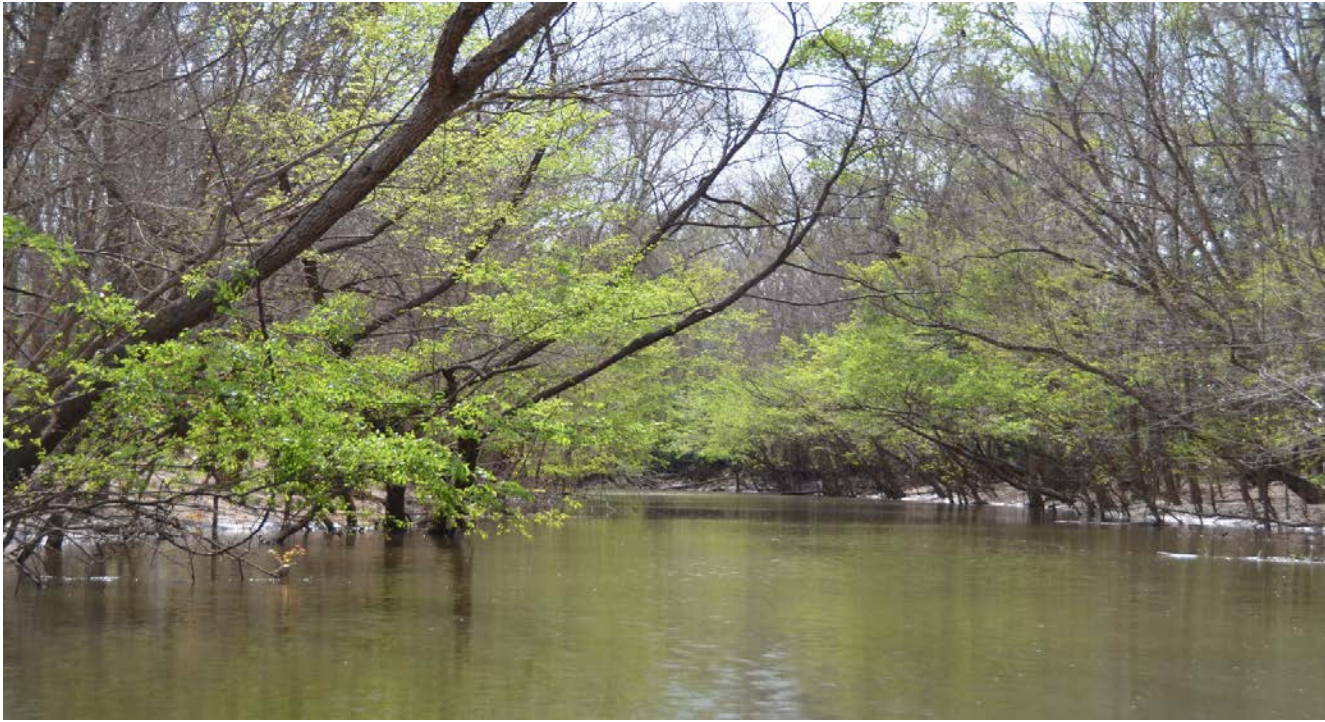
Interior view of Sutton Lake just south of Blountstown



Looking west across The Nature Conservancy's Apalachicola Bluffs and Ravines Preserve and Alum Bluff toward deep Floodplain Swamp and sloughs of The Forestland Group property



View from the Apalachicola River of The Forestland Group property (right) across from Alum Bluff



Growth of Black Willow and River Birch on sand accumulation along slough



View from the Apalachicola River of Torreya State Park (left) and The Forestland Group property on opposite bank



Forested Apalachicola River frontage in southern Liberty & Calhoun counties with The Forestland Group property along both banks



Bald cypress and water tupelo in Floodplain Swamp – Liberty County



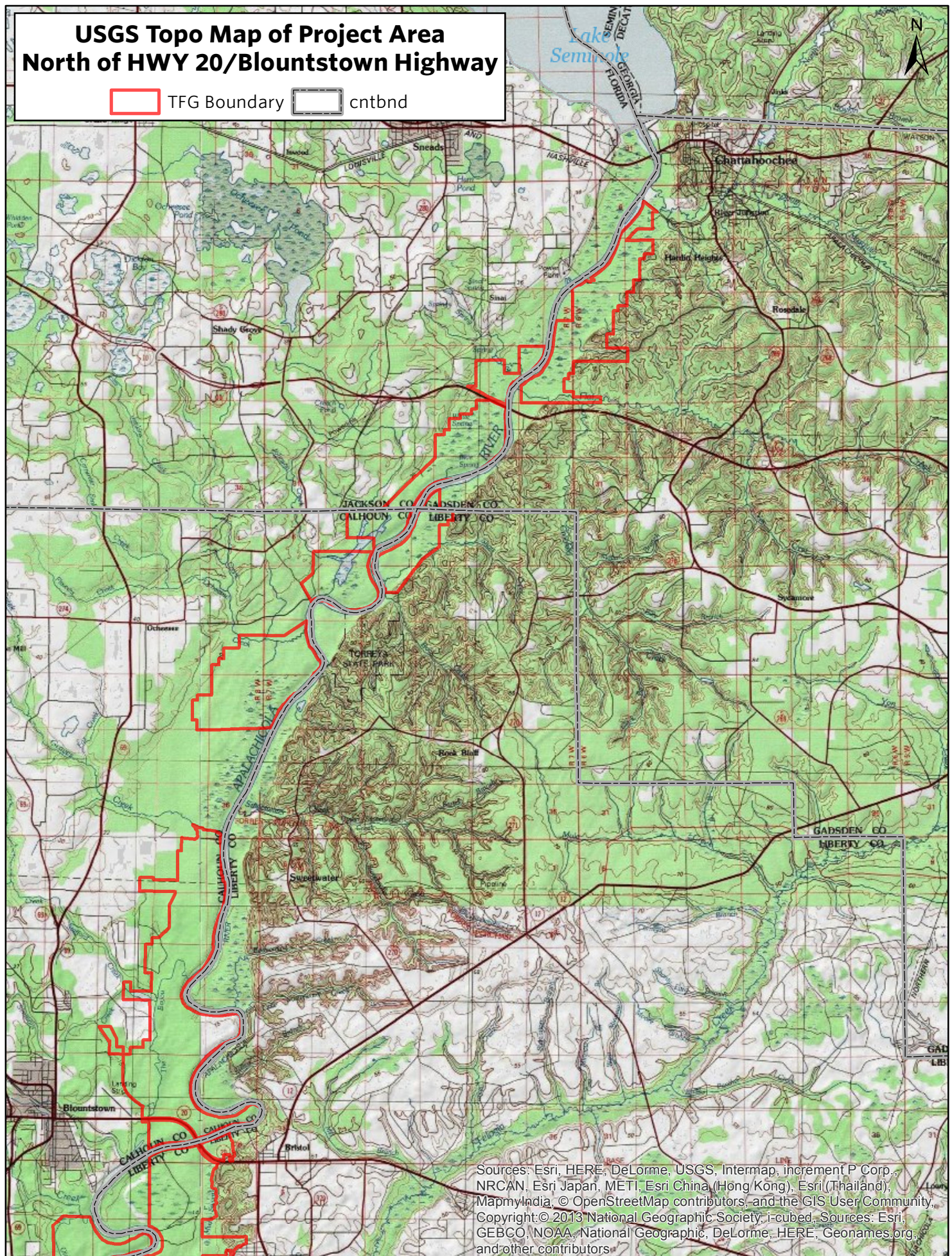
Looking from Alum Bluff west across Apalachicola River to the Forestland Group property



Looking from Sneads' Ridge (at near 265 feet elevation) just below Woodruff Dam across the Apalachicola River Floodplain

Upper Apalachicola River Ecosystem

Figure 1A



Upper Apalachicola River Ecosystem

Figure 1B

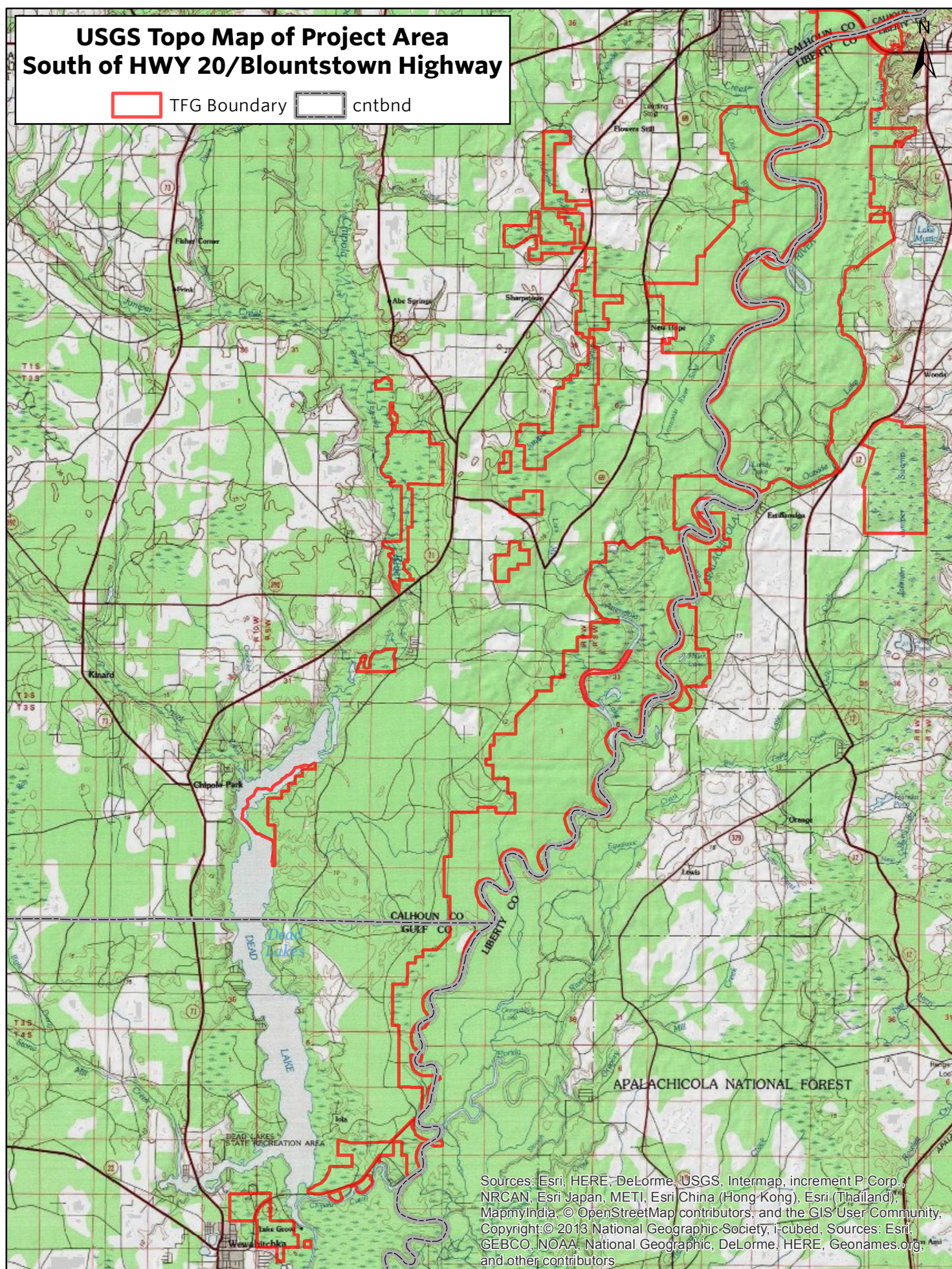


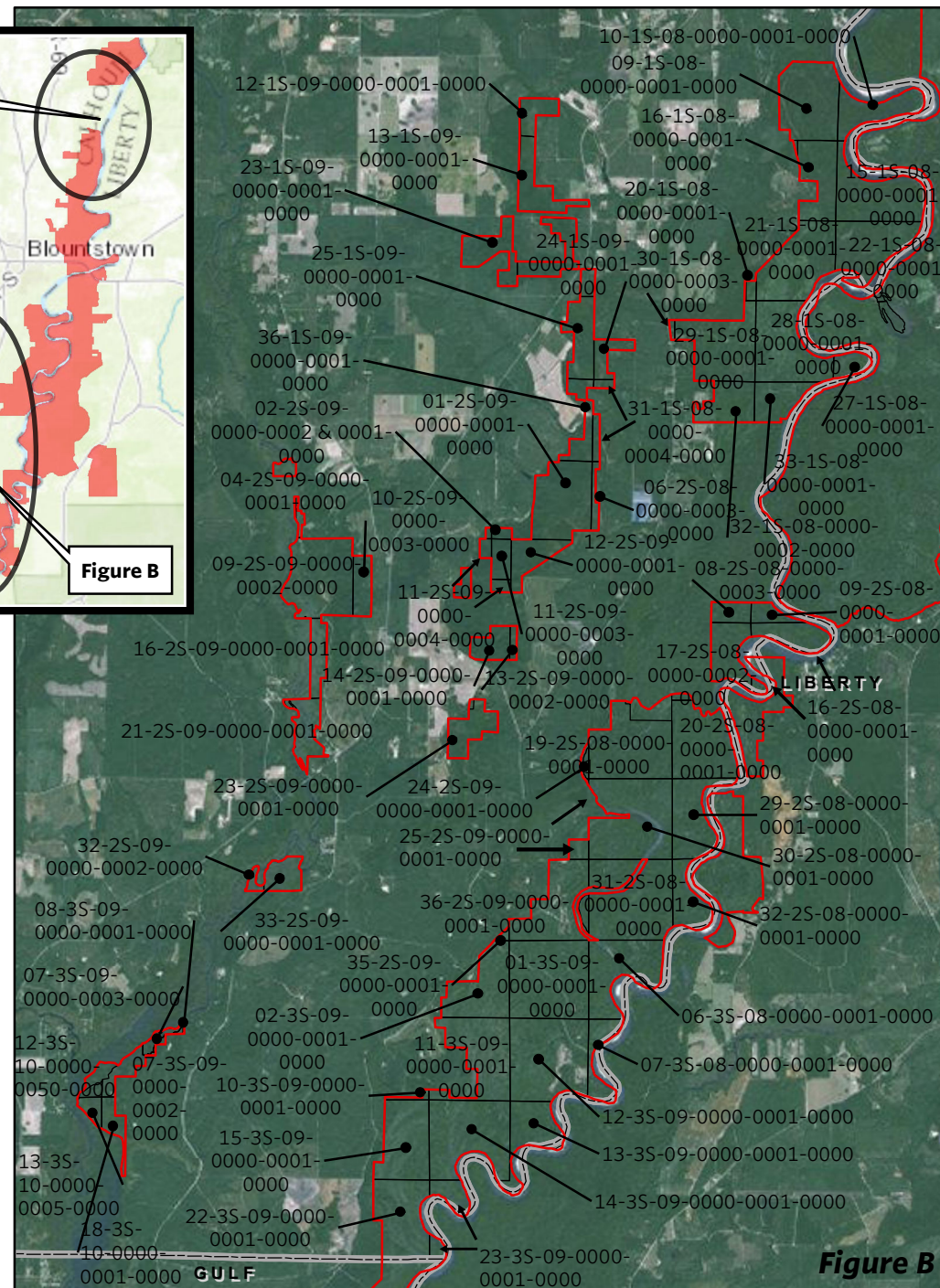
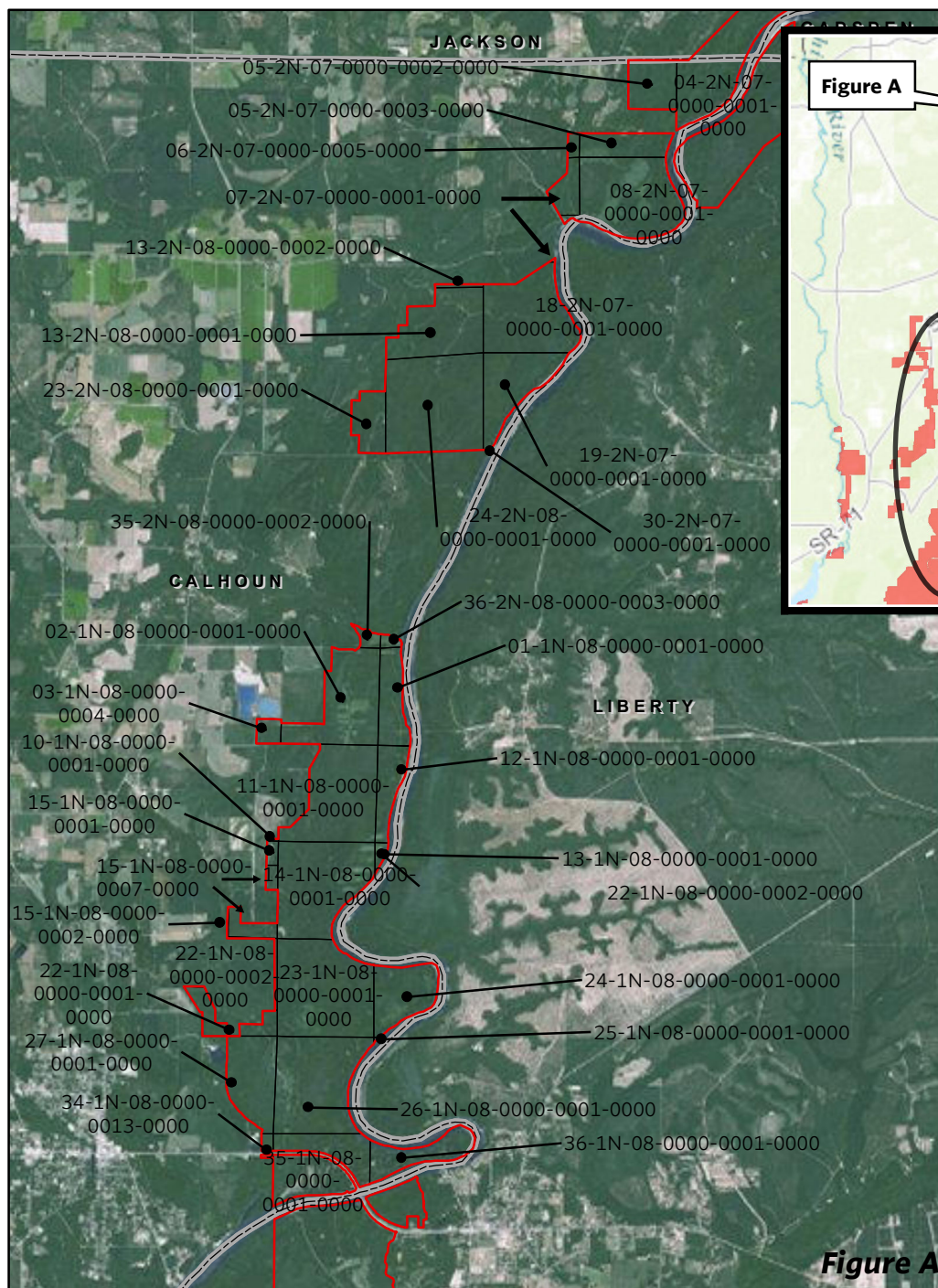
Figure A

Blountstown

SR-11

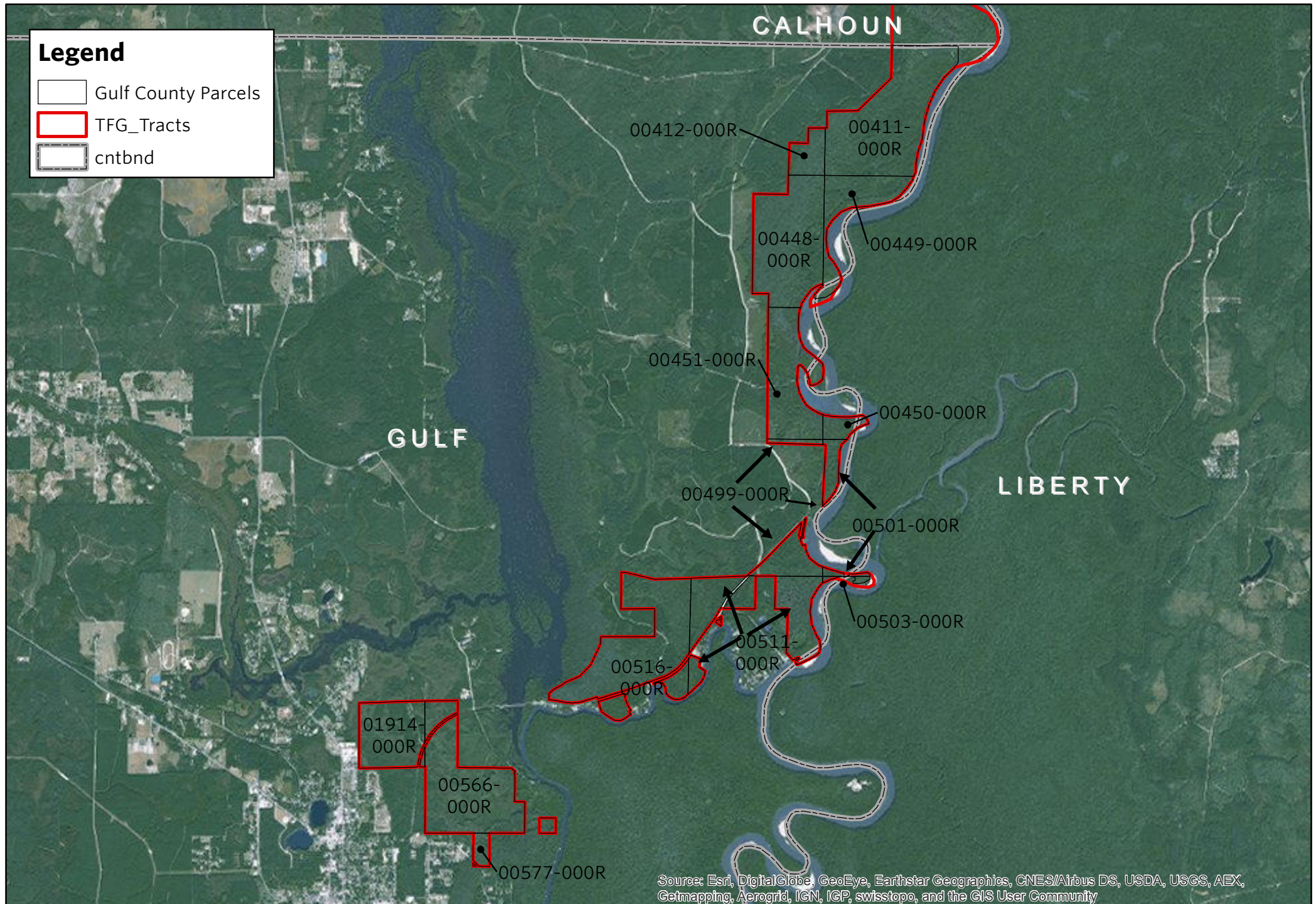
SR-71S

Figure B



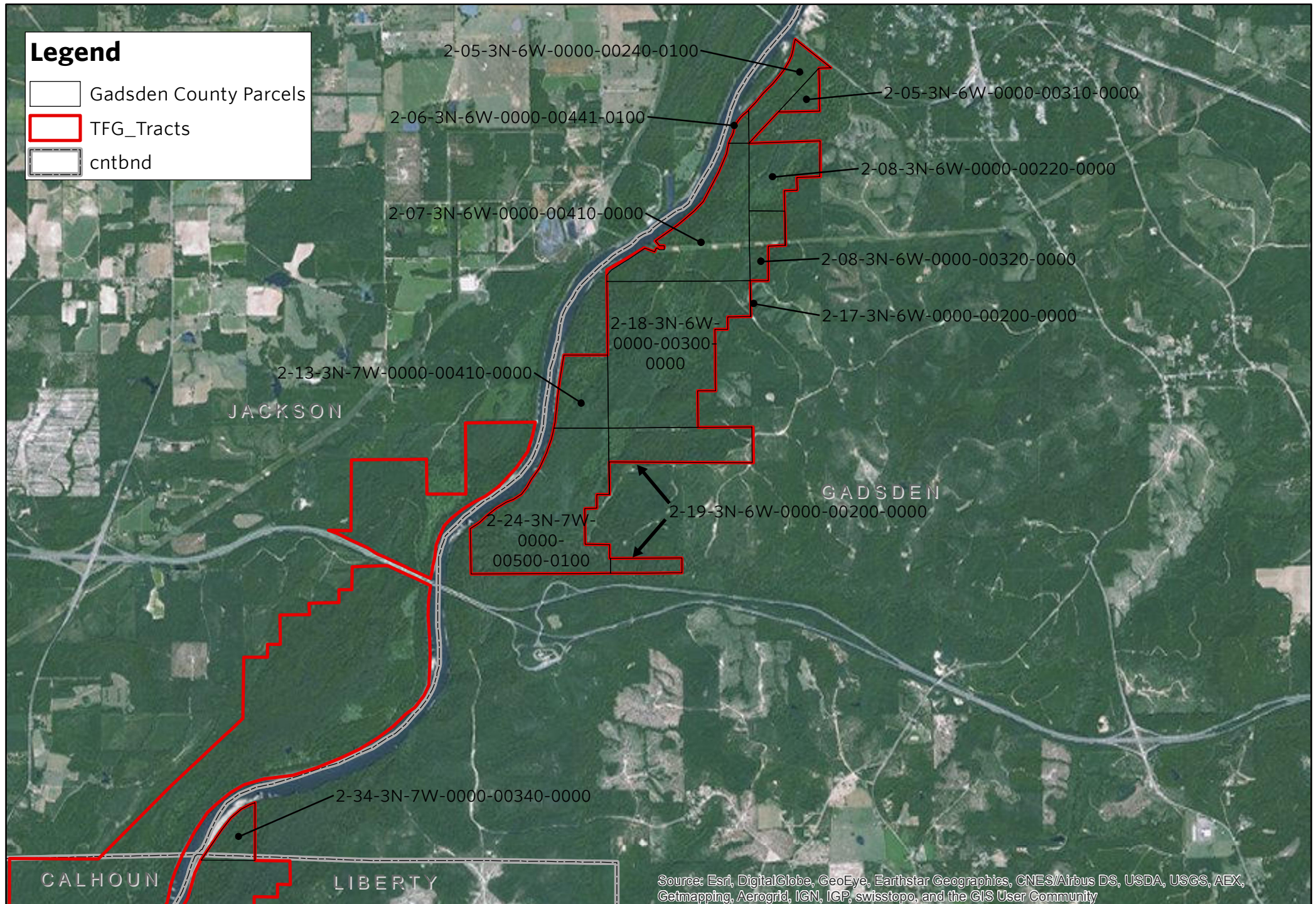
Upper Apalachicola River Ecosystem

Figure 2B



Upper Apalachicola River Ecosystem

Figure 2C



Upper Apalachicola River Ecosystem

Figure 2D

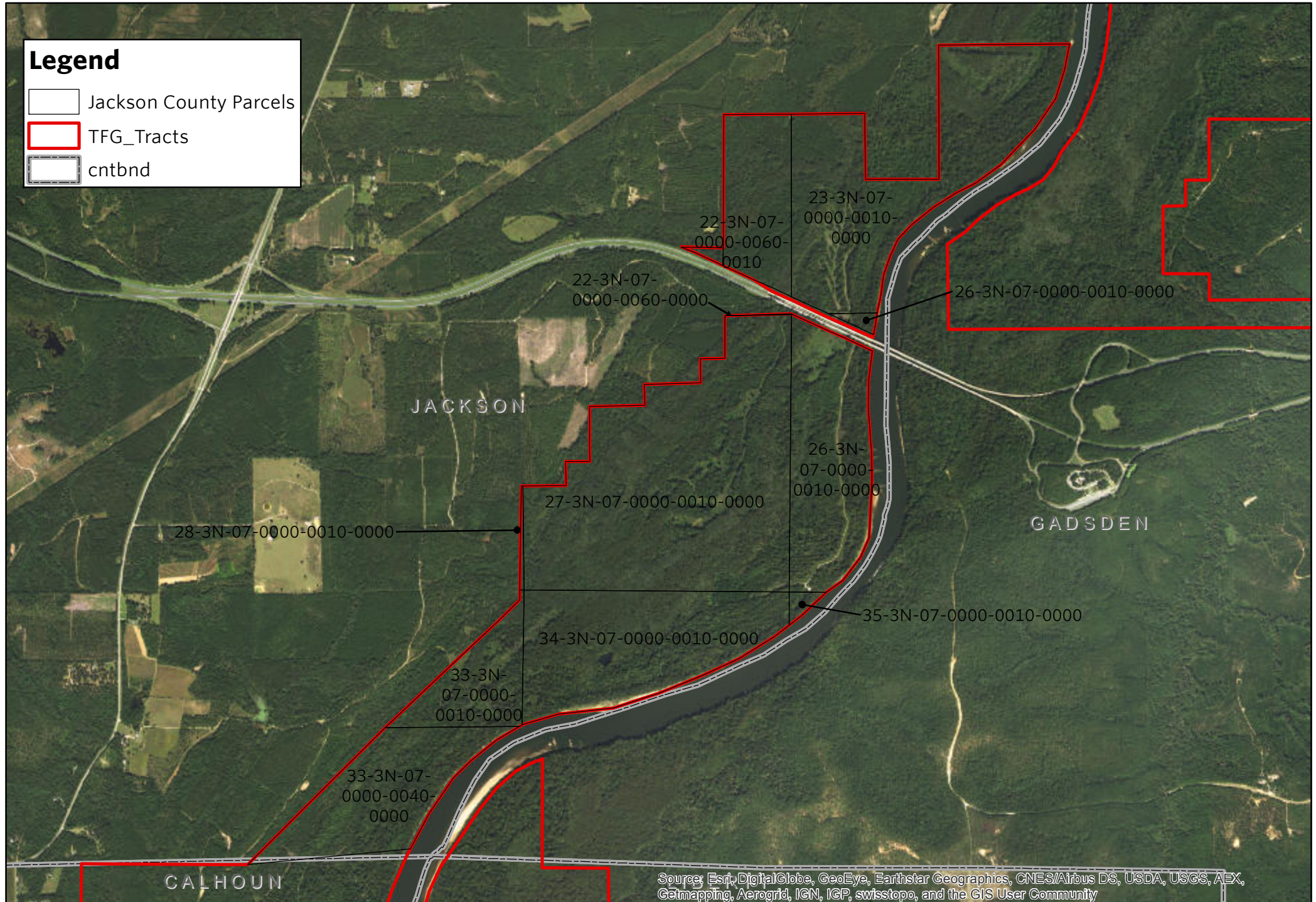


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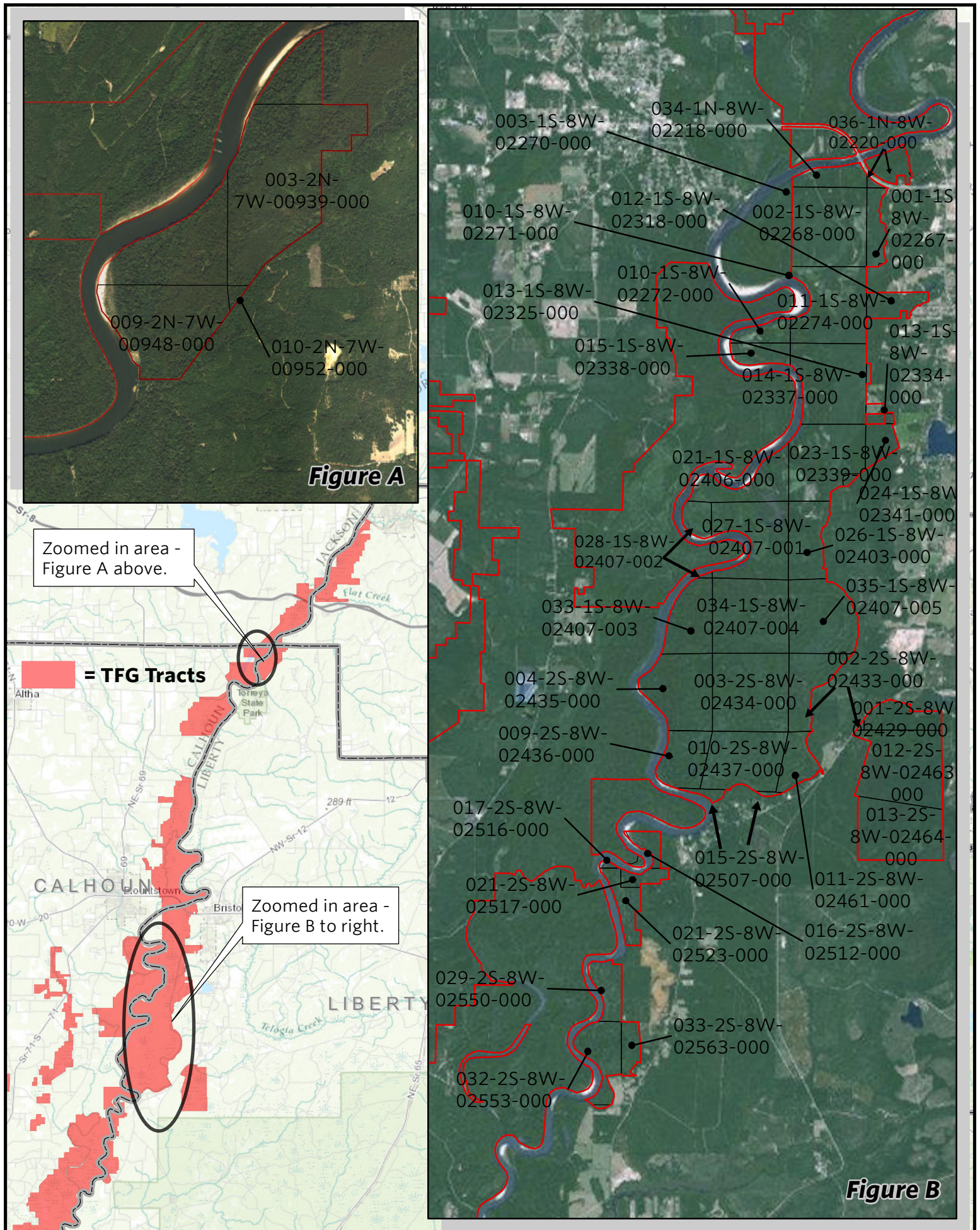
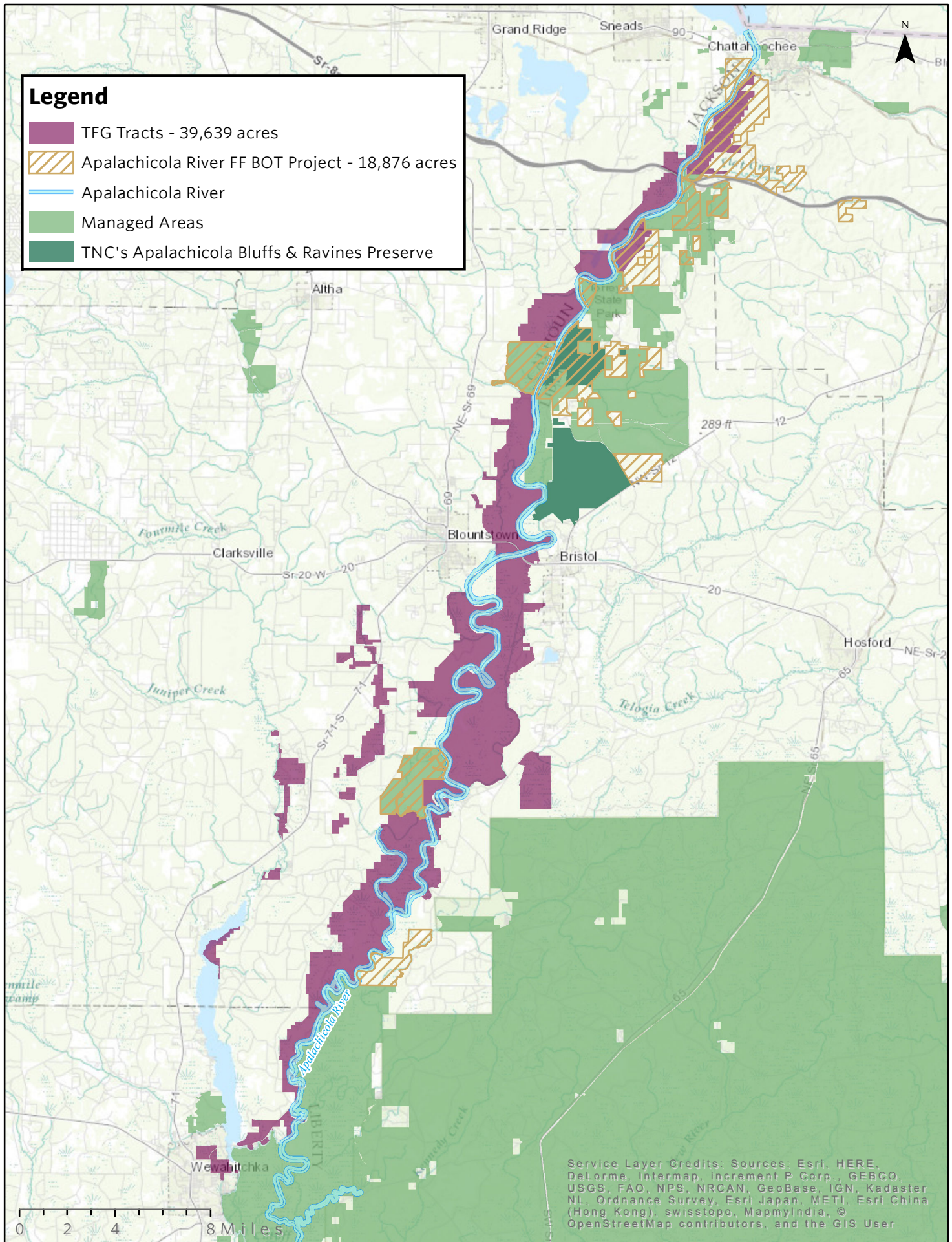


Figure 3



Upper Apalachicola River Ecosystem

Figure 4

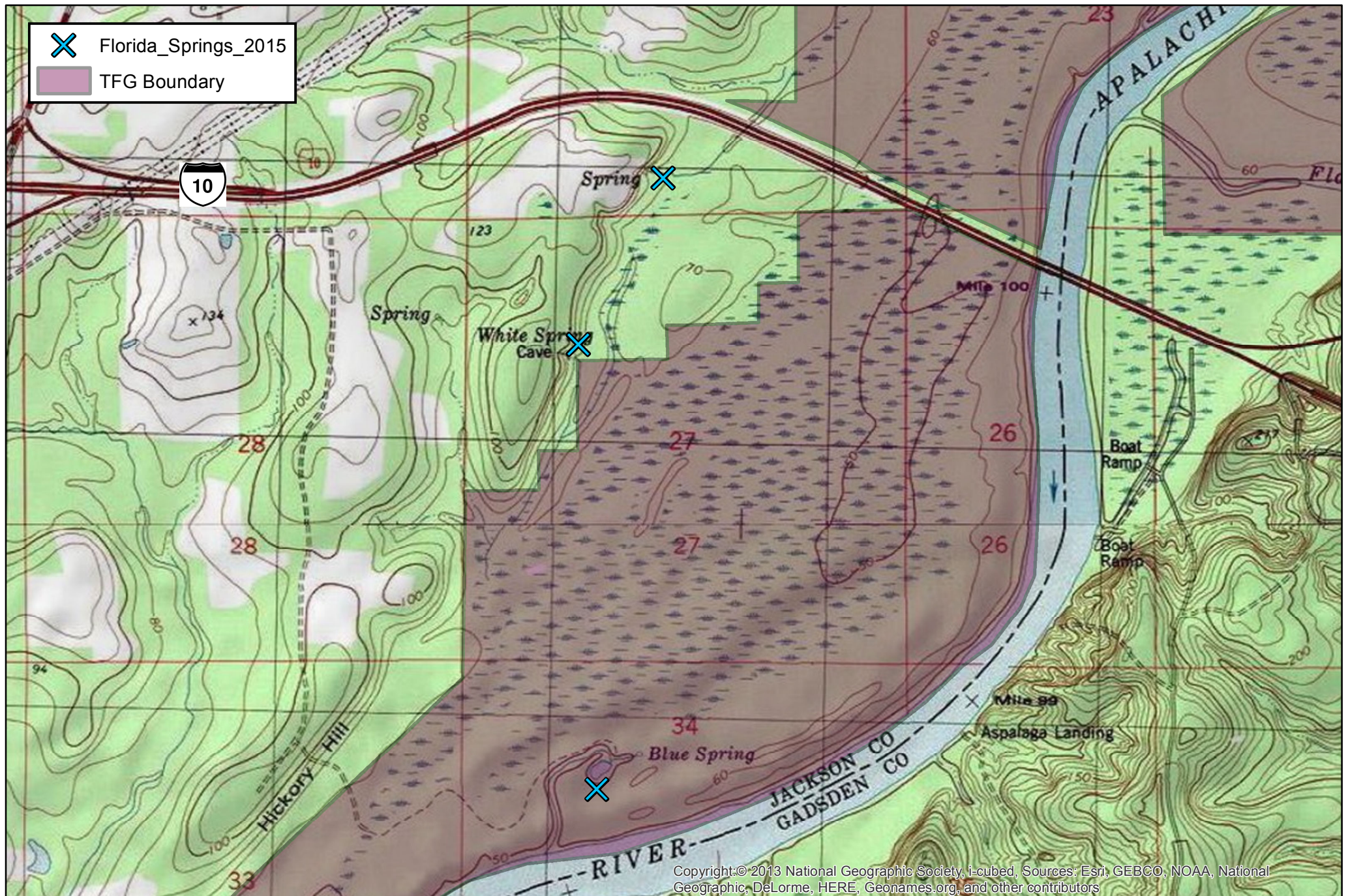
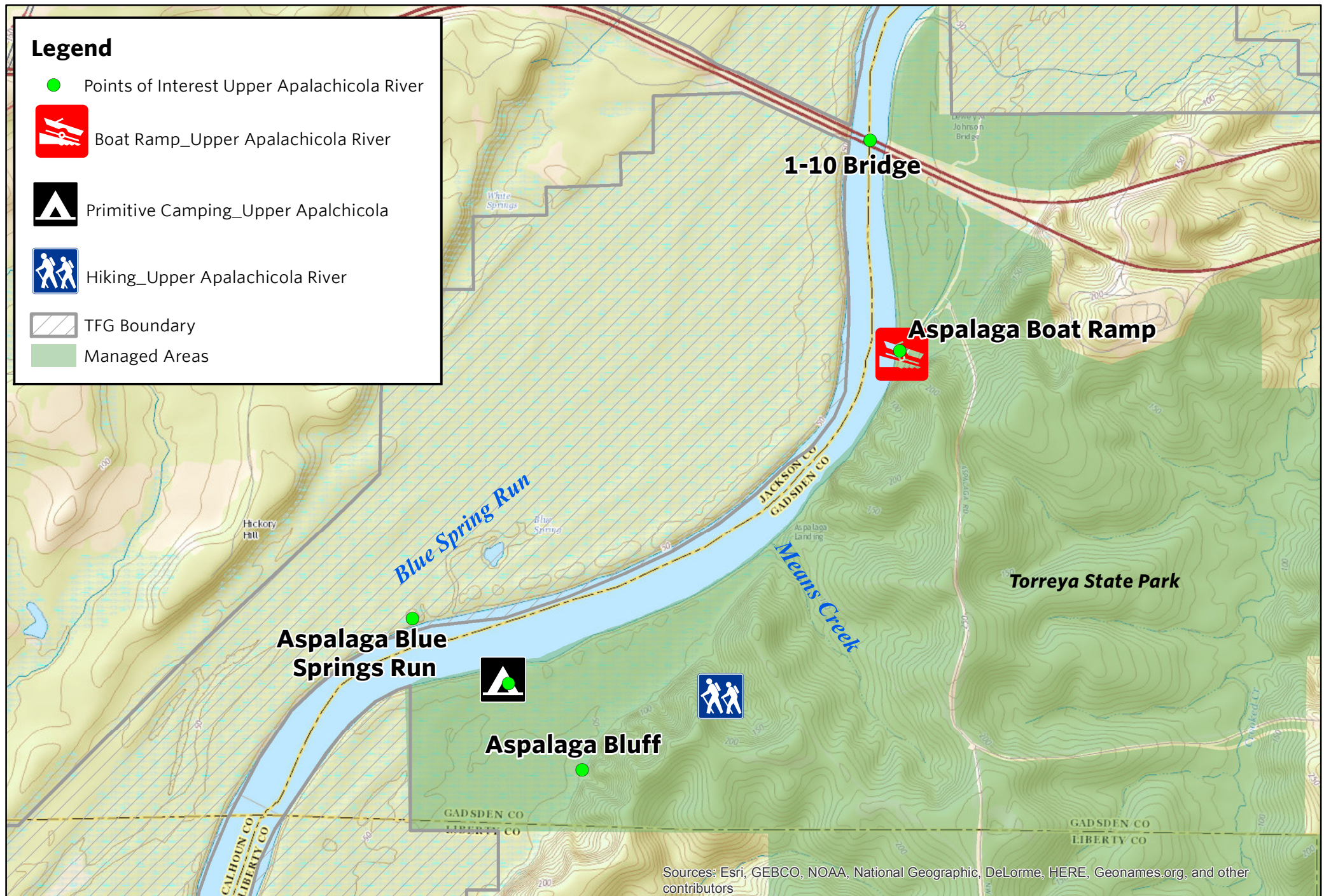


Figure 5



Upper Apalachicola River Ecosystem

Figure 6

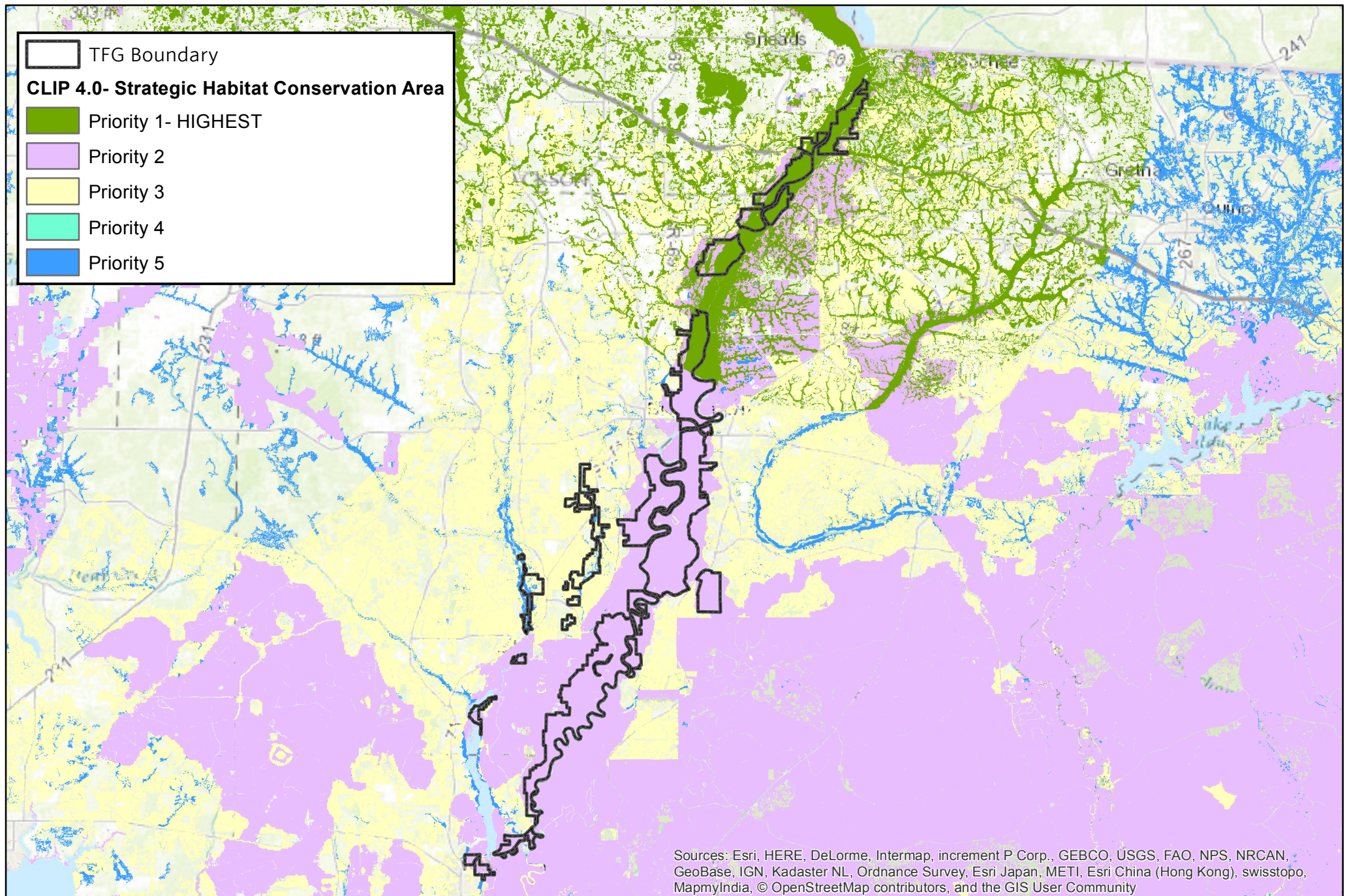
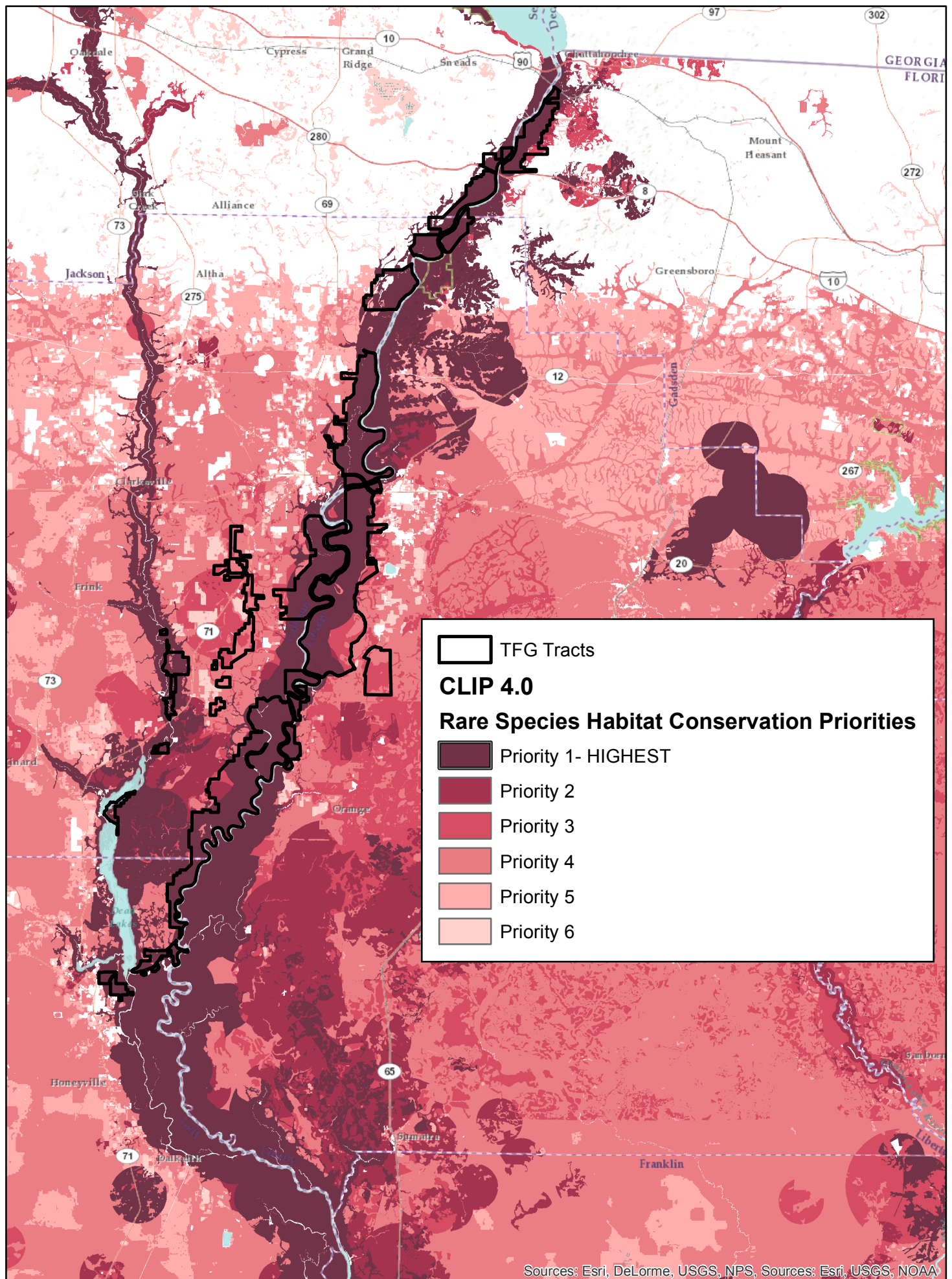


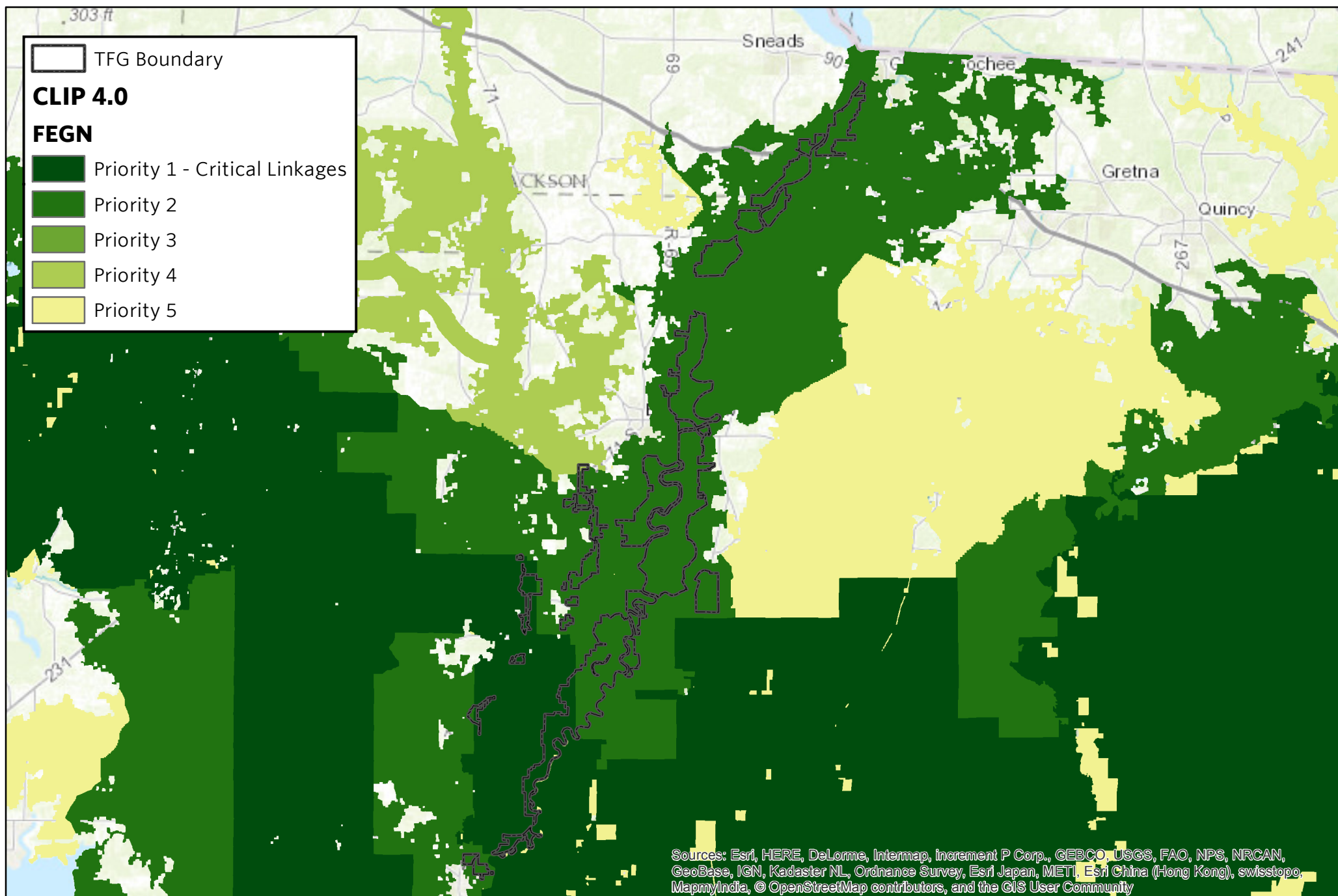


Figure 7



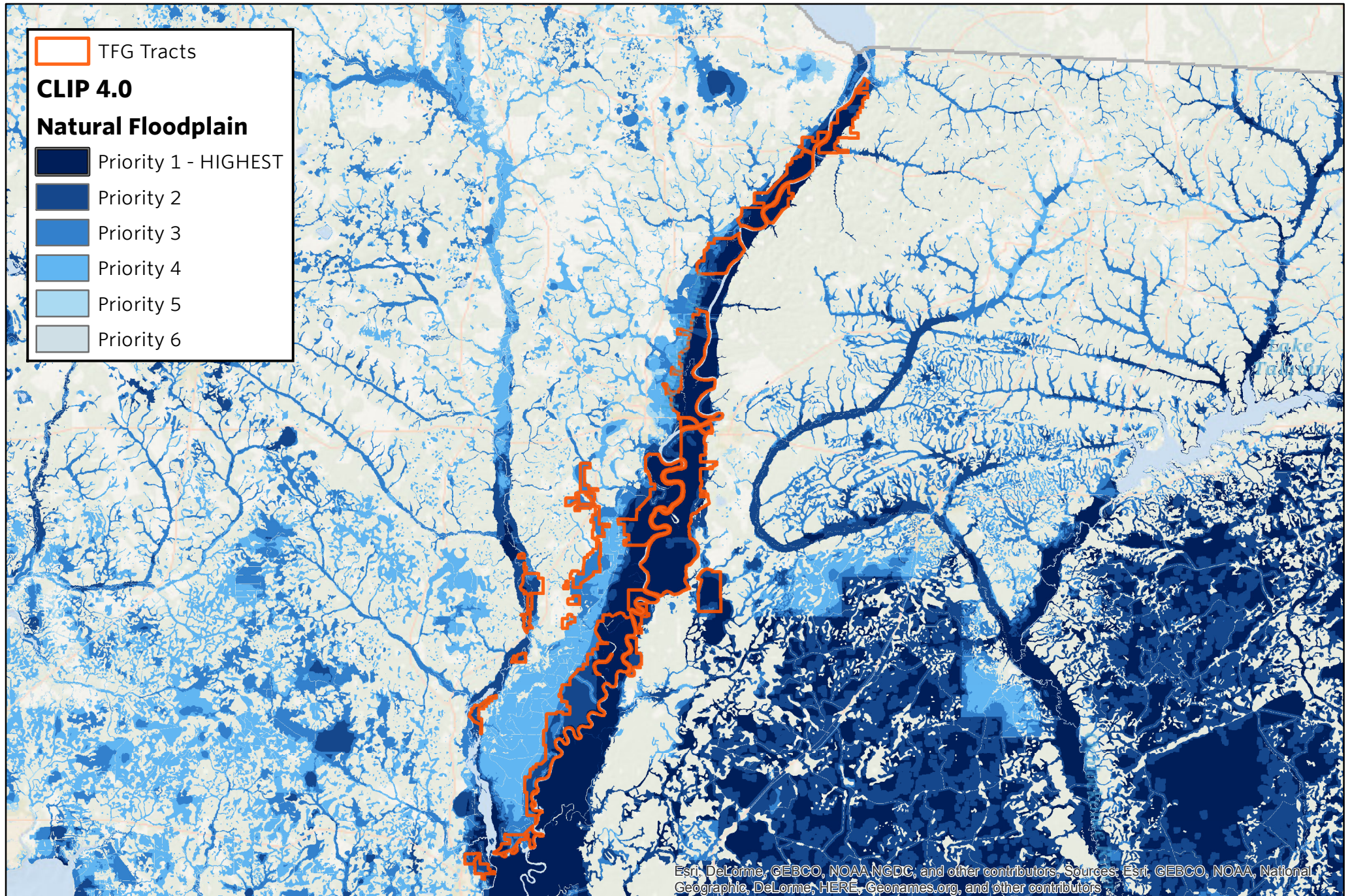
Upper Apalachicola River Ecosystem

Figure 8



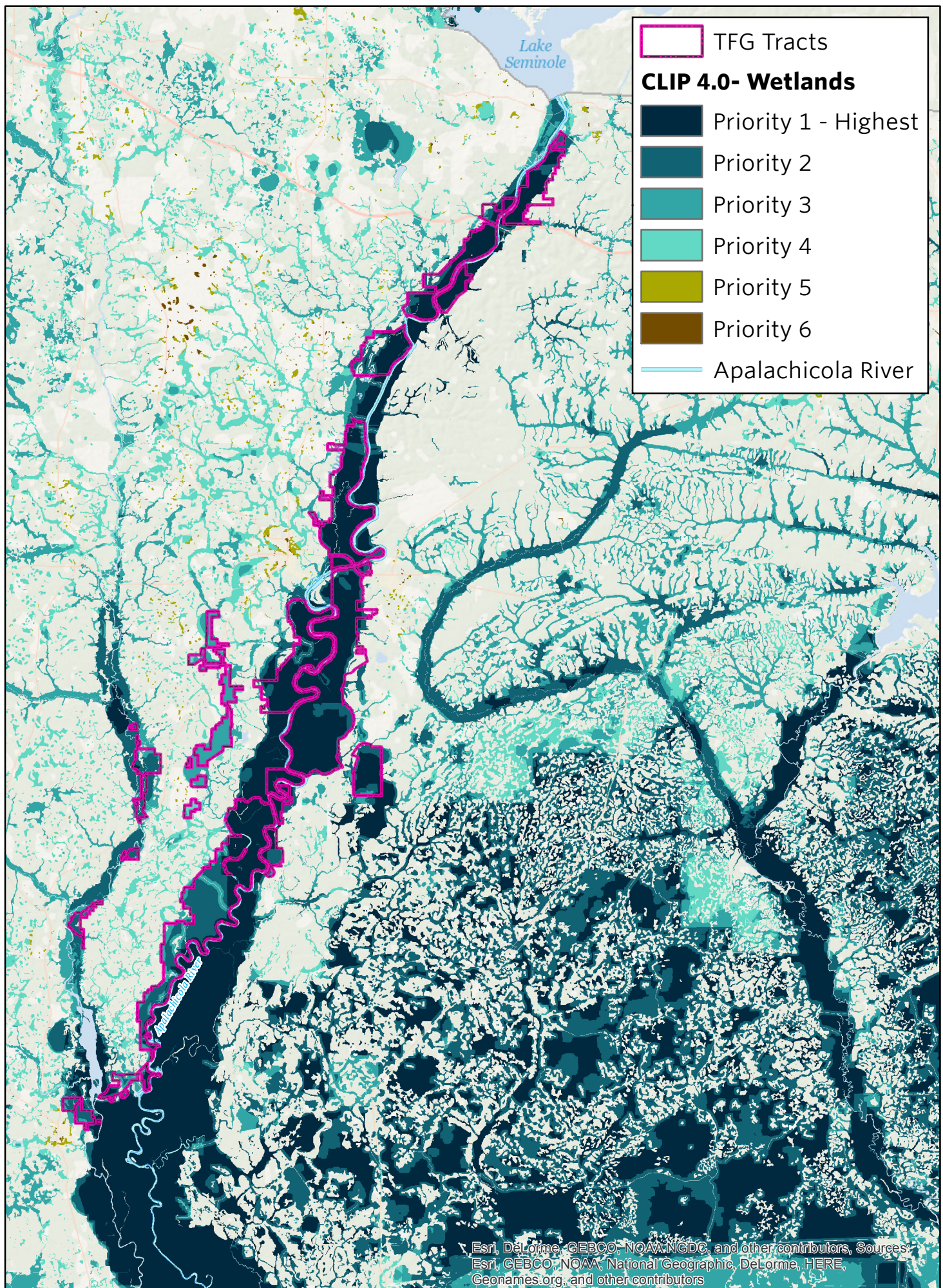
Upper Apalachicola River Ecosystem

Figure 9



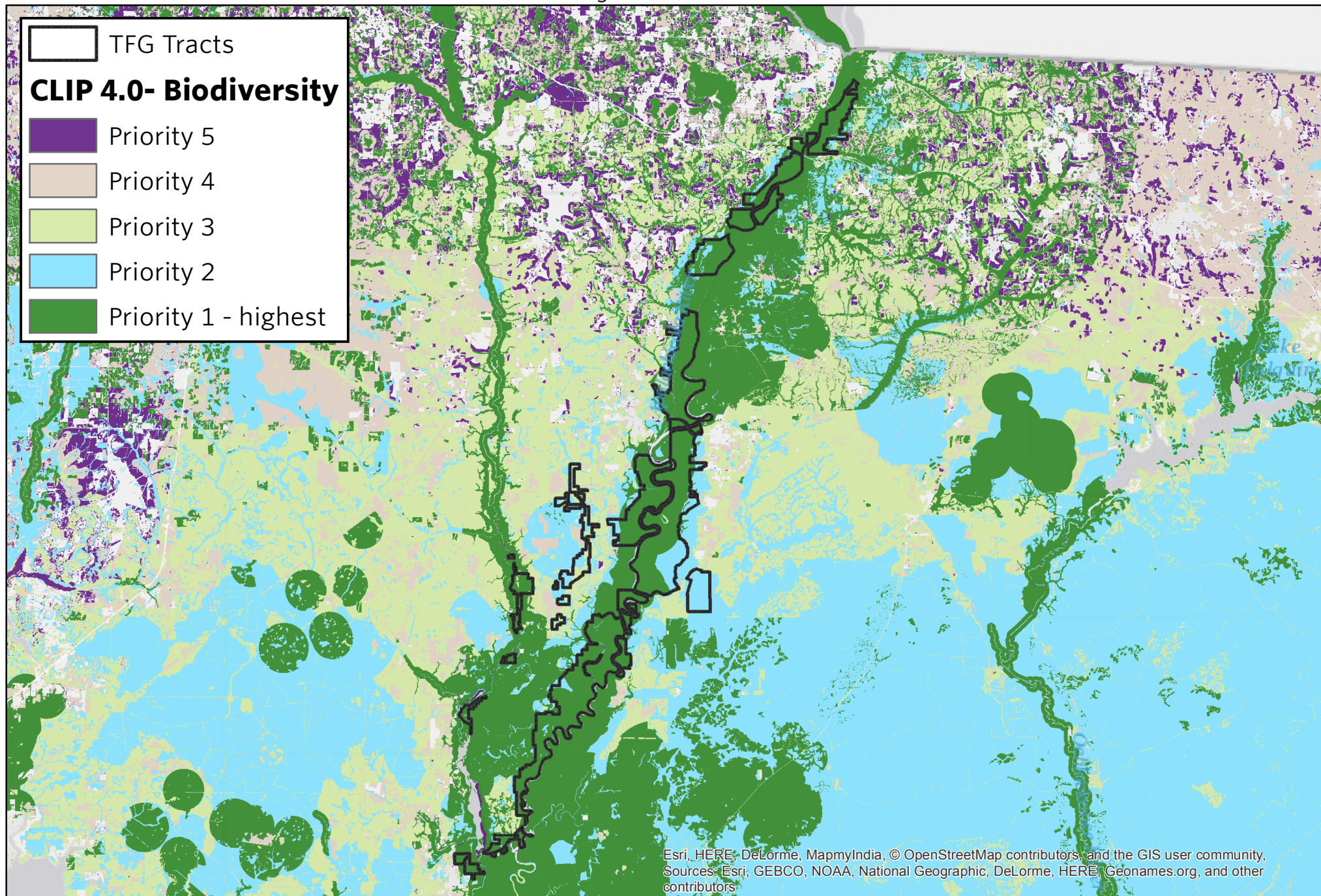
Upper Apalachicola River Ecosystem

Figure 10



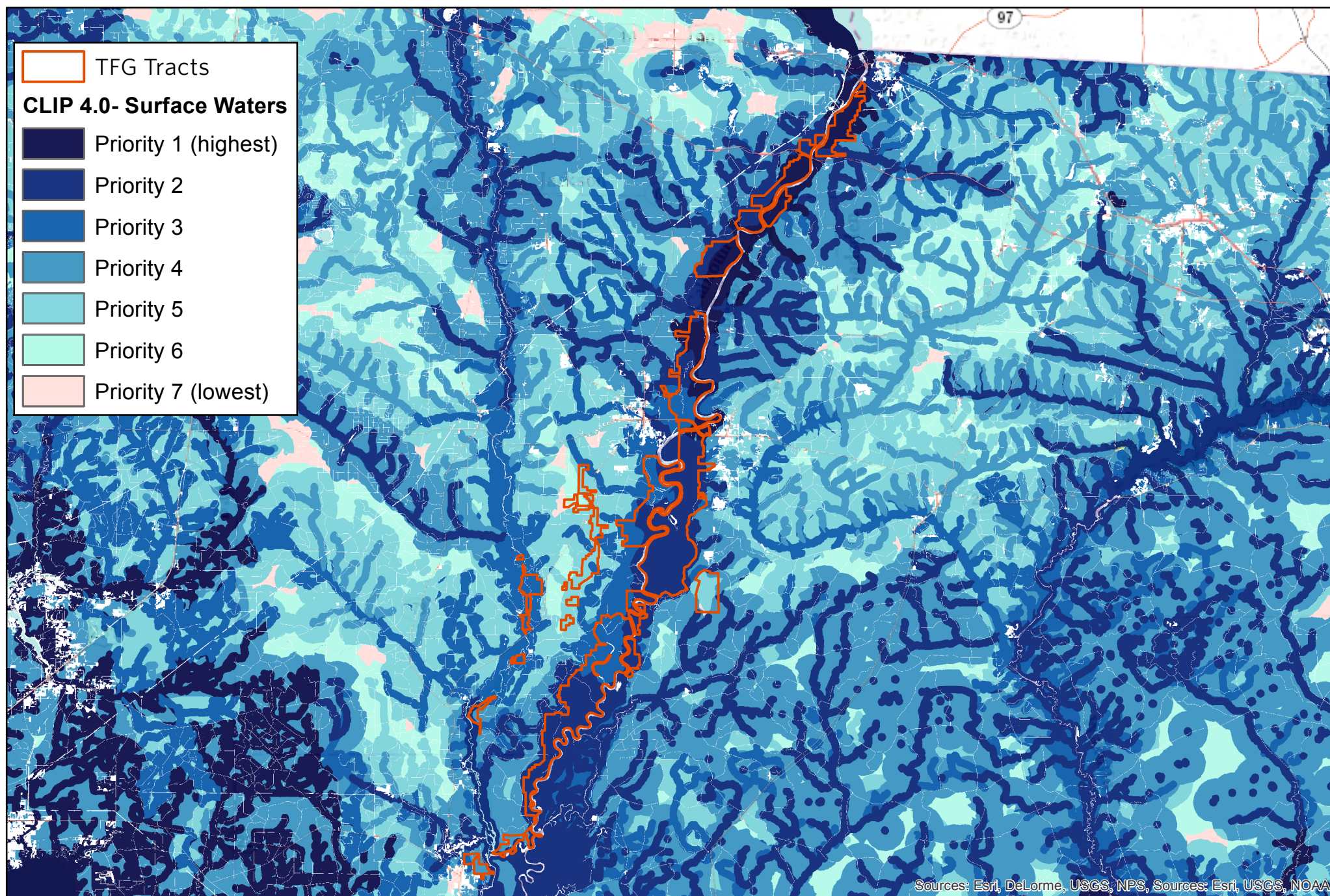
Upper Apalachicola River Ecosystem

Figure 11



Upper Apalachicola River Ecosystem

Figure 12



Appendix 1

EO_ID	Scientific Name	Common Name	DATA	SENSIT	GRANK	SRANK	FEDERAL	STATE PROT	LAST OBSERVATION DATE	OCC_STATUS
8092	Cornus alternifolia	Alternate-leaf Dogwood	N	G5	S2	N	E		1983-04-17	Documented
16739	Macrochelys apalachicola	Apalachicola Alligator Snapping Turtle	N	G2G3	S2	N	SSC		2014-05-13	Documented
10852	Desmognathus apalachicola	Apalachicola Dusky Salamander	N	G4	S2S3	N	N		1969-12-23	Documented-Historical
25903	Desmognathus apalachicola	Apalachicola Dusky Salamander	N	G4	S2S3	N	N		1969-02-23	Documented-Historical
8546	Anodonta heardi	Apalachicola Floater	N	G2	S1S2	N	N		2010-08-19	Documented
29754	Haliaeetus leucocephalus	Bald Eagle	N	G5	S3	N	N		2003	Documented
30884	Matelea baldwyniana	Baldwyn's Spiny-pod	N	G3	S1	N	E		2006-04-20	Documented
8457	Luxilus zonistius	Bandfin Shiner	N	G4	S1S2	N	N		1985-05-30	Documented
8481	Graptemys barbouri	Barbour's Map Turtle	N	G2	S2	N	ST		1999-05-01	Documented
25412	Schisandra glabra	Bay Star-vine	N	G3	S2	N	E		1982-05-13	Likely
26577	Schisandra glabra	Bay Star-vine	N	G3	S2	N	E		2006-04-26	Documented
33824	Schisandra glabra	Bay Star-vine	N	G3	S2	N	E		2008-04-25	Documented
3759	Cyprinella callitaenia	Bluestripe Shiner	N	G2G3	S2	N	N		2004-05-19	Likely
38093	Cyprinella callitaenia	Bluestripe Shiner	N	G2G3	S2	N	N		2004-06-15	Likely
38095	Cyprinella callitaenia	Bluestripe Shiner	N	G2G3	S2	N	N		1976-09-23	Documented-Historical
37971	Elliptio fraterna	Brother Spike	N	G1G2	S1	N	N		2012-10-12	Documented
23836	Sideroxylon lycioides	Buckthorn	N	G5	S2	N	E		1982-05-08	Documented
20653	Euonymus atropurpureus	Burningbush	N	G5	S2	N	E		1982-05-10	Documented
30885	Delphinium carolinianum	Carolina Larkspur	N	G5	S1	N	E		2006-04-20	Documented
26686	Croomia pauciflora	Croomia	N	G3	S2	N	E		2006-04-26	Likely
26898	Agkistrodon contortrix	Eastern Copperhead	N	G5	S2	N	N		1995-04-09	Documented
29535	Echinacea purpurea	Eastern Purple Coneflower	N	G4	S1	N	E		2005-04-15	Documented
38114	Pseudemys concinna concinna	Eastern River Cooter	N	G5T5	S3	N	N		1995	Documented
37961	Ursus americanus floridanus	Florida Black Bear	N	G5T2	S2	N	N		2012	Likely
2213	Silene polypetala	Fringed Campion	N	G2	S1	LE	E		2006-04-20	Documented
6074	Silene polypetala	Fringed Campion	N	G2	S1	LE	E		2006-04-26	Documented
15828	Silene polypetala	Fringed Campion	N	G2	S1	LE	E		2006-04-19	Documented
30768	Silene polypetala	Fringed Campion	N	G2	S1	LE	E		2006-04-26	Documented
27316	Hybanthus concolor	Green Violet	N	G5	S1	N	E		2006-04-26	Documented
11303	Acipenser oxyrinchus desotoi	Gulf Sturgeon	N	G3T2	S2	LT	FT		1988	Documented
37995	Elliptio purpurella	Inflated Spike	N	G2	S2	N	N		2009-09-09	Documented
12299	Hepatica nobilis	Liverleaf	N	G5	S2	N	E		2006-04-26	Documented
12848	Trillium lancifolium	Narrow-leaved Trillium	N	G3	S2	N	E		1982-05-10	Documented
16185	Trillium lancifolium	Narrow-leaved Trillium	N	G3	S2	N	E		1982-05-13	Likely
17767	Amphiuma pholeter	One-toed Amphiuma	N	G3	S3	N	N		1970-05-09	Likely
11172	Elliptoideus sloatianus	Purple Bankclimber	N	G2	S1S2	T	FT		1970	Likely
23298	Magnolia pyramidata	Pyramid Magnolia	N	G4	S3	N	E		1982-05-10	Documented
3094	Anodontoides radiatus	Rayed Creekshell	N	G3	S2	N	N		1993-06-21	Documented
39120	Quadrula infucata	Sculptured Pigtoe	N	G3	S2S3	N	N		1992	Documented
38072	Alasmidonta triangulata	Southern Elktoe	N	G1	S1	N	N		1990-08-29	Documented
37908	Apalone spinifera	Spiny Softshell	N	G5	S3	N	N		2014-10-13	Documented
7038	Ameiurus serracanthus	Spotted Bullhead	N	G3	S3	N	N		1968-12	Likely-Historical
3130	Slope forest		N	G2?	S1	N	N		2006-04-26	Likely
28478	Slope forest		N	G2?	S1	N	N		2004	Likely
28540	Alluvial forest		N	G4	S3	N	N		2004	Documented
13711	DATA-SENSITIVE	DATA-SENSITIVE	Y	G1	S1	N	N		2005-04-15	Documented

Appendix 2

OBJECTID	Sheild	SiteName	SiteType1	SiteType2	SiteType3	SiteType4
2903	CA00008	OCHESSEE LANDING	Prehistoric midden(s)	Historic refuse / dump	Artifact scatter-low density (< 2 per sq meter)	
2904	CA00010	PARISH LAKE	Prehistoric midden(s)			
2905	CA00011	AMMONIA LAKE	Habitation (prehistoric)	Prehistoric midden(s)		
2906	CA00012	RIDGE LANDING	Lithic scatter/quarry (prehistoric; no ceramics)			
2915	CA00026	DEAD DOG	Artifact scatter-low density (< 2 per sq meter)			
2920	CA00031	JUMPING FISH	Prehistoric midden(s)			
2921	CA00032	JUNIPER SWAMP PIT	Artifact scatter-low density (< 2 per sq meter)			
2925	CA00036	MCCUADE	Artifact scatter-low density (< 2 per sq meter)			
2926	CA00038	LONG SLOUGH	Artifact scatter-low density (< 2 per sq meter)			
2930	CA00042	OCHESSEE CREEK MOUTH	Single artifact or isolated find	Prehistoric lithics only, but not quarry		
2931	CA00043	CYPRESS STUMP	Artifact scatter-low density (< 2 per sq meter)			
2932	CA00044	DIVING TURTLE	Artifact scatter-low density (< 2 per sq meter)			
2933	CA00045	ATHENA	Artifact scatter-low density (< 2 per sq meter)			
2936	CA00048	TERMITE VERANDA	Artifact scatter-low density (< 2 per sq meter)			
2937	CA00049	CRAZY BUG	Artifact scatter-low density (< 2 per sq meter)			
2940	CA00053	DARK RAVINE	Artifact scatter-low density (< 2 per sq meter)			
2941	CA00054	ELDERBERRY RIDGE				
2942	CA00055	FIRST STOP	Artifact scatter-low density (< 2 per sq meter)			
2943	CA00056	LEANING OAK	Artifact scatter-low density (< 2 per sq meter)			
2944	CA00057	TURTLE NEST	Artifact scatter-low density (< 2 per sq meter)			
2945	CA00058	GRAPE VINE	Artifact scatter-low density (< 2 per sq meter)			
2949	CA00062	TURNING POINT	Prehistoric shell midden			
2951	CA00064	LARSON	Single artifact or isolated find	Artifact scatter-low density (< 2 per sq meter)		
2954	CA00067	MARY SLOUGH	Artifact scatter-low density (< 2 per sq meter)			
2955	CA00068	MUSCORGEE REACH	Artifact scatter-low density (< 2 per sq meter)			
2956	CA00069	QUEEN CITY	Artifact scatter-low density (< 2 per sq meter)			
2963	CA00088	GRAVES JUNCTION	House	Ceramic scatter		
2964	CA00089	PARISH LAKE NORTH	Habitation (prehistoric)	Prehistoric midden(s)		
2965	CA00090	PARISH LAKE ROAD	Prehistoric lithics only, but not quarry			
3014	CA00149	MCCLELLAN, JOHN A SITE	Artifact scatter-low density (< 2 per sq meter)			
3027	CA00163	P119-1	Land-terrestrial	Other	Artifact scatter-low density (< 2 per sq meter)	
3028	CA00164	P119-2	Other	Artifact scatter-low density (< 2 per sq meter)		
3038	CA00193	DUNCAN MCMILLAN SITE	Habitation (prehistoric)			
3044	CA00199	TURTLE SHELL SITE	Land-terrestrial	Land-terrestrial	Prehistoric midden(s)	Artifact scatter-dense (> 2 per sq meter)
3045	CA00206	Deep Midden site	Specialized site for procurement of raw materials	Prehistoric shell midden	Prehistoric midden(s)	
8984	GD00023	FLAT CREEK NORTH	Ceramic scatter	Land-terrestrial	Prehistoric shell midden	
9114	GD00269	TIRE CHANNEL	Artifact scatter-low density (< 2 per sq meter)			
9115	GD00270	PICNIC	Artifact scatter-low density (< 2 per sq meter)			
9123	GD00279	INTERSTREAM	Artifact scatter-low density (< 2 per sq meter)			
9124	GD00280	SOBE EYE	Artifact scatter-low density (< 2 per sq meter)			
9125	GD00281	CABIN CREEK	Ceramic scatter			
9128	GD00284	BLACK SNAKE	Artifact scatter-low density (< 2 per sq meter)			
9223	GD00583	RIVERHILL #2	Artifact scatter-low density (< 2 per sq meter)			
9224	GD00684	RIVER HILL #3	Campsite (prehistoric)			
9804	GU00179	Iola	Subsurface features are present	Land-terrestrial	Land-terrestrial	Prehistoric lithics only, but not quarry
12977	JA00137	COPE'S LANDING	Campsite (prehistoric)	Prehistoric midden(s)		
12986	JA00147	NN				
13193	JA00414	JULY LAKE CREEK	Ceramic scatter			
13195	JA00416	WETT SHIRT	Ceramic scatter			
13196	JA00417	THICK GREENBRIAR	Habitation (prehistoric)			
13198	JA00419	SECRET STREAMS	Ceramic scatter			
13199	JA00420	SPIDER WEB	Ceramic scatter			
16232	LU00157	WATERSNAKE	Ceramic scatter			
17047	LU00002	YON MOUND AND VILLAGE	Land-terrestrial			
17051	LU00007	ESTIFANULGA	Prehistoric burial mound(s)			
17080	LU00041	GOLDEN BLUFF	Habitation (prehistoric)			
17092	LU00053	NN	Habitation (prehistoric)			
17164	LU00135	CALHOUN BRIDGE	Artifact scatter-low density (< 2 per sq meter)			
17189	LU00172	OTIS HARE	Prehistoric midden(s)			
17192	LU00175	FIRST STREET	Historic refuse / dump			
17213	LU00197	BRANTLEY MILL	Artifact scatter-low density (< 2 per sq meter)			
17228	LU00213	WIND LAKE	Single artifact or isolated find			
17229	LU00214	GREEN CHAMELEON	Single artifact or isolated find			
17233	LU00218	LONG CLIMB	Single artifact or isolated find			
17239	LU00224	RAIL SLOUGH	Artifact scatter-low density (< 2 per sq meter)			
17240	LU00225	BROKEN OAK	Artifact scatter-low density (< 2 per sq meter)			
17241	LU00226	PINE LOG	Artifact scatter-low density (< 2 per sq meter)			

Culture6	Culture7	Culture8	SurvEval	Rev(N)	D_Nrlsted	ShpoEval	forType	Shape_Leng	Shape_Area
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00434727526	0.00000133954
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00694345662	0.00000328520
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.01742979508	0.00000634984
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00959482175	0.00000454111
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00145714087	0.00000016190
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00330179152	0.00000085200
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00318846719	0.00000066285
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00686113039	0.00000241976
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00204902552	0.00000032820
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00195156700	0.00000079585
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00417711099	0.00000069495
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00269248389	0.00000053890
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00244223688	0.00000046865
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00629500787	0.00000150454
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00415927580	0.00000112829
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00249313079	0.00000045921
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00229639002	0.00000039781
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00311372861	0.00000073841
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00207728045	0.00000033850
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00217995666	0.00000033626
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00370310143	0.00000084526
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00488377026	0.00000175201
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00367832205	0.00000092410
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00270592688	0.00000054545
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00301821599	0.00000065180
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00403024856	0.00000110898
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00216670030	0.00000036210
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.01425701404	0.00000770257
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00340596355	0.00000090981
			Insufficient Information	0		Not Evaluated by SHPO	NORM	0.00331880544	0.00000067221
Leon-Jefferson	Nonwood	Other	Insufficient Information	4382		Indigible for NRHP	NORM	0.01071176889	0.00000401176
			Likely NRHP Eligible	4382		Potentially Eligible for NRHP	NORM	0.00077123012	0.0000004515
			Insufficient Information	5563		Not Evaluated by SHPO	NORM	0.00475811334	0.00000174959
Wesden Island II			Insufficient Information	11332		Not Evaluated by SHPO	NORM	0.00266883863	0.00000048535
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00136033780	0.00000014630
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	GV	0.01714008600	0.00001836001
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00258678337	0.00000051515
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00252130725	0.00000049400
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.01720579887	0.00000305811
Woodland			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00394911522	0.00000097895
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00212145956	0.00000035090
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00326794804	0.00000066070
			Insufficient Information	4773		Not Evaluated by SHPO	NORM	0.00347564847	0.00000085555
			Insufficient Information	4773		Not Evaluated by SHPO	NORM	0.00418220907	0.00000106275
			Insufficient Information	14289		Not Evaluated by SHPO	NORM	0.00224694451	0.00000040177
			Insufficient Information	0		Not Evaluated by SHPO	NORM	0.00620931823	0.00000191565
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00286796714	0.00000051535
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00281983667	0.00000047715
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00184812598	0.00000018955
			Eligible for NRHP	0		Not Evaluated by SHPO	NORM	0.00759146322	0.00000248755
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00201992461	0.00000031185
			Not Evaluated by Recorder	1299		Not Evaluated by SHPO	NORM	0.00291906363	0.00000065515
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00340692435	0.00000081405
			Not Evaluated by Recorder	11332	12/15/1978	Eligible for NRHP	NORM YES	0.02196310063	0.00002065336
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	GV	0.03904945382	0.00007049912
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	GV	0.02999745326	0.00004735576
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.007995540865	0.00000404943
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00446197609	0.00000099086
			Indigible for NRHP	0	7/26/1989	Eligible for NRHP	NORM	0.00180230231	0.00000025270
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00489010126	0.00000136566
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00673852223	0.00000348046
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00257721000	0.00000040700
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00374329727	0.00000104531
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00198580596	0.00000028665
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00394626471	0.00000118711
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00466026457	0.00000141911
			Not Evaluated by Recorder	0		Not Evaluated by SHPO	NORM	0.00476297556	0.00000141921

OBJECTID	SHPID	ShpName	County	City	IntEst	Ownership	CemTypea1	CemTypea2	EthnicGrp1	EthnicGrp2	EthnicGrp3	EthnicGrp4	Status	Condition	ShpEval	UNITSa4aTY	ShpLeng	ShpA_Area
646	U00355	U.S. MILITARY CEMETERY AT BIGCO BLUFF	0	NONE	1860+	Unspecified by surveyor	Unspecified		Unspecified by surveyor				Unspecified by Surveyor	Unspecified by surveyor	Not Evaluated by SHPO	NOR	0.0037838950	0.0000010015

OBJECTID	SurvNum
1	1
407	534
656	909
1019	1749
1107	1935
2449	4382
2705	4773
2761	4851
3217	5563
3250	5606
3840	6430
8038	11332
10027	13935
10459	14289
11483	15421
12249	16532
12800	17291

Title
Archaeological and Historical Survey of the Florida Gas Transmission Company Pipeline Additions Right-of-Way in Florida
An Archaeological Survey of Upland Locales in Gadsden and Liberty Counties, Florida
The Rediscovery & Analysis of the Cultural Significance of Magnetic Anomalies River Miles 93.0-93.7 & 98.2-99.5 Apalachicola River, Florida
Historic Properties Survey of Jackson County, Florida
Cultural resource survey of Apalachicola River Bridge Replacement on SR 20 and National Register Eligibility of the Apalachicola River Bridge.
Phase I C.R.I. of the 453.18 KM (281.60 MI) Florida Portion on the Proposed F.G.T. Company Phase III Expansion Project Vol. I-II;Appe.I Site Maps, III's; Photo's; A.II
Archaeological Investigations of the 1994 Record Flood Impacts in the Apalachicola Valley, Northwest Florida
Cultural Resource Assessment of the Proposed Stormwater Retention Pond Expansion Area, Adjacent to State Road 20/Apalachicola River Bridge, in Bristol
Apalachicola Valley Remote Areas Archaeological Survey, Northwest Florida (V. I The Survey and Sites Located)(V. II 8GU14; 8GU94)
A Cultural Resource Assessment Survey John Redd Road East Relocation, Calhoun County, Florida
Archaeological Phase I Investigation along State Road 20, Florida for Lightwave LLC, Fiber Optic Line
May 7, 2005 Apalachicola River Post-Flood Site Inspection Trip, Calhoun and Liberty Counties, Florida
Cultural Investigations in the Apalachicola and Chattahoochee River Valleys in Florida, Alabama, and Georgia: History, Archeology, and Underwater Remote Sensin
Historic Backgournd of Old Iola and New Iola Sites, Gulf County
Archaeological and Historical Survey: Deadhead Logging Permit Survey, Apalachicola River, Mile Marker 26-46: Pre-CUt Timber Recovery Permit Application Numb
Florida Gas Transmission Phase VIII First Addendum Report Related to Report Nos. 2008-07035 and 2008-07036
Phase I Cultural Resources Survey and Archaeological Inventory of Loops 2, 3, 4, 5, 6, and Greenfield 1 of the Florida Gas Transmission Company, LLC Phase VIII Exp

Pub_Dat	Author1	Author2	Author3	Sponsor	Im_Num_Q
1976	CHANCE, MARSHA A.			Florida Gas Transmission Co	8 6
1976	JONES, M. KATHERINE	PERCY, GEORGE W.		DEPT OF ANTHROPOLOGY FSU	28
1983	WRIGHT, NEWELL O.			US ARMY Corps of ENGINEERS	
1988	ADAMS, WILLIAM R.			Jackson County Bd of Commissio	225
1989	BROWNING, WILLIAM D.	WIEDENFELD, MELISSA G.		Fla. Dept. of Transportation	7
1993	ATHENS, WILLIAM P.	DONALD, CHARLOTTE	FENN, THOMAS	Florida Gas Transmission Co.	205 53
1996	WHITE, NANCY MARIE			Div. of Historical Resources	24 67
1997	PENTON, DANIEL T.			Fla. Dept. of Transportation	1
1999	WHITE, NANCY MARIE			FLORIDA DIVISION OF HIST RES	11 3
1999	ALMY, MARION			PUBLIC ARCHAEOLOGY LABORATORY	2
2001	BROOMS, MCDONALD	ELEAM, CLARISSA		SOUTHLAND PROF. ENGINEERS	1
2005	Tesar, Louis D.			Robert Daniels	1 2
1980	Brazda, Steven J.	Floyd, Robert J.	Gibson, Jon L.	U.S. Army Engineer District, Mobile	0 0
2007	Darley, Zaida E.			USF Department of Anthropology Lab	2 0
2007	Cockrell, Wilburn A.			Russell R. Boukard	0 0
2009	Barse, William	Coughlin, Sean	Crowe, Emily E.	Florida Gas Transmission Company	42 14
2008	R. Christopher Goodwin & Associates			Florida Gas Transmission Company	36 48

CratNum	chastru	larir	Cell	Shape_Leng	Shape_Area
	YES	YES		4.42345473628	0.00039496755
	YES			0.81026159484	0.00289009194
	YES			0.04729735787	0.00003504048
		YES		2.23019246179	0.23293396702
	YES	YES		0.04145466087	0.00002186018
199303435	YES	YES		8.86191379591	0.00091503432
	YES			3.74467252302	0.02896558543
199701610	YES			0.00730106142	0.00000197756
	YES			3.95630406641	0.00409156403
199906575	YES			0.004222575365	0.00000038510
200108568	YES			2.24107435412	0.00040898760
	YES			0.06772655808	0.00007345967
	YES	YES	YES	3.31380046103	0.00237704573
	YES	YES		0.01604007048	0.00000290409
200710649	YES			0.37584547493	0.00022680755
2009028048	YES	YES		22.79625361510	0.00691332786
200807035	YES	YES		7.94504678008	0.00222874172