



Georgia Resilient Coastal Forests

Benefits Report



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Produced by the Green Infrastructure Center Inc.

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Coastal forests are important ecological, historical and cultural habitat that are imperiled by a wide range of threats that can impact their abundance, distribution, composition and intactness. Coastal forests are at risk from unprecedented challenges such as sea-level rise and climate change, but many of the U.S.'s coastal areas are experiencing high urban growth rates leading to forest clearing to make room for new housing and industry. Weather-related threats such as hurricanes, flooding and wildfire are increasing in intensity and frequency as global temperatures increase. Increasing global temperatures also influence the distribution and life cycles of plants, animals, pests and diseases causing unforeseen impacts to coastal forest quality. Even some widespread climate solutions to address greenhouse gas emissions, such as development of utility-scale solar energy, may conflict with coastal forests as land is sought for new solar farms.

The pressures facing coastal forests make it imperative that federal, state and local governments, nonprofits, universities, businesses, forest landowners and community members be informed about what is at stake and what could be lost. This pilot study was designed to create a landscape-scale conservation planning process unique to coastal forests of the southeast United States. The pilot study includes an inventory of coastal forest resources and assets, an analysis of the benefits these forests provide, an evaluation of the various threats and their level of risk to coastal forests, engagement of local and state stakeholders about these threats, prioritization of existing forests and the development of management strategies to mitigate or adapt to future impacts.



Resilient Coastal Forest Study Area Georgia



Figure-1: A map outlining the Georgia Resilient Coastal Forest study area.

This benefits’ report is a partial assessment of natural resource assets related to coastal forests. It analyzes the benefits coastal forests provide to the environment and communities that reside within and around those forests. By identifying and quantifying the role and benefits coastal forests play in a region, these data can be used by local stakeholders to understand the extent of services, justify decision-making when protecting or conserving forests, utilize data in local planning decisions, educate the public and build support and political will from the community to effect necessary change.

What do we mean by benefits?

Coastal forests provide valuable ecosystem services. These services are further classified into supporting services, regulating services, provisioning services, and cultural services. Each type of service is dependent on the functional role the forests play in the environment and human society. Supporting services are nutrient cycling, soil formation, pollination, and habitat, while regulating services are air and water purification, decomposition, carbon sequestration and storage, and flood protection. Provisioning services, oftentimes referred to as ecosystem goods, are tangible forest products, such as timber, paper, medicines, foods, biofuels, and genetic material. Cultural services examples are recreation, science and education, historical or natural heritage sites, and spiritual practices associated with natural places and symbolism.

This benefits report quantifies many of the services described, with a particular focus on the role of coastal forests in providing regulating, provisioning, and cultural services. The study area’s land cover was mapped using remote sensing techniques from aerial photographs and geographical information system (GIS) data layers publicly available or shared by committee partners from national, state, and local groups. Rural areas were mapped at a 10-meter pixel resolution, while urban areas

were mapped at a finer resolution of 1-meter pixels. Benefits’ calculations were derived from the land cover and by using published multipliers from the U.S. Forest Services i-Tree multipliers specific for the study region (i-Tree County multipliers). Other values were sourced from GIS datasets shared by local partners or published datasets.

227,469 acres of total forest cover

Total forest cover makes up 54.4% of land cover in the study area, with evergreen and wooded wetlands forests being evenly split as the predominant forest types in the region at 27% each (see Table-1 below).

Table-1: Number of acres and percent land cover, by type.

Land Cover Type	Acres	Percent Cover
Deciduous Forest	1,505	0.36%
Evergreen Forest	112,920	27%
Mixed Forest	140	0.03%
Wooded Wetland	112,904	27%
Wetland	78,265	19%
Pervious	79,060	19%
Developed	7,552	2%
Impervious	9,222	2%
Water	16,416	4%
Total	417,984	100%

Source: National Land Cover Database 2016



Longleaf pine forests are an important coastal forest habitat for many wildlife species.

Forest Cores and Woodlands

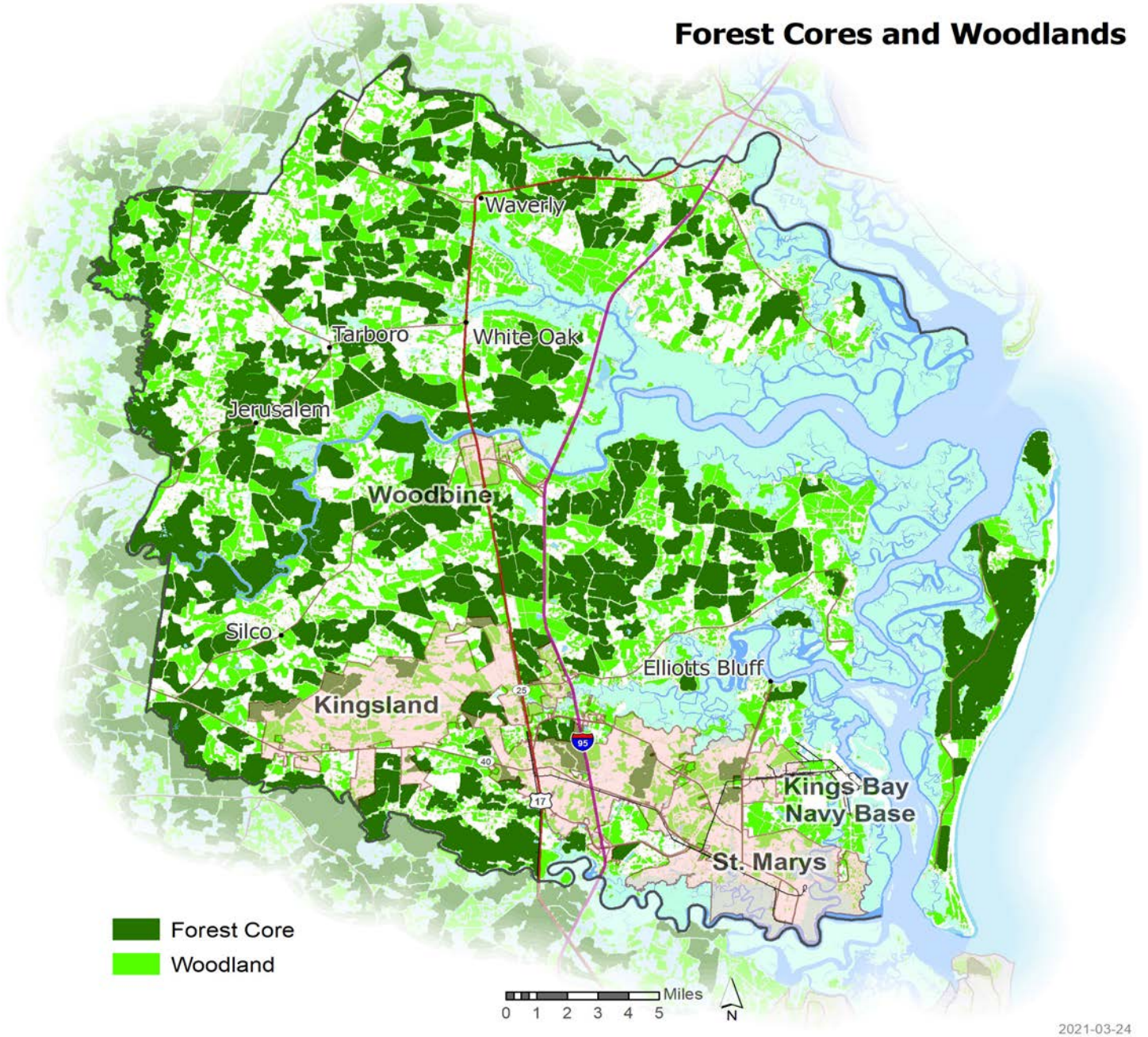


Figure-2: A map displaying the coastal forest cores (forests larger than 100 acres in size) and woodlands (forests smaller than 100 acres in size but larger than 10 acres).

Benefits of Urban Tree Canopy

As part of the analysis, GIC mapped tree canopy cover at 1-meter resolution for each of the cities and towns located within the study area. Tree canopy values for each city or town can be found in Table-3. In cities and towns, urban tree canopy provides many community health benefits by reducing air and water pollution, sequestering carbon, mitigating urban heat island effects and reducing standing water and stormwater runoff.

For this study, the reduction in air pollution and carbon sequestration and storage were calculated for the study area's urban forests. Mitigating air pollution in urban settings is critical to avoid long-term health impacts to residents and to meet federal air-quality standards.

Many cities are developing Climate Action Plans to support sustainability measures, such as energy efficiency, urban cooling and reducing greenhouse gas emissions. Coastal forests, in both urban and rural settings, play a key role in mitigating greenhouse gas emissions. Forest land conversion accounts for 25% of global emissions.

Coastal forests sequester hundreds of thousands of tons of carbon dioxide from the atmosphere annually and play a significant role in mitigating future impacts of climate change on the surrounding communities (see Table-2). Trees sequester carbon which forms greenhouse gases such as sulphur dioxide and carbon dioxide, thereby reducing sources of global warming. Storing carbon and preventing its release is another way that trees mitigate the impacts of climate change. Coastal forests play an even larger role in preventing greenhouse gas formation by also sequestering carbon in the soil and thick organic layer of the forest floor.

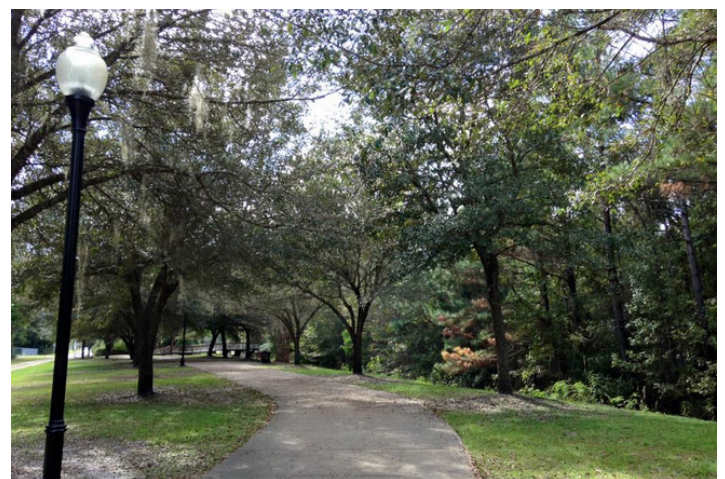
Besides the role coastal urban forests play in regulating environmental impacts, these same forests directly and indirectly provide cultural services in the form of health benefits through

recreation and promoting behaviors that encourage physical activity in communities. Parks and green spaces account for a significant amount of a population's moderate-to-vigorous physical activity, with an average of 5,300 hours per week spent on exercise in some neighborhood parks in the Los Angeles, CA, area. (Kim et al 2016). And it is not just greenspaces in communities that promote these behaviors. Tree canopy alone is shown to be an effective influencer on physical activity. A higher density of street trees (at the 75th vs 25th percentile) in low-income neighborhoods was associated with a 12% lower prevalence of obesity in children between the ages of 3-5 years in New York City (Lovasai et al 2013). Furthermore, a higher

Table-2: Carbon sequestration and storage for each locality using U.S. Forest Service's iTree County multipliers.

Localities	Tons/YR	Tons
County/City	CO2seq	CO2stor
Camden County	1,222,609	29,843,892
Kings Bay Base	1,876	45,789
Kingsland	67,427	1,645,902
St. Marys	23,166	565,471
Woodbine	4,112	100,368
Study Area Total	1,319,189	32,201,421

Source: i-Tree County, U.S. Forest Service



Trees capture and store carbon making them well-suited as a solution to addressing climate change.

Photo credit: St. Marys Convention & Visitors Bureau

Benefits of Urban Tree Canopy

density of street trees was positively associated with longer walking times. Individuals walked a median value of 32 minutes longer on streets with a high density of trees than on streets with a lower density (Vich et al 2019).

In addition to urban forests' role in promoting physical activity, the scientific literature shows a correlation between tree canopy or greenspaces and improved mental health and faster healing from illnesses. Patients recovering from surgery in hospital rooms with views of nature have shorter hospital stays, receive fewer negative evaluations, and take fewer pain-relieving medicines than patients in rooms with windows facing a brick wall (Ulrich 1984). Visual exposure to settings with trees helps recovery from stress within five minutes, as indicated by changes in blood pressure and muscle tension (Ulrich 1984).

Finally, trees play a significant role in urban economies by increasing property values, which translates into a greater tax base for local governments. In one study, it was demonstrated that trees can increase residential property values by up to 37% (Foster et al 2011).

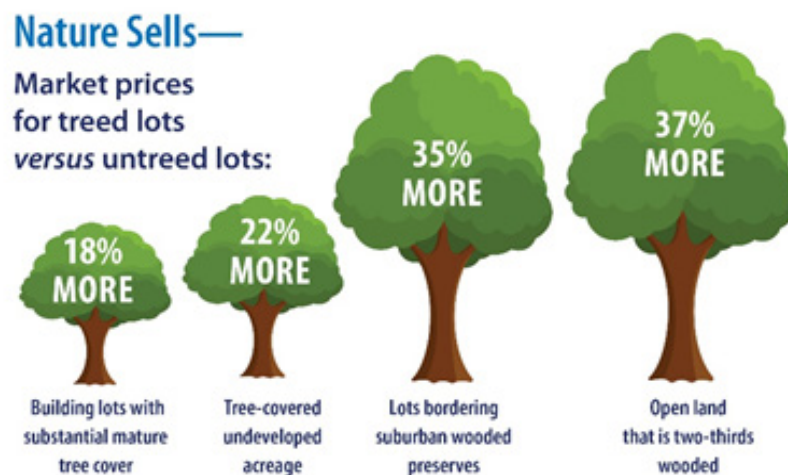
Trees also influence consumer spending patterns. They provide more attractive areas for development, and improve the character and charm of historic districts and commercial areas by giving

opportunities for people to interact with nature. A study by the University of Washington found that people shopped longer and more often in tree-lined retail areas and spent about 12% more money in large cities and 9% more in small cities (Wolf 2007). In addition, trees and areas of urban coastal forest cover contribute to the livelihood and economic well-being of cities and towns by drawing in tourists and indirectly supporting economic development in communities.



Businesses benefit from tree canopy by making shopping areas more aesthetically pleasing.

Photo credit: St. Marys Convention & Visitors Bureau- Ashley Alexander



Source: Kathleen Wolf, 2007, City Trees and Property Values.

Urban Tree Canopy

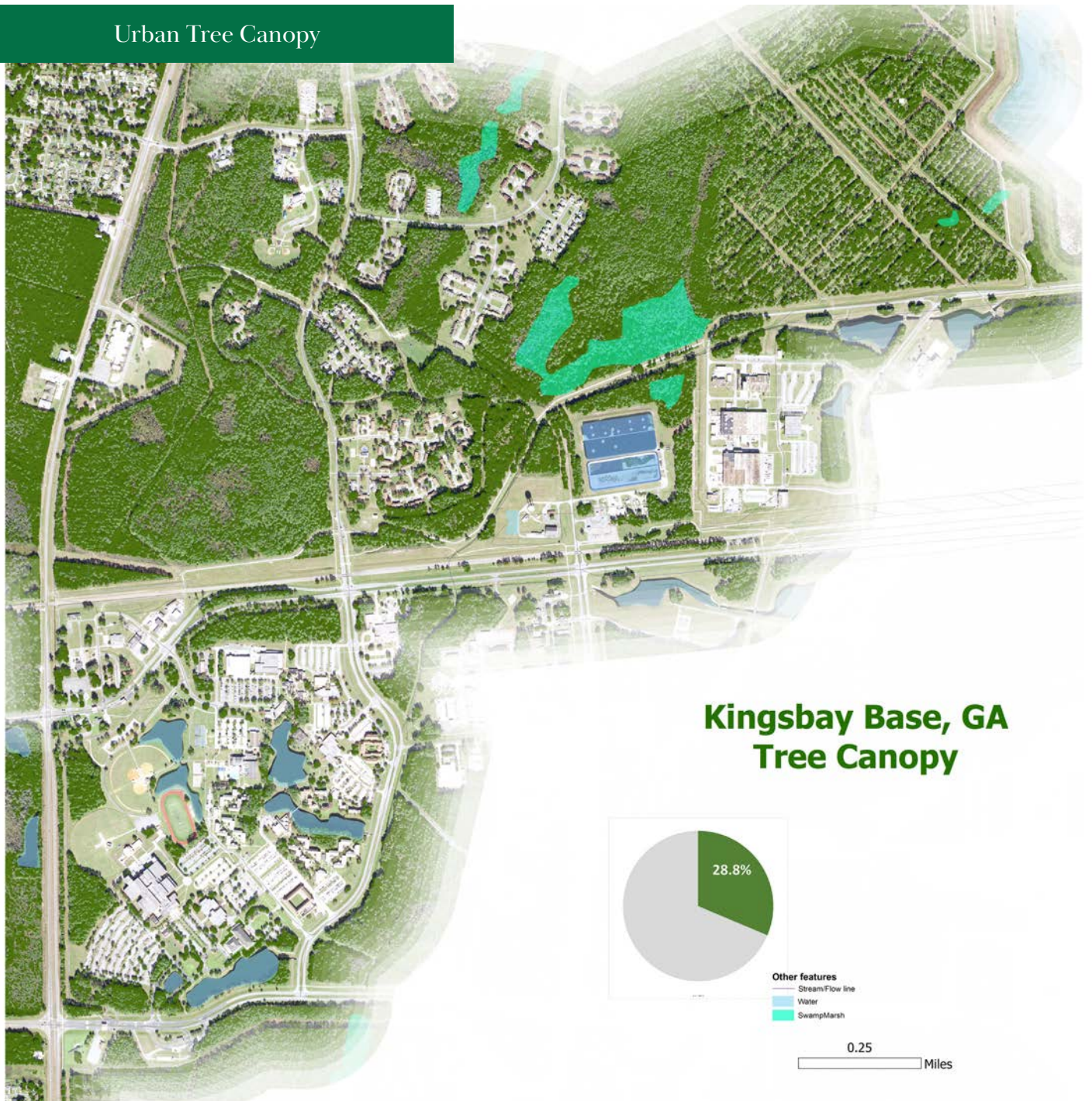


Figure-3: A map showing the extent of urban tree canopy for Kingsbay Naval Submarine Base.

**Kingsland, GA
Tree Canopy**

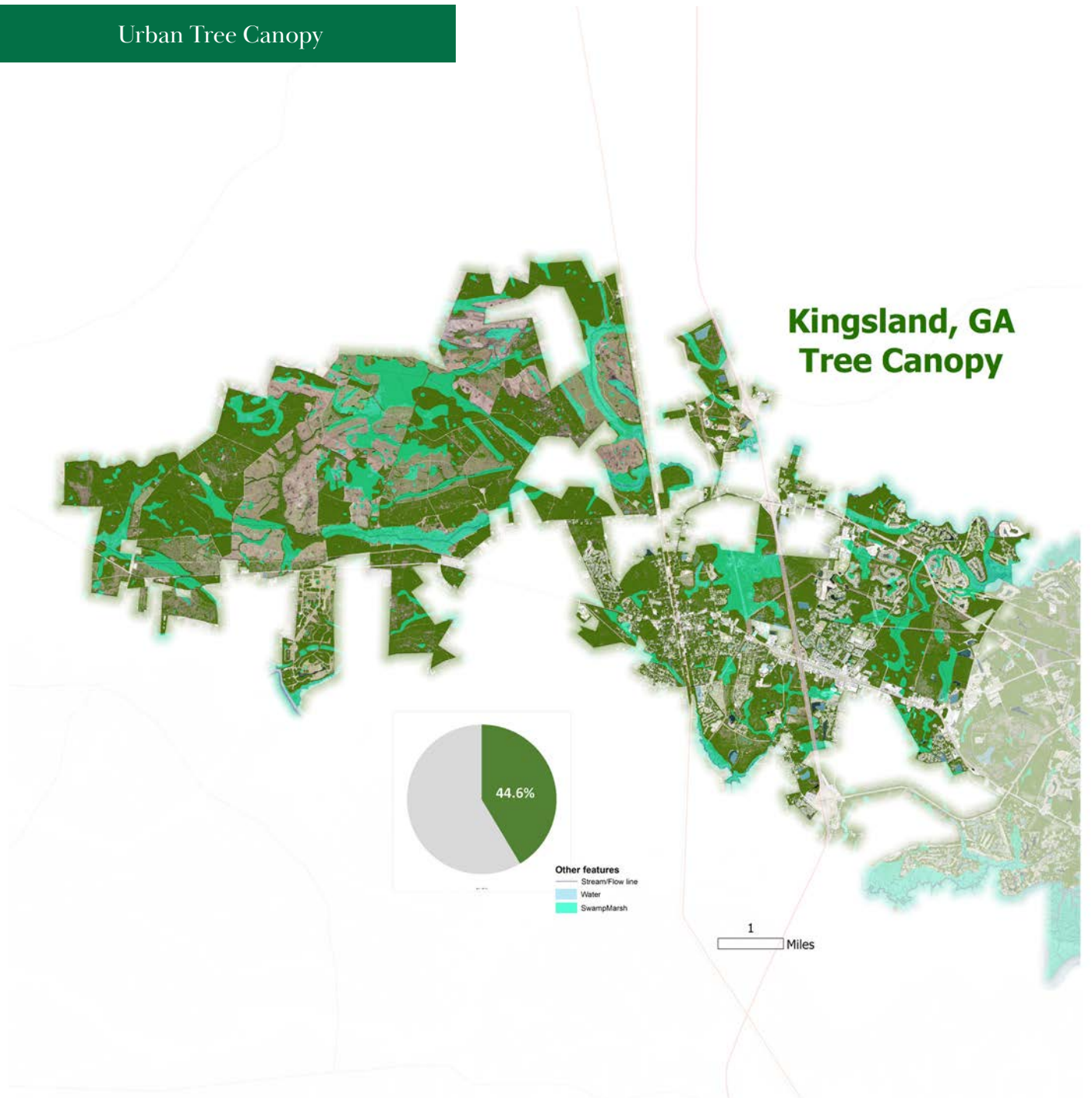


Figure-4: A map showing the extent of urban tree canopy for the City of Kingsland.

St. Mary's, GA Tree Canopy

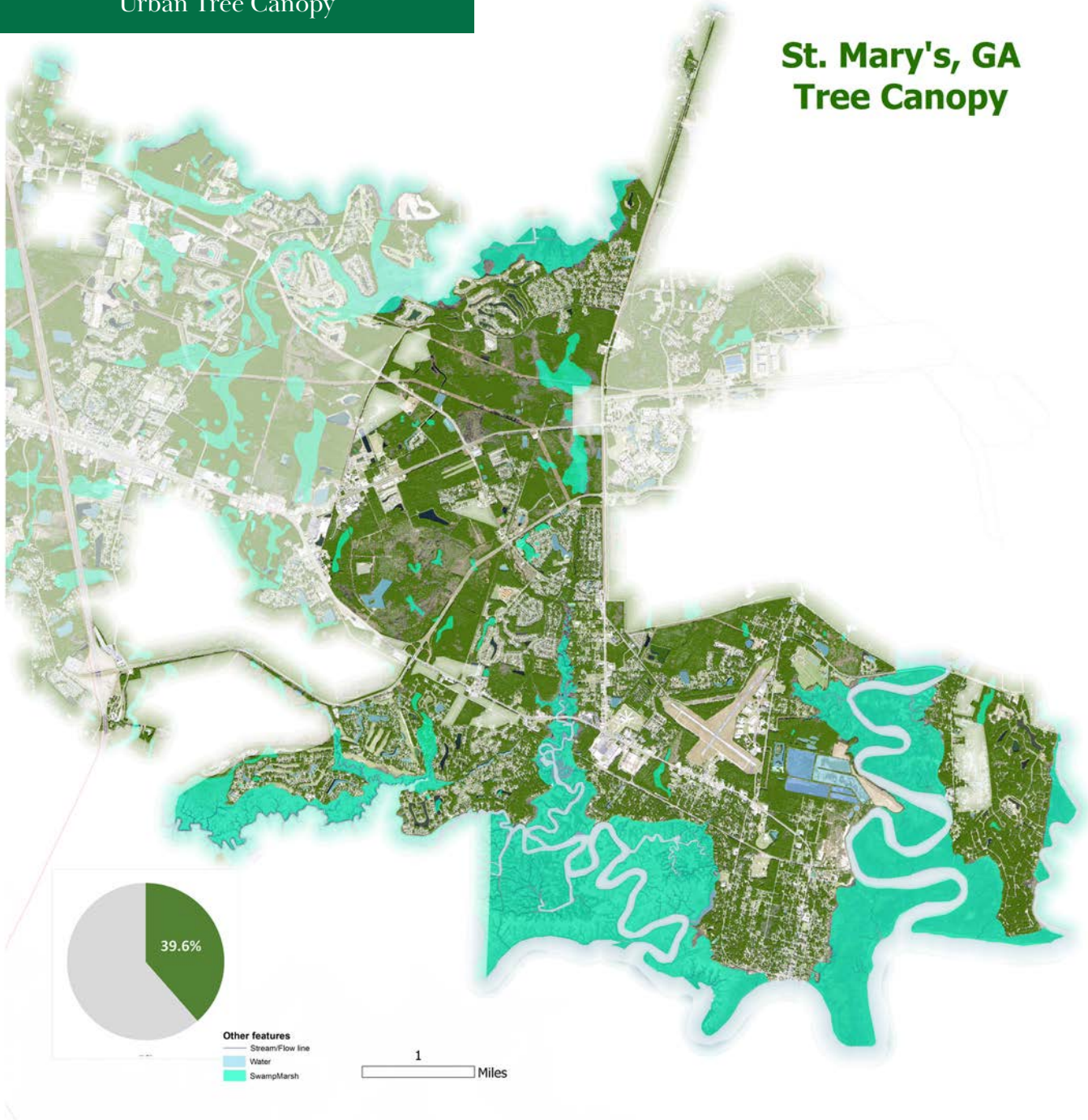


Figure-5: A map showing the extent of urban tree canopy for the City of St. Marys.

Woodbine, GA Tree Canopy

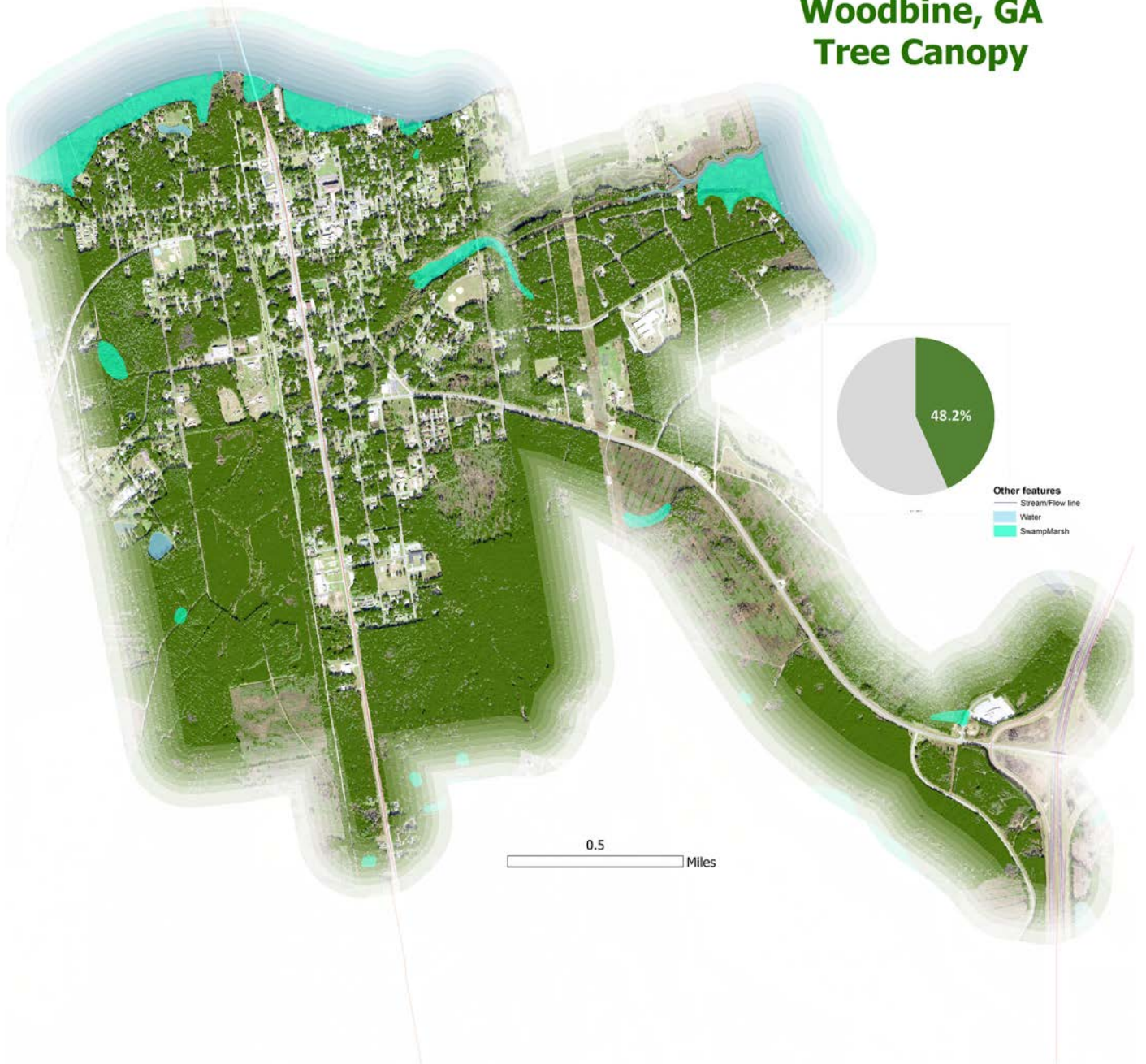


Figure-6: A map showing the extent of urban tree canopy for the City of Woodbine.

Benefits to Air Quality

For this study, the reduction in air pollution and carbon sequestration and storage were calculated for the study area's urban forests. Mitigating air pollution in urban settings is critical to avoid long-term health impacts to residents and to meet federal air-quality standards.

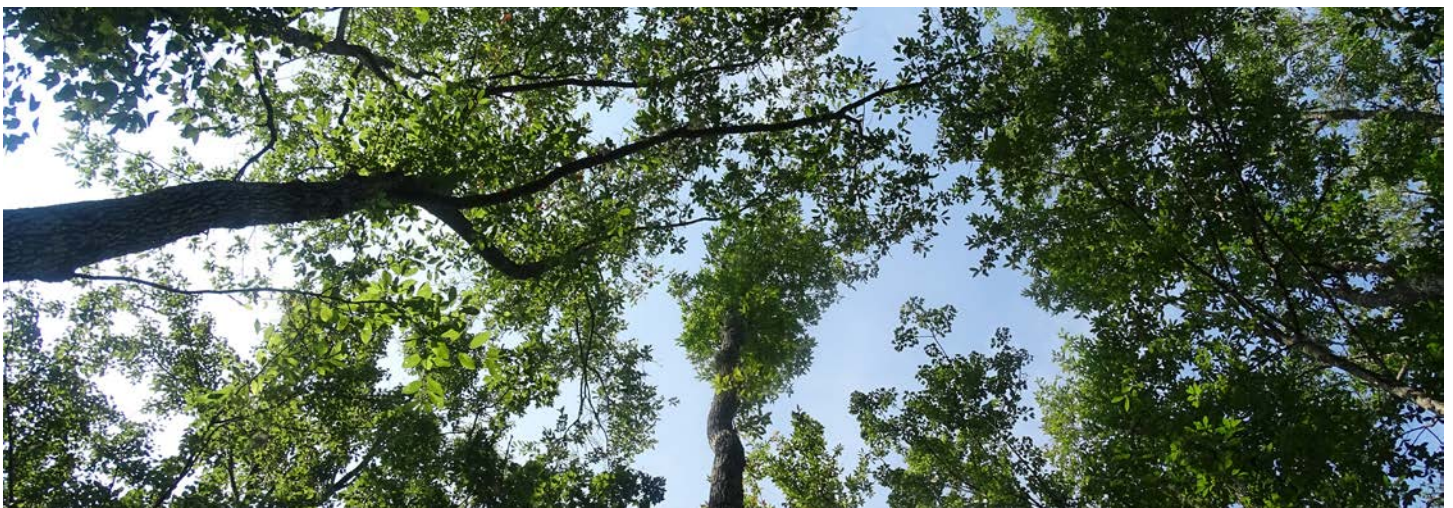
Trees mitigate the impacts of air pollution through a number of different mechanisms. For

example, they cool surface temperatures, by shading impervious surfaces that hold and radiate heat, thereby reducing the conversion of some air pollutants, such as nitrogen dioxide, into ground-level ozone. Trees also capture small particulate matter on their leaves or sequester pollutants through gas exchange, effectively removing these substances from the atmosphere. Even at the neighborhood level, trees reduce pollutants. Well-treed neighborhoods suffer less respiratory illnesses, such as asthma (Meenakshi et al 2014).

Table-3: Air quality pollutant reductions for each locality using U.S. Forest Service's i-Tree County multipliers.

County/City	Canopy Area (Acres)	CO Carbon monoxide	NO2 Nitrogen dioxide	O3 Ozone	PM2.5 Particulate Matter (2.5 microns)	PM10 Particulate Matter (10 microns)	SO2 Sulphur dioxide
Camden County	227,469	95,252	2,245,082	14,987,114	691,132	4,622,263	680,626
Kings Bay Base	349	146	3,445	22,994	1,060	7,092	1,044
Kingsland	12,545	5,253	123,817	826,545	38,116	254,920	37,537
St. Marys	4,310	1,805	42,539	283,970	13,095	87,581	12,896
Woodbine	765	320	7,550	50,403	2,324	15,545	2,289
Study Area Total	245,438	102,776	2,422,433	16,171,027	745,729	4,987,400	734,392

Source: i-Tree County, U.S. Forest Service



Forests clean the air by filtering out small particles and cooling the atmosphere which reduces the conversion of pollution into harmful volatile organic compounds.

Benefits to Water Resources

Forests provide numerous services for the regulation of flooding and provisioning of clean and safe drinking water to communities. Forest buffers along riparian corridors filter out sediment and nutrients that contribute to poor water quality, while shading and cooling water for aquatic life. Tree roots and the forest duff layer soak up rainfall and infiltrate water into the ground, preventing it from becoming surface flow runoff. By infiltrating rainfall into the ground, forests play a vital role in groundwater recharge, replenishing aquifer systems that communities rely on for drinking water sources. Coastal forests and forested wetlands capture and store flood waters and slowly infiltrate it back into the ground, acting as reservoirs that regulate flooding.

Coastal forested wetlands or “swamps” possess thick, organic soils that support flood tolerant tree species such as Carolina ash, swamp tupelo, red maple and bald cypress. Forested wetlands play a critical role as habitat for a variety of plants, wildlife and aquatic

organisms such as fish, clams and crayfish. Many of the forested wetlands are located at the boundaries of high water along the coast or concentrated along tributaries or on floodplains of major river systems. When these forested wetlands occur locally on floodplains of major coastal river systems, tree species such as water oak, willow oak, sweet gum, red maple and water hickory can be found (GA DNR 2012).

Forested wetlands are the dominant forest land cover type on the landscape, but these forest types are not homogeneous, rather they are found in a variety of hydrological conditions from riparian floodplains, the borders of high tides and marshes and local ponds and depressions. Camden County has more wetland area than any other coastal county in Georgia (GA DNR 2012). These wetlands are at risk from conversion to urban development and agriculture or degradation from salt inundation and invasive species.

Salt inundation is a particular concern as sea-level rise encroaches into forested areas and more powerful storm surge pushes saltwater and salt spray further inland. Salt creates toxic conditions in the soil which leads to water stress for trees ill-adapted to high concentrations of salt, resulting in “ghost forests,” large swaths of dead standing and often bleached trees. With tree cover loss and higher water tables, marshes are able to migrate further inland eroding the extent of forest habitat. In addition, some invasive species such as phragmites colonize and form dense thatch which reduces native plant competition, decreases habitat quality and elevates wildfire risk to adjacent homes and properties.



Wetlands provide numerous water quality benefits, habitat and shoreline protection in coastal zones.

Benefits to Water Resources in the Study Area at a Glance...

Coastal Forests in the study area capture and infiltrate 3.9 billion gallons of stormwater per 2 inch rain fall event.

Pollution loading levels (nonpoint sources) reduced pollutants such as nitrogen, phosphorus, sediment and reduced loadings to waterways by:

- 1,041,480 lbs per year of avoided nitrogen runoff
- 59,640 lbs per year of avoided phosphorous runoff
- 32,000 tons per year of avoided sediment runoff

Miles of streams that have a forested buffer = 193 miles or 37% of stream miles.

Miles of stream listed as impaired (section 303-d listed) = 23.3 miles or 4.5% of stream miles.

Of those 193 forested stream miles, 86% have at least a 100 ft buffer and 76% have at least a 600 ft buffer.

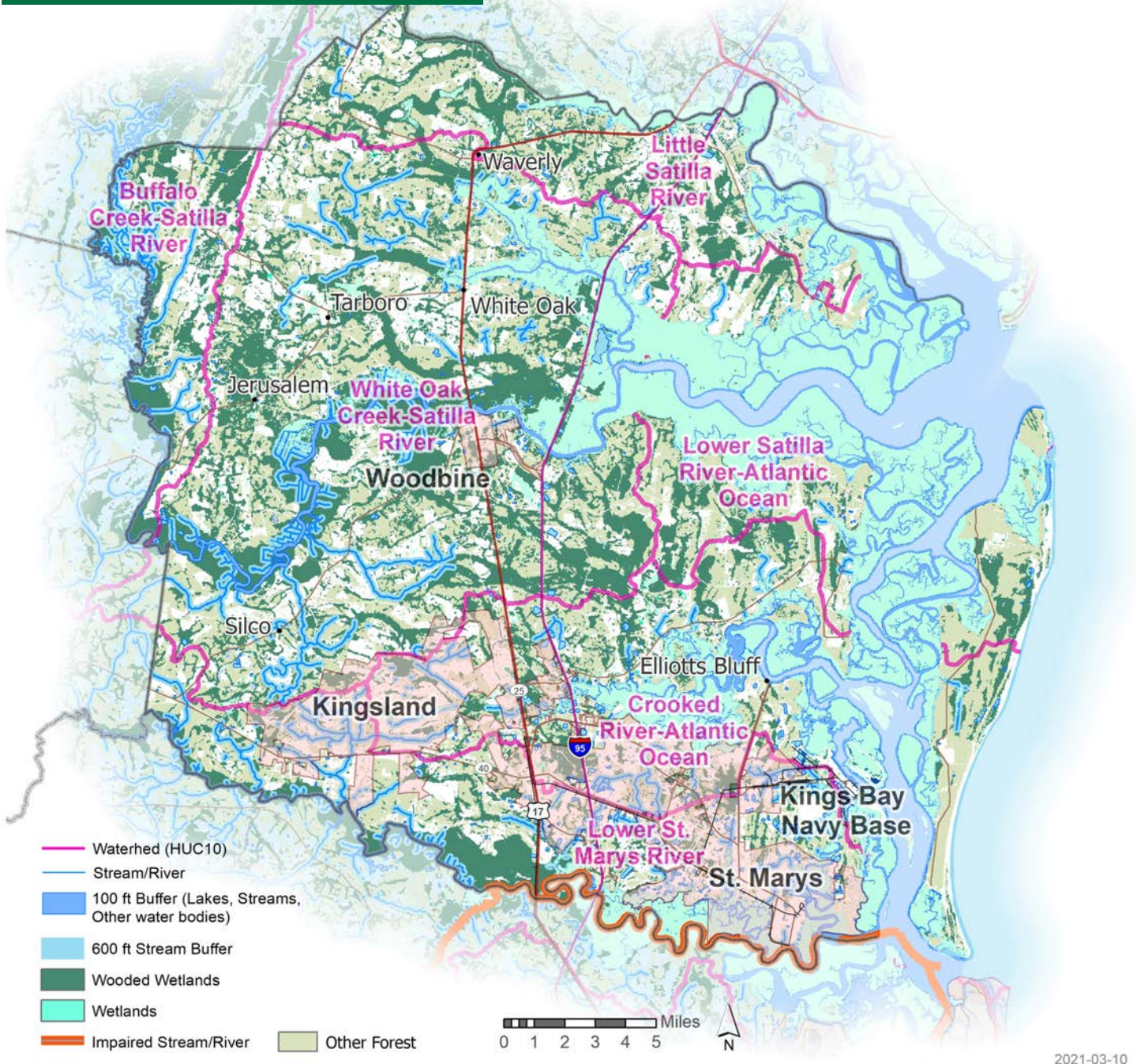
A 100 ft buffer removes the majority of N, P, S from overland runoff, while a 600 ft buffer is wide enough to also serve as a corridor for many species of wildlife.

Wetlands = 78,265 acres

Forested wetlands = 112,904 acres ¹

¹Note that wetlands data are from the National Wetlands Inventory and overlaid with forest cover. Wetlands are difficult to pick out with aerial mapping when covered by dense canopy. The extent of forested wetlands in the study area may be far greater.





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Figure-7: A map displaying the water resources within the project study area including 100 ft and 600 ft stream buffers, wooded wetlands, and non-forested wetlands. 100 ft forested buffers protect water quality and 600 ft forested buffers were mapped as possible wildlife corridors.

Benefits to Wildlife & Biodiversity

One of the biggest supporting services provided by coastal forests is the amount of habitat they offer to forest-dependent species. Forest-dwelling species, such as the red-cockaded woodpecker are dependent on large tracts of intact forests for habitat. Without protected forestlands, these species would be extirpated from the region.

Forest cores and corridors also provide connectivity for wildlife across the landscape, which allow animals to migrate and adapt to immediate (fire) and long-term (climate change) threats. The Georgia study area contains 227,469 acres of total forest cover; however, large intact tracts of forests (100+ acres in size) make up only 108,132 acres or 48% of total forest cover.

Table-4 below shows the breakout of intact forest tracts by size and count within the study area. There are 23 intact forest tracts that are larger than 1000 acres in size, and the acreage across class sizes is somewhat evenly split, with the largest intact forested tracts (greater than 1000 acres in size) comprise 18% of total forest cover in the region. This means large intact forested habitat in the region is limited which can impact some species of wildlife that require large blocks of contiguous

Table-4: Number of acres of forest cores, by size class, in the study area.

Size Class	Count	Total Acres
100 – 500 acres	141	40,037
501 – 1000 acres	41	27,215
1000+ acres	23	39,880
Total	205	108,132

Source: Green Infrastructure Center's intact cores model using NLCD 2016 data.

forest.

The coastal forests of Georgia are rich in tree diversity, with over 86 species of trees making up the forests. There is a total of 355 species of terrestrial vertebrates within the study area. Birds are the most “species rich” of any of the groups, at 214 species (see Table-5).

Table-5: Species richness of terrestrial vertebrates, by taxonomic group.

Taxonomic Group	Species Richness
Amphibians	39
Birds	214
Mammals	43
Reptiles	59
Total	355

Source: Biodiversity Mapping.org



Alligators basking in the sun.

Photo credit: St. Marys Convention & Visitors Bureau

Benefits to Wildlife & Biodiversity

The region is also home to several federal- and state-listed threatened and endangered species (Table-6). Thirty-seven species within the study area are either federally or state listed (or both) as endangered, threatened or rare. The Gopher tortoise (*Gopherus polyphemus*), a keystone species known for its burrows which many other animals inhabit are associated with sandy soils in longleaf pine savannas and forests. Red cockaded woodpeckers (*Picoides borealis*) also inhabit these same forests and create nest cavities in trees which many species rely on. Other species such as the wood stork (*Mycteria americana*), are found in mature, mixed-hardwood swamp forests and cypress stands. Coastal forests not only provide critical habitat for these rare species, but serve as refugia for hundreds of species that support the many ecosystem services and functions upon which communities rely.



Red-cockaded Woodpecker

Photo credit: Lance Cpl. Matthew K. Hacker

Table-6: A list of federal- and state-threatened and endangered species within the study area. LT = Listed Threatened; LE = Listed Endangered; C= Candidate; R= Rare.

Common Name	Scientific Name	Taxonomic Group	Federal Listing	State Listing
Shortnose Sturgeon	<i>Acipenser brevirostrum</i>	Fish	LE	LE
Atlantic Sturgeon	<i>Acipenser oxyrinchus oxyrinchus</i>	Fish	LE	LE
Loggerhead Sea Turtle	<i>Caretta caretta</i>	Reptile	LT	LE
Piping Plover	<i>Charadrius melodus</i>	Bird	LT	LT
Green Sea Turtle	<i>Chelonia mydas</i>	Reptile	LT	LT
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Reptile	LE	LE
Eastern Indigo Snake	<i>Drymarchon couperi</i>	Reptile	LT	LT
Northern Atlantic Right Whale	<i>Eubalaena glacialis</i>	Mammal	LE	LE
Gopher Tortoise	<i>Gopherus polyphemus</i>	Reptile	C	LT
Kemp's Ridley	<i>Lepidochelys kempii</i>	Reptile	LE	LE
Wood Stork	<i>Mycteria americana</i>	Bird	LT	LE
Red-cockaded Woodpecker	<i>Picoides borealis</i>	Bird	LE	LE
West Indian Manatee	<i>Trichechus manatus</i>	Mammal	LT	LE

Source: Georgia Department of Natural Resources

Table-6 continued: A list of federal- and state-threatened and endangered species within the study area. LT = Listed Threatened; LE = Listed Endangered; C= Candidate; R= Rare.

Common Name	Scientific Name	Taxonomic Group	Federal Listing	State Listing
Morzeni's Spleenwort	<i>Asplenium heteroresiliens</i>	Vascular Plant		LT
Velvet Sedge	<i>Carex dasycarpa</i>	Vascular Plant		R
Wilson's Plover	<i>Charadrius wilsonia</i>	Bird		LT
Say's Spiketail	<i>Cordulegaster sayi</i>	Insect		LT
Ciliate-leaf Tickseed	<i>Coreopsis integrifolia</i>	Vascular Plant		LT
Rafinesque's Big-eared Bat	<i>Corynorhinus rafinesquii</i>	Mammal		R
Swallow-tailed Kite	<i>Elanoides forficatus</i>	Bird		R
Creeping Morning-glory	<i>Evolvulus sericeus var. sericeus</i>	Vascular Plant		LE
Godfrey's Wild Privet	<i>Forestiera godfreyi</i>	Vascular Plant		LE
Florida Wild Privet	<i>Forestiera segregata</i>	Vascular Plant		R
Southeastern Pocket Gopher	<i>Geomys pinetis</i>	Mammal		LT
American Oystercatcher	<i>Haematopus palliatus</i>	Bird		R
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Bird		LT
Hartwrightia	<i>Hartwrightia floridana</i>	Vascular Plant		LT
Corkwood	<i>Leitneria floridana</i>	Vascular Plant		LT
Gopher Frog	<i>Lithobates capito</i>	Amphibian		R
Pond Spice	<i>Litsea aestivalis</i>	Vascular Plant		R
Round-tailed Muskrat	<i>Neofiber alleni</i>	Mammal		LT
Striped Newt	<i>Notophthalmus perstriatus</i>	Amphibian		LT
Bachman's Sparrow	<i>Peucaea aestivalis</i>	Bird		R
Wild Coco	<i>Pteroglossaspis ecristata</i>	Vascular Plant		LT
Climbing Buckthorn	<i>Sageretia minutiflora</i>	Vascular Plant		LT
Soapberry	<i>Sapindus marginatus</i>	Vascular Plant		R
Least Tern	<i>Sternula antillarum</i>	Bird		R

Source: Georgia Department of Natural Resources



Photo credit: St. Marys Convention & Visitors Bureau- Kram Kran Photo

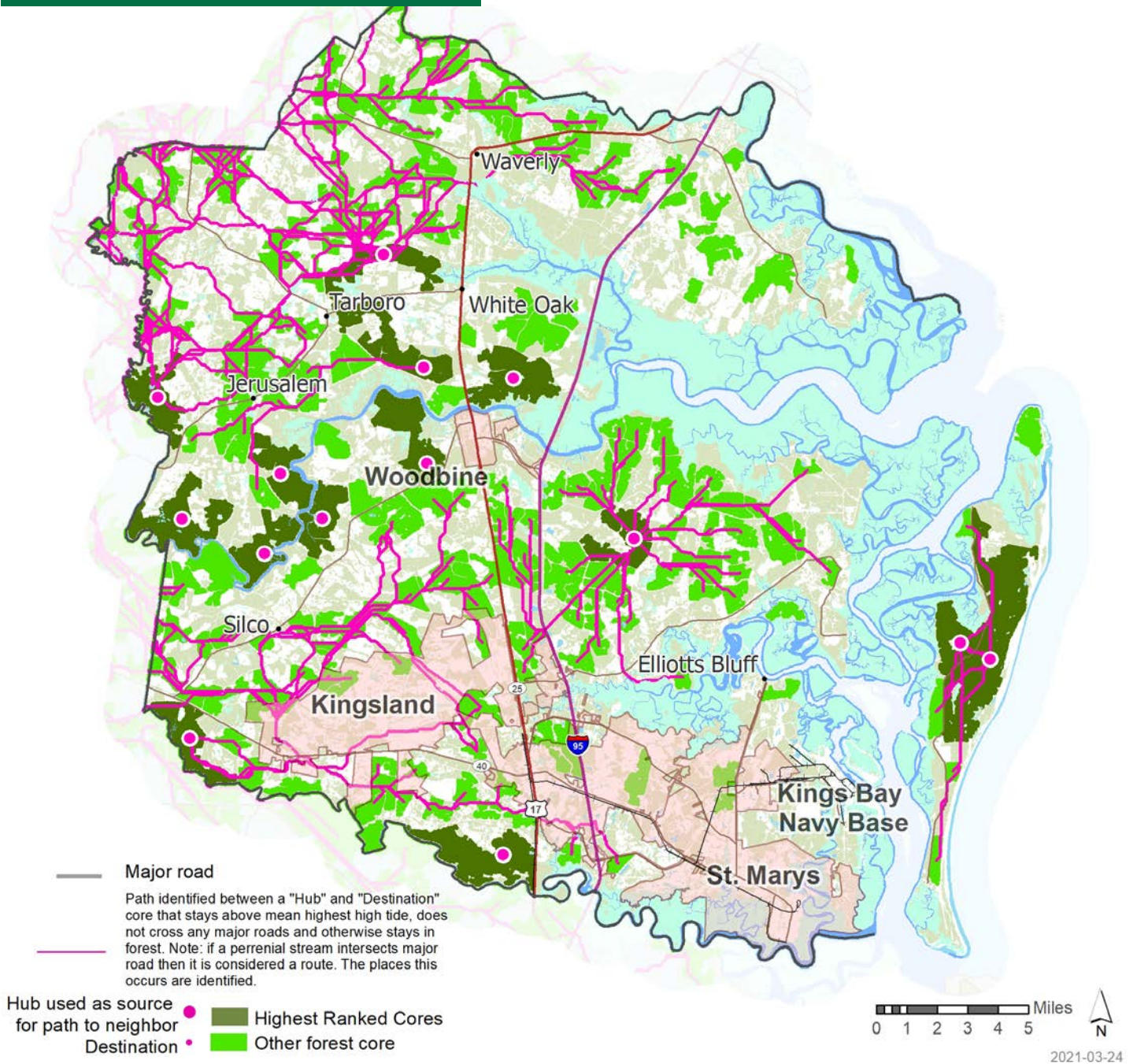


Figure-8: A map showing forest corridors and connections across the study area.

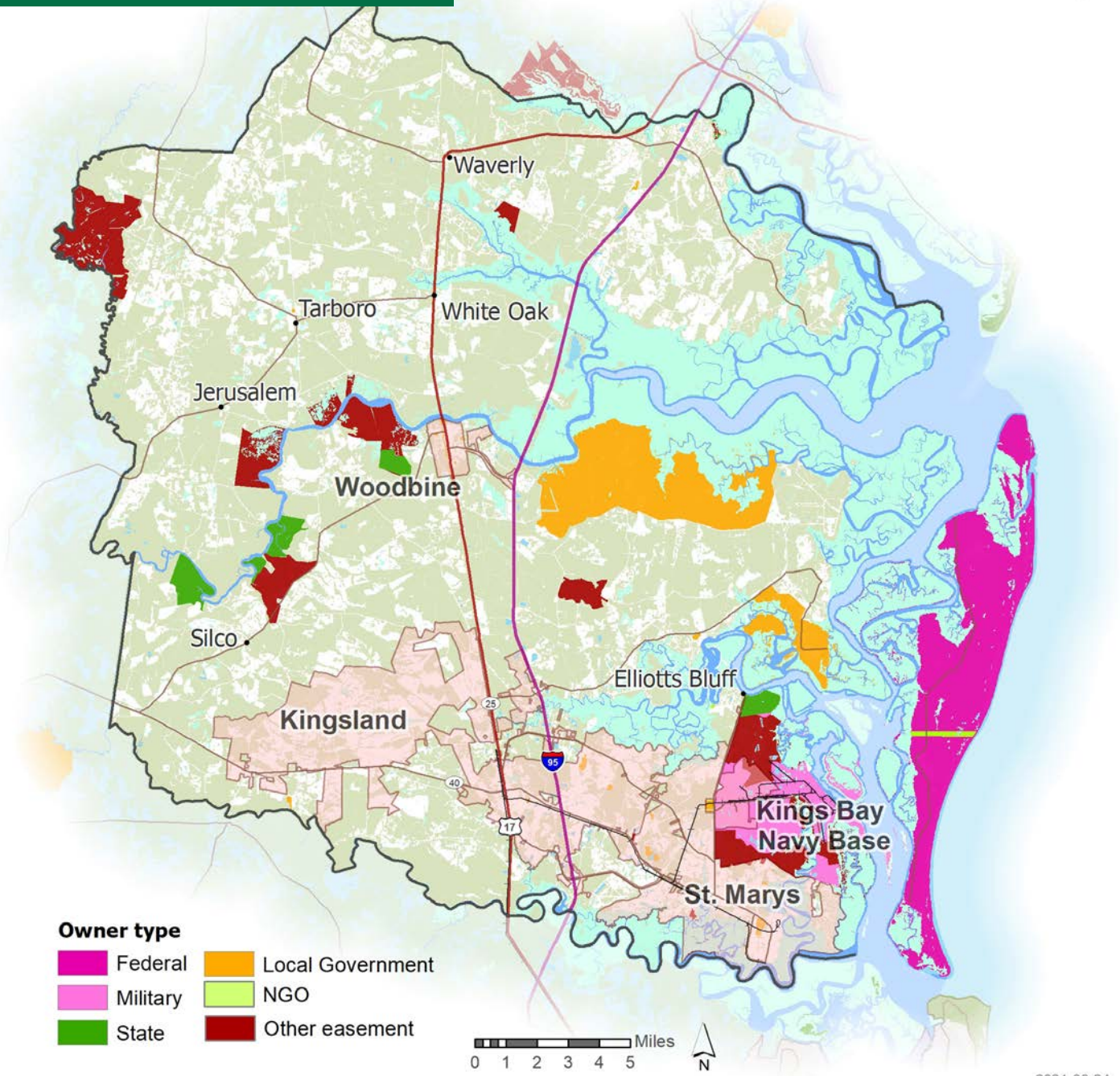


Figure-9: A map showing protected lands by ownership status.

Benefits to Forest Economy

The forest sector contributes to regional and local economies through resource production, taxes, and direct jobs in the industry (lumber, milling) and indirectly through supporting jobs. In 2018, the forest products industry's direct economic impacts in the Coastal Regional Commission, which is composed of 10 coastal counties including Camden County, was \$2.3 billion in output, employed more than 4,770 people and generated \$433.5 million in compensation (Georgia Tech 2018). The forest industry ranked second in total employment and wages when compared to other manufacturing sectors in the state (Georgia Tech 2018). Camden County was ranked eighth in the top 10 counties for timber by value in the state at over \$14 million USD (UGA 2017).

The forest sector is dependent on the availability and abundance of forestland and the economies of scale for production, harvesting, and processing. As coastal forests are converted into non-forest uses, markets that rely on a steady supply of timber and non-timber products are jeopardized, along with those jobs and tax revenue streams upon which communities rely.

Table-7: Total forest products value of Camden County (2017)

Forest Products	2017 Harvest Values (USD)
Christmas trees	\$0
Pine straw	\$0
Misc. forest products	\$200
Timber	\$14,326,044
Total	\$14,326,244

Source: University of Georgia Farm Gate Report, 2017



The forest economy is dependent on available land for forests to regenerate and replace harvested trees.



Commercial forest land is vital for the supply of timber to regional mills and the market.

Benefits to Recreation & Tourism

Recreation is a cultural and provisioning service coastal forest provide to communities. Recreation, in the form of hiking trails, greenways, lakes and rivers for fishing, birding, and more, brings valuable active pursuits to communities. Georgians' top recreation activities in the state in 2015 were foot travel (80%), picnic (78%), swim (67%) and the study, observation or appreciation of wildlife and nature (65%) (Longstreth et al 2015). These figures will likely be higher for 2020, when many recreation activities were limited to the outdoors.

These outdoor enthusiasts also spend money in the local economy on products such as food, gas, and lodging. In fact, American consumers spend more money on outdoor recreation than on fuel and pharmaceuticals combined (OIA 2017). Nature-based outdoor recreation, which includes activities such as hiking, camping, and hunting, all of which take place in a natural setting, contributed \$3.90 billion to Georgia's Gross Domestic Product (GDP) in 2019 (BEA ORSA 2019). These amenities attract employers and employees alike, making the region desirable for businesses and workers to relocate and revitalize a local or regional economy. One study demonstrated a strong positive correlation between the growth of entrepreneurial and creative class industries and rural counties that ranked very high in outdoor amenities (McGranahan et al 2010).

Economic Value of Tourism Industry For Georgia

Employment: **143,122** outdoor recreation jobs in all industries

Nature Based GDP: **\$3.90 Billion**

Source: Bureau of Economic Analysis (BEA), Outdoor Recreation Satellite Account (ORSA), 2019



Wildlife viewing is a popular attraction for visitors at Crooked River State Park.

Photo credit: Georgia Department of Natural Resources

Acres of protected lands: **76,832** acres or **18%** of the study area.

- Federal or state parks: 30,212 acres
- Conservation easements: 16,165 acres
- Military lands: 8,143 acres
- Local parks: 22,312 acres

Source: USA Prot 2.0, Conservation Lands 2019-Camden County, Camden Parks, Cabin Bluff, Cylon Tract, NRCS Easements



Forests contribute to an immersive outdoor experience for a variety of recreational activities.

Photo credit: St. Marys Convention & Visitors Bureau



Figure-10: A map displaying the cultural and historical resources in the study area.

Benefits to Cultural Heritage

Number of historical and cultural sites in the study area

11 historical and cultural sites* are located in the study area.

**Source: National Register of Historic Places, National Park Service*

3 of those sites are within 200 meters of a forest.

Landscape context is important for historic sites. Forested backdrops, large trees and scenic vistas are all provided by the landscape. As much of the study area contains significant federal, state and local historic assets, the landscape's role in adding to that setting cannot be underestimated. Forests form the cultural landscape for many of Georgia's historic sites.

A cultural landscape is defined as “a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.” (National Park Service Preservation brief 36).

Conclusions

This report highlights the many environmental, economic, social and cultural benefits coastal forests provide to the Lower York River watershed and surrounding communities. This analysis will be used to inform the next stages of the Resilient Coastal Forests Project where local stakeholders and the public will evaluate coastal forest threats, their extent and discuss subsequent management strategies to protect, adapt and mitigate risks. The stakeholders will prioritize what forests are most important using the inventory and asset data and discuss ways to maintain forest integrity, connectivity on the landscape and maximize forest benefits into the future through



*Tree canopy provides context to important cultural sites.
Photo credit: St. Marys Convention & Visitors Bureau*



Historic trees lend a backdrop to sites and often tell their own story about significant events.

Photo credit: St. Marys Convention & Visitors Bureau

conservation management strategies. Knowing the benefits that coastal forests provide to the community helps local stakeholders build support for forestland conservation in urban, suburban and rural landscapes and to plan for a resilient future for Georgia's trees.

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