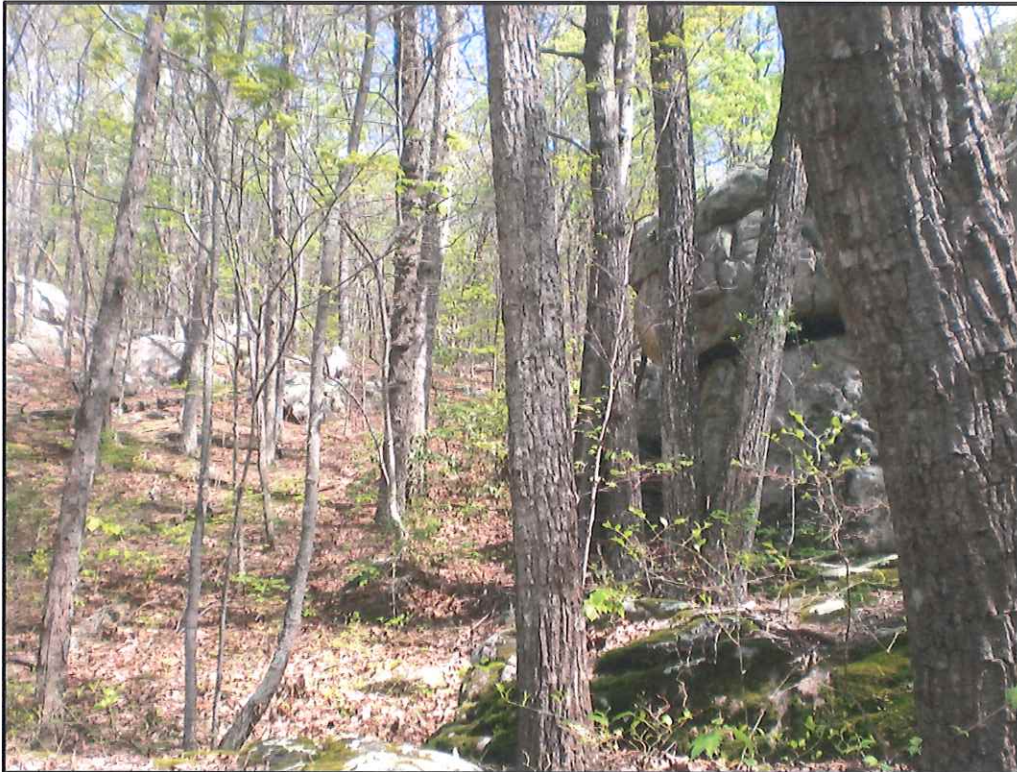


**GULF CREEK, LLC CONSERVATION EASEMENT  
DADE & WALKER COUNTIES, GEORGIA**

+/- 345.69 ACRES

PREPARED: MAY-AUGUST 2017

**BASELINE DOCUMENTATION REPORT**



226 Old Ladiga Road  
Piedmont, Alabama 36272  
256.447.1006

Prepared by:  
Amy Gaddy, Stewardship Director  
Georgia-Alabama Land Trust, Inc.

# Georgia-Alabama Land Trust, Inc.

## CONSERVATION EASEMENT BASELINE DOCUMENTATION REPORT

Easement Name: Gulf Creek, LLC

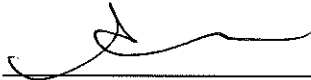
County: Dade & Walker Counties, Georgia  
City: Rising Fawn, Georgia

Date of Easement: \_\_\_\_\_, 2017

Easement Grantor: Gulf Creek, LLC  
Attn: Anthony Tippins  
P.O. Box 2248  
Savannah, Georgia 31402

Easement Holder: Georgia-Alabama Land Trust, Inc.  
Attn: Executive Director  
226 Old Ladiga Road  
Piedmont, Alabama 36272  
256.447.1006

Documentation:  
Prepared by: Amy Gaddy, Stewardship Director

Signature:   
\_\_\_\_\_

Date: April 17, 2017- August 23, 2017

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## Declaration of Property Condition:

### Grantor Acknowledgment of Property Condition

This is to certify that I, **Anthony Tippins**, as the member of **Gulf Creek, LLC**, Grantor of a Conservation Easement to the **Georgia-Alabama Land Trust, Inc.**, on the Property in the Counties of Dade and Walker, State of Georgia, to be recorded in the Dade and Walker County Registry of Deeds, am familiar with the condition of the Property subject to said Conservation Easement and in compliance with Section 1.170A-14(g)(5) of the federal tax regulations, do acknowledge and certify that this Baseline Documentation Report is an accurate representation as of the date of the grant of said Conservation Easement. In any conflict or inconsistency between the Baseline Documentation Report and the terms of the Conservation Easement, the Conservation Easement shall prevail.

Easement Grantor: **Gulf Creek, LLC**

  
\_\_\_\_\_

**Anthony Tippins**

Its: Member

  
\_\_\_\_\_

Witness: Signature

Nov 03, 2017  
Date:

Taylor Shook  
\_\_\_\_\_

Witness: Print Name

State of Georgia

County of Chatham

On 3<sup>rd</sup> day of November, 2017 personally appeared before me the above named, **Anthony Tippins**, and made oath that the foregoing description and acknowledgments made on personal knowledge are true.

Cealan Costello Clifford  
\_\_\_\_\_

Notary Public: Signature

Cealan Costello Clifford  
\_\_\_\_\_

Notary Public: Print Name

My Commission Expires: Nov 3, 2017



### Grantee Acknowledgment of Property Condition

This is to certify that I, **Katherine Eddins**, as an authorized representative of the Grantee of a Conservation Easement granted to the **Georgia-Alabama Land Trust, Inc.** by **Gulf Creek, LLC**, on the Property in the County of Dade, State of Georgia, to be recorded at the Dade County Registry of Deeds, am familiar with the condition of the Property subject to said Conservation Easement and, in compliance with Section 1.170A-14(g)(5) of the federal tax regulations, do acknowledge and certify that this Baseline Documentation Report is an accurate representation as of the date of the grant of said Conservation Easement. In any conflict or inconsistency between the Baseline Documentation Report and the terms of the Conservation Easement, the Conservation Easement shall prevail.

Easement Grantee: **Georgia-Alabama Land Trust, Inc.**

*Katherine Eddins*  
By: **Katherine Eddins, Executive Director**  
Georgia-Alabama Land Trust, Inc.

\_\_\_\_\_  
Date:

*Kelly Dejeu*  
Witness: Signature

*Kelly Engle*  
Witness: Print Name

State of Alabama

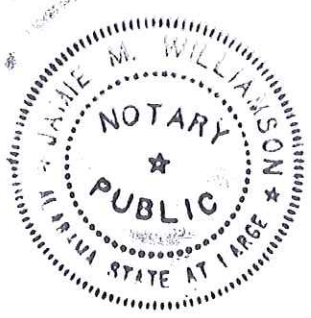
County of At Large

On 6<sup>th</sup> day of December, 2017 personally appeared before me the above named, **Katherine Eddins**, and made oath that the foregoing description and acknowledgments made on personal knowledge are true.

*Jamie M. Williamson*  
Notary Public: Signature

Jamie M. Williamson  
Notary Public: Print Name

My Commission Expires: 29 June 2018



### Author Acknowledgement of Property Condition

This is to certify that I, **Amy Gaddy**, authored the following Baseline Documentation Report for the **Gulf Creek, LLC** Conservation Easement and that it is, to the best of my knowledge, an accurate description of the physical features and current land uses on the Property. I have been instructed by the **Georgia-Alabama Land Trust, Inc.**, in the methods to document Conservation Easement properties and prepare Baseline Documentation Reports.

Baseline Documentation Report Preparer: **Amy Gaddy**

[Signature]  
By: **Amy Gaddy**  
Georgia-Alabama Land Trust, Inc.

12-5-17  
Date:

[Signature]  
Witness: Signature

Kelly Ingle  
Witness: Print

State of Alabama

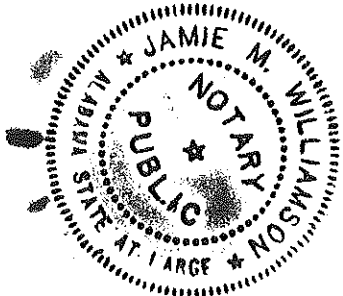
County of At Large

On the 5<sup>th</sup> day of December, 2017 personally appeared before me the above named **Amy Gaddy**, and made oath that the foregoing description and acknowledgments made on personal knowledge are true.

[Signature]  
Notary Public: Signature

Jamie M. Williamson  
Notary Public: Print Name

My Commission Expires: 29 June 2018



## Conservation Easement Abstract:

Name of Easement: Gulf Creek, LLC

Contact Information: Gulf Creek, LLC  
Attn: Anthony Tippins  
P.O. Box 2248  
Savannah, Georgia 31402  
404.229.9361  
atippins@aztec-energy.com

Easement Size (approximate acreage): +/- 345.69 Acres

Location of Easement: Dade & Walker Counties, Georgia

## Restrictions and Retained Rights:

The Property is protected from activities or land uses that would have a detrimental effect on the Conservation Values of the Property set forth in the Conservation Easement. With prior notice/permission, the Land Trust retains the right to visually inspect the Property, in a reasonable manner and at reasonable and regular times, in order to verify the compliance with the Conservation Easement.

**Reserved Rights:** The Grantor's rights to use the Property, as specifically set forth in the Conservation Easement, do not significantly impact the Conservation Values protected by the Conservation Easement.

Reserved rights are set forth in the Conservation Easement and also determined by consultation between the Grantee and the Grantor.

**Restrictions:** Activities inconsistent with the Conservation Easement are set forth in the Conservation Easement and also determined by consultation between the Grantee and the Grantor.

## Man-Made Features:

The Conservation Easement contains the following improvements:

- Woods Roads and associated Creek Crossings
- Old Debris Pile

The man-made features of the Conservation Easement are pictured in the Photograph Section of Appendix 2, and illustrated on the Man-Made Features Map and Stand Delineation Map in Appendix 3 of this Report.

## Concise Summary Statement of Easement Purposes:

The purpose of this Conservation Easement is:

- Protection of a significant, relatively natural habitat of fish, wildlife or plants, or similar ecosystems, including but not limited to rare, threatened and/or endangered species and promotion of the Georgia State Wildlife Action Plan (GSWAP). The GSWAP identifies at risk species, high priority habitats, and high priority waters for conservation. The Property contains mesic hardwood forest habitat and pine-oak woodlands habitat, both of which have been deemed High Priority Habitat in the Southern Appalachians/Ridge and Valley Ecoregion. Protection of these habitats will ensure they remain, supporting flora and fauna within the region, and will further the goals of GSWAP.
  - The mature mesic hardwood forest contains habitat suitable for a variety of migratory birds, many of which are declining due to fragmentation of habitat and loss of mature mesic hardwood forest.
- Preservation of open space (including farmland and forest land), pursuant to federal, state or local policies. This Conservation Easement will benefit the general public in the State of Georgia by preserving valuable high priority habitat in furtherance of state habitat and land management goals.
  - The Georgia Department of Natural Resources (GA DNR), Wildlife Resource Division's Georgia Comprehensive Wildlife Conservation Strategy also known as the Georgia State Wildlife Action Plan (GSWAP) (updated 2015). Throughout this Report the said Plan will be referred to as the GSWAP
  - U.S. Forest Legacy Program, Mountain Forest Legacy Area
  - Georgia's Conservation Use Value Assessment
  - Joint City-County Comprehensive Plan Update 2007-2027 Community Agenda for Dade County and the City of Trenton (2007)
  - Thrive 2055.
- Preservation of open space for the scenic enjoyment of the general public.
  - The Property is located on Highway 157 in Rising Fawn Georgia, and is part of a larger effort on the part of Grantor, other NGO's, state and federal agencies to protect Lookout Mountain. The Property is in close proximity to several other conserved properties. The contiguous forested area is viewable by general public traveling along Highway 157. Protection of the Property is part of a larger effort to insure a scenic view of forest land for the public's visual enjoyment.

## Target Elements:

- Protection of the GSWAP designated high priority habitats through "Preservation Area" habitat protection while promoting a healthy forest habitat, maximizing greenspace and augmenting wildlife corridors.



- Protection of the “high priority habitats” referred to as Mesic Hardwood Forests, Pine-Oak Woodlands and Forest.
- Protection of High Priority Landscape Feature
- Protection of forestland from conversion to non-forest uses, to protect biological diversity and riparian habitats.
- Protection of the hardwood forests in order to protect and promote the declining populations of migratory birds. The Property is located within a major spring migration route and offers suitable habitat to Neotropical migratory birds, birds of prey, and waterfowl species for wintering and breeding stopovers, as well as year-round habitat to residential species.
- The Property is located on Highway 157 in close proximity to several other conserved properties. Hardwood forest habitat is viewable by general public traveling along Highway 157. Protection of the Property is part of a larger effort to insure a scenic view of forest land for the public's visual enjoyment.
- The Property is in close proximity to Trenton, Georgia and is in the greater Chattanooga, TN metropolitan area, subjecting the Property to development pressure. Protection of this Property will ensure that habitat will remain a part of Dade County's landscape, pursuant to the GSWAP, Thrive 2055 and the Dade County Comprehensive Plan.

## **Potential Threats to Ecological Integrity**

The primary threat to the Property is encroachment of development, resulting in forest conversion, habitat fragmentation, erosion, and stormwater runoff. This is happening at an increasing pace in the greater Chattanooga area, where the Property is located, including on once undisturbed ridgelines and coves. Property contains a diversity of habitats, including high priority habitats. The destruction of these habitats due to development would negatively impact the species that depend upon them, including a variety of migratory birds (for a further discussion of this, see the GSWAP). Development of the Property would lead to increased erosion and stormwater runoff as impervious surfaces replace the natural pervious surfaces which would negatively impact the health of the larger Tennessee watershed.

## **Problems Affecting Wildlife Diversity**

As discussed in the Georgia State Wildlife Action Plan, one of the factors impacting wildlife diversity in the Southwestern Appalachians/Ridge & Valley region is an increase in residential and commercial development along major highways and on the outskirts of metropolitan areas. This has resulted in loss of both agricultural and forest land, and has resulted in habitat fragmentation as new roads and utility corridors have been constructed. Much of the development of industrial and

commercial sites has occurred along Interstate Highway 75 and other major highways. Expansion of the Chattanooga metropolitan area has resulted in significant residential development in several counties in Northwest Georgia, with associated subdivisions, roads, utility corridors, and retail centers. Other metropolitan areas experiencing significant growth in this region include Rome, Dalton, Calhoun, Chatsworth and Trenton. Much of the industrial development in this region has occurred in the valleys near major streams and roads. Residential development has occurred in these same areas, but increasingly houses and subdivisions are being constructed in more remote locations, including secluded coves, steep forested slopes and along the brows of Lookout Mountain and Sand Mountain.

Based on Environmental Protection Division monitoring data for 2012, approximately 31% of monitored streams in the Southwestern Appalachians/Ridge & Valley ecoregions support designated uses (as measured by percent of total monitored stream miles); 67% did not support designated uses, and 2% were pending assessment. The percentage of monitored stream miles not supporting designated uses is the highest of all ecoregions. Point-source discharges into streams in this region include effluent from industrial facilities and treated wastewater from municipal treatment facilities. Other stressors of water quality include nutrient, pesticide or sediment inputs from roadways, cultivated fields, and pastures. Given the high number of imperiled mollusks in this ecoregion, improvements in water quality are a high priority for maintenance of wildlife diversity.

Groundwater withdrawals for industrial, municipal, and residential uses as well as contamination of groundwater represent potential impacts to sensitive karst environments such as caves. This region contains the vast majority of Georgia's 600+ caves. Most of these caves are found on private land, and only a few have been adequately surveyed for rare cave fauna. However, occurrences of several rare species have been documented from these caves, including gray myotis, Tennessee cavefish, and Tennessee cave salamander. All of these species are particularly sensitive to changes in the quantity or quality of water in underground streams.

Construction of dams or other structures altering stream flow represents another significant problem for aquatic species in this region. Most of the major river impoundments (e.g., Lake Allatoona, Carter's Lake, Weiss Lake) affecting streams in this area lie outside the Southwestern Appalachians/Ridge & Valley ecoregions, but the impacts of these impoundments extend upstream and downstream of the dams. These impacts include loss of stream habitat, creation of migration barriers, isolation of subpopulations, and degraded water quality (low dissolved oxygen, altered water temperatures).

Conversion of upland hardwood and pine-hardwood forests to pine plantations has also resulted in impacts to wildlife diversity. While not as prevalent in this region

as in other areas of the state, this conversion has resulted in a decrease in habitat for a number of declining bird species. Specific problems associated with this forest conversion include loss of vegetative structure and nesting sites, decline in hard and soft mast production, loss of understory and groundcover diversity, and physical disturbance of habitat for organisms found in leaf litter or soil.

Fire suppression is a significant problem in this region. Extension of residential and commercial development from urban centers into surrounding suburbs has resulted in many fire-dependent habitats being surrounded by highways, subdivisions, or retail centers. Concerns about smoke management, air quality, and damage to structures make it difficult to implement prescribed burn plans for some of these important habitats. For example, while a fire plan has been developed for Chickamauga-Chattanooga National Military Park, concerns about smoke management problems along heavily traveled U.S. Highway 27 and potential damage to historic structures and monuments in the park represent impediments to implementation of the plan. Throughout the region, a lack of fire has resulted in the decline in the extent and quality of habitats such as limestone terrace woods, sagponds, longleaf pine-mixed hardwood forest, oak and pine-oak woodlands and forests, calcareous prairies, canebrakes, and limestone glades and barrens.

Invasive species and diseases pose significant threats to high priority species and habitats in this region. The red shiner is an introduced fish suspected of having a serious impact on several native fish in the Coosa River system through competition and hybridization. Other exotic aquatic species of concern include the Asiatic clam and the zebra mussel (the latter is currently not known from Georgia, but is a very serious aquatic pest in other states, including Tennessee). The hemlock woolly adelgid has caused serious decline in eastern hemlock stands, and the emerald ash borer is a threat to ash trees in this ecoregion. Notable examples of nonnative plant species of concern in this region include Nepalese browntop, Chinese privet, Japanese honeysuckle, oriental bittersweet, royal paulownia, silvergrass, and autumn olive. White-nose syndrome is the primary wildlife disease impacting species of conservation concern in this ecoregion.

For some high priority species and habitats, unmanaged recreational use represents a serious problem. High levels of use by rock climbers may threaten habitats such as sandstone barrens and limestone ledges and impact associated rare species. Similarly, cave exploration by careless or inexperienced cavers can result in significant impacts to cave formations and populations of rare cave fauna. Indiscriminant use of all-terrain vehicles (ATVs) and other vehicles in or adjacent to streams, springs, calcareous flatwoods, or rare edaphically controlled communities such as calcareous prairies and limestone glades can result in significant impacts to high priority species and habitats.

Incompatible road and utility corridor management pose problems for some high priority plant species such as Cumberland rose gentian, royal catchfly, and prairie

purple coneflower. For these species, use of herbicides and other vegetation management tools should be planned and implemented in a way that minimizes impacts to rare plant populations occurring in the road right-of-way or utility corridor.

**Required Frequency of Monitoring for this Easement:**

Monitoring will occur on an annual basis given reasonable notice per the terms of the Conservation Easement.



## Condition of Property Summary:

### Prior Land Use:

Historically, the uplands were managed as natural hardwood forest, with areas of pines and possible areas of agriculture.

**Cultural and Historical Resources:** A search of Georgia's Natural, Archaeological, and Historic Resources GIS database did not reveal any known cultural or historical resources on the Property.

During the field survey the following conditions were observed or noted:

Structures or former structures that potentially contained hazardous materials or residue thereof:	None.
Impoundments, such as lagoons or ditches, that potentially contained hazardous liquids:	None.
Abandoned Storage tanks:	None.
Above Ground Storage Tanks:	None.
Electrical cables and Transformers above / below ground:	None.
Abandoned surface or hydrocarbon mines:	None.
Drains, Sumps, Pits, Ditches, Pools:	None.
Odors, Stains, Corrosion, Stressed Vegetation:	None.

The individual performing this Environmental Checklist shown is neither qualified nor liable for failure to detect or identify possible environmental factors and hazards on the subject Property. This Environmental Checklist, as well as this entire report must not be considered, under any circumstances, to be an environmental site assessment of the subject Property, as would be otherwise performed by an environmental professional.

### Current Land Use:

The approximately 345.69 acre Property is currently comprised of mesic hardwood forests, pine-oak woodlands, hardwood forests, pine forests and contains frontage along Gulf Creek. It is used for recreation and wildlife habitat. Woods roads provide access across the property, mostly for foot-traffic.

### Physical Environment:

**Ecoregion:** The physical environment of the subject Property is described using the Environmental Protection Agency's (EPA) Ecoregion Descriptions. Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources.

The Property is located in an area categorized as an EPA Level III Ecoregion called the Southwestern Appalachians Ecoregion. The Southwestern Appalachian region stretches from Kentucky to Alabama and is characterized by low, flat-topped mountains containing a mosaic of forest and woodland with some cropland and

pasture. The eastern boundary of this ecoregion is relatively smooth and notched by small eastward flowing streams; the western boundary has a rougher escarpment that is more deeply incised. The deeper ravines and escarpment slopes of this ecoregion contain mixed mesophytic forest, while the top of the plateau has more xeric mixed pine-oak forests and woodlands characterized by mixed oaks. Subdivisions of the Southwestern Appalachians include the Plateau Escarpment and the Southern Table Plateaus.

Within the Southwestern Appalachian Ecoregion, the Property is more precisely situated in the Southern Table Plateaus subdivision. The Southern Table Plateaus include Sand Mountain, Lookout Mountain, and Pigeon Mountain. While similar in some respects to the Cumberland Plateau in Tennessee, this region is lower in elevation, has a slightly warmer climate, and has more agriculture. It is mostly forested with mixed oak and oak-hickory communities. The plateau surface is less dissected with lower relief compared to the Plateau Escarpment, and it has slightly cooler temperatures and higher precipitation than the adjacent Ridge and Valley.

Much of the above information is included in Table 1 of Appendix 5 which presents a summary of the EPA Level III and IV Southwestern Appalachian Ecoregion. The proximity and range of the ecoregions in Georgia are illustrated in the Ecoregion Map located in Appendix 3.

**Hydrology:** The Property is located in the Gulf Creek sub watershed (HUC 12), of the Lookout Creek watershed (HUC 10) of the Middle Tennessee-Chickamauga sub basin (HUC 8). The Middle Tennessee-Chickamauga sub basin supports the larger Middle Tennessee-Hiwassee basin (HUC 6). River Basin and Watershed Maps are illustrated in Appendix 3 of this Report.

The Property contains Gulf Creek and ephemeral drains that support the high priority Gulf Creek sub watershed (HUC 12). Gulf Creek flows down Lookout Mountain through Forester Gulch before entering Lookout Creek, approximately 6 miles downstream, just south of the town of Rising Fawn. Lookout Creek continues north through Lookout Valley, serving as the water source for Trenton, before entering the Tennessee River just across from Moccasin Bend.

The Gulf Creek watershed encompasses an area of 18,229.6 acres, primarily west of Highway 157. The watershed lies within Dade, Walker, and DeKalb counties. It includes the area between Newsome Gap in the north and Amos Mill in the south. It drains Johnson's Crook, as well as Tatum Gulf, the east slope of Fox Mountain, and the western slope of Lookout Mountain. The largest town in the watershed is Rising Fawn. The Property is located in the central portion of the Gulf Creek watershed.

The main stem of the Tennessee River is highly regulated with few free-flowing stream reaches. Six major reservoirs constructed primarily by the Tennessee Valley Authority from the 1920's through the 1940's for purposes of power

generation, navigation, and flood control are located along the lower Tennessee River. Three additional reservoirs are located on major tributaries. Reservoirs along the Tennessee River are also used extensively for drinking water and recreational activities such as fishing, swimming, and boating. Water-resource managers and the public are extremely interested in maintaining the high quality of these reservoirs.

The Tennessee River basin is most notable for its abundance and diversity of freshwater fishes. Recognized as one of the most diverse rivers in North America, the Tennessee River supports about 240 fish species and at least 111 rare plant and animal species, including 6 species of rare fish, 8 species of rare mussel, 5 rare amphibian species, 1 rare snail species, 3 rare crustaceans, 5 rare insects and spiders, 11 rare bird species, 6 rare mammal species, 2 rare reptile species, and at least 64 species of rare plants. Animals of concern include the flame chub, snail darter, Southern cavefish, Cumberland monkeyface, Tennessee clubshell, orange-foot pimpleback, green salamander, hellbender, Tennessee cave salamander, Chickamauga crayfish, and the spiny riversnail. Promoting a clean watershed from the Property will contribute to the health and populations of these sensitive aquatic species.

Gulf Creek is a perennial year round trout stream as designated by the Georgia Department of Natural Resources. Georgia's approximately 4,000 miles of trout streams are relatively unproductive when compared to streams found in other parts of the country due to the calcium deficient soils found in north Georgia. In order to meet the fishing demands of over 100,000 trout anglers, stocking and special regulations are used on some streams to maintain acceptable catch rates. The Wildlife Resources Division and the U.S. Fish & Wildlife Service stock streams with rainbow, brown and brook trout from late March through August. The number of trout stocked and the stocking frequency depend on a stream's fishing pressure, accessibility, and water conditions. In general, streams on public lands are stocked more often and with greater numbers of trout. Most of the trout streams of Georgia are located on private lands. Trout fishing opportunities vary and include heavily-stocked high-use streams, wilderness streams, streams with special regulations, and small impoundments. Trout need clean, cold water to survive and reproduce. Georgians can be good trout managers by using proper land use practices. Trees left along stream banks provide shade to keep water temperatures cold while their root systems help stabilize stream banks and prevent soil from washing into the stream and smothering trout eggs and aquatic insects. Other recreational activities such as white water rafting, rock climbing, hiking, mountain biking, equestrian riding, and camping are associated with the Lookout Creek watershed.

**Geology & Soils:** Georgia consists of four distinct geologic regions. From northwest to southeast, those four regions are the Valley and Ridge, the Blue Ridge, the Piedmont, and the Coastal Plain. All of these geologic regions extend into the surrounding states, but Georgia is the only state south of Virginia to have all four regions. The Property is located in the Coastal Plain geologic region.

Based upon physical geography, Georgia can be divided into five physiographic provinces. Physiographic provinces are geographic regions with similar landforms, subsurface rock types, and geologic structure and history. The Property is located in the Appalachian Plateau physiographic province. The Appalachian Plateau physiographic province is subdivided into smaller sections and districts, with the Property being located within the Lookout Mountain District of the Cumberland Plateau Section.

The Lookout Mountain District is composed of two nearly flat-topped mountains, Lookout-Pigeon and Sand Mountains, separated by Lookout Valley. The mountains are capped by Rockcastle Sandstone of Pennsylvanian age, and the valley is underlain by Chickamauga Limestone of Ordovician age. The upland slopes gently to the southwest from a maximum elevation of 2200 feet near Durham to an elevation of 2000 feet near the Alabama-Georgia border. The northwestern margin of Lookout Mountain and the southeastern margin of Sand Mountain are marked by a continuous escarpment that drops abruptly 1000-1200 feet to Lookout Valley. Elevations in Lookout Valley vary from 800-1000 feet. The escarpment on the southeastern side of Lookout-Pigeon Mountain, the district and province boundary, drops abruptly 800-1000 feet to the Chickamauga Valley District. These escarpments are breached by numerous small streams which have their source on top of the upland and reach the valleys through deep notches in the cliffs.

The Property is located in the Sand Mountain Major Land Resource Area (MLRA) (129). The Sand Mountain MLRA is underlain by alternating beds of limestone, dolomite, shale, and sandstone of early Paleozoic age. Ridgetops are capped with more resistant carbonate and sandstone layers, and valleys have been eroded into the less resistant shale beds. These folded and faulted layers are at the southernmost extent of the Appalachian Mountains. The narrow river valleys are filled with unconsolidated deposits of clay, silt, sand, and gravel. The dominant soil orders of MLRA 129 are Ultisols and Inceptisols.

Much of the forest is a mesic hardwood forest. Major overstory species include white oak, red oak and hickory, including white oak (*Quercus alba*), shagbark hickory, northern red oak, chestnut oak. The writer of this report was delighted by the abundance of mature white oak within the overstory. It is not common to find a site on Lookout Mountain with soils and land use practices that sustain such an abundance of *Quercus Alba*. Other species include American beech, dogwood, sourwood, yellow poplar, black cherry, bigleaf magnolia, sugar maple, and American beech, American elm, American basswood. The soils of this forest have never been plowed and contain an intact seed bed. Hornbeam and birches can be found along Gulf Creek. In the forest understory, there are a variety of native plants, such as greenbrier, low panicums, bluestems, and native lespedezas, wild azalea, buckeye, and numerous forbs and ferns.



Prime farmland, as designated by the U.S. Department of Agriculture (USDA), is land that has the best combination of physical and chemical characteristics for producing food and other beneficial crops and is also available for these uses. Farmland of statewide importance, or of local importance, is land other than prime farmland or unique farmland but that is also highly productive. Criteria for defining and delineating these lands are determined by the appropriate state or local agencies in cooperation with USDA. The Natural Resource Conservation Services and local counties work in unison to create soil characteristics for each county. Farmland of statewide importance comprise approximately 0.7 acres (0.2%) of the Property.

More specific details regarding the distribution and classification of all the Property's soils are depicted in the Soils Classification Table, and Farmland Soils Map of Appendix 4.

**Ecological Features:** On April 20, 2017, an on-site survey of the Property was performed by Land Trust personnel. Various Checkpoints (CPs) were established on the Property by Global Positioning System (GPS) and representative photographs were obtained. A topographic map illustrating the photographic checkpoints and photographs associated with can be seen in Appendix 2 of this Report. Biological/Ecological data was collected for preparation of this Baseline Documentation Report. The approximately 345.69 acre Property is currently comprised of mesic hardwood forests, pine-oak woodlands, hardwood forest, pine forests and has frontage along Gulf Creek. Management of the Property is primarily focused at outdoor recreation.

The Property is located on Gulf Creek. Streams, springs and drainages formed within the surrounding elevations are funneled through the Property along the Creek. The Property's mesic forests and pine oak woodlands comprise the ecologically significant habitats of the Property, and will be protected as Preservation Areas. This will maintain forest integrity. Protection of the forest habitats will reduce water quality degradation that could otherwise be caused by land practices, such as residential development. These type would result in erosion and sedimentation, a common and widespread problem known to aquatic habitats.

The mesic hardwood forest comprises approximately 49.7% (171.9 acres) of the Property. Major overstory species include white oak, red oak and hickory, including white oak, shagbark hickory, northern red oak, chestnut oak. Other species include American beech, dogwood, sourwood, yellow poplar, black cherry, sugar maple, and American beech, American elm, American basswood. In the forest understory, there are a variety of native plants, such as greenbrier, low panicums, bluestems, and native lespedezas, wild azalea, buckeye, and numerous forbs and ferns.

GSWAP priority species such as purple sedge, wild hyacinth, American ginseng, dwarf larkspur, and trailing meadowrue may find suitable habitat in the mesic hardwood forests of this region.

Mixed pine-oak woodlands occupy approximately 30.6% (105.9 acres) of the Property. These stands contain many red oaks, white oaks, hickories, shortleaf pine and loblolly pines. These stands do not appear to have had any disturbance in a number of years. Both the mesic hardwoods and the pine-oak woodlands have rocky areas.

Pine forests occupy approximately 9.0% (30.9 acres) of the property. These contain shortleaf pine, loblolly pine and Virginia pines. Hardwood forests occupy approximately 10.7% (36.9 acres) on the eastern side of the Property. These hardwoods are similar to the other stands of the property, but have more red maples and black gums, and are smaller in diameter than the other stands. The composition of the Property can be seen in the Stand Delineation Map located in Appendix 3.

The Property supports a larger conservation effort in this area. Several additional tracts within close proximity to the Property are protected including State and federally protected lands, and lands protected with permanent conservation easements. Much of this protected land enhances the quality of life of people within the greater Chattanooga area, due to the many bike and hiking and climbing trails and scenic beauty and wildlife viewing. The Property adds to this matrix of healthy land and water, extending the wildlife habitat range and reinforcing the aquatic health benefits in association to the streams and riparian corridors that exist on these lands. Proximity of protected lands in relation to the Property can be seen on the Proximity to Protected Lands Map in Appendix 3.

**Preservation Areas:** Preservation Areas are natural areas that warrant protection due to the presence of either: 1) high-quality terrestrial and aquatic natural communities that represent a pre-settlement landscape; 2) habitat for rare species of plants and animals; or 3) significant geological and geomorphological features and archaeological sites. Establishment and protection of PAs ensures the conservation of natural diversity, maintenance of ecological reference areas, and provides opportunities for scientific research, environmental education, and might include activities such as prescribed burning, removal of invasive species, carrying out site restoration, and maintenance of facilities (primarily fences, boundary signs, and parking areas) to enhance, restore, or protect the PAs.

The GSWAP has identified a number of High Priority Species and Habitats for the Ridge and Valley Ecoregion. The Property contains Mesic Hardwood Forests, Pine-Oak Woodlands and Forests, and Gulf Creek, which are recognized as high priority habitats and much of which will be protected by Preservation Area designation. Most of the Property is within the PA. Detailed descriptions of the GSWAP high priority habitats that exist on the Property are listed below:

### Mesic Hardwood Forests

Mesic forests of bluffs, ravines, and colluvial flats, characterized by a diverse canopy of hardwood species such as yellow poplar, black cherry, white oak, shagbark hickory, northern red oak, bigleaf magnolia, sugar maple, and American beech. Hemlock and loblolly pine may be minor components in some areas. Mature examples are characterized by a rich understory of shrubs and herbaceous plants. This large patch habitat includes a rich mesic hardwood forest subtype found on calcareous soils.

### Pine-Oak Woodlands and Forest

Relatively open subxeric to xeric forest or woodland, typically dominated by shortleaf pine, Virginia pine, and post and blackjack oaks, often with a diverse grass and shrub layer. May also include chestnut oak, scarlet oak, and other dry-site hardwood species. Includes typical shortleaf pine-post oak woodlands as well as mixed pine-oak scrub and dry pine-oak forest.

Protection of this Property, including special protection of the high priority habitats under the Special Natural Area, furthers the goals of the Georgia Comprehensive Wildlife Conservation Strategy also known as the Georgia State Wildlife Action Plan promulgated by the Georgia Department of Natural Resources (the Plan is referred to as the GSWAP throughout this Report). Protection of this Property helps to maintain known viable populations of high priority species and functional examples of high-priority habitat through voluntary land protection on private lands. The Property contains natural forest habitats which may contain or be suited for plant and animal species which are of concern, threatened, or endangered. Table 2 and Table 3 of Appendix 5 contains a list of high priority animals and plants for Dade and Walker Counties, Georgia, where the Property is located.

The GSWAP has also identified high priority terrestrial conservation areas, aquatic conservation areas, and high priority cave sites in Georgia. Some of these sites have been listed as High Priority Sites and Landscape Features within the Southwestern Appalachians / Ridge and Valley Ecoregion by the GCWCS. Included in these high priority sites and landscape features is Lookout Mountain.

Lookout/Sand Mountain -These two mountains make up the main portion of the Southern Table Plateaus in Georgia. Important conservation sites within this 50,000+ acre landscape include Johnson Crook, Cloudland Canyon State Park, and Zahnd Wildlife Management Area. The Johnson Crook area contains more than twenty caves as well as limestone outcrops, mesic hardwood forest, and redcedar-pine woodland. At least five rare plant species have been documented from this area and the potential for discovering other rarities is high. A portion of this site has been protected the Georgia Land Trust and Southeastern Cave Conservancy. Cloudland Canyon, owned by the State of Georgia and managed as a state park, contains many rare plants and animals. Significant natural communities include limestone outcrops, caves, mesic hardwood forest, redcedar-pine woodland, seeps and 68 springs. Zahnd Wildlife Management Area, the

largest state-owned natural area in North Georgia, contains examples of sandstone barrens/outcrop, sagponds, pine-oak woodlands and forest, and underground streams

The high priority habitats defined by the GSWAP can be further defined by NatureServe and its Ecological Systems designations. These systems are habitat types noted to exist within a particular ecosystem. NatureServe has classified and described these ecological systems based on the National Vegetation Classification (NVC). The NVC is the standard vegetation classification system for federal agencies and it has received widespread support from state, federal, academic, and international partners. This classification serves many natural resource management purposes including conservation planning, biodiversity protection, scientific research, inventory, and mapping, and was recommended by the International Association of Fish and Wildlife Agencies (IAFWA) Teaming with Wildlife Committee for regional and national consistency in the development of Comprehensive Wildlife Conservation Strategies. The Property's high priority habitat as designated by the GCWCS known as Mesic Hardwood Forests encompass the NatureServe Ecological System identified as the South-Central Interior Mesophytic Forest. The Pine-Oak Woodlands and Forest encompass the Southern Ridge and Valley Dry Calcareous Forests. Below is a detailed description of the habitat.

South-Central Interior Mesophytic Forest (NatureServe): This high-diversity, predominately deciduous forest system occurs on deep and enriched soils in non-montane settings and usually in somewhat protected landscape positions such as coves or lower slopes. In some cases the enriched soils are due to, or enhanced by, the presence of limestone or related base-rich geology. The core distribution of this system lies in the Cumberland and Allegheny Plateaus, extending into the adjacent southern Ridge and Valley and portions of the Interior Low Plateau where it is located entirely south of the glacial boundary. Dominant species include sugar maple, American beech, tulip poplar, American basswood, northern red oak, cucumber tree, and black walnut. Weeping hemlock may be a component of some stands. Trees may grow very large in undisturbed areas. The herb layer is very rich, often with abundant spring ephemerals. Many examples may be bisected by small streams. These high-diversity deciduous forests occur on deep and enriched soils, usually in somewhat protected landscape positions such as coves or lower slopes.

Southern Ridge and Valley Dry Calcareous Forests (NatureServe): This system includes dry to dry-mesic calcareous forests of the Southern Ridge and Valley region of Alabama and Georgia, extending north into Tennessee, Kentucky, Virginia and adjacent West Virginia. It includes calcareous forests on lower escarpments of the Cumberland Plateau and other related areas. Examples occur on a variety of different landscape positions and occur on generally deeper soils than glade systems of the same regions. This system is distinguished from those farther north in the Ridge and Valley because of its southerly location in the region,



an area which is transitional to the "Oak-Pine-Hickory" region. High-quality and historic examples are typically dominated by combinations of *Quercus* species and *Carya* species, sometimes with *Pinus* species and/or *Juniperus virginiana* as a significant component in certain landscape positions and with particular successional histories. These forests occur in a variety of habitats and are the matrix vegetation type that covers most of the landscape under natural conditions. Examples can occur on a variety of topographic and landscape positions including ridgetops and upper and midslopes. Fire frequency and intensity are factors determining the relative mixture of deciduous hardwood versus evergreen trees in this system. Much of this system is currently composed of successional forests that have arisen after repeated cutting, clearing, and cultivation of the original forests. The range of this system is primarily composed of circumneutral substrates, which exert an expected influence on the composition of the vegetation.

The Property will support a larger conservation effort within the Lookout Mountain range and more specifically within the Cloudland Canyon State Park protection area. This corridor of contiguous protected land extends approximately 10 miles along the Dade and Walker County line north to the Georgia and Tennessee State line and includes nearly 10,000 acres that are protected by Georgia Department of Natural Resources, Lula Lake Land Trust and private Conservation Easements. The protection of additional lands with the existing contiguous lands will extend the wildlife habitat range and reinforce the aquatic health benefits in association to the streams and riparian buffers that exist on these lands. In addition, these lands will extend the public benefit of scenic view shed of mature natural forests and clean streams as well as promote and extend public use trail systems for outdoor recreation. The proximity of protected lands in relation to the Property can be seen on the Proximity to Protected Lands Map in Appendix 3.

**Animals & Wildlife Corridors:** Gulf Creek supports a diverse and rich mix of aquatic habitats. In addition to the sensitive aquatic habitats that exist in the watershed, there are terrestrial environments that also provide ecologically important habitats. The protection, restoration and enhancement of this Property would provide a relatively natural habitat for many species of mammals, amphibians, reptiles, and birds within these terrestrial environments. The abundance and diversity of the wildlife on the Property would decline or be extinguished if the habitat created by the Property were improvidently altered.

The conservation of this Property, with its intact stream, mature forest, virgin seed bed, and proximity to other conserved lands, all within the GSWAP high priority Lookout Mountain landscape, will preserve a relatively natural habitat for many species of mammals, amphibians, reptiles, and birds. The abundance and diversity of the flora and fauna on the Property would decline if the natural habitats which exist on this Property were improvidently altered. Further, protection of the Property will contribute to maintaining forested corridors in an ever fragmenting environment.

Technical teams for the Georgia Comprehensive Wildlife Conservation Strategy conducted research studies within the Ridge & Valley Ecoregion and the Southwestern Appalachians Ecoregion and Middle-Tennessee-Hiwassee River Basin and identified 110 high priority animal species including 11 birds, 8 mammals, 2 reptiles, 6 amphibians, 27 mollusks, 35 fishes, 12 terrestrial arthropods and 9 aquatic arthropod. These species have been assigned global and state rarity ranks, protected status under federal or state law, and habitat range in Georgia. In addition, 65 species of plants were also identified.

The Property's mesic hardwood forests and associated water features located within said mesic hardwood forest provide excellent migratory, breeding and forage habitats for several amphibious and reptilian species. Snakes benefiting from the protected forests afforded by the Property include many non-venomous varieties such rat snakes, black racers, kingsnakes, eastern hognose snake, red-belly snake, common garter snake, brown snake, queen snake, and northern water snake, to name a few. Species such as the spring peeper, Fowlers toad, American toad, Cope's gray treefrog, green frog, dusky salamander, tiger salamander, spotted salamander, green anole, six-lined racerunner, and five-lined skink among many others are provided suitable habitat in the natural hardwood forests, riparian corridors and water features of the Property. Priority and greatest conservation need species with suitable habitat to exist in the riparian corridor and mesic hardwood forests of the Property include the green salamander, four-toed salamander, hellbender, and mountain chorus frog. Though representatives of these amphibians and reptiles may not be found directly on the Property, the proximity of the Property to important waterways may have an indirect but profound impact on these amphibians and reptiles in or near creeks and rivers far from the Property.

The Property being located in the Southern Appalachians and containing mature forests of mixed hardwoods / pine forests, and mesic hardwoods creates important habitat for many migratory bird species. The mature hardwood forests of the Southwestern Appalachian Ecoregion provides habitat for migratory species such as the Acadian flycatcher, wood thrush and yellow-throated warbler. According to the GSWAP, "the greatest bird conservation issue in these ecoregions is the conversion of hardwood and mixed pine-hardwood forest to loblolly pine plantation, residential or commercial development, or agricultural uses. A large percentage of natural vegetation has been converted to other uses, and mature forest and the birds dependent on mature forests are less secure in the Southwestern Appalachians / Ridge and Valley than any other region in the Southern Appalachians. The long-term health of populations of priority birds including the Acadian flycatcher, wood thrush, and yellow-throated warbler will depend on maintenance and management of remnant forest stands, mature forest and restoration efforts."

The Property lies within a migratory path for threatened Neotropical birds. Many familiar songbirds such as warblers, vireos, orioles and tanagers are among those

referred to as Neotropical migrants that have potential to use the forests and open lands provided by the Property. These bird species breed in North America and migrate to Mexico, Central and South America and the Caribbean to spend the winter. Migratory non-game bird species have potential to use the Property for nesting and forage. Loss of habitat needed for wintering, breeding and as stopovers during migration has caused significant declines in numerous species of migratory birds.

Several priority and greatest conservation need species are provided habitat on the Property, including the Cooper's hawk, barn owl, dickcissel, Bachman's sparrow, American kestrel, horned lark, Swainson's warbler, grasshopper sparrow, and Baltimore oriole, among others. Species such as the yellow-throated warbler, white-breasted nuthatch, pileated woodpecker, and barred owl require mature trees greater than 20 inches diameter for nesting, perching and other activities which are present throughout the mature forests. Other large birds of prey such as the eastern screech owl, great-horned owl and barred owl may also be found in the mature forests. Eastern wild turkey and mourning dove are the primary game birds with suitable habitat to exist within the Property's mosaic of habitats.

The Property contains numerous sensitive natural habitats that are suitable for a variety of mammals, songbirds, reptiles, amphibians, and other living organisms associated with ecosystems similar to those found on the Property. More than ninety species of mammals inhabit Georgia, from the coastal waters of the Atlantic Ocean to the mountains of northeast Georgia at elevations of more than 4,700 feet. The habitat diversity in the region supports a wide variety of wildlife. Although small numbers of black bears are found in isolated areas, the white-tailed deer is typically the only large indigenous mammal in this region.

Many mammals familiar to people, such as the white-tailed deer, live in the state; however about half of the area's mammals are rodents or bats, which are seldom seen and often unknown to most people. The mature natural forests, riparian corridors of the Property supports habitat for numerous mammals, including bats, such as the eastern pipistrelle, big brown bat, Seminole bat, hoary bat, eastern red bat, silver-haired bat, and evening bat. State priority and greatest conservation need bat species include the little brown bat, northern myotis, eastern small-footed myotis, state protected Rafinesque's big-eared bat, and the federally endangered gray bat. Mammals with potential to live in the Property's habitats include white-tailed deer, black bear, wild hog, northern raccoon, eastern cottontail, eastern spotted skunk, red fox, gray fox, bobcat, coyote, muskrat, eastern gray squirrel, eastern fox squirrel, eastern woodrat, and numerous other grounding dwelling species such as the white-footed mouse, other mice, rats, moles, voles, shrews and chipmunk. The presence of some mammals may be limited by the size of the forest, since larger animals need more space.

**Animal Species Encountered During the Site Visit**

Type	Common Name	Scientific Name
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<b>Bird</b>	Eastern wild turkey	<i>Meleagris gallopavo gallopavo</i>
	Barred owl	<i>Strix varia</i>
<b>Mammal</b>	Eastern gray squirrel	<i>Sciurus carolinensis</i>
	White-tailed deer	<i>Odocoileus virginianus</i>
	Northern raccoon	<i>Procyon lotor</i>

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## **Biography of Preparer:**

**Amy Gaddy**, CF, RF graduated from the University Of Tennessee School Of  
Forestry in spring of 2006 with a B.S. in Forestry and in fall of 2008 with a M.S. in  
Forestry. While completing her degrees, Amy worked in the Department's Stand

Dynamics Lab. She also worked for the USDA Forest Service Southern Research Station's Forest Inventory and Analysis Unit. Prior to Amy's employment with the Land Trust, she was the Staff Forester for a private company in East Tennessee, managing all forestry activities on their 72,000 acres. She is a Certified Forester, Registered Forester in Alabama, and is active in Tree Farm, serving as the Piedmont District Inspector in Alabama. Amy has been employed with the Land Trust since April 2013 and currently serves as Stewardship Director. As Stewardship Director, Amy is responsible for supervising the annual monitoring program, stewardship of conservation easements and lands held in fee simple, landowner relationship building, and management of the baseline documentation reports of working conservation easements.

## Appendix 1: Directions to Property

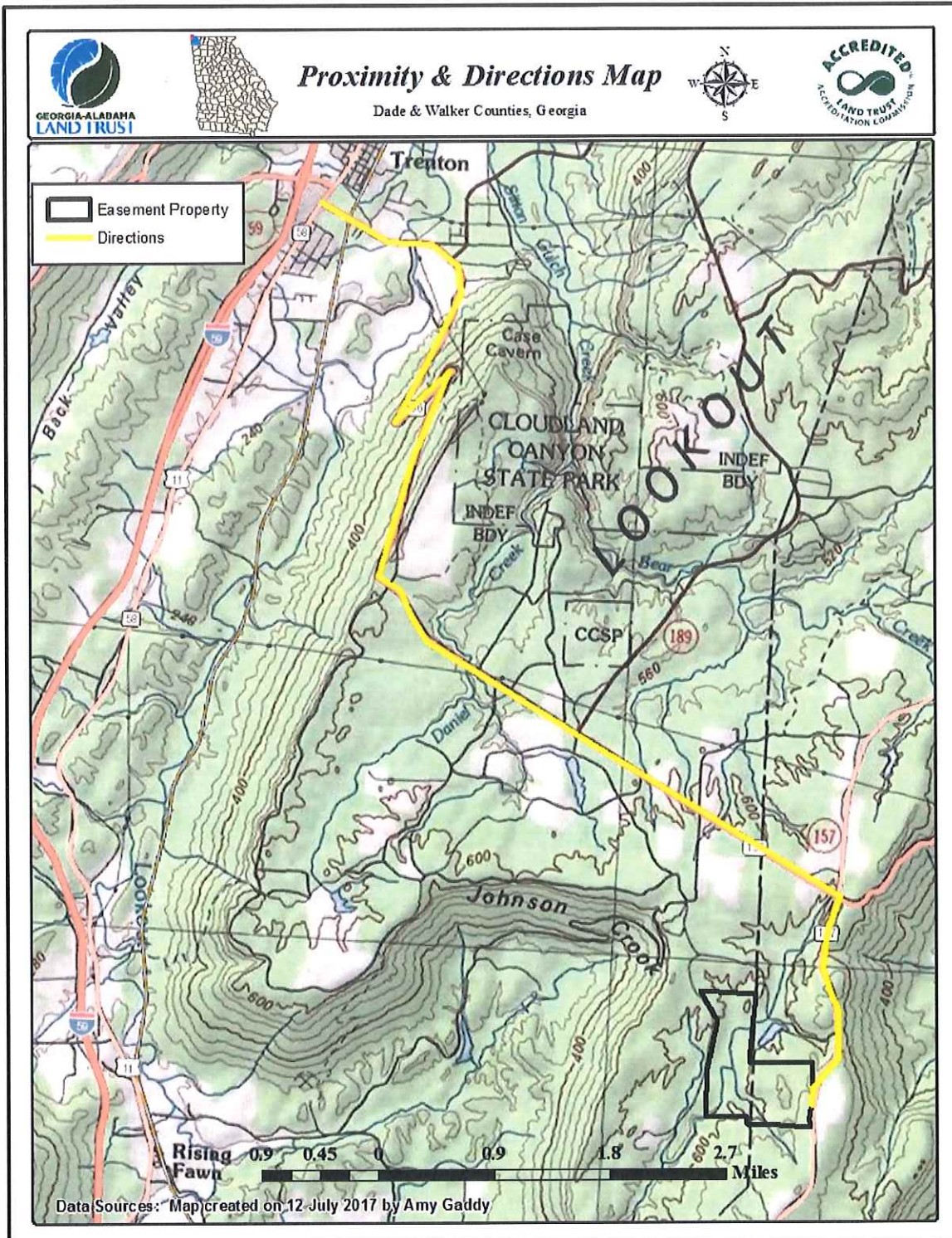
### Written Directions:

To reach the Property from Trenton, Georgia, travel east on GA-136 for 9.2 miles. At the intersection with GA-157, turn right and travel south for 1.7 miles. The entrance to the Property is located on the right and blends well with the surroundings. Access points and roads through the Property can be seen in the Man-Made Features Map in Appendix 3 of this Report.



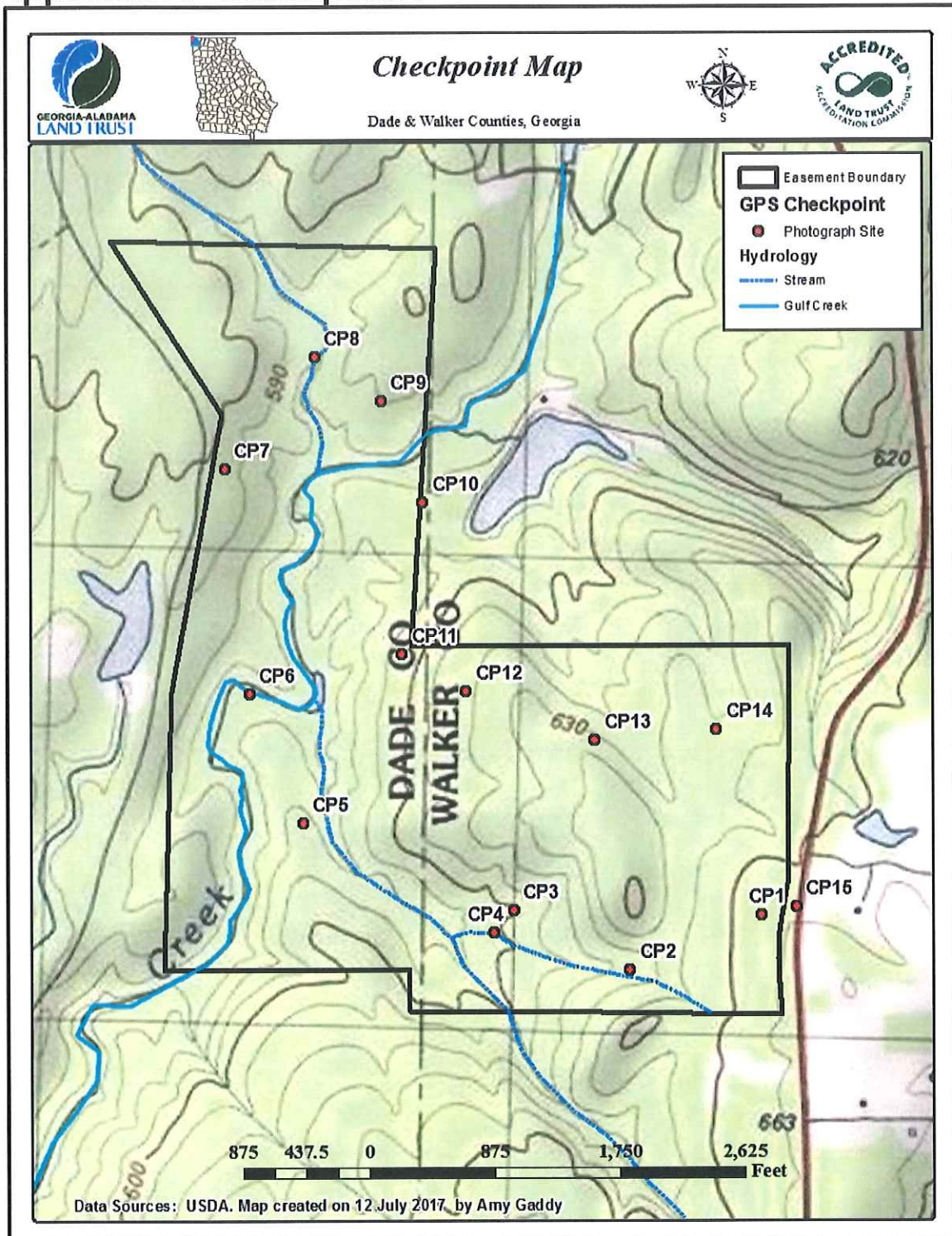
Entrance leading to Gulf Creek, LLC Property, located on Hinkle Road (AKA Highway 157).  
(34.768516 N 85.441749 W)







## Appendix 2: Checkpoints



### Photographs of Easement Property:

Refer to the topographic site map annotated with checkpoints (CP) and the referenced photographs taken on April 20, 2017 to help with the descriptions of the areas visited.



**CP1 Photo 1 (330°) Old debris pile in forest.  
(34.768347 N 85.442532 W)**





**CP1 Photo 2 (50°) View of pine stand.  
(34.768347 N 85.442532 W)**



**CP1 Photo 3 (230°) View of pine stand.  
(34.768347 N 85.442532 W)**





**CP2 Photo 4 (320°) View of mesic hardwoods.  
(34.767275 N 85.445585 W)**



**CP2 Photo 5 (180°) View of mesic hardwoods.  
(34.767275 N 85.445585 W)**





**CP2 Photo 6 (270°) View of trail conditions.  
(34.767275 N 85.445585 W)**



**CP3 Photo 7 (90°) View of drainage.  
(34.768373 N 85.448309 W)**





**CP3 Photo 8 (350°) View of rock outcrops in mesic hardwoods.  
(34.768373 N 85.448309 W)**



**CP3 Photo 9 (295°) View of rock outcrops in mesic hardwoods.  
(34.768373 N 85.448309 W)**





**CP4 Photo 10 (235°) View of stream in mesic hardwoods, with azalea blooming.  
(34.767953 N 85.44875 W)**



**CP5 Photo 11 (220°) View of pine-oak woodland.  
(34.770005 N 85.453211 W)**





**CP5 Photo 12 (355°) View of pine-oak woodland.  
(34.770005 N 85.453211 W)**



**CP6 Photo 13 (310°) View of Gulf Creek.  
(34.772457 N 85.454473 W)**





**CP6 Photo 14 (95°) View of Gulf Creek.  
(34.772457 N 85.454473 W)**



**CP6 Photo 15 (15°) View of hard crossing on Gulf Creek.  
(34.772457 N 85.454473 W)**





**CP7 Photo 16 (195°) View of pine-oak woodland.  
(34.776729 N 85.455111 W)**



**CP7 Photo 17 (35°) View of pine-oak woodland and trail conditions.  
(34.776729 N 85.455111 W)**





**CP8 Photo 18 (10°) View of pine-oak woodland and stream that feeds Gulf Creek.  
(34.77888 N 85.453049 W)**



**CP8 Photo 19 (65°) View of pine-oak woodland.  
(34.77888 N 85.453049 W)**





**CP8 Photo 20 (185°) View of stream.  
(34.77888 N 85.453049 W)**



**CP9 Photo 21 (20°) View of pine forest.  
(34.778056 N 85.451496 W)**





**CP9 Photo 22 (180°) View of pine forest.  
(34.778056 N 85.451496 W)**



**CP9 Photo 23 (240°) View of pine forest.  
(34.778056 N 85.451496 W)**





**CP10 Photo 24 (245°) View of pine forest.  
(34.77614 N 85.45052 W)**



**CP10 Photo 25 (330°) View of pine forest.  
(34.77614 N 85.45052 W)**





**CP11 Photo 26 (30°) View of rocky forest floor.  
(34.773239 N 85.450955 W)**



**CP12 Photo 27 (240°) View of mesic hardwood forest.  
(34.77255 N 85.449464 W)**





**CP12 Photo 28 (30°) View of mesic hardwood forest.  
(34.77255 N 85.449464 W)**



**CP13 Photo 29 (65°) View of mesic hardwood forest.  
(34.771657 N 85.446462 W)**





**CP13 Photo 30 (140°) View of mesic hardwood forest.  
(34.771657 N 85.446462 W)**



**CP14 Photo 25 (25°) View of hardwood forest.  
(34.771875 N 85.443635 W)**





**CP14 Photo 26 (130°) View of hardwood forest.  
(34.771875 N 85.443635 W)**



**CP15 Photo 27 (330°) View of property entrance.  
(34.768516 N 85.441749 W)**





**CP15 Photo 28 (20°) View of Highway 157.  
(34.768516 N 85.441749 W)**



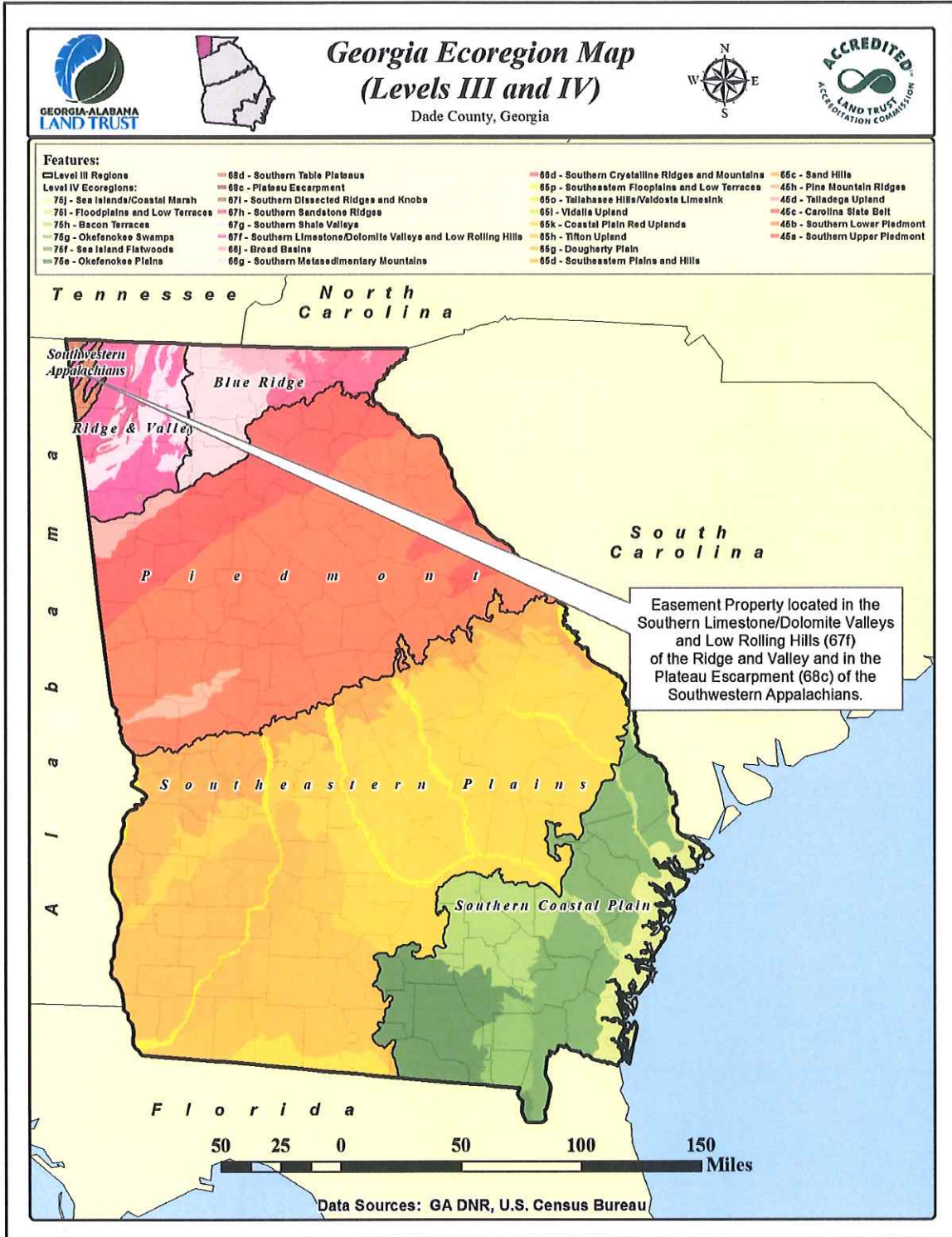
**CP15 Photo 28 (20°) View of Highway 157.  
(34.768516 N 85.441749 W)**

## Appendix 3: Maps of Easement Property List of Maps:

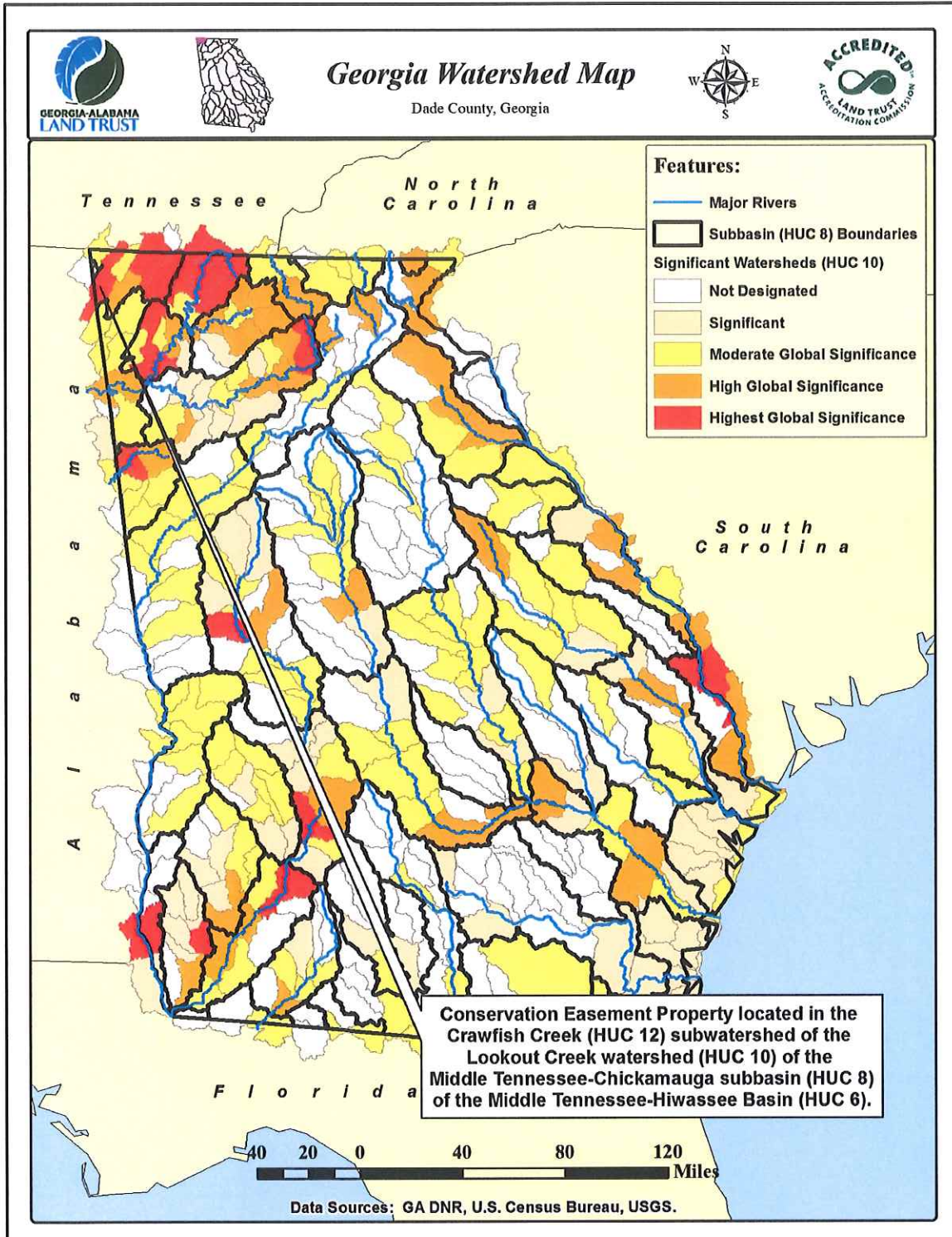
- Georgia Ecoregion Map
- Georgia Watersheds Map
- Man-Made Features Map
- Building Envelopes Topographic Map
- Building Envelopes Aerial Map
- Stand Delineation Map
- Preservation Area Map
- Land Management Topographic Map
- Land Management Aerial Map
- Proximity to Protected Land Map

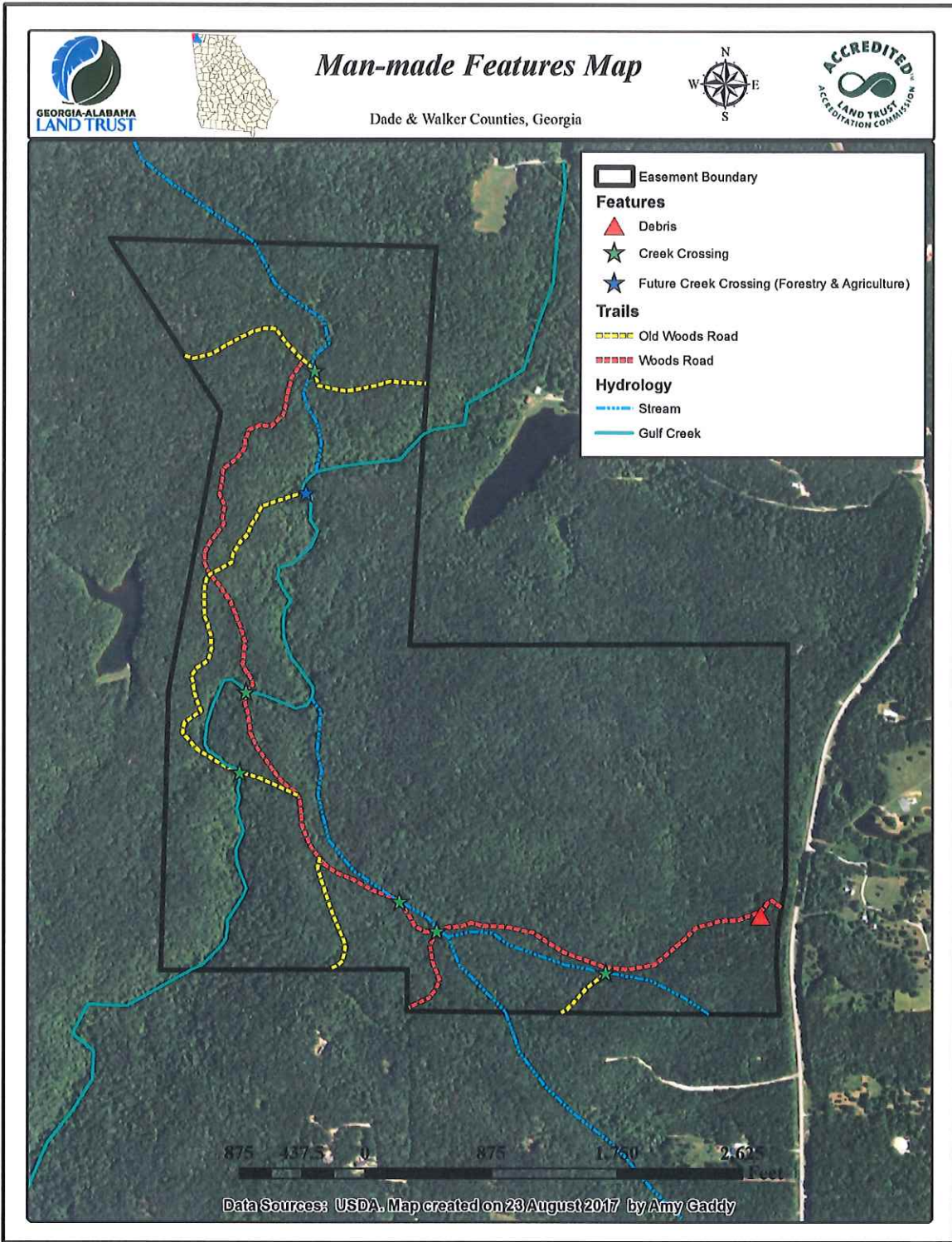
**Map Datum:** All map coordinates are in UTM using the 1983 North American Datum on USGS Topographic Maps.

**Map Disclaimer:** Maps contained in this report are not surveys and must not be construed as surveys. The Land Trust and its staff are not licensed surveyors. The information imparted with these maps is meant to assist the Land Trust in their efforts to clearly depict Property boundaries, describe placement of certain retained, reserved or excluded rights, and to calculate acreage figures. Property boundaries, while approximate, were established using the best available information which may include: surveys, tax maps, and field mapping using G.P.S. and/or ortho photos.

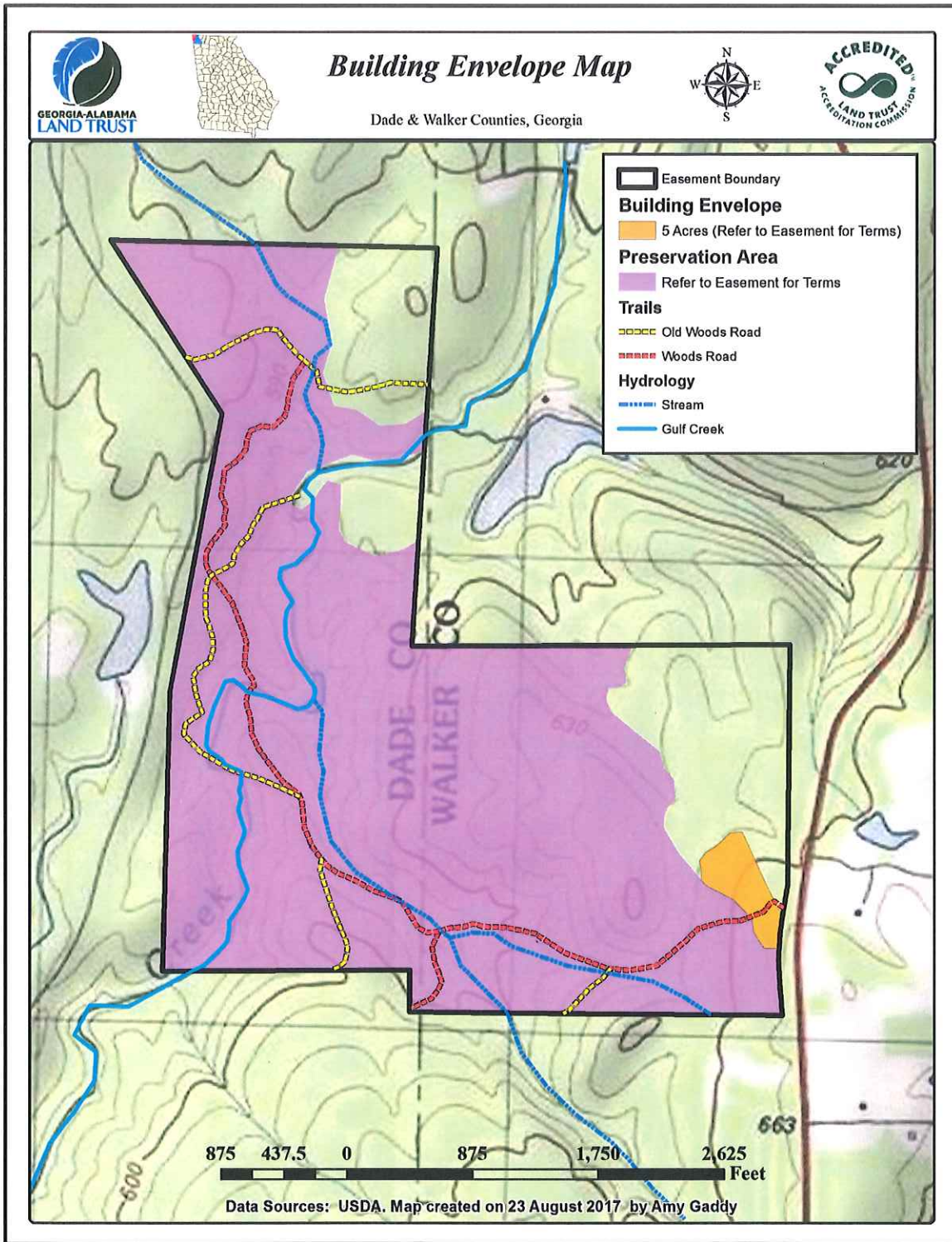


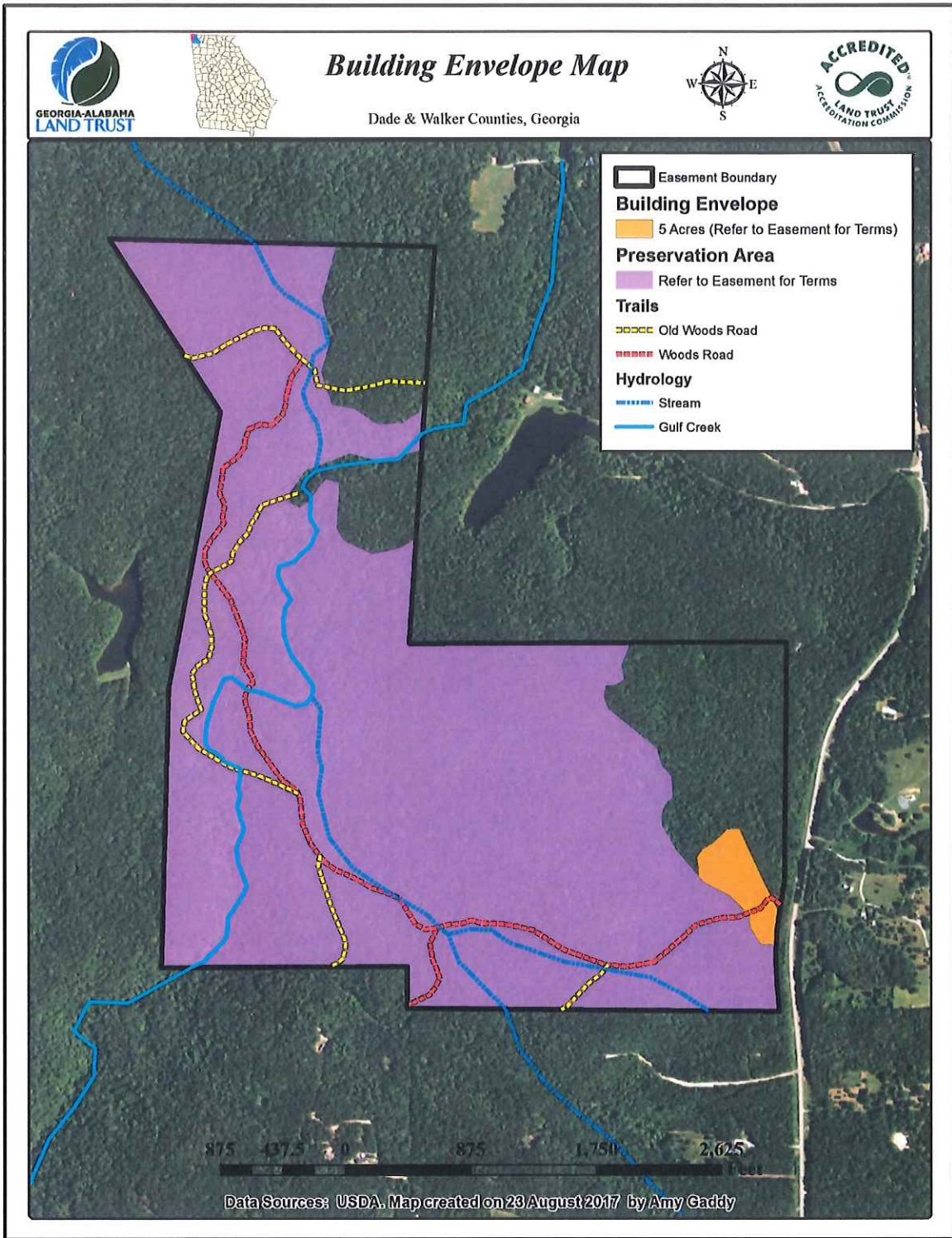




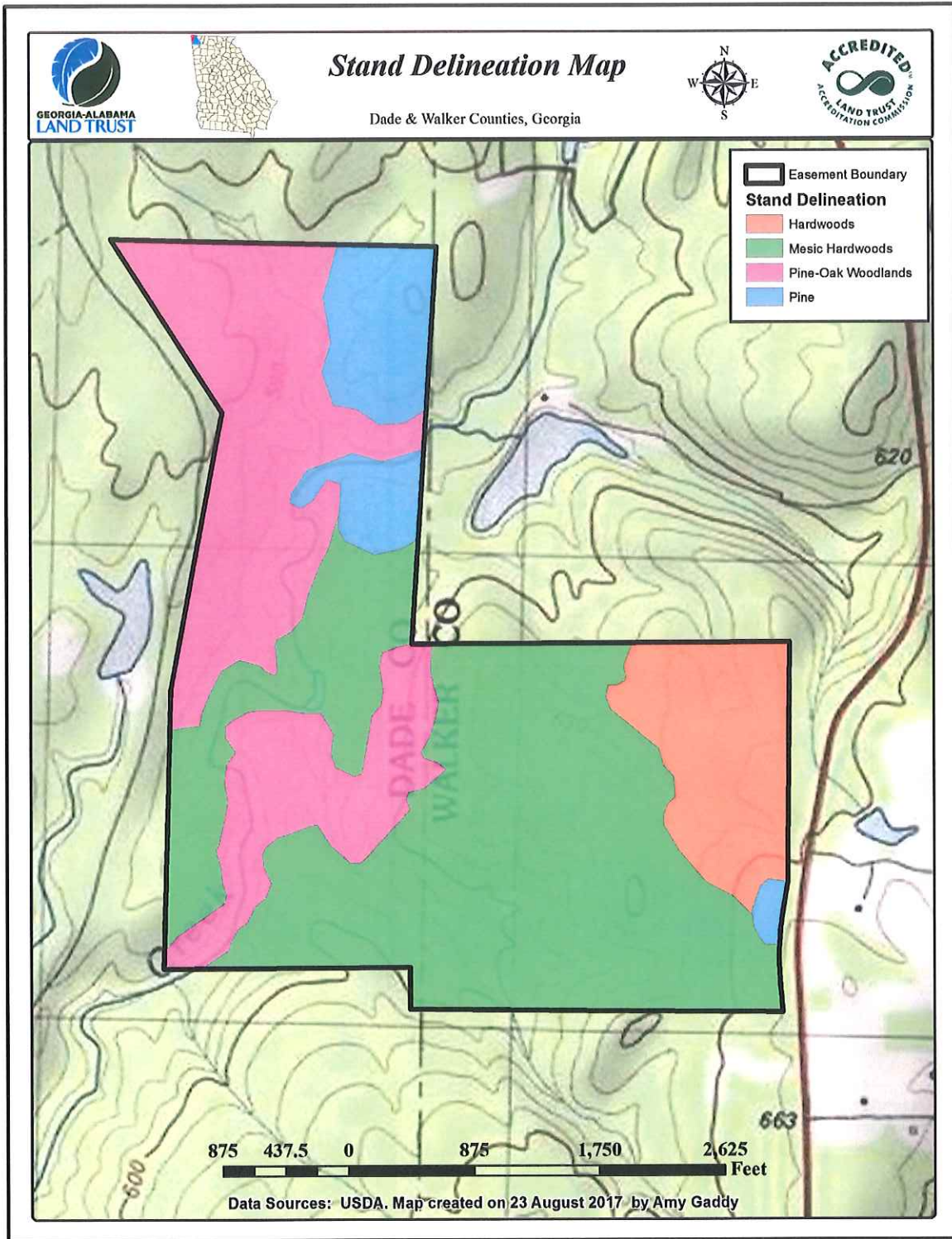




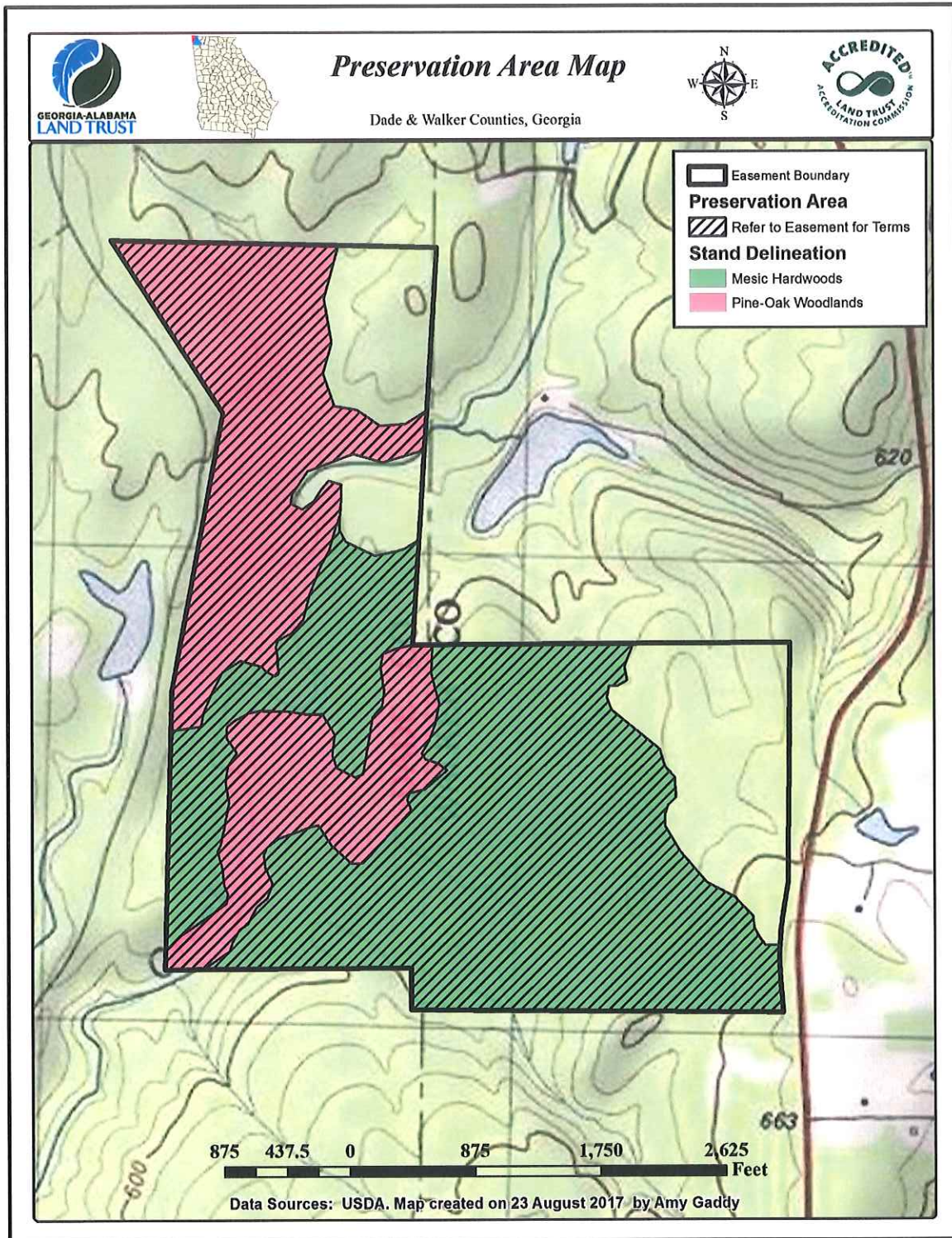




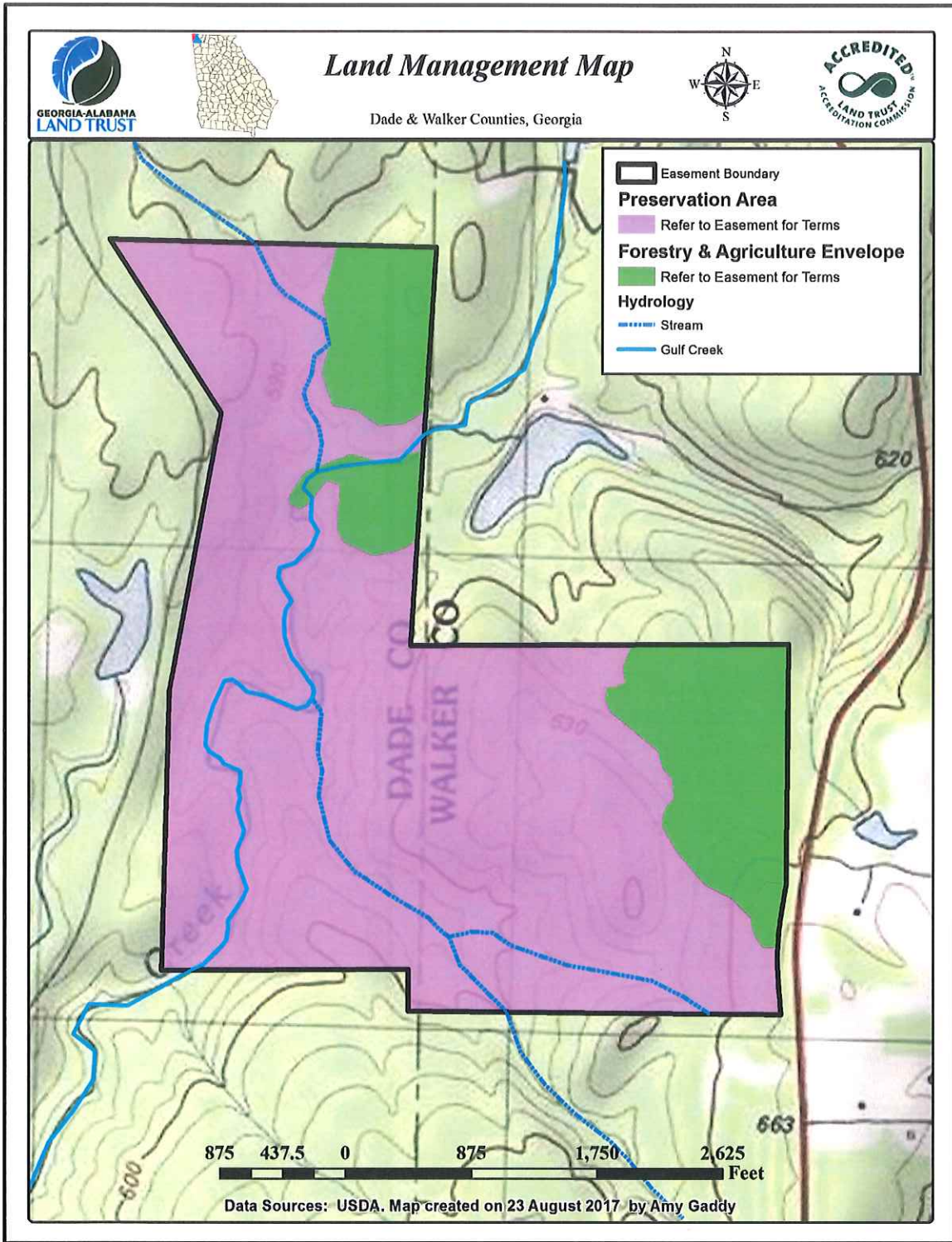


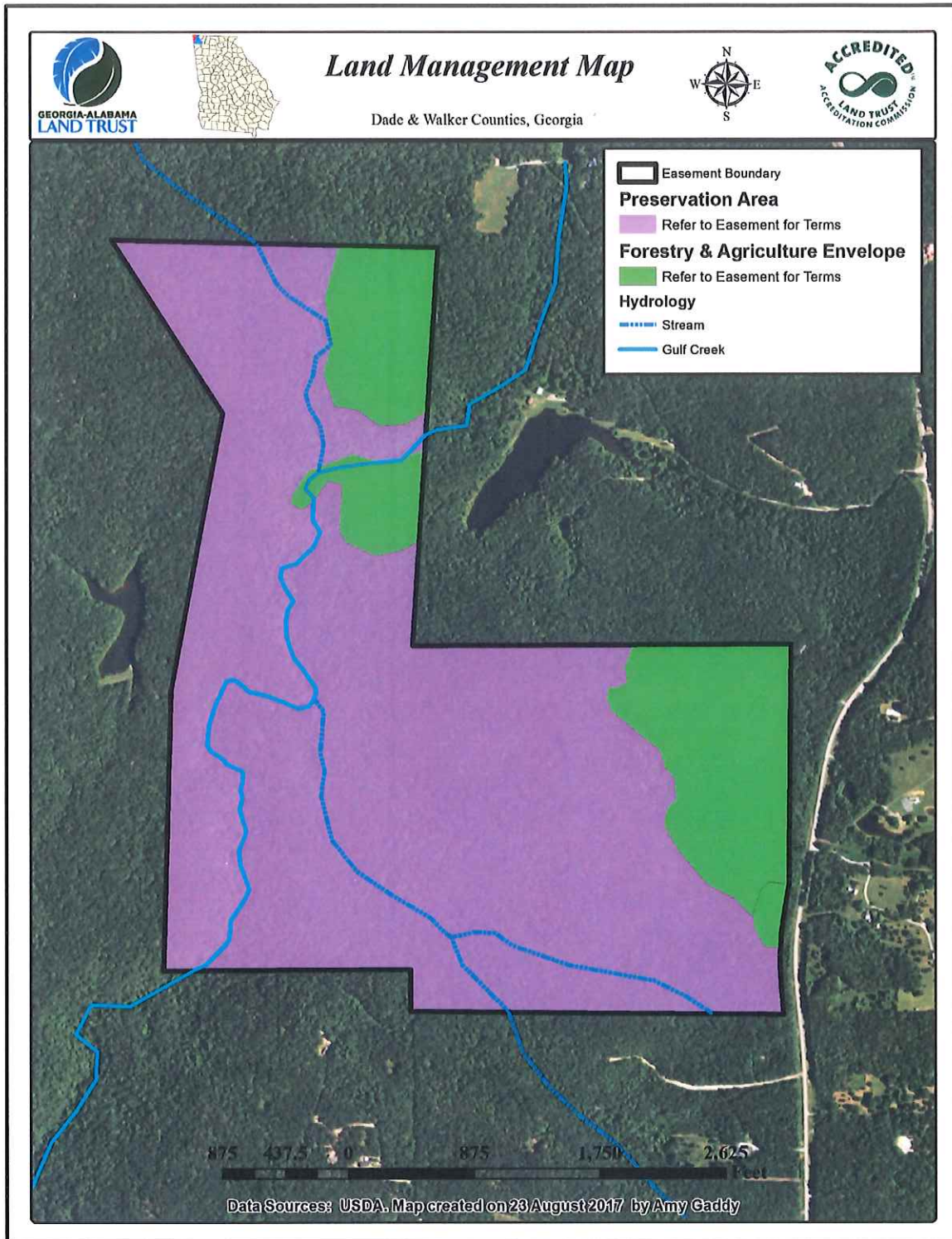




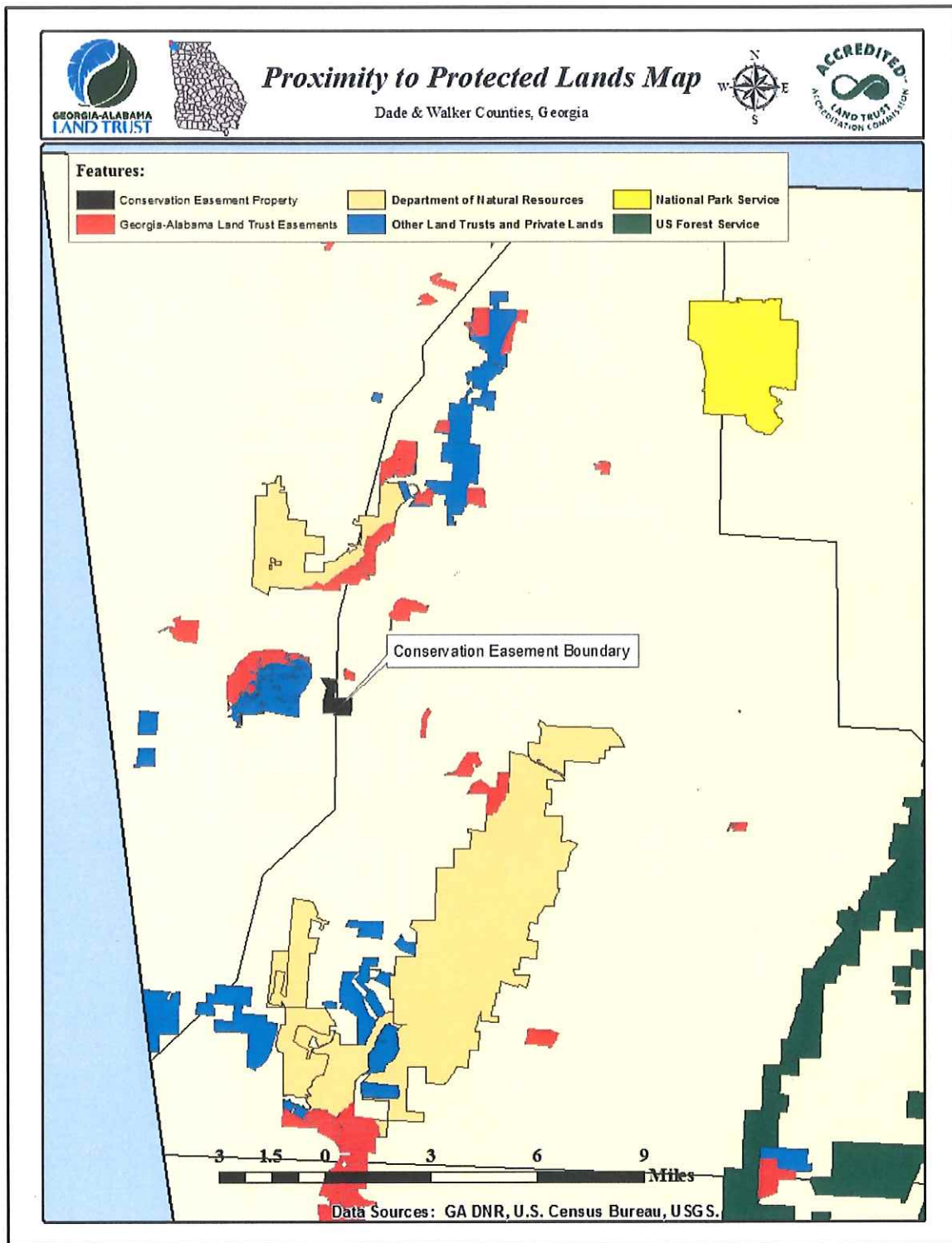










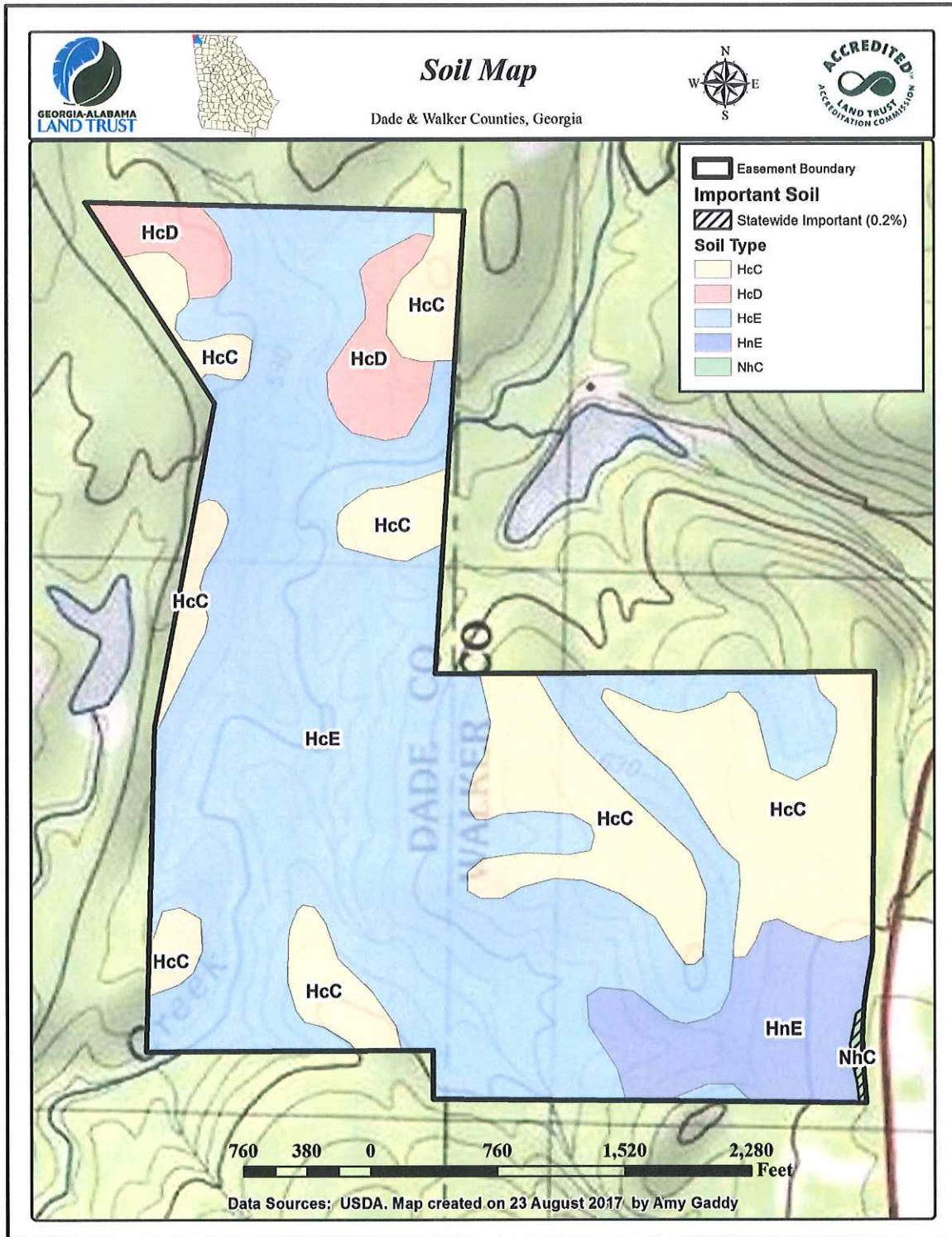


## Appendix 4: Soils

### Soils Classification Table: Property Soil Description and Farmland Importance Status

Symbol	Map Unit Name	Farmland Rating	Hydric Rating	Acres	Percent
HcC	Hartsells-Hector complex, 2-10% slopes	N/A	Non-hydric	87.0	25.2%
HcD	Hartsells-Hector complex, 6-15% slopes, rocky	N/A	Non-hydric	15.9	4.6%
HcE	Hartsells-Hector complex, 15-35% slopes, rocky	N/A	Non-hydric	215.5	62.3%
HnE	Hartsells-Nauvoo complex, 10-25% slopes	N/A	Non-hydric	26.6	7.7%
NhC	Nauvoo-Hartsells complex, 6-10% slopes	Statewide Important	Non-hydric	0.7	0.2%
		<b>Totals</b>		<b>345.7</b>	<b>100.00%</b>





## Appendix 5: Tables

### List of Tables:

- **Table 1: Characteristics Summary of the EPA Level IV Southern Table Plateaus in the EPA Level III Southwestern Appalachian Ecoregion of Georgia**
- **Table 2: Special Concern Plants and Animals in Dade County, Georgia According to Georgia's Department of Natural Resources Wildlife Resources Division (GADNR)**
- **Table 3: Special Concern Plants and Animals in Walker County, Georgia According to Georgia's Department of Natural Resources Wildlife Resources Division (GADNR)**
- **Table 4: Plant List of Dominant, Co-Dominant and Understory Species Identified on Easement Property**



**Table 1 - Characteristics Summary of the EPA Level IV Southern Table Plateaus in the EPA Level III Southwestern Appalachian Ecoregion of Georgia**

68 SOUTHWESTERN APPALACHIANS												
Level IV Ecoregion	Physiography		Geology		Soil			Climate			Potential Natural Vegetation	Land Use and Land Cover
	Area (square miles)	Elevation / Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature / Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max, (F)			
68d. Southern Table Plateaus	141	1300-2300 / 100-400	Quaternary to Tertiary sandy decomposition residuum; Pennsylvanian quartzose sandstone, conglomerate, siltstone, shale, and coal.	Ultisols (Hapludults, Fragluudults); Inceptisols (Dystrudepts)	Hartsells, Townley, Gorgas, Montevallo, Enders, Nauvoo, Wynnville	Thermic / Udic	58-67	190-200	27/48 / 65/88	Oak-hickory forest; mixed mesophytic forest (oak, elm, hickory, ash, maple, blackgum, pine, sweetgum, basswood, beech) in ravines and gorges.	Mostly forested; to the southwest, some cropland and pasture with corn, soybeans, potatoes, hay; small areas of coal mining.	

**Table 2 - Special Concern Plants, Animals and Natural Communities in Dade County, Georgia, According to Georgia Department of Natural Resources Wildlife Resources Division (GADNR).**

*Plants – Dade County, Georgia*

Taxonomy	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Habitat in Dade County, Georgia
Vascular Plants	<i>Agalinis decemloba</i>	Ten-lobed Purple Foxglove	G4Q	S1			Dry, grassy meadows.
	<i>Amelanchier sanguinea</i>	Roundleaf Serviceberry	G5	S1?			Rocky slopes
	<i>Amorpha nitens</i>	Shining Indigo-bush	G3?	S1?			Rocky, wooded slopes; alluvial woods
	<i>Asplenium bradleyi</i>	Bradley's Spleenwort	G4	S2			Sandstone, quartzite, rarely granite crevices
	<i>Astragalus canadensis</i>	Canada Milkvetch	G5	S1			Hardwood forests over limestone
	<i>Carex careyana</i>	Carey Sedge	G4G5	S1			Mesic hardwood forests over limestone
	<i>Carex purpurifera</i>	Purple Sedge	G4?	S2			Mesic hardwood forests over limestone
	<i>Cirsium carolinianum</i>	Carolina Thistle	G5	S3			Prairies; open mixed pine-oak woods, shortleaf pine-blackjack oak savannas over serpentine
	<i>Cornus drummondii</i>	Midwestern Roughleaf Dogwood	G5	S1?			Open woods and cedar glades over calcareous shale and limestone
	<i>Cotinus obovatus</i>	American Smoketree	G4	S1			Mixed oak-redcedar forests on rocky limestone slopes
	<i>Crataegus triflora</i>	Three-flower Hawthorn	G2G3	S1		T	Hardwood forests on rocky, limestone slopes
	<i>Delphinium tricorne</i>	Dwarf Larkspur	G5	S2?			Mesic hardwood forests in calcareous areas
	<i>Diarrhena americana</i>	American Dropseed	G4G5	S1			Mesic hardwoods over limestone
	<i>Dryopteris celsa</i>	Log Fern	G4	S2			Floodplain forests; lower slopes of rocky woods



<i>Erigenia bulbosa</i>	Harbinger-of-spring	G5	S2?			Mesic hardwood forests over basic soils
<i>Glyceria acutiflora</i>	Sharp-scaled Manna-grass	G5	S1?			Sag pond margins
<i>Helianthus smithii</i>	Smith's Sunflower	G2Q	S1			Dry open woods and thickets
<i>Hypericum sphaerocarpum</i>	Barrens St. Johnswort	G5	S1			Limestone barrens
<i>Jeffersonia diphylla</i>	Twinleaf	G5	S1		R	Mesic deciduous forests over limestone
<i>Lathyrus palustris</i>	Marsh Wild Pea	G5	S1?			Alluvial meadows, floodplain forests
<i>Lilium canadense</i>	Canada Lily	G5	S2?			Openings in rich woods
<i>Lilium philadelphicum</i>	Wood Lily	G5	S1		E	Wet meadows over sandstone
<i>Lithospermum occidentale</i>	Western Marbleseed	G4G5T 4?	S1			Limestone glades and adjacent woods
<i>Lysimachia fraseri</i>	Fraser's Loosestrife	G3	S2		R	Moist, open, bouldery gravel bars and streambanks; edges of sandstone and granite outcrops
<i>Nestronia umbellula</i>	Indian Olive	G4	S3		R	Mixed with dwarf shrubby heaths in oak-hickory-pine woods; often in transition areas between flatwoods and uplands
<i>Ophiglossum engelmannii</i>	Limestone Adder's-tongue	G5	S2S3			Rocky limestone glades; rarely on granite outcrops (Heggies Rock)
<i>Palamocladium leskeoides</i>	A Moss	G3G5	S1?			Rock face (dry limestone?), Lookout Mountain
<i>Panax quinquefolius</i>	American Ginseng	G3G4	S3			Mesic hardwood forests; cove hardwood forests
<i>Paronychia argyrocoma</i>	Silverling	G4	S1			Sandstone and granite outcrops
<i>Penstemon calycosus</i>	Long-sepal Beardtongue	G5	SH			Limestone ledges and streambanks
<i>Phlox amplifolia</i>	Broadleaf Phlox	G3G5	S2			Mesic hardwood forests over basic soils
<i>Polygala senega</i>	Seneca Snakeroot	G4G5	S2?			Georgia habitat information not available

Ribes curvatum	Granite Gooseberry	G4	S2				Rocky upland forests; bouldery mesic slopes
Sabatia capitata	Cumberland Rose-gentian	G2	S2	R			Meadows over sandstone or shale
Sambucus racemosa ssp. pubens	Red Elderberry	G5T4T5	S1				Boulderfields; high elevation summits (e.g.; Hightower Bald, Brasstown Bald)
Saxifraga careyana	Carey Saxifrage	G3	S1				Moist rock ledges
Scirpus pendulus	Nodding Bulrush	G5	S1				Wet ground over limestone, calcareous swales
Scutellaria montana	Large-flowered Skullcap	G4	S3	LT	T		Mesic hardwood-shortleaf pine forests; usually mature forest with open understory, sometimes without a pine component
Silene regia	Royal Catchfly	G3	S1		E		Limestone barrens; remnant prairies
Silene rotundifolia	Roundleaf Catchfly	G4	S1				Moist sandstone ledges and cliffs, often with Heuchera villosa
Silphium mohrii	Cumberland Rosinweed	G3?Q	S1?				Rocky hardwood forests
Spiraea virginiana	Virginia Spirea	G2	S1	LT	T		Bouldery gravel bars and ledges along major streams
Thermopsis mollis	Downy Bush-pea	G3G4	S1?				Dry slopes and ridges; mostly in open pine-oak forests
Trichomanes petersii	Dwarf Filmy Fern	G4G5	S2				Acidic boulders, ledges and overhangs; Altamaha Grit outcrops
Trillium sulcatum	Barksdale Trillium	G4	S2				Mesic hardwood forests
Veratrum woodii	Ozark Bunchflower	G5	S2		R		Mesic hardwood forests over basic soils

**Animals – Dade County, Georgia**

Taxonomy	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Habitat in Dade County, Georgia
Amphibians	Aneides aeneus	Green Salamander	G3G4	S3		R	Moist rock crevices; canopies of trees; within hardwood forests



	Cryptobranchius alleganiensis alleganiensis	G3G4 T3T4	S2	T	Clear, cool, mountain streams and rivers with large rocky substrates
Birds	Eastern Hellbender	G4	S1	R	Rocky cliffs %26 ledges; seacoasts-migration; skyscrapers
	Peregrine Falcon	G5	S3	T	Edges of lakes %26 large rivers; seacoasts
	Bald Eagle	G3	S1	E	pool areas of clear headwater creeks, typically less than 2 m in width
	Tennessee Dace	G5	S2		Medium-sized rivers to large streams in flowing runs with substrate of gravel to bedrock
	Spotfin Shiner	G4	S1	R	Small to medium streams, gravel to cobble bottoms; riffles and pools
	Blackside Snubnose Darter	G4	S2S3		Sluggish to moderate current over silty or fine substrates
	Blueside Darter	G5	S2	R	Margins of small to medium streams in areas of sluggish to moderate current
	Northern Studfish	G3G4	S1	R	Medium to large rivers, mud to gravel bottoms; riffles in small tributaries
	Ohio Lamprey	G4	S3		Cool, clear streams in flowing water over sandy to rocky substrates
	Mountain Shiner	G5	S1		Large streams in Hiwassee River system (e.g., Brasstown Creek)
	Silver Redhorse	G3	S1	E	Large streams and small rivers in flowing pools areas over gravel
	Popeye Shiner	G5	S2		Midwater areas in large rivers, lakes, and mouths of small streams
	Emerald Shiner	G5	S2		Rocky streams and small rivers over gravel in swift current
	Telescope Shiner	G5	S2		Streams, rivers, and lakes
Mimic Shiner	G5	S3	R	Large creeks and rivers in moderate current associated with woody debris, undercut banks, or vegetation	
Dusky Darter	G4	S1	E	Underground streams	
Southern Cavefish	G5	SNR		Ponds and slow-moving streams	
Unicorn Clubtail	G5	S1		Clear cool streams under debris or clean slab rocks; streams can dry to isolated pools	
Boxclaw crayfish	G5Q	S1		Riffle areas of streams under rocks	
Longnose crayfish	G2	S3	T	High elevation streams with bedrock or rocks	
Blackbarred Crayfish	G3G4	S1		Large creeks in TN Basin tributaries; shoal and run habitats; sand and gravel, frequently occurs under large, flat rocks	
Cumberland Moccasinshell	G2G3	S1		small streams to large rivers with flowing water in TN Basin tributaries; stable gravel with interstitial sand	
Tennessee Pigtoe	G4	S3		Large to medium sized TN Basin tributaries	
Mountain Creekshell					
Villosa vanuxemensis					

	Myotis grisescens	Gray Myotis	G3	S1	LE	E	Caves with flowing water or with large creeks or bodies of water nearby, also storm sewers and artificial caves in other states. Unknown summer roosts-eastern GA. range.
	Myotis leibii	Eastern Small-footed Myotis	G1G3	S2			Caves; mines; abandoned buildings, bridges, rock shelters in Mtn. areas; high elevation talus fields
	Myotis lucifugus	Little Brown Myotis	G3	S3			Caves %26 Mines; mixed forests, structures, bat houses
	Myotis septentrionalis	Northern Myotis	G2G3	S2S3	LT	T	Caves %26 mines in winter; riparian areas, upland forests, cracks and crevices in dead and live trees in summer
	Myotis sodalis	Indiana Myotis	G2	S1	LE	E	Limestone caves with pools; wooded areas near streams, upland forests, large snags in open areas including ridge tops
	Neotoma floridana haematoria	Southern Appalachian Woodrat	G5T4 Q	S3			High-elevation forests; rock ledges
Mammals	Perimyotis subflavus	Tri-colored Bat	G3	S5			Open forests with large trees and woodland edges; roost in tree foliage; hibernate in caves or mines with high humidity
	Graptemys geographica	Northern Map Turtle	G5	S1		R	large streams and rivers
Reptiles	Lampropeltis triangulum triangulum	Eastern Milk Snake	G5T5	S2			Open woods; fields; forests; rock outcrops

**Other Occurrences**

Natural Communities	Curv cave	Cumberland Plateau/ridge and Valley Cave				GNR	SNR
Natural Communities	Diamorpha smallii - Minuartia glabra Sandstone Herbaceous Vegetation	Cumberland Sandstone Flatrock Glade				G2G3	SNR
Natural Communities	Quercus stellata - Pinus virginiana / (Schizachyrium scoparium, Piptochaetium avenaceum) Woodland	Red Knobs Sandstone Post Oak - Virginia Pine Woodland				G2?	SNR



Natural Communities	(Salix caroliniana, Rhododendron arborescens) - Andropogon gerardii - Baptisia australis - (Solidago simplex var. randii) Herbaceous Vegetation	Cumberland Riverside Scour Prairie	G2?	SNR
Natural Communities	Tsuga canadensis - (Fagus grandifolia, Tilia americana var. heterophylla) / Magnolia tripetala Forest	Cumberland/Appalachian Hemlock - Hardwood Cove Forest	G4	SNR
OTHER ELEMENTS	Lejeunea sharpii	Sharp's Lejeunea	G2G3	S1?

**Table 3 - Special Concern Plants, Animals and Natural Communities in Walker County, Georgia, According to Georgia Department of Natural Resources Wildlife Resources Division (GADNR).**

*Plants – Walker County, Georgia*

Taxonomy	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Habitat in Walker County, Georgia
Nonvascular Plants	<i>Lejeunea blomquistii</i>	Blomquist Lejeunea	G1G2	S1S2			Waterfall spray zones
	<i>Lejeunea sharpii</i>	Sharp's Lejeunea	G2G3	S1?			Georgia habitat information not available
	<i>Metzgeria lechleri</i>	Lechler's Veilwort	GNR	S1?			Georgia habitat information not available
Vascular Plants	<i>Aesculus glabra</i>	Ohio Buckeye	G5	S2			Mesic forests in mafic soil
	<i>Agalinis decemloba</i>	Ten-lobed Purple Foxglove	G3G4	S1			Dry, grassy meadows.
	<i>Agastache nepetoides</i>	Yellow Giant Hyssop	G5	S1			Openings in rich hardwoods
	<i>Amorpha nitens</i>	Shining Indigo-bush	G3?	S1?			Rocky, wooded slopes; alluvial woods
	<i>Asclepias hirtella</i>	Barrens Milkweed	G5	S2			Limestone glades; remnant prairies and nearby roadbanks
	<i>Asplenium bradleyi</i>	Bradley's Spleenwort	G4	S2			Sandstone, quartzite, rarely granite crevices
	<i>Astranthium integrifolium</i>	Wild Daisy	G5	S1?			Limestone glades
	<i>Baptisia australis</i> var.	Glade Blue Wild Indigo	G5T2	S2			Limestone glades and barrens
	<i>Bouteloua curtipendula</i> var. <i>curtipendula</i>	Side-oats Grama	G5T5	S2			Georgia habitat information not available
	<i>Buchnera americana</i>	American Bluehearts	G5?	S1			Wet meadows; seasonally moist barrens and limestone glades
	<i>Calamovilfa arcuata</i>	Cumberland Sandreed	G2G3	S1			Riverside scour areas
	<i>Camassia scilloides</i>	Wild Hyacinth	G4G5	S2			Floodplain and mesic hardwood forests over limestone
	<i>Carex albensina</i>	White Bear Lake Sedge	G5	S1			Rich, calcareous woods
	<i>Carex oligocarpa</i>	Few-fruit Sedge	G4G5	S2?			Rich hardwood forests over limestone
	<i>Carex platyphylla</i>	Broadleaf Sedge	G5	S1S2			Mesic hardwood forests over basic rock
	<i>Carex purpurifera</i>	Purple Sedge	G4?	S2			Mesic hardwood forests over limestone
<i>Carex stricta</i>	Tussock Sedge	G5	S1			Sag ponds; shallow-ponded mountain bogs	
<i>Carya laciniosa</i>	Shellbark Hickory	G5	S2?			Bottomland forests	



<i>Castilleja coccinea</i>	Scarlet Indian Paintbrush	G5	S1?			Moist rock ledges; fens
<i>Cheilanthes alabamensis</i>	Alabama Lipfern	G4G5	S2			Limestone ledges
<i>Chelone lyonii</i>	Appalachian Turtlehead	G4	S1			Wet woods, streamsides, fens of S. Appalachians
<i>Cirsium carolinianum</i>	Carolina Thistle	G5	S3			Prairies; open mixed pine-oak woods, shortleaf pine-blackjack oak savannas over serpentine
<i>Clematis morefieldii</i>	Morefield's Leatherflower	G2	S1	LE	E	Limestone woodland
<i>Cotinus obovatus</i>	American Smoketree	G4	S1			Mixed oak-redcedar forests on rocky limestone slopes
<i>Crataegus aemula</i>	Rome Hawthorn	G2G3	S2?			Upland hardwood forests; creek flats
<i>Crataegus calpodendron</i>	Pear Hawthorn	G5	S2?			Mesic calcareous forests
<i>Crataegus triflora</i>	Three-flower Hawthorn	G2G3	S1		T	Hardwood forests on rocky, limestone slopes
<i>Cypripedium acaule</i>	Pink Ladyslipper	G5	S4		U	Upland oak-hickory-pine forests; piney woods
<i>Cystopteris tennesseensis</i>	Tennessee Fragile Fern	G5	S1			Seepy limestone-shale outcrops
<i>Dalea gattingeri</i>	Gattinger's Prairie Clover	G3G4	S2S3			Limestone glades and barrens
<i>Dalea purpurea</i>	Purple Prairie-clover	G5	S1			Limestone glades
<i>Dasistoma macrophylla</i>	Mullein Foxglove	G4	S1?			Rocky limestone woods
<i>Delphinium tricorne</i>	Dwarf Larkspur	G5	S2?			Mesic hardwood forests in calcareous areas
<i>Desmodium ochroleucum</i>	Cream-flowered Tick- trefoil	G2	S1		T	Open, calcareous woodlands, including lower slope of Pigeon Mountain
<i>Diarrhena americana</i>	American Dropseed	G4G5	S1			Mesic hardwoods over limestone
<i>Dryopteris celsa</i>	Log Fern	G4	S2			Floodplain forests; lower slopes of rocky woods
<i>Echinacea purpurea</i>	Purple Coneflower	G4	S2?			Prairies and glades, circumneutral soils
<i>Erigenia bulbosa</i>	Harbinger-of-spring	G5	S2?			Mesic hardwood forests over basic soils
<i>Erigeron strigosus</i> var. <i>calicicola</i>	Cedar Glade Daisy Fleabane	G5T3	S1			Limestone glades or cedar glades
<i>Fothergilla major</i>	Large Witch-alder	G3	S1		T	Rocky (sandstone, granite) woods; bouldery stream margins
<i>Fraxinus quadrangulata</i>	Blue Ash	G5	S2			Mesic hardwood forests over limestone
<i>Glyceria melicaria</i>	Slender Manna-grass	G5	S1?			Swamps
<i>Helianthus smithii</i>	Smith's Sunflower	G2Q	S1			Dry open woods and thickets
<i>Heliotropium tenellum</i>	Delicate Heliotrope	G5	S2?			Limestone glades and barrens
<i>Hydrastis canadensis</i>	Goldenseal	G3G4	S2		E	Rich woods in circumneutral soil
<i>Hydrophyllum macrophyllum</i>	Largeleaf Waterleaf	G5	S1			Rich woods in circumneutral soil
<i>Hypericum dolabriforme</i>	Glade St. Johnswort	G4	S3			Limestone glades and barrens

<i>Isoetes appalachiana</i>	Appalachian Quillwort	G4	S2?			Shallow water (one foot deep) of slow moving streams; mucky stream margins, periodically droughty
<i>Jeffersonia diphylla</i>	Twinleaf	G5	S1	R		Mesic deciduous forests over limestone
<i>Juncus filipendulus</i>	Texas Plains Rush	G5	S2?			Remnant prairies; limestone barrens
<i>Juncus gymnocarpus</i>	Naked-fruit Rush	G4	S2S3			Seepy streambanks; open swamps; mountain bogs
<i>Leavenworthia exigua</i> var.	Least Gladecress	G4T3	S2	T		Limestone glades
<i>Leavenworthia uniflora</i>	Gladecress	G4	S1			Limestone glades
<i>Lilium canadense</i>	Canada Lily	G5	S2?			Openings in rich woods
<i>Lilium philadelphicum</i>	Wood Lily	G5	S1	E		Wet meadows over sandstone
<i>Lithospermum latifolium</i>	Broadleaf Gromwell	G4	S1			Mixed deciduous hardwood forests over limestone
<i>Lithospermum occidentale</i>	Western Marbleseed	G4G5 T4?	S1			Limestone glades and adjacent woods
<i>Lygodium palmatum</i>	Climbing Fern	G4	S2			Acid soils of thickets and open upland forests
<i>Lysimachia fraseri</i>	Fraser's Loosetrife	G3	S2	R		Moist, open, bouldery gravel bars and streambanks; edges of sandstone and granite outcrops
<i>Marshallia trinervia</i>	Broadleaf Barbara's-buttons	G3	S1S2			Streambanks in open, bouldery gravel bars and washed, sandy banks
<i>Matelea obliqua</i>	Limerock Milkvine	G4?	S1S2			Mesic deciduous hardwood forests over limestone
<i>Melanthium latifolium</i>	Broadleaf Bunchflower	G5	S2?			Mesic deciduous hardwood forests
<i>Mertensia virginica</i>	Virginia Bluebells	G5	S2			Floodplain forests in limestone valleys
<i>Muhlenbergia sobolifera</i>	Sprouting Muhly	G5	S1?			Dry, wooded limestone slopes
<i>Neviusia alabamensis</i>	Alabama Snow-wreath	G2	S1	T		Along wet weather streams over limestone
<i>Ophioglossum engelmannii</i>	Limestone Adder's-tongue	G5	S2S3			Rocky limestone glades; rarely on granite outcrops (Heggies Rock)
<i>Panax quinquefolius</i>	American Ginseng	G3G4	S3			Mesic hardwood forests; cove hardwood forests
<i>Paronychia argyrocoma</i>	Silverling	G4	S1			Sandstone and granite outcrops
<i>Phacelia purshii</i>	Miami-mist	G5	S1			Mesic hardwood forests over basic soils
<i>Phillardaphus pubescens</i>	Hairy Mockorange	G5?	S1			Limestone ledges and rocky banks
<i>Phlox amplifolia</i>	Broadleaf Phlox	G3G5	S2			Mesic hardwood forests over basic soils
<i>Polymnia laevigata</i>	Tennessee Leafcup	G3	S1			Bouldery slopes
<i>Ponthieva racemosa</i>	Shadow-witch Orchid	G4G5	S2?			Calcareous swamps; marly outcrops
<i>Potamogeton amplifolius</i>	Bigleaf Pondweed	G5	S1			Sluggish streams; ponds
<i>Ribes curvatum</i>	Granite Gooseberry	G4	S2			Rocky upland forests; bouldery mesic slopes
<i>Sabatia capitata</i>	Cumberland Rose-gentian	G2	S2	R		Meadows over sandstone or shale



<i>Saxifraga careyana</i>	Carey Saxifrage	G3	S1			Moist rock ledges
<i>Scutellaria leonardii</i>	Glade Skullcap	G4T4	S2			Limestone glades
<i>Scutellaria montana</i>	Large-flowered Skullcap	G4	S3	LT	T	Mesic hardwood-shortleaf pine forests; usually mature forest with open understory, sometimes without a pine component
<i>Scutellaria pseudoserrata</i>	Southern Showy Skullcap	G3	S2			Mesic hardwood forests
<i>Silene rotundifolia</i>	Roundleaf Catchfly	G4	S1			Moist sandstone ledges and cliffs, often with <i>Heuchera villosa</i>
<i>Silphium mohrii</i>	Cumberland Rosinweed	G3?Q	S1?			Rocky hardwood forests
<i>Solidago arenicola</i>	Black Warrior Goldenrod	G2G3	S1			Riverside scour areas
<i>Spiraea virginiana</i>	Virginia Spirea	G2	S1	LT	T	Bouldery gravel bars and ledges along major streams
<i>Spiranthes ovalis</i> var. <i>erostellata</i>	Self-pollinating Oval Ladies-tresses	G5?T4 ?	S2S3			Seepy margins of small streams; floodplain woods
<i>Stachys nuttallii</i>	Nuttall's Hedge-nettle	G5?	S2			Mesic hardwood forests over basic soils; alluvial bottomlands
<i>Stylophorum diphyllum</i>	Celandine Poppy	G5	S1			Mesic hardwood forests over limestone
<i>Symphotrichum ericoides</i>	Heath Aster	G5	S1			Limestone glades
<i>Symphotrichum georgianum</i>	Georgia Aster	G3	S3		T	Upland oak-hickory-pine forests and openings; sometimes with <i>Echinacea laevigata</i> or over amphibolite
<i>Symphotrichum laeve</i> var. <i>laeve</i>	Smooth Aster	G5T5	S2?			Mesic hardwood forests in circumneutral soil
<i>Symphotrichum phlogifolium</i>	Phlox-leaved Aster	G5	S1			Mesic hardwood forests over basic soil
<i>Symphotrichum praealtum</i>	Willow-leaf Aster	G5	S1?			Lowland forests over limestone
<i>Symphotrichum pratense</i>	Barrens Silky Aster	G4?	S1			Limestone glades
<i>Thermopsis mollis</i>	Downy Bush-pea	G3G4	S1?			Dry slopes and ridges; mostly in open pine-oak forests
<i>Trichomanes boschianum</i>	Appalachian Filmy Fern	G4	S1			Acidic ledges and overhangs
<i>Trichomanes petersii</i>	Dwarf Filmy Fern	G4G5	S2			Acidic boulders, ledges and overhangs; Altamaha Grit outcrops
<i>Trillium flexipes</i>	Bent Trillium	G5	S1			Mesic hardwood forests over limestone
<i>Trillium lancifolium</i>	Lanceleaf Trillium	G3	S3			Floodplain forests; also lower rocky slopes over basic soils
<i>Trillium sulcatum</i>	Barksdale Trillium	G4	S2			Mesic hardwood forests
<i>Triosteum angustifolium</i>	Narrowleaf Wild Coffee	G5	S1?			Mesic hardwood forests over limestone
<i>Triphora trianthophora</i>	Three-birds Orchid	G3G4	S2?			Loamy soils of rhododendron thickets; hardwood forests
<i>Ulmus serotina</i>	September Elm	G4	S1			Mesic hardwood forests over limestone
<i>Veratrum woodii</i>	Ozark Bunchflower	G5	S2		R	Mesic hardwood forests over basic soils

Viburnum bracteatum	Limerock Arrow-wood	G1G2	S1	E	Mesic hardwood forests over limestone
Viola egglestonii	Glade Violet	G4	S2		Limestone glades
Woodsia scopulina ssp. appalachiana	Appalachian Cliff Fern	G4	S1		Sandstone and shale cliffs

**Animals – Walker County, Georgia**

Taxonomy	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Habitat in Walker County, Georgia	
<b>Amphibians</b>	Ambystoma tigrinum tigrinum	Eastern Tiger Salamander	G5	S3S4			Isolated wetlands for breeding; variety of open, upland habitats; CP-sandhills, oldfields, dry pine savanna	
	Aneides aeneus	Green Salamander	G3G4	S3		R	Moist rock crevices; canopies of trees; within hardwood forests	
	Gyrinophilus pallescens	Tennessee Cave Salamander	G2G3	S1		T	Streams in caves; substrates include rock, gravel, sand, and mud	
	Hemidactylium scutatum	Four-toed Salamander	G5	S3			Swamps; boggy streams and ponds; hardwood forests	
	Plethodon petraeus	Pigeon Mountain Salamander	G2	S2		R	Moist, rocky woods; cave entrances	
<b>Birds</b>	Pseudacris brachyphona	Mountain Chorus Frog	G5	S2			Hardwood forests with fishless breeding pools	
	Falco peregrinus	Peregrine Falcon	G4	S1		R	Rocky cliffs and ledges; seacoasts-migration; skyscrapers	
	Haliaeetus leucocephalus	Bald Eagle	G5	S3		T	Edges of lakes and large rivers; seacoasts	
	Peucaea aestivalis	Bachman's Sparrow	G3	S2		R	Open pine or oak woods; old fields; brushy areas, young large grassy pine regeneration areas	
	Picoides borealis	Red-cockaded Woodpecker	G3	S2	LE	E	Open pine woods; pine savannas	
	<b>Fish</b>	Cyprinella spiloptera	Spotfin Shiner	G5	S2			Medium-sized rivers to large streams in flowing runs with substrate of gravel to bedrock
		Etheostoma duryi	Blackside Snubnose Darter	G4	S1		R	Small to medium streams, gravel to cobble bottoms; riffles and pools
		Etheostoma jessiae	Blueside Darter	G4	S2S3			Sluggish to moderate current over silty or fine substrates
		Fundulus catenatus	Northern Studfish	G5	S2		R	Margins of small to medium streams in areas of sluggish to moderate current
		Hemitemia flammea	Flame Chub	G3	S1		E	Springs and springfed streams; often associated with aquatic vegetation
Hybopsis lineapunctata		Lined Chub	G3G4	S2		R	Upland creeks over sandy substrate with gentle current	
Lampetra aepyptera		Least Brook Lamprey	G5	S2			Ammocoetes associated with mud, silt, and macrophytes. Adults associated with sand and gravel	



	<i>Lythrurus lirus</i>	Mountain Shiner	G4	S3			Cool, clear streams in flowing water over sandy to rocky substrates
	<i>Notropis asperifrons</i>	Burrhead Shiner	G4	S2		T	Small streams to medium-sized rivers in pools, slow runs, and backwater areas
	<i>Notropis atherinoides</i>	Emerald Shiner	G5	S2			Midwater areas in large rivers, lakes, and mouths of small streams
	<i>Notropis telescopus</i>	Telescope Shiner	G5	S2			Rocky streams and small rivers over gravel in swift current
	<i>Noturus flavipinnis</i>	Yellowfin Madtom	G1	SX			Pools and backwaters of medium-sized creeks; gravel and pebble substrate
	<i>Percina sciera</i>	Dusky Darter	G5	S3		R	Large creeks and rivers in moderate current associated with woody debris, undercut banks, or vegetation
	<i>Phenacobius uranops</i>	Stargazing Minnow	G4	S1		T	Riffle areas in small to medium rivers
	<i>Cambarus extraneus</i>	Chickamauga Crayfish	G2	S2		T	Small to medium shallow rocky streams with moderate current
	<i>Cambarus longirostris</i>	Longnose crayfish	G5Q	S1			Riffle areas of streams under rocks
	<i>Cambarus scotti</i>	Chattooga River Crayfish	G3	S2		T	rocky riffles in streams with moderate to swift current
	<i>Cambarus unestami</i>	Blackbarred Crayfish	G2	S3		T	High elevation streams with bedrock or rocks
	<i>Campeloma regulare</i>	Cylinder campeloma	G4	S2			Large rivers to small streams along margins
	<i>Gomphus consanguis</i>	Cherokee Clubtail	G3	S2		T	Spring-fed moderately-flowing forest streams, especially where they drain small ponds
	<i>Hamiota altilis</i>	Finelined Pocketbook	G2G3	S2		LT	Small streams to large rivers; sand, gravel, and cobble substrates; usually not in swift current
Invertebrates	<i>Lasmigona etowaensis</i>	Etowah Heelsplitter	G3	S3			Small to medium creeks, often in very small streams where no other mussels occur. Some current, mainly sandy substrates but occasionally in mud or gravel. May be associated wit
	<i>Lasmigona holstonia</i>	Tennessee Heelsplitter	G3	S1			Small to large creeks; Occurs often in small creeks and medium sized rivers and spring runs. Sandy substrates, may be mixed with some gravel or mud
	<i>Lestes congener</i>	Spotted Spreadwing	G5	SNR			Semiaquatic: aquatic larvae, flying adults
	<i>Lestes forcipatus</i>	Sweetflag Spreadwing	G5	S1			Semiaquatic: aquatic larvae, flying adults
	<i>Medionidus acutissimus</i>	Alabama Moccasinshell	G2	S1		LT	Large rivers to medium sized creeks; sand and gravel substrate; slow to swift current
	<i>Pleurobema georgianum</i>	Southern Pigtoe	G1	S1		LE	Large rivers to medium sized creeks in riffles, runs, and shoals; sand and gravel substrate
	<i>Pleurocera pyrenella</i>	Skirted Hornsnail	G2	S2			Mountain streams
	<i>Pleurocera vestita</i>	Brook hornsnail	G3	S2			Aquatic habitats

	<i>Pleuroanaia barnesiana</i>	Tennessee Pigtoe	G2G3	S1			small streams to large rivers with flowing water in TN Basin tributaries; stable gravel with interstitial sand
	<i>Pseudanophthalmus fastigatus</i>	Tapered Cave Beetle	G1	S1?			Caves
	<i>Pseudanophthalmus georgiae</i>	Georgian Cave Beetle	G1G2	S1?			Caves
	<i>Villosa nebulosa</i>	Alabama Rainbow	G3	S2			Large rivers to small streams; flowing water with gravel and sand substrates, may be found in fine sediments among cobble and boulders
	<i>Villosa umbrans</i>	Coosa Creekshell	G2	S2			gravel and sand substrates in shoal and riffle habitats
	<i>Villosa vanuxemensis</i>	Mountain Creekshell	G4	S3			Large to medium sized TN Basin tributaries
	<i>Myotis grisescens</i>	Gray Myotis	G4	S1	LE	E	Caves with flowing water or with large creeks or bodies of water nearby, also storm sewers and artificial caves in other states. Unknown summer roosts-eastern GA. range.
	<i>Myotis leibii</i>	Eastern Small-footed Myotis	G4	S2			Caves; mines; abandoned buildings, bridges, rock shelters in Mtn. areas; high elevation talus fields
	<i>Myotis lucifugus</i>	Little Brown Myotis	G3	S3			Caves and Mines; mixed forests, structures, bat houses
	<i>Myotis septentrionalis</i>	Northern Myotis	G1G2	S2S3	LT	T	Caves and mines in winter; riparian areas, upland forests, cracks and crevices in dead and live trees in summer
	<i>Myotis sodalis</i>	Indiana Myotis	G2	S1	LE	E	Limestone caves with pools; wooded areas near streams, upland forests, large snags in open areas including ridge tops
	<i>Neotoma floridana haematoresia</i>	Southern Appalachian Woodrat	G5T4 Q	S3			High-elevation forests; rock ledges
	<i>Perimyotis subflavus</i>	Tri-colored Bat	G2G3	S5			Open forests with large trees and woodland edges; roost in tree foliage; hibernates in caves or mines with high humidity
	<i>Sorex hoyi</i>	Pygmy Shrew	G5	S2			Mountain bogs; grassy openings in high elevation forests
	<i>Graptemys geographica</i>	Northern Map Turtle	G5	S1		R	large streams and rivers
	<i>Lampropeltis triangulum triangulum</i>	Eastern Milk Snake	G5T5	S2			Open woods; fields; forests; rock outcrops



**Other Occurrences**

Taxonomy	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Habitat in Walker County, Georgia
Natural Community	Asplenium montanum - Heuchera parviflora var. parviflora - Silene rotundifolia Sparse Vegetation	Cumberland Plateau Sandstone Cliff (Dry Type)	G3G4	SNR			Georgia habitat information not available
	Bare rock/lichens, cu/rv sandstone outcrop	Sandstone Outcrop Rock/lichens	GNR	SNR			Georgia habitat information not available
	Cu/rv cave	Cumberland Plateau/ridge and Valley Cave	GNR	SNR			Georgia habitat information not available
	Cu/rv submesic needleleaf ever. forest	Cedar Glade	GNR	SNR			Georgia habitat information not available
	Diamorpha smallii - Minuartia glabra Sandstone Herbaceous Vegetation	Cumberland Sandstone Flatrock Glade	G2G3	SNR			Georgia habitat information not available
	Forest, sagpond	Sagpond Forest	GNR	SNR			Georgia habitat information not available
	Herbaceous veg., cu-rv sandstone outcrop	Sandstone Outcrop Herb Community	GNR	SNR			Georgia habitat information not available
	Mountain spring	Mountain Spring	GNR	SNR			Georgia habitat information not available
	Quercus stellata - Pinus virginiana / (Schizachyrium scoparium, Piptochaetium avenaceum) Woodland	Red Knobs Sandstone Post Oak - Virginia Pine Woodland	G2?	SNR			Georgia habitat information not available
	(Salix caroliniana, Rhododendron arborescens) / Andropogon gerardii - Baptisia australis - (Solidago simplex ssp. randii) Herbaceous Vegetation	Cumberland Riverside Scour Prairie	G2?	SNR			Georgia habitat information not available
	Schizachyrium scoparium - Sorghastrum nutans - Silphium spp. Herbaceous Vegetation	Southern Ridge and Valley Dry-Mesic Grasslands	G2?	SNR			Georgia habitat information not available
	Shrub/scrub veg., cu-rv sandstone outcrop	Sandstone Outcrop Shrub/scrub Community	GNR	SNR			Georgia habitat information not available
	Tsuga canadensis - (Fagus grandifolia, Tilia americana var. heterophylla) / Magnolia tripetala Forest	Cumberland/Appalachian Hemlock - Hardwood Cove Forest	G4	SNR			Georgia habitat information not available

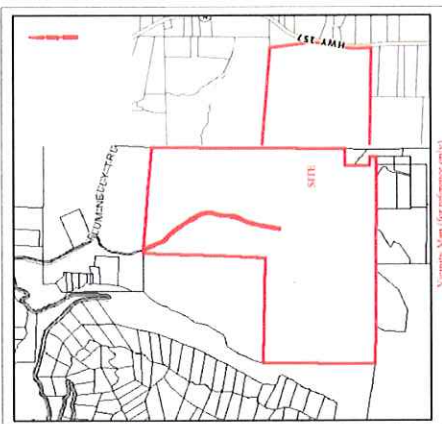
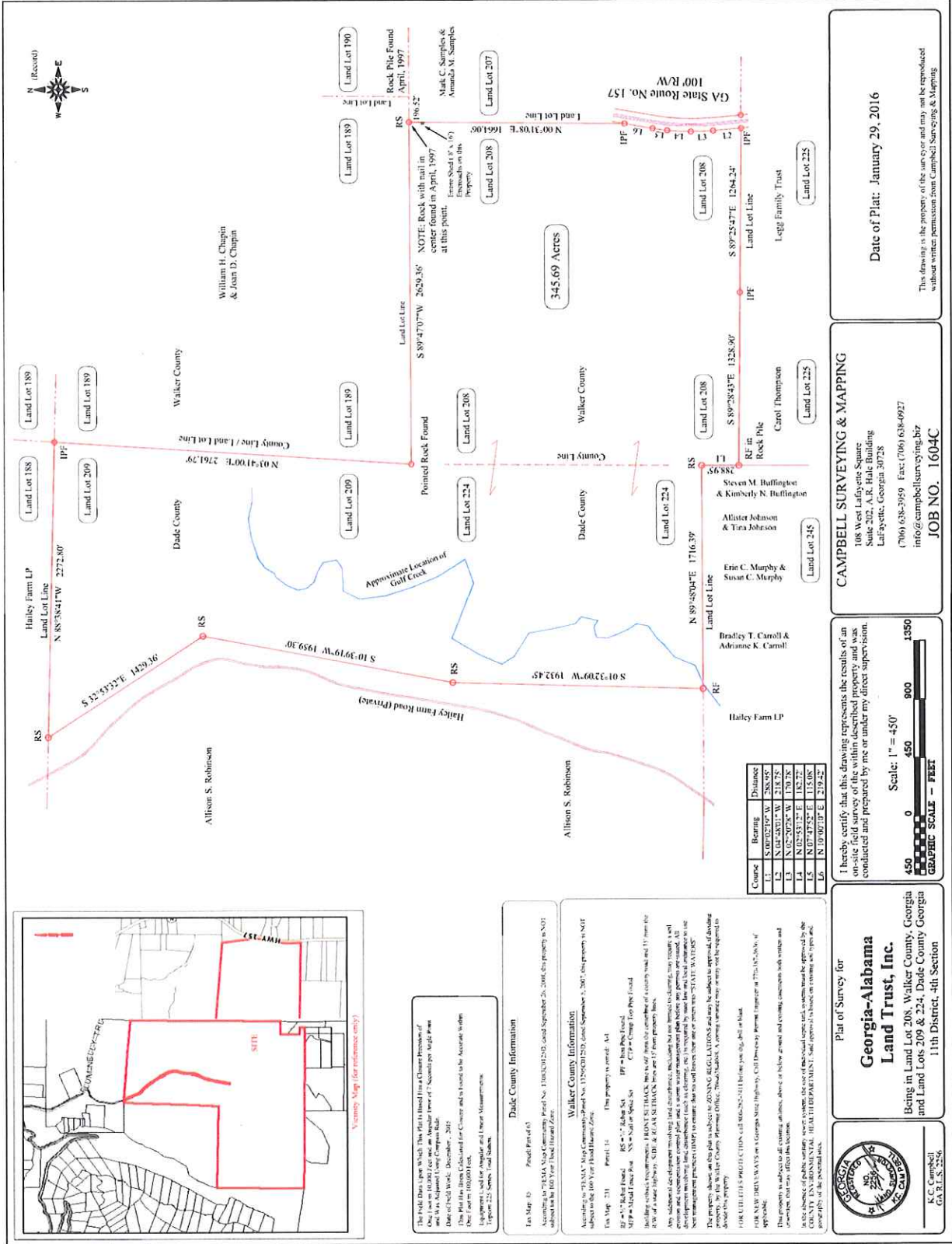
**Table 4: Plant List of Dominant, Co-Dominant and Understory Species Identified on Easement Property During Site Visit**

Common Name	Scientific Name
<b>Dominant Species</b>	
Pine (Shortleaf)	<i>Pinus echinata</i>
Pine (Virginia)	<i>Pinus virginiana</i>
Pine (Loblolly)	<i>Pinus taeda</i>
Oak (Black)	<i>Quercus velutina</i>
Oak (Southern Red)	<i>Quercus falcata</i>
Oak (Northern Red)	<i>Quercus rubra</i>
Oak (Chestnut)	<i>Quercus prinus</i>
Oak (Scarlet)	<i>Quercus coccinea</i>
Oak (Water)	<i>Quercus nigra</i>
Oak (White)	<i>Quercus alba</i>
Hickory (Mockernut)	<i>Carya tomentosa</i>
Hickory (Pignut)	<i>Carya glabra</i>
Eastern Hemlock	<i>Tsuga canadensis</i>
Ash (Carolina)	<i>Fraxinus caroliniana</i>
American Beech	<i>Fagus grandifolia</i>
Maple (Red)	<i>Acer rubrum</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Sycamore	<i>Plantanus occidentalis</i>
Yellow Poplar	<i>Liriodendron tulipifera</i>
<b>Co-Dominant Species</b>	
Maple (Southern Sugar)	<i>Acer barbatum</i>
Persimmon	<i>Diospyros virginiana</i>
Sourwood	<i>Oxydendrum arboreum</i>
Red Cedar	<i>Juniperus virginiana</i>
Elm (American)	<i>Ulmus americana</i>
Elm (Winged)	<i>Ulmus alata</i>
Locust (Black)	<i>Robinia pseudo-acacia</i>
Blackgum	<i>Nyssa salvatica</i>
Cucumber-Tree	<i>Magnolia acuminata</i>
Cherry (Black)	<i>Prunus serotina</i>
Willow (Black)	<i>Salix nigra</i>
Black Walnut	<i>Juglans nigra</i>
<b>Understory Tree &amp; Shrub Species</b>	
Alder	<i>Alnus serrulata</i>
American Holly	<i>Ilex opaca</i>



Buckeye (Red)	<i>Aesculus pavia</i>
Devilwood	<i>Osmanthus americanus</i>
Dogwood (flowering)	<i>Cornus florida</i>
Hawthorn sp.	<i>Crataegus sp.</i>
Redbud	<i>Cercis canadensis</i>
Sassafrass	<i>Sassafrass albidum</i>
Sparkleberry	<i>Vaccinium arboreum</i>
Sumac (Winged)	<i>Rhus copallinum</i>
Staghorn Sumac	<i>Rhus hirta</i>
Rhododendron	<i>Rhododendron spp.</i>
Mountain Laurel	<i>Kalmia latifolia</i>
Pawpaw	<i>Asimina tribola</i>
Chinese Privet	<i>Ligustrum sinense</i>
Dwarf Huckleberry	<i>Gaylussacia dumosa</i>
Elliot Blueberry	<i>Vaccinium elliotii</i>
Sweetshrub	<i>Calycanthus floridus</i>
Mapleleaf Viburnum	<i>Viburnum acerifolium</i>
Witch-hazel	<i>Hamamelis virginiana</i>
Wild Azalea	<i>Rhododendron canascens</i>
Mountain Mint	<i>Pycnanthemum tenuifolium</i>
Eastern Baccharis	<i>Baccharis halimifolia</i>
<b>Understory Vine, Grass &amp; Forb Species</b>	
Cat Sawbrier	<i>Smilax glauca</i>
Catbrier	<i>Smilax bona-nox</i>
Highbush Blackberry	<i>Rubus argutus</i>
Japanese Honeysuckle	<i>Lonicera japonica</i>
Lanceleaf Greenbrier	<i>Smilax amallii</i>
Muscadine Grape	<i>Vitis rotundifolia</i>
Poison-ivy	<i>Toxicodendron radicans</i>
Roundleaf Greenbrier	<i>Smilax rotundifolia</i>
Trumpet Honeysuckle	<i>Lonicera sempervirens</i>
Trumpetcreeper	<i>Campsis radicans</i>
Virginia Creeper	<i>Parthenocissus quinquefolia</i>

# Appendix 6: Survey



**Survey Map (for reference only)**

The field data upon which this Plat is based is a Closure Perimeter of 1000 feet (one mile) for one or more of the following: 1/4 Section, 1/2 Section, 3/4 Section, 1/2 Mile, 1/4 Mile, 1/8 Mile, 1/16 Mile, 1/32 Mile, 1/64 Mile, 1/128 Mile, 1/256 Mile, 1/512 Mile, 1/1024 Mile, 1/2048 Mile, 1/4096 Mile, 1/8192 Mile, 1/16384 Mile, 1/32768 Mile, 1/65536 Mile, 1/131072 Mile, 1/262144 Mile, 1/524288 Mile, 1/1048576 Mile, 1/2097152 Mile, 1/4194304 Mile, 1/8388608 Mile, 1/16777216 Mile, 1/33554432 Mile, 1/67108864 Mile, 1/134217728 Mile, 1/268435456 Mile, 1/536870912 Mile, 1/1073741824 Mile, 1/2147483648 Mile, 1/4294967296 Mile, 1/8589934592 Mile, 1/17179869184 Mile, 1/34359738368 Mile, 1/68719476736 Mile, 1/137438953472 Mile, 1/274877906944 Mile, 1/549755813888 Mile, 1/1099511627776 Mile, 1/2199023255552 Mile, 1/4398046511104 Mile, 1/8796093022208 Mile, 1/17592186044416 Mile, 1/35184372088832 Mile, 1/70368744177664 Mile, 1/140737488355328 Mile, 1/281474976710656 Mile, 1/562949953421312 Mile, 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