Kettle Creek Conservation Easement
Baseline Documentation Report

Kettle Creek Tract
Wilkes County, Georgia

Prepared For:
Southeast Regional Land Conservancy, Inc.
Building E, Suite 102
6111 Peachtree-Dunwoody Rd
Atlanta GA 30328
&
Kettle Creek Holdings, LLC
34 Old Ivy Rd. NE, Suite 200
Atlanta, GA 30342

Prepared By:
Karin Heiman, Consulting Biologist
367 Onteora Blvd., Asheville NC 28803
828-277-9955 karinh11@yahoo.com

20 December, 2013

SIGNATORY PAGE

The undersigned agree and acknowledge that this Baseline Report, together with supporting photographic documentation, maps and figures, is an accurate representation of the Property at the time of the conveyance of the conservation easement thereon and that the Inventory was available to the grantor and grantee prior to conveyance of the conservation easement to the Southeast Regional Land Conservancy.

FOR THE GRANTEE - SOUTHEAST REGIONAL LAND CONSERVANCY, INC.:

James C. Wright
Executive Director

12/30/13
Date

FOR THE GRANTOR – Kettle Creek Holdings, LLC:

By Kettle Creek Property Manager LLC, a Georgia limited liability company, its Managing Member
Charles LeGette, Jr., its Manager

12/30/13
Date

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INTRODUCTION

The Kettle Creek conservation easement will protect approximately 968 acres in Wilkes County, Georgia. The site is just southwest of the Town of Washington. Two well-travelled public roads, Quaker Springs and Sandy Cross roads, run through the middle of the property. The easement will support scenic natural views for these roads. It is situated nearly evenly between the metropolitan areas of Athens and Augusta, within the Piedmont (also classified as the Midland Physiographic portion of the Piedmont Province of the Metamorphic Region of the Appalachian Highlands). The landform is generally gently rolling topography, with a combination of open and forested land. The site will provide a permanent green space in a developing area.

The easement protects long frontages on both Kettle Creek and the Little River, with the confluence occurring on the property. The watershed is part of the Savannah River Basin. Wilkes County is within the Central Savannah River Resource Conservation & Development Council Area (http://csrarcd.org/) which encompasses thirteen counties in east central Georgia along the Savannah River. Due to the importance of the Savannah River Basin, the Council was formed in 1990 to work with local, state, and federal agencies to assist local people in planning and carrying out activities that conserve natural resources, support economic development, enhance the environment, and improve the standard of living for all citizens. Quaker Springs also occurs within the easement. Historically it was said to be such a significant spring that a settlement formed along it (no structures currently exist at this location). Both the springs and an unnamed tributary in the western portion of the tract have a confluence with the Little River in the easement.

The easement will protect pine-hardwood forests, pine forests, oak-hickory pine forests, bottomland hardwood forests, alluvial forests, a river, a creek, springs, and a hayfield. The majority of the land is timberland. Much of the pine forest had been cut several years ago. Natural succession is occurring, with good tree regeneration. More mature pine and hardwood forests occur in the northern portion of the tract. The drainages and low areas are covered in mature hardwood forest. Occurring in the river corridor are some of the largest river birch and hackberry trees the author has seen. A river, creek, springs and wet beaver dam areas are to be found. Natural communities (extrapolated from acreages calculated by K. Pettay in the Forest Management Plan, 2013) include mixed pine / hardwood (509 acres), pine-dominated forest (173 acres), mature hardwood (243 acres), and pasture/hayfield (47 acres). Elevations range from approximately 395 to 505 feet above mean sea level.

The Significant Habitat Area is composed of the mature hardwood forests generally following the low ground, plus the Quaker Springs site, totaling approximately 243 acres. These areas are of special ecological significance and are to be protected from logging, road building, and other disturbances. The mature hardwood areas are especially important in that they provide wildlife attributes for a wide range of species. Shelter and denning areas are found on the forest floor and in tree cavities. The flaky bark of mature trees provides shelter for bats and other animals. The oak and hickory trees produce a mast crop important for a wildlife winter food source. The mesic soils are covered by a

diversity of herbaceous species. These areas are included in the easement's Significant Habitat Areas.

The tract also has historical significance. Kettle Creek flows into the Little River near the Tyrone community in Wilkes County [which is the location of the easement]. It likely takes its name from a local fish trap, called a kittle. During the American Revolution (1775-83) several incidents occurred along its banks. The most important event to occur here took place on Sunday, February 14, 1779. On that morning 600 American supporters [some reports say 800] of the British cause, popularly known as Loyalists or Tories, encamped atop a hill in a bend of the creek. Elijah Clarke and other patriot soldiers were able to defeat the loyalists and prevented the British from invading northern Georgia. Within the easement is a small well-kept historic cemetery. The oldest legible date noted during the survey was 1817. There may possibly be graves from the Revolutionary War period, but this was difficult to discern. The cemetery was included in one of the building envelope areas and is to be protected.

Numerous water features are present on the tract, including long frontage on the Little River and Kettle Creek, and will be protected within the easement. As part of the 1996 Farm Bill (PUBLIC LAW 104–127—APR. 4, 1996, the FEDERAL AGRICULTURE IMPROVEMENT AND REFORM ACT OF 1996), the National Resources Conservation Service (NRCS) started the National Conservation Buffers Initiative to encourage landowners in agricultural and other urban and rural settings to install buffer strips primarily to improve the quality of our Nation's waters.

The protection of the river, creek, tributaries, wetlands, streams, and springs allows for retention of many public benefits that will be increasingly important in the future. These include reduced storm water runoff, ground water recharge, retention of permeable surfaces, filtering runoff water, decreasing sedimentation to downstream water bodies, and protecting channels and banks from scour and erosion. The property has creeks that would be classified as State Waters, as well as containing good quality wetlands, springs, and ponds. The easement helps to enhance water quality in the watershed downstream. These water features provide a habitat for aquatic organisms, reproductive habitat for terrestrial amphibians, drinking sources for wildlife, and many other benefits. The wetlands are also crucial for many plant species requiring wetland habitat, as well as animals such as crayfish and amphibians.

Continuity, such as afforded by this large property, is an important ecological concept for sustainable habitat for plant and animal populations as well as ecological communities. Habitat value is enhanced exponentially when connectivity occurs because habitat potential and diversity is increased. Large land area means that the species within can maintain better genetic diversity and larger foraging/nesting habitats. Continuity along river and stream corridors, such as those in the easement, are very important for animal migration.

Conservation values recognized under the Georgia Department of Natural Resources Comprehensive Wildlife Conservation Strategy (CWCS) program include 1) high priority

habitats including Oak-hickory-pine forest, large streams, and small streams, and 2) at least 100-foot buffer protection along streams and wetlands.

Based on the facts that the property is large in size, contains natural communities such as hardwood forests, wetlands, creek corridors, and other habitats, and is somewhat proximal to known occurrences of rare species, there is good potential for occurrences of rare species within the conservation property. Numerous rare species occurrences are recorded for Wilkes County. The easement provides potential habitat for listed numerous species, including *Aimophila aestivalis* (Bachman's Sparrow), *Hemidactylium scutatum* (Four-toed Salamander), *Cambarus strigosus* (Lean Crayfish), *Distocambarus devexus* (Broad River Burrowing Crayfish), *Nestronia umbellula* (Indian Olive), *Amorpha schwerinii* (Schwerin Indigo-bush), *Cypripedium acaule* (Pink Ladyslipper), *Draba aprica* (Sun-loving Draba), *Quercus oglethorpensis* (Oglethorpe Oak), and *Trillium discolor* (Pale Yellow Trillium).

A number of bird species considered important in the Partners in Flight program were noted even during this wintertime survey. Other species are likely to be found during breeding and migration times. The species include downy woodpecker, eastern towhee, eastern bluebird, belted kingfisher, tufted titmouse, and northern flicker. Partners in Flight (aka. Compañeros en Vuelo / Partenaires d'Envol) was launched in 1990 in response to growing concerns about declines in the populations of many land bird species. The initial focus was on neotropical migrants, species that breed in the Nearctic (North America) and winter in the Neotropics (Central and South America), but the focus has spread to include all landbirds. The central premise of Partners in Flight (PIF) has been that the resources of public and private organizations in the Western Hemisphere must be combined, coordinated, and increased in order to achieve success in conserving bird populations in this hemisphere. Partners in Flight is a cooperative effort involving partnerships among federal, state and local government agencies, philanthropic foundations, professional organizations, conservation groups, industry, the academic community, and private individuals.

The tract is within the Savannah River Flyway near the convergence with the Atlantic Flyway (see discussion below). This is an important migratory route for both game and non-game avian species. The easement's undeveloped green space helps to protect migration routes in perpetuity.

The reserved rights are structured in the Easement Agreement such that they will not impair the conservation values of the property. Within the easement are three building envelopes of approximately one to two acres each. The area adjacent to the historic cemetery was added to one of the building envelopes. The cemetery is to be protected. Significant reserved rights permitted in the conservation easement agreement include timber harvesting activities, hunting, recreational ATV use by owners and their guests, fishing, and other activities of quiet enjoyment of the property. Prescribed burning every 3 to 5 years is part of the Forest Management Plan and is highly encouraged by the land trust because it supports healthy forests, helps to maintain conservation values, reduces chances for catastrophic fires, improves aesthetics, and other values.

No commercial timber harvest is to be conducted for at least twenty years, with the exception of thinning operations only to the level necessary. Timber harvest activities are to be conducted in accordance with all applicable governmental regulations or guidelines covering such activities and through the Forest Management Plan. On easement land, management for Conservation Purposes and listed plant or animal species has top priority, in timber management decisions. Every future plan should be designed to protect soil stability, water quality, ecology, and other conservation values of the Conservation Area. Commercial harvest is prohibited in the Significant Habitat Areas (see Significant Habitat Map in Appendix I and in Forest Management Plan by K. Pettay 2013). This will include approximately 243 acres. This map should be consulted whenever activities are proposed. Notification to the land trust is needed prior to timber management and earth moving activities, with the exception of prescribed burning. The FMP provides for a conservative sawtimber rotation in appropriate areas.

For future site-preparation methods, no mechanical methods that disturb soil or chemical methods are to be used. Mulching may be used if necessary. Prescribed burning is recommended. Occasional new firebreaks may be needed. Vegetation control utilizing herbicide spraying is prohibited on the tract, with the exception of specific instances for small areas to be agreed upon between the landowner and the SERLC. Herbicide use within ten feet of a water feature (ie. lake, pond, stream, spring, wetland) is prohibited. Any and all actions to retain the mature forests are highly encouraged by the land trust. Anthropocentric features within the tract include a historic cemetery approx. (0.3 acres in size) forest roads, old log landing decks, a small wildlife food plot, a small slave cabin with several pieces of old farm equipment (see photos), a small fallen-in wooden cattle pen near road (see photos), a hayfield / pasture, several hunt stands, occasional fences and gates, and a small electric line. Several of small cabins and trailers as a hunt camp are within one of the building envelopes.

The conservation values of the easement are discussed in the section to follow.

Conservation Values

- The Kettle Creek Conservation Easement provides a permanent green space in a developing area between metropolitan areas. While the site quite rural and forested, there is development pressure around the region.

- Two well-travelled public roads, Quaker Springs and Sandy Cross roads, run through the middle of the property. The easement will support scenic natural views for these roads.

- The easement protects long frontages on both Kettle Creek and the Little River, with the confluence occurring on the property. The watershed is part of the Savannah River Basin. Wilkes County is within the Central Savannah River Resource Conservation & Development Council Area (http://csrarcd.org/) which encompasses thirteen counties in east central Georgia along the Savannah River. Due to the importance of the Savannah River Basin, the Council was formed in 1990 to work with local, state, and federal agencies to assist local people in planning and carrying out activities that conserve natural resources, support economic development, enhance the environment, and improve the standard of living for all citizens. Quaker Springs also occurs within the easement. Historically it was said to be so significant that a settlement formed along it (no structures currently exist at this location). Both the springs and an unnamed tributary in the western portion of the tract have a confluence with the Little River in the easement.

- Numerous water features (mentioned above) are present on the tract and will be protected within the easement. As part of the 1996 Farm Bill (PUBLIC LAW 104–127—APR. 4, 1996, the FEDERAL AGRICULTURE IMPROVEMENT AND REFORM ACT OF 1996), the National Resources Conservation Service (NRCS) started the National Conservation Buffers Initiative to encourage landowners in agricultural and other urban and rural settings to install buffer strips primarily to improve the quality of our Nation's waters.

- The protection of the river, creek, tributaries, wetlands, streams, and springs allows for retention of many public benefits that will be increasingly important in the future. These include reduced storm water runoff, ground water recharge, retention of permeable surfaces, filtering runoff water, decreasing sedimentation to downstream water bodies, and protecting channels and banks from scour and erosion. The property has creeks that would be classified as State Waters, as well as containing good quality wetlands, springs, and ponds. The easement helps to enhance water quality in the watershed downstream. These water features provide a habitat for aquatic organisms, reproductive habitat for terrestrial amphibians, drinking sources for wildlife, and many other benefits. The wetlands are also crucial for many plant species requiring wetland habitat, as well as animals such as crayfish and amphibians.

- The easement will protect pine-hardwood forests, pine forests, oak-hickory pine forests, bottomland hardwood forests, alluvial forests, a river, a creek, springs, and a hayfield. The majority of the land is timberland. Much of the pine forest had been cut several years ago. Natural succession is occurring, with good tree regeneration. More mature pine and hardwood forests occur in the northern portion of the tract. The drainages and low areas are covered in hardwood forest. Important water features include a river, creek, springs, wetlands, and beaver dam areas.

- The mature hardwood areas provide significant wildlife attributes for a wide range of species and are to be protected as Significant Habitats. Shelter and denning areas are found on the forest floor and in tree cavities. The flaky bark of mature trees provides shelter for bats and other animals. The oak and hickory trees produce a mast crop important for a wildlife winter food source.

- Continuity, such as afforded by this large property, is an important ecological concept for sustainable habitat for plant and animal populations as well as ecological communities. Habitat value is enhanced exponentially when connectivity occurs because habitat potential and diversity is increased. Large land area means that the species within can maintain better genetic diversity and larger foraging/nesting habitats.

- The tract is within the Savannah River Flyway near the convergence with the Atlantic Flyway (see discussion below). This is an important migratory route for both game and non-game avian species. The easement's undeveloped green space helps to protect migration routes in perpetuity. During the site survey visit, a 'kettle' of hawks was observed under migration (see photos).

- Conservation values recognized under the Georgia Department of Natural Resources Comprehensive Wildlife Conservation Strategy (CWCS) program include 1) high priority habitats including Oak-hickory-pine forest, large streams, and small streams, and 2) at least 100-foot buffer protection along streams and wetlands.

- The easement will protect at least of one hundred fifty plant species, as documented in this survey.

- Based on the facts that the property is large in size, contains natural communities such as hardwood forests, wetlands, creek corridors, and other habitats, and is somewhat proximal to known occurrences of rare species, there is good potential for occurrences of rare species within the conservation property. Numerous rare species occurrences are recorded for Wilkes County. The easement provides potential habitat for listed numerous species, including *Aimophila aestivalis* (Bachman's Sparrow), *Hemidactylium scutatum* (Four-toed Salamander), *Cambarus strigosus* (Lean Crayfish), *Distocambarus devexus* (Broad River Burrowing Crayfish), *Nestronia umbellula* (Indian Olive), *Amorpha schwerinii*

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- A newly realized conservation value that are gaining in global importance and recognition is provided by retaining forests, especially those not put under rotation. Forest loss and depletion accounts for 25% of worldwide CO2 emissions which are linked to global warming. Intact forests absorb CO2. Young forests provide a carbon gain of about 140 tons of carbon per acre (Wayburn, 2008). Conservation forests 200 years old provide a carbon gain of about 275 tons per acre. Carbon sequestration has been studied on the tract (see stewardship plan).

METHODS

The site was visited on 25 November, 2013. Survey work was done on foot and four-wheel drive vehicle. The Georgia Natural Heritage Program (NHP, 2013) was consulted for data on known occurrences of rare species within the county. Plant taxonomy in the report follows Radford et al (1968), Weakley (2012), and NHP (2013). Animal taxonomy follows NHP (2013).

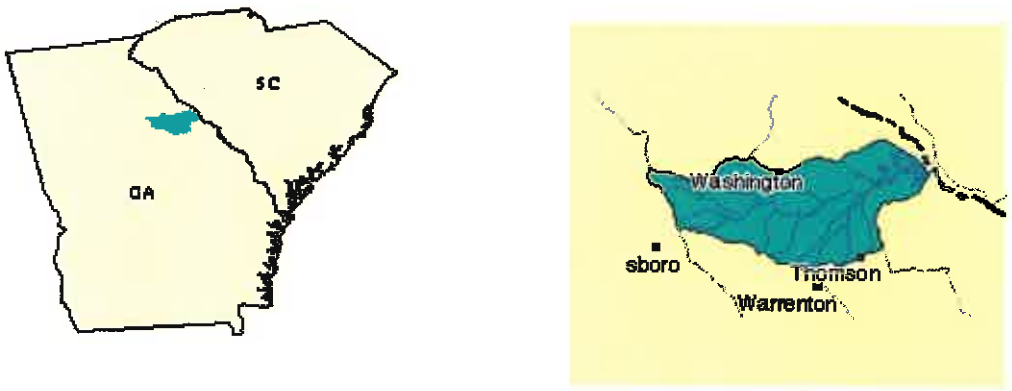
Global, Federal, and State ranking information for rare species is maintained by the State Natural Heritage Program and the US Fish and Wildlife Service. Any rare species discussed in the following text will follow the standardized ranking system. Global ranks are defined thusly: G1 = critically imperiled globally because of extreme rarity (5 or fewer occurrences), G2 = Imperiled globally because of rarity (6 to 20 occurrences), G3 = Rare or uncommon (localized within range or narrowly endemic to special habitats, generally 20-100 occurrences), G4 = Apparently secure, G5 = Demonstrably secure. State ranking follow the same categories: S1 = critically imperiled in state because of extreme rarity (5 or fewer occurrences), S2 = Imperiled in state because of rarity (6 to 20 occurrences), S3 = Rare or uncommon (localized within range or narrowly endemic to special habitats, generally 20-100 occurrences), S4 = Apparently secure, S5 = Demonstrably secure.

RESULTS AND DISCUSSION

Natural Features

The Kettle Creek conservation easement will protect approximately 968 acres in Wilkes County, Georgia. The site is just southwest of the Town of Washington. Two well-travelled public roads, Quaker Springs and Sandy Cross roads, run through the middle of the property. The easement will support scenic natural views for these roads. It is situated nearly evenly between the metropolitan areas of Athens and Augusta, within the Piedmont (also classified as the Midland Physiographic portion of the Piedmont Province of the Metamorphic Region of the Appalachian Highlands). The landform is generally gently rolling topography, with a combination of open and forested land. The site will provide a permanent green space in a developing area.

The easement protects long frontages on both Kettle Creek and the Little River, with the confluence occurring on the property. Some reaches of Kettle Creek appear to be quite straight and may be good candidates for stream mitigation. Water is generally quite clear-running. The watershed is part of the Savannah River Basin. Wilkes County is within the Central Savannah River Resource Conservation & Development Council Area (http://csrarcd.org/) which encompasses thirteen counties in east central Georgia along the Savannah River. Due to the importance of the Savannah River Basin, the Council was formed in 1990 to work with local, state, and federal agencies to assist local people in planning and carrying out activities that conserve natural resources, support economic development, enhance the environment, and improve the standard of living for all citizens. Quaker Springs also occurs within the easement. Historically it was said to be such a significant spring that a settlement formed along it (no structures currently exist at this location). Both the springs and an unnamed tributary in the western portion of the tract have a confluence with the Little River in the easement.



Illustrations for the Little River Watershed. The Little River flows into the Savannah River Watershed.

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The Significant Habitat Area is composed of the mature hardwood forests generally following the low ground, plus the Quaker Springs site, totaling approximately 243 acres. These areas are of special ecological significance and are to be protected from logging, road building, and other disturbances. The mature hardwood areas The mature hardwood areas are especially important in that they provide wildlife attributes for a wide range of species. Shelter and denning areas are found on the forest floor and in tree cavities. The flaky bark of mature trees provides shelter for bats and other animals. The oak and hickory trees produce a mast crop important for a wildlife winter food source. The mesic soils are covered by a diversity of herbaceous species. These areas are included in the easement's Significant Habitat Areas.

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The wide corridor of Kettle Creek

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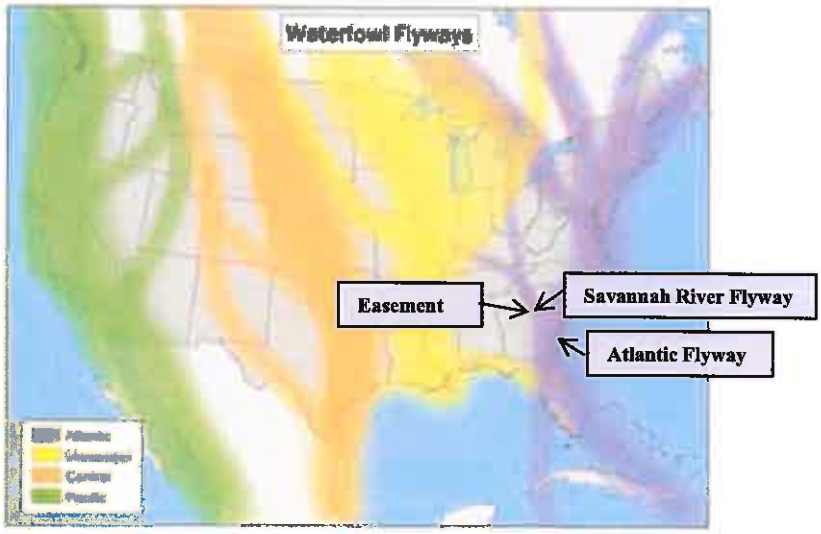


The reserved rights are structured in the Easement Agreement such that they will not impair the conservation values of the property. Within the easement are three building envelopes of approximately one to two acres each. The area adjacent to the historic cemetery was added to one of the building envelopes. The cemetery is to be protected.

Significant reserved rights permitted in the conservation easement agreement include timber harvesting activities, hunting, recreational ATV use by owners and their guests, fishing, and other activities of quiet enjoyment of the property. Prescribed burning every 3 to 5 years is part of the Forest Management Plan and is highly encouraged by the land trust because it supports healthy forests, helps to maintain conservation values, reduces chances for catastrophic fires, improves aesthetics, and other values.

No commercial timber harvest is to be conducted for at least twenty years, with the exception of thinning operations only to the level necessary. Timber harvest activities are to be conducted in accordance with all applicable governmental regulations or guidelines covering such activities and through the Forest Management Plan. On easement land, management for Conservation Purposes and listed plant or animal species has top priority, in timber management decisions. Every future plan should be designed to protect soil stability, water quality, ecology, and other conservation values of the Conservation Area. Commercial harvest is prohibited in the Significant Habitat Areas (see Significant Habitat Map in Appendix I and in Forest Management Plan by K. Pettay 2013). This will include approximately 243 acres. This map should be consulted whenever activities are proposed. Notification to the land trust is needed prior to timber management and earth moving activities, with the exception of prescribed burning. The FMP provides for a conservative sawtimber rotation in appropriate areas.

For future site-preparation methods, no mechanical methods that disturb soil or chemical methods are to be used. Mulching may be used if necessary. Prescribed burning is recommended. Occasional new firebreaks may be needed. Vegetation control utilizing herbicide spraying is prohibited on the tract, with the exception of specific instances for small areas to be agreed upon between the landowner and the SERLC. Herbicide use within ten feet of a water feature (ie. lake, pond, stream, spring, wetland) is prohibited. Any and all actions to retain the mature forests are highly encouraged by the land trust. Anthropocentric features within the tract include a historic cemetery approx. (0.3 acres in size) forest roads, old log landing decks, a small wildlife food plot, a small slave cabin with several pieces of old farm equipment (see photos), a small fallen-in wooden cattle pen near road (see photos), a hayfield / pasture, several hunt stands, occasional fences and gates, and a small electric line. Several of small cabins and trailers as a hunt camp are within one of the building envelopes.

Within the easement are three designated building envelopes of approximately one to two acres each (see map in Appendix I). These are labeled on the map as tracts 4, 5 & 6. Tracts 4 and 5 are along paved roads so as to cause as little disturbance as possible to the easement. Utilities will not need to run through the easement land. Tract 6 is located at an existing hunt camp a short distance off of the paved road to utilize and already disturbed tract. Utilities and driveway should continue to follow the existing forest road. One dwelling structure is allowed to be built on each of the three tracts. No rights for placing septic systems within the easement area are retained. Therefore the entire septic system should be placed within the envelope. Building envelopes were placed far removed from Significant Habitat Areas.

Forests within the easement include a variety of tree species. These include loblolly pine (*Pinus taeda*), various hickories including shagbark hickory (*Carya* spp.), swamp chestnut oak (*Quercus michauxii*), laurel oak (*Quercus laurifolia*)white oak (*Quercus alba*), water oak (*Quercus nigra*), willow oak (*Quercus phellos*), cherrybark oak (*Quercus pagoda*), post oak (*Quercus stellata*), scarlet oak (*Quercus coccinea*), southern red oak (*Quercus falcata*), southern sugar maple (*Acer floridanum*), sweetgum (*Liquidambar styraciflua*), American beech (*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), sourwood (*Oxydendrum arboreum*), hackberry (*Celtis* sp.), black willow (*Salix nigra*), honey locust (*Gleditsia triacanthos*), black gum (*Nyssa sylvatica*), sassafras (*Sassafras albidum*), red maple (*Acer rubrum*), mimosa (*Albizia julibrissin*), black walnut (*Juglans nigra*), American holly (*Ilex opaca*), ironwood (*Carpinus caroliniana*), river birch (*Betula nigra*), box elder (*Acer negundo*), basswood (*Tilia* sp.), flowering dogwood (*Cornus florida*), red cedar (*Juniperus virginiana*), red bud (*Cercis canadensis*), flowering dogwood (*Cornus florida*), hawthorn (*Crataegus* sp.), persimmon (*Diospyros virginiana*), elm (*Ulmus* sp.), winged elm (*Ulmus alata*), sycamore (*Platanus occidentalis*), wild cherry (*Prunus serotina*), chinaberry (*Melia azedarach*), ash (*Fraxinus* sp.) and others.

Shrubs and vines present include blackberry (*Rubus argutus*), blueberry (*Vaccinium* sp.), farkleberry (*Vaccinium arboretum*), deerberry (*Vaccinium stamineum*), Virginia creeper (*Parthenocissus quinquefolia*), greenbrier (*Smilax* spp.), sumac (*Rhus* sp.), trumpetvine (*Campsis radicans*), poison ivy (*Toxicodendron radicans*), Russian olive (*Elaeagnus* sp.), pawpaw (*Asimina* sp.), privet (*Ligustrum sinense*), dewberry (*Rubus* sp.), bottlebrush buckeye (*Aesculus parviflora*), river cane (*Arundinaria tecta*), buttonbush (*Cephalanthus occidentalis*), sweetshrub (*Calycanthus floridus*), crossvine (*Bignonia capreolata*), huckleberry (*Gaylussacia* sp.), Japanese honeysuckle (*Lonicera japonica*), American beautyberry (*Callicarpa americana*), elderberry (*Sambucus canadensis*), alder (*Alnus serrulata*), wild jessamine (*Gelsemium sempervirens*), multiflora rose (*Rosa multiflora*), muscadine (*Vitis rotundifolia*), buckthorn (*Frangula* sp.), trifoliate orange (*Citrus trifoliata*), and others.

Herbaceous species include fish-on-a-string (*Chasmanthium latifolium*), henbit (*Lamium amplexicaule*), stork's-bill (*Erodium cicutarium*), false-nettle (*Boehmeria cylindrica*), grapefern (*Botrichium* sp.), chainfern (*Woodwardia* sp.), a variety of broomsedges (*Andropogon* spp.), silky oat-grass (*Danthonia sericea*), lyreleaf sage (*Salvia lyrata*), mayapple (*Podophyllum peltatum*), wooly manna grass (*Scirpus cyperinus*), black-eyed susan (*Rudbeckia* sp.), St. Johnswort (*Hypericum* sp.), elephantfoot (*Elephentopus* sp.), sourclover (*Oxalis* sp.), sedges (*Carex* spp.), Christmas fern (*Polystichum acrostichoides*), nutrush (*Scleria* sp.), partridgeberry (*Mitchella repens*), snakeroot (*Prenanthes* sp.), butterfly pea (*Centrosema* sp.), ebony spleenwort (*Asplenium platyneuron*), violet (*Viola* sp.), asters (*Aster* spp.), bracken fern (*Pteridium aquilinum*), wild sunflower (*Helianthus* sp.), beggars ticks (*Desmodium* spp.), switchgrass (*Dichanthelium* spp.), fescue (*Festuca* sp.), thoroughworts (*Eupatorium* spp.), goldenrods (*Solidago* spp.), Queen Anne's lace (*Daucus carota*), spikegrass (*Chasmanthium laxum*), vervain (*Verbena* sp.), thistle (*Cirsium* sp.), dog fennel (*Eupatorium capillifolium*), rabbit tobacco (*Gnaphalium* sp.), lespedeza (*Lespedeza* spp.), buttercup (*Ranunculus* sp.), daisy

fleabane (*Erigeron* sp.), plantains (*Plantago* spp.), rushes (*Juncus* spp.), wingstem (*Verbesina occidentalis*), switchgrass (*Panicum* sp.), orchard grass (*Dactylis glomerata*), pineweed (*Hypericum gentianoides*), flowering spurge (*Euphorbia corollata*), avens (*Geum* sp.), sneezeweed (*Helenium* sp.), lobelia (*Lobelia* sp.), flatsedge (*Cyperus* sp.), knotweed (*Polygonum* sp.), cinquefoil (*Potentilla recta*), daisy (*Chrysanthemum leucanthemum*), and others.

Non-vascular species on the property include reindeer lichen (*Cladina* sp.), greenshield lichen (*Flavoparmelia caperata*), ruffle lichens (*Parmotrema* sp.), Carolina shield lichen (*Canoparmelia caroliniana*), cladonia lichens (*Cladona* spp.), speckled shield lichen (*Punctelia* sp.), pincushion moss (*Leucobryum album*), old man's beard lichen (*Usnea* spp.), and logmoss (*Thuidium delicatulum*).

A short list of plant species was compiled during the field survey. A total of one hundred fifty species were recorded (see species lists in Appendix II). The list includes forty-one species of trees, twenty-nine species of shrubs and vines, sixty-eight herbaceous species, and eleven non-vascular species. A more thorough inventory of plant species throughout the growing season would certainly reveal a much greater number. With every survey, there is always potential for more species to be encountered in the future. Due to the paucity of survey information in many areas, there is always likelihood that any land could contain unrecorded rare species. Appendix V contains a list of the rare species known to Wilkes County. The conservation property may provide potential habitat for a number of these species.

The maturing hardwood forests with adjoining fields, pine stands, creeks, and small lake create habitat features for a variety of wildlife. Animal species noted or likely to use the tract include resident and migratory bird species, raccoons, rabbits, opossum, coyote (scat noted & tracks noted), bobcat (tracks noted), grey squirrel, fence lizard, a variety of snakes and frogs, American toad, red fox, and white tailed deer. Birds likely to use the tract include the cardinal, tufted titmouse, robin, mockingbird, redtailed hawk, broadwing hawk, quail, turkey vulture, belted kingfisher, Carolina wren, black capped chickadee, bluejay, yellow shafted flicker, pileated (noted near Quaker Springs) and other woodpeckers, American crow, parula warbler, worm-eating warbler, catbird, eastern kingbird, and a variety of waterfowl. Wintering white-throated sparrows were noted. Managers noted seeing fox squirrels. Non-native species such as fire ants were present.

The natural attributes developing as the hardwood forests mature provide important habitat for wildlife both large and small. Tree cavities provide habitat for many animals including squirrels, raccoons, owls, and a variety of woodpeckers. Salamanders and many small species seek shelter under fallen logs. Numerous mammals search for food under the logs. Many plants depend upon the organic matter provided by the fallen logs as a natural soil fertilizer. As the oak and hickory trees mature, they begin to produce mast (acorns and nuts that provide winter food important for survival). It is said that oak trees don't even begin peak mast production until fully mature.

Historic Uses

Historically, portions of the site may have been used for timber, old homesteads, grazing, farming, hunting, or other uses. Kettle Creek flows into the Little River near the Tyrone community in Wilkes County [which is the location of the easement]. It likely takes its name from a local fish trap, called a kittle. During the American Revolution (1775-83) several incidents occurred along its banks. The most important event to occur here took place on Sunday, February 14, 1779. On that morning 600 American supporters [some reports say 800] of the British cause, popularly known as Loyalists or Tories, encamped atop a hill in a bend of the creek. Elijah Clarke and other patriot soldiers were able to defeat the loyalists and prevented the British from invading northern Georgia. Within the easement is a small well-kept historic cemetery. The oldest legible date noted during the survey was 1817. There may possibly be graves from the Revolutionary War period, but this was difficult to discern. Quaker Springs also occurs within the easement. Historically it was said to be such a significant spring that a settlement formed along it (no structures currently exist at this location). A small slave cabin with several pieces of old farm equipment are present (see photos & photopoints).

Current Anthropocentric Structures

Anthropocentric features within the tract include a historic cemetery approx. (0.3 acres in size) forest roads, old log landing decks, a small wildlife food plot, a small slave cabin with several pieces of old farm equipment (see photos), a small fallen-in wooden cattle pen near road (see photos), a hayfield / pasture, several hunt stands, occasional fences and gates, and a small electric line. Several of small cabins and trailers as a hunt camp are within one of the building envelopes.

Within the easement are three designated building envelopes of approximately one to two acres each (see map in Appendix I). These are labeled on the map as tracts 4, 5 & 6. Tracts 4 and 5 are along paved roads so as to cause as little disturbance as possible to the easement. Utilities will not need to run through the easement land. Tract 6 is located at an existing hunt camp a short distance off of the paved road to utilize and already disturbed tract. Utilities and driveway should continue to follow the existing forest road. One dwelling structure is allowed to be built on each of the three tracts. No rights for placing septic systems within the easement area are retained. Therefore the entire septic system should be placed within the envelope. Building envelopes were placed far removed from Significant Habitat Areas.

Directions to Site

From the junction of Spring St. and Hwy US 78 Business Route in downtown Washington, take hwy 78 west to hwy 44. Take hwy 44 south (left) for 8.5 miles. Turn left on Sandy Cross Road and go 1.9 miles to junction with Quaker Springs Road.

Management Recommendations

There are a number of highly recommended management practices that would prove beneficial for the natural resource values of the property, including the following.

- In the cut-over areas (stand 2) a prescribed burning regime should begin right away. Prescribed burning is part of the Forest Management Plan and is highly encouraged by the land trust because it supports healthy forests, helps to maintain conservation values, reduces chances for catastrophic fires, improves aesthetics, and other values. The schedule is to burn stands every 3 to 5 years.

- The important riparian and hardwood forests designated in the 'Significant Habitat Map' in Appendix I are given special management consideration in that commercial logging and earth-moving activities are prohibited. Significant Habitat areas follow the lines for Stand 3 in the FMP (K. Pettay 2013; see also Significant Habitat Map below) and the Quaker Springs area. This will include approximately 243 acres of land. This map should be consulted whenever activities are proposed. Also, at least 100-foot buffer protection along all streams and wetlands is in place.

- No commercial timber harvest is to be conducted for at least twenty years, with the exception of thinning operations and only to the level necessary. Timber harvest activities are to be conducted in accordance with all applicable governmental regulations or guidelines covering such activities and through the Forest Management Plan. On easement land, management for Conservation Purposes and listed plant or animal species has top priority, if necessary, for timber management decisions. Every future plan should be designed to protect soil stability, water quality, ecology, and other conservation values of the Conservation Area. Commercial harvest is prohibited in the Significant Habitat Areas (see Significant Habitat Map in Appendix I and FMP and includes Stand 3 and the Quaker Springs area). Notification to the land trust is needed prior to

timber management and earth moving activities, with the exception of prescribed burning.

- No new roads are to be built within the easement area, with the exception of approved firebreaks, skid and haul roads associated with future forestry activities.

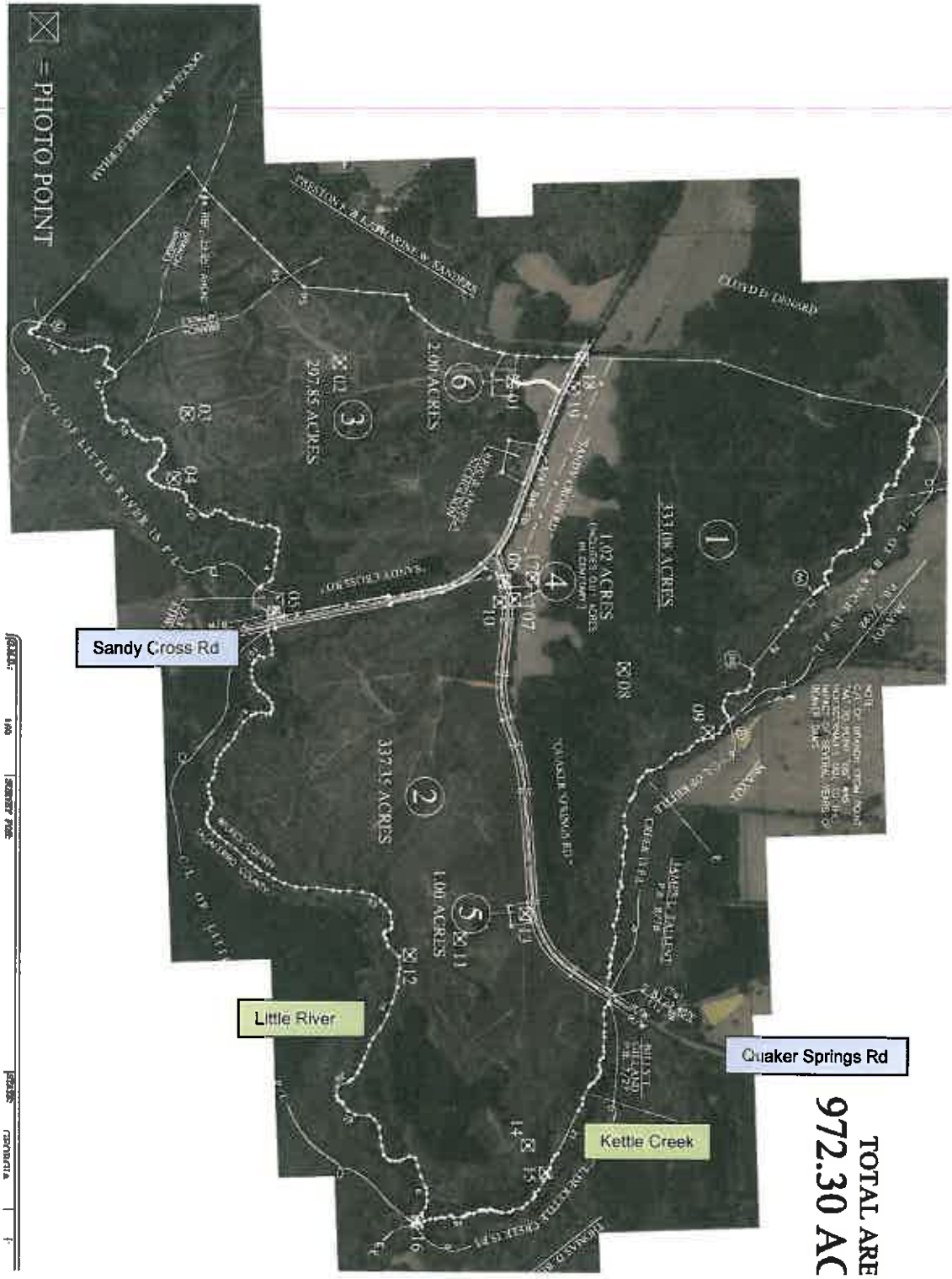
- Removal or control of any invasive non-native plant or animal species would be recommended by the land trust.

- Maintenance of existing roads, firebreaks, and trails is to continue. All activities, including logging, skidding, fire breaks, road upgrades, utility placement, and others, should follow Georgia's Best Management Practices (1999; See references in Appendix III). Extra care should be taken to avoid sedimentation and erosion so as to protect the conservation values of the property.

- Hunting and use of hunting stands is to continue, as well as fishing, non-commercial ATV use, and quiet enjoyment of the property.

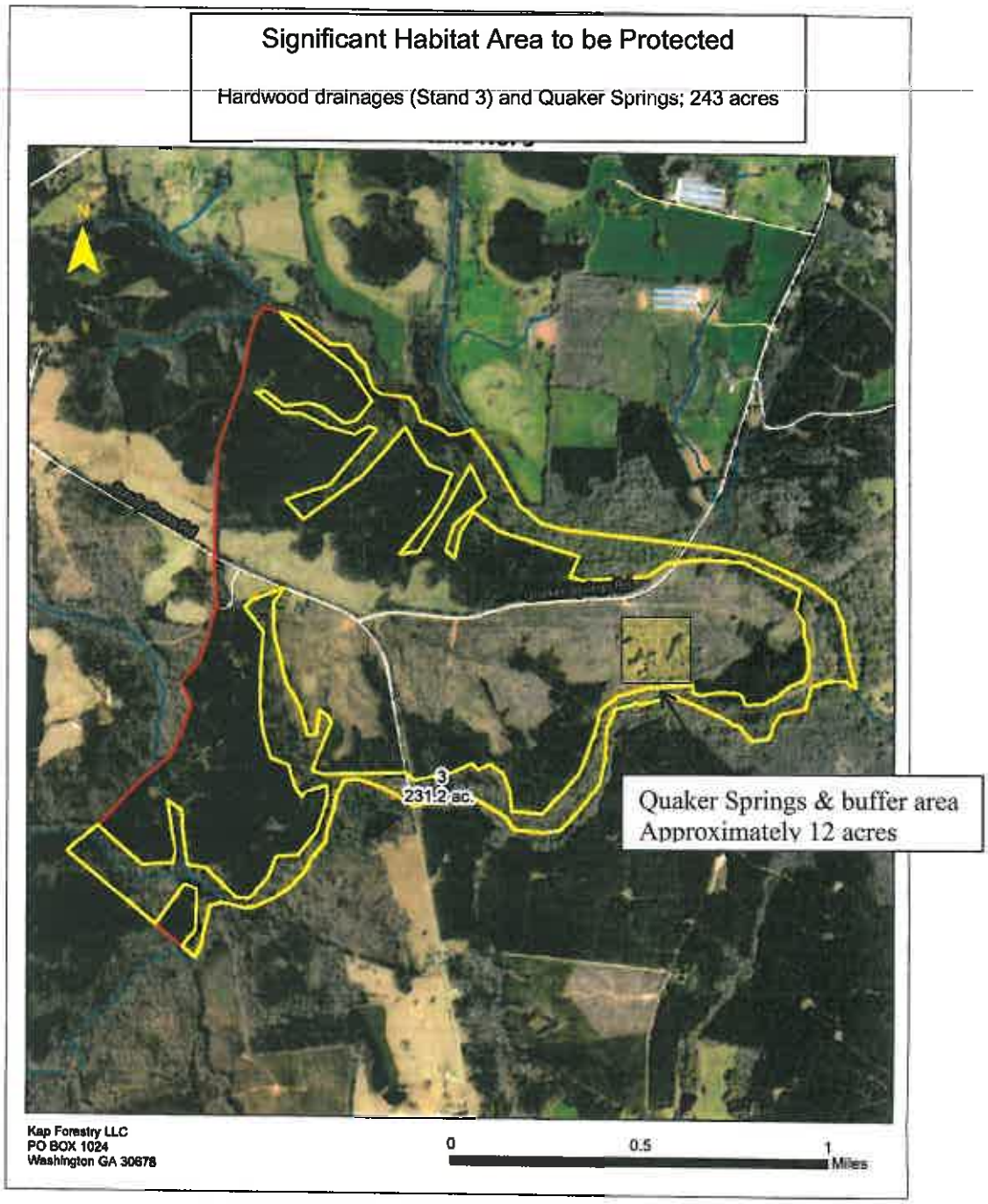
APPENDIX I: MAPS OF THE KETTLE CREEK TRACT

Photopoint Map

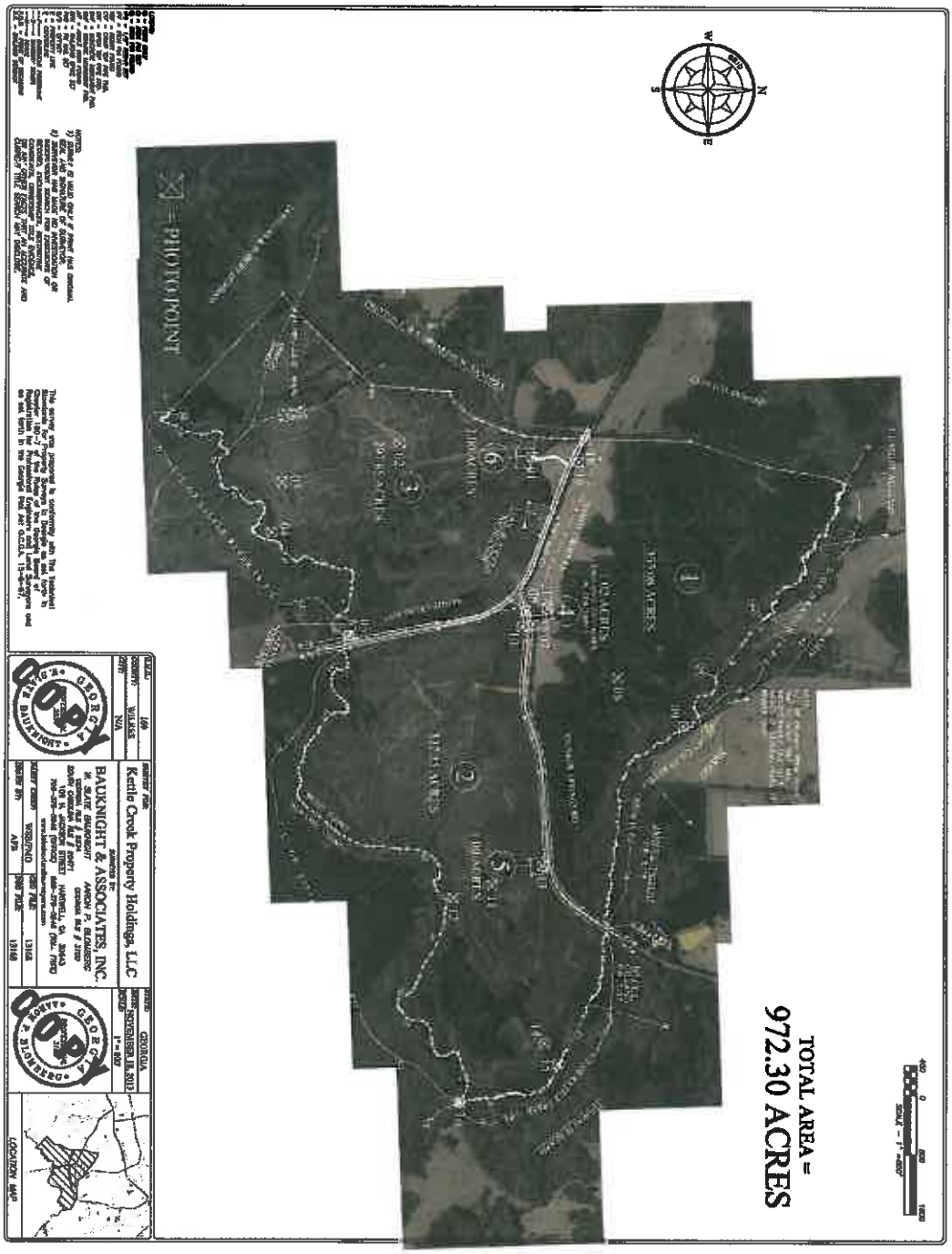


Kettle Creek Tract Significant Habitat Map

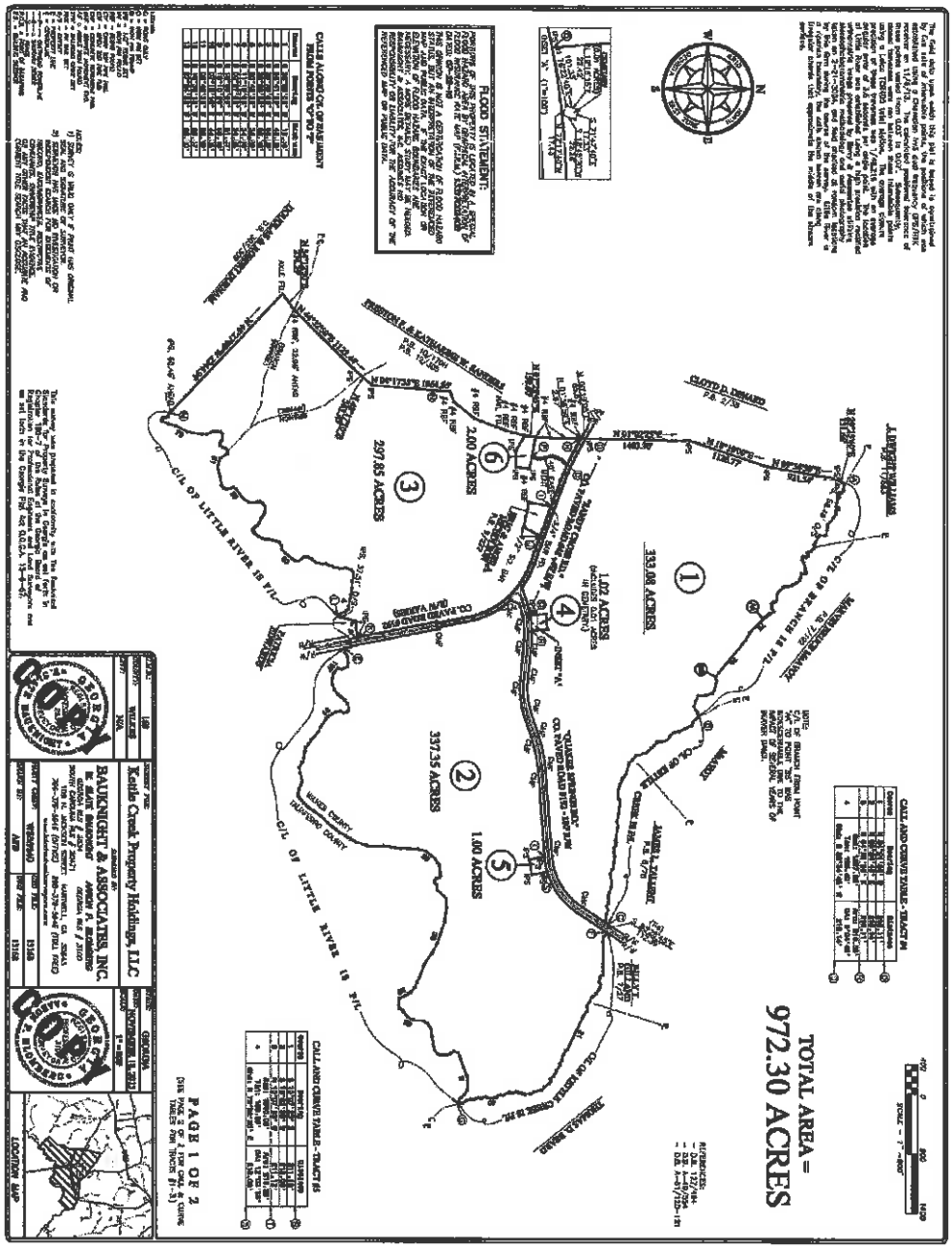
Taken from FMP by K. Pettay 2013; Significant Habitat areas that preclude general timber harvest operations are to follow the lines for Stand 3 & the Quaker Springs area;



Survey With Aerial Map



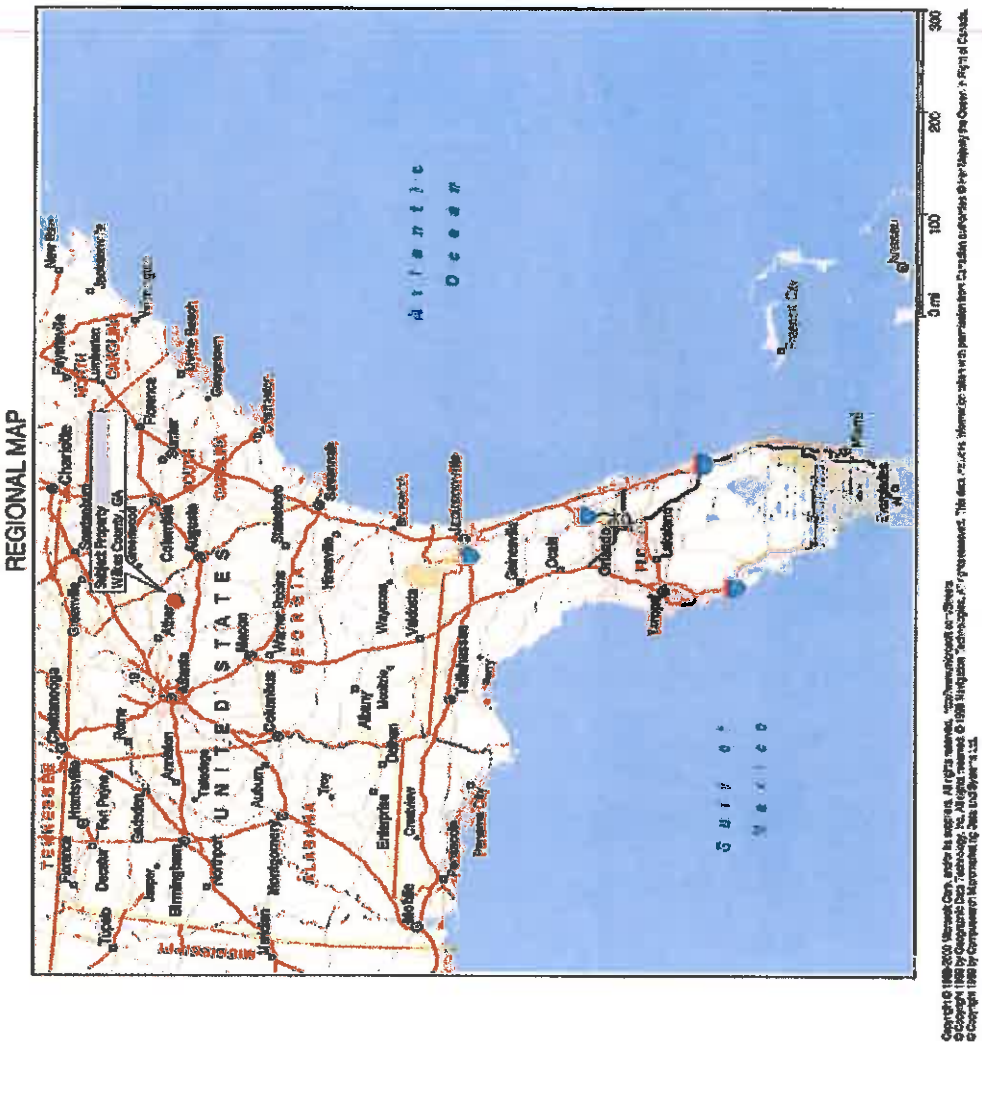
Survey Map


TOTAL AREA =
972.30 ACRES
333.00 ACRES
337.35 ACRES
297.85 ACRES
1.00 ACRES
2.00 ACRES
1.00 ACRES
FLOOD STATEMENT:
BAUKNIGHT & ASSOCIATES, INC.
Kettle Creek Property Holdings, LLC
PAGE 1 OF 2

TRACT #1
TRACT #2
TRACT #3
Kettle Creek Property Holdings, LLC
BAUKNIGHT & ASSOCIATES, INC.
PAGE 2 OF 2

Regional Map

(from appraisal document by D. Roberts)



APPENDIX II: PLANT SPECIES LISTS

SPECIES OF THE KETTLE CREEK CONSERVATION EASEMENT PROPERTY TREES	
Scientific Name	Common Name
Acer floridanum	southern sugar maple
Acer negundo	box elder
Acer rubrum	red maple
Albizia julibrissin	mimosa
Betula nigra	river birch
Carpinus caroliniana	ironwood
Carya sp.	shagbark hickory
Carya spp.	hickories
Celtis sp.	hackberry
Cornus florida	flowering dogwood
Crataegus sp.	hawthorn
Diospyros virginiana	persimmon
Fraxinus sp.	ash
Ilex opaca	American holly
Juglans nigra	black walnut
Juniperus virginiana	red cedar
Liquidambar styraciflua	sweet gum
Liriodendron tulipifera	tulip poplar
Magnolia grandiflora	southern magnolia
Melia azedarach	chinaberry
Nyssa sylvatica	black gum
Ostrya virginiana	hop-hornbeam
Oxydendrum arboreum	sourwood
Pinus taeda	loblolly pine
Platanus occidentalis	sycamore
Prunus serotina	wild cherry
Quercus alba	white oak
Quercus coccinea	scarlet oak
Quercus falcata	southern red oak
Quercus laurifolia	laurel oak
Quercus michauxii	swamp chestnut oak
Quercus nigra	water oak
Quercus pagoda	cherrybark oak
Quercus phellos	willow oak
Quercus stellata	post oak

Salix nigra	black willow
Sassafras albidum	sassafras
Tilia sp.	basswood
Ulmus alata	winged elm
Ulmus sp.	elm

SHRUBS & VINES	
Scientific Name	Common Name
Alnus serrulata	alder
Arundinaria tecta	river cane
Asimina triloba	pawpaw
Bignonia capreolata	crossvine
Callicarpa americana	beautyberry
Calycanthus floridus	sweetshrub
Campsis radicans	trumpetvine
Cephalanthus occidentalis	buttonbush
Citrus trifoliata	trifoliate orange
Cornus sp.	shrub dogwood
Elaeagnus sp.	Russian olive
Frangula sp.	buckthorn
Gaylussacia sp.	huckleberry
Gelsemium sempervirens	wild jessamine
Ligustrum sinense	privet
Lonicera japonica	Japanese honeysuckle
Parthenocissus quinquefolia	Virginia creeper
Rhus sp.	sumac
Rosa multiflora	multiflora rose
Rubus argutus	blackberry
Rubus sp.	dewberry
Sambucus canadensis	elderberry
Smilax spp.	greenbrier
Toxicodendron radicans	poison ivy
Vaccinium arboretum	farkleberry
Vaccinium sp.	blueberry
Vaccinium stamineum	deerberry
Vitis rotundifolia	muscadine grape
Yucca sp.	yucca

HERBACEOUS SPECIES	
Scientific Name	Common Name
Andropogon glomeratus	broomsedge
Andropogon sp.	broomsedge
Asplenium platyneuron	ebony spleenwort
Aster spp.	asters
Bidens sp.	beggars ticks
Boehmeria cylindrica	false-nettle
Botrichium sp.	grapefern
Carex spp.	sedges
Chasmanthium latifolium	fish-on-a-string
Chasmanthium laxum	spikegrass
Chimaphila maculata	pipsissewa
Chrysanthemum leucanthemum	daisy
Cirsium sp.	thistle
Coreopsis major	greater coreopsis
Cyperus sp.	flatsedge
Dactylis glomerata	orchard grass
Danthonia sericea	silky oat-grass
Daucus carota	Queen Anne's lace
Desmodium spp.	beggars ticks
Dicanthelium spp.	switchgrass
Elephentopus sp.	elephantfoot
Erigeron sp.	daisy fleabane
Erodium cicutarium	stork's-bill
Eupatorium capillifolium	dog fennel
Eupatorium spp.	thoroughworts
Euphorbia corollata	flowering spurge
Festuca sp.	fescue
Geum sp.	avens
Gnaphalium sp.	rabbit tobacco
Helianthus sp.	wild sunflower
Hypericum gentianoides	pineweed
Hypericum sp.	St. Johns wort
Juncus spp.	rushes
Lamium amplexicaule	henbit
Lespedeza spp.	lespedeza
Lobelia sp.	lobelia
Ludwigia sp.	seedbox
Mitchella repens	partridgeberry

Panicum sp	switchgrass
Plantago spp.	plantains
Podophyllum peltatum	mayapple
Polygonum spp.	knotweeds
Polystichum acrostichoides	Christmas fern
Potentilla recta	cinquefoil
Prenanthes sp.	snakeroot
Pteridium aquilinum	bracken fern
Ranunculus sp.	buttercup
Rudbeckia sp.	black-eyed susan
Salvia lyrata	lyreleaf sage
Scirpus cyperinus	wooly manna grass
Setaria sp.	foxtail grass
Solidago spp.	goldenrods
Verbascum thapsus	mullein
Verbena sp.	vervain
Verbesina occidentalis	wingstem
Viola spp.	violets
Woodwardia sp.	chainfern

NON-VASCULAR SPECIES (though many more present)	
Scientific Name	Common Name
Canoparmelia caroliniana	Carolina shield lichen
Cladona spp.	cladonia lichens
Collema sp.	jellyskin lichen
Flavoparmelia caperata	greenshield lichen
Leucobryum album	pincushion moss
Parmotrema spp.	ruffle lichens
Punctelia sp.	speckled shield lichen
Thuidium delicatulum	logmoss
Usnea sp.	old man's beard

APPENDIX III: REFERENCES

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APPENDIX IV: BASELINE PHOTOGRAPHY
KETTLE CREEK CONSERVATION EASEMENT PHOTOSTATION LIST

Photo #	Location (GPS coordinates in WGS84; pts #ket-)	Direction taken	Comments
1A	33°39'28.84" / 82°50'27.71"	W	Taken from hunt camp, which is in a building envelope, showing some of the current structures;
1B		E	Same location as 1A, showing more of hunt camp;
1C		N	Same location as 1A, looking into easement and toward county road;
2A	33°39'11.02" / 82°50'29.72"	SW	A high point in a cutover area with saplings; Larger trees in distance;
2B		SSE	Same location as 2A; Cutover area with saplings;
2C		E	Same location as 2A; Forest road and cut-over area;
2D		N	Same location as 2A, noting sapling regeneration;
3A	33°38'55.28" / 82°50'23.26"	S	Grove of trees with a hunt stand and wildlife food plot in distance;
3B		E	Same location as 3A;
4A	33°38'53.94" / 82°50'15.23"	E	Little River with island in river on right;
4B		SE	Same location as 4A, looking across part of river and island;
4C		N	Same location as 4A, looking across forest road;
5A	33°39'04.42" / 82°49'58.82"	SSW	Private outparcel adjacent to easement, with house that used to be old mill site along river; Easement is in the distance on the right;
5B		SSE	Same location as 5A; Out of easement, showing river and county road beyond;
5C		N	Same location as 5A; Out of easement, showing house;
6A	33°39'28.21" / 82°50'03.04"	W	Taken from the junction of Quaker Springs Road and Sandy Cross Road;
6B		S	Same location as 6A, looking south into easement;
6C		E	Same location as 6A, looking down Quaker Springs Road; Easement is on both sides of road, proving a public scenic view;
6D		N	Same location as 6A; A forest road coming off of the paved road;
7	33°39'29.20" / 82°50'00.84"	E	On the other side cemetery is building envelope, currently wooded;
8A	33°39'40.54" / 82°49'52.41"	E	These forest stands likely originated from natural regeneration; Dominated by pine with occasional hardwoods along forest road;
8B		N	Same location as 8A;
9A	33°39'49.33" / 82°49'44.66"	N	Kettle Creek looking upstream; To the far right is out of easement, all the rest is in;
9B		S	Same location as 9A, looking downstream; Far left is out of easement, all the rest is in;
10	33°39'27.69" / 82°50'00.46"	S	Old fallen-in wooden fences for a cattle pen near county

			road;
11A	33°39'23.91" / 82°49'18.87"	S	Looking into Quaker Springs; At the very head of the springs there is no water above ground but just downstream water flows;
11B		N	Same location as 11A, noting large mature trees surrounding the springs;
12A	33°39'18.74" / 82°49'16.82"	N	Looking upstream toward springhead for Quaker Springs, noting flowing water;
12B		SW	Same location as 12A; Looking downstream in spring with the confluence of the Little River in the distance (within the easement);
13A	33°39'30.62" / 82°49'22.08"	W	Standing in building envelope just inside gate by county road; Land across road in distance is in the easement;
13B		S	Same location as 13A, looking into easement, toward Quaker Springs;
13C		ESE	Same location as 13A, noting dirt forest road; Foreground is out of the easement and the remainder is in;
14A	33°39'31.08" / 82°48'53.49"	N	These sporadic pine stands are much more mature than the cut-over areas; Fire management would be beneficial;
14B		NE	Same location as 14A, with fairly mature pines on L and mixed forest on R;
15A	33°39'32.92" / 82°48'50.19"	SSE	Kettle Creek, looking downstream;
15B		NW	Same location as 15A, looking upstream;
16A	33°39'19.77" / 82°48'43.92"	S	The confluence of Kettle Creek & the Little River with beaverdam material; To the R and L beyond photopoint is out of easement;
16B		E	Same location as 16A, showing Kettle Creek just above confluence;
16C		NW	Same location as 16A, showing Little River looking upstream with large beaverdam;
16D		NNW	Same location as 16A, looking into easement noting large trees;
17A	33°39'31.02" / 82°50'03.51"	NW	Hayfield and small electric line;
17B		SE	Same location as 17A, showing narrow portions of the hayfield;
18A	33°39'35.88" / 82°50'30.54"	NNE	Standing at property corner on Sandy Cross Road, looking into tract with metal gate for hayfield/forest road;
18B		E	Same location as 18A, showing the view along Sandy Cross Road; The easement runs along both sides of the road;
18C		S	Same location as 18A; At the pink flagging is a corner and to the L is out of the easement and to the R is in;
19	33°39'35.06" / 82°50'26.98"	SSE	An old slave cabin with several old farm implements;

Photo 1A: Taken from hunt camp, which is in a building envelope, showing some of the current structures;

Photo 1B: Same location as 1A, showing more of hunt camp;

Photo 1C: Same location as 1A, looking into easement and toward county road;

Photo 2A: A high point in a cut-over area with saplings; Larger trees in distance;

Photo 2B: Same location as 2A; Cut-over area with saplings;

Photo 2C: Same location as 2A; Forest road and cut-over area;

Photo 2D: Same location as 2A, noting sapling regeneration;

Photo 3A: Grove of trees with a hunt stand and wildlife food plot in distance;

Photo 3B: Same location as 3A;

Photo 4A: Little River with island in river on right;

Photo 4B: Same location as 4A, looking across part of river and island;

Photo 4C: Same location as 4A, looking across forest road;

Photo 5A: Private outparcel adjacent to easement, with house that used to be old mill site along river; Easement is in the distance on the right;

Photo 5B: Same location as 5A; Out of easement, showing river and county road beyond;

Photo 5C: Same location as 5A; Out of easement, showing house;

Photo 6A: Taken from the junction of Quaker Springs Road and Sandy Cross Road;

Photo 6B: Same location as 6A, looking south into easement;

Photo 6C: Same location as 6A, looking down Quaker Springs Road; Easement is on both sides of road, proving a public scenic view;

Photo 6D: Same location as 6A; A forest road coming off of the paved road;

Photo 7: On the other side cemetery is building envelope, currently wooded;

Photo 8A: These forest stands likely originated from natural regeneration; Dominated by pine with occasional hardwoods along forest road;

Photo 8B: Same location as 8A;

Photo 9A: Kettle Creek looking upstream; To the far right is out of easement, all the rest is in;

Photo 9B: Same location as 9A, looking downstream; Far left is out of easement, all the rest is in;

Photo 10: Old fallen-in wooden fences for a cattle pen near county road;

Photo 11A: Looking into Quaker Springs; At the very head of the springs there is no water above ground but just downstream water flows;

Photo 11B: Same location as 11A, noting large mature trees surrounding the springs;

Photo 12A: Looking upstream toward springhead for Quaker Springs, noting flowing water;

Photo 12B: Same location as 12A, Looking downstream in spring with the confluence of the Little River in the distance (within the easement);

Photo 13A: Standing in building envelope just inside gate by county road; Land across road in distance is in the easement;

Photo 13B: Same location as 13A, looking into easement, toward Quaker Springs;

Photo 13C: Same location as 13A, noting dirt forest road; Foreground is out of the easement and the remainder is in;

Photo 14A: These sporadic pine stands are much more mature than the cut-over areas; Fire management would be beneficial;

Photo 14B: Same location as 14A, with fairly mature pines on L and mixed forest on R;

Photo 15A: Kettle Creek, looking downstream;

Photo 15B: Same location as 15A, looking upstream;

Photo 16A: The confluence of Kettle Creek & the Little River with beaverdam material; To the R and L beyond photopoint is out of easement;

Photo 16B: Same location as 16A, showing Kettle Creek just above confluence;

Photo 16C: Same location as 16A, showing Little River looking upstream with large beaverdam;

Photo 16D: Same location as 16A, looking into easement noting large trees;

Photo 17A: Hayfield and small electric line;

Photo 17B: Same location as 17A, showing narrow portions of the hayfield;

Photo 18A: Standing at property corner on Sandy Cross Road, looking into tract with metal gate for hayfield/forest road;

Photo 18B: Same location as 18A, showing the view along Sandy Cross Road; The easement runs along both sides of the road;

Photo 18C: Same location as 18A; At the pink flagging is a corner and to the L is out of the easement and to the R is in;

Photo 19: An old slave cabin with several old farm implements;

Additional Photos

Further photos of the historic cemetery;

Some of the older gravestones in the cemetery are hard to read;

large dead trees, such as this one near Quaker Springs, provide cavities and habitat for woodpeckers and many species of wildlife;

Additional large trees near Quaker Springs;

Next to the slave cabin are several old implements, such as this tractor-driven small sawmill: The trees have grown up through them;

Out of the easement, showing a view of the river from county road;

APPENDIX V:

Georgia Natural Heritage Program List of the Rare Species for Wilkes County

Known occurrences of special concern plants, animals and natural communities
Wilkes County — Fips Code: 13317

Find details for these species at Georgia Rare Species and Natural Community Data and NatureServe Explorer.

[US] indicates species with federal status (Protected or Candidate).
Species that are federally protected in Georgia are also state protected.
[GA] indicates Georgia protected species.
link to species profile on our site (not available for all species).
link to report for element on NatureServe Explorer (only available for animals and plants).

Animal Occurrences

- Aimophila aestivalis (Bachman's Sparrow) [GA] - bird
- Cambarus strigosus (Lean Crayfish) [GA] - crustacean
- Distocambarus devexus (Broad River Burrowing Crayfish) [GA] - crustacean
- Elliptio arctata (Delicate Spike) [GA] - mollusk
- Haliaeetus leucocephalus (Bald Eagle) [GA] - bird
- Hemidactylium scutatum (Four-toed Salamander) - amphibian
- Moxostoma robustum (Robust Redhorse) [GA] - fish
- Notropis scepticus (Sandbar Shiner) [GA] - fish
- Somatogyrus tenax (Savannah Pebblesnail) - mollusk

Plant Occurrences

- Amorpha schwerinii (Schwerin Indigo-bush)
- Cypripedium acaule (Pink Ladyslipper) [GA]
- Draba aprica (Sun-loving Draba) [GA]
- Hymenocallis coronaria (Shoals Spiderlily) [GA]
- Nestronia umbellula (Indian Olive) [GA]
- Quercus oglethorpensis (Oglethorpe Oak) [GA]
- Sedum pusillum (Granite Stonecrop) [GA]
- Trillium discolor (Pale Yellow Trillium)

Generated from Georgia DNR's NatureServe Biotics conservation database on October 12, 2011

APPENDIX VI: Qualifications of Author

KARIN HEIMAN, Consulting Biologist
367 Onteora Blvd., Asheville, N.C. 28803; office: 828-277-9955; cell: 828-712-1608
karinh11@yahoo.com or karinh11@bellsouth.net
Conservation Easement Documentation • Land Use Analysis • Wetland Delineation • Environmental Impact Analysis • Natural Area Reports & Education • Endangered Species Surveys
Webpage: http://www.wncblueridge.com/ncs/
Celebrating our 26th Anniversary of Service in the Southeast and around the world

EXPERIENCE

Karin Heiman has been a consulting biologist since 1985. Her experience includes contract work with numerous land trust organizations, the Department of Transportation (in NC [including Woman-owned Business Enterprise status certification], VA, DE, MI), US Dept. of Agriculture, NC Dept. of Agriculture, National Park Service, US Forest Service, US Fish & Wildlife Service, National Institute of Health, US EPA, US Army COE, US Air Force, state Natural Heritage Programs (NC, GA, SC), Institutions (UNCA, U of IL, U of OR, NC State & WCU), and many engineering firms. Certified with the State of North Carolina as a Forest Stewardship Contractor.

Areas of experience include conservation easement documentation, establishment of monitoring techniques for conservation properties, botanical surveys, Environmental Impact and NEPA documentation, biological assessments, conservation easement baseline documentations, wetland delineation and determination, forest community typing and mapping, natural area reconnaissance, land use planning, rare species search and survey, teaching short courses, design and implementation of monitoring projects, and lichenological studies. She began her Conservation Easement Baseline Documentation work in 1986 for The Nature Conservancy on one of Ted Turner's islands. She has been working with the Southeast Regional Land Conservancy since 2002.

EDUCATION

Bachelor of Art & Sciences Degree from Warren Wilson College, Swannanoa, NC; Dec. 1984. Major: Environmental Studies with Botany Concentration, Minor in Biology.

CERTIFICATIONS

Woman-owned Business Enterprise (WBE) status certification with N.C. Department of Transportation. (1989-95 & 2000-current).
Certified by the State of North Carolina to write Forest Stewardship Plans for landowners (2009-present:).

A PARTIAL LIST OF REPORTS & PUBLICATIONS

2012. ZOMLEFER, W.B., D.E. GIANNASI, A. REYNOLDS, & K. HEIMAN. Vascular plant flora of Chattahoochee River National Recreation Area, a corridor from the Buford Dam to Atlanta, Georgia. *Rhodora* 114 (957), pp. 50-102;

2012 Review of a Conservation Easement. K. Heiman. Documentation work contracted by the Internal Revenue Service examining the competency of an easement under contention. North Carolina.

2002 "The Vascular Flora of the Chattahoochee River National Recreation Area" K. Heiman. Published in Tipularia, the journal of the Georgia Botanical Society, GA, and for the National Park Service and the Nature Conservancy.

1999 "The Vascular Flora of the Carl Sandburg Home National Historic Site". M. Blaha, K. Heiman & A. Ulinski, report for the National Park Service.

1999 "A New Species of Canoparmelia from North America" K. Heiman & J. Elix. *Mycotaxon* vol. LXX, pp. 163-166.

1992-99 Various reports written for many projects for engineering firms, agencies, and institutions, such as the Asheville Airport project, numerous Environmental Assessments and FONSI reports for the University of North Carolina at Asheville, Biological Evaluations for petroleum companies for gas well construction projects on National Forest Lands & many others.

1997 "Regional Gradients in Lichen Communities of the Southeastern United States" B. McCune, J.P. Dey, J.E. Peck, K. Heiman & S. Will-Wolf. *Bryologist*, vol 100, no. 2, pp. 145-158.

1996 "Macrolichens of the Blue Ridge Parkway in North Carolina" K. Heiman. *Evansia*, vol. 13(2), pp. 47-57.

1986-present Conservation easement baseline documentation reports too numerous to list (available upon request).