
Natural Bridge
Longleaf Preserve
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Natural Bridge Longleaf Preserve

Only a handful of reserves in the entire range of longleaf combine the attributes of this property. Very few privately held properties anywhere, and precious few public lands, can claim longleaf forest of this caliber.

The Natural Bridge property is an emblem of all longleaf can be:

- A nursery and shelter for some of North America's rarest and most beautiful plants and wildlife.
- A sustainable resource of the finest mature sawtimber, planking, poles and masts that North America has to offer, ready to be managed in perpetuity as a low-risk, high-value, multi-aged longleaf woodland.
- A forest of light and space meant to be lived in, loved and passed on to new generations.

This rare combination of qualities is the result of a family's caring stewardship for the better part of a century and Benton Hester's 25-year effort to make this a longleaf showpiece.

Though the Natural Bridge property stands alone in its unusually high quality forests and the exceptional care it has received, it is not isolated.

This property sits at the crossroads of the biggest and most ambitious longleaf conservation effort in North America.

Many have envisioned a longleaf corridor stretching from Alabama's largest state forest, which is just a few miles north of Natural Bridge, westward across Rayonier timberlands to the largest contiguous acreage of longleaf forest in North America – some 700,000 acres of state and national forest lands.

Thirty minutes south at Nokuse Plantation, the owner has embarked on the largest private longleaf restoration effort in the country, hoping to connect more than 1.5 million acres of longleaf forest across the Panhandle.

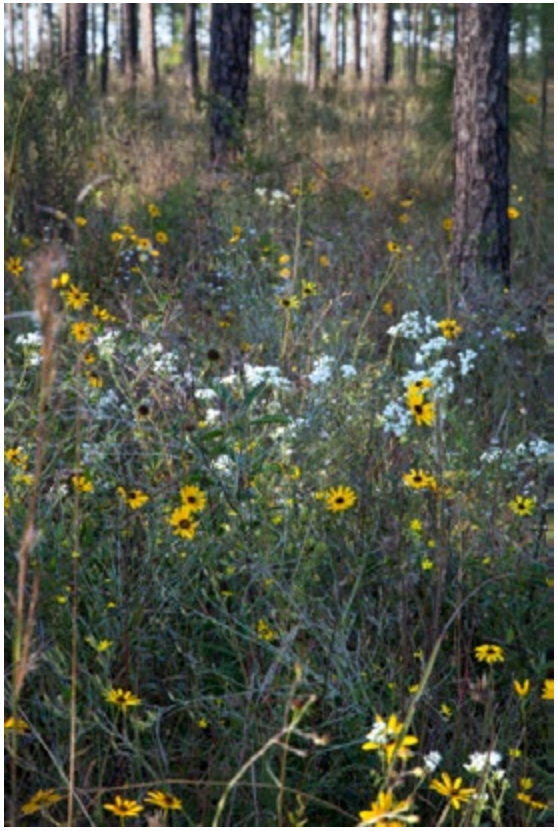
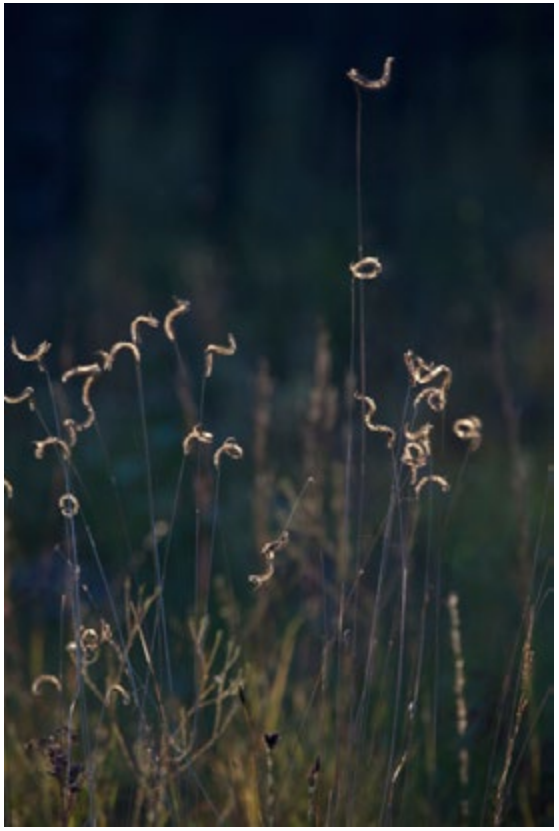
The Natural Bridge property could serve as the critical hinge in those efforts, becoming an outstanding model for all who are passionate about longleaf.

Starting with an intact core of roughly 3500 acres, it is not difficult to imagine amassing, in a few short years, a Natural Bridge longleaf preserve of 10,000 or more acres. It would rival the largest and most celebrated longleaf reserves in the country and become the centerpiece of longleaf conservation nationally.

The property's unusual resources **3533 acres** **$10,000,000**

- This property offers some of the best quail habitat remaining in this part of the world. Burgeoning populations of deer, turkey and rabbit combine to make this one of the most sought after hunting preserves in the area.
- Wood quality is sufficiently high to allow the development of a specialty marketing program, offering the kind of high grade and hard-to-find timbers sought by boatwrights and other fine builders.
- A high quality intact understory, combined with an increasingly multi-aged stand of timber, makes this forest one of the premier teaching tools within the range of longleaf. The value of this property as a learning campus has already been recognized by the Longleaf Alliance, The Nature Conservancy, the Florida and Alabama departments of conservation, and the National Forest Service.
- If the longleaf remains intact, this property's value as a conservation resource will continue to grow, making it very attractive to conservation buyers.

Mark Bailey Mark@cypruspartners.com 334-312-4258
Beth M. Young Beth@cypruspartners.com 205-533-1513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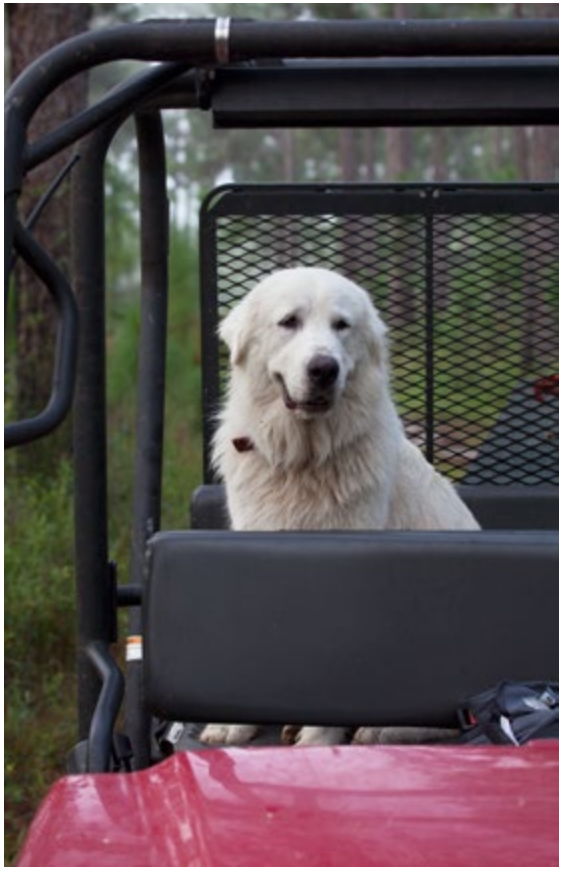






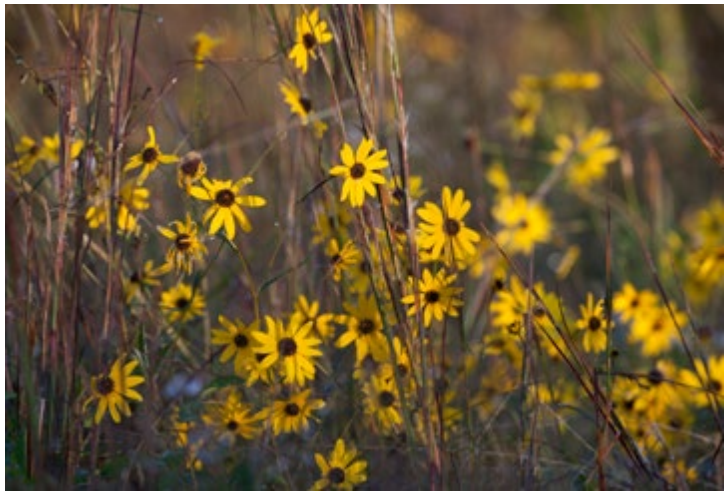


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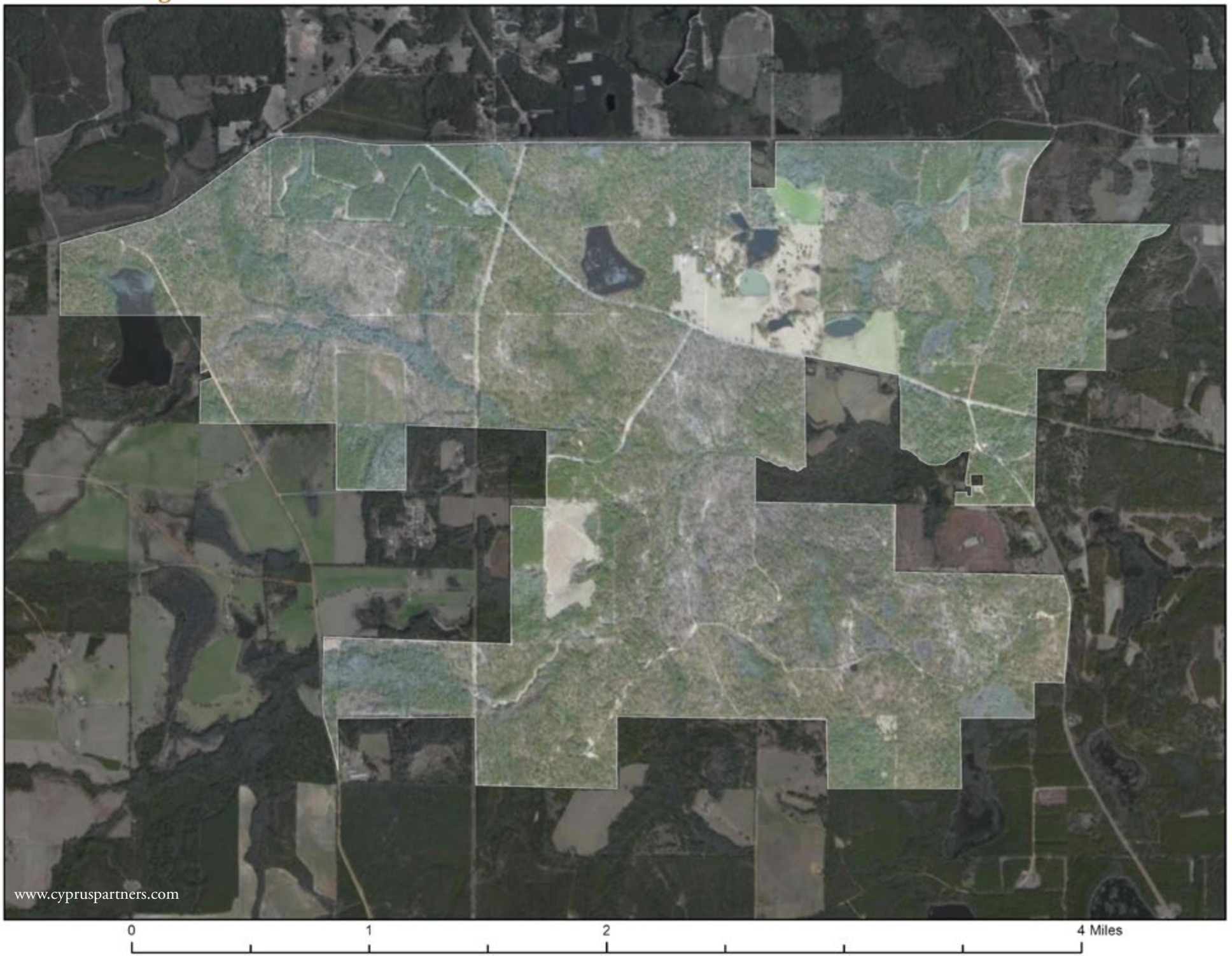
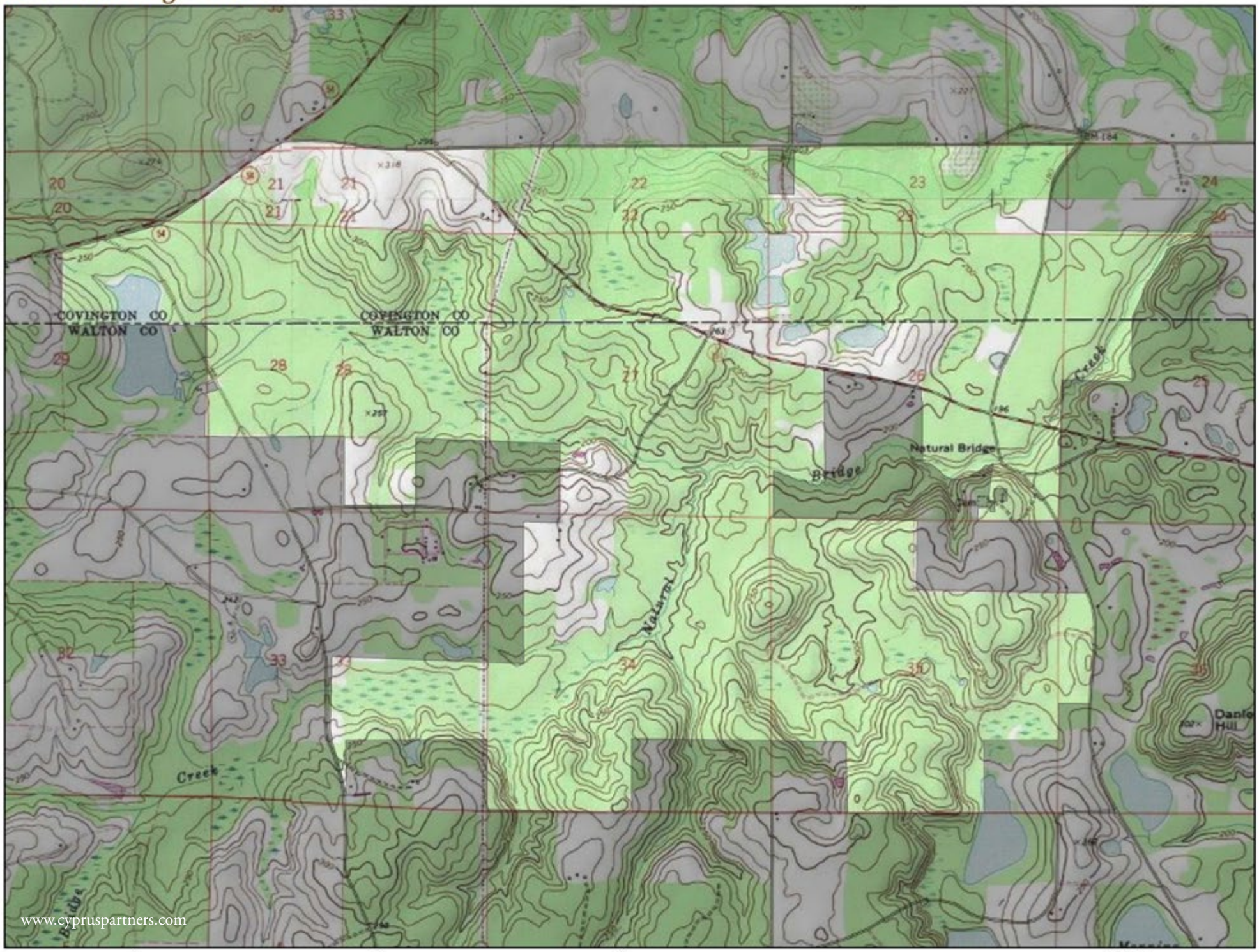
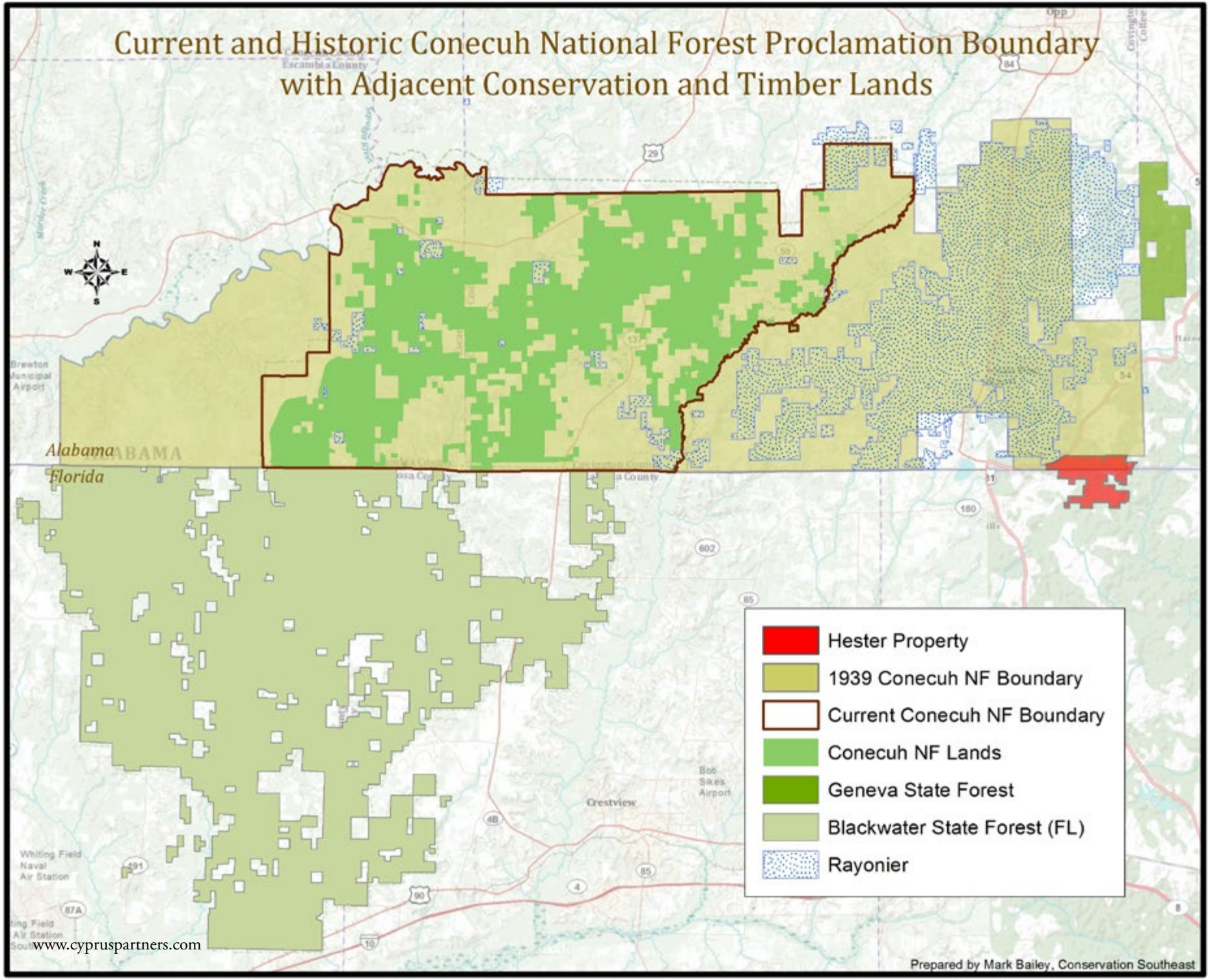
Natural Bridge Tract



Natural Bridge Tract




Current and Historic Conecuh National Forest Proclamation Boundary
with Adjacent Conservation and Timber Lands
Alabama
Florida
Hester Property
1939 Conecuh NF Boundary
Current Conecuh NF Boundary
Conecuh NF Lands
Geneva State Forest
Blackwater State Forest (FL)
Rayonier
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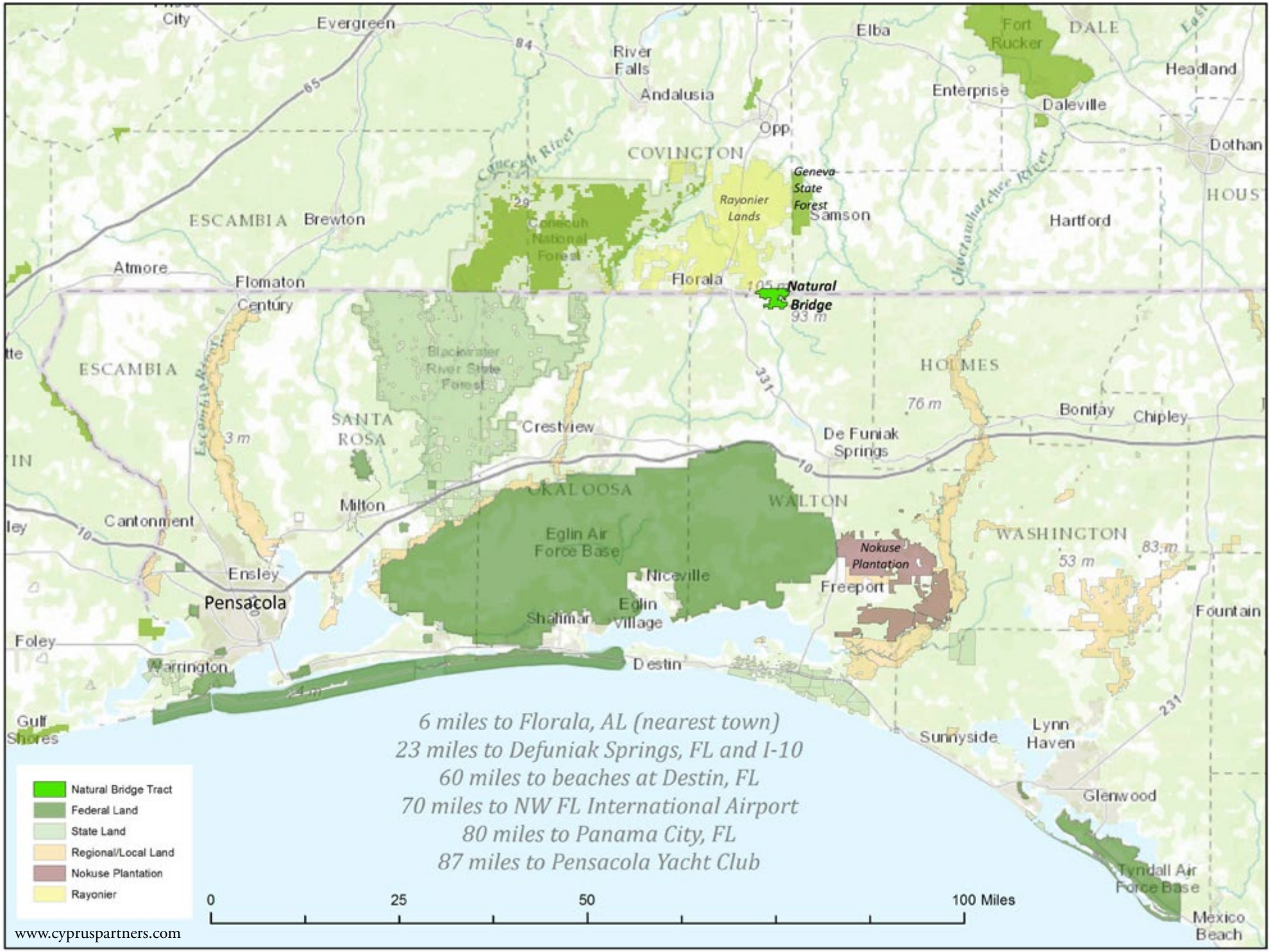
Prepared by Mark Bailey, Conservation Southeast



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Natural Bridge Forest: A Management Plan

Bill Finch, Senior Fellow, Ocean Foundation
Rhett Johnson, Consulting Forester, founder of Longleaf Alliance
Mark Bailey, wildlife management consultant with Conservation Southeast
In consultation with Benton Hester, property owner

I. Property Description

Location and size

This property straddles the Florida and Alabama state line in Covington County, Alabama, and Walton County, Florida. It is approximately 6 miles west of Florala, and 20 minutes north of DeFuniak Springs, and in the Choctawhatchee River drainage basin. This property sits on the edge of the original acquisition boundary for the Conecuh National Forest. On the northwest corner, it is connected to some 70,000 acres of Rayonier timberlands. A variety of land uses surround the other borders, ranging from agriculture to intensive forestry, but remnant longleaf ecosystems are still intact on several adjacent properties.

This tract includes approximately 3400 acres distributed as follows: Natural Pine, 2300(+) acres; Mixed pine and hardwoods, 384 acres; Plantation pine, 270 acres, mostly longleaf, with some slash and loblolly; Road, 52 acres; ROW, 17 acres; Swamp, 19(+) acres; Open water, 45(+) acres; Buildings, 10 acres; Open land, 26 acres.

Property and management history.

Most of the tract has been under continuous longleaf management. The owner's family became involved when his grandfather started buying up the properties during and shortly after World War II. The grandfather was the physician for Jackson Lumber Company, and according to the owners, began buying up cutover properties for bargain prices, "since the prevailing wisdom was that those smaller trees would never amount to anything." Most of the Jackson Lumber lands were converted to pasture, row crop or to plantation forests. But, the landowner said, his grandfather had memories of huge longleaf before it was clearcut, and he wanted to grow it back. Over the years, additional pieces were added, and the last piece was added three or four years ago.

The owner notes that the longleaf component was almost lost in the 1960s and 1970s, when consulting foresters were pushing clearcutting of naturally regenerated forests and replanting with new "improved" slash varieties. But he said his family's "cheapness" helped the forest "dodge a bullet." The family, he said, didn't understand why they needed to pay for replanting, when longleaf replanted itself.

When the present owner took over management of the tract in the mid to late 1980s, only a little bit of burning had been done in recent years. Immediately, the owner put the property on a burn rotation. The first 10 years of burning were "hit or miss" as he dealt with heavy fuel loads and lack of fire breaks. His early management, he said, was mostly about aesthetics, and he "just had an idea of what looked right for game and nongame populations."

The owner was active in most of the day-to-day management of the property, but worked with a number of consulting foresters over the years to balance a stable income producing timber resource with biologically diverse longleaf and wetland ecosystems. Travis Gardner with Time Limited Forestry is now overseeing most of the management and burning.

Over the past 25 years, the owner has done a number of selective cuts, usually for poles, plywood and sawtimber, when market conditions were advantageous and to promote regeneration. The result is an increasingly multi-age forest, stocked by natural regeneration and managed by area-regulation group and single-tree selection on a large scale.

Since there is no "terminus" cut, no replanting and no clearly discernible stand age, traditional stand-by-stand management, designed primarily for short-rotation, even-aged, plantation forests, is not used on the site. Instead, the property has been divided into two large compartments, primarily for fire-management and accounting purposes. The division follows roughly the Florida/Alabama line. Management decisions are not made within artificial stand divisions, but rather largely follow forest types (e.g., native longleaf, plantation longleaf, plantation slash/loblolly, mixed pine/hardwood, cypress-tupelo) already occupying the sites. Variable management techniques may also be applied to certain areas to address stocking deficiencies or environmental disturbances, such as hurricanes, tornadoes or unusually intense fire. But these site-specific treatments are remedial, determined by the extent of the deficiency or impact, and are not associated with carefully delineated or permanent stands.

The property has been on an every-other-year burn rotation for 15 years. While the landowner conducted only winter burns the first decade or so on the property, he began to realize that growing season burns were more effective for hardwood control, ground story diversity, longleaf regeneration and wildlife. Fuel loads are now under control, fire breaks are in place, and growing season burns, even as late as July and August, are regularly executed on most of the property.

Initially, the landowner assumed he had to "exterminate" hardwoods, but he now feels that he should simply "let the fire do what the fire is going to do." While serious hardwood encroachment is surprisingly rare, the owner has allowed a few hardwood hammocks to persist, particularly in xeric areas or in extremely wet areas where fire intensity may decline and where hardwood hammocks were likely to occur naturally. This has added to the diversity of the site.

His emphasis now is on elimination or control of invasive species before they become a serious threat to the landscape, with cogon and privet the primary targets.

General Forest Types

Upland Longleaf

A more than 2300 acres of the tract is naturally regenerated longleaf. An additional 385 acres is a mix of natural pine and hardwood. There are additional acres of longleaf plantation.

Most of the naturally regenerated longleaf is in multi-aged stands maintained with biannual fires, increasingly in the growing season. Recruitment of younger age classes over most of the area is good to excellent. Scattered throughout the property are trees greater than 75 years, but it appears that trees 25 to 75 years of age comprise most of the basal area. Stocking is highly variable across the site, as is typical of naturally regenerated forest.

Embedded within the longleaf-dominated ecosystem, particularly on xeric sites, are domes or groves of longleaf-associated broadleaf species, including Quercus geminata, Q. laevis, Q. incana, Q. margaretta and Q marilandica, and a number of rare shrubs or small trees, such as Pensacola weeping hawthorn (Crataegus lacrimata). Mesic areas include flatwoods with a somewhat higher percentage of naturally regenerated Pinus elliottii and broadleaf trees.

Light penetration to the forest floor is excellent, allowing an extraordinarily diverse layer of grasses, herbs and small shrubs. While large areas are characterized by wiregrass-dominated communities (Aristida stricta/beyrichiana) typical of easternmost areas of Alabama and the Florida panhandle, most of the grassland areas are dominated by a variety of bluestems (Andropogon and Schizachyrium species) more typical of western Alabama and Florida panhandle longleaf communities, along with a wide assortment of three-awn grasses (Aristida spp.), Indian grasses (Sorghastrum spp.), dropseeds (Sporobolus spp.), toothache grass (Ctenium), and many other species associated with or endemic to longleaf communities. Some grasses of special concern, such as Andropogon arctatus, are included.

Herbaceous diversity is high, with a number of species endemic not only to longleaf, but also to longleaf forests in only a handful of counties in the western Panhandle and adjacent Alabama. This includes rare or narrowly endemic baptisias, rhexias, composites, pawpaws, orchids, lilies and the recently described mint, Dicerandra fumella.

Invasive species are rare and primarily associated with ruderal sites nearest to roadways and property boundaries. Cogon grass infestations are cause for concern, but are so far restricted and under control.

Upland Slash Loblolly

Slash and loblolly plantations occur on fewer than 200 acres, in various age classes. These were planted by previous owners before they were included in the larger parcel. Growth rate is moderate, stocking rates are high, and some thinning will soon be required to prevent stagnation. Some of these areas are showing signs of fire suppression. Ground layer development is poor, but native grasses and forbs are evident in places.

Creek Bottoms: Mixed Pine Hardwoods

Creek bottoms and streamside management zones make up about 350 acres of the site, and include a wide variety of broadleaf trees and shrubs mixed with longleaf, loblolly and slash pines. Healthy streamside buffers are visible and intact throughout the property. While the landowner has not isolated these

areas from fire, fire penetration is naturally variable, and helps determine the variable composition of these forest areas.

Many creekside zones are dominated by moderately to highly acidic sandy loams or peaty sands. In areas where limestone is exposed near the surface, red cedars (Juniperus virginianus) and other calciphiles are evident in the fire shadows nearest the creek. Some of these transitional zones are home to some of the property's rarest and most noteworth species, including the pot of gold lily (Lilium iridollae), the bog mountain mint (Pycnanthemum nudum) and native Gulf Coast azaleas (Rhododendron austrinum). Rare species often take advantage of light in the galleries along the creek banks, or in the ecotone between the wettest sites and the frequently burned longleaf uplands. The ecotonal communities are enhanced by moderately to broadly open canopies as a result of natural penetration of fire from the uplands. Privet is increasingly a problem in areas of the property isolated from fire, and shows up in these areas with some frequency, but is not yet abundant.

Wetlands

Inventories designate 18 acres of wetlands and 45 acres of open water on the property, the latter divided between natural and artificial ponds and lakes. It's likely that a significantly larger percentage of the property, particularly areas characterized as creekside mixed pine and broadleaf, could be included in a carefully delineated wetland classification.

Sinks, cypress domes and natural ponds are common on the property as a result of the karst geology underlying much of the tract. Natural ponds may resemble pocosins, often with a dense growth of pond cypress (Taxodium ascendens) and pond tupelo (Nyssa biflora), but many are open-water ponds, ringed with a variety of broadleaf trees, including live oaks, magnolias and other species of trees and shrubs – clethra, hamamelis, etc. -- that take advantage of reduced fire return intervals. Ponds and sinks may be isolated from surficial streams, they may be groundwater fed, or they may have surficial inflow or outflow. Water levels typically fluctuate dramatically throughout the year, often spilling over the banks in spring, and some ponds may retreat to little more than small mudholes in fall. Open water areas may be increased, and hydroperiods stabilized, by beaver activity. Open water areas support a variety of floating, emergent and submerged plants, including potamogeton, naiads and others. Rare shrub species, such as pond spice, should be anticipated in some of the ecotones between ponds and uplands. These sinks and ponds on this property have been described as some of the best extant habitat for the endangered flatwoods salamander, though their presence has not been confirmed.

Hillside seeps and pitcher plant bog habitats are common on the property, and vary in extent from a few acres to scattered patches of a few hundred square feet. In larger wetter bogs, tree growth is poor and with frequent burning the basal density is very low and the canopy cover is often less than 25%. Bogs and hillside seeps with more rapid drainage may be difficult to distinguish from surrounding habitat until indicator plant species emerge. The largest bogs support the extraordinary herbaceous diversity typical of such habitats, including at least four species of pitcher plants and other rare carnivorous plants (Pinguicula primuliflora), orchids (Platanthera nivea) and rhexias.

A number of small to moderate sized artificially damned lakes and ponds are scattered around the primary residence. These are clear, spring fed lakes that captured existing depressions and wetlands, and mostly are rather low head, so in some cases they function ecologically much like beaver ponds, with some additional deep water habitat for bass and brim. Many native fish and bird species are also evident on the ponds. The fringes of these ponds are typically cypress tupelo swamps or they may grade into pitcher plant habitat.

Wildlife

This property supports healthy and in many ways extraordinary populations of game and non-game wildlife. The property owner says he was told that if he "managed for quail" the other species would take care of themselves. Quail populations are evidently quite high and coveys are widely distributed. Deer populations are high but there are no indications that they are causing damage or exceeding the carrying capacity of the landscape. Turkey numbers are good. The squirrel population is dominated by fox squirrels, an unusual phenomenon that suggests the quality of the longleaf habitat.

The property excels in supporting non-game wildlife, including rare or declining species like the gopher tortoise, pine snakes, pocket gophers and numerous other pinewoods-endemic reptiles and amphibians. Freshwater diversity, while only casually sampled, also appears to be high, with robust populations of

rare or narrowly endemic fish in the genera Pteronotropis, Fundulus and Etheostoma.

Infrastructure

Private roads are well maintained and sufficient for timber harvest. Road associated erosion is rare. Most stream crossings are vented low water fords that have been stabilized with crushed stones. There is little or no evidence of siltation from crossings.

The primary road issues on the property are the state- and county-maintained roads that come near to or cross the natural bridge feature at Natural Bridge Creek. These roads are major sources of silt and runoff for the creek, and are damaging the integrity and historic value of the natural bridge.

There are at least three historic buildings on site, including the historic Lockhart depot that was moved from that community and rehabbed as a residence. Houses and barns are mostly centrally located and isolated from fire.

Open and Agricultural Land

In the 19th and early 20th century, open and agricultural land played a significant role in maintaining larger populations of some species, including quail. Except immediately around building infrastructure, most of the open and agricultural lands have been converted to forest. Fewer than 25 acres of open land remain. Much of that includes old pastures under, for example, pecan groves, where penetration by light fires has begun to restore native bunch grasses. These open areas, particularly where they support native bunch grasses, have become important foraging and nesting habitats for quail and other species.

In addition, the hunting clubs maintain some greenfields. Wildlife value of these tracts varies.

II. Management Goals and Strategies by Type

Upland Longleaf Communities

Overview: Upland longleaf communities will continue to be managed with a focus on natural regeneration techniques that maintain that community type, employing occasional timber harvests and frequent fire to encourage recruitment, structural and age diversity in the tree component, and optimizing diversity in the wildlife and plant communities. Harvests will be timed to take advantage of markets, to promote regeneration and to ensure a continuing timber resource. Windrowing and bedding will be avoided. To better predict future growth and yield, harvest opportunities, regeneration and residual growth, the owner may employ modified reverse-J or BDq models or other quantifiable harvest, regeneration and size-class prediction tools.

Fire: The landowner has targeted biannual burning for all upland longleaf portions of the properties. Newer longleaf plantations will be burned as appropriate. Warm season burns have been conducted on the property from March through August, and the owner will continue to develop a warm season fire regime as practice and safety allow. Relatively intense fires and summer burns may be preferentially used in years with abundant seed fall; conversely, sites hosting abundant year-one seedlings may be temporarily isolated from fire when increased stocking of that site is desirable.

Invasives: Early control of invasives is a priority. Pre-emptive strikes on cogon have been a landowner priority and will continue to be. Annual inspections and spot spraying will be used to restrict cogon invasion of the property. Privet will also require annual inspections and spot herbicide treatment (particularly on the periphery and in areas isolated from fire). Hog controls will be implemented as necessary.

Infrastructure: New infrastructure, including roads, will be installed to minimize impact on hydrology, to reduce erosion and siltation, to avoid impacts to fire intensity or frequency, and to reduce unnecessary compartmentalization of the tract.

Hunting: Hunting leases are an important financial resource on the property. But hunting and game improvements will be done in a way that is compatible with maintenance of the timber resource and the health of game and non-game wildlife populations. Hunting pressure on key game species, particularly quail and fox squirrels, will be strictly limited. Selective hunting techniques may be used to reduce grazing damage by deer, or to increase growth

by reducing herd size. Year-round native forb and grasses food plots will be encouraged.

Indicators and Target species: To judge the effectiveness of management decisions, the property owner will look to continuing good regeneration of longleaf, increases in pole-quality timber and persistence and increase in quail, fox squirrel and gopher tortoise populations.

Upland Slash/ Loblolly

Because many of these slash and loblolly plantations are on upland or flatwoods areas where longleaf would be preferred for wildlife, growth or risk reduction, many of these plantations will likely be gradually converted to longleaf. Many of these stands may need a number of successive thinnings to prevent or reduce stagnation. This will be a multi-year or even multi-decadal process that begins with the gradual reintroduction of fire and a reduction in canopy coverage, which prevents shrub build-up and associated "ladder" fires, and allows a native grass and forb understory to develop. Basal area and canopy coverage will continue to be gradually reduced with successive thinnings and timber cuttings until the forest reaches a basal area sufficient to support replanting with longleaf. Indicators and target species to judge the effectiveness of management would be increasing density and coverage of Andropogon grasses.

Creek Bottoms, Mixed Pine Hardwoods

The goal in these corridors and zones is to maintain appropriate canopy and understory diversity and minimize wetland and stream impacts while harvesting in accordance with best management practices. Connectivity between the uplands and wetlands and streams will be maintained or restored where possible, allowing free hydrological exchange and free movement of fire and wildlife species.

Canopy and understory diversity and composition will be governed primarily by the penetration of growing season fires into these habitats. Too-frequent fire penetration may result in the loss of certain species; too little will result in the loss of others.

Indicators and target species to judge the effectiveness of management decisions in this zone would be flatwoods salamander (where extant or reintroduced) and plant species such as Pycnantheum nudum, Lilium iridollae, Rhododendron austrinum and Schwalbea Americana (where extant).

If herbicides are needed, site appropriate herbicides will be used. Hydrological alterations will be avoided where possible, and soil compaction will be minimized through timing of harvests and other means.

Wetlands

The priority in wetland areas is to maintain appropriate canopy and understory diversity, to minimize impacts to hydrology, and to maintain connectivity between wetlands and uplands to allow free movement of fire, species and water. BMPs for streamside management zones will be adhered to, erosion and soil compaction will be minimized and only site appropriate herbicides will be used. Windrowing and bedding will be avoided.

Indicators and target species include pitcher plant species (Sarracenia), snowy (Platanthera nivea), primrose butterworts (Pinguicula primuliflora), flatwoods salamanders, spadefoot toads, and in more naturally stable open water ponds, native Pteronotropis minnows.

Wildlife

The property owner favors management that benefits quail and fox squirrels, and this has certainly proved beneficial to a wide range of creatures. As the landowner increases populations of species already on the property, there may be opportunities to further enhance wildlife diversity by reintroducing some species that have been lost, such as flatwoods salamander and red-cockaded woodpeckers. As the present forest matures, allowing a few residual trees per acre may increase opportunities for participating in reintroduction programs that enhance wildlife values, and may also eventually provide additional revenue as programs develop to monetize protection of endangered species and carbon capture. Quail, fox squirrels and gopher tortoises will continue to be used as indicators of habitat quality and productivity in the uplands. Salamanders, frogs and endemic Pteronotropis minnows may be used as indicators in wetlands and natural ponds.

Infrastructure

Roads will be maintained to minimize erosion and runoff; new roads will be built to minimize impact on burning and hydrology. Because roads are often the source of introduction for invasives, roadside areas will be regularly inspected for invasives, and where practical, efforts will be made to prevent movement of invasives on vehicles.

Historic buildings will continue to be maintained and isolated appropriately from fire damage. The landowner will minimize additions of infrastructure by hunting clubs and others that compromise other goals outlined here.

Open Land and Agricultural Land

In the 19th and early 20th century, open and agricultural land played a significant role in maintaining larger populations of some species, including quail. Modern agricultural practices, frequent mowing and "improved pasture" programs have now largely eliminated quail, turkey, squirrel and rabbits from agricultural and open lands. Greenfields may have originally been intended to replace some of this lost habitat, but with modern planting and management techniques do not make significant contributions to wildlife numbers.

Nevertheless, open and agricultural lands can still be effectively incorporated to promote wildlife numbers. Pecan groves and adjacent areas of pasture can be maintained for intensive management of quail populations. Greenfield patches can be managed to provide a year-road source of native forage, both annuals and perennials, for a wide range of species, including quail. Where appropriate, burning will continue on agricultural and open lands to promote a year-round wildlife food source. Indicator species would be quail and rabbit usage and nesting in these habitats.

III. Summary

Management by the family over the past 70 years has resulted in an extraordinary, and now nearly unique, resource. As more information became available on the longleaf ecosystem and its dynamics, management tools changed and management objectives evolved. Fire, which was once seen as an enemy of these forests, has now became the primary management tool. Timber harvest techniques have matured to ensure better regeneration. In recent years, the landowner has developed a sophisticated approach to managing both for game and non-game species. The results speak for themselves.

The future of this property depends not only on maintaining the fire, harvesting and other management practices that have resulted in the present appearance, but also on adapting and modifying management techniques to take advantage of new knowledge and changing circumstances on the property, in the region and in timber markets. For example, managing stands that show a two-age or three-age structure so that they develop a more evenly distributed multiple age- and size-class profile could enhance revenues, lower risk, ensure that a wider variety of products are available at all times and further enhance game and non-game wildlife (see the Escambia Experimental Forest for excellent examples). In areas where the canopy has been deficient in longleaf, where longleaf regeneration has been poor, or where frequent entry may be difficult or impractical, modified shelterwoods may be better employed (T.R. Miller properties offer good examples of this technique). Continuously expanding small-gap harvest techniques have also been effectively used to enhance longleaf structure, ecosystem diversity and long-term revenues (this technique can be viewed at the nearby Solon Dixon Forestry Center). Each of these techniques may be applied as deemed appropriate on various parts of the property.
Emerging markets for non-traditional forest resources, including valuation of carbon capture, endangered species protection and enhancement, ecotourism, high-end hunting tourism, forest sustainability and other ecosystem services, should continue to be investigated.

The owner will continue to use appropriate techniques to preserve and increase diversity in plant and animal communities. He'll work to achieve forest sustainability by employing natural regeneration and multi-aged management. He'll work to protect and enhance watersheds and wetlands, including streams, sink ponds, bogs and other special habitats.
To do this, he'll need to maintain economic viability of the land through smart, efficient and sustainable timber harvest and marketing of other forest resources.

Cyprus Partners Real Estate

Mark Bailey - Wildlife/ Conservation Biologist / Land Specialist
Conservation Southeast
www.conservationsoutheast.com/
334-312-4258
Mark@CyprusPartners.com

Beth Maynor Young - Conservation Photographer / Land Specialist
www.BethMaynorYoung.com
205-533-1513
Beth@CyprusPartners.com

Tom Brickman - Forester / Appraiser / Broker
Cyprus Partners
www.cypruspartners.com
205-936-216
Tbrick@CyprusPartners.com

Bill Finch - Naturalist / Botanist / Conservation Writer & Consultant
Earthword Services
www.WAFinch.com
251-591-2215
wfinch@rocketmail.com