

Longleaf Habitat Restoration Initiative

Final Performance Report

State: Alabama

SWG Grant Number: 2006C –CNR-101

Period: October 1, 2006 to September 30, 2008

Need:

TNC has worked to conserve sites that are significant for Alabama's species and longleaf habitats of greatest conservation need (GCN) within three of the State's Priority Area's as identified by Alabama's CWCS. Each of these sites is either known to contain populations of the GCN species listed above or TNC is actively working to attract or reintroduce these species by restoring these sites to high quality habitat. Restoration of these sites requires on the ground management activities including prescribed burning, invasive exotic species removal, mechanical removal of encroaching hardwood and/or pine species, native groundcover restoration, planting of native tree species, etc. The funds provided by this grant would enable TNC to further its restoration efforts at these sites and specifically address some of the critical problems for these habitats as identified in the CWCS. More specifically TNC will focus on addressing the "highest priority conservation actions needed" for each major habitat type including reintroducing or continuing controlled burning, controlling non-native exotic species, and developing monitoring and management plans to benefit Alabama's GCN species and habitats.

Objective(s):

1. Work to restore longleaf pine habitat at three Nature Conservancy preserves in south and central Alabama to benefit the GCN species listed in the summary.
2. Reforest with longleaf pine 50 acres of clear-cut land at the Roberta Case Pine Hills Preserve.
3. Reforest 20 acres of clear-cut land at Splinter Hill Bog.
4. Under plant 80 acres of longleaf pine in a thinned loblolly pine plantation at Bibb County Glades Preserve.
5. Conduct controlled burns on a minimum of 200-acres at each of the preserves outlined in this proposal to restore native longleaf pine habitat. * Controlled burning will be subject to acceptable weather conditions.
6. Target four non-native invasive species for mechanical and chemical control that are impacting our ability to restore the native longleaf pine habitat features of the preserves outlined in this proposal. These species are cogongrass and Chinese Privet at Splinter Hill Bog, kudzu at Roberta Case Pine Hills Preserve and Bibb County Glades Preserve, Chinese Privet at all three preserves and wisteria at Roberta Case Pine Hills Preserve.
7. Focus restoration efforts on gopher tortoise habitat at Splinter Hill Bog Preserve to become a potential gopher tortoise relocation site and actively seek donor tortoises as they become available.

8. Conduct breeding bird point counts at each of these preserves to create a breeding bird list.

Expected Results:

The results and benefits of this project will complement ongoing restoration activities on three TNC preserves in south and central Alabama. More specifically the results will include 150 acres of longleaf pine plantings combined with controlled burning and invasive species control on TNC property in adjacent areas. Habitat will be improved for not only the GCN species previously mentioned but also other species on the Alabama Wildlife watch list such as the Eastern hognose snake, Eastern coachwhip, pine woods snake; red headed woodpecker; chuck-will's-widow and prairie warbler. One of the other species that will particularly benefit from this project will be the Northern bobwhite quail which has documented populations on all of these TNC properties, a species that has had serious and dramatic declines documented by numerous accounts.

Approach:

TNC will use controlled burning, mechanical removal, planting of native tree species and control on non-native exotic species to conduct habitat restoration activities on TNC lands within three of the State's Priority Areas. Below is a summary of restoration priorities and expected benefits:

Splinter Hill Bog Preserve/Splinter Hill Bog Priority Area: Located in the headwaters of the Perdido River along Dyas Creek in Baldwin County, this preserve and the surrounding landscape is forested by longleaf pine savanna/seepage bog communities with interspersed sandhill habitats. The Splinter Hill Bog Priority Area has some of the largest concentrations of natural longleaf pine stands in the state. TNC and the ADCNR State Lands Division currently own approximately 2,200 contiguous acres. TNC and the State Lands Division have documented occurrences of gopher tortoises, Florida pine snake, Bachman's sparrow, Henslow' sparrow and eastern diamondback rattlesnakes from this site. The site also has a high potential for GCN Crayfish species. The habitat context of surrounding lands is very conducive to ideal red-cockaded woodpecker and Eastern Indigo Snake habitat although none have been documented recently to our knowledge. Other GCN species possibly utilizing the habitat at this site include, Eastern coral snake, swallow-tailed kite, American Kestrel, Swainson's warbler, black bear and long-tailed weasel. Although believed extirpated from the state this site would also provide good habitat for the Eastern Indigo Snake and Southern hognose snake.

The Nature Conservancy will conduct the following activities at this site: TNC will plant longleaf pine at a low density (200 trees/acre) on a 20 acre clear-cut area near the preserve's parking area. TNC will use herbicide and mechanical removal to eradicate two known areas of cogongrass, and approximately ¼-acre of Chinese Privet. Any Chinese tallow noted on the property will also be eradicated. TNC will specifically target the two known areas of gopher tortoises for habitat restoration using chemical and mechanical removal of hardwoods on a minimum of 5-acres. If the opportunity is available TNC would also like to accept gopher tortoises from nearby lands to expand the small population that is already on the site. TNC is

currently exploring opportunities to set up this site as a gopher tortoise mitigation site.

The Nature Conservancy will establish the following monitoring efforts to measure the effectiveness of our restoration activities and to determine presence/absence of GCN species:

1. The Nature Conservancy will establish 5 points to monitor bird populations on the preserve.
2. The Nature Conservancy will conduct two one-day field surveys for herp species.
3. The Nature Conservancy will conduct searches for RCW cavity trees once a year.
4. The Nature Conservancy will conduct an annual census of gopher tortoise burrows, identifying them as active/inactive or abandoned.
5. The Nature Conservancy will establish a series of photo monitoring points throughout the preserve.
6. The Nature Conservancy will conduct a winter survey to determine the presence/absence of Henslow's Sparrows.

Roberta Case Pine Hills Preserve/Autauga Sandhills Priority Area: This 364-acre preserve, located in the fall-line of central Alabama, contains one of the largest and most natural populations of the federally endangered Alabama canebrake pitcher plant (*Sarracenia rubra ssp. alabamensis*). This preserve provides a unique diversity of habitats from upland longleaf pine forests, seepage slopes, bottomland hardwoods, cane-brakes, and springs. Of particular interest are the cane-brakes seeps that provide nesting habitat for the Swainson's warbler. With funding from this proposal TNC would target controlled burning to promote Swainson's warbler habitat.

At this site TNC will plant longleaf pine at a low density (200 trees/acre) in a 50 acre clear-cut. TNC has managed the clear-cut for native ground cover for 3 years. TNC will also use controlled burning on a minimum of 200-acres along with the selective removal of off-site pine species, and the mechanical and chemical control of off-site hardwood species. TNC will focus non-native invasive control efforts on approximately 2-3 acres of kudzu that is invading the woodland surrounding the large pasture on the south end of the property. Invasive control efforts will also target approximately ½ acre of Chinese wisteria near the preserve entrance and several smaller areas of Chinese privet to promote habitat that could support: Southeastern five-lined skink, American kestrel, wood thrush, Swainson's warbler, Kentucky warbler, and Bachman's sparrow. Historically this area was one of the last known locations in Alabama for the southern hognose snake.

The Nature Conservancy will establish the following monitoring efforts to measure the effectiveness of our restoration activities and to determine presence/absence of GCN species:

1. The Nature Conservancy will establish 5 points to monitor bird populations on the preserve.
2. The Nature Conservancy will establish a series of photo monitoring points throughout the preserve.

Bibb County Glades Preserve/ Bibb County Glades Priority Area: This 500-acre TNC preserve

protects unique natural communities associated with limestone glades and rock outcrops, mountain longleaf pine ecosystem and the Little Cahaba River. This site represents one of the highest concentrations of rare plant biodiversity in the southeastern U.S. This preserve is located adjacent to the Cahaba River NWR which currently has a proposed expansion boundary of approximately 7,500 acres. This preserve also borders an 850 acre tract that the ADCNR State Lands Division is currently negotiating to buy. Long-range plans for the Refuge include the re-introduction of the red-cockaded woodpecker which has its largest known population in Alabama less than 15 miles away on the Talladega National Forest, Oakmulgee District. This project will restore habitat that will be available for RCW re-introduction or colonization in the future.

At this site TNC will selectively cut approximately 80 acres of 30 year old loblolly pine plantations and under plant the area with longleaf pine seedlings. TNC will also use controlled burning on a minimum of 200-acres. Non-native invasive species control will focus on several areas of kudzu and a few small areas of Chinese privet to promote and restore habitat that could support the following GCN species: coal skink, Southeastern five-lined skink, Eastern coral snake, red-cockaded woodpecker, American kestrel, American woodcock, wood thrush, worm-eating warbler, Kentucky warbler, and Bachman's sparrow.

The Nature Conservancy will establish the following monitoring efforts to measure the effectiveness of our restoration activities and to determine presence/absence of GCN species:

1. The Nature Conservancy will establish 5 points to monitor bird populations on the preserve.
2. The Nature Conservancy will establish a series of photo monitoring points throughout the preserve.
3. The Nature Conservancy will conduct searches for RCW cavity trees once a year.

This project will be coordinated from the Birmingham office of TNC but will involve fire crews from TNC of Georgia and Alabama. Most of the longleaf pine will be planted the first year of the project and survival will be evaluated in year two. This project will be evaluated through the ongoing ecological monitoring taking place at each site.

Target Date for Achievement: September 30, 2008

Completion Date: September 30, 2008

Accomplishments:

Splinter Hill Bog Preserve

Numerous restoration and inventory activities funded by this grant have occurred at Splinter Hill Bog Preserve and are summarized below: Over the past two seasons The Nature Conservancy conducted six controlled burns at Splinter Hill Bog Preserve totaling approximately 620-acres. These burns

included the first growing season burn conducted at the Preserve in late May of 2008. Additional funding was obtained which allowed for the completion of mulched fire lines throughout the property this summer. Longleaf Pine was planted on approximately 20-acres of cutover lands on the preserve in the winter of 2007 and survived well despite drought conditions. An inventory of gopher tortoise burrows was also conducted in 2007 which identified 16 active burrows on the preserve (Figure 1). Since that time the USFWS has released one adult tortoise and 8 eight juvenile tortoises. Several efforts were made over the last two years to improve habitat conditions in target areas for gopher tortoises including hand removal of hardwoods and treatment with herbicide, followed by pile burning. Approximately 20 volunteers with over 100 hours were used during this process. Breeding bird point counts (Figure 2) were conducted in the late spring of 2007 and 2008 which identified the following species:

Bachman's Sparrow	Indigo Bunting
Blue Grosbeak	Morning Dove
Blue-gray Gnatcatcher	Northern Cardinal
Blue Jay	Pileated Woodpecker
Brown-headed Nuthatch	Pine Warbler
Carolina Chickadee	Red-bellied Woodpecker
Carolina Wren	Red-shouldered Hawk
Common Yellowthroat	Red-eyed Vireo
Downy Woodpecker	Summer Tanager
Eastern Wood-pewee	Tufted Titmouse
Eastern Towhee	White-eyed Vireo
Great Crested Flycatcher	Wild Turkey
Hooded Warbler	Yellow-breasted Chat



Americorp Volunteers Clearing Woody Vegetation to Improve Gopher Tortoise Habitat

Splinter Hill Bog Preserve contains healthy populations of Bachman's Sparrows. They are particularly abundant in the northeast corner of the preserve around the parking lot area. One Henslow's Sparrow was sighted in the winter of 2007 during a winter birding effort. Additionally the

best habitats were searched in 2007 and 2008 for Red-cockaded woodpecker activity with no success. Over 100 cover boards were put out in the Spring of 2007 to help attract amphibian and reptile species for inventory. These boards have been checked numerous times with no real results. A snake was noted one time but escaped before it could be identified. The following reptile and amphibian species have been observed over the previous two years:

Black Pine Snake (Intergrade)	Rough Green Snake
Broad-headed Skink	Six-lined Racerunner
Gray Rat Snake	Spring Peeper
Green Anole	Southern Leopard Frog
Eastern Cottonmouth	Southern Copperhead
Eastern Diamondback Rattlesnake	Southern Toad
Eastern Fence Lizard	Yellow-bellied Water Snake
Eastern Garter Snake	
Northern Black Racer	
Oak Toad	

Multiple efforts were made to control non-native invasive plant species at Splinter Hill Bog. Two areas of cogongrass were treated with no signs of re-sprout and multiple areas of Japanese climbing fern were sprayed. Significant progress has also been made on a large area of Chinese Privet in the NW corner of the preserve. Additional treatments for these species and Chinese Tallow will be ongoing this Fall.



Prescribed Burn at Splinter Hill Bog



Japanese Climbing Fern Control

Roberta Case Pine Hills Preserve

Numerous restoration and inventory activities funded by this grant have occurred at Roberta Case Pine Hills Preserve and are summarized below: A total of 5 burns were conducted at Roberta Case Pine Hills Preserve totaling approximately 400-acres over the last two years. Burns targeted areas with canebrake pitcher plants, areas to be planted in longleaf pine and areas targeted for warm season grass restoration. Following the burns in the winter of 2007 approximately 50-acres of cut over lands were hand planted in longleaf pine. Volunteers for Auburn University at Montgomery assisted

in one day of planting. While some trees did survive, the drought had a significant impact on survival as most of this site is sandy or gravely dry uplands. Breeding bird point counts (Figure 3) were conducted in the late spring of 2007 and 2008 which detected the following bird species believed to be breeding on the preserve:

American Crow	Indigo Bunting
Blue Grosbeak	Morning Dove
Blue-gray Gnatcatcher	Northern Cardinal
Blue Jay	Pileated Woodpecker
Carolina Chickadee	Pine Warbler
Carolina Wren	Prairie Warbler
Common Yellowthroat	Red-headed Woodpecker
Downy Woodpecker	Red-eyed Vireo
Eastern Bluebird	Summer Tanager
Eastern Wood-pewee	Swainson's Warbler
Eastern Towhee	Tufted Titmouse
Field Sparrow	Wood Thrush
Great Crested Flycatcher	Yellow-breasted Chat
Hooded Warbler	Yellow-throated Vireo



Volunteers Planting Longleaf Pine



Prescribed Burn at Roberta Case Pine Hills Preserve

Bibb County Glades Preserve

Numerous restoration and inventory activities funded by this grant have occurred at Bibb County Glades Preserve and are summarized below: Over the past two seasons The Nature Conservancy has conducted two prescribed burns totaling approximately 100 acres in the Mountain Longleaf Pine Ecosystem that occurs on the preserve. In 2007 The Nature Conservancy searched areas of available habitat for Red Cockaded Woodpecker and determined that there were none present on the preserve.

As large scale restoration progress on the nearby Cahaba River National Wildlife Refuge this area will likely be a great translocation site. Approximately 80 acres of 30 year old loblolly pine

plantation was selectively harvested at Bibb County Glades Preserve. The hardwood re-sprouts have been treated with herbicide and the area will be planted in longleaf pine this winter. Breeding bird point counts (Figure 4) were conducted in the late spring of 2007 and 2008 which detected the following bird species believed to be breeding on the preserve:

Acadian Flycatcher	Indigo Bunting
American Crow	Morning Dove
Blue-gray Gnatcatcher	Ovenbird
Blue Jay	Northern Cardinal
Broad Winged Hawk	Pine Warbler
Brown-headed Nuthatch	Prairie Warbler
Carolina Chickadee	Red-bellied Woodpecker
Carolina Wren	Red-eyed Vireo
Common Yellowthroat	Scarlet Tanager
Downy Woodpecker	Summer Tanager
Eastern Wood-pewee	Tufted Titmouse
Eastern Towhee	White-eyed Vireo
Great Crested Flycatcher	Yellow-breasted Chat
Hairy Woodpecker	Yellow-throated Warbler
Hooded Warbler	



Prescribed Burn at Bibb County Glades Preserve



Thinning Operation at Bibb County Glades Preserve

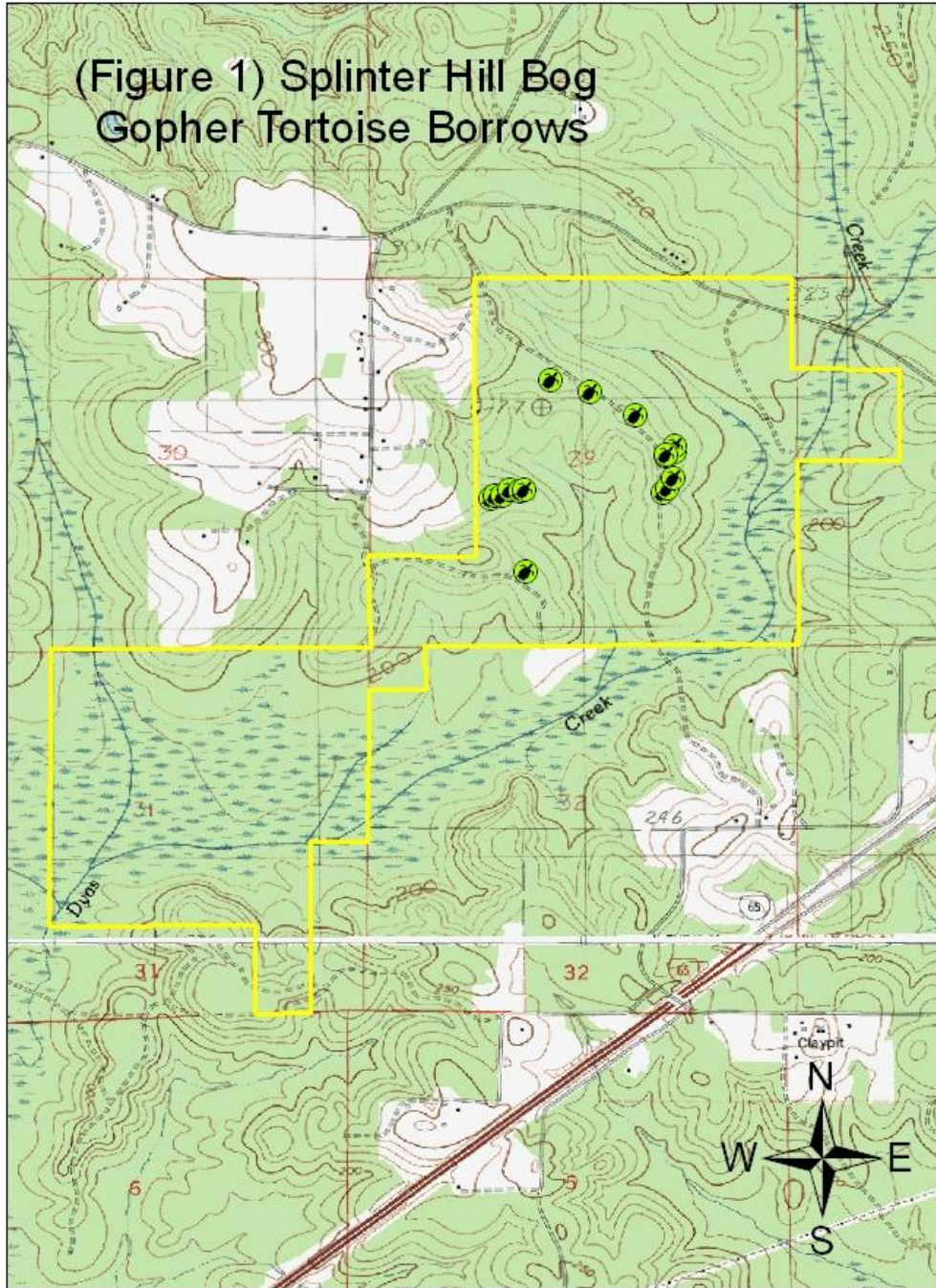
Significant Problems Encountered:

The drought which began to take shape in April and May of 2007 had a significant impact on the survival on longleaf pine seedlings at Roberta Case Pine Hills Preserve. Seedlings at Splinter Hill Bog seemed to have faired better. The dry conditions also postponed several growing season burns that were schedule for May of 2007.

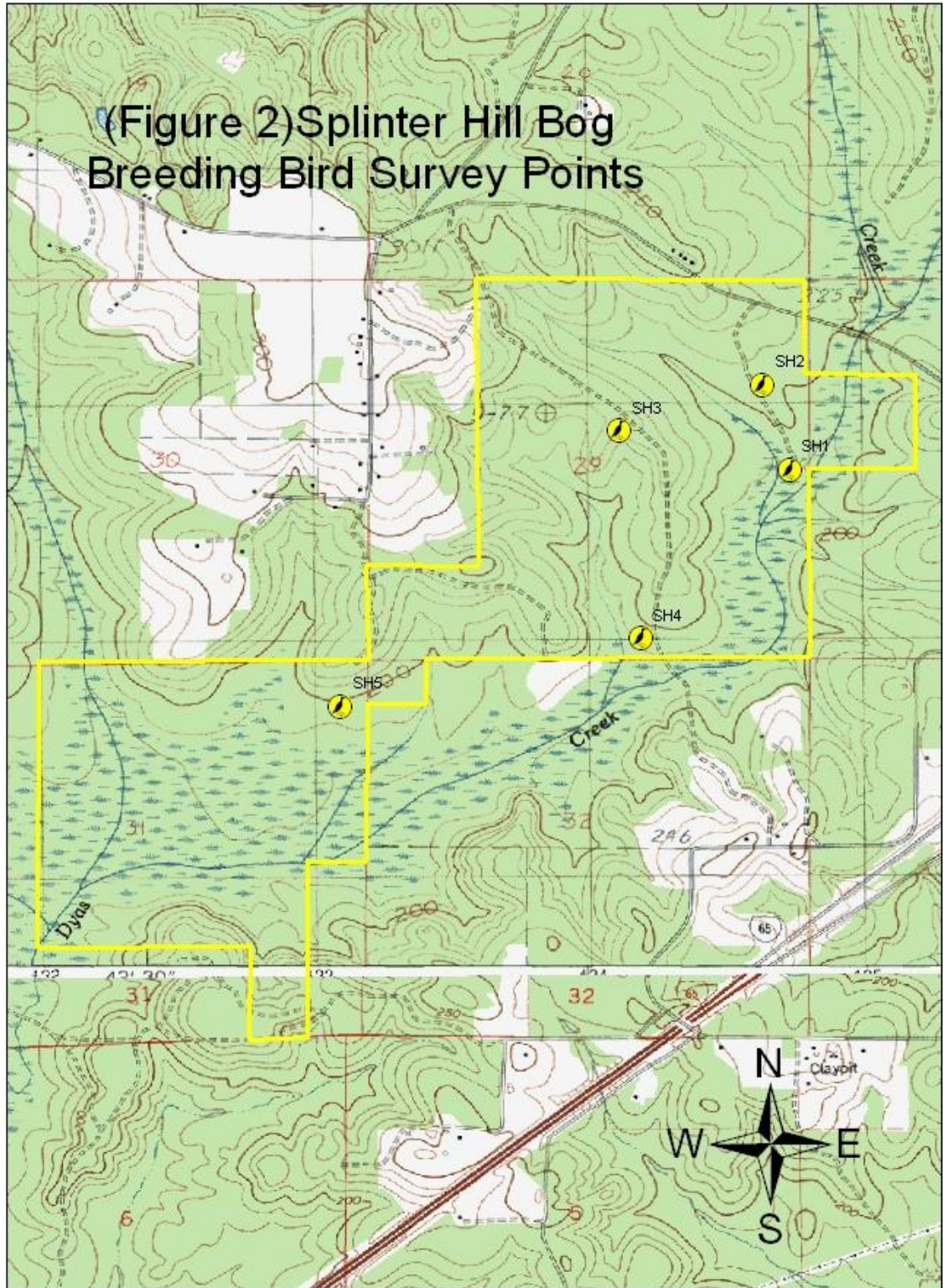
Significant Deviations:

None.

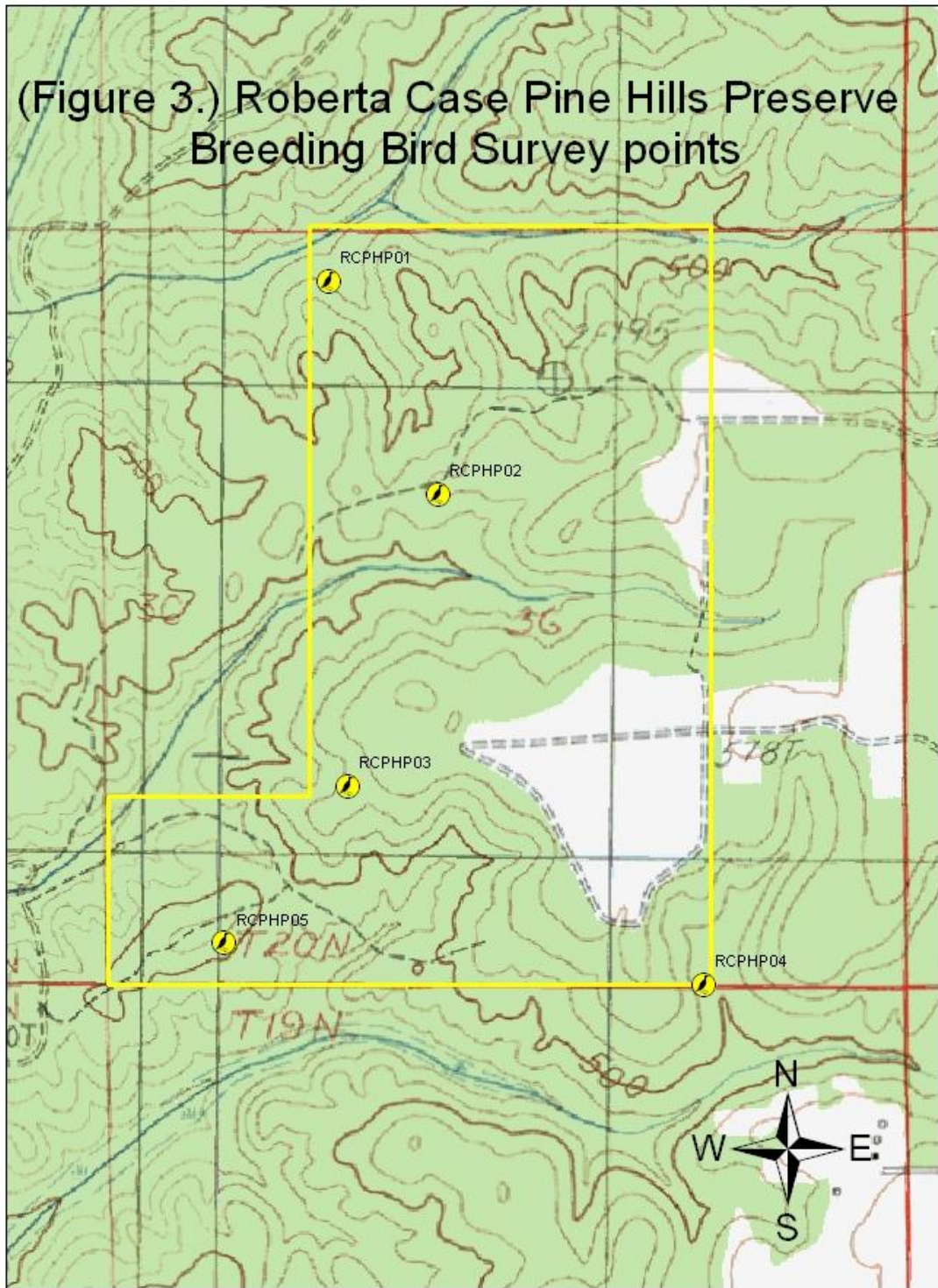
(Figure 1) Splinter Hill Bog
Gopher Tortoise Borrows



(Figure 2) Splinter Hill Bog
Breeding Bird Survey Points



(Figure 3.) Roberta Case Pine Hills Preserve
Breeding Bird Survey points



(Figure 4.) Bibb County Glades Breeding Bird Survey Points

