

Project 7
**Shortleaf Pine-Bluestem Habitat Restoration on Freedom
Hills and Lauderdale Wildlife Management Areas.**

Final Performance Report

State: Alabama

SWG Grant Number: T-3-2

Period: October 1, 2006 to January 31, 2010

Need:

In 2001-2002, the Alabama Department of Conservation and Natural Resources (ADCNR) acquired approximately 30,000 acres through Alabama's *Forever Wild* program. These lands are contained in Freedom Hills Wildlife Management Area (FHWMA) and Lauderdale Wildlife Management Area (LWMA). Approximately 10,000 of these acres consist of Streamside Management Zones and areas of excessive slope that are held in fee title by the *Forever Wild* program. The remaining 20,000 acres are in a timber lease agreement that releases fee title to the *Forever Wild* program through the year 2020. As these acreages are released to the state following harvest and expiration of leases, site preparation and planting shortleaf pine seedlings will be needed. Approximately 1,000 acres, previously managed as short rotation loblolly pine plantation, was available for restoration work on the first year of this project (FY 2006), with an additional 1,000 acres becoming available in the 2nd and 3rd years of this project.

The *Alabama Comprehensive Wildlife Conservation Strategy* (ACWCS) states that restoration of native communities, and fire where appropriate, is needed to benefit the following species of greatest conservation need (GCN) associated with shortleaf pine – bluestem habitats:

Coal Skink, *Eumeces anthracinus*
Southeastern Five-lined Skink, *Eumeces inexpectatus*
Eastern King Snake, *Lampropeltis getula getula*
Northern Pine Snake, *Pituophis melanoleucus melanoleucus*
Black Pine Snake, *Pituophis melanoleucus lodingi*
American Kestrel, *Falco sparverius*
American Woodcock, *Scolopax minor*
Bewick's Wren, *Thryomanes bewickii*
Bachman's Sparrow, *Aimophila aestivalis*
Eastern Spotted Skunk, *Spilogale putorius*
Long-tailed Weasel, *Mustela frenata*
Long-eared Myotis, *Myotis septentrionalis*

Objective:

The objective is to restore a fire maintained shortleaf pine – bluestem ecosystem on approximately 20,000 acres, beginning with approximately 2,000 acres funded by this project.

Expected Results and Benefits:

The restoration and management of shortleaf pine-bluestem habitats is expected to re-establish a segment of this disappearing ecosystem within the FHWMA and LWMA. The GCN species listed above, as well as other wildlife, will benefit from this restoration.

Approach:

During FY 2006, site preparation (herbicide application) was scheduled for approximately 1,000 acres. Beginning in the winter of FY 2007, these stands will be prescribe burned, followed by hand planting shortleaf pine seedlings. Over the three-year project period, approximately 2,000 acres will be treated in similar fashion and restored to shortleaf pine.

Although not included in the grant proposal itself, a monitoring program for GCN species was also developed during FY2006. The ADCNR will establish the following monitoring efforts to measure the effectiveness of the habitat restoration activities for GCN and other wildlife species.

Monitoring will begin in spring of 2007. One site will be established for each 500 acres that is site prepared and replanted with pine seedlings. Each site will be paired with a control site on a forest stand that has not been reforested. Global Position System coordinates and a description will be recorded at the time each site is established. The description of each site will be updated annually. Maps with the sites identified will be maintained for reference by personnel conducting monitoring activities.

Birds A point count survey for birds will be conducted at each site between May 1st and June 15th each year. Sites will also be visited in January to document the occurrence of American kestrels and American woodcock. Northern bobwhites will be surveyed at each site in spring and fall according to guidelines for Natural Resources Conservation Service CP33 monitoring.

Reptiles and Amphibians Each site will be searched visually and by using hand tools to turn over woody debris, leaf litter, etc. twice each year, once during May and a second time between September 15th and October 15th. In order to avoid disturbance to the point count for birds at the same site, the survey in May will not be conducted within the three days prior to the bird count. Searches will be conducted in a figure eight pattern beginning at the center of each site. From the

center the search will proceed north along a line for 300 feet then west for 300 feet, south 300 feet and east 300 feet which will intersect with the starting point. The search will then proceed east for 300 feet, south for 300 feet, west for 300 feet and north 300 feet which will terminate at the starting point. The length of the eight segments of the search line will total 2,400 feet. The search will cover the area out to ten feet from the center line on each side for a total of 48,000 square feet (1.1 acres). All species of reptiles and amphibians encountered and their numbers will be recorded.

Mammals Each site will be searched during June each year to determine the presence of sign such as tracks and droppings that indicate the presence of mammals. In order to avoid disturbance to the point count for birds at the same site, the survey will not be conducted within the three days prior to the bird count. Each search will be conducted in a figure eight pattern as described for the reptiles and amphibians survey. Bats will be surveyed at each site during June or July by mist netting and/or use of passive ultrasonic detectors such as the *Anabat* system.

Other Observations Incidental observations such as road kills, live sightings, nests, dens and skeletal remains will be recorded for animals of special interest associated with the reforested tracts. This will include GCN species and those that are rarely observed due to their behavior and habits. Global Position System coordinates will be obtained at observation sites. Observations made during other surveys and studies conducted on the property will be included in the records.

The costs associated with monitoring efforts are not included in the project budget. It will likely take a number of years for this habitat to approach maturity and reach a stage that will benefit all of the identified wildlife species. Accordingly, the monitoring will be accomplished through existing and future ADCNR research and survey projects.

Activities:

Site prep spraying was done by helicopter spraying a mixture of 48 oz. of Chopper and 4 quarts of Razor Pro in a 10 GPA mix.

Trees for the first planting year were 1 year old seedlings from Tennessee and 2 year old trees from a nursery in Kentucky. The following years, a nursery in Georgia was contracted to grow the seedling. All seedlings planted after the first season were considered containerized.

The following table lists the acreage for each year from treatment through planting.

Reforestation Activities	FY 06	FY 07	FY 08	FY 09	FY 10
Site prep Spraying Acreage FH	960		894	640	
Site prep Spraying Acreage Laud.		930			
Site prep Burning Acreage FH	960		894		
Site prep Burning Acreage Laud.		930			
Tree planting Acreage FH		166	600	140	1313
Tree planting Acreage Laud.			464	360	

Maps of these reforestation activities are attached.

Monitoring of wildlife species was conducted from May through September and any incidental observations from other parts of the year were documented.

Point Count surveys were conducted during May or June of 2007 through 2009 for bird species. The following table list those bird species noted.

From Cutover unit	From Hardwood unit
Birds	Birds
Red Shouldered Hawk	Ruby Throated Hummingbird
Northern Bobwhite	Red Eyed Vireo
American Crow	Carolina Chickadee
Yellow breasted Chat	Carolina Wren
Tufted Titmouse	Tufted Titmouse
Red Bellied Woodpecker	Eastern Wood Pewee
Indigo Bunting	Kentucky Warbler
Northern Cardinal	Blue Jay
Pine Warbler	Great Crested Flycatcher
Great Crested Flycatcher	Acadian Flycatcher
Common Yellowthroat	Red Bellied Woodpecker
Rufus Sided Towhee	Eastern Phoebe
Red Eyed Vireo	Pileated Woodpecker
Mourning Dove	American Crow
Blue Jay	Rufus Sided Towhee
Pileated Woodpecker	Cedar Waxwing
Scarlet Tanager	Yellow Breasted Chat
Carolina Wren	Yellow Billed Cuckoo
American Kestrel	Wood Thrush
American Woodcock	Scarlet Tanager
Eastern Wild Turkey	Indigo Bunting
Prairie Warbler	Eastern Wild Turkey
Redheaded Woodpecker	
American Robin	
Eastern Meadowlark	
American Goldfinch	

Grasshopper Sparrow	
Eastern Blue Bird	
Eastern Wood Pewee	
Yellow Billed Cuckoo	
Whip Poor Will	

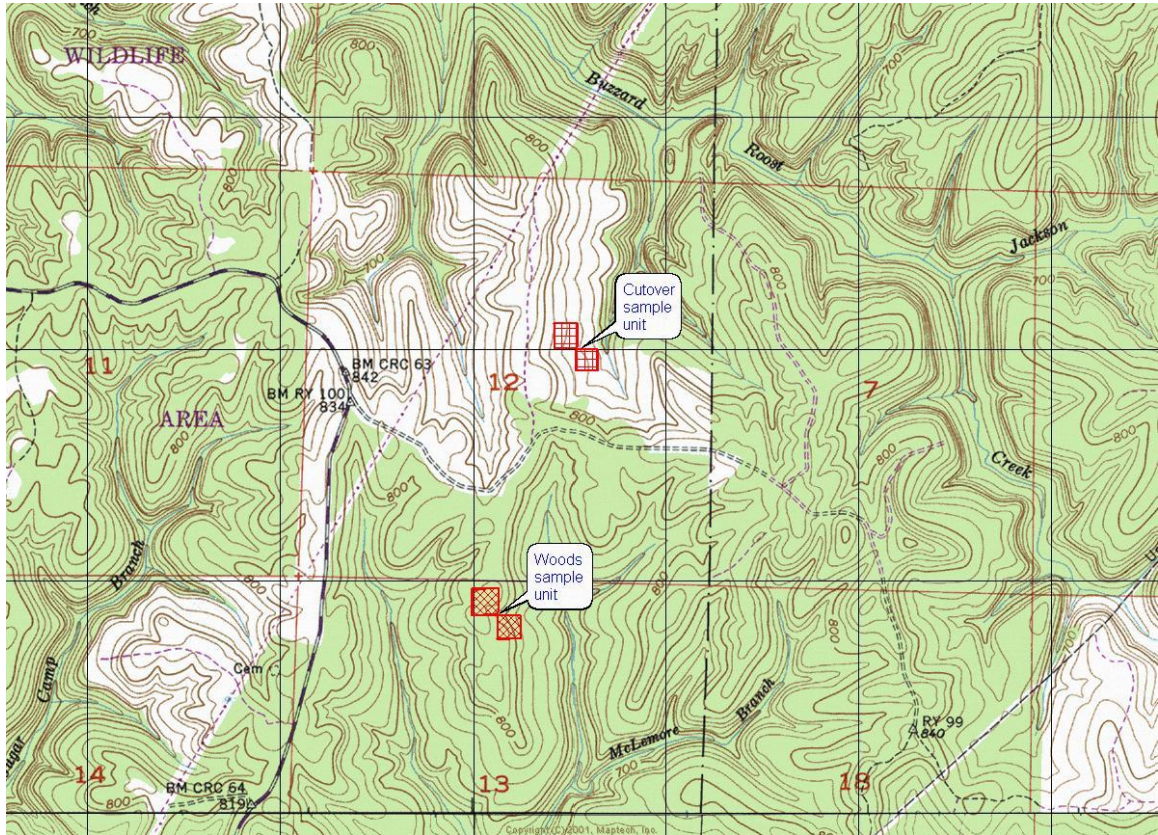
Mammal surveillance was done in May using snap traps, Sherman traps, and drift fence with pit falls. A total of 1819 trap nights were documented. Bats were monitored with mist nets and using an Anabat device system. Observations of tracks and live animals were noted throughout the year.

Monitoring of reptiles and amphibians were done by flipping logs and rocks in each unit a couple times a year during each year of monitoring. The only documented individual was actually caught in the drift fence pit fall.

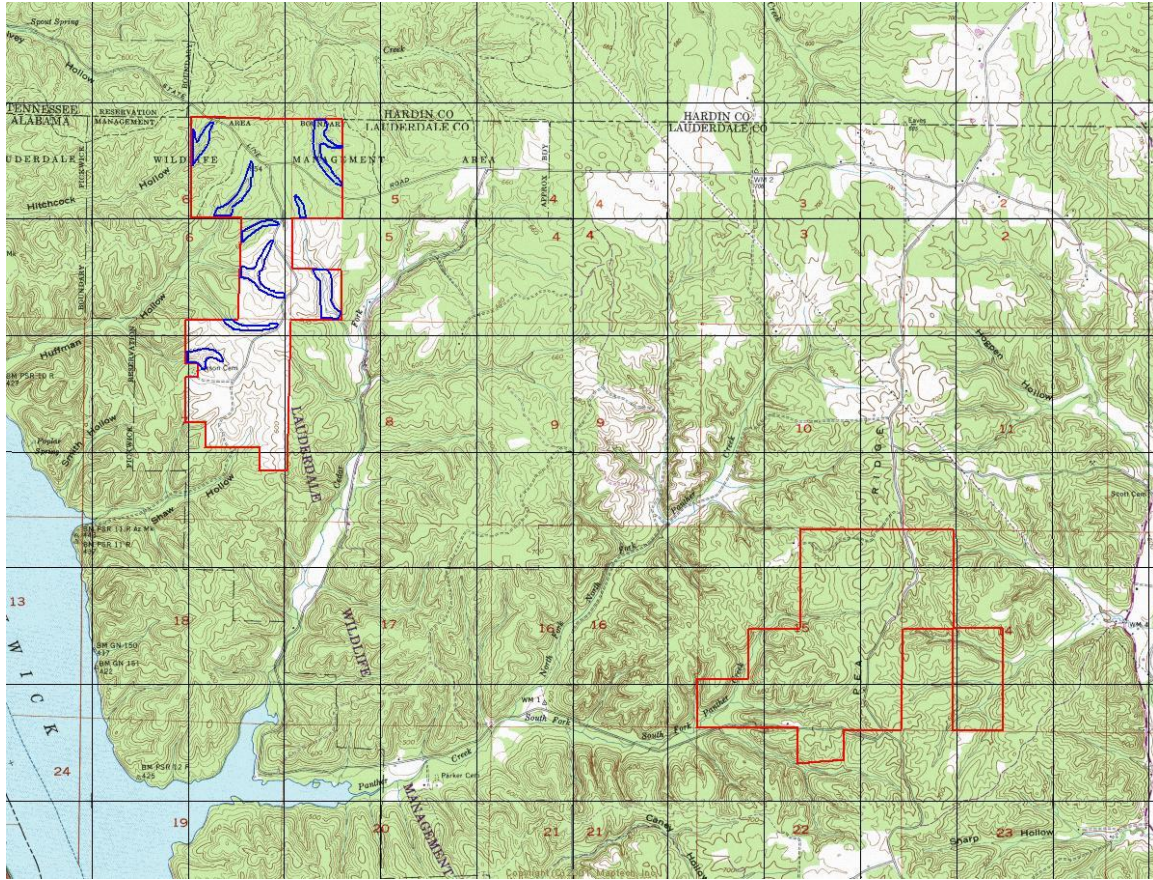
The following table list mammals and herps documented during monitoring.

From Cutover Unit	From Hardwood Unit
Mammals	Mammals
Red Bat	Red Bat
Big Brown Bat	Flying Squirrel
Evening Bat	Armadillo
Pipistrelle Bat	White-tailed deer
Armadillo	Raccoon
White-tailed deer	White-footed mouse
Coyote	Southern short-tailed shrew
Bobcat	Woodland vole
Fox	
Eastern Cotton-tailed rabbit	
Golden Mouse	
Cotton rat	
White-footed mouse	
Woodland vole	
Mole	
From Cutover Unit	From Hardwood Unit
Reptiles and Amphibians	Reptiles and Amphibians
	Five-lined Skink

Location of monitoring sites



Location of site prep and planting at Lauderdale WMA



Locations of site prep and plantings at Freedom Hills WMA.

