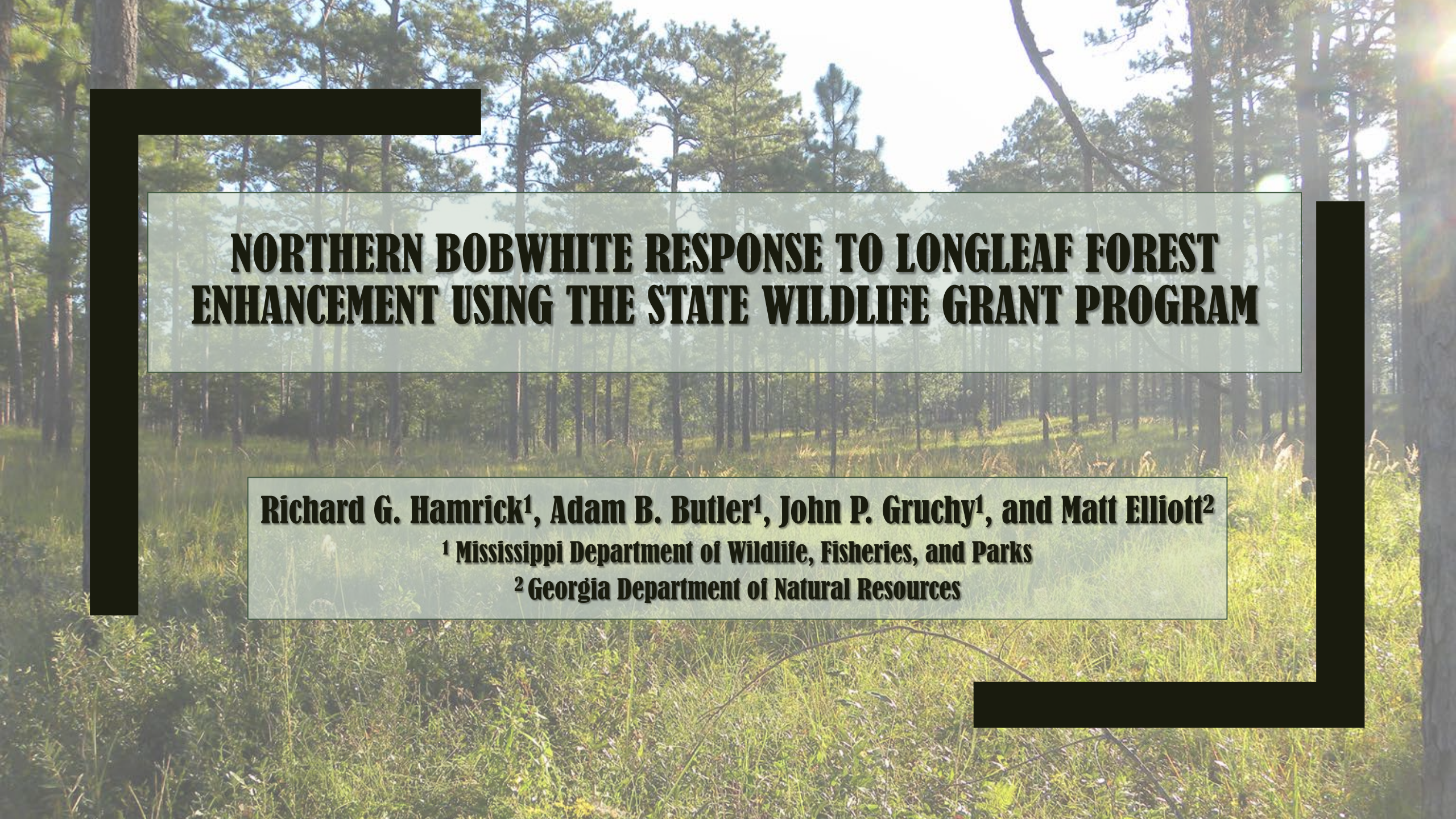




NORTHERN BOBWHITE RESPONSE TO LONGLEAF FOREST ENHANCEMENT USING THE STATE WILDLIFE GRANT PROGRAM

Richard G. Hamrick¹, Adam B. Butler¹, John P. Gruchy¹, and Matt Elliott²

¹ Mississippi Department of Wildlife, Fisheries, and Parks

² Georgia Department of Natural Resources



State Wildlife Grant Program

Federal funding to state fish and wildlife agencies to develop programs that benefit sensitive or imperiled wildlife and their habitats.

“Species of greatest conservation need” identified by State Wildlife Action Plans.

Pyric ecosystems and their inhabitants are overly represented within SWAPs.

Multistate Sandhills/Upland Longleaf Ecological Restoration Project

In 2011, Mississippi joined state wildlife agencies from Alabama, Florida, Georgia, and Louisiana in securing a collective \$1.5 million multistate competitive SWG.

The project sought to enhance longleaf forests.

The gopher tortoise (*Gopherus Polyphemus*), was the species of greatest conservation need designated to be the primary beneficiary of this project.

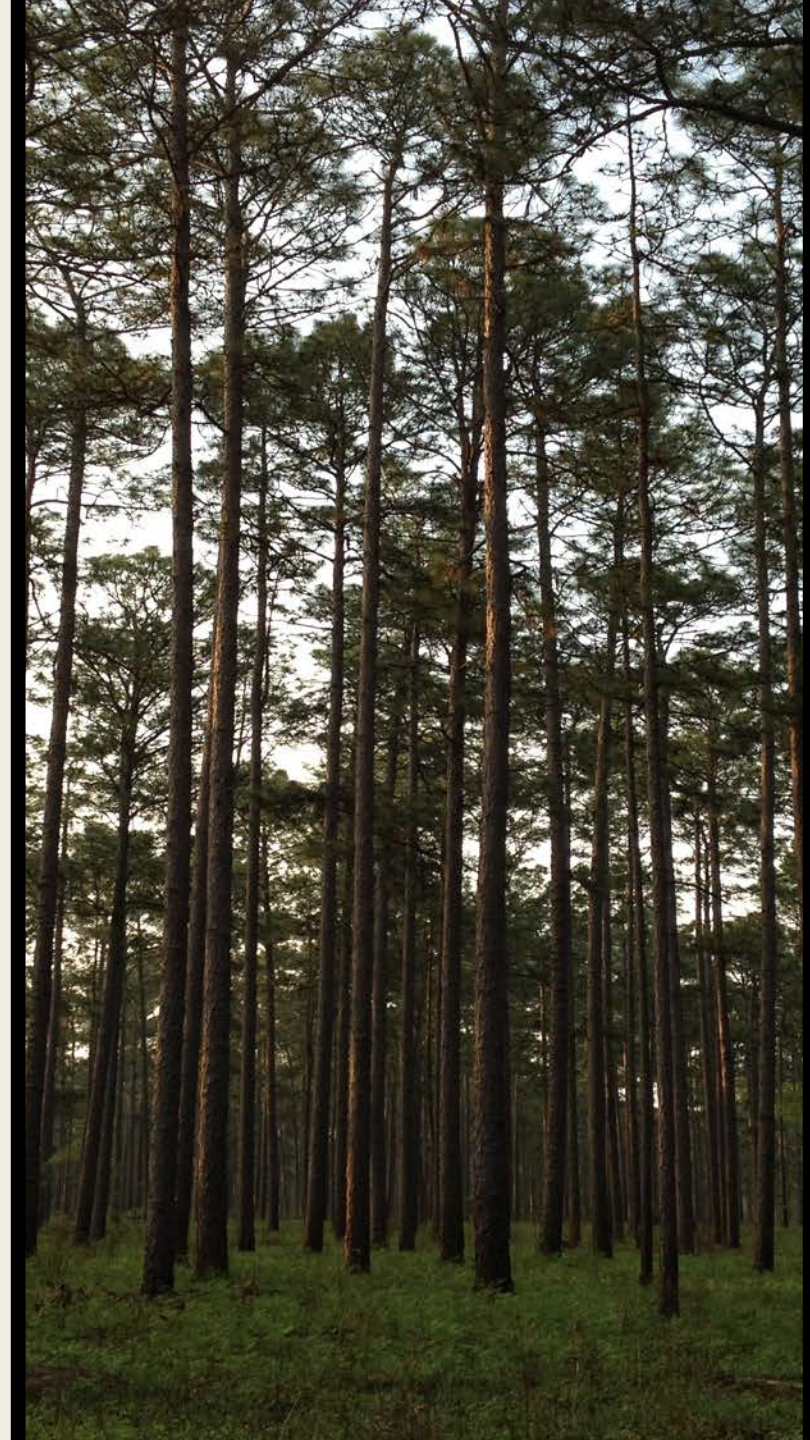


Multistate Sandhills/Upland Longleaf Ecological Restoration Project

Project objectives were to enhance nearly 52,000 acres of longleaf forest across the 5 recipient states.

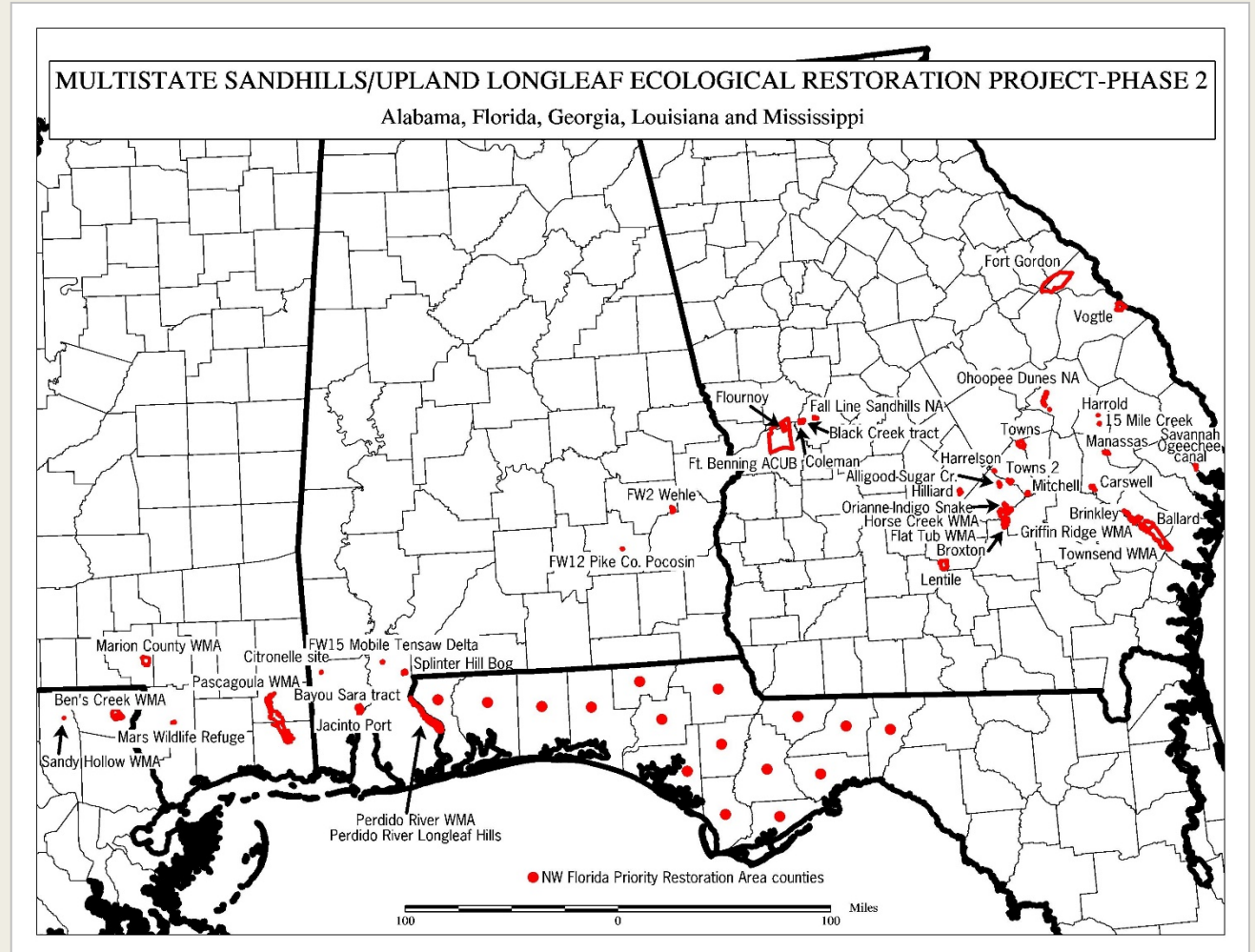
Each state set their own subset of objectives and state-specific deliverables.

All states would monitor the response of understory vegetation, avian communities, and establish baselines for gopher tortoise populations.



Multistate Sandhills/Upland Longleaf Ecological Restoration Project: MISSISSIPPI

Mississippi portion of the project
was primarily to be carried out at
the Marion County Wildlife
Management Area.



Marion County Wildlife Management Area

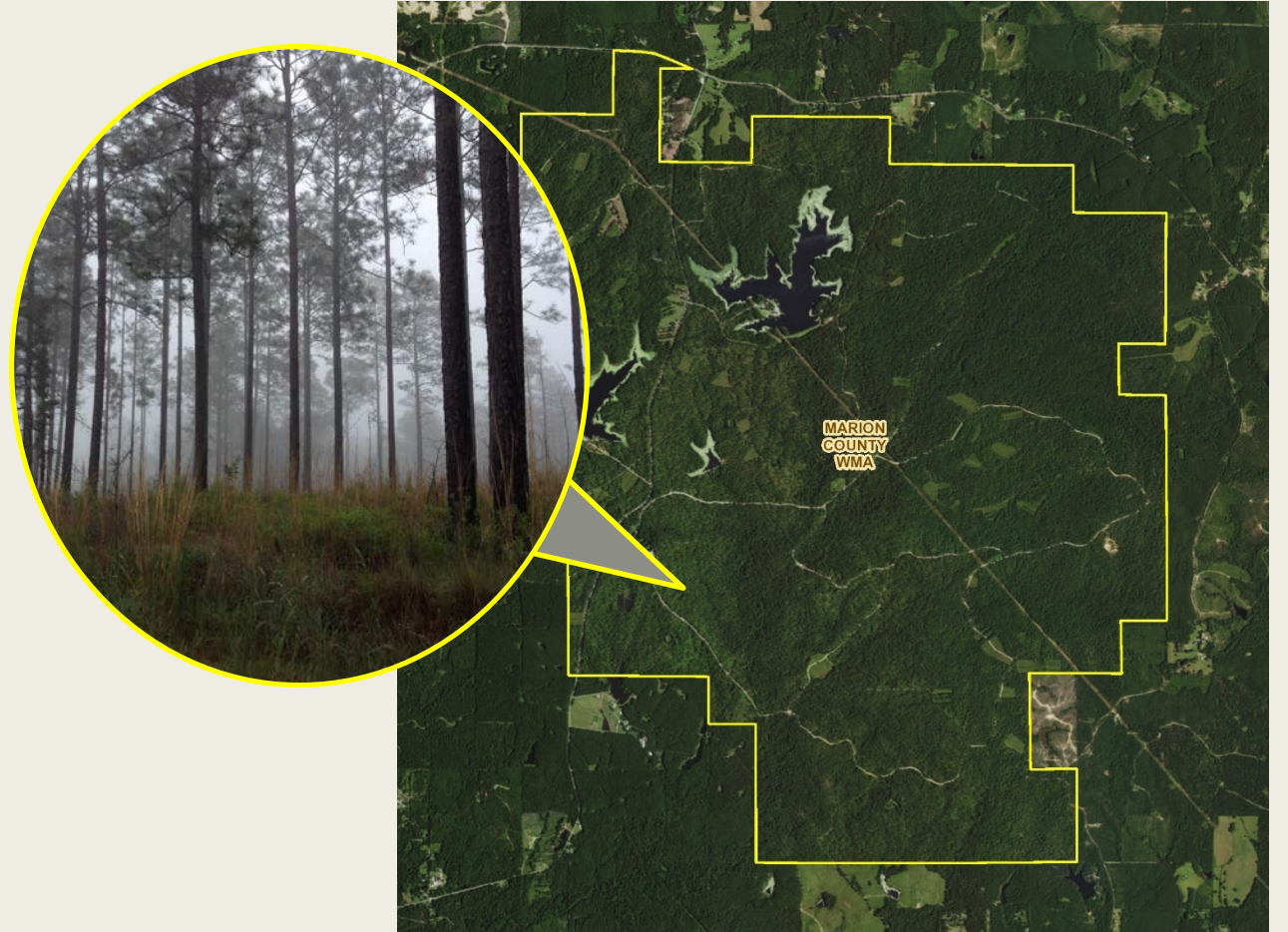
Purchased in 1949; first state-owned Wildlife Management Area.

7,125 total acres.

Dominated by longleaf pine forests.

Historically managed with prescribed fire on 3-year return intervals.

Holds populations of gopher tortoise and Northern bobwhite.



Marion County Wildlife Management Area



Past fire-return intervals were often insufficient to prevent woody plant entrenchment in many stands.

SWG dollars were used to selectively apply herbicides to rapidly reduce undesirable plants.

Prescribed fire was then reintroduced post-treatment.

Herbicide Application

Triclopyr used at 4oz per gallon plus surfactant.

Applied via HAND CREWS during
August – October 2012 & 2013.

Injection with *Imazapyr* at 12oz per gallon
where necessary.

Primarily targeted:

Gallberry (*Ilex coriacea*)

Youpon (*Ilex vomitoria*)

Sweet Gum (*Liquidambar styraciflua*)

Wax Myrtle (*Myrica cerifera*)

Plus other off-site or undesirable
woody-stemmed vegetation.

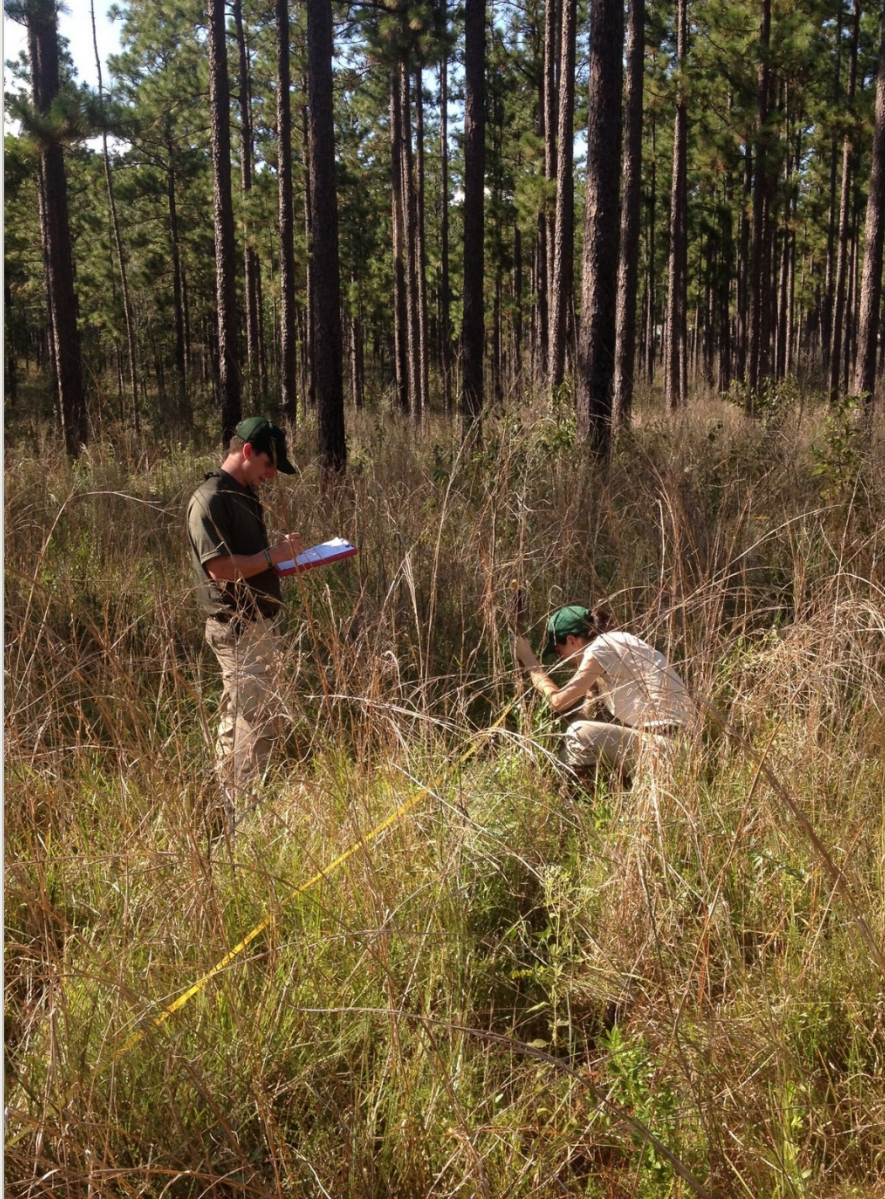


Prescribed Fire

Treatment stands were burned during the following late winter or early spring.



Vegetation Monitoring



Random points selected in treated stands.

Measured coverage of functional classes
using point-intercept method via paired
50m transects.

Pretreatment measurements – Fall 2012
Post-treatment measurements – Fall 2014

Avian Monitoring

Standard 250m radius breeding season point counts randomly distributed across treated and untreated stands.

Counts were 12 minute duration divided into 3, 4-minute segments.

All avian species (including NOBOs) were counted.

Pretreatment Counts – June 2012

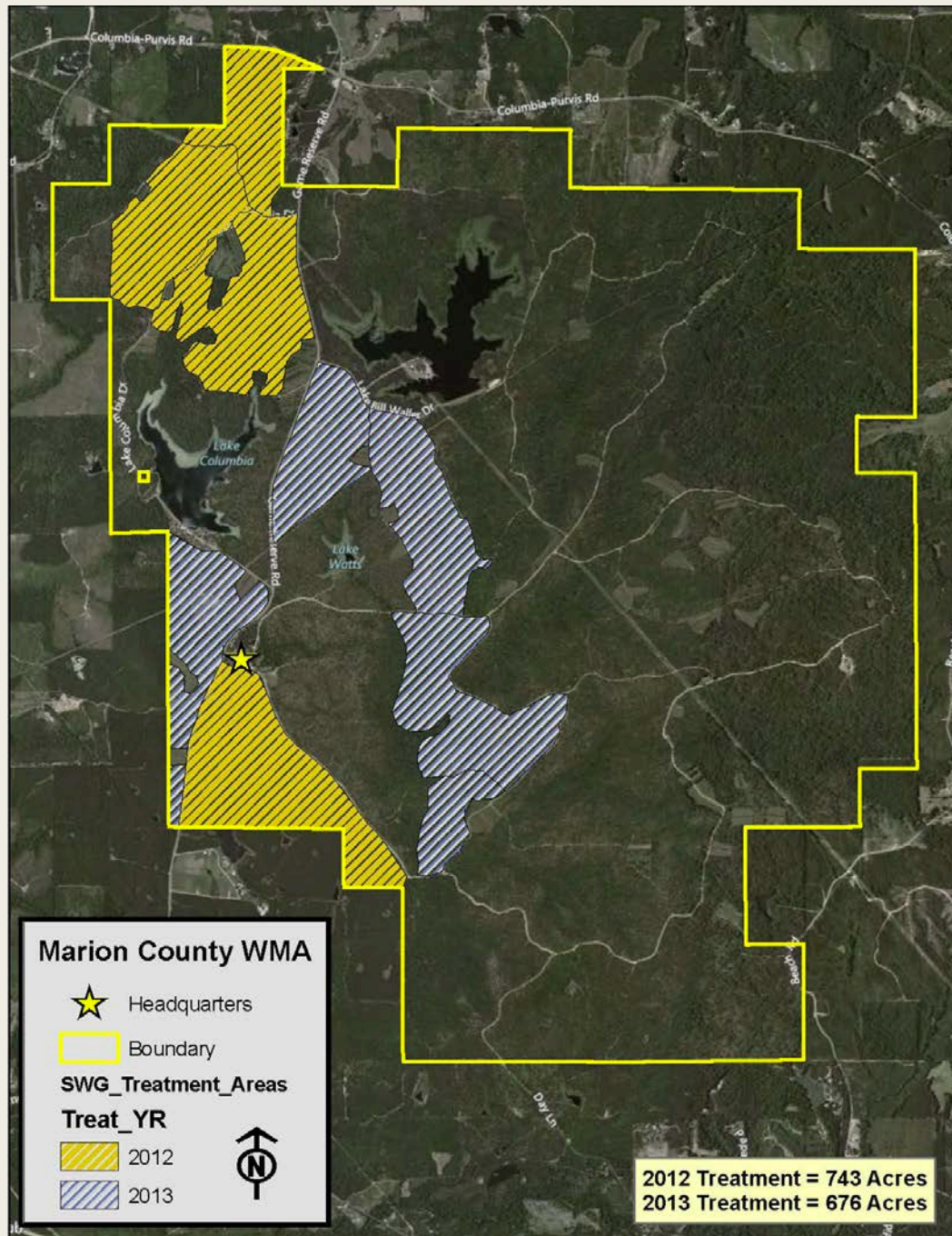
Post-treatment Counts – May/June 2014

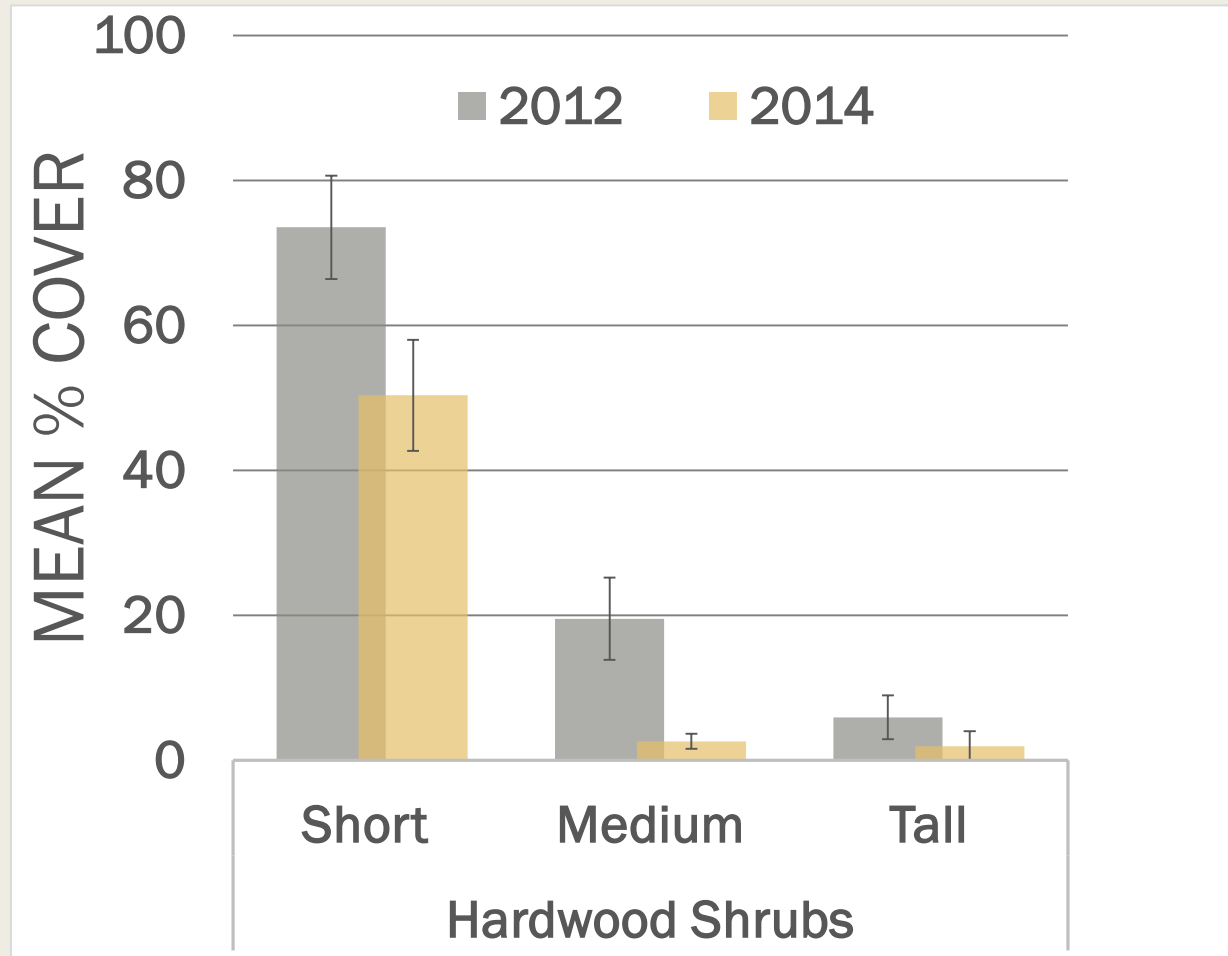


Results

Herbicide applications occurred during early fall 2012 and 2013.

Combined years of treatments covered approximately 20% of the WMA.

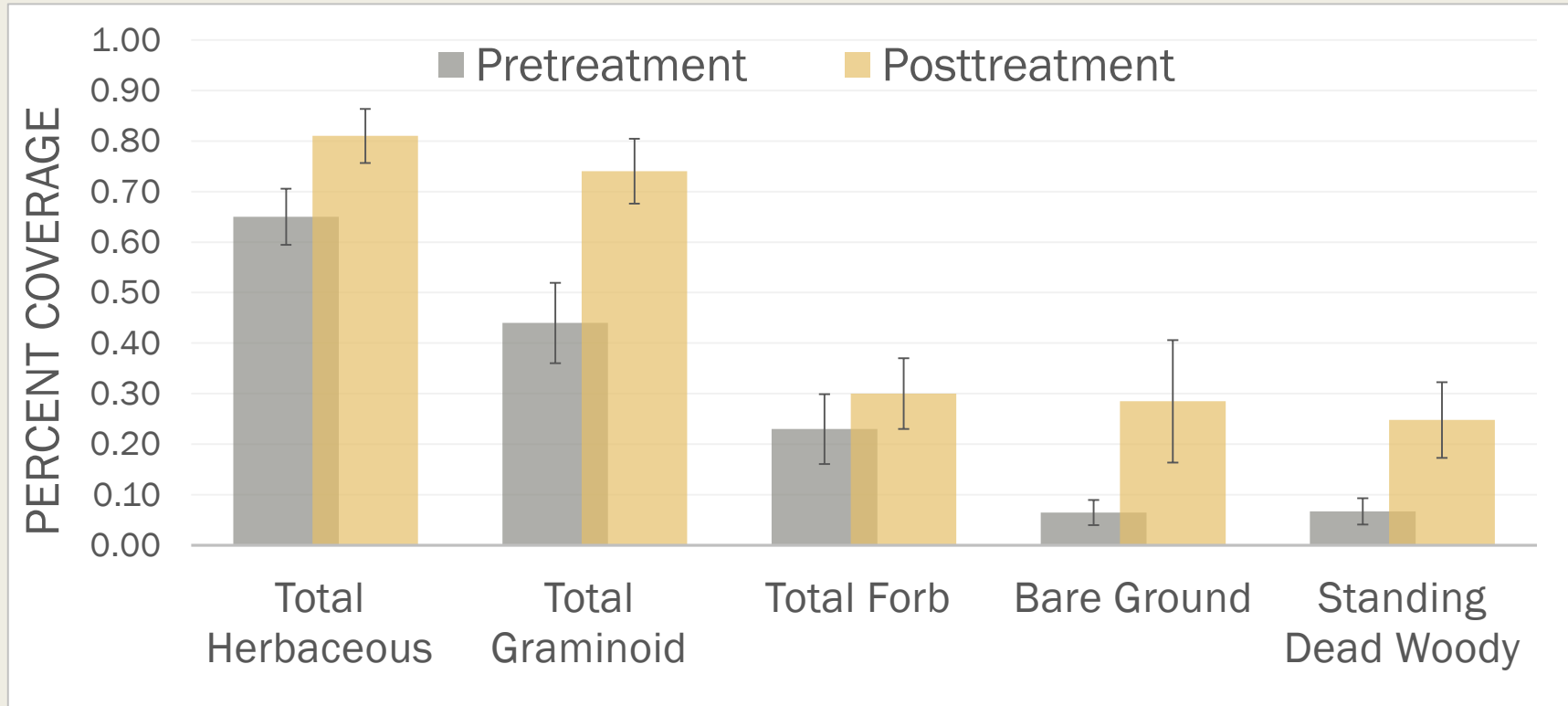




Results

Coverage of woody brush was reduced across all size classes.

Results



Coverage of herbaceous vegetation, graminoids, bare ground, and standing dead woody vegetation increased significantly.

Total forb coverage increased 30%, despite lack of statistical significance.

Pretreatment

Summer 2012



Immediate Post-treatment

September 2012



Post-treatment

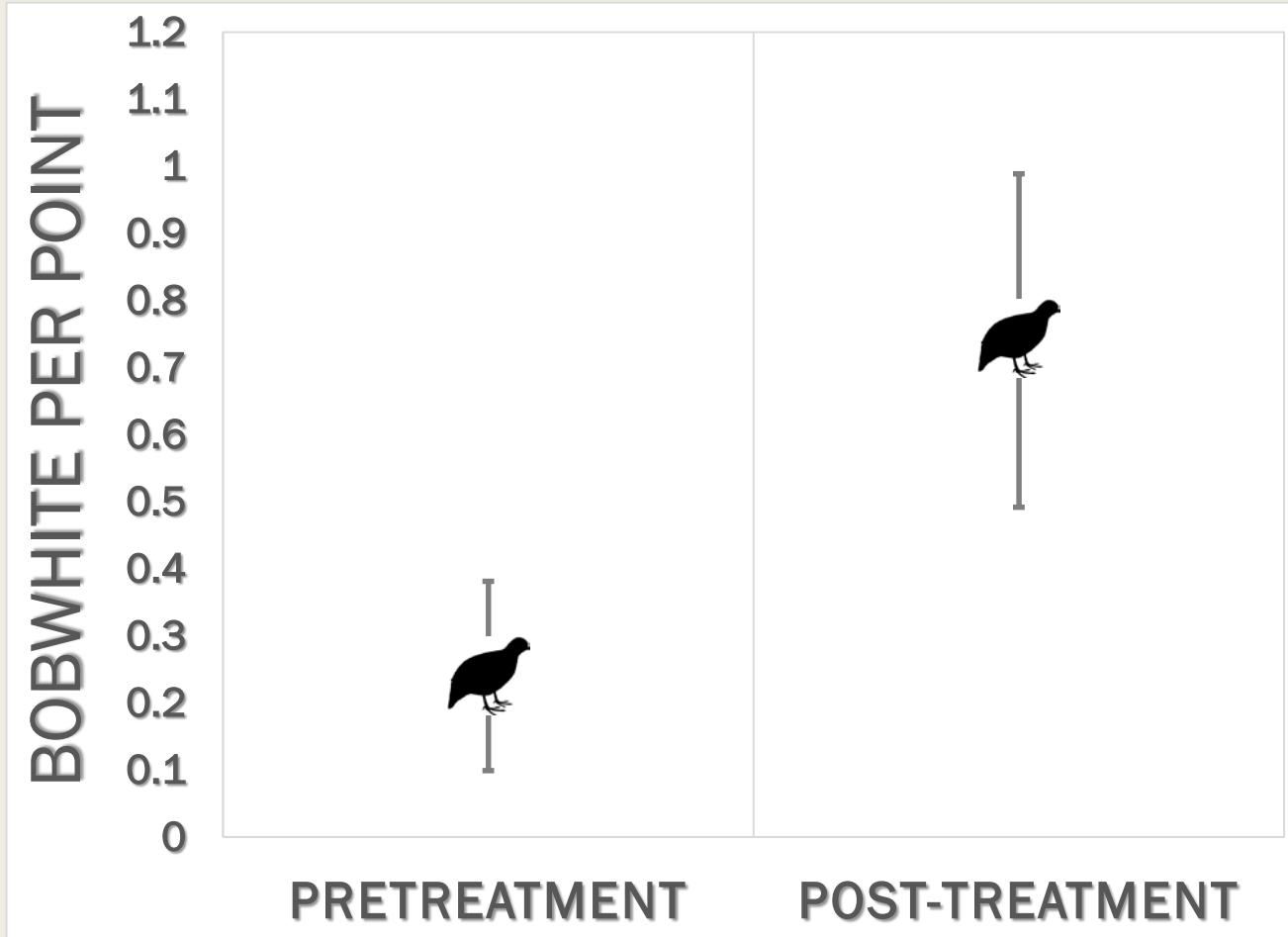
May 2013



One-Year Post-treatment

September 2013



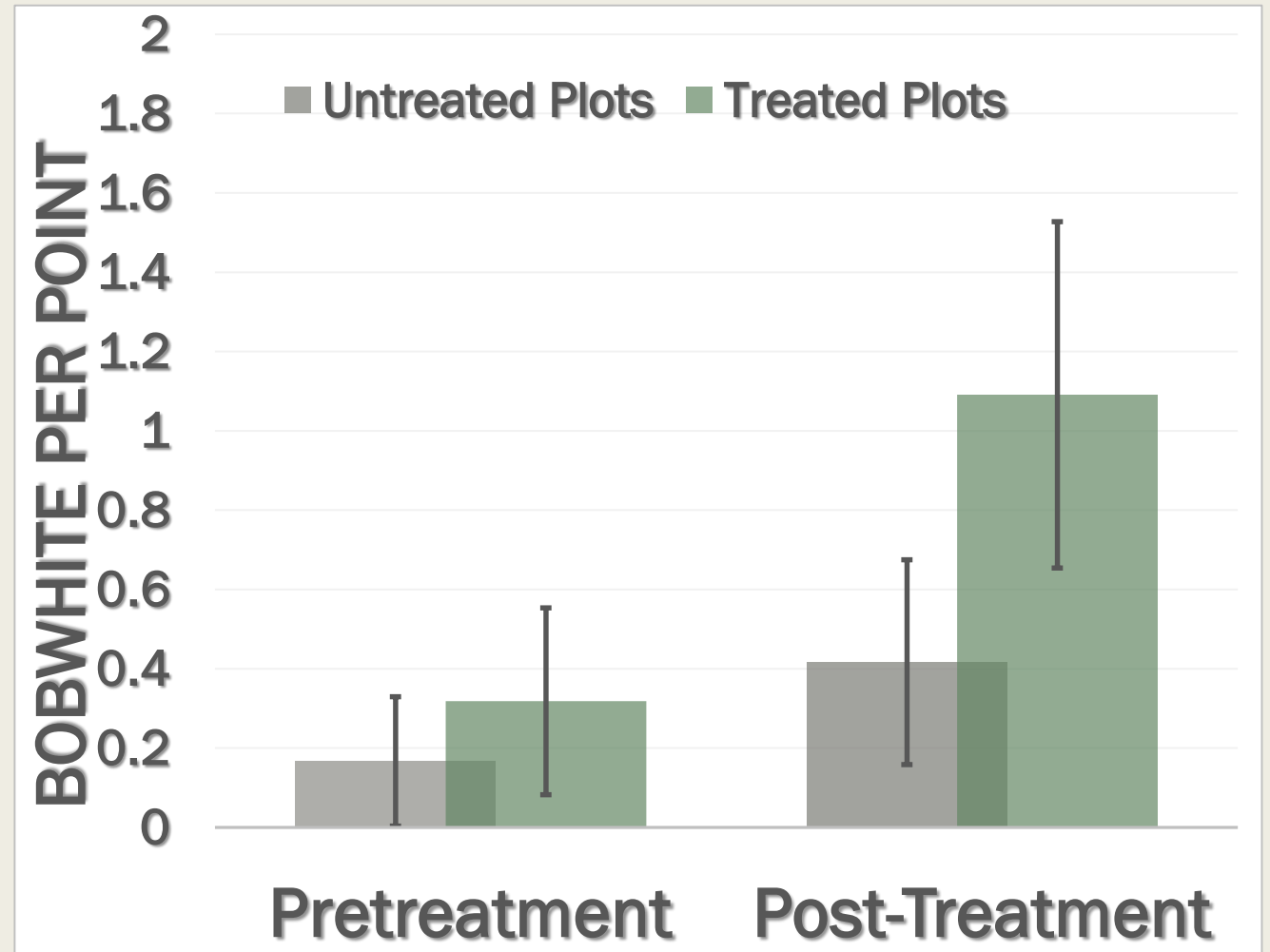


Results

Mean relative abundance of bobwhites increased 3-fold across the entire WMA following treatments.

Results

In 2014, bobwhite relative abundance was nearly twice as great within treated versus untreated stands.



Conclusions

NOBOs share habitat overlap with many species of greatest conservation need, including gopher tortoises in the SE.

Funding from “nontraditional” game management sources like SWG can be used to enhance habitat for bobwhites (along with other nongame and T&E species).



Conclusions

Selective herbicide treatments reduced woody-stemmed vegetation and promoted a bobwhite friendly understory.

Treating approximately one-fifth of the WMA over two years appeared to increase bobwhite abundance across the entire area.



Questions?

