

Final Performance Report

State: Georgia

Grant No.: T-16-2

Grant Title: Georgia Sandhills Inventory

Grant Duration: 9 months **Start Date:** 1 April 2009 **End Date:** 31 December 2009

Period Covering Report: 1 April 2009 to 31 December 2009

Project Costs: Federal: \$20,000 State: \$20,000 Total: \$40,000

Study/Project Objective:

This project has several objectives. The first is a map of sandhills and sandhills-associated habitats throughout the state. This should be at a level of detail that is at least to that of Natureserve's Ecological Systems, and potentially at that of associations. The second is a field-based assessment of as many high-quality areas as possible, including ecological condition, rare (and other) species present, and potential for restoration. The third objective is, on a sub-sample of sites, some estimate of population extent and size for gopher tortoises. This will involve counts of burrows, and will take place on public lands, and private lands where permission can be obtained.

This project was an addition to original T-16 State Wildlife Grant that had the same objectives.

Activity This Period:

- A GIS coverage of sandhills habitats across the Georgia Coastal Plain was derived from aerial photograph interpretation with SSURGO soils data and substantial ground-truthing as guides. Assessments of sandhills ecological integrity were also obtained from aerial photograph interpretation.
- We mapped nearly 240,000 acres of sandhill habitats across the Coastal Plain. Largest concentrations were in Taylor, Marion, Emanuel, Long, Richmond, and Tattnall Counties. Sandhills were associated with three primary geological features: Cretaceous shorelines along the Fall Line; Pleistocene aeolian dunes along South Georgia rivers; sandy remnants of Pleistocene barrier islands on the lower Coastal Plain. Many areas that would formerly contain sandhill habitat have been converted to other uses and are no longer recognizable as such.
- Analysis of ecological integrity data in a landscape context is ongoing.
- Joseph Jones Ecological Research Center completed gopher tortoise line transect surveys and subsequent data analysis on 20 state and Nature Conservancy-owned properties. Tortoise population estimates were derived for 13 of these properties. Final report was reworked into a publication in *Applied Herpetology* (included as Appendix). Largest

tortoise populations on state lands are on Townsend WMA (424 before recent additions) and River Creek WMA (313). Silver Lake WMA may have a comparably-sized population but an estimate was not obtained for this property,

- Vegetation plots and rapid gopher tortoise surveys were conducted at 291 points in 51 counties across the Coastal Plain, on both public and private land.
- A total of 1664 active gopher tortoise burrows and 948 inactive burrows were observed across all sites visited. Active tortoise burrows were observed at 218 of 291 points visited, in 40 of 51 counties, indicating the species is still widespread across the Georgia Coastal Plain.
- Other rare species observed during surveys included: eastern indigo snake (at 2 sites), Bachman's sparrow (2 sites), Florida pine snake (2 sites), Southeastern pocket gopher (4 sites), sandhills rosemary (6 sites), sandhills milkvetch (3 sites), *Chamaecrista deeringiana* (2 sites), Ochoopee wild basil (2 sites), Florida swamp privet (1 site), sandhills golden-aster (10 sites), Ochoopee bumelia (4 sites), and Pickering's morning-glory (5 sites).
- Access database developed for data acquired during project. Data analysis is ongoing. We will attempt to derive an index of ecological integrity using vegetation data obtained at plots.
- Data distributed to participating private landowners.
- Mississippi State University Entomology Museum conducted ant and grasshopper surveys at Fall Line Sandhills Natural Area, Big Hammock Natural Area, and Ochoopee Dunes Natural Area. Results indicate negative relationship between ant diversity and soil disturbance on sandhills. Some results published in *Journal of Orthoptera Research* and included as Appendix.
- A number of sites identified during the course of this project are now receiving restoration management as part of the subsequent Multistate Sandhills Ecological Restoration competitive State Wildlife Grant.

Deviations: The grant was extended six months.

Prepared By: Matt Elliott

Date: 31 March 2010