

2014-2016 State Wildlife Grant Application Pre-Proposal

- Project Title:** **Implementing Phase III State Wildlife Action Plan Strategies in the West Gulf Coastal Plain Sandhill Oak -Shortleaf Pine Forests and Woodlands to Benefit AWAP Species of Greatest Conservation Need**
- Project Summary:** **The Nature Conservancy and partners will conduct ecological restoration including prescribed burns, forest thinning, erosion control and invasive species control on over 2,500 acres within the Central Sandhill Ecosystem in Nevada county and Ouachita county and Miller County Sandhills Ecosystem in Miller county. The restoration activities will enhance ecosystem function, increase the size and connectivity of woodland habitats, and serve to initiate an organized, ecosystem-based partnership in these areas.**
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- Griffin Park, Arkansas Game and Fish, Region 5 Supervisor, Cell (870) 245-7804, Office (870) 777-5580, gpark@agfc.state.ar.us**
- Budget Summary:** **Total Amount of Project Cost: \$89,708.87(w/match)
Total Amount of SWG Allocated: \$52,818.88
Matching Funds from TNC and Partners: \$36,890.00 (41% match)**

Conservation Need

The sandhills represent one of the most impressive amounts of biological diversity in the Natural State. The most xeric condition in the Upper West Gulf Coastal Plain ecoregion contains over 400 plant taxa in just portions of Ouachita, Nevada, Miller counties; accounting for over 13% of the entire flora of Arkansas in a relatively small areas of the state.

Multiple wildlife/wildlife habitat priorities also exist in the sandhill region as identified by the State Wildlife Grants (SWG) Request for Proposals (RFP), and are targeted by this proposal: Mapping and reduction of invasive species, habitat improvement for grassland birds (specifically Northern Bobwhite (*Colinus virginianus*)), sandhill woodland restoration, wetland maintenance/restoration, and improving stream water quality by implementing road construction Best Management Practices (BMP's).

Each of the SWG priorities are either further detailed in the Arkansas Wildlife Action Plan (AWAP), or are defined as an emerging issue that justifies special attention. The AWAP database contains 20 wildlife Species of Greatest Conservation Need (SGCN) that would benefit from this project (**Table 1**).

Table 1. Priorities of the Phase II Sandhill SWG as identified in the 2011 RFP, description of qualifying activities, page number of priority in the AWAP, and state and global conservation rank, if applicable.

Priority (Listed in RFP)	Issue	Priority Name	Activity Description (Qualifying activity listed in 2011 RFP)	AWAP Page No.	State-Rank	Global-Rank
Invasive species		Emerging issue	Identify and develop actions	N/A	N/A	N/A
Grassland Birds		<i>Colinus virginianus</i>	Manage landscape for grasses	195	S5	G5
Sandhills		<i>Coccyzus americanus</i>	Conduct habitat management	191	S4B	G5
Sandhills		<i>Scaphiopus hurreterii</i>	Conduct habitat management	110	S2	G5
Sandhills		<i>Dendroica discolor</i>	Conduct habitat management	203	S4B	G5
Sandhills		<i>Aimophila aestivalis</i>	Conduct habitat management	114	S3B	G3
Sandhills		<i>Micrurus tenere tenere</i>	Conduct habitat management	1068	S2	G5
Sandhills		<i>Pipilo erythrophthalmus</i>	Conduct habitat management	285	S3	G5
Sandhills		<i>Caprimulgus carolinensis</i>	Conduct habitat management	169	S4B	G5
Sandhills		<i>Mustela frenata</i>	Conduct habitat management	833	S2	G5
Sandhills		<i>Melanerpes erythrocephalus</i>	Conduct habitat management	254	S4BS4N	G5
Sandhills		<i>Chaetura pelagica</i>	Conduct habitat management	176	S4B,S5N	G5
Sandhills		<i>Neonympha areolata areolata</i>	Conduct habitat management	676	S2	G4T3T4
Seep Wetlands		<i>Corynorhinus rafinesquii</i>	Restore, enhance, or maintain	817	S2	G3
Seep wetlands		<i>Eurycea quadridigitata</i>	Restore, enhance, or maintain	67	S3	G5
Seep wetlands		<i>Ictinia mississippiensis</i>	Restore, enhance, or maintain	236	S4B,S4N	G5
Seep wetlands		<i>Satyrium kingi</i>	Restore, enhance, or maintain	695	S1	G3
Seep wetlands		<i>Protonotaria citrea</i>	Restore, enhance, or maintain	294	S4B	G5
Seep wetlands		<i>Desmognathus conanti</i>	Restore, enhance, or maintain	64	S1	G5
Seep wetlands		<i>Deirochelys reticularia miaria</i>	Restore, enhance, or maintain	1059	S3	G5
Stream Quality		Etheostoma parvipinne	Implement road BMP projects	459	S2	G4

The sandhill woodlands are actually three, distinct plant communities (xeric sand barren, dry sandhill woodland, and dry mesic sandhill), but are grouped in the AWAP under the Upper West Gulf Coastal

Plain Sandhill Oak-Shortleaf Pine Forests and Woodlands habitat type on page 1539. The wetlands are also three distinct communities (wooded sandhill seep, saturated sandhill shrub seep, and herbaceous sandhill marsh), but grouped in the AWAP under Upper West Gulf Coastal Plain Seepage Swamp and Baygall on page 1548. Collectively, these communities additionally support at least twenty rare plant species as monitored by the Arkansas Natural Heritage Commission (ANHC).

In 2012, a SWG was awarded to address the impacts of plantation conversion and prescribed fire exclusion in the sandhills. Thinning operations and prescribed fire was conducted on 3,730 acres of sandhill woodland habitat. Erosion control was conducted on ½ mile of stream crossing and four invasive plants were identified as major threats to these ecosystems. However, much more work is needed across the ecosystem. This project will continue this process by prioritizing and implementing prescribed fire, ecological thinning of forests and overgrown barrens, reducing sedimentation from road erosion, and combating invasive plant species.

Purpose and Objectives

The Nature Conservancy (TNC) and its partners maintain an on-going presence in the sandhill ecosystem of Ouachita, Nevada, and Miller counties, but funding is rarely adequate to maintain progress on all our conservation goals. Our goal for this project is to utilize our varied expertise and matching capabilities to complement each other's programs in areas that will provide increased benefits to the ecosystem's SGCN, and provide a wide range of educational opportunities for the general public. Specific objectives have been determined based on each partner's needs and capabilities. Objectives from a management practice perspective are as follows:

Fire management objectives:

- Restore fire to 2,000 acres once within two years, with average 80% unit coverage.
- Attain moderate overall burn intensity for 70% of the burns.
- Conduct post fire summary reports to confirm completed objectives.

Thinning treatments objectives:

- Thin 1,000 acres of loblolly pine.
- Mulch 100 acres of loblolly pine and eastern red cedar from sandhill barren sites.
- Conduct prior and post-treatment photo points.

Erosion control Objectives:

- Prioritize between 3 and 5 erosion problems along roads within the sandhill priority areas.
- Reconstruct county roads to reduce erosion on one mile within the Poison Springs State Forest.
- Conduct prior and post-treatment photo points.

Invasive Species Control Objectives:

- Conduct invasive species treatment on 100 acres.
- Conduct prior and post-treatment photo points.

Sandhill Restoration Partnership Objectives:

- Share conservation progress and monitoring data with conservation partners annually.

Approach

Our approach is to integrate the AWAP with other natural resource efforts at federal, state, and local levels to form an organized Sandhill Restoration Partnership. This project will not only address habitat needs of SGCN, but also improve habitat used by other wildlife. The benefits of this project will be accessible to the public and will raise the profile of the AWAP and the SWG project. On-the-ground implementation of AWAP priority actions will occur in a visible arena, as a formalized commitment to sandhill restoration objectives among partners, and will provide an opportunity for public exploration that may allow this project to serve as a demonstration for other similar projects and further profile the AWAP, SWG, and project partners. Many of these deliverables have conceptual plans already in place,

matching funds will be tracked after the SWG contract has been executed. After that, each partner will be providing assistance to the project through a variety of skills.

Expected Results/Benefits

TNC and its partners expect to improve ecosystem conditions for SGCN in priority areas located within the Central Sandhills and Miller County Sandhills (map available upon request). The most important activity for the sandhill ecosystem is restoration and maintenance of an ecological fire regime. Prescribed fire, especially when coupled with mechanical thinning, will increase native species abundance and diversity, reduce the abundance of non-native species, increase the size and connectivity of woodland and barren habitats, restore structure diversity, and improve wetland ecotone structure and diversity. Installing erosion control BMP's on highly impacted PSSF roads will reduce sediment pollution inputs into stream and seep habitats for SGCN, reduce recruitment opportunities for terrestrial invasive species, reduce maintenance activities that impact SGCN, and improve project visibility to citizens within the area. Invasive species mapping and control will further reduce the spread of invasive species and improve future efforts to further reduce invasive species across the ecosystem.

Measurable Results:

- 3-5 burn plans and 1-3 thinning prescriptions.
- 8-10 miles of fire lines around burn units.
- 1500-2500 acres of reduced litter and forest density.
- 25-45% reduction in woody stem density on 50-100 acres of sandhill barrens (Figure 1).
- 3-5 road erosion BMP's installed over one mile of the most severely impacted portions of the PSSF (Figure 2).
- Invasive species treated on 100-200 acres with control measures for 1 species for up to 50 acres.
- 5-10 post-monitoring and operational reports after each treatment and a final report.



Figure 1: Phase II Mulching Work at Arkansas Oak. Before and After



Figure 2: Phase II Scott Story Road Restoration. Before and After.

Proposed Budget

The estimated budget for this project with 50% match is outlined in Table 2. Partnership in-kind match is included in the Salary/Benefits category and was calculated by the respective partnership leads. Partnership monetary match is listed in the Contractual Expenses category and determined by the amount

needed to complete services conducted by TNC and/or sub-contractors. Operating expenses includes expenses and materials purchased with a single value of less than \$5,000.00. The Nature Conservancy has a federal negotiated indirect cost rate (NICRA) of 14.99%, which is accepted by US Fish and Wildlife Service.

Table 2. Proposed budget allocation as outlined in the 2014 SWG Budget Summary.

Category	SWG Funds	Cash (Match)	In-Kind (Match)	Total
Salary	17,204.00	2,000.00	23,335.00	42,539.00
Benefits	6,599.45	767.20		7,366.65
Travel	2,130.00			2,130.00
Equipment	0.00			0.00
Supplies	1,000.00			1,000.00
Contractual Expenses	18,000.00		10,373.00	28,373.00
Other	1,000.00			1,000.00
Total Direct Costs	45,933.45	2,767.20	33,708.00	82,408.65
Total Indirect (14.99%)	6,885.42	414.80		7,300.22
<i>Totals</i>	52,818.87	3,182.00	33,708.00	89,708.87

Qualifications of Partnership

As a prescribed fire project manager and land steward for TNC, **Clint Harris** has established a working track record with partners in this proposal while conducting prescribed fire activities, participating as a team member in partner-developed workshops, and as a peer in conservation planning. Clint is trained in planning and implementing ecological restoration activities including prescribed fire, forest management, and invasive species control.

As State Forest Manager for the Arkansas Forestry Commission, **Ed Montgomery** works with partners including The Nature Conservancy, Arkansas Game and Fish Commission, Arkansas Natural Heritage Commission, and Arkansas Department of Parks and Tourism in the management of Poison Springs State Forest. Ed’s duties as State Forest Manager include making silvicultural decisions for over 22,000 acres of timberland, supervising timber inventory, timber marking, road, boundary, campsite, vehicle, and building maintenance, contract administration, assisting with land purchases, and bidding and awarding timber sales.

Doug Fletcher is the Chief of Stewardship for the Arkansas Natural Heritage Commission. Doug received a B.S. in Wildlife Management and a M.S. in Biology from Arkansas State University at Jonesboro, Arkansas. Doug has been responsible for managing the stewardship of Arkansas' System of Natural Areas for over a decade.

As a prescribed fire project manager and Park Superintendent for Arkansas State Parks, **Robert Giles** has established a working track record with partners such as Arkansas Forestry Commission, USDA Forest Service, and The Nature Conservancy conducting prescribed fire activities. Duties included: planning and writing burn plans, assisting other parks with planning, prep work, burns, and post burn assessments and records.

Griffin Park is the Region 5 Supervisor for the Arkansas Game and Fish Commission. Griffin has works with partners including The Nature Conservancy, Arkansas Forestry Commission, and Arkansas Heritage Commission. Griffin oversees all conservation efforts on ~700,000 acres in the southwestern portion of Arkansas.