

2011 State Wildlife Grant Application Pre-Proposal

Project Title: **Implementing Phase II 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 1,500 acres within the Central Sandhill Ecosystem in Nevada and Ouachita counties. 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 the area.**

Project Leader: **Jason Milks, Private Lands Species-at-Risk Project Manager
The Nature Conservancy (TNC)
Mailing Address: 601 N. University Ave., Little Rock, 72205
Office Phone: (501) 614-5080; Cell Phone: (501) 804-6244
Fax: (501) 663-8332; E-mail: jmilks@tnc.org**

Project Partners: **Ed Montgomery, Arkansas Forestry Commission, State Forest Manager, 870- 836-5882, ed.montgomery@arkansas.gov
Doug Fletcher, Arkansas Natural Heritage Commission, Chief of Stewardship, 501-324-9612, douglas@arkansasheritage.org
Sarah Jones, Arkansas State Parks, Park Superintendent, Cell 413-687-7053
Office 870-685-2748, sarah.k.jones@arkansas.gov**

Budget Summary: **Total Amount of Project Cost: \$97,331 (w/35% match)**

Total Amount of SWG Requested: \$63,265

Matching Funds from TNC and Partners: \$34,066

Conservation Need

The sandhills represent the most xeric condition in the Upper West Gulf Coastal Plain ecoregion and contain some of the most diverse communities in the United States. Over 400 plant taxa have been identified in the sandhills of Ouachita and Nevada counties accounting for over 13% of the entire flora of Arkansas in a very small part of the state.

Six ecological communities have been described in the Arkansas sandhills: xeric sand barren, dry sandhill woodland, dry-mesic sandhill woodland, wooded sandhill seep, saturated sandhill shrub seep, and herbaceous sandhill marsh. All rank as G2-G3 and they collectively support at least twenty rare plant species. The Arkansas Wildlife Action Plan (AWAP) database lists 24 wildlife species of greatest conservation need (SGCN) for the project area (Table 1). Terrestrial SGCN most likely to directly benefit from this grant proposal include shrubland and woodland birds like Bachman’s Sparrow and Northern Bobwhite, as well as the Texas coral snake, and Hurter’s spadefoot toad; however, restoration and management of the sandhill uplands will also enhance and protect SGCN habitat within the seep communities, including five S1 or S2 crayfish, dwarf and spotted dusky salamanders, the Western chicken turtle, and Rafinesque’s big-eared bat. In addition, controlling road erosion will reduce sediment inputs and directly improve water quality for the crayfish and indirectly in the watershed, which includes three federally endangered and one federally listed candidate mussel species: Ouachita rock-pocketbook (*Arkansia wheeleri*), pink mucket (*Lampsilis abrupta*), winged mapleleaf (*Quadrula fragosa*), and spectaclecase (*Cumberlandia monodonta*). Stresses to this system include incompatible forest management practices, conversion to pine plantation, fire exclusion, fragmentation, and non-native plant species. In 2007, a State Wildlife Grant (SWG) was awarded to address the impacts of plantation conversion and prescribed fire exclusion. However, additional work is needed to continue restoration of this ecosystem. This project will restore sandhill communities by implementing prescribed fire, ecological thinning of forests, reducing sedimentation from road erosion, and controlling/eradicating invasive plant species.

Table 1. Terrestrial species of the **West Gulf Coastal Plain Sandhill Oak –Shortleaf Pine Forests and Woodlands** identified as Species of Greatest Conservation Need in the AWAP.

Crustacean	crayfish	<i>Procambarus regalis</i>	Suitable	36	S2	G2
Crustacean	crayfish	<i>Bouchardina robisoni</i>	Data Gap	80	S1	G1
Crustacean	crayfish	<i>Fallicambarus petilicarpus</i>	Marginal	80	S1	G1
Insect	Georgia Satyr	<i>Neonympha areolata areolata</i>	Suitable	27	S3	G3
Insect	King's Hairstreak	<i>Satyrrium kingi</i>	Suitable	30	S3	G3
Mammal	Long-tailed Weasel	<i>Mustela frenata</i>	Data Gap	19	S2	G5
Mammal	Rafinesque's Big-Eared Bat	<i>Corynorhinus rafinesquii</i>	Optimal	33	S3	G3
Reptile	Texas Coral Snake	<i>Micrurus tenere tenere</i>	Optimal	19	S2	G5
Reptile	Western Chicken Turtle	<i>Deirochelys reticularia miaria</i>	Optimal	15	S3	G5
Bird	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Suitable	14	S4	G5
Bird	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	Suitable	19	S3	G5
Bird	Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	Suitable	14	S4	G5
Bird	Chimney Swift	<i>Chaetura pelagica</i>	Suitable	14	S4	G5
Bird	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Suitable	14	S4	G5
Bird	Mississippi Kite	<i>Ictinia mississippiensis</i>	Marginal	11	S4	G5
Bird	Prothonotary Warbler	<i>Protonotaria citrea</i>	Suitable	14	S4	G5
Crustacean	crayfish	<i>Fallicambarus gilpini</i>	Suitable	80	S1	G2
Crustacean	crayfish	<i>Faxonella blairi</i>	Data Gap	50	S1	G2

Objectives

The Nature Conservancy and its partners will restore portions of the sandhill ecosystem condition by implementing and maintaining an ecological fire regime, reducing stem densities of planted loblolly pine, and reducing invasive plant species, and erosion threats from roads. In 2007, SWG funds were used to help conduct 1100 acres of prescribed fire and 463 acres of ecological thinning within the same priority area. Before conducting burns, ecologically-based, peer-reviewed burn plans and thinning treatments will be developed and approved. Burns will be conducted by trained TNC and Arkansas Forestry Commission (AFC) burn crews and will be lead by a Burn Boss. Ecological thinning treatments will be accomplished by a professional forestry consultant. Invasive species and erosion impacts will be mapped, prioritized, and addressed by TNC, AFC, Arkansas State Parks (ASP), and/or Arkansas Natural Heritage Commission (ANHC) personnel. These efforts will also solidify a more organized Sandhill Restoration Partnership in the region.

Fire management objectives:

- Restore fire to 1500 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:

- Contract thin 30 acres of dense, loblolly pine stands.
- Cut-and-lay 60 acres of loblolly pine and eastern redcedar from sandhill barren sites.
- Conduct prior and post-treatment photo points.

Erosion control Objectives:

- Identify and prioritize erosion problems on tracts and along roads throughout the sandhill priority area.
- Contract reconstruction of county roads to mitigate erosion on 3-5 sites throughout Poison Springs State Forest (PSSF).
- Mitigate 3-5 erosion problems on sandhill tracts.
- Conduct prior and post-treatment photo points.

Invasive Species Control Objectives:

- Identify and prioritize 1-3 invasive species problems within the sandhills.
- Conduct or contract invasive species removal on 100 acres based on prioritization.
- Conduct prior and post-treatment photo points.

Sandhill Restoration Partnership Objectives:

- Develop agreed-upon charter among partners for restoration of the sandhill ecosystem

Expected Results/Benefits

The Nature Conservancy and its partners expect to improve conditions in portions of the Central Sandhills Ecosystem. The most important objective for this project is restoration and maintenance of an ecological fire regime. Prescribed fire, coupled with mechanical thinning, will open up sandhill woodlands and barrens, reduce the abundance of non-native species, increase native species abundance and diversity, increase the size and connectivity of woodland habitats, and restore structure to the woodlands and barrens. Invasive species control will further increase native species recruitment opportunities and replace non-useable habitat for SGCN, and further reduce the opportunities for invasive species to increase across the ecosystem. Erosion control efforts will reduce sediment pollution inputs into aquatic habitats of SGCN, reduce recruitment opportunities for terrestrial invasive species, and decrease habitat loss.

Measurable Actions:

- 3-5 burn plans and 1-3 thinning prescriptions
- 1-5 miles of fire lines around burn units
- 1000-1500 acres of prescribed burns
- 25-45% reduction in basal area on selected stands and 20-50 acres of thinned trees from barrens
- 1-3 invasive species reduced across 100-200 acres
- 3-5 erosion mitigation reconstructions (reduced sediment loads may be estimated, but unmeasured)
- 5-10 post- monitoring and operational reports after each treatment and 1 final report

Approach

This is a two-year project that addresses 3 priority implementation actions listed in Appendix A of the 2011 SWG Request for Proposals (RFP): 1) Identification, prioritization, and control of the emerging issue of invasive species, 2) Habitat Management to maintain or increase habitat quality of native grasslands, and 3) Habitat Management to maintain or increase habitat quality of oak woodlands. 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 important to recreation. This project will be

accessible to the public and will raise the profile of the AWAP and the SWG project with officials and the general public. On-the-ground implementation of AWAP priority actions in a visible arena, an formalized commitment to sandhill restoration objectives among partners, and an opportunity for public exploration will allow this project to serve as a demonstration for other similar projects and further profile the AWAP, SWG, and project partners.

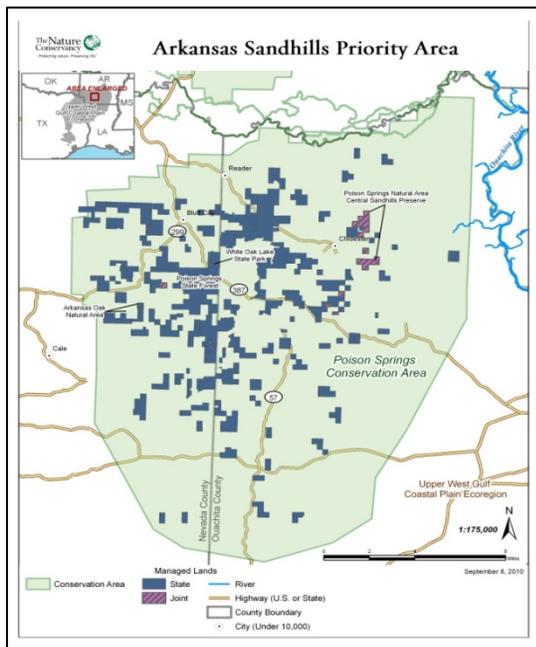


Figure 1. Central Sandhills Focal Area location in Arkansas.

Ecoregion Where Project Will Be Conducted

The Central Sandhills of Arkansas are located in the Upper West Gulf Coastal Plain ecoregion in Nevada and Ouachita counties. TNC, AFC, ANHC, and ASP own tracts within this ecosystem. A Partner’s for Fish and Wildlife (PFW) grant is under consideration for managing TNC and other privately owned tracts in the region. A SWG award would complement this work by funding restoration efforts on core public areas managed by the AFC, ANHC, and ASP. Restoration efforts would be conducted within the Arkansas Sandhills Priority Area (Figure 1).

Proposed Budget

The estimated budget for this project with 35% required match is outlined in Table 2. Partnership in-kind match is included in the Salary/Benefits column and was estimated by the respective partnership leads. Partnership monetary match is listed in the Contractual Expenses column and determined by the amount needed to complete services conducted by TNC. 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 23.3%, which is accepted by USFWS.

Table 2. Proposed budget allocation as outlined in the 2011 SWG RFP.

Category	Partnership (Match)	TNC (Match)	SWG	Total
Salary / Benefits	\$13,335		\$35,945	\$49,280
Contractual Expenses	\$10,373		\$12,090	\$22,463
Operating Expenses		\$8,421	\$3,400	\$11,821
Subtotal	\$23,708	\$8,421	\$51,435	\$83,564
Indirect Costs (23%)		\$1,937	\$11,830	\$13,767
<i>Totals</i>	<i>\$23,708</i>	<i>\$10,358</i>	<i>\$63,265</i>	<i>\$97,331</i>

Qualifications of Partnership

As a prescribed fire project manager for TNC, **Jason Milks** 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. As a member of a diverse staff of science and conservation managers, Jason is trained in planning and implementing ecological restoration activities including prescribed fire, forest management, invasive species control, and ecological monitoring. The Arkansas Chapter of TNC annually employs seasonal burn crews and conducts prescribed burns and other stewardship and restoration tasks on private, state and federal properties. In addition to burning expertise, TNC employs a staff that is responsible for planning and oversight of forestry, monitoring, and stewardship-related projects.

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 for Arkansas State Parks, **Sarah Jones** has established a working track record with partners such as Arkansas Forestry Commission, USDA Forest Service, and The Nature Conservancy conducting prescribed fire activities. As a member of the ASP Fire Team, Sarah Jones acts as a regional leader for prescribe fire. Duties included: planning and writing burn plans, assisting other parks with planning, prep work, burns, and post burn assessments and records.