

2008 State Wildlife Grant Application Pre-Proposal

Project Title:

Restoring West Gulf Coastal Plain Calcareous Prairie at a new addition to Terre Noire Natural Area to Benefit Species of Greatest Conservation Need

Project Summary:

Arkansas Natural Heritage Commission and The Nature Conservancy will cut, pile and burn Eastern Red Cedar to restore 155 acres of blackland prairie at a high-priority tract recently acquired as an addition to Terre Noire Natural Area in Clark County, AR. This project addresses two Arkansas Wildlife Action Plan funding priorities and provides benefit to Species of Greatest Conservation Need such as grassland birds and other dependent grassland wildlife.

Project Leader:

**Mark Clark, Blackland/ Sandhill Project Manager, TNC
E-mail: mclark@tnc.org
Mailing Address: 43 Modlin Road, Arkadelphia, AR 71923
Office Phone: (870) 246-3895; Cell Phone: (501) 804-2308**

Project Partner:

**Jennifer Akin, Natural Community Ecologist
Arkansas Natural Heritage Commission
E-mail: JenniferA@arkansasheritage.org
Mailing Address: 1500 Tower Building, Little Rock, AR 72201
Office Phone: (501) 324-9763; Fax: (501) 324-9618**

Budget Summary:

Total Amount Requested: \$13,520 (50%)

Matching Funds from ANHC / TNC: \$13,520 (50%)

Total Project Amount: \$27,040

Restoring West Gulf Coastal Plain Calcareous Prairie at a new addition to Terre Noire Natural Area to Benefit Species of Greatest Conservation Need

Executive Summary

This project addresses 2008 State Wildlife Grant funding priorities #2: Restore and/or maintain prairies and native grasslands for grassland bird habitat; and #10: Restore fire to fire-suppressed habitats to benefit Species of Greatest Conservation Need. The project will restore 155 acres of the Upper West Gulf Coastal Plain Calcareous Prairie terrestrial habitat which is located within the Blackland Prairie subdivision of the South Central Plains ecoregion. This on-the-ground restoration project implements conservation actions outlined in the Arkansas Wildlife Action Plan (habitat restoration/ improvement; fire management and threat abatement) and could serve as a demonstration site for similar projects on other state, federal, and private lands. The project integrates AR Wildlife Action Plan priorities with other natural resource efforts as part of a larger, long-term, multi-partner conservation endeavor to restore and maintain viable blackland ecological communities in Arkansas. Completion of this project will take two years.

Specific Project Goal

Restore 155 acres of blackland prairie and woodland at Terre Noire Natural Area by removal of eastern red cedar within two years of grant execution.

Background

Terre Noire Natural Area, located near Arkadelphia in Clark County, is co-owned by Arkansas Natural Heritage Commission and The Nature Conservancy. Protection of tracts within the larger Terre Noire Conservation Area began in 1988 with the acquisition of a 75-acre parcel. The Natural Area has grown as additional parcels were acquired, the most recent of which was a high-priority, 155-acre tract acquired in 2007 (Figure 1).

Terre Noire Natural Area is one of the best remaining blackland prairie complexes left in the state. The site is a mosaic of native herbaceous and woody vegetation. Little bluestem is the dominant grass, although other grasses typical of tallgrass prairie communities are present. Numerous species tracked by Arkansas Natural Heritage Commission occur at the site, including Bachman's Sparrow (*Aimophila aestivalis*), a rare grassland bird in Arkansas, which nests at the site.

Conservation Significance

Blackland prairies and associated woodlands were historically abundant in south central United States occurring primarily in northeast and east central Texas, with smaller tracts in southwest Arkansas, northwest Louisiana, Mississippi and Alabama. Originally, there were approximately 12 million acres of this blackland ecosystem. In 1975, approximately 1% (~100,000 acres) of the blackland ecosystem remained as remnant tracts with less than 5,000 acres of high quality habitat. This amount has decreased further in the last 25 years by conversion to agricultural lands, urbanization, and other land uses. It is one of the most imperiled ecosystems in the southeast United States.

The blackland prairies (West Gulf Coastal Plain Calcareous Prairie) and associated woodlands and bottomlands in Arkansas harbor more than 600 plant and 315 animal species, including many that are considered at-risk in Arkansas and globally. Twenty-two blackland ecological communities have been described in Arkansas, 21 of which are considered globally rare (ranked G1-G3). The Arkansas Game and Fish Commission's database lists 20 terrestrial Species of Greatest Conservation Need with habitat suitability rankings of suitable to optimal for the West Gulf Coastal Plain Calcareous Prairie habitat (Table 1).

Major threats to the blackland ecosystem include altered fire regimes, invasive native and non-native plant species (including eastern red cedar, sericea lespedeza, kudzu vine), conversion to non-native pasture grasses (tall fescue and bermuda grass), and habitat fragmentation through development.

Table 1. Terrestrial Species of Greatest Conservation Need with habitat suitability ranking of suitable or optimal for West Gulf Coastal Plain Calcareous Prairie (CWCS Database).

Class	Common Name	Scientific Name	Description	S-Rank	G-Rank
Amphibia	Great Plains Narrowmouth Toad	<i>Gastrophryne olivacea</i>	Optimal	S2	G5
Aves	Northern Bobwhite	<i>Colinus virginianus</i>	Optimal	S5	G5
Aves	Painted Bunting	<i>Passerina ciris</i>	Suitable	S4B	G5
Aves	Migrant Loggerhead Shrike	<i>Lanius ludovicianus migrans</i>	Optimal	S3B,S3N	G4T3Q
Aves	Northern Harrier	<i>Circus cyaneus</i>	Suitable	S1B,S4N	G5
Aves	Short-eared Owl	<i>Asio flammeus</i>	Suitable	S3N	G5
Aves	Le Conte's Sparrow	<i>Ammodramus leconteii</i>	Suitable	S3S4N	G4
Aves	Barn Owl	<i>Tyto alba</i>	Suitable	S2B,S3N	G5
Aves	Henslow's Sparrow	<i>Ammodramus henslowii</i>	Suitable	S1B,S2N	G4
Aves	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Suitable	S3B,SZN	G5
Aves	Lark Sparrow	<i>Chondestes grammacus</i>	Suitable	S3S4B,SZN	G5
Aves	Bell's Vireo	<i>Vireo bellii</i>	Suitable	S3B	G5
Aves	Sedge Wren	<i>Cistothorus platensis</i>	Suitable	S1B,S4N	G5
Insecta	anthophorid bee	<i>Tetraloniella albata</i>	Optimal	S1	G?
Insecta	red milkweed beetle	<i>Tetraopes quinquemaculatus</i>	Suitable	S1S2	G?
Insecta	Texas milkweed beetle	<i>Tetraopes texanus</i>	Optimal	S1S2	G?
Insecta	robberfly	<i>Microstylum morosum</i>	Optimal	SU	G3G4
Mammalia	Desert Shrew	<i>Notiosorex crawfordi</i>	Suitable	S1?	G5
Reptilia	Southern Prairie Skink	<i>Eumeces obtusirostris</i>	Optimal	S2	G5
Reptilia	Western Slender Glass Lizard	<i>Ophisaurus attenuatus</i>	Optimal	S3	G5T5

Project Objectives/ Methods

Restoration of the most recent addition to the Terre Noire Natural Area which consists of 155 acres of blackland prairie and woodland that has been overtaken and degraded by eastern red cedar. A Hav-Roc tree saw, an implement developed specifically for cedar removal, attached to a rented multi-terrain loader will be used to cut and pile the cedars. The cedar will then be burned by TNC/ANHC burn personnel.

Prairie Restoration Objective:

- By July 2010, reduce cedars from 75 acres of blackland prairie by 90% via cutting, piling and burning.
- By July 2010, restore fire to the entire 155 acres at least once.

Prairie Restoration Monitoring Objective

- Photomonitoring will be used to document the removal of eastern red cedar.

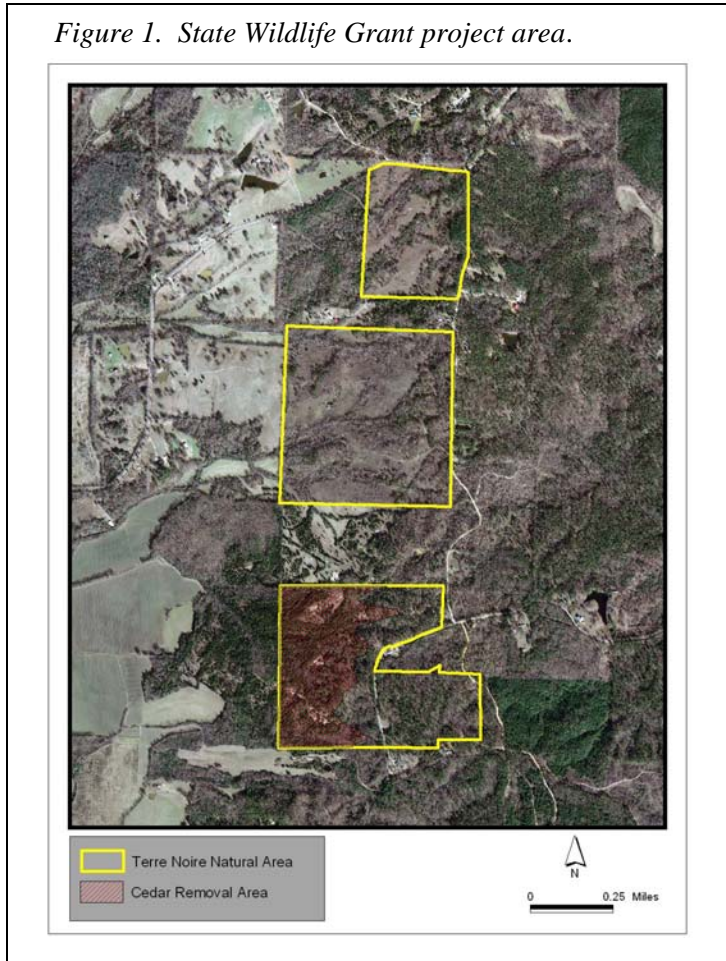
Measurable Product/ Outcome

Measurable Actions:

- Write cedar removal prescription for treatment area;
- Cut and pile cedars;
- Burn cedar piles after drying period;
- Complete prescribed burns;
- Complete operational report.

Existing Resources and Long Term Project Maintenance

The site is owned by Arkansas Natural Heritage Commission and prescribed burns, as well as other stewardship activities, are annual budget items for their properties. The Nature Conservancy, ANHC and AGFC, all of which employ personnel with expertise in prairie restoration and maintenance, are conservation partners and constantly work together to ensure actions are practical and effective. Long term maintenance (beyond the project period) of the restored prairie will be accomplished by frequent prescribed burns. Eastern red cedars are not fire tolerant and will not re-establish on a project site with a restored fire regime.



Proposed Budget

Category	Total	TNC/ANHC (Match)	SWG
Salary / Benefits	13,500	8,000	5,500
Operating Expenses	8,500	3,000	5,500
Capital Expenses	0	0	0
Subtotal	22,000	11,000	11,000
Indirect Costs (23%)*	5,060	2,530	2,530
<i>Totals</i>	<i>27,040</i>	<i>13,520</i>	<i>13,520</i>

***Indirect Costs:** The Nature Conservancy has a federal negotiated indirect cost rate (NICRA) of 23%, which is accepted by USFWS.

Qualifications of The Nature Conservancy and Arkansas Natural Heritage Commission to Carry Out the Project

Arkansas Natural Heritage Commission (ANHC) and The Nature Conservancy (TNC) have worked in the Arkansas blackland ecosystem with our partners for approximately 20 years. They have developed a broad understanding of this at-risk ecosystem through years of scientific observation and use of adaptive management in implementation of restoration techniques. The Nature Conservancy owns, and is experienced with the use of, a Hav-Roc tree saw which was developed specifically for cutting eastern red cedars. Successful prairie restoration via eastern red cedar removal has been accomplished on ANHC Natural Areas and TNC preserves.

Jennifer Akin is a Natural Community Ecologist for the Arkansas Natural Heritage Commission. Jennifer received a B.S. in biology and a M.S. in botany both from the University of Arkansas at Fayetteville. Jennifer has worked for The Nature Conservancy documenting the recovery of restored wetland and uplands and the National Park Service performing surveys in over two hundred vegetation types in the Sierra Nevada Mountains for production of a vegetation map. She has published two scientific papers on algae in relation to aquatic vegetation in Arkansas.

Mark Clark is a project manager for The Nature Conservancy charged with facilitating protection and restoration efforts in the Blackland and Sandhill ecosystems of Arkansas. Mark previously held positions with Arkansas Game & Fish Commission and The Ross Foundation. He has personally overseen and participated in successful cedar removal and fire restoration projects to restore degraded blackland prairies on private and state-owned lands.