

2008 State Wildlife Grant Application Pre-Proposal

Project Title:

Implementing State Wildlife Action Plan Strategies at Oak Ridge Ravines Preserve to Benefit Species of Greatest Conservation Need

Project Summary:

Prescribed burns, ecological thinnings and brush control will be used to restore/ improve 700 acres of wildlife habitat within Oak Ridge Ravines Preserve in the South Central Plains ecoregion. Implementation of conservation actions will enhance species composition, diversity and structure of calcareous prairie, mesic hardwood woodland and pine-hardwood forest habitats. Multiple species of greatest conservation need and other nongame and game wildlife species will benefit from this project to be carried out by The Nature Conservancy and Arkansas Natural Heritage Commission.

Project Leader:

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Project Partner:

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Budget Summary:

**Total Amount Requested: \$35,670 (47%)
Matching Funds from TNC: \$40,590 (53%)
Total Project Amount: \$76,260**

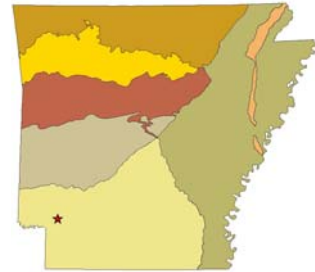
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Funding Priorities Addressed By This Proposal

Funding priorities addressed by this project include #2: Restore and/or maintain prairies and native grasslands for grassland bird habitat; #10: Restore fire to fire-suppressed habitats to benefit Species of Greatest Conservation Need; and #11: Manage forests to benefit Species of Greatest Conservation Need. Additional attributes of this project include: integration of the Plan priorities with other natural resource efforts to conserve the Nacatoch Ravines Conservation Area; addressing the needs of Species of Greatest Conservation Need while also benefiting other terrestrial wildlife species that depend on habitat structure and composition created and maintained by frequent surface fires; one-the-ground stewardship/restoration activities that can serve as demonstration projects that may be replicated at other sites.

Ecoregion & Terrestrial Habitats Where Project Will Be Conducted

The proposed project will take place within the Oak Ridge Ravines Preserve which is part of the larger Nacatoch Ravines Conservation Area in Hempstead County, AR. The Wildlife Action Plan terrestrial habitats highlighted in this project are West Gulf Coastal Plain (WGCP) Pine-Hardwood Forest, WGCP Calcareous Prairie and WGCP Mesic Hardwood Forest, within the South Central Plains ecoregion.



Oak Ridge Ravines Preserve. Oak Ridge Ravines Preserve is located in Hempstead County, Arkansas on the Woodbine Escarpment above the Red River Floodplain. The land making up the 1,100 acre preserve was purchased by The Nature Conservancy during 2006 and 2007 from private, industrial and non-industrial timberland owners. The properties were identified as high-priority acquisitions by The Nature Conservancy (TNC) and Arkansas Natural Heritage Commission (ANHC) as additions to the Nacatoch Ravines Conservation Area.

Conservation Significance. Oak Ridge Ravines preserve was determined ecologically important because it is part of the largest intact example of ravine mesic slope forests remaining in the South Central Plains ecoregion. The site occurs on the escarpment between the blacklands and Red River valley. The site supports 16 rare plant species and the rare southern redback salamander (*Plethodon serratus*) also occurs there. Terrestrial habitats occurring on the site include West Gulf Coastal Plain (WGCP) Pine-Hardwood Forest, WGCP Calcareous Prairie and WGCP Mesic Hardwood Forest. These three terrestrial habitats are considered suitable or optimal for 37 Species of Greatest Conservation Need (Table 1).

Project Objective

Within two years of grant execution, utilize prescribed fire, ecological thinning of timber stands and woody brush control to restore/ improve plant species composition, diversity and structure of 700 acres of forest, woodland and prairie habitat at the Oak Ridge Ravines Preserve to benefit Species of Conservation Concern and their associates.

Table 1. Terrestrial Species of Greatest Conservation Need with habitat suitability ranking of suitable or optimal for habitats associated with this project (CWCS Database).

Class	Common_Name	Scientific_Name	S_Rank	G_Rank
Amphibia	Great Plains Narrowmouth Toad	<i>Gastrophryne olivacea</i>	S2	G5
Amphibia	Louisiana Slimy Salamander	<i>Plethodon kisatchie</i>	S2	G3G4Q
Aves	American Woodcock	<i>Scolopax minor</i>	S2B,S4N	G5
Aves	Barn Owl	<i>Tyto alba</i>	S2B,S3N	G5
Aves	Bell's Vireo	<i>Vireo bellii</i>	S3B	G5
Aves	Brown-headed Nuthatch	<i>Sitta pusilla</i>	S4	G5
Aves	Chimney Swift	<i>Chaetura pelagica</i>	S4B,S5N	G5
Aves	Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	S4B	G5
Aves	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S3B,SZN	G5
Aves	Henslow's Sparrow	<i>Ammodramus henslowii</i>	S1B,S2N	G4
Aves	Hooded Warbler	<i>Wilsonia citrina</i>	S4B	G5
Aves	Kentucky Warbler	<i>Oporornis formosus</i>	S4B	G5
Aves	Lark Sparrow	<i>Chondestes grammacus</i>	S3S4B,SZN	G5
Aves	Le Conte's Sparrow	<i>Ammodramus leconteii</i>	S3S4N	G4
Aves	Migrant Loggerhead Shrike	<i>Lanius ludovicianus migrans</i>	S3B,S3N	G4T3Q
Aves	Mississippi Kite	<i>Ictinia mississippiensis</i>	S4B,S4N	G5
Aves	Northern Bobwhite	<i>Colinus virginianus</i>	S5	G5
Aves	Northern Harrier	<i>Circus cyaneus</i>	S1B,S4N	G5
Aves	Painted Bunting	<i>Passerina ciris</i>	S4B	G5
Aves	Prairie Warbler	<i>Dendroica discolor</i>	S4B	G5
Aves	Sedge Wren	<i>Cistothorus platensis</i>	S1B,S4N	G5
Aves	Short-eared Owl	<i>Asio flammeus</i>	S3N	G5
Aves	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	G5
Aves	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	S4B	G5
Insecta	anthophorid bee	<i>Tetraloniella albata</i>	S1	G?
Insecta	Giant Stag Beetle	<i>Lucanus elephus</i>	S2	G3G5
Insecta	red milkweed beetle	<i>Tetraopes quinquemaculatus</i>	S1S2	G?
Insecta	robberfly	<i>Microstylum morosum</i>	SU	G3G4
Insecta	Texas Frosted Elfin	<i>Callophrys irus hadros</i>	S1	G3T1T2
Insecta	Texas milkweed beetle	<i>Tetraopes texanus</i>	S1S2	G?
Mammalia	American Black Bear	<i>Ursus americanus americanus</i>	S5	G5
Mammalia	Desert Shrew	<i>Notiosorex crawfordi</i>	S1?	G5
Mammalia	Seminole Bat	<i>Lasiurus seminolus</i>	S1?	G5
Mammalia	Southeastern Bat	<i>Myotis austroriparius</i>	S2?	G3G4
Reptilia	Southern Prairie Skink	<i>Eumeces obtusirostris</i>	S2	G5
Reptilia	Texas Coral Snake	<i>Micrurus tenere tenere</i>	S2	G5T5
Reptilia	Western Slender Glass Lizard	<i>Ophisaurus attenuatus attenuatus</i>	S3	G5T5

Methods

Fire Management Methods. Comprehensive, peer-reviewed, prescribed burn plans will be developed for each burn unit. Fire breaks will be constructed around each burn unit. Each prescribed burn will be conducted by personnel trained and certified to National Wildfire Coordinating Group (NWCG) standards. A Prescribed Burn Boss Type II (RXB2) will lead, and be responsible for, each burn. Post-burn monitoring will be conducted after each burn to determine effectiveness. A Fire Summary Report describing burn operations and fire effects will be developed for each burn.

Forest/ Woodland Management Methods. Forest/ woodland structure will be evaluated to identify stands in need of treatment. Peer-reviewed ecological thinning prescriptions will be developed for each timber stand to be treated. Ecological thinning operations will be carried out by timber contractors using best management practices and overseen by TNC's Director of Conservation Forestry. Post-treatment monitoring will be conducted to determine effectiveness and an Ecological Thinning Report will be developed.

Prairie Management Methods. Peer-reviewed brush removal prescriptions will be developed for each unit. Shearing/ cutting, herbicide spot treatment and/or prescribed fire will be utilized to reduce woody stems on prairie sites. Post-treatment monitoring will be conducted to determine effectiveness and a Prairie Restoration Report will be developed.

Measurable Products/ Outcomes

- Peer-reviewed Prescribed Burn Plans;
- Multiple prescribed burns conducted within the project area;
- Fire breaks constructed around burn units (will increase ease of additional burns in the future);
- Reduced basal area in timber stands subjected to ecological thinning;
- Improved quality and quantity of prairie/ grassland habitat;
- Complete post-fire effects/ thinning prescription monitoring and operational reports.

Existing Resources & Long Term Project Maintenance

The site is owned by The Nature Conservancy. Annual funding is acquired through gifts and grants to fund stewardship activities on our properties. The Nature Conservancy, ANHC and AGFC, all of which employ personnel with expertise in habitat 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/ improved habitat will be accomplished by frequent prescribed burns and additional stewardship activities. Habitat response will be monitored to determine effectiveness of management activities.

Proposed Budget

The total cost for this project will be \$76,260. The Nature Conservancy respectfully requests \$35,670 from the AR Game & Fish Commission and will provide \$40,590 as a match (53%).

Category	Total	TNC (Match)	SWG
Salary / Benefits	51,000	28,000	23,000
Operating Expenses	6,000	5,000	1,000
Capital Expenses	3,000	0	5,000
<i>Subtotal</i>	<i>62,000</i>	<i>33,000</i>	<i>29,000</i>
Indirect Costs (23%)*	14,260	7,590	6,670
<i>Totals</i>	<i>76,260</i>	<i>40,590</i>	<i>35,670</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 to Carry Out the Project

The Nature Conservancy (TNC) has worked in these Arkansas systems with our partners for approximately 20 years. TNC has developed a broad understanding of this at-risk ecosystem through years of scientific observation and use of adaptive management in implementation of restoration techniques. TNC also maintains a science and conservation staff that is trained in planning and implementing prescribed fires as per National Wildfire Coordinating Group (NWCG) standards. Each burn plan is peer reviewed and a Prescribed Burn Boss Type II (RXB2) leads every burn. The Arkansas Chapter of TNC annually employs a seasonal burn crew and conducts prescribed burns on private, state and federal properties. In addition to burning expertise, TNC employs a Director of Conservation Forestry that is responsible for planning and oversight of forestry-related projects. Successful ecological thinning has been accomplished on TNC preserves, including a previous SWG project at Kingsland Preserve and in the Central Sandhills

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 projects to restore degraded blackland and sandhill communities on private and state-owned lands.