

*2010 State Wildlife Grant Pre-Proposal*

**Project Title:** Implementation of State Wildlife Action Plan Strategies on Five Arkansas State Parks for CWCS Species of Concern in Oak Woodlands and Glade Habitats.

**Project Summary:** This project seeks to continue to develop a collaborative multi-partner prescribed fire coalition for the restoration of oak woodland and glade habitat structure and species composition. Five Arkansas State Parks will participate by implementing prescribed fire and a public information campaign. Ecological monitoring for Arkansas Wildlife Action Plan animal Species of Greatest Conservation Need (SGCN) will be conducted in order to measure progress toward desired ecological conditions.

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**Total Project Cost: \$89,000**

**State Wildlife Grant request: \$57,810**

**Matching funds from Arkansas State Parks and TNC: \$31,190**

## FUNDING PRIORITY ADDRESSED BY PREPROPOSAL

This project addresses a priority implementation action listed in Appendix A of the 2010 SWG Request for Proposals (RFP): 1) Habitat Management to maintain or increase quality oak woodlands and glades located throughout the project area. This project will accelerate implementation of Fire Management Plans at five Arkansas State Parks to restore oak woodlands and glades using collaborative multi-partner prescribed fire and conduct ecological monitoring. This project will rapidly begin reintroducing fire to fire-suppressed habitats to benefit Species of Greatest Conservation Need.

In addition, this project will have an education and outreach component. The education component will include the development of an “Outdoor Fire Ecology Workshop” for Park Naturalist and Interpreters. With a goal of increasing opportunities for Naturalist and Interpreters to engage the public and increase public knowledge on the need and wildlife benefits of restoring fire maintained habitats. The outreach component will include the development of a “Fire and Wildlife” brochure for public dissemination by Arkansas State Parks.

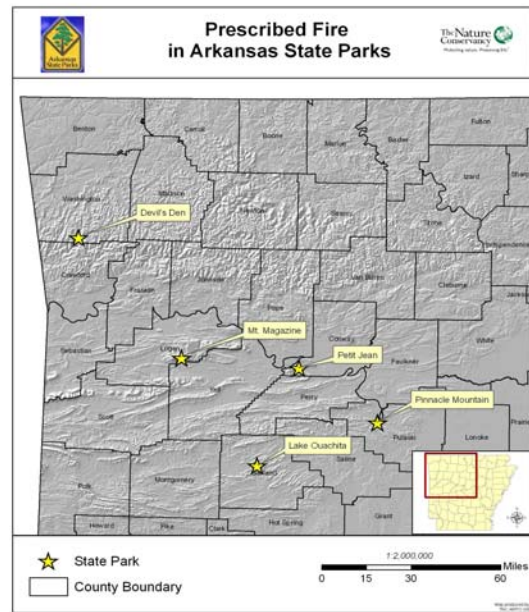


Figure 1. Arkansas State Park Fire Restoration Areas

## ECOREGION WHERE PROJECT WILL BE CONDUCTED

Restoration activities will be conducted in the Boston Mountains of the Ozark Plateau, Arkansas Valley, and Ouachita Mountains Ecoregions. This on-the-ground restoration work will occur at five Arkansas State Parks including Mt. Magazine, Petit Jean, Pinnacle, Lake Ouachita and Devils Den (Figure 1).

## PROJECT METHODS

Project partners will work collaboratively to implement the five-year Fire Management Plans that are currently being developed at the five parks identified. This partnership will implement eight (8) cooperative multi-partner prescribed burns totaling 2,033 acres, conduct Post Burn Evaluations for each burn and conduct photo point monitoring pre/post burn at permanent macroplot locations with each burn unit.

In addition, the partnership will develop a one day “Outdoor Fire Ecology Workshop” for Park Naturalist and Interpreters with the goal of increasing the opportunities for Naturalist and Interpreters to engage the public on the ecological benefits of fire management. It is anticipated that this workshop will be hosted at a participating State Park during the spring (post fire) where participants will be able document plant and animal response to the fire. To increase opportunities for Arkansas State Parks staff educate the public on the benefits of fire management, the partnership will develop a “Fire and Wildlife” brochure for public dissemination by Arkansas State Parks. This project will focus on restoring oak woodlands and glade habitats.

## Expected Results and Benefits to Species of Concern

Measurable outcomes from this collaborative fire management partnership will be implementation of five year Fire Management Plans at five Arkansas State Parks to rapidly facilitate the promotion of suitable habitat for species-at-risk. The species-at-risk affected by this proposal occur in open and dry vegetation types typical of Arkansas woodland, savannas, prairies, and glades in the Boston Mountains of the Ozark Plateau, Arkansas Valley, and Ouachita Mountains Ecoregion. These species are dependent on open woodland structure and herbaceous understory habitat maintained by periodic fire during their life cycles. As a result of fire suppression, most of this type of habitat has become increasingly limited due to densification of vegetation. In addition, the glade habitat has been encroached by surrounding vegetation including eastern red cedar. This current condition plays a large part in the loss or degradation of habitat suitable for pine/oak woodlands and glade dependent species-at-risk in these areas (Table 1).

**Table 1.** Targeted Species of Concern (CWCS Database).

Class	Genus	Scientific_Name	Common Name
Insecta	<i>Speyeria</i>	<i>diana</i>	Diana fritillary
Reptilia	<i>Eumeces</i>	<i>obsoletus</i>	Great Plains skink
Reptilia	<i>Ophisaurus</i>	<i>Attenuatus</i>	Western slender glass lizard
Reptilia	<i>Terrapene</i>	<i>ornata</i>	Ornate box turtle
Reptilia	<i>Crotaphytus</i>	<i>collaris</i>	Eastern collared lizard
Aves	<i>Passerina</i>	<i>ciris</i>	Painted bunting
Aves	<i>Aimophila</i>	<i>Aestivalis</i>	Bachman's Sparrow
Aves	<i>Thryomanes</i>	<i>Bewickii</i>	Bewick's Wren
Aves	<i>Lanis</i>	<i>Ludovicianus</i>	Loggerhead Shrike
Aves	<i>Pipilo</i>	<i>erythrophthalmus</i>	Eastern Towhee
Aves	<i>Colinus</i>	<i>Virginianus</i>	Northern Bobwhite

To restore the habitats that species' identified by the Comprehensive Wildlife Conservation Strategies (CWCS) utilize requires establishing a suitable fire regime that promotes open oak woodland and open and shrubby glade habitats. This project has selected 2,033 acres at five Arkansas State Parks for prescribed fire and ecological monitoring. Measurable actions include:

- Write burn plans for each burn unit.
- Install fire lines around burn units.
- Install photo points throughout burn units.
- Implement eight (8) prescribed burns on 2,033 acres.
- Complete post-fire effects monitoring and After Action Reviews (AARs).
- Conduct photopoint monitoring after burns.
- Conduct Field Workshop titled: "Fire Ecology for Arkansas State Park Interpreters"
- Develop brochure titled "Fire and Wildlife" for public dissemination.

At the conclusion of this project, over 2000 acres of improved habitat will be beneficial to the identified species by the Comprehensive Wildlife Conservation Strategy. All data gathered from this project will be added to the CWCS database.

### Specific Measureable Objectives to be Accomplished by July 2012:

- Complete eight (8) prescribed burns on 2,033 acres within two years.

- Increase pine/oak woodland and glade habitat by completing prescribed burns with 75% or more coverage on 2,033 acres within two years measured through the post-fire effects monitoring protocol.
- Increase amount of sunlight reaching the ground to promote native grass/forbs growth on 2,033 acres by reducing understory and midstory woody stems with a moderate intensity burn measured through the post-fire effects monitoring protocol and photo point monitoring.
- Train 20-30 Arkansas State Park staff on the ecological and wildlife benefits of fire management.

**Monitoring**

TNC’s Arkansas Field Office utilizes a fire effects monitoring procedure to track attainment of fire. This monitoring includes tracking burn acreage and effectiveness in reaching fire management objectives. Burn plans developed for this project will incorporate specific measurable objectives that will be documented post fire. The post burn monitoring will be used to document immediate and mid term effects on the vegetation community. The fire severity is calculated from point transects through the burn unit. Post-burn monitoring information will include organic substrate consumption, understory vegetation consumption, scorch height, crown scorch percent, char height, and char degree. Once the post burn monitoring is completed, the data will be incorporated into the long-term fire management plan to help management Arkansas State Parks evaluate the long term goals and objectives of the fire management plan.

In addition to the fire effects monitoring, this project will conduct photo point monitoring pre/post burn at permanent macroplot locations with each burn unit. This qualitative photo point monitoring will be used to educate the public on how restoring fire adapted communities increase in biodiversity through time with the fire regime is restored. All photos will be stored at the individual state parks.

**Budget**

The total cost for this project will be \$89,000 over two years. The partnership will provide \$31,190 in match (35%) and respectfully requests \$57,810 (65%) for the Arkansas Game and Fish Commission through the State Wildlife Grant.

<b>Category</b>	<b>Total</b>	<b>Partnership (Match)</b>	<b>SWG</b>
Salary / Benefits	\$68,190	\$31,190	\$37,000
Operating Expenses	\$10,000	0	\$10,000
Capital Expenses	0	0	0
Subtotal	\$78,190	\$31,190	\$47,000
Indirect Costs (23%)*	\$10,810	0	\$10,810
<b>Totals</b>	<b>\$89,000</b>	<b>\$31,190</b>	<b>\$57,810</b>

\***Indirect Costs:** The Nature Conservancy has a federal negotiated indirect cost rate (NICRA) of 23%.

## **Qualifications of Partnership**

**Doug Carter** is the Fire Manager for Arkansas State Parks and Ranger at Mount Magazine State Park. Doug has over 15 years of fire management experience. In his role as Fire Manager, Doug oversees and approves all fire management activities for Arkansas State Parks. Doug is one of the earliest active burn bosses for Arkansas State Parks and oversees fire management for all 52 of Arkansas State Parks.

**McRee Anderson** is the Interior Highlands Fire Restoration Project Manager for the Arkansas Chapter of The Nature Conservancy. McRee is currently a National Wildfire Coordinating Group (NWCG) certified RXB2 Burn Boss. McRee co-leads The Nature Conservancy's Prescribed Fire Program in the state and has been involved in fire management for 8 years.