

**Restoration of High Priority Pine Flatwoods and Bottomland Habitats
along the Ouachita-Saline River Terrance for species at risk.**

Project Summary

The conservation activities outlined in this pre-proposal will target private lands adjacent to Felsenthal National Wildlife Refuge on the Ouachita-Saline River Terrace in Union County, Arkansas. The Felsenthal-west site is owned fee-title by The Nature Conservancy. Felsenthal-west provides open pine (pine flatwoods) habitat for at least twelve species of greatest need. This project will restore and enhance forest structure and composition on 1,100 acres of pine flatwoods through the use of prescribed burns and midstory thinning.



Desired condition



Current condition

Project lead

Mike Melnechuk, Fire Manager
The Nature Conservancy in Arkansas
601 North University
Little Rock, AR, 72205
501-614-5080
mmelnechuk@tnc.org

Budget summary

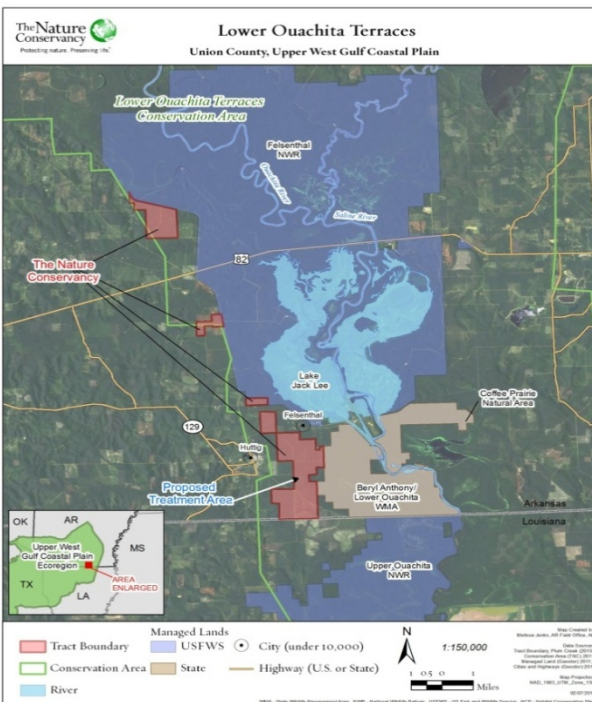
Match Scenario	SWG Request	Match Required	Total Amount
35% Match Required	\$46,180	\$16,162	\$62,342

Habitat need:

Historically, there were 600,000 acres of pine flatwoods on the Ouachita-Saline River Terrace in Arkansas. The pine flatwood ecosystem is undergoing rapid conversion to industrial pine plantations. The conversion from native habitat was so rapid from 2002 – 2007 that TNC projected that the pine flatwoods ecosystem would be functionally converted from native conditions by 2015. Due to the impacts industrial plantations have in disrupting hydrology by creating raised beds for planting, intensive conversion is difficult and expensive to restore. The industrial plantations also rotate through dense young stand in perpetuity. Hence the pine flatwood ecosystem is a high priority for conservation under the State of Arkansas' Wildlife Action Plan, the PFW strategic Plan, and TNC's Upper West Gulf Coastal Plain Ecoregional plan of 2002, and as a Forest Legacy Focal Area. In 2002 the partners set a goal of 60,000 conserved acres by 2012, 10% of the historical extant of this system in the focus area. A habitat model was created showing the areas least impacted by conversion and these were targeted for conservation. The Felsenthal-west site complements and expands the pine flatwoods ecosystem extant on the Felsenthal National Wildlife Refuge by 21%, which makes this area the largest single block of pine flatwoods on the Ouachita-Saline River Terrace under conservation management. Suitable habitat includes mature, pine-dominated, fire maintained woodland and savanna. Given time degraded pine flatwoods habitat is restorable through the use of well-tested restoration activities such as the ones that would be used here.

Location

The project will be conducted on TNC owned lands adjacent to Felsenthal National Wildlife Refuge in Union County, Arkansas. The project area is in Arkansas' 4th congressional district.



Habitat objectives

This project addresses the following conservation actions identified in Arkansas Wildlife Action Plan species reports: conduct prescribed burns (Brown-headed Nuthatch), restore native warm season grasses and forbs (Northern Bobwhite, Sedge Wren), disturb (fire management) grasslands every 4-5 years, establish large blocks of grassland habitat, restore native grasslands (Henslow's Sparrow, LeConte's Sparrow), maintain open mature pine forest habitat, maintain or restore historical fire regimes, maintain or restore pine/bluestem communities (Bachman's Sparrow, Orchard oriole, Prairie Warbler). Maintain shrub habitat (Eastern Towhee). Project completion will take two years.

The habitat objectives proposed under this grant include:

1. Restoration of a fire regime (frequency of 2-3 years) to 1,100 acres.
2. Restoration of habitat structure (50-70 square feet of pine overstory per acre) by reducing overstory and midstory tree density on 1,100 acres.
3. Reducing Chinese tallow infestations on 1,100 acres.
4. Measure progress towards desired ecological condition on 1,100 acres.

Expected results and benefits to species of concern

This project will benefit 12 SGCN known from Felsenthal National Wildlife Refuge and Felsenthal-west (Table 1). Open and frequently burned pine-oak flatwoods provide open grassy pine woodlands, as well as dense shrub thickets, snags, and herbaceous marsh habitat. Currently the habitat is moderately degraded, fire suppressed, moderately dense midstory, lightly infested with invasive species, and overgrown. The Felsenthal Area is recognized as an Important Bird Area by Audubon Arkansas: a site that provides essential habitat for one or more breeding, wintering, and/or migrating birds.

Table 1: Arkansas Wildlife Action Plan SGCN which will benefit from this project (12). All species have been documented at Felsenthal-west/Felsenthal NWR

American Woodcock	Northern Bobwhite
Bachman's Sparrow	Prairie Warbler
Orchard Oriole	Red-headed Woodpecker
Eastern Towhee	Brown-headed Nuthatch
Henslow's Sparrow	Sedge Wren
Le Conte's Sparrow	Seminole bat

Restoring the ecological fire regime that is necessary to maintain this system, invigorating the herbaceous layer, eliminating Chinese tallow, and reducing woody stem density will greatly improve habitat for woodland and grassland priority birds. Shrub thickets are self-maintaining in this system by the nature of fire burning across the flatwoods with varying intensities. Seminole bats nest and roost in the small bottoms that cross the pine flatwoods and feed in open woodlands and barrens. This habitat is adjacent to similarly managed areas on the Felsenthal NWR providing additional scale and connectivity for area-sensitive species.

Approach

Objective 1. Will be implemented during appropriate burn windows through the life of the project by the TNC burn crew.

Activities

Burn units identified and burn plans written (months 1-3)
Fire lines installed (months 4-18)
Prescribed fire implemented (months 4-20)

Objective 2. Will be implemented through an hack-and-squirt and/or chainsaw thinning operation by the TNC stewardship crew or contractor. Overly dense pine regeneration not controlled by prescribed burning and hardwoods too large to be killed by fire will be targeted for treatment. Treatments will be implemented during the summer months of the project.

Activities

Overly dense stands identified and unit prescriptions written (months 1-3)
Density reduction treatments completed (summer months of project)

Objective 3. Will be addressed through an herbicide application during the summer months of project by the TNC stewardship crew or contractor. A basal frill cut application glyphosate or imazapyr on stems larger than 1/4" diameter will be used. On smaller saplings and seedlings a foliar spray with the same chemicals by backpack sprayer will be used. Treatments will in early summer in areas with no standing water.

Activities

Map and evaluate tallow infestations (first non-winter months)
Develop unit prescriptions (early summer)
Herbicide treatments (early summer)

Objective 4. Will be addressed by post treatment evaluations of each treatment and before and after photo points of the habitats.

Activities

Establish photo points with leaves on (non-winter months)
Evaluate treatments using standard protocol post implementation

Commitments

- TNC is committed to reporting progress to AGFC at an annual interval, and to produce a final report prior to the project end date.
- TNC is committed to sharing information with peers via papers, reports at meetings and updates of the Arkansas Wildlife Action Plan.

- TNC is committed to raise any financial match required if match cannot be raised through proposed partners.
- TNC is committed to providing detailed maps of project construction sites for review by the State Historic Preservation Office once sites have been selected. Sites cannot be selected until road inventory and analysis has been completed.

Budget detail

	SWG	Match	Total
Personnel / Fringe	\$29,136	\$ 7,697	\$36,833
Travel	\$ 1,000	\$ 500	\$ 1,500
Supplies	\$ 6,000	\$ 500	\$ 6,500
Contracts	\$ 3,000	\$ 5,000	\$ 8,000
Subtotal	\$39,136	\$13,697	\$52,833
Indirects (18%)	\$ 7,044	\$ 2,465	\$ 9,509
Total	\$46,180	\$16,162	\$62,342

Personnel

The Nature Conservancy has worked with the pine-oak flatwoods and associated plant communities for approximately 20 years and has developed a broad understanding of this at-risk ecosystem through 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 compliant with the National Wildfire Coordination Group standards.

Mike Melnechuk is the Fire Manager for The Nature Conservancy Arkansas Field Office. His responsibilities include assisting with the implementation of fire management activities in Arkansas as well as stewardship and restoration activities on the various preserves for The Nature Conservancy, the Arkansas Natural Heritage Commission, and occasionally military installations. He coordinates with the Director of Conservation, as to the day to day operations of the seasonal burn crew. He has a Bachelor of Science degree in geography/natural resource management from Western Michigan University.

Douglas Zollner is an ecologist currently serving as the Director of Conservation Science for the Arkansas Field Office. He has been working with the Conservancy for 21 years. Zollner has over 35 years of working experience with ecological assessments and conservation planning, woodland and watershed restoration, fire ecology, ecological modeling, and developing and implementing measures of conservation success in an adaptive management context. He received a Bachelor of Science from the University of Arizona in Watershed Management and a Master of Science from Texas Tech University in the Ecology of Arid Lands.