

**Project Title:** Restoration of Wetland Prairie and Oak Savanna in Northwest Arkansas to Benefit Species of Greatest Conservation Need

**Project Summary:**

Wilson Springs Preserve is a 121 acre wet prairie remnant in Washington County. Wilson Springs Preserve is located within the city limits of Fayetteville, AR and is surrounded by increasing development pressure. Open prairies and oak savannas were once prevalent across the Northwest Arkansas region. Years of fire suppression and lack of grazing have resulted in previously open wetland prairie and oak savanna becoming over grown and heavily forested. The property is owned by Northwest Arkansas Land Trust (NWALT). NWALT has successfully restored targeted areas of the preserve to its native habitat, including oak savanna, prairie, riparian and perennial streams. The Arkansas Darter, a SGCN and candidate for federal endangered species listing, inhabits the streams on this property. Sixteen grassland birds listed as SGCN have also been documented to use this property in the last ten years. The current restoration project is focused on clearing dense overgrowth of trees and invasive woody vegetation from an approximately 30-acre former tallgrass prairie and oak savanna habitat on the property. The target area is located adjacent to approximately 20 acres of previously restored riparian and savanna areas. Completion of this project will improve habitat quality and increase patch size for seventeen SGCN that have previously been documented on the Wilson Springs Preserve.

**Project Leader:**

Terri Lane, Executive Director  
Northwest Arkansas Land Trust  
1725 S. Smokehouse Trail  
Fayetteville, AR 72701  
(479) 966-4666  
[tlane@nwalandtrust.org](mailto:tlane@nwalandtrust.org)

**Project Partners:**

Tim Snell, Associate State Director  
The Nature Conservancy  
Land Committee Chair, NWA Land Trust Board  
[tsnell@TNC.org](mailto:tsnell@TNC.org)

Alan Edmondson, Land Stewardship Specialist  
Northwest Arkansas Land Trust  
[aedmondson@nwalandtrust.org](mailto:aedmondson@nwalandtrust.org)

**Project Budget:**

<b>SWG Amount Requested</b>	<b>\$ 30,625.00</b>
<b>NWALT Match Provided</b>	<b>\$ 18,958.00</b>
<b>PROJECT Total</b>	<b>\$ 49,583.00</b>

**Need:** Native grasslands and oak savannas were once prevalent across the Northwest Arkansas region. The rapid economic development and urban sprawl in the Northwest Arkansas area has resulted in negative ecological impacts such as degraded water quality, habitat loss and fragmentation. Botanical surveys have confirmed that the project area at Wilson Springs has potential for restoration of tallgrass prairie and oak savanna habitat. Adjacent areas previously cleared have grown back in tallgrass prairie species indicating that opening the canopy will allow the seed bank to germinate. This project seeks to address loss of native prairie and savanna habitat through restoration and enhancement.

**Purpose and Objectives:** The purpose of this project is to restore an approximately 30-acre native grassland and savanna habitat at the Wilson Springs Preserve. The main objectives are to 1) Remove heavy overgrowth of trees and non-native invasive woody vegetation to open the canopy and allow native seed bank to regenerate; and 2) Conduct botanical surveys, aquatic surveys and water quality testing to monitor results and guide ongoing adaptive management.

**Location:** Wilson Springs Preserve is located within the city limits of Fayetteville in Washington County Arkansas. It is part of the Ozark Highlands eco-region. The preserve is situated at the headwaters of Clabber Creek, a spring-fed tributary of the Illinois River.



Wilson Springs Preserve with restoration areas



Closed canopy and dense woody vegetation in restoration project target area

**Approach:** Use timber mulcher to clear all material 8” DBH and smaller from target area to open canopy and allow native seed bank to regenerate (December 2016- February 2017)

Approximately 30 acres of densely overgrown prairie and savanna habitat will be selectively cleared. All understory and overstory vegetation which is 8 inches or less in diameter at breast height will be removed using a timber mulcher. A 100 foot forested buffer will be cleared only of invasive vegetation, providing edge habitat around the exterior of the target area.

**Conduct biological assessments to guide adaptive management** (October 2016- September 2018)

A rapid botanical survey will be conducted in the area before clearing to determine a baseline plant species composition, as well as after the 1<sup>st</sup> and 2<sup>nd</sup> years of growth to monitor restoration response. Areas found to contain rare or tracked plant species will be more thoroughly examined. Several permanent plots will be installed to study and document how vegetation responds to restoration and to guide adaptive management decisions. Aquatic surveys for the Arkansas Darter will be conducted biannually. Water quality monitoring and testing will be conducted periodically.

**Expected Results and Benefits:** The clearing of the overgrown prairie and savanna habitat will greatly increase the amount of sunlight reaching the ground which will allow for the reestablishment of native plant species from the seed bank. Some target native plant species identified at Wilson Springs Preserve include Big Blue Stem, Indian Grass, Little Bluestem, Swamp Milkweed, and Rattlesnake Master. The reestablishment of native wetland and prairie plant species will increase the quality of habitat as well as the patch size of habitat by at least 30 acres benefitting many SGCN that have historically used the Wilson Springs Preserve. These species include: Henslow’s Sparrow, Migrant Loggerhead Shrike, Northern Harrier, Willow Flycatcher, Sedge Wren, Grasshopper Sparrow, Black-crowned Night Heron, Eastern Towhee, Bell’s Vireo, Le Conte’s Sparrow, American Bittern, Yellow-billed Cuckoo, Pied-billed Grebe, Painted Bunting, Northern Pintail, Northern Bobwhite.

The newly restored prairie and savanna habitat will require ongoing maintenance to ensure that woody vegetation does not encroach and fill in the canopy. NWALT will use adaptive management techniques to maintain an open savanna habitat. Some possible techniques to be used include prescribed burns, flash grazing, hand removal, herbicide application, and disking. NWALT’s volunteer workforce, the “Conservation Crew”, will assist in keeping non-native invasive plant species and invasive woody vegetation from reestablishing. It is the intention of NWALT to keep this area clear and the canopy open indefinitely. NWALT’s Land Committee and the Wilson Springs Steering Committee will guide the management practices at Wilson Springs Preserve.

Biological inventories will help to assess the progress and success of the restoration project. Rapid botanical surveys will show which plant species are reestablishing to what extent. The permanent plots will be used to study how the vegetation responds to the initial clearing and also how the vegetation responds to different adaptive management techniques over time. Biannual aquatic surveys will study the relative abundance of the Arkansas Darter at the site as well as testing to monitor water quality.

**Budget:**

<b>Item</b>	<b>NWALT Match</b>	<b>SWG</b>	<b>Total</b>
<b>Personnel Expenses</b>			
Salary	<b>\$5,616.00</b>		
Overhead	<b>\$3,000.00</b>		
Volunteer	<b>\$3,322.00</b>		
Steering Committee	<b>\$1,020.00</b>		
<b>Restoration Expenses</b>		<b>\$ 30,625.00</b>	
<b>Research Expenses</b>			
Botanical Surveys	<b>\$4,000.00</b>		
Aquatic Surveys	<b>\$2,000.00</b>		
<b>Project Totals</b>	<b>\$18,958.00</b>	<b>\$30,625.00</b>	<b>\$49,583.00</b>

## **Qualifications**

Terri Lane, Northwest Arkansas Land Trust, Executive Director

Terri will provide executive oversight for the purposes of this grant, ensuring the overall and timely completion of grant objectives. Terri has led restoration projects at Wilson Springs for the past four years as the director of the land trust. She holds a degree in Environmental Soil and Water Science from the University of Arkansas and has worked in the environmental field over 15 years.

Tim Snell, The Nature Conservancy, Associate State Director

Tim is a board member and Land Committee Chair for the Northwest Arkansas Land Trust. He will provide technical expertise and guidance on the restoration process. Tim is responsible for Arkansas' Water Resources Initiative and has worked to develop and implement conservation strategies, working with landowners, government agencies, corporations and researchers to protect rare species and threatened habitats.

Alan Edmondson, Northwest Arkansas Land Trust, Land Stewardship Specialist

Alan will serve as the primary manager of the restoration project including working with restoration and biological monitoring contractors, conducting site visits, monitoring aquatic communities and conducting water quality sampling. Alan has worked on Wilson Springs restoration projects and monitored the property for the past 1.5 years as a land stewardship specialist for the land trust. He holds a degree in Earth Science and is completing a master's degree in Geography. Alan's has worked as an independent contractor for USGS, as well as a land and game manager on a private reserve.