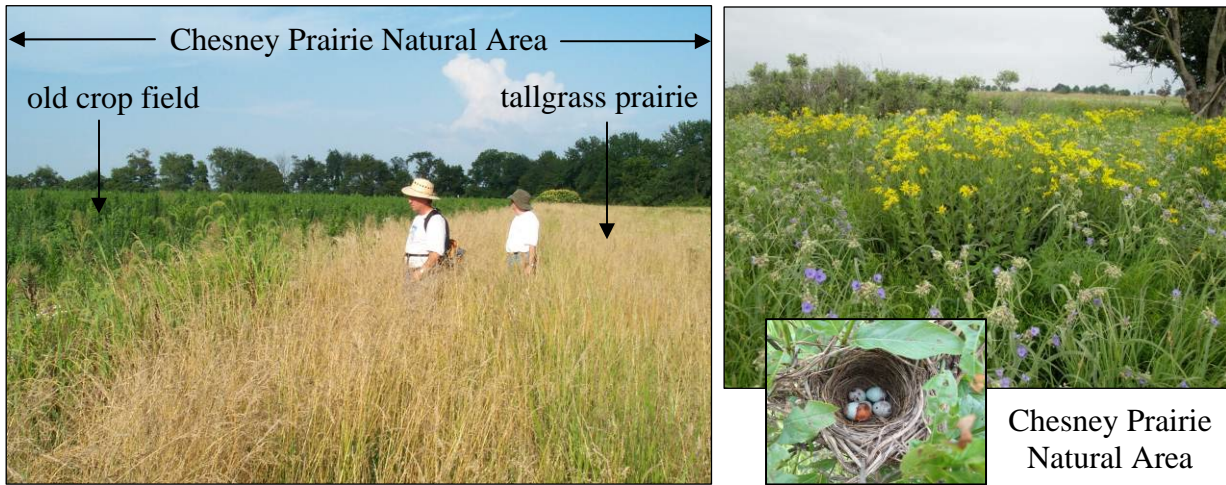


**INCREASING GRASSLAND BLOCK SIZE AND RESTORING
OZARK PRAIRIE AND WOODLANDS**

Project Summary

Native grassland will be reestablished in an old crop field with local genotype prairie seed and the quality of prairie, successional shrub habitat, and riparian woodlands will be improved using herbicide, prescribed fire, and mechanical methods at Chesney Prairie Natural Area. This will address three funding priorities, including the highest priority of the bird taxa team, directly benefitting source populations of 12 grassland-dependent SGCN known from the site and increase opportunities for additional SGCN. This project will increase block size, restore existing habitat, provide connectivity to adjacent high-quality habitat, and benefit the greater Ozark prairie landscape.



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SWG Funding Requested: \$54,600 (65%)

Amount and Source of Matching Funds: \$29,400 (35%) of non-federal funds will be provided from the Arkansas Natural Heritage Commission

Total Project Costs: \$84,000

NEED: Tallgrass prairie is one of Arkansas's rarest community types with the loss of over 95% of the state's native grasslands. Likewise, grassland birds and other grassland-dependent species have declined dramatically due to conversion of prairie habitat to agricultural and urban uses, degradation, and fragmentation. Restoration and management of high-priority grassland habitat are necessary to improve and reverse the downward population trend of grassland birds and grassland-dependent species.

Chesney Prairie Natural Area (CPNA), located in Benton County, is a remnant of a prairie ecosystem that once covered 75,000 acres across the Ozark plateaus and one of very few remaining prairie remnants on the Arkansas portion of the Springfield Plateau. It is one of two remaining remnants of a much larger tallgrass prairie, the historic Lindsley Prairie, formerly covering 12,000 plus acres. Only 100 acres of Lindsley Prairie remain, represented at Chesney and Stump prairies.

CPNA is an exceptionally diverse 82-acre high-quality prairie remnant owned and managed by the Arkansas Natural Heritage Commission (ANHC). It supports wet-mesic and dry-mesic tallgrass prairie and a riparian woodland corridor with a lush understory of grasses and forbs along the headwaters of Sager Creek. More than 290 native plant species are documented from the site including 18 rare plants. This diversity has made Chesney Prairie a high-priority site and one of the best and most popular bird-watching sites in Northwest Arkansas with greater than 150 species of birds recorded nesting, wintering, or migrating at CPNA. Numerous species of greatest conservation need (SGCN) also use the site. Bird SGCN known from CPNA include Willow Flycatcher, Short-eared Owl, Northern Bobwhite, LeConte's Sparrow, Sedge Wren, Bell's Vireo, and Lark Sparrow. In addition, species restricted to tallgrass prairie, such as the Prairie Mole Cricket and Ornate Box Turtle, both only known from two other sites in northern Arkansas, occur at Chesney Prairie.

Amidst this diversity at CPNA, there are ecologically unproductive areas that need intensive restoration and management to support suitable habitat for SGCN. Prior to state ownership, 17 acres of dry, upland prairie at Chesney were cultivated. In addition, exotic plant species such as velvet grass and cheat grass have invaded portions of the surrounding high-quality prairie. Further, some patches of woody vegetation are too mature to support successional shrub habitat necessary for open grassland, shrub-nesting priority birds.

For this proposal, we will restore an old crop field, control invasive plant species, and manage successional shrub habitat at CPNA. This will enhance and expand grassland habitat at a high-priority site providing immediate benefits to 12 SGCN known from the natural area. Numerous studies have shown that for grassland bird management to be effective, conservation actions must be implemented either adjacent to or in the best-quality grassland remnants available. At a landscape scale, this project will increase grassland block size benefiting area-sensitive species such as Henslow's Sparrow and Grasshopper Sparrow. Breeding Henslow's Sparrows have been documented in at least four locations of northwestern Arkansas, and in northeastern Oklahoma.

FUNDING PRIORITIES: Restoring Southeastern Great Plains Tallgrass Prairie at Chesney Prairie will address three 2013 AWAP funding priorities for: (1) Grassland Birds – implementation of habitat restoration and management for native grasslands, (2) Prairies and Native Grasslands – habitat management to maintain or increase habitat quality or increase patch size for SGCN, and (3) Woodlands – habitat management to maintain or increase habitat quality

for SGCN. Restoration and management of native grasslands for grassland birds is identified in the 2013 State Wildlife Grants RFP as the Bird Taxa Team's highest priority.

LOCATION OF WORK: Project is in the Ozark Highlands Ecoregion, restoring Southeastern Great Plains Tallgrass Prairie at Chesney Prairie Natural Area in Benton County (pictured right).



OBJECTIVES: All treatments are within the 82-acre natural area; overlapping treatments total 125 acres; project will take two years.

1. Increase block size by reestablishing native tallgrass prairie species composition on 17 acres of an old crop field.
2. Increase prairie quality by controlling invasive plant species on 10 moderately and 10 lightly infested acres.
3. Increase early successional shrub habitat structure and composition along fencerows and in site appropriate portions of existing prairie patches dominated by more mature trees.
4. Increase the amount and quality of grassland habitat, riparian woodland, and successional shrub habitat on 65 acres using prescribed fire.
5. Measure progress towards desired ecological conditions by monitoring habitat response and response of grassland bird SGCN.

APPROACH: Objective 1 will be addressed in both years of the project. Herbicide and/or shallow tillage will be used to prepare the site eliminating perennial and annual non-prairie species. Row leveling or drainage restoration of the old crop field is not needed. Treatment will begin in fall 2013 and continue every 4-6 weeks during the growing season in 2014. Seed will be mechanically harvested from the major prairie grasses in high-quality areas at CPNA and Stump Prairie (as needed) in fall 2014. A variety of prairie forbs will be hand collected during both years by ANHC and volunteers. Seed will be cleaned and planted using a Truax seed drill in fall 2014. Spot treatment of any persistent non-prairie species and prescribed fire will be used to continue management of the restored crop field beyond the grants project period.

Objective 2 will be addressed during both years of the project. Herbicide alone cannot effectively control velvet grass. Each year, a hand crew will cut and collect velvet grass seed heads and use herbicide to spot treat it and other exotic plant species including cheat grass and an invasive blackberry. Prescribed fire will also be used to eliminate invasive plants. Fire will germinate cheat grass seed from the seed bank and germinated seedlings will be killed by follow-up herbicide treatments, reducing cheat grass recruitment during and after the project period.

Objective 3 will be addressed in both years of the project by cutting mature, desired woody vegetation so that they re-sprout and reset succession. Undesired woody vegetation will be killed using herbicide.

Objective 4 will be addressed in both years of the project. Two burn units are already established. Firelines will be maintained and each unit will be burned in a separate year. Fire will favor native warm season grasses and forbs, increase connectedness, and improve the quality of prairie and woodland.

Objective 5 will be addressed by conducting baseline and monitoring surveys over the two-year period. Habitat response from restoration activities will be monitored by ANHC measuring changes in structure and plant species composition using transects and photopoints. Northwest

Arkansas Audubon Society volunteers and ANHC will conduct surveys for wintering and breeding grassland birds using transects and general area searches.

EXPECTED RESULTS AND BENEFITS: Increased quantity and quality of Ozark tallgrass prairie and riparian woodlands at a high-priority location. These efforts will aid in the persistence of source populations of SGCN that use Chesney Prairie and contribute to population dynamics and perseverance of populations at other remnants in the Ozarks. Habitat restoration and enhancement will have the following benefits for grassland-dependent species.

- 1.) Increased amount of suitable habitat for breeding, wintering, and migrating grassland birds.
- 2.) Increased amount of suitable habitat for the Prairie Mole Cricket and Ornate Box Turtle.
- 3.) Increased connectivity within the prairie by eliminating fragmentation caused by the old crop field.

This project will directly benefit SGCN (Table 1) known from CPNA (12 species) and benefit grassland-dependent, area-sensitive species. In addition, this project will address specific SGCN conservation actions identified in the AWAP. These are: maintain and restore grassland with shrub component/restore native grasslands (Bell's

Table 1: SGCN that will benefit from this project (14). Species known from CPNA are in bold; Priority Score is in parenthesis.

Bell's Vireo (19)	Painted Bunting (11)
Grasshopper Sparrow (19)	Rusty Blackbird (14)
Henslow's Sparrow (33)	Sedge Wren (23)
Lark Sparrow (17)	Short-eared Owl (19)
Le Conte's Sparrow (17)	Willow Flycatcher (29)
Migrant Loggerhead Shrike (33)	Prairie Mole Cricket (32)
Northern Bobwhite (10)	Ornate Box Turtle (19)

Vireo, Migrant Loggerhead Shrike, Willow Flycatcher), disturb grasslands every 4-5 years/restore native grasslands (Le Conte's Sparrow, Henslow's Sparrow), restore native warm season grasses and forbs (Northern Bobwhite, Sedge Wren, Short-eared Owl), conduct prescribed burns/restore native grasslands (Grasshopper Sparrow, Ornate Box Turtle), maintain or restore open habitat with scattered shrubs and trees (Painted Bunting), restore and protect wooded wetlands (Rusty Blackbird), and maintain or restore a mosaic of grassland with shrub and bare ground components (Lark Sparrow).

Restoration and management of priority habitat will optimize breeding and wintering opportunities for grassland birds and provide quality habitat for other grassland-dependent wildlife. Further, increased block size should encourage population growth of dispersing grassland species from nearby northwestern Arkansas and northeastern Oklahoma prairies, thereby providing benefits within the prairie landscape in the Ozarks. Public outreach showcasing project success will highlight the ecological and recreational values of prairie and the impact of the AWAP.

BUDGET: Grant funding for salary will be used for staff paid from non-recurring federal funds.

Category	Total	Match	Grant
Salary / Benefits	\$ 14,500	\$ 7,000	\$ 7,500
Contract Services	60,000	20,900	39,100
Supplies and Materials	1,500	1,500	0
Travel	8,000	0	8,000
Grand Total	\$ 84,000	\$ 29,400	\$ 54,600

ORGANIZATION AND STAFF QUALIFICATIONS

The ANHC has worked alongside with other state agencies and private partners to develop a broad understanding of this at-risk ecosystem through years of scientific observation and use of adaptive management in implementation of restoration and conservation techniques. ANHC protects and maintains tallgrass prairies within four natural divisions of the state. In the Grand Prairie, a SWG helped ANHC restore an abandoned railroad at Downs Prairie Natural Area seeding the site with native prairie species. In the Ozark Highlands, ANHC owns and manages high-quality remnants at Baker Prairie, Chesney Prairie, and Searles Prairie Natural Areas.

Project Leader: Bill Holimon is an Ornithologist and is Chief of Research for the Arkansas Natural Heritage Commission. Bill received a B.S. in biology from the University of Arkansas at Little Rock and an M.S. in biology from New Mexico State University. Bill previously worked for The Nature Conservancy in Texas on conservation of two federally listed endangered bird species, the Golden-cheeked Warbler (*Dendroica chrysoparia*) and Black-capped Vireo (*Vireo atricapilla*). In addition, he has conducted extensive work on various taxa of Red Crossbills (*Loxia curvirostra*) throughout North America. Bill is a native Arkansan who has published five scientific papers on rare birds of Arkansas; four on grassland birds and the fifth on the endangered Red-cockaded Woodpecker (*Picoides borealis*).

Joe Woolbright is the founder and director of Ozark Ecological Restoration Inc. (OERI), a 501(c)(3) non-profit company. Since 1999, OERI has performed restoration stewardship on 7,000 acres on the Ozark Plateau and Arkansas River Valley. Clients include tallgrass prairie projects for ANHC, WHIP projects for AGFC, WRP projects for NRCS, 404 Mitigation projects for U.S. Army Corps of Engineers, invasive species eradication for The Nature Conservancy, and multiple projects for several municipalities and private corporations. Joe has also received the Carl M. Becker Award for stewardship from the Natural Areas Association in 2010.

Dr. Douglas James holds B.S. and M.S. degrees from the University of Michigan and a Ph.D. degree from the University of Illinois, specializing in ornithology and ecology. He has been a member of the faculty at the University of Arkansas for 60 years where he teaches ornithology, mammalogy and ecology. He has published 106 papers in peer reviewed journals mainly concerning ornithology, including the book "Arkansas Birds." He has mentored 52 master's theses and 26 doctoral dissertations. He and his students have censused birds on prairie preserves in northwestern, central, and southwestern Arkansas, some of which currently are designated Important Bird Areas. He is presently the President of the Northwest Arkansas Audubon Society, a chapter of the National Audubon Society.

ALTERNATE BUDGET 50-50% cost share: Restoration of native grasslands is the highest priority identified for grassland birds by the bird taxa team. We will increase the match amount instead of reducing the project's scope.

Category	Total	Match	Grant
Salary / Benefits	\$ 14,500	\$ 7,000	\$ 7,500
Contract Services	60,000	33,500	26,500
Supplies and Materials	1,500	1,500	0
Travel	8,000	0	8,000
Grand Total	\$ 84,000	\$ 42,000	\$ 42,000