

Grand Prairie Working Lands Initiative

We propose to restore agricultural land in the Grand Prairie region to a mix of tallgrass prairie and wetland habitat for grassland and marsh birds. We will identify a core restoration area, determine the needs of ecological indicator species, carry out the restoration, and implement public outreach for best management practices for birds. Initially, several small (9 ac total) grassland-wetland prairie patches will serve as demonstration sites and seed sources for a larger-scale restoration (100 ac).

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Total Requested: \$25,400

Total Match: \$25,400

A. Funding Priorities. This project addresses three funding priorities of the Wildlife Action Plan. The Grand Prairie Working Lands Initiative is a high-profile, on-the-ground, landscape-scale, restoration project that will serve as a demonstration and can be replicated in other landscapes. The project will tie into land-use planning efforts of Audubon (Important Bird Areas, Waterbirds on Working Lands), Arkansas Game and Fish Commission (AGFC; Wildlife Management Areas, Stuttgart Airport prairie restoration), Arkansas Natural Heritage Commission (ANHC; Natural Areas), and U.S. Army Corps of Engineers (USACE; hydrological and ecological restoration). The project will help species of greatest conservation need while also providing habitat for other wildlife that require prairies. The specific State Wildlife Action Plan priority the initiative will address is habitat restoration for grassland and marsh birds.

B. Project Area. The project area is the Grand Prairie region of Eastern Arkansas, including portions of the Bayou Meto Basin.

C. Conservation Priority. The specific conservation priority this initiative will address is habitat restoration for grassland and marsh birds. Prairie birds have experienced the most consistent and precipitous population declines of any avian guild. This decline is largely due to habitat loss and fragmentation. Less than 1% of the original native prairie habitat remains in North America, having been largely replaced by agricultural and urban development. The Grand Prairie of Eastern Arkansas was the state's largest prairie in the early 19th Century, comprising about 400,000 acres of grassland within a total area of a half-million acres. Between the prairies were strips of savanna as well as upland and bottomland forests along bayous. The region supported grassland species such as bison and prairie-chickens. Its wetlands ranged from seasonal herbaceous marsh to hardwood bottoms and supported marsh birds, wading birds and some of the largest concentrations of wintering waterfowl in the Mississippi flyway. In the early 20th Century the potential of the region for rice production was recognized and it rapidly became one of the premiere rice-producing areas of the U.S. In the process, the prairie and associated habitats were plowed and converted to agricultural fields. Today, only 400 acres of native prairie remains, one-tenth of one percent of the original. But growing awareness of its unique ecological values along with the desire of farmers to restore marginal cropland to native habitats make possible the restoration of significant areas of habitat, both upland and wetland.

D. Project Goals. By 2009 Audubon proposes to restore three small (3 ac) grassland-wetland prairie patches for demonstration sites and as seed sources for a larger-scale restoration. Farmers are more likely to enroll small areas such as unproductive field corners into conservation programs than large fields of productive row-crop. Over 5-10 years we will work towards restoring a 75- to 100-acre block of native prairie. This patch will act as a core around which we will continue to work with surrounding landowners to restore smaller parcels of land to historic conditions, connect existing habitat patches, and assist producers in implementing best management practices on their agricultural fields that benefit both birds and crop production. Tasks include (1) identifying a core restoration area based on geomorphology, soil composition, proximity to existing protected areas, and the willingness of landowners to participate; (2) identifying the ecological needs of indicator species and how these needs can be met on the landscape; (3) carrying out on-the-ground restoration; and (4) implementing a public outreach strategy for best management practices on working lands.

E. Methods. Our work will be organized around the four tasks listed above. (1) Identify a core restoration area. The USACE has conducted detailed analyses of the restoration potential of the Grand Prairie and Bayou Meto Basin based on hydrogeomorphology and soil composition. Restoration will be easier if the desired future conditions match historical conditions for each local site. Landscape connectivity is another factor in considering project placement. By placing priority on farms that are close to existing protected areas, or by working with multiple adjacent farms, a complex of closely spaced patches can provide habitat for a higher diversity of species than any single patch. Several protected areas

already exist in this region including: Stuttgart Municipal Airport Important Bird Area (2,560 acres, includes remnant and restored prairie); Konecny Prairie (70 ac) and Roth Prairie (41 ac) Natural Areas; and Bayou Meto (33,832 ac) and Prairie Bayou (441 ac) Wildlife Management Areas. However, public lands cannot bare sole responsibility for maintaining wildlife populations. Private landowners must be willing to participate in conservation. Audubon Arkansas has identified landowners who own significant acreage and who have previously worked with Audubon or have expressed interest in working with us on conservation initiatives. Potential private partners include: Winrock and Two Prairie Farms (5,000 ac), Five Oaks Lodge (3,500 ac), Monsanto Corporation (3,200 ac), and Mallard Pointe Lodge (2,000 ac). These properties are owned by respected members of the community who can serve as examples and encourage neighbors to become involved in conservation efforts. We also will meet with USACE and Bayou Meto Water Management District to identify landowners who meet our requirements. Bayou Meto Water Management District represents many of the landowners in the region.

(2) Identify indicator species and their ecological needs. Within the suite of grassland and wetland birds we will select indicator species that are high priorities for conservation, are sensitive to habitat change, and whose presence indicates high quality habitat. Their particular habitat needs will determine the desired habitat structure following restoration. Presence and increase of these species in the agricultural landscape can be quantified through monitoring and will signal the success of conservation efforts. Potential indicator species include the Northern Bobwhite (*Colinus virginianus*), an upland grassland bird that is highly valued by private landowners, King Rail (*Rallus elegans*), a marshbird that once commonly nested on rice fields but has all but vanished with the intensification of agriculture, and the Mottled Duck (*Anus fulvigula*), another game species that occasionally nests in rice fields.

(3) Carry out on-the-ground restoration. Restoration starts with site preparation. Specific site preparation techniques will depend on the initial condition of the land and may include disking, multiple herbicide applications, or burning. Site preparation will be followed by restoring microtopography and hydrology. Hydrology will be carefully designed to serve ecosystem restoration needs while also providing water for the working farm. This work will be followed by seeding local genotypes of species appropriate to the hydrologic gradient - marsh to wet prairie to dry-mesic prairie. Local genotypes are best adapted to local environmental conditions. Native plant species to be seeded include big bluestem and indiagrass on upland sites, and cordgrass and gammagrass on wet sites. Over the next several years, management and natural succession will lead to establishment of a stable plant community.

(4) Implement a public outreach strategy for best management practices. Agriculture is an indelible part of the landscape. These working lands can and do serve as valuable bird habitat. The goal is to minimize the negative effects of practices such as over-application of pesticides, clean farming, and farming on marginal lands, while balancing productivity of the land for both birds and row-crops. Best management practices (BMPs), such as integrated pest management, conservation tillage, and edge management are viable solutions. Audubon will promote these practices to farmers throughout the area by coordinating with agricultural agencies such as the Arkansas Farm Bureau Federation and publicizing BMPs through local media outlets and Arkansas Cooperative Extension Service.

F. Measurable Products. The initial small-scale restoration sites will demonstrate that we have the partnerships and capacity to achieve our larger goals and thus attract further support. Over several years, we plan to restore at least 75 acres to Grand Prairie vegetation. Seventy-five acres (30 ha) is a minimum area requirement for some area-sensitive bird species. Eventually, we hope that our restoration efforts, combined with other restoration projects, currently protected public lands, and the acres enrolled in USDA conservation programs will create a complex of grassy uplands, seasonally flooded wetlands, and wooded stands characteristic of the Grand Prairie. Thousands of additional acres of working lands will apply BMPs to minimize negative effects on surrounding lands.

G. Communicating Results. We will communicate our activities and results to the public through press releases, articles in popular magazines such as Audubon and Arkansas Wild, presentations to Audubon Chapters and civic groups, and Audubon's web site. We will update the scientific community, CWCS database, and Natural Resource Monitoring Partnership as needed.

H. Existing Resources. The proposed project is complemented by a number of other Audubon Arkansas projects in the region. (1) Audubon received \$100,000 from the Monsanto Fund for the Waterbirds on Working Lands initiative, some of which will be used for promoting and implementing BMPs. The goal of this project is to enhance agricultural land for waterbirds, such as waterfowl and marshbirds, while also maintaining the economic productivity of the land. Partnership with Arkansas Farm Bureau Federation is a key part of the public outreach strategy. (2) Audubon received \$100,000 from the National Fish and Wildlife Foundation to assist communities around the Big Woods in developing ecotourism in Arkansas's Delta. This project will be a venue for disseminating conservation information and building landowner support for restoration. (3) A \$100,000 grant from Waste Management will fund the restoration of bottomland hardwood forest and emergent wetland along the upper portion of Bayou Meto, upstream from the proposed project area. (4) Audubon has a Memorandum of Agreement with ANHC and the USACE to conduct habitat restoration. ANHC has pledged at least \$5,000. They are also supporting initial landowner contacts and site assessments. USACE's contribution will include native prairie seeds harvested under a contract with the University of Arkansas at Pine Bluff's Experimental Farm in Lonoke. This is a high-value, no-cost contribution to the project. (5) AGFC has spent \$42,131 to date on prairie restoration at Stuttgart Airport; our efforts will complement this ongoing project. AGFC has a broadcaster and grass drill available to farmers for free.

I. Deliverables Calendar.

- Now through July 2007
Audubon Arkansas and ANHC are currently seeking landowners in eastern Arkansas to participate in this and other restoration projects. We will make maps of each site and assess the site for restoration potential.
- July 2007 – Fall 2008
Find additional landowners if necessary. Begin site preparation including disking, multiple herbicide applications with roundup, and burning. We anticipate that landowners will contribute time and equipment to site prep. Dig small, shallow wetland depressions 3-4 feet deep with tapered sides.
- Winter 2008- June 2009
Mow weeds. Seed project sites using a broadcaster and grass drill. Begin monitoring vegetation using approximately 10 randomized plots per acre. Survey birds using line transects.

Once prairie vegetation begins to grow we will continue restoration efforts through periodic herbicide applications and prescribed burns. Monitoring will continue at least once per year for three years to assess vegetation establishment and bird response.

J. Budget over 24 months:

Item	Audubon - Match	ANHC - Match	AGFC	Total
<i>Salary & Benefits</i>	\$5,000 ^a	\$5,000 ^b	\$20,000 ^c	\$30,000
<i>Operating Expenses</i>				
Travel		\$2,500		\$2,500
Monitoring		\$2,500		\$2,500
Outreach & education	\$5,621 ^d			\$5,621
<i>Capital Expenses</i>				
Equipment	\$4,779 ^e		\$1,500 ^f	\$6,279
<i>Indirect Costs</i>			\$3,900	\$3,900
Total	\$15,400	\$10,000	\$25,400	\$50,800

^a Administrative support at \$30/hour for 7 hours per month over 24 months.

^b Staff support at \$30/hour for 7 hours per month over 24 months.

^c Salary and benefits for Audubon project manager (1/4 time) plus support from 5 staff.

^d Waterbirds on Working Lands Initiative funds for promoting BMPs.

^e Match provided by landowners working with Audubon and ANHC:

Burning - \$18/ac X 9 ac X 2 burns = \$324

Herbicide - \$47/ac X 9 ac X 3 applications = \$1,269

Disking - \$22/ac X 9 ac = \$198

Tractor* - \$55/ac X 9 ac X 6 events (disking, 3 herbicide, broadcasting, drilling) = \$2,970

* If we cannot use a landowner's tractor Audubon has a Kubota RTV-900, or we may borrow a tractor from our partner Riggs Tractor Supply. Either the farmer, Audubon staff, or Riggs employee will operate the tractor.

^f Trackhoe for digging wetlands- \$100/hr X 15 hours = \$1,500.

Project Total	\$50,800
Total Match	\$25,400
Total Requested from The State Wildlife Grant:	\$25,400

Qualifications:

Kenneth Smith, Executive Director, is the lead manager responsible for this project's success. Mr. Smith served as Assistant Secretary for U.S. Fish Wildlife and Parks where he was responsible for developing policy of the National Park Service and the U.S. Fish and Wildlife Service. He also served as Deputy Chief of Staff to President Bill Clinton and Secretary Bruce Babbitt in the U.S. Department of the Interior where he was instrumental in establishing several new national wildlife refuges. In 1997, Mr. Smith returned to Arkansas where he served as Director of the Ozark Natural Science Center. From 1989 to 1993, he served Governors Bill Clinton and Jim Guy Tucker as Assistant for Natural and Cultural Resources. Earlier, he established the first office of the Nature Conservancy in Arkansas and served as Program Coordinator for the Natural Heritage Program. Mr. Smith holds a B.S. degree in Biology and Chemistry and an M.S. degree in Biology.

Kevin Pierson, Director of Conservation, will be the manager responsible for oversight of day-to-day activities of project implementation, including monitoring to ensure benchmarks are achieved within time frames specified. As Director of Conservation, Mr. Pierson supervises numerous activities related to wetland restoration, habitat improvement, and water quality science. His work currently focuses in watersheds in the Ozarks, Arkansas River Valley, and Delta. Prior to working for Audubon, Mr. Pierson was an associate at an environmental consulting firm. Before that, he worked for the Arkansas Department of Environmental Quality. He graduated from the University of Arkansas with a M.S. in Ecology.

Daniel Scheiman, Ph.D., Director of Bird Conservation, will provide technical expertise on bird habitat requirements, serve as liaison with Arkansas Farm Bureau Federation, and assist with planning, restoration, monitoring, and outreach. Dr. Scheiman manages Arkansas' Important Bird Areas program and Waterbirds on Working Lands Initiative. He also serves on the Ivory-billed Woodpecker Recovery Team and Arkansas Quail Committee. He received his B.S. from Cornell University, M.S. from Eastern Illinois University, and Ph.D. from Purdue University, all in wildlife ecology. He has over ten years of bird research experience on topics such as bird-habitat relationships and population dynamics, resulting in several peer-reviewed publications. He travels throughout the state to lecture on bird conservation and lead bird walks.

Thomas Foti, Natural Area Chief Planner, will provide technical expertise on habitat restoration. Mr. Foti has recently retired as Plant Community Ecologist and Chief of Research and Inventory of the Arkansas Natural Heritage Commission. His section was responsible for scientific evaluation of potential natural areas to guide protection and management, and review of potential environmental impacts of proposed state and federal development projects. He has published books and scientific papers on Arkansas natural history, including *Arkansas and the Land* by University of Arkansas Press. He has done research, inventory and restoration in the Grand Prairie region for 40 years.

Since 2003, **Audubon Arkansas** has implemented Wetland Reserve Program projects on 4,600 acres in the state. Our staff has extensive experience in: wetlands reconstruction, reforestation, grasslands restoration, managing contracts, working with landowners, monitoring, and in public outreach. We have technical training and certification in prescribed burning, wildland fire chainsaws, watershed planning, stream morphology, water quality monitoring, GIS, and vertebrate and invertebrate surveys. Audubon Arkansas and Ducks Unlimited partnered at the Woodsen Joint Venture which was the single largest Wetland Reserve Program site conducted by NRCS to date. During implementation of that project, Audubon contracted with professional foresters, surveyor/engineers, dirt movers, and tree planting crews who performed the work. Audubon personnel were on site each day of the tree planting. Over 700,000 hardwoods were planted; about 150 acres of grasslands were created. Audubon continues to monitor these tracts.