

**Restoration and Management of Upland Early Successional Habitat on Little Bayou
Wildlife Management Area (WMA), Ashley County**

Upland grassland habitat will be restored to premium grassland habitat to benefit Northern Bobwhite (*Colinus virginianus*) and other priority grassland birds on Little Bayou Wildlife Management Area (WMA) in Ashley County. This project will restore fire through prescribed burning to 400 acres of field systems, reclaim 110 acres of old fields by mulching, plant 80 acres of native warm season grasses, and manage 30 acres of grasslands with fallow disking.

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State Wildlife Grant Requested - \$38,200

Matching Funds and In-kind Service - \$38,282

Restoration and Management of Upland Early Successional Habitat on Little Bayou Wildlife Management Area, Ashley County

Funding and Conservation Priorities and Need: This project addresses both funding and conservation priorities outlined in the Arkansas State Action Plan. The proposed project will integrate Wildlife action plan priorities with other land-use and natural resources efforts at the local and state level. Implementation of prescribed burns will restore native grasslands and will help meet habitat objectives in plans including the Northern Bobwhite Conservation Initiative (NBCI) and will provide grassland habitat for priority grassland birds. This project addresses needs of species of greatest conservation concern identified in the plan and will also benefit other fish and wildlife species that rely on grassland habitat. Lastly, this is an on-the-ground stewardship project that implements priorities in the action plan. Furthermore, it can also serve as a demonstration area for projects to be implemented on other state, federal, and private lands and could serve as a model for management on other Arkansas Game and Fish Commission (AGFC) Wildlife Management areas.

The proposed project also addresses two high priority conservation actions identified by the 2007 Arkansas State Wildlife Action Plan. One implementation priority identified by the steering committee is to restore fire across appropriate terrestrial habitats in all ecoregions. Additionally, the team identified restoration and maintenance of prairies and native grasslands as a priority conservation action for 2007. It will restore a fire regime on 400 acres and restore 220 acres of native grasslands of the Little Bayou WMA.

Several grassland species have been identified in this plan as Species of Greatest Conservation Need (SGCN). The threats to these species include habitat loss, often as a result of conversion to agriculture. The species of concern include Northern Bobwhite, LeConte's Sparrow, Short-eared Owl, Loggerhead Shrike, Grasshopper Sparrow, Northern Harrier, and Sedge Wren. Depending on the successional stage of restored habitat, any of these species could utilize the habitat provided. Conservation actions suggested for grassland-reliant species include habitat restoration and provision of larger blocks of grassland habitat. Additionally, establishment of native warm season grasses is an essential element of prairie restoration as are the management techniques outlined in this project.

Project Site: The Little Bayou WMA is located in the Mississippi Alluvial Plain in Ashley County (map attached). Little Bayou WMA is a 1,379 acre tract of land owned and managed by the AGFC. This WMA includes several hundred acres of grasslands that provide critical habitat for Northern Bobwhite and other grassland birds identified as species of greatest conservation need (SGCN) in the Arkansas State Wildlife Action Plan. These grasslands require fire to maintain them in an ideal successional stage to provide optimum habitat for grassland bird species.

Project Goals: The proposed project will help to establish and manage approximately 620 acres of high quality grassland habitat with prescribed fire and other grassland management techniques. This project would establish 14 miles of fire lines to create burn units of less than 50 acres on a total of 400 acres to which fire will be restored. This will allow a rotational burn schedule on Little Bayou WMA to set back to early successional stages without removing the entire established habitat in one burn. Northern Bobwhite need different stages of grass establishment for different times of the year. Therefore, a rotational fire system will allow proper management of these grasslands to maximize the quality of this habitat type. Additionally, rotational burning will provide a variety of stages of grassland habitats to benefit a greater number of grassland bird species.

This project will also reclaim grassland that has not been managed for a long period of time. AGFC will contract the reclamation of 110 acres of fields by mulching. Mulching is needed because lack of management has led to a large amount of woody encroachment. After mulching, these grasslands will then be managed with fire and fallow disking to maintain them as high quality grassland habitat.

This project will also establish 80 acres of new native warm season grass (NWSG) fields and manage 30 acres of fields with fallow disking. Once established this addition of 80 acres of NWSG could increase Northern Bobwhite populations by as much as 20 coveys based on the Northern Bobwhite Conservation Initiative. The 30 acres of fallow disking will maintain current fields that are in good condition in a high quality grassland stage. The establishment of native warm season grasses is identified in the State Action Plan as a high priority conservation action that will benefit several grassland bird species, such as LeConte's Sparrow, Grasshopper Sparrow, Loggerhead Shrike, and Sedge Wren.

Materials and Methods: In order to reclaim and manage 620 acres of grasslands on Little Bayou WMA the AGFC will use a contractor to establish 14 miles of fire lines. Fire lines would be established in 2007. AGFC personnel will prepare and implement prescribed fire plans on 400 acres of grassland in late winter and early spring of 2008 and 2009. A contractor will also be used to mulch 110 acres of grasslands that have excessive woody encroachment during the 2007-2008 fiscal year.

AGFC will determine the proper NWSG mix for this area and plant the appropriate amount of seed to establish good wildlife cover for grassland birds. AGFC will use a rented tractor for this area and use AGFC owned broadcasting and rolling equipment to establish the 80 acres of new NWSG. Any competition will be eradicated prior to planting to insure establishment of the native warm season grasses. Once established these grass stands will be managed with prescribed fire and fallow disking. Planting would be done in winter of 2008 and 2009.

In order to maintain high quality grassland habitat where it is established, AGFC will use fallow disking to manage approximately 30 acres. This will be done in winter of 2007/2008 and 2008/2009.

Monitoring: We will monitor both habitat and bird response to this management regime. In order to monitor habitat change we will measure vegetation parameters for pre and post burns. We will measure percentage of native grasses, native forbs, woody plants, bare ground, and non-native plants. In order to monitor avian response to this management, we will conduct area searches that will give us species richness and abundance for this area for both pre and post burn periods. The final methodology of our monitoring will be entered on the Natural Resources Monitoring Partnership website.

Study Results and Benefits: Through the establishment of fire lanes, implementation of prescribed fire, mulching, NWSG establishment, and fallow disking, this project's objectives are to restore and manage 620 acres of high quality grassland in the Mississippi Alluvial Plain. This management should positively benefit grassland birds by increasing quality nesting and brooding habitat that will be maintained by prescribed fire and fallow disking.

We recognize the importance that State Wildlife Grants funded projects produce results that meet needs outlined in the action plan and that results are tracked and added to the plan. We will ensure measurable progress of meeting these goals in the plan by updating the Arkansas

State Wildlife Action Plan with results of this project by adding results to databases at the conclusion of the project. We will also use this site as a demonstration area to conduct landowner workshops and media outings to educate the public on good grassland wildlife management. Early monitoring results should be ready for presentation to the scientific community by sometime in 2010.

Deliverables:

- 14 miles of firelines – Summer 2007
- 400 acres of prescribed fire – Late Winter 2008 and 2009
- 110 acres of mulching to reclaim old fields – Summer 2007
- 30 acres of fallow disking – Late Winter 2008 and 2009
- 80 acres of new native warm season grasses planted – Winter of 2007-2008 and 2008-2009
- Landowner/Public workshop – Summer 2009
- Presentation @ scientific meeting - 2010

Budget and Expenditures

Source Item	Match*	SWG Money Requested
Salary Expenses:		
AGFC biologists @ \$20/manhour for 270 hrs	\$5,400	\$0
Contractor for 14 miles of fire lane establishment (\$2,500/mile)	\$0	\$35,000
Contractor for reclamation of 110 acres of old field by mulching (\$220 per acre)	\$22,000	\$0
Operating Expenses:		
AGFC vehicles (2,000 miles @ \$0.42/mile)	\$840	\$0
AGFC ATV (100 miles @ 0.42/mile)	\$42	\$0
Tractor Rental	\$3,000	\$0
Capital Expenses:		
Hayes ATV Power Torch	\$2,800	\$0
Native Warm Season Grass Seed (80 acres worth)	\$3,200	\$3,200
Prescribed Fire Hand Tools	\$500	\$0
Safety Clothing	\$500	\$0
Project Totals	\$38,282	\$38,200

Total Project Cost \$76,482

Matching Funds and In-Kind Service \$38,282
 State Wildlife Grant Request \$38,200

* All matching funds will be through AGFC budgeted items or in-kind service.

Qualification of Individuals and Organizations Involved

Organization:

Arkansas Game and Fish Commission – The Arkansas Game and Fish Commission’s mission is to wisely manage all the fish and wildlife resources of Arkansas while providing maximum enjoyment for the people. Arkansas Game and Fish Commission are engaged in bird initiatives including the Northern Bobwhite Conservation Initiative and Partners in Flight, which are initiatives with goals to restore high quality habitat for high priority bird species.

Research Personnel:

Steven Fowler – Quail Program Coordinator

1 year as AGFC Quail Program Coordinator

3.5 years as AGFC Private Lands Biologist

2.5 years as a wildlife graduate student

4.5 years as an undergraduate majoring in wildlife ecology and management

M.S. in Biology from Arkansas State University

M.S. Thesis: Survival, Cause-Specific Mortality, and Habitat Use of Wild Northern Bobwhite (*Colinus virginianus*) at the Camp Robinson Wildlife Demonstration Area

B.S. in Wildlife Ecology and Management from Arkansas State University

Member of The Wildlife Society

Member of the Arkansas Chapter of The Wildlife Society

Catherine Rideout – Passerine Bird Program Coordinator

Catherine W. Rideout has worked as the Passerine Bird Program Coordinator at Arkansas Game and Fish Commission since 2003. She received a B.S. degree in Biology at Davidson College in North Carolina in 1994 and an M.S. degree in Biology from Boise State University in Idaho in 2003. She participates in Joint Ventures and Partners in Flight and serves as the co-chair of Southeast Partners in Flight and is a member of the Bird Conservation Committee of the Association of Fish and Wildlife Agencies. She coordinates bird conservation and management of nongame birds for the agency and is a member of the Wildlife Society and several ornithological societies.

David Luker – Habitat Biologist

3 years as AGFC Habitat Biologist

B.S. in Forestry from University of Arkansas at Monticello

Board Registered Forester

