2013 State Wildlife Grant Preproposal

Title of Project

Restoration and Management of Woodlands, Savannas and Glades within the Boston Mountain and Ozark Highlands Ecoregions (Phase III)

Project Summary

Woodland, savanna and glade communities will be restored and managed to benefit multiple species of greatest conservation need (SGCN) in the Boston Mountains and Ozark Highlands Ecoregions. These high priority vegetative communities will be restored through the application of prescribed fire (14, 250 acres), mechanical reduction of woody vegetation (1,209 acres) and invasive species eradication (160 acres). Habitat treatments will be implemented on seven Wildlife Management Areas in north Arkansas, two adjacent private landowners and the Fred Berry Conservation Education Center on Crooked Creek.

Project Partners

Arkansas Game and Fish Commission

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Arkansas Natural Heritage Commission

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Budget Summary

Total Project Cost: $313,470

SWG funding request: $149,530 (48%) Matching funds (AGFC): $163,940 (52%)

Restoration and Management of Woodlands, Savannas and Glades within the Boston Mountain and Ozark Highlands Ecoregions (Phase III)

Project Need

The primary goal of this project is to address the restoration of woodlands, savannas and glades for the benefit of associated SGCN, as outlined in the 2013 State Wildlife Grant RFP per the Arkansas Wildlife Action Plan (AWAP). Historically, woodlands, savannas and glades provided a mosaic of diverse habitats in the Boston Mountains and Ozark Highlands ecoregions. Decades of fire suppression and subsequent forest densification have resulted in the dramatic loss of these habitat types and concomitant loss of floral and faunal communities. State and federal resource management agencies throughout the central US are prioritizing habitat management efforts to increase the extent and quality of these habitats on both public and private lands. Restoration of these habitat types has been accomplished via prescribed fire and a variety of mechanical vegetation reduction methods. In addition to addressing priority conservation actions within the AWAP, this proposed project would address the habitat management objectives and priority species found in numerous management plans, including the Northern Bobwhite Conservation Initiative, Central Hardwoods Joint Venture (CHJV) priority bird species list, Central Hardwoods Boston Mountain draft Conservation Plan and Arkansas Game and Fish Commission (AGFC) Wildlife Management Area (WMA) Master Plans.

In addition to the emphasis placed on these habitat management activities by the AGFC, other natural resource management agencies including the U.S. Forest Service (various Ecosystem Restoration projects per the St. Francis-Ozark National Forest Land and Resource Management Plan), the National Park Service (Terrestrial Habitat Management Plan) and the Natural Resources Conservation Service continue to focus efforts on increased use of prescribed fire in combination with forest thinning for the restoration of glades, savanna and woodland habitats. With over a decade of collaborative management experience within the Boston Mountains and Ozark Highlands Ecoregions, natural resource managers realize the critical need for the long-term maintenance of these restored habitats using prescribed fire at a desired frequency and intensity to control invading woody vegetation. In addition, there remains a need to further expand the scope of recent restoration efforts across these ecoregions while also performing critical maintenance activities (i.e. prescribed fire) on previously restored areas.

It is important to note that this proposal is a continuation of two previously approved State Wildlife Grant projects which have been successfully implemented by the same project partners. A final report is available for the 2009 grant entitled “Restoration and Management of Upland Early Successional Habitat and Woodlands in the Boston Mountains and Ozark Highlands” (T27R-03) and an interim report is available for the 2010 grant entitled “Restoration and Management of Woodlands, Savanna and Glades in Three Ecoregions” (T34P-02). Among other things, habitat mapping results from these previous projects have been used to identify glades targeted for restoration within this project.

Project Objective

Woodland, savanna and glade communities will be restored or maintained to benefit SGCN in the Boston Mountains and Ozark Highlands Ecoregions. Over the next two years, these priority

habitats will be restored through the application of prescribed fire and mechanical reduction of vegetation. Specifically, this project will:

- Perform WSI herbicide injection on 570 acres to reduce forest mid-story density
- Conduct prescribed burns on 14,250 acres using a 9-person prescribed burn/habitat crew (part-time personnel) to restore or maintain woodlands, savannas and glades.
- Restore 45 acres of sensitive glade habitat through the removal of eastern red cedar (glade locations identified in T34P-02.)
- Conduct 160 acres of invasive species control (to include spotted knapweed and autumn olive)
- Conduct pre- and post-treatment surveys to monitor both vegetative and avian response

Approach

Prescribed fire, mechanical vegetation removal and herbicide application will be utilized, and often combined, to implement the maintenance and restoration objectives in this proposal. Prescribed fire will be implemented utilizing an AGFC part-time prescribed fire crew (9 members). These personnel, in conjunction with AGFC full-time staff will conduct all prescribed burn activities. Mechanical reduction/removal of eastern red cedar (*Juniperus virginiana*) will be accomplished by a contractor or AGFC prescribed fire crew via chainsaws. Cedars will then be burned in place or in piles (site specific) in conjunction with prescribed fire activities. Invasive species eradication will be completed by the AGFC prescribed fire crew and AGFC full-time staff. WSI herbicide injection treatments will be conducted by private contractors utilizing AGFC standardized habitat contract procedures.

Both vegetative and bird response to the habitat management activities will be monitored. In order to monitor habitat change, vegetation parameters will be measured to include canopy cover, percent ground cover, ground cover composition, shrub density, cedar density, etc. by ANHC personnel. Two transects were established at three WMAs (Gene Rush, Harold E. Alexander Spring River and McIlroy Madison County) under a previous SWG project (T34P-02). These sites will be revisited, along with an additional transect added for each WMA as well as establishing two transects on Scott Henderson Gulf Mountain WMA. Avian point counts will be conducted to provide species richness and abundance/density estimates utilizing a contractor.

Expected Results and Benefits

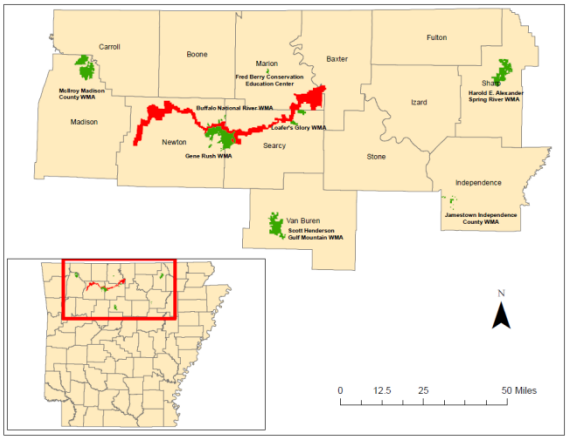
Approval of this proposed two-year project will result in the restoration and critical maintenance of over 14,000 acres of priority glade, woodland and savanna habitats in two Arkansas ecoregions. These priority conservation actions restore and maintain critical habitats which will provide direct benefits for the following SGCN (all documented on these WMAs) as identified in the AWAP: Collared Lizard (*Crotophytus collaris*), Bachman's Sparrow (*Aimophila aestivalis*), Blue-winged Warbler (*Vermivora pinus*), Eastern Towhee (*Pipilo erythrophthalmus*), Hooded Warbler (*Wilsonia citrina*), Red-headed Woodpecker (*Melanerpes erythrocephalus*) and the Prairie Warbler (*Dendroica discolor*). In addition, ANHC has documented 44 rare plants on the AGFC WMAs contained within this proposal which will derive direct benefits from these proposed management actions. The project partners are committed to the implementation and advancement of the AWAP and will provide information/data to all appropriate databases.
It is imperative that increased efforts are made to highlight wildlife benefits to these habitat management activities in a holistic manner in order to garner increased public awareness and

support for both the AWAP as well as sometimes controversial management activities such as prescribed fire. Therefore, during this proposed project, additional efforts will be made to promote these habitat management activities and the AWAP even further through additional field trips with an emphasis on showcasing these activities and subsequent benefits to local elected officials and other key groups. It is important to note that the habitat management activities that will be performed on the Fred Berry Conservation Education Center (FBCEC) will provide a valuable educational opportunity to promote awareness of the AWAP, the management of priority habitats for SGCN and serve as a demonstration area for natural resource managers and private landowners alike.

Location of Work

The project will occur on eight tracts of public land and two tracts of private land in the Ozark Highlands and Boston Mountains.

The public land includes McIlroy Madison County WMA (14,496 acres in Madison County), Gene Rush WMA (19,949 acres in Newton and Searcy Counties), Harold E. Alexander Spring River WMA (13,859 acres in Sharp County), Scott Henderson Gulf Mountain WMA (11,683 acres in Van Buren County), Jamestown Independence County WMA (971 acres in Independence County), Loafer's Glory WMA (2,686 in Searcy County), Buffalo National River (95,730 acres in Baxter, Marion, Newton and Searcy Counties), and Fred Berry Conservation Education Center on Crooked Creek (421 acres in Marion County).



Budget

The budget below outlines cost to complete the project objectives in two years:

Conservation Action	AGFC	SWG	TOTAL
Prescribed Fire/Habitat Crew Salary (9 part-time positions) Implementation of prescribed fire (14,250 acres)	101,340	113,030	214,370
Monitoring (avian and vegetation)	0	18,000	18,000
Contract work: 45 acres of cedar removal, 570 acres of WSI herbicide injection, 160 acres of invasive species eradication	62,600	3,000	190,944
Meals and lodging for 9 crew members	0	6,000	6,000
Small equipment (trailer, chainsaws, leaf blowers)	0	9,500	9,500
Total Project Cost ($)	**163,940**	**149,530**	**313,470**

Qualifications of Individuals and Organizations Involved

The **Arkansas Game and Fish Commission's** mission is to wisely mange all the fish and wildlife resources of Arkansas while providing maximum enjoyment for the people. The Arkansas Game and Fish Commission is responsible for the effective coordination and implementation of the Arkansas Wildlife Action Plan and the management and protection of the Species of Greatest Conservation Need and priority habitats identified therein. The implementation of the AWAP includes the implementation of priority conservation actions on AGFC owned lands within the state.

The **Arkansas Natural Heritage Commission** is charged with the responsibility of establishing and maintaining a system of Natural Areas. Natural areas are those lands specifically managed to preserve, and sometimes restore, natural communities that are now rare across the state. ANHC also maintains the Natural Heritage Inventory, the central repository for information on rare species and natural communities in Arkansas. The Natural Heritage Inventory gathers this information which is then factored into land management practices at the state, regional, and national levels. ANHC has proven success in restoring degraded glade and prairie habitats through removal of invasive woody species such as eastern red cedar and use of prescribed fire.

Brad Carner has worked as a biologist with the Arkansas Game and Fish Commission since 1999. Since 2008, he has served as regional wildlife supervisor for an eleven-county area in north-central Arkansas. He received his BS degree in Zoology (1996) from Arkansas State University and his MS degree in Biology (2002) from Arkansas State University. In his current capacity, he has served as Project Leader for two approved SWG projects and been involved in the successful completion of two additional SWG projects.

A. J. Riggs has worked as a Biologist for the Arkansas Game and Fish Commission since March 2004 (9 years). She received a BS degree in Ecology from Juniata College in Huntington, Pennsylvania in 1999. Since 2008, she has been directly involved in all aspects of the successful implementation of four SWG projects within north-central Arkansas.

Theo Witsell – Botanist, ANHC. B.S. Biology (2000) and M.S. Biology (2007), University of Arkansas at Little Rock. He has been the staff botanist for ANHC since 2000. He has also worked as a contract botanist for the USDA Forest Service, the NPS, the United States Department of Defense, the U.S. Army Corps of Engineers, the Lady Bird Johnson Wildflower Center (University of Texas at Austin) and the Gates Rogers Foundation. He is an active member of the Arkansas Vascular Flora Committee (a group of botanists writing the *Manual of the Vascular Flora of Arkansas*).