



Restoration of Native Warm Season Grasses to Improve Migratory Bird Habitat

Project # 07-354

Background:

Historically, the southeastern United States included large tracts of native grasslands and savannahs with scattered trees and shrubs that were kept open by natural fire events. Native grasses are important for many species of migratory birds and other wildlife because their clumpy growth form provides structural cover for nesting, brood rearing, and foraging. Over the last century, most of these areas have been replaced with nonnative grasses, agricultural crops, forest cover (due to suspension of fire regime), and urban/suburban development. Throughout North America, efforts are underway to restore native grasslands and other essential habitats for migratory birds through private-public partnerships.

To facilitate cooperative conservation efforts, the North American Bird Conservation Initiative has created geographic Bird Conservation Regions (BCRs) that address bird conservation needs. Redstone Arsenal lies within the Central Hardwoods BCR (CHBCR) which extends west to the Ozark Mountains and east to the Interior Low Plateaus. The CHBCR is divided into 3 Focus Areas- the Ozarks, the Northern Interior Low Plateau, and the Southern Interior Low Plateau. Within the Southern Interior Low Plateau, several smaller focus groups have been formed to address local bird conservation issues. The Tennessee River Migratory Bird Focus Area is divided into two partnerships, a Tennessee Partnership and a Decatur (Alabama) Partnership. The Wildlife Habitat Council (WHC) has been working with the CHBCR to foster public-private partnerships for restoration work on corporate lands and surrounding areas to create a large network of migratory bird habitat. One of the first projects to come out of the partnership focuses on an approximate 25 mile corridor of land along the Tennessee River in North Alabama. The land in the corridor is owned by several corporations, Wheeler National Wildlife Refuge (WNWR), the Tennessee Valley Authority (TVA), the City of Decatur, and Redstone Arsenal (RSA). The primary focus of the partnership is improving habitat on private, as well as public, lands for priority grassland bird species such as Dickcissels, Grasshopper Sparrows, Field Sparrows, Prairie Warblers, Northern Bob-white Quail, Loggerhead Shrikes, and Eastern Meadowlarks. In 2003, initial corporate participants in the Decatur partnership

included 3M, BP, Vulcan Materials, and Nucor Steel. The collective result has been the conversion of roughly four hundred acres of fescue to native warm season grasslands and eight acres of pine savannahs. Public education and outreach projects such as wildlife viewing areas and walking trails have been constructed in some locations. New partners since 2004 are Redstone Arsenal, NASA, Morgan County Regional Landfill, Solutia Inc., and the Boeing Company.

Objective:

The current goals of the partnership are 1) continued restoration and management of habitat on existing corporate partners' landholdings, 2) development of more public outreach tools, and 3) identification and recruitment of new public and private partners along the Tennessee River corridor to create more continuous migratory bird habitat. As a major landholder along the Tennessee River, RSA proposed to convert 100 acres of nonnative pasture to native warm season grasses with Department of Defense (DoD) Legacy Program funding. The project was aimed to improve migratory bird habitat in the region and would help promote the DoD in a leadership role for regional conservation by setting an example for neighboring corporate landholders.



Native warm season grasses and forbs in third growing season.



Summary of Approach:

Two hundred and twenty acres of nonnative pasture (some with a 2007 DoD Legacy Program funding and some with additional funding) were converted to native warm season grasses (NWSG). Species planted were big bluestem, little bluestem, Indian grass, switchgrass, and a mix of native forbs and wildflower species.

Conversion of the area involved three general phases; site preparation, planting, and monitoring and management. Site preparation required use of the non-persistent, non-soil active herbicide glyphosate to kill nonnative grasses. Planting of the NWSG was accomplished using a no-till method. NWSG are managed and maintained through annual prescribed burning. Success of the project is determined through estimating percent cover of non-native species and native warm season grasses in addition to determining differences in utilization by migratory birds between NWSG and nonnative pasture.



Native warm season grasses during prescribed burn on RSA.

Benefit:

Section 3 of Executive Order 13186 designates federal responsibilities for protecting migratory birds in that all federal agencies shall, amongst other things, "...restore and enhance the habitat of migratory birds, as practicable;...design migratory bird habitat and population conservation principles, measures, and practices, into agency plans and planning processes (natural resource, land management, and environmental quality planning, including, but not limited to, forest and rangeland planning, coastal management planning, watershed planning, etc.) as practicable, and coordinate with other agencies and nonfederal partners in planning efforts;...recognize and promote economic and recreational values of birds, as appropriate; and develop partnerships with non-Federal entities to further bird conservation." As one of the

largest landholders in the Tennessee River Valley, the Army is in the unique position to demonstrate leadership by implementing management practices which improve habitat quality for migratory songbirds without compromising mission activities. Showing our support through participation in a regional conservation partnership with other federal agencies and corporations indicates the Army's willingness to cooperate with local and regional partnerships. In addition to ensuring compliance with the Sikes Act and the Migratory Bird Treaty Act, regional partnerships designed to improve habitat for declining species may prevent the need for future listings under the Endangered Species Act. Restoration of native grasses also has several economic and ecological benefits. Maintenance costs are reduced because once they are well established; native grasses do not require regular mowing or pesticide-herbicide treatments. The extensive root systems of native grasses provide erosion control, drought tolerance, and increase soil fertility by regular regeneration of the root system. The use of native grass species will help the installation meet its goals for sustainability with regards to natural resources and the present and future Army mission.

Accomplishments:

Project resulted in greater % cover of native plant species, less % cover of nonnative species, and greater native plant diversity in native warm season grass areas compared to selected nonnative pasture. However, our % bare ground is below the recommended rate of 50%. In addition, there was no difference between NWSG areas and nonnative pasture areas in number of bird species or number of priority bird species. We believe through more intensive management of the NWSG areas, i.e. through annual prescribed burning instead of biennial prescribed burning, we can improve our conversion results and produce high quality grassland dependent migratory bird habitat.

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