2015 Presidential Migratory Bird Federal Stewardship Award

Top Three Nominee

Department of Energy: Managing Grasslands and Early Succession Habitat for Migratory Birds on the Oak Ridge Reservation

Partners: Tennessee Wildlife Resources Agency (TWRA); University of Tennessee; Tennessee Division of Forestry; Austin Brewer, Eagle Scout, Troop 949, Toqua District, Great Smoky Mountain Council, Boy Scouts of America; URS | CH2M Oak Ridge LLC

Photo Credit: Department of Energy

The Oak Ridge Reservation (ORR) is a 33,481 acre U.S. Department of Energy (DOE) property located in the Ridge and Valley Province of East Tennessee. Since 2002, DOE, in collaboration with others, has actively managed this property for early succession habitat to benefit birds and wildlife. Actions taken include planting native warm season grasses, conducting prescribed burns, thinning loblolly pine stands and right-of-way corridors, applying herbicides to invasive plants, and installing/maintaining nest boxes. Migratory bird protection is also enhanced by landscape committees which ensure use of native plants, support of ORR bird research and publications, and recently inventorying gates, posts, and bollards for potential entrapment of cavity-nesting birds.

Before 1942, when the government acquired the land now known as the ORR, the property was largely made up of individual farmsteads consisting of grazed woodlots, fescue fields, forests, and cropland. Since the early 2000s, considerable effort has been dedicated to eliminating remnant fescue (e.g., tall fescue, Lolium arundinaceum) because of its endophyte toxicity (mainly to insects) and its well-known tendency to diminish overall biological diversity (particularly problematic for ground-nesting birds). Fescue elimination is followed up with drilling or broadcasting of native warm season grasses or recolonization by native plants from within the existing seed bank.

Approximately 70% of the ORR is forested, with several hundred acres in dense stands of loblolly pine (Pinus taeda). At the stem exclusion stage, these stands exhibit closed canopies, minimal growth of herbaceous understory, and extremely low wildlife value. Measurements (fixed radius plots) taken in these stands indicate a basal area of ~125 ft2/acre with an overall plant community consisting of ~47 species (~43% herbaceous plants and grasses). By comparison, a recently thinned stand exhibits a basal area of ~75 ft2/acre (additional thinning is planned) with an overall plant community consisting of ~81 species (~63% herbaceous plants and grasses) at the end of one growing season.

The establishment of diverse native understory plant communities improves food, cover, and vertical structure in these pine stands, and such plant communities are a good predictor of future avian richness comprised of early succession/grassland obligates. The paucity of savannah-type plant communities in the Ridge and Valley may also be limiting movement of short-distance migrants such as loggerhead shrikes (Lanius ludovicianus), grasshopper sparrows (Ammodramus savannarum), and Henslow's sparrows (Ammodramus henslowii). The red-headed woodpecker (Melanerpes erythrocephalus), a species believed to have been absent from the ORR from the early 1970s to the late 1990s, also benefits from these thinning operations.

DOE and partner applicants have taken a multifaceted approach to managing for early succession communities that also includes appropriate use of targeted herbicide applications and prescribed fire. Equally important is DOE's recognition of the need for public outreach in order to maintain a sustainable program. This need has been addressed through establishment of public greenways and conservation easements, and through support for public bird walks, Earth Day activities, collaborative research, and Boy Scout/Girl Scout activities on the ORR.