

Forest Conversion to Early Successional Habitat

Bridgestone/Firestone WMA

August 2021

- Quail and many other associated early successional habitat species (dickcissel, prairie warbler, field sparrow, loggerhead shrike, yellow-breasted chat, indigo bunting, blue grosbeak, eastern cottontail, etc.) have been in decline for decades. Native early successional vegetation communities that quail require for habitat have also been in sharp decline for several decades. Bobwhite only exist in areas where these plant communities are a significant portion of the landscape. The decline and deterioration of these vegetation communities is the reason for the decline in bobwhite in TN and throughout their geographic distribution. The northern bobwhite is an imperiled species in most of the eastern US.
- In 2013, the TWRA dedicated four WMAs across the state as Quail Anchor Areas (Anchor Area), to be managed specifically for northern bobwhite, to create source populations and provide emigration potential to neighboring properties. Bridgestone-Firestone WMA (BSFS) was selected as an Anchor Area due to its potential to impact the species with proper management.
- However, in general, the Quail Anchor Areas have not been managed to their full potential for quail until recently. For example, some have dove fields and crop-field leases (which are not usable for quail most of the year), and prescribed burning and affecting as much acreage as possible has not been prioritized.
- Research shows quail need a minimum of ~ **1,500 acres** to sustain a population by having enough area to support multiple populations' emigration/immigration for genetic diversity. Previous focus on native grass plantings and minimal herbicide treatments, along with overuse of mowing has not increased the quality of quail habitat on these areas. We are currently adjusting our efforts to better provide optimal quail habitat.
- In 2019, the Agency documented its rededication to truly maximizing our attempt to help quail by producing the "Northern bobwhite quail restoration plan." TWRA considers this an urgent and imperative effort for the species before populations are further reduced. The plan outlines numerous management strategies to maximize the quality of quail habitat (by prioritizing burning, removing nonnative invasive plants, etc.), and more importantly the **QUANTITY OF QUAIL HABITAT**.
- Specifically, the plan details habitat enhancement strategies to increase the quality and quantity of quail habitat by converting forest land to early successional plant communities through timber harvest (Quail Plan - Habitat Goal, Objective 4). Additionally, we have funded a quail research project with Quail Forever, Inc. The University of Tennessee project is tracking quail to learn survival rates, daily and seasonal movements, habitat use, and the effects of various habitat management practices. This effort is to determine what habitat needs quail have over the course of a full year, which time periods affect survival and recruitment and ultimately how best to manage for bobwhite. This research includes a cooperative and adaptive management plan developed by UT Extension and TWRA for Anchor Areas. The management plan for BSFS

includes forest conversion to increase quail habitat adjacent to the “Farm Unit” to meet requirements for a viable and sustainable quail population.

- **BSFS is approximately 20,000 acres and is 82% forested.** Virtually all surrounding lands are also closed-canopy forest (including a myriad of state parks, state natural areas, commercial pine land, and TNC property). Closed-canopy forests do not provide habitat for bobwhite and have limited value to other wildlife species, as there is little ground vegetation (food and cover source).
- Progress on BSFS has been made with increased prescribed burning activity and eradicating nonnative invasive plants. The Farm Unit (where the initial cuts are planned) has only 650 acres of existing quail habitat, well below the necessary amount for a viable population. There is potential at BSFS to convert a total of about 2,000 acres of existing closed-canopy forest to early-successional plant communities. **If realized, this conversion would impact 10% or less of current forest acres.**
- The first phase of forest conversion has already been completed on the Farm Unit where approximately 380 acres were converted from loblolly pine forest to early successional habitat.
- **The current project at the Farm Unit is to convert approximately 340 acres of existing closed-canopy forest to 245 acres of “light” savannahs (with about 2 trees/acre retained), and 95 acres of woodlands (with about 40% trees retained).** This initial 340-acre project is adjacent to approximately 1,070 acres that has been identified for forest conversion in the future.
- Additional future project sites also include approximately 970 acres of hardwood/pine forest conversion on the Farm Unit and approximately 420 acres of loblolly pine forest conversion on the Mooneyham Unit. **All numbers represent approximate maximum acreage converted.**
- Time to complete all the proposed forest conversions would be approximately 5-10 years.
- **The resulting plant community will enhance habitat for not only quail, but a number of other popular game species, especially white-tailed deer and wild turkey. The ground cover vegetation will provide new food sources and will likely lead to increased antler growth as the responding plants provide the nutrition deer require for antler growth and development during the spring and summer months. With the vast acreage of oaks (current and remaining), acorn production as a fall food source would not be limited. Reducing forest acreage will greatly enhance nesting and brooding cover for wild turkeys and lead to greater numbers of gobblers and enhanced hunting opportunities.**
- While the surrounding plant communities will change, no trails will be removed from the WMA.
- TWRA and partners plan to continue these efforts to further increase quail habitat and the associated plant communities to provide and enhance habitat for many other wildlife species that either require or benefit from these plant communities.