GEORGIA DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION

BOBWHITE QUAIL INITIATIVE
BQI

# Managing Pine Stands for Bobwhites

*Third in a series on management techniques to improve habitat for quail*

*Bobwhite abundance in pine forests is strongly associated with the composition of the ground vegetation. Quail and several priority non-game birds benefit from ground cover of grasses, forbs, and shrubs which develop in very open and frequently-burned pine woods, and occur for the first two to four years following forest regeneration. However, on sites where pine trees occur at densities that shade and out-compete desirable food and cover plants, quail habitat is degraded. Management for maximum economic return from timber is not consistent with providing optimum habitat for quail. However, through careful planning, timber can be managed for reasonable economic returns while maintaining huntable quail populations. General recommendations are provided below, however results vary depending on landscape context and site-specific conditions. Landowners interested in improving their properties for quail and other wildlife should begin by seeking technical assistance from qualified professionals.*

In Georgia, longleaf/slash, loblolly/short leaf, and oak/pine forests comprise a substantial proportion of the bobwhite quail's geographic range. Pine stands produce pine seeds, which are utilized by quail as a fall food; and pine stands produce large quantities of pine needles, which serve as a fuel to facilitate prescribed burning. Within its historic range, longleaf pine is best suited for quail management for several reasons. Longleaf pines have thinner crowns that allow more sunlight to reach the forest floor; have large nutrient-rich seeds that quail prefer; can be burned at an early age; and can be managed on long rotations. However, quail management can be successfully integrated with all pine species. Primary practices for managing pine stands for quail include thinning, prescribed burning, and establishing and managing openings.

Thinning Pine Stands: Thin pine stands so that a minimum of 40 to 60 percent of the ground is in direct sunlight. This usually falls within the range of 35 to 65 square feet of basal area per acre. Heavier thins are necessary on poorer soils. If red-cockaded woodpeckers are present, thinning must be accomplished to meet guidelines for cluster site and foraging habitat protection and maintenance. Manage pine stands on saw timber rotations so that a greater percentage of the total stand life is in a productive condition for quail management and hunting.

Burning: Prescribe burn up to 60% of the stand on an annual basis. This is best accomplished by establishing permanent firebreaks that divide the area in checkerboard fashion into 10 to 50 acre blocks. Burn these blocks on a two-year cycle so that about one-half of the woodlands are burned each year. On poor soils, burning on a three-year cycle may be sufficient. Conduct burns during February under cool, moist conditions. Let fires feather into hardwood heads and drains. Growing season burns (April to May), particularly in longleaf/wiregrass, can be used to control hardwood encroachment. Fuel conditions will limit the use of growing season fire in pine stands established on old agricultural fields. Periodic, mechanical and/or chemical treatments may be needed on these sites to control hardwood invasion.

Forest Openings: Place at least 15 percent of forest stands into two to five acre fields. Manage these fields by strip disking during late October through February where one-third is disked each year. Within this range of disking dates, adjust timing of disking based on results. Ideally disking should produce stands of ragweed, beggarweed, partridge pea and other "quail friendly" plants. Rotate disking across fields so there is always a succession of growth from bare ground up to three years of vegetative growth. Strip plantings of grain sorghum or Egyptian wheat within fields can provide supplemental winter foods and may be especially important on sites with poor native food production. Rotate strip plantings along with the fall/winter disking so that one-third to two-thirds is fallowed each year. Fields also can be planted to partridge pea; fall/winter disking will encourage it to volunteer back in future years. Managers should observe the results of one year of disking before planting, as an abundance of native seed may be present.

*-BQI Biologists, updated 2019*