

Strip Disking and Other Valuable Bobwhite Quail Management Techniques



The bobwhite quail (northern bobwhite, *Colinus virginianus*), is one of the most exciting game birds in the Southeast. A covey rise of 12 or more birds in front of a dog's nose has increased the heart rates of thousands of bobwhite hunters over the decades that man has enjoyed this sport.

For the past several decades, though, bobwhite numbers have been declining, and for the last 10 years, population declines have been as much as 7 percent per year in certain places. Changing land use practices and habitat conditions (food and cover problems) account for most of the downward trend in bobwhite numbers, but other factors, such as predation, disease, and environmental toxicants may play significant roles. In parts of the South, where bobwhites have been managed intensively, bird populations have remained stable, which indicates the bobwhite quail can be managed successfully if you use proper techniques to create essential habitats.

Habitat Requirements

In the southeastern United States, bobwhite are closely tied to early successional plant communities. Early successional plants are the annual weeds, grasses, and shrubs that develop in the first several years after some kind of disturbance. The disturbance may be a disking, fire, cultivation or fallowing, or such.

Bobwhites have specific habitat requirements that vary seasonally according to environmental and biological processes. Various stages of the agricultural/fallow/idle old-field cycle meet different seasonal habitat needs of bobwhites. For example, they nest in idle native grasslands (broomsedge field), raise their broods in weedy areas, and use low shrubby cover for protection from predators and weather. Habitat



management programs for bobwhites should create and maintain each of these plant communities that meet specific seasonal habitat needs. In the past, bobwhite were an accidental byproduct of forest and agricultural management practices. However, in modern landscapes, restoration of bobwhite populations requires intentional management.

Habitat Management

Planned periodic disturbance is the key to creating and maintaining bobwhite habitat. Because of the long growing season, fertile soils, and abundant rainfall in the Southeast, undisturbed agricultural lands can rapidly develop into dense young forests not suitable for bobwhites. Management practices that are beneficial for bobwhites generally involve setting back plant succession to very early stages, similar to those found in fields one or two years after cultivation. In the South, habitats, whether open fields or wooded areas, that are allowed to grow up longer than three to four years without some type of soil or vegetative disturbance quickly grow out of good bobwhite habitat.

Typically, management practices for open fields include prescribed burning annually or every two years, bush-hogging, disking, planting agricultural crops, and protecting some areas that grow up into brushy escape cover. For wooded areas, the same management practices apply, but concentrating on opening up or daylighting canopies by selective thinning or clearcut timber harvests (to encourage understory plant growth) is important. Prescribed burning on a one- or two-year rotation is critical in pine forests for controlling the leaf and needle litter layer and hardwood understory and for promoting growth of legumes.

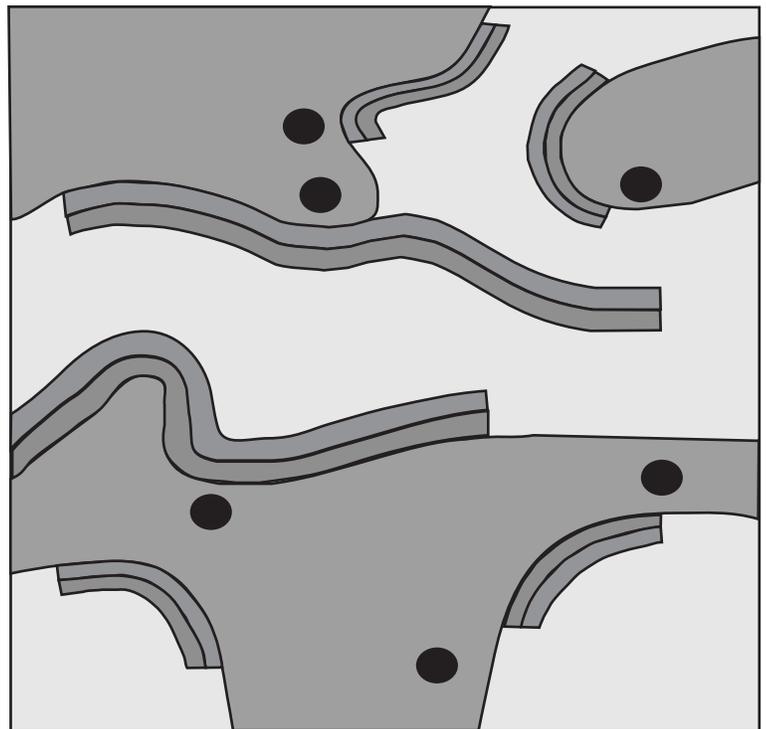
Bobwhite thrive in complex landscapes that resemble a patchwork of small crop fields, old fields, grasslands, and brush. Mixing different habitat types (nesting, broodrearing, feeding, or escape cover) close by is a must. Small patches

of various habitat types, such as brushy fence rows and ditch banks, should be left within cropland or old-field areas. Small woodlots should be bordered by transition zones of brushy cover that gradually fades into an opening or field. Artificial brush piles or windrows can be placed in large fields to break them into smaller units and increase habitat diversity. The goal is to create a patchwork of types, well interspersed. This interspersion of patch types increases the proportion of the landscape bobwhites can use.

Strip Disking

Although bobwhite populations have declined, many landowners in the Southeast have significant opportunities to create habitat and restore populations. Hundreds of thousands of acres of old fields and young forests may provide excellent bobwhite habitat. But many of these habitats are in poor shape for bobwhites because they have grown up into thickets of less desirable grasses and brush that are too dense for birds to use. Many don't have a desirable plant mix.

Bobwhites like to have their feet touch bare ground because this makes it easy for them to feed on seeds and insects. The key to bobwhite management



	Native woods		Disk 30-50 foot wide strip on odd years
	Artificial brushpiles or half-cut trees bent to the ground		Disk 30-50 foot wide strip on even years
	Native herbaceous vegetation		

is a balance between a mix of bare ground that lets bobwhites feed and travel freely and vegetation that provides food, nesting habitat, and protection from predators.



Thick sod or dense vegetation that hinders bobwhite feeding can be renovated in old-field habitats with a tractor and disk. The technique simply involves disking strips through a field or open woods in the fall or spring. These strips should be 30 to 50 feet wide and separated by undisked strips of 60 to 100 feet. Disked strips should be as long as possible and should follow the contour of the land to prevent erosion. The undisked areas will provide nesting habitat, while the adjacent disked areas that later grow up into succulent forbs and legumes will provide habitat that is rich in insects and seeds.

Strip disking should be thought of as a rest/rotation system. After a year has passed, disk the previously undisked areas and let the previously disked areas grow for up to two years. This system develops a mix of vegetation that is zero to one, one to two, and two to three years old. Do not let areas get older than three years.

Strip disking enhances habitat quality in a number of ways, including releasing grass-bound fields, reducing litter accumulation, creating bare ground, stimulating germination of desirable seed-producing plants, and increasing insect populations by as much as four times. It will maintain nesting cover and produce adjacent brood habitat on a scale that will positively impact bobwhite populations. It will provide more insects and plenty of natural seeds at a much lower cost than planting food plots, although planting some of the strips to grains or legumes will further enhance habitat quality by providing additional winter food resources.

Although planting winter food resources is an important management tool and can enhance local habitat quality, vegetation succession management is the single most important aspect of bobwhite habitat management in the Southeast. Strip disking is an efficient and cost-effective vegetation management tool and should be broadly implemented to enhance bobwhite habitat quality.

As an example of successful strip disking, one Mississippi landowner kept records between 1987 and 1991 that show an increase in covey numbers from 16 to more than 100 partly because of switching to this management technique. Although not a cure-all for bobwhite quail, strip disking can be a valuable management technique that may help return the bobwhite to good population numbers.

Conservation Reserve Program

Strip-disking is an approved management practice on grass fields enrolled in the Conservation Reserve Program (CRP). In fact, the USDA-Farm Services Agency will cost-share (50 percent) strip-disking on CRP as a mid-contract management practice. To qualify for this cost-share CRP contract, you must visit your USDA Service Center (USDA-FSA/NRCS office) and request that your CRP conservation plan of operation (CPO) be modified to permit strip-disking. For further information, see the USDA-FSA Mid-Contract Management Guidelines and USDA jobsheets MS-CRP-05 and MS-ECS-645-09.



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