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## Bobwhite Quail Management

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Bobwhite habitat is characterized by grassy areas interspersed with brush and seed-producing crops or native plants. The long-term abundance of bobwhite is primarily a function of habitat conditions, specifically food, cover, and nesting habitat.

Bobwhite prefer areas where approximately 50% of the ground is exposed and 50% contains upright growth of herbaceous and woody vegetation. Bobwhite typically forage in open areas in the early morning hours, then occupy the "woody" headquarters" until late afternoon, when they resume foraging in the open until evening.

There are 4 types of cover important to bobwhite:

1. grasslands, used in summer and spring for nesting, roosting and some feeding;
2. agricultural fields, mainly used for feeding, also for loafing, dusting and roosting during the summer and fall;
3. brushy areas, used as escape cover and feeding and roosting sites in fall and winter; and,
4. woodlands, used mainly in the fall and winter for roosting, escape cover and feeding areas. Superior quail habitat contains a judicious mixture of these four types of cover.

Bobwhite tend to nest in the rough (i.e., sites which have not been burned for 1 or more years), but areas burned the current year may also be used. Rough areas contain abundant dead grass and straw used in nest construction. Since dead grass stems provide important support for the nest, areas in annual weeds are poor nest sites. Bobwhite prefer to nest in areas where the ground is only partly covered by vegetation. Research has shown that most bobwhite nests are made of and placed in grass. Nests are frequently placed along an edge between grass and bare soil.

It has been reported that the highest rate of chick mortality is in the first two weeks of life, the same period when insects are the most important food items. During that period, quail utilizing fallow and agricultural fields have ranges approximately one-half the size of those using open woodlands. It is possible that these reduced ranges may lead to a lower chick mortality, thus increasing production.

Spring/summer food plots are especially important to quail because of their superior insect attracting capability. In the spring/summer plots recommended plantings include; pearltop millet, American joint vetch, Egyptian wheat, and Alyce clover. During the fall/winter recommended plantings should include various clovers, cereal grains, and hairy vetch. Food plots should be divided into four stages. These plots should range in size from 0-3 acres. These plots should be located such that each is within sight of another plot; and within 300 yards of escape cover. Three-fourths of each food plot should contain approximately equal portions of cool-season (fall/winter) cover crops (see appendix). These portions consist of a current-year fall/winter crop, a first year fallow fall/winter crop and a second year fallow fall/winter crop. The remaining one-fourth is devoted to a current-year spring/summer cover crop.

However, not all openings have to be planted. Most of the areas should be maintained in native herbaceous vegetation. These native "meadows" should be fertilized to improve the nutritional quality of the native vegetation. These areas should be burned, disked, or shredded every 3 to 5 years to prevent woody vegetation from becoming established. By lightly disking and fertilizing an area in late winter, a variety of forbs (weeds), grasses, and herbaceous plants are produced that are beneficial to quail and many other species of wildlife.

Quail require cover that provides overhead protection and open spaces underneath to allow freedom of movement. In order to eliminate some of the grass competition, strips 40 to 50 feet in width should be mowed in the densely vegetated areas for the young birds during the early spring. Strip mowing and disking near dense vegetation will allow early successional plants to occupy these areas, as well as, provide a good interspersed nesting, foraging, and escape cover. Disking long, narrow strips will greatly increase the "edge" effect within these fields. These strips should be associated or placed next to blocks of escape cover.

It is essential that food plots are properly fertilized and limed in order to receive the maximum benefit. Each food plot should have a soil test in order to determine the correct lime and fertilizer rates.

In enhancing bobwhite brood habitat, supplemental food plots which contain warm season (spring/summer) species such as browntop, pearltop, and Japanese millets, Egyptian wheat, Alyce clover, iron and clay cowpeas, American jointvetch, and kobe lespedeza should be favored. These plots will produce not only high insect populations, but also provide an abundance of seed. By maintaining a diversity of warm season species, crop failure of 1 or more species may be offset by the production of others. In addition, these food plots will greatly benefit white-tailed deer and wild turkey as well.

Cool season plantings should be combinations of elbow rye, clovers, rye grass, and wheat. Cereal grains such as rye and wheat will also benefit turkeys and quail in the spring and summer. The green vegetation of the clovers will be utilized by deer, turkey and quail during the winter and will also provide good "bugging areas" in the spring and early summer.

Arrowleaf clover is a perennial and will not need to be replanted if properly managed. A variety of plantings should be established to provide for more diversity and as insurance against the failure of one type of planting.

Other structure and seed-producing species which should be encouraged in and around food plots are partridge pea, sericea, Thunberg, and bicolor lespedezas; these species provide excellent overhead protection from avian predators. Due to the amount of time spent at these plots, overhead protection (screening cover) from avian predators is extremely important.

By properly implementing supplemental food plots, annual productivity of bobwhite can be increased. Food plots should be located within 200 yards of suitable nesting habitat. Strips of screening cover should divide stage of the food plot. Additionally, a 3-5 year rough should be left around each plot for escape cover. However, the significance of providing adequate insect biomass, overhead protection (screening cover), and a vegetative condition that will allow chicks to move freely in search of insects cannot be overstated.