Quail Habitat Management

Management Practices to Enhance Agricultural Lands

To provide quality nesting areas and brood rearing habitats in agricultural fields, field borders (also called buffers or transition zones) should be established. A strip of no less than 50 feet (15.2 meters) wide should be left unplanted around the edges of fields to provide beneficial edge habitat for quail. Field borders provide important nesting and brood rearing cover, as well as valuable food in the form of native weed seeds and insects. Once these borders have been established (after two years), one half of the area should be lightly disced between November and March, in order to set back plant succession and renew the habitat. If disced during the critical summer growth period in no-till stands, scatter openings over 5-10 percent of the total number of fields in a given year. Residue from the harvest operation can provide an important overwintering food supply and protect valuable topsoil from erosion. For this reason, crop residues should be allowed to remain in the field as long as possible. If plowing under the residue is necessary, leaving 10 percent around the edges is better than clean tilling the entire field. When possible, no-till methods of planting should be incorporated into the farming operation. No-till, or conservation tillage, yields benefits for soil productivity, water quality and wildlife habitat. Recent research reported that quail chicks fare much better during the critical summer growth period in no-till production agriculture fields versus conventionally tilled fields. Information on no-till farming is available from the local office of the CCES, NRCS, or local Conservation District offices.

Management Practices to Enhance Forest Lands

Forests can also be managed to provide suitable quail nesting and brood rearing areas. The key is to open up the woods as much as possible based on landowner management objectives. Thinning any stand of pine stands will enhance habitat for quail as well as other wildlife species. Wildlife habitat in pine plantations is greatly improved by using selective cutting (20-50%). When regenerating stands, scatter openings over 5-10 percent of the area, more if the majority of the tract is wooded. Thinning stands of pure hardwood should be left unmowed in pine trees but maintained by discing, mowing or burning on a 1-3 year rotation. Portions of the opening could be planted annually to wildlife foods, but it is a good practice to leave some areas fallow. Openings should be longer than wide and irregular in shape when possible. Select well-drained sites for openings.

are desired to achieve the “patchy” diversified type of burn that will produce good quail habitat. Stands of pure hardwood should be excluded from fire completely. After burning, firelines can be discerned to stimulate growth of native vegetation or paired with annual wildlife plantings such as browntop millet, Kobe lespedeza, etc. Firelines can also be used to connect fields or woodland openings to improve access and create a hunting course.

Regenerated pine stands will provide much better quail habitat than those that are properly managed after fire. Firelines should be left intact to prevent soil erosion. This technique will also assist in road maintenance by allowing sunlight to rapidly dry the roadbed after heavy rains. Daylighting can be accomplished during thinning or other timber harvest operations.

Constantly be aware of change in habitat. Even the most minute changes can have a major impact on quail populations. Look at areas that use to provide breeding habitat that have been tilled over the years. A minor change may take a minor improvement whereas a major change may take more time and effort to improve habitat conditions.

Quail respond rapidly to improvements in habitat quality. High-quality nesting and brood rearing habitat provides the key to increasing quail numbers and improving hunter success. Without proper emphasis on these critical habitat elements, quail habitat management results will likely be disappointing. However, with proper planning and attention to detail, forest land, agricultural land and pasture land can all be manipulated to provide quality nesting and forage cover — the critical elements for quail management success.
Nesting & Brood Rearing Habitat: Critical to Quail Management Success

Quail Habitat Management

The annual life cycle of quail is a precarious one. Studies have shown that nestling success is highly variable but averages about 36 percent. Nest predation is also about 35 percent, and nest abandonment accounts for the rest. Roughly 90 percent of nests will be located in one-year-old burned sites and less than 50 feet from bare ground. Nests will also be located near blackberry or plum thickets that produce soft, pliable fruits consisting of sugar. This is essential since the berries provide high levels of needed energy to an incubating hen.

Quail chicks are quite small, weighing less than 1/4 ounce at hatching, but can move and feed themselves only hours after leaving the egg. Within the first two weeks of hatching, broods are highly susceptible to predation and/or severe weather causing about 70 percent mortalities. Insects are an especially important source of protein for young chicks and will comprise more than 80 percent of their diet.

Habitat management for bobwhite quail should focus on providing habitat during all phases of its life cycle, including nesting cover, brood rearing cover, escape cover, feeding areas, loafing areas, and roosting areas. Suitable habitat should be available on a year-round basis. The sublittoral of changes in habitat may go unnoticed by us but may have a major impact on quail populations. Most landowners provide escape cover and food but are not aware of how important nesting and brood rearing habitats are for quail management success. Providing this type of habitat cannot be overemphasized.

Nesting Sites for Quail

Fall quail populations are dependent on the reproductive success of the preceding spring and summer months. Adequate, high quality nesting cover allows quail and other ground nesting birds ample opportunity for nest site selection, and reduces nest losses to predators. Quality nest sites are characterized by bunchgrasses (e.g., bromesedge) and annual weeds with bare ground and space available between the stems of the grasses. Areas managed for nesting habitat should be located on well-drained soils with brood rearing areas and escape cover nearby.

Brood Rearing Areas for Quail

Annual weeds, such as ragweed and partridge pea, provide ideal brood rearing habitat for quail due to the abundance of insects found in such areas. These plants also provide the type of structure and cover required to allow ease of movement for quail chicks while protecting them from predators.

How to Provide Suitable Nesting and Brood Rearing Habitat

Nesting and brood rearing sites can be created, enhanced and maintained simply and economically by discing or the use of prescribed fire. Mechanical disturbance or burning will set back vegetative succession, creating areas dominated by annual grasses and weeds. Disc or burn no more frequently than every two years, as dead vegetative material from the previous growing season is often used in the construction of nest quails. Likewise, all nesting cover should not be manipulated in any given year in order to provide constant opportunity for nesting or renesting with suitable habitat, well distributed across the property. Discing stimulates the growth of beggarweed, ragweed, and partridge pea, which are excellent at attracting insects, an essential food for chicks. Of course these plants also produce valuable seeds that are preferred by adult birds.

Blackberry patches and plum thickets near nesting sites should be protected, as they provide an important high energy food source for nestling hens and shade for hens and broods. Plum thickets are especially susceptible to fire damage, and should be protected during prescribed burning.

Management Practices to Enhance Pasture Lands

Management practices such as fertilizing and rotational grazing (0-15-30-0-14-14) or similar nitrogen-free fertilizer) freshly disked strips may improve growth of desirable plants.

SOURCES OF TECHNICAL AND/OR COST-SHARE ASSISTANCE

Small Game Project, South Carolina Department of Natural Resources, PO Box 167, Columbia, SC 29202 (803-734-3609) - Technical Assistance

South Carolina Forestry Commission, County Office - Technical and Cost-Share Assistance

USDA, Farm Service Agency, County Office - Cost-Share

USDA, Natural Resources Conservation Service, County Office - Cost-Share and Technical Assistance

Produced by: SCDNR Small Game Project in cooperation with SC Quail Unlimited State Committee and participating Quail Unlimited Chapters

Written by Judy A. Barnes/Small Game Project
Designed by Ginger DeHaven/Graphics

South Carolina Department of Natural Resources

DNR Website: dnr.sc.gov
Job# 07ML5892

Quail Habitat Management

The annual life cycle of quail is a precarious one. Studies have shown that nestling success is highly variable but averages about 36 percent. Nest predation is also about 35 percent, and nest abandonment accounts for the rest. Roughly 90 percent of nests will be located in one-year-old burned sites and less than 50 feet from bare ground. Nests will also be located near blackberry or plum thickets that produce soft, pliable fruits consisting of sugar. This is essential since the berries provide high levels of needed energy to an incubating hen.

Quail chicks are quite small, weighing less than 1/4 ounce at hatching, but can move and feed themselves only hours after leaving the egg. Within the first two weeks of hatching, broods are highly susceptible to predation and/or severe weather causing about 70 percent mortalities. Insects are an especially important source of protein for young chicks and will comprise more than 80 percent of their diet.

Habitat management for bobwhite quail should focus on providing habitat during all phases of its life cycle, including nesting cover, brood rearing cover, escape cover, feeding areas, loafing areas, and roosting areas. Suitable habitat should be available on a year-round basis. The sublittoral of changes in habitat may go unnoticed by us but may have a major impact on quail populations. Most landowners provide escape cover and food but are not aware of how important nesting and brood rearing habitats are for quail management success. Providing this type of habitat cannot be overemphasized.

Nestling Sites for Quail

Fall quail populations are dependent on the reproductive success of the preceding spring and summer months. Adequate, high quality nesting cover allows quail and other ground nesting birds ample opportunity for nest site selection, and reduces nest losses to predators. Quality nest sites are characterized by bunchgrasses (e.g., bromesedge) and annual weeds with bare ground and space available between the stems of the grasses. Areas managed for nesting habitat should be located on well-drained soils with brood rearing areas and escape cover nearby.

Brood Rearing Areas for Quail

Annual weeds, such as ragweed and partridge pea, provide ideal brood rearing habitat for quail due to the abundance of insects found in such areas. These plants also provide the type of structure and cover required to allow ease of movement for quail chicks while protecting them from predators.

How to Provide Suitable Nesting and Brood Rearing Habitat

Nesting and brood rearing sites can be created, enhanced and maintained simply and economically by discing or the use of prescribed fire. Mechanical disturbance or burning will set back vegetative succession, creating areas dominated by annual grasses and weeds. Disc or burn no more frequently than every two years, as dead vegetative material from the previous growing season is often used in the construction of nest quails. Likewise, all nesting cover should not be manipulated in any given year in order to provide constant opportunity for nesting or renesting with suitable habitat, well distributed across the property. Discing stimulates the growth of beggarweed, ragweed, and partridge pea, which are excellent at attracting insects, an essential food for chicks. Of course these plants also produce valuable seeds that are preferred by adult birds.

Blackberry patches and plum thickets near nesting sites should be protected, as they provide an important high energy food source for nestling hens and shade for hens and broods. Plum thickets are especially susceptible to fire damage, and should be protected during prescribed burning.

Management Practices to Enhance Pasture Lands

Management practices such as fertilizing and rotational grazing (0-15-30-0-14-14) or similar nitrogen-free fertilizer) freshly disked strips may improve growth of desirable plants.