

Minimizing Avian Predation Through Habitat Management

Sixth in a series on management techniques to improve habitat for quail

Studies show that predation by birds can be a significant source of mortality on bobwhites, especially when cover is sparse and during the spring and fall migration periods. Cooper's hawks often are responsible for much of the avian induced mortality. Other hawk species (e.g. sharp shinned, red-tailed, red-shouldered, broad-winged, and marsh hawks) and owls occasionally eat quail, especially when quail are abundant.



However, raptors can benefit quail populations by preying on other species (e.g. snakes and mid-sized mammal predators) that also prey on quail and/or their eggs; by weeding out diseased birds; and by perpetuating strong genetic attributes within the quail population. Predator/prey interactions are complex and the incidental observation of raptors in pursuit of, or feeding on, quail does not necessarily mean avian predators are limiting the quail population.

The following habitat management practices are recommended for reducing avian predation:

1. **Woodland thins:** Heavy thinning of woodlands to less than 50 ft²/ac basal area reduces raptor search efficiency. Thinning encourages the establishment of ground cover to conceal quail and reduces the availability of perch trees. Cooper's hawks often hunt by moving from tree to tree and watching for prey species. Wide gaps in the forest canopy rejuvenate ground cover and reduce hunting efficiency by Cooper's hawks and other raptors. Research (Dr. Bill Palmer, Tall Timbers Research Station personal

communication) indicates that predation on Cooper's hawks by hawks and owls may increase when the tree canopy is heavily thinned. In effect, heavy woodland thinning improves the habitat for quail and reduces habitat quality for Cooper's hawks and many other quail predators.

2. **Prescribed burning:** Prescribed burning is an effective and cost efficient tool for managing fields and woodlands for bobwhites. However, the timing, size and frequency of burns can be important as they relate to the susceptibility of quail to avian predators. In general: 1) burn in late winter through early spring to minimize exposure of quail to avian predators; 2) burn small blocks (10 acres to 50 acres—smaller is better) of habitat and maintain a good mix of burned and unburned ground cover; and 3) do not burn too frequently—during drought years or on infertile soils a three year or longer burning rotation may be best.
3. **Hedgerow renovation:** Over time many field hedgerows develop into “tree rows” through natural succession, which reduces ground cover for quail and other grassland wildlife while increasing habitat for quail predators. Removing most of the trees from hedgerows restores desirable ground cover and reduces raptor perch sites. Establishing small clumps of woody vine and shrub cover along hedgerows (plum, wax myrtle, blackberry, etc.) enhances cover conditions for quail and may encourage greater use of these habitats by quail during the fall and winter months.
4. **Food and cover:** Providing feed for quail, whether natural, planted, or supplemental, in association with quality ground cover may reduce avian predation as it decreases the time and degree of exposure of quail to raptors and other predators when foraging.

Habitat management is the best, and only legal way to manage avian predation on quail. Federal and state laws protect all raptors from lethal control.

-BQI Biologists, updated 2019