



# Bobwhite

by Chuck Fergus

The bobwhite quail, *Colinus virginianus*, is a year-round resident of Pennsylvania. The species is found throughout the East and South, ranging west to Kansas and south into Texas and Mexico. Quail belong to the family Phasianidae, which contains 177 species, including pheasants, grouse, chickens and peacocks.

## Biology

An adult bobwhite weighs about seven ounces, has an 8-inch body length and a standing height of about six inches. A bobwhite is stout and chunky through the body, with a small head, short wings, and a short, rounded tail.

Plumage is mostly chestnut brown, white and black, with the brown graying toward the tail. The sides are streaked with orange-brown, and the underparts are white or creamy, barred lightly with black. Here's how the plumage of a male (cock) differs from that of a female (hen): the male has a white throat and eye line separated by a dark brown band, while the female has a buffy throat/eye line and a light brown dividing band.

The species is easily identified by its call, a whistled *bob-bob-white*. Bobwhites also make subdued clucking tones, and birds from a scattered covey, or group, will sing *purr-leer, purr-leer*, an assembly call.

Bobwhites eat large amounts of weed seeds (ragweed, poke, beggarweed, foxtail, switch grass, pigweed and others); insects (Japanese, June, potato and other beetles, mosquitoes, grasshoppers, crickets, aphids, etc.); and waste grains (corn, wheat, grain sorghum and vetch). Seasonal foods include young greens in spring; insects in summer; nuts, berries, small wild fruits and green plants in fall; and weed seeds in winter. Quail also savor the pulp of acorns and hickory nuts discarded by squirrels, woodpeckers and blue jays. Most food is found by scratching through litter covering the ground.

Bobwhites are social birds. Depending on the time of year, a

covey may contain 10 to 30 quail; the birds range up to a quarter-mile daily and live on 10 to more than 100 acres. A covey functions as a unit: birds forage in the same area, loaf together in the same cover, and roost together at night. When roosting, bobwhites form a circle, their tails together and their heads pointing outward like spokes from a wheel hub. Group roosting helps each individual maintain body heat. If disturbed, the birds flush in all directions.

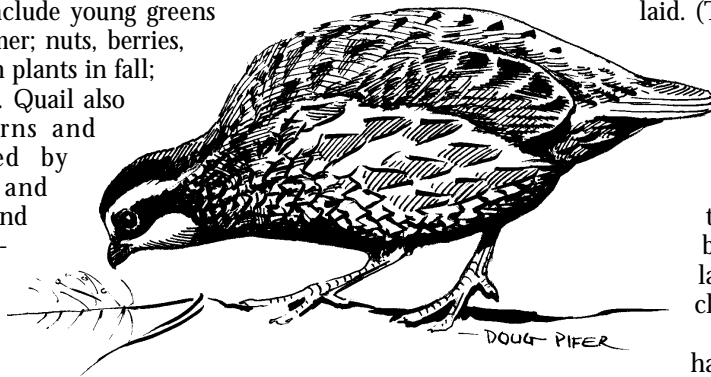
In spring, males begin courtship. They sing, bow low, elevate their fanned-out tails, spread their wings, puff out their body plumage, strut and fight. Bobwhites are monogamous, unlike our other game birds (a male turkey, pheasant or grouse usually has several mates). A pair of quail will nest in high grass or weeds along a fence-row, roadside or stream bank; or in a field, often of timothy, alfalfa or clover. The female simply scratches a depression in the soil and lines it with dead grass. Weeds may grow over the nest and conceal it.

The breeding season stretches from May to August, and two broods may be raised. Nest mortality factors: cold, wet weather and early hay mowing are the most destructive; skunks, opossums, raccoons and snakes eat eggs and may kill brooding birds. If early nesting attempts fail, most pairs renest (up to four times).

The female lays 10 to 20 eggs (typically 14 to 16) at a rate of about one per day. Eggs are pointed at one end — shaped like a top — smooth, glossy, creamy white and unmarked. Incubation is by both sexes but mostly by the female, beginning after the last egg is

laid. (That way, all eggs will hatch on the same day.) If threatened, a brooding bird may flutter along the ground, feigning a broken wing and trying to lure the intruder away from the nest. Should one member of a pair die after eggs are laid, its mate will brood the clutch and rear the young.

After 23 days, chicks hatch. They're precocial, able



to run about and feed themselves soon after they dry, and they usually leave the nest the day they hatch. Chicks are fuzzy, buff beneath and mottled chestnut brown above, with a dark streak extending back from each eye. The parents brood their young, sitting on top of them at night and during heavy rain. Chicks instinctively squat and remain still at a danger signal given by an adult, and their brown natal down is good camouflage. Foxes, weasels, hawks and stray cats take their toll, but hard, driving rain and cold weather are probably more serious threats during the first few days.

Young birds develop rapidly. When two weeks old, they can fly short distances, and by 10 weeks of age they have most of the speed and agility of their parents. After feathers grow in, 4-month-old birds are nearly identical to adults in size and plumage. Birds of the year have pale tips on their outer primary coverts, or wing feathers, while the same feather is uniformly gray on adults.

Parents and young stay together all summer. They can sometimes be spotted taking "dust baths" or pecking grit for their crops on dirt roads and along field edges. In autumn, the families usually break up; later, bobwhites regroup into winter coveys, which contain up to 30 birds.

Winter is a harsh season for quail. Food is scarce, especially when snow crusts over ground and plants. Mortality can be high, and winter weather certainly takes more bobwhites in Pennsylvania than do predators or hunters; the quail population is at its lowest in March and April. The average life expectancy of an individual bobwhite is less than a year, with an estimated 75 percent of the population replaced annually by young of the year.

Bobwhite quail have tremendous sporting qualities: explosive flight and a strong inclination to hold for a bird dog. Along with grouse and woodcock, they're considered a classic quarry by dyed-in-the-wool bird hunters who love to hunt behind pointers and setters. But hunters aren't the only folks who appreciate the gentle beauty of this bird — farmers, naturalists and those who just like to get out and walk in the country all love to hear the pure, whistled *bob-bob-white* of this native quail.

## Population

Pennsylvania is on the northern fringe of the bobwhite's range. Two factors affect our state's quail population: habitat and climate. Without adequate food and cover (habitat), the population will not flourish; and when winters are hard and long, bobwhite numbers plummet. In fact, the northern limit of *Colinus virginianus*' breeding range fluctuates with the weather: hard winters cause widespread mortality, while several mild years allow the population to expand northward.

Bobwhite quail aren't forest dwellers, so they don't prosper in Penn's Woods. Pennsylvania's most consistent quail producing area is some of our southern counties — Franklin, Chester, Adams and York. The rich farms of the ridge and valley region (southcentral to central Pennsylvania) sometimes produce quail hotspots. But throughout the rest of the state, bobwhites are scarce to non-existent.

In general, we had more quail 60 or more years ago

when smaller farms flourished. These family enterprises had a variety of crops, thick hedgerows, brushy fields and pasture lands. Recent trends toward larger holdings and clean-farming (where every bit of ground is put into production) have reduced the diversity of food and cover that quail need. Also, many farms have reverted to woodland.

In the past, the Game Commission stocked quail in attempts to bolster local populations. But in most instances these pen-reared birds failed to adapt to the wild, and such releases are no longer performed. Providing good habitat is the most promising way to help quail.

## Habitat

The bobwhite does well in brushy and abandoned fields, open pinelands and farms; in fact, it's been labeled a bird of farmland and early successional stages. Ideal quail habitat consists of 30 to 40 percent grassland, 40 to 60 percent cropland, 5 to 20 percent brushy cover, and 5 to 40 percent woodland, with all types of vegetation well mixed.

Quail require two types of cover. First, they need dense brush to protect them from predators and to afford shelter during severe weather. Blackberry thickets, fencerows, wild grape tangles, and fields overgrown with greenbrier or scrubby pines are good for this. Second, quail need open grass or weedy areas for nesting.

Farmers can manage their land with an eye toward quail protection and propagation. Sorghum and grape thickets provide both food and cover during severe weather. Strips of millet, soybeans, lespedeza and buckwheat (all good food producers) can be planted near the cover of weed fields, brush piles or fencerows. When cover is adequate, only one-eighth to one-fourth of an acre of food need be planted for every 15 to 30 acres. Also, portions of grain crops can be left unharvested. Light disking and controlled burning disturb the soil, stimulate weed growth, and provide seed food. Disking and burning should be completed in late winter, before nesting begins.

Many of the above techniques are used on state game lands because they benefit a wide variety of wildlife — bobwhites, pheasants, cottontail rabbits, songbirds, predators and others. Persons interested in improving land for wildlife can contact the Game Commission for more detailed information. Under certain programs, the PGC provides landowners with plantings and/or labor to improve areas for wildlife. To prosper, birds and mammals need good habitat and plenty of it — things that we often can provide.

Wildlife Notes are available from the  
Pennsylvania Game Commission  
Bureau of Information and Education  
Dept. MS, 2001 Elmerton Avenue  
Harrisburg, PA 17110-9797  
[www.pgc.state.pa.us](http://www.pgc.state.pa.us)

An Equal Opportunity Employer