

## Bobwhite Quail (*Colinus virginianus*)



### Description

The bobwhite quail is common in Illinois. The familiar "ah-bob-white" mating call of the male is heard in the spring and summer. Other calls, whistles, and clucks are used when feeding, guiding the chicks, and when looking for one another after being scattered.

The bobwhite quail is a short, plump bird about 10 inches long, weighing 6 to 7 ounces. Bobwhite quail have short bills and tails. Their legs are about 2 ½ inches long and are suited for walking and running. The short wings of a bobwhite are adapted to short, rapid flights, rather than long sustained flights. The overall color of a bobwhite is a rusty brown on the side, grey on the back, and lighter brown underneath. Adult males, or cocks, have a white throat patch and a white line above and running back from the eye down the neck. The throat patch and line above the eye are buff colored on the hen.

### Distribution & Abundance

Bobwhites are found from the Atlantic Seaboard to western Iowa, eastern Nebraska, Texas and Mexico, and north to the Great Lakes. Their primary range is in the southern and southeastern United States. Severe winters limit populations in the northern part of the quail range. The best quail range in Illinois lies south of Interstate 70 and in the western counties that border the Illinois River or the Mississippi River below Rock Island.

As the virgin forests were cut and the prairies plowed 150 years ago, the bobwhite population increased. The bird extended its range because early agricultural methods created a greater mixture of the habitats where quail thrive. More recently, the bobwhite population has decreased from its historic high. This was due to increased farm and field size, and to clean farming that destroyed hedges, fence rows, grasslands, and brushy areas.

### Habitat

Bobwhites thrive where small cropfields are mixed with timber, brushy areas, and grasslands. For nesting, mixed grass and clover are better than alfalfa, because the mixed stands are less dense. Unmowed grasses and legumes along ditches, field boundaries, and in crop rotations benefit quail. The best nesting habitat occurs in fields of perennial weeds with clumps of brambles and shrubs.

Shrubby cover like hedgerows, windbreaks, cut-back woodland borders, and odd areas are helpful in providing a diverse landscape pattern preferred by bobwhites. The best habitat is along the "edge" between cover types. Wild plum thickets, greenbrier and wild grape tangles, vines, blackberries, and clump plantings of conifers provide needed escape cover. Quail prefer clumpy ground cover with some bare ground showing. Grassy ground cover needs periodic management or it quickly becomes too dense for bobwhite movement.



### Habits

Quail are social birds that form coveys numbering 10-20 birds. Bobwhite coveys form circular night roosts with tails touching and heads facing outward. Such roosts conserve energy. If one bird is separated from its covey, it will join another covey, if possible. In the fall and winter, coveys may travel together, interchange birds, or combine into a larger one.

The daily movements of the bobwhite are usually restricted to 1/8-1/4 mile. Its annual range rarely exceeds 1 mile. Greater movements are caused by destruction of habitat, food failure, or spring and fall covey mixing.

Whether hunted or not, up to 7 out of 10 quail will die between fall and spring. Although many predators feed on quail eggs, young, and adults, predation is usually not an important limiting factor of quail populations. However, weather conditions do have an impact on quail numbers. Long cold periods with snow cover result in increased predation by forcing quail to move away from protective cover in search of food. During hard winters, if quail fail to find food for 4 days, they lose as much as one-third of their body weight and may not survive. Deep snow or long periods of ice are particularly serious for bobwhites.

### Foods

Bobwhites eat a wide variety of foods made up nearly entirely of plant materials in winter and 70% plants in summer. A large part of the chick's diet is insects for the first few weeks of life; both young and adults eat a significant number of insects in summer and early fall. Corn, soybeans, and sorghum are the most important food items in fall. Lespedeza, acorns, wheat, and seeds of ragweed, white sassafras, beggar-ticks, jewelweed, Spanish needle, and small wild beans, are also eaten. Quail will eat the succulent leaves of clovers and grasses, and will eat blackberries, poison ivy berries, sumac seeds, elderberries, wild cherries, and other wild fruits and seeds.

### Reproduction

Bobwhites are in coveys most of the year, but as spring approaches, the coveys break up and the "bobwhite" call is heard as males and females begin pairing.

Paired cocks and hens build a grass-covered nest in a shallow depression on the ground near the edge between field and woods. Over 60% of the nests will be established in idle areas such as fencerows and rights-of-way. Nesting begins in April with the peak between June 1 and July 15.

Bobwhites lay an average of 14 small white eggs, at the rate of about 1 per day. The cock stays near the nest and continues to give the bobwhite whistle. Males sometimes share incubation duties. The hen will usually abandon the nest if disturbed during egg-laying or the early part of the incubation period. After incubation is well underway, the hen is reluctant to leave the nest. At this time, hens are subject to many hazards, including farming activities and predators.

About 6-7 nests out of every 10 are destroyed, but the hen is persistent and continues to establish nests. Eventually 7 out of 10 hens bring off a brood. The eggs hatch in 21-23 days and about 90% of the eggs hatch. Hot dry weather or cool wet weather reduces hatching success. Most hatching occurs between June 15 and August 15 in Illinois; the peak is about July 15. Some clutches will hatch as late as October.

The adults and chicks leave the nest as soon as possible after the eggs hatch. Chicks are often chilled by sudden rains, which can cause death. Chicks can fly in 2-3 weeks. The adults keep a close watch over the chicks, and when danger threatens, a low cluck from an adult causes the chicks to freeze in their tracks. The cock will often raise the brood if the hen is killed. If both the cock and hen are killed the brood may be adopted by another hen or cock. It takes a pair of quail 4-5 months to raise the young from the time of egg-laying to maturity; therefore, a pair of bobwhites will usually have only one successful brood a year.



### Conservation

Good quail habitat contains 4 cover types: cropfields, grassland, woodland and brush. Good quail country has all 4 cover types in about equal quantities scattered in small blocks close to each other. Habitat management for the bobwhite also benefits the gray catbird, brown thrasher, common yellowthroat, field sparrow, northern cardinal, rufous-sided towhee, indigo bunting, American goldfinch, and eastern cottontail.

Landowners can increase quail by following a few simple steps:

1. Divide large cropfields with shrub borders.
2. Fence woodlands from livestock.
3. Plant cropfield headlands and field borders to grasses such as redtop and timothy. Include Korean lespedeza in southern Illinois.
4. Delay mowing until August.
5. Plant annual food patches near woody cover. Use grains such as sorghum (milo), corn, soybeans, millet, or wheat, or leave 1-4 rows of corn unpicked. Provide plots at a ratio of 1 acre per 40 acres of permanent cover.
6. Do not cultivate or spray crops in the 4 rows nearest cover, allowing annual weed growth.

7. Disk strips in idle grasslands and shrub areas.

DNR's Division of Wildlife Resources offers technical assistance to landowners who are interested in establishing quail habitat on their properties. Call 217/782-6384 for the name of a District Wildlife Habitat Biologist in your area.

Local Quail Unlimited chapters will assist landowners with bobwhite habitat management. To learn more about Quail Unlimited, request habitat management assistance, or join a chapter, call 812/536-2272, or visit <http://www.qu.org/>.

The USDA's Natural Resource Conservation Service and local Soil and Water Conservation Districts offer assistance to landowners with planning and establishing filter strips and riparian buffers. Vegetative buffers provide habitat for bobwhites and other wildlife. There is a SWCD office in nearly every county.

Private non-profit organizations can apply for grants from the Illinois Wildlife Habitat Fund for habitat projects that benefit wild bobwhite populations. Contact the Division of Wildlife Resources at 217/782-6384 for an application.

### Selected References

*Population Ecology of the Bobwhite* by J. L. Roseberry and W. D. Klimstra. Southern Illinois University Press, Carbondale and Edwardsville. 1984. ISBN 0-8093-1116-0

*The Bobwhite Quail—Its Life and Management* by W. Rosene, Jr. Rutgers University Press, New Brunswick, NJ. 1969. ISBN 8135-0603-4

*North American Game Birds* by P. A. Johnsgard. University of Nebraska Press, Lincoln and London. 1975. ISBN 0-8032-5811-9

<http://www.fsa.usda.gov> (agricultural conservation programs)

<http://dnr.state.il.us/prairie/table.htm> (prairie establishment and landscaping)

<http://ext.msstate.edu/anr/wildfish/wildlife/quail.html> (habitat management for bobwhites)

<http://www.conservation.state.mo.us/manag/quail2/index.shtml> (quail management)



## Wildlife Conservation in Illinois - Ten Ways to Make a Difference

- ⊞ Hunters and trappers contribute millions of dollars toward habitat conservation. Areas purchased or managed with these funds provide homes for hundreds of species. Even if you don't hunt or trap, you can join in by purchasing a **Habitat Stamp** (\$5.50) or **State Migratory Waterfowl Stamp** (\$10.50) at the sporting goods section of most discount stores. Sporting a "Sporting Series" license plate on your car or truck is another way to support habitat conservation. For information, contact the Secretary of State at 1-800-252-8980 or visit <http://www.sos.state.il.us> and select the "Online Facility".
- ⊞ Turn your backyard into a more friendly place for wildlife. For tips on how to put out the welcome mat, order "**Backyard Conservation**" by dialing 1-888-LANDCARE or visiting the website at <http://www.nhq.usda.gov/CCS/Backyard.htm>.
- ⊞ Hundreds of laws help protect wildlife and their habitat. You can assist your local Conservation Police Officer in keeping an eye-out for poaching, pollution and other threats to the environment by participating in DNR's **Resource Watch Program** (217-782-6431).
- ⊞ Participate in DNR's **Acres for Wildlife Program**. A wildlife biologist will visit your property, prepare a management plan tailored to your goals and help you get started by providing access to planting equipment and no-cost or low-cost grass, trees and shrubs. Call 217-782-6384 to get the name and phone number of your local biologist.
- ⊞ Help monitor Illinois' streams and forests by becoming a trained Citizen Scientist. For information about the **EcoWatch Network**, call 312-814-4747 or visit <http://dnr.state.il.us/inringif.htm>.
- ⊞ Illinois law requires young people to take a special training course and pass a test before they can purchase a license for hunting or trapping. You can help teach them about laws, safety, ethics and wildlife conservation by becoming a certified instructor in DNR's **Safety Education Programs** (1-800-832-2599).
- ⊞ Teach others about the environment. Be a **volunteer facilitator** for Project WILD, Project WILD Aquatic, Project Learning Tree or Project WET (217-524-4126).
- ⊞ Contribute to the **Wildlife Preservation Fund** on your state income tax form. Interested in making a donation for a specific project? Contact the **Illinois Conservation Foundation** (1-312-814-7237).
- ⊞ Join a **conservation organization** like Pheasants Forever, Ducks Unlimited, Quail Unlimited, or the National Wild Turkey Federation. Membership fees support wildlife conservation and some local chapters offer a chance to get involved with "on the ground" projects in your area.
- ⊞ Take someone with you the next time you go **hunting or trapping**. These activities are highly regulated and can help keep wildlife numbers at acceptable levels, reduce damage to human property, provide funds for conservation, and obtain many different materials and products for human use.

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