

BOBWHITE QUAIL
MANAGEMENT GUIDE

The bobwhite quail is common throughout Oklahoma where suitable habitat exists. Modern farming techniques such as large fields, fewer shrubby fence rows, persistent overuse of native rangelands, and tame pasture development have reduced quail in some areas. This bird is tolerant of man's land uses as long as suitable habitat for living exists.



Quail populations vary from year to year depending on quality and quantity of habitat and reproductive success. This is usually determined by severity of winter and weather conditions during the breeding season. Populations in good habitat and under ideal weather conditions during breeding season may reach one bird per acre during the fall months. Intensive management specifically for quail can increase this density.

Mating and Nesting:

The coveys begin breaking up in early spring usually late April or early May in Oklahoma. The male remains in attendance throughout the summer assisting the female in rearing the brood. Should the female die during incubation, the male will take over and rear the young. He will also adopt any birds that might be left without parents. The peak nesting period is between May 15 and June 30. Nests that occur after this date are usually renests. The nest is a shallow depression in the ground lined with last year's dead vegetation and arched over with a mixture of dead and growing vegetation. In some cases there may be a tunnel in heavy vegetation leading to the nest.

Clutches average about 12 eggs, but may vary from 6 to 24. One egg is laid each day until the clutch is completed and incubation starts immediately. This usually takes about 23 days. One brood a year is attempted, but if this clutch or brood is lost they will continue to reneest maybe two or three times. This accounts for late hatches seen as late as October. Some studies have shown that in isolated cases some birds will raise a second brood while tending the first.

Population dynamics:

About one bird in five lives longer than one year whether hunted or not. Weather and habitat are the two most important factors affecting the yearly population. During extremely dry years the lack of ground moisture and dew causes eggs to dry out during the pre-incubation and incubation period. Coveys of up to 30 birds may be seen in the fall. Covey size does not remain constant particularly when one or more coveys are using the same general feeding area. There is a constant interchange of birds from one covey to another. Most large coveys are made up of two or more small broods and unmated birds that tend to join the gregarious groups or coveys. These will gradually diminish in size as the season progresses. During late winter months possibly only 6 to 8 birds will be found in a covey. At this time they have difficulty keeping warm while roosting. At this period the food supplies diminish to the point that their energy intake is less than needed. When late winter coveys are significantly less than 8, habitat deficiencies may be suspected.

Predators:

Predators are nature's method of regulating wildlife populations by removing weak, crippled, and diseased individuals, thereby assuring a healthy, alert bird to reproduce future populations.

Probably the most destructive predators, particularly on nests, are the skunk, raccoon, opossum, and snake. Some of the smaller hawks (coopers and sharpshinned) may prey on birds during the fall and winter season. Housecats are also destructive predators.

While some losses are incurred from predators, these animals also prey upon destructive species such as field rats. The reproductive abilities of quail are high enough to tolerate some predation and still perpetuate the species from year to year.

About dusk quail may be seen flying to a roosting site, which is usually an open area. This is thought to be a way to reach the roosting area without leaving a scent trail for predators to follow.

Habitat:

Adequate habitat of the type required by quail must be maintained at all times to keep quail in the area. If a habitat element is deficient the birds may have to move to other more suitable areas. The diet of quail is composed of approximately 85 percent vegetative and 15 percent animal matter during the year.

When new habitats are developed by artificial plantings (example--in abandoned fields), it is not necessary to introduce breeding stock. They will move in from outlying areas when habitat becomes sufficient to sustain the birds.

Quail will use water if it is available, but subsist very well without it.

Food:

The diet of quail varies throughout the season depending on the location, soil and climatic conditions and the species of food plant that occurs in that vicinity. Most of the animal matter in the form of insects, spiders, and worms is taken by the young during the brooding season. They require this high protein food for their rapid development and growth. Also at this time of year many seed sources have not developed. Some plants, even though not eaten by quail, attract insects used by these birds.

Quail fare better during early stages of plant succession due to abundance of subclimax seed producing plants which may occur on portions of covey range.

Some native plants, mainly legumes, contain as much as 48 percent protein. Quail, like many other species, are opportunists which search out these choice foods and utilize them before the less desirable ones are used. Some seeds, particularly cultivated crops, are choice foods for blackbirds, crows, starlings, and songbirds. These birds compete with quail for the available food supply. These foods usually disappear soon after maturity, and are not available for quail during late winter.

Some of the more common forbs, legumes, grasses, and woody plants utilized in Oklahoma are:

Illinois bundleflower	Annual cool-season grasses
Showy partridge pea	Lovegrasses
Roundhead lespedeza	dropseeds
Stuves lespedeza	sensitivebrier
Prairie clovers	Trailing wild bean
Sunflowers	Wild millets (bristlegrasses)
Tephrosia	Desmodiums (tick clover)
Western indigo	Paspalums
Crotons	Panic grasses
Euphorbias	Korean lespedeza
Ragweeds	Sericea lespedeza
Pigweeds	Carolina geranium

Woody plants:

oaks
elms
grape
blackberries
mulberry
wild cherry
persimmon
mesquite

dogwood
hackberry
buckbrush
hawthorne
woolly buckthorn (chittam)
black haw
osage orange
cedar
sumac

Cover:

The cover for quail must be of a density to suit the habits of quail throughout the year. Very dense cover of grasses, forbs, or woody plants is required for escape cover. A more open cover with a good canopy overhead is required for loafing cover. Good escape cover should always be present no more than 1/8 mile from the feeding areas. Cover immediately overhead or in very near vicinity should be present around dusting area. There should be woody or weedy cover along travel lanes to give some degree of security to the birds as they move from one area to another. Nesting cover is important during the breeding season. It should always be adequate for concealed nest building and protection from the elements. Grassy cover in brooding areas should not be so dense that very small birds cannot walk through it.

Land Management:

It is possible to manage some lands intensively for maximum populations. Most landowners cannot afford the expense and effort for this type of management unless they can realize a substantial monetary return from hunting.

There are management techniques that are inexpensive to apply and are generally compatible with normal farming and ranching operations. Rotation deferred grazing will provide better ground cover for nesting. Forbs, annual grasses, and legumes will be allowed to develop seeds. Travel cover will be more dense, and birds will be able to cover a larger territory in search of food.

Crop residue management will make accessible some waste grains after harvest. This, in addition to a few rows or a few feet of a drilled crop left standing, will provide additional food for a period of time. Overseeding native range or tame pastures with legumes or forbs can provide supplemental food. Construct brush piles from trees to increase cover where cover is lacking. Make clearings in heavily wooded areas to permit other desirable plants to grow. The release of mast producing trees will increase food production. Restrict or exclude grazing from critical areas or other selected areas to protect native vegetation. Small areas may be disturbed by discing or chiseling once every 3 or 4 years to increase forb production.

Prescribed burning can sometimes improve quail habitat. Burning should be done during the late winter (about March 30) when moisture and wind condition are such that damage to living plants, grass roots and soil is minimized. Only a portion of the covey range should be burned in any one year. Excessive vegetative cover will be disposed of and some seeds are stimulated to germinate. This practice applied every year or two keeps excessive fuel buildup to an acceptable level and avoids possibility of wildfire that would destroy valuable plants.

Wildlife plots that have total livestock exclusion may become too dense with native grass after one or two growing seasons to be good quail habitat. Periodic limited grazing will usually alleviate this problem.

Agricultural crops that can be planted in Oklahoma for quail are corn, grain, sorghum, wheat, millet, sudan, soybeans, cowpeas, and mungbeans. In Eastern Oklahoma, sericea lespedeza may be used to provide nesting areas, travel lanes, and emergency late winter food. Korean lespedeza can be seeded on field edges, improved pastures, range lands, and wooded areas. This legume will provide a choice all winter food supply. Reseeding may be needed after extremely dry years. Fertilizer applied according to test will increase seed yield.

Harvesting the excess birds in the fall by hunting is good management. Quail cannot be stockpiled. Research has proven that on unhunted areas quail populations are no greater the following year than on hunted areas. Research has also proven that hunters take no more than 10 to 15 percent of the crop. They usually stop hunting before the breeding population is affected.

The release of pen raised birds is generally not advocated. These birds are usually semidomesticated and are not able to survive the rigors of natural habitat. Release sites are often occupied by other birds and food supplies are insufficient.

The use of feeders during severe winter weather and throughout the year is practiced by some landowners. This practice will concentrate birds and also attract birds from outlying areas. This leaves the birds vulnerable to all sorts of predation. The birds become dependent on this food source and won't hustle for themselves. Feeds that are sometimes used do not contain nutritive components found in native foods.