

NORTHERN BOBWHITE - COLINUS VIRGINIANUS

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Galliformes Family: Odontophoridae Genus: Colinus
Species: C. virginianus

Habitat:

Biomes: Northern Bobwhites are year-round residents in open habitats of southeastern North America. They live in agricultural fields, grasslands, open pine or pine-hardwood forests, and grass-brush rangelands as far north as Massachusetts and southern Ontario, and as far west as southeastern Wyoming and eastern New Mexico. They seem to avoid mature woodlands, inhabiting instead the early stages of regrowth after a fire, farming, logging, or other disturbance. They are most numerous in patchwork areas of fields, forests, and croplands; in coastal Texas rangelands; and in southern pine forests that are intensively managed for bobwhite hunting. During snowfalls in the northern part of their range, bobwhites depend on woody cover to prevent snow from reaching the ground and blocking their foraging habitat.

Distribution:

In US: Resident throughout e. North America west to the Great Plains, north to s. New England and extreme s. Canada (where rare and declining), and south to s. Mexico. Also resident in parts of the Caribbean and very locally in portions of the Pacific Northwest.

In Other Countries: Known to have been introduced to China, Hawaii, New Zealand, and many places in Europe.

Holistic Description: An emphatic, whistled bob-white ringing from a grassy field or piney woods has long been a characteristic sound of summers in the Eastern countryside. It's quite a bit harder to spot a Northern Bobwhite, as the bird's elegantly dappled plumage offers excellent camouflage. They forage in groups, scurrying between cover or bursting into flight if alarmed. Bobwhites have been in sharp decline throughout the past half-century, likely owing to habitat loss and changes in agriculture, and they are an increasingly high priority for conservation.

Species Richness: There are twenty-one recognized subspecies in 3 groups. 1 subspecies is extinct

Population Dynamic: The northern bobwhite is threatened across its range due to habitat loss, and habitat degradation. Changing land use patterns, and changing fire regimes have caused once prime habitat to become unfavorable for the bobwhite.

Evolution and Systematics:

Evolution: Colinus is best-known genus in fossil record for quail; >700 known fossils classified in this genus exist. Colinus fossils are known from late-Pliocene Arizona and Kansas

Systematics: Eighteen subspecies in four groups, Birds become paler and grayer from east to west across the e. United States. In Mexico, darker males tend to be found in lowland humid areas, whereas relatively lighter males tend to be found in upland, arid areas

Number of Species: CHECK SPECIES AND SPECIES RICHNESS

Number of Genera: CHECK SPECIES AND SPECIES RICHNESS

Physical Characteristics:

Size and Length: 24 to 28 cm (9.4 to 11.0 in), 6.1 oz

Wingspan: 33 to 38 cm (13 to 15 in)

Coloration: They are intricately patterned in brown, rufous, buff, and black. Males have a bold black-and-white head pattern. Females have a buffy throat and eyebrow.

General Body Features: Distinctive small quail with short crest or peak to the head. Strong black-and-white striped face with brown crown and white throat. Rich chestnut upperparts with brown-and-white-scaled underparts.

Special Features of the Body: Owing to their body color, they can camouflage themselves to hide from predators. On sensing danger, the bird will stand still in its place or freeze, making it particularly difficult to spot.

Special Features of the Head and Sensory Organs: NONE

Dentition: BEAK AND DIET

Special Features of the Limbs and Digits: The bobwhites are not good fliers by nature. Although they can fly relatively short distances, their average flight lasts only for 5.1 seconds. However, they are gifted with strong legs that help them quickly walk or run away from danger.

Any Special Internal Anatomy: They have the ability to store food in their crops (food storage area) for later digestion. Therefore, they can stay without food for quite some time.

Sexual Dimorphisms: Adult males are distinguished by white facial stripes and throat in contrast to the buff coloration of females and juveniles. The wing coverts of males have sharply contrasting black markings on the feathers while the wing

coverts of females lack color distinctions. The base of the mandible is black in males and yellow in females. White edges, dark bars, and vermiculations on the reddish brown back and white breast create a mottled appearance.

Differences Between Juvenile Stage and Adult: Juvenile plumage similar to that of adult female, but much duller and less boldly marked.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: Typically diurnal. Feeding is most active during early morning and late afternoon.

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Northern Bobwhites are highly social, usually found in groups, or coveys, of 3–20 individuals. They feed in early morning and late afternoon. At night, coveys usually roost on the ground (or occasionally in vegetation) in a close-packed, outward-facing circle with their tails pointing toward the center, probably to conserve heat and stay on the alert. They coexist peacefully for most of the year, but in the breeding season male bobwhites fight to attract mates. Both males and females perform courtship displays. Originally thought to be monogamous, they actually have several breeding strategies: males can raise broods with multiple females; and females can raise broods with multiple males (although males often abandon such broods). Bobwhites sometimes intermingle their eggs with those of Ring-necked Pheasants and free-range domestic chickens. Hawks, owls, raccoons, opossums, skunks, foxes, and snakes prey on adult bobwhites and their young. Adults flutter and drag their wings to distract predators from their chicks.

Locomotion: Walks and runs quickly on the ground. When disturbed, runs in short bursts. If undisturbed, movements are slower and more deliberate, often punctuated with frequent pecks at food items. Locomotion occurs in body positions ranging from deep crouch to full leg extension. Flies relatively short distances, close to the ground with rapid, explosive takeoff. Analysis of 300 flights showed that average flight lasted 5.1 s, maximum height attained was 2.4 m, and average straight-line distance traversed was 47 m, at average speed of 8.7 m/s.

Communication and Perception: Males and females give a loud whistled bob-white that sweeps upward in pitch; the song is used mostly by unmated males during the breeding season.

Home Range: Within coveys, birds roost together, often in direct contact. On the roost, inter-bird distance is greater during warmer temperatures than colder temperatures

Degree of Sociality: Highly social during the nonbreeding season, a result of covey formation and changes in covey membership.

Level of Aggression: Male ceases display to mate after pair has formed. In bill-fighting, one bird pecks at another's beak. Attacks occur at both low and high intensity, ranging from single jabs or lunges at an individual to aerial attacks in which the aggressor tries to rake the rival with his toes. Avoidance behaviors are also described by Stokes. Most aggression occurs during the breeding season. Little aggressive behavior occurs within coveys.

Migration: Populations are typically sedentary, year-round residents, especially in areas of moderate- to high-quality habitat. Nevertheless, in the Smoky Mtns. of the se. U.S., seasonal movements between low-elevation wintering and high-elevation breeding habitats are known, although evidence of extensive fall movements in relation to drought or poor habitat conditions should be interpreted as dispersal rather than migration.

Predators:

Predators: Cooper's Hawk, raccoon, opossum, skunk, fox, coyote, and other terrestrial carnivores.

Anti-Predator Defenses: When adults with chicks encounter predators, they perform distraction displays such as fluttering and wing-dragging. Antipredator behavior apparently is learned, and is not usually present in captive-reared birds.

Diet and Nutrition:

Adult Diet: Bobwhites eat mostly seeds and leaves, supplemented with varying amounts of insects during the breeding season. Chicks are fed mostly insects until they are 6–8 weeks old. Arthropods can make up 5 percent of the male's diet and 20 percent of the female's diet during the breeding season. Bobwhites forage as a group, scratching and pecking through leaf litter or foraging on low plants. When snow falls they seek out patches of bare ground under brushy areas. Their staple food of seeds comes from agricultural crops, weeds, forest plants, and rangeland vegetation. During fall and winter they eat many legume seeds, ragweed seeds, pine seeds, and acorns. In the spring they eat more leafy green parts of plants, and in the summer their diet includes grass seeds, some fruits, and arthropods—such as bugs, flies, bees, wasps, beetles, and spiders.

Juvenile Diet: Young are almost totally insectivorous during the first 6–8 wk of life.

Special Adaptations for Getting Prey: CHANGE SEASON DIET

Reproduction:

Mating System: Originally thought to be monogamous, but evidence was indirect and circumstantial. Information from radio-marked individuals shows clear evidence of ambisexual polygamy; i.e., both males and females are known to incubate and raise broods with > 1 mate during the breeding season.

Mating Season: Mid - Feb to Mid - May

Courtship: During the beginning of the breeding season, the function of the Food-Finding Call (see Sounds: vocalizations, above) changes, taking on a sexual role to attract a female. After formation of the pair bond, and in the presence of females, males are highly aggressive toward other males.

Mating: NONE

Pheromones Involved:

Nesting: The male and the female jointly choose a nest site on the ground or in low vegetation, usually within 65 feet of an opening such as a field or road. Both sexes work together to dig a scrape in the ground, about 6 inches across and 2 inches deep, and line it with grass and other dead vegetation. They often weave weeds and grasses into an arch to completely hide the nest from view. Nest building takes about 5 days.

Egg-Laying: Clutch Size: 7-28 eggs Number of Broods: 1-3 broods Egg Length: 1.2 in (3 cm) Egg Width: 1.0 in (2.5 cm) Incubation Period: 22-24 days Nestling Period: 1 day Egg Description: Dull or creamy white.

Hatching and Incubation/Gestation: Active and covered with down, but dependent on parents to stay warm and find food. Precocial and nidifugous at hatching.

Development: Can walk almost immediately upon hatching. Takes first flight usually about 14 d after hatching.

Parental Care: Both sexes are known to brood young birds for first 2 wk of life; frequency of brooding gradually decreases as chicks mature. Which parent broods often depends on fate of other parent-i.e., whether the mate left to join and breed with a different partner, or was lost to predation.

Lifespan: The average lifespan of the bobwhite is about 6 months and under ideal conditions, bobwhites can survive up to five years in the wild.

Conservation:

Official Federal Status: Near Threatened

Special Statuses in Individual States: NONE

Threats: Northern Bobwhites were once a common species in eastern North America, but experienced widespread, sharp declines between 1966 to 2014, up to 4% per year, resulting in a cumulative decline of 85%, according to the North American Breeding Bird Survey. Partners in Flight estimates a global breeding population of 5.8 million with 84% living in the U.S., and 11% in Mexico. They rate an 11 out of 20 on the Partners in Flight Continental Concern Score. The 2014 State of the Birds Report listed them as a Common Bird in Steep Decline, and placed the rare "Masked" race of Northern Bobwhite, found in southeastern Arizona, on the 2014 Watch List. The bobwhite's decline probably results from habitat degradation and loss owing to urbanization, fire suppression, and changes to agriculture and forestry. Agricultural fields have become less suitable for bobwhites with higher levels of pesticides and herbicides yielding less insect and plant food, and fewer hedgerows to provide cover. Although forest-clearing can increase bobwhite numbers in the short term, it can also lower them in the long term if forests don't regenerate. Some landscapes, when managed with prescribed fire, grazing, or other controlled disturbances, can produce high bobwhite densities, and hunting plantations in the Southeast have long done this. Upland pine forests could be managed for the Northern Bobwhite and the endangered Red-cockaded Woodpecker at the same time. In economic terms, the Northern Bobwhite was one of the most important game birds in North America. Population declines from habitat loss now mean that in many places there are no longer enough to hunt. Bobwhite hunting can be sustainable if controlled properly, but currently management varies widely across the continent. The National Bobwhite Conservation Initiative is a consortium of state agencies, conservation organizations, and hunters working to improve the prospects of this species.

Conservation Efforts: ^^^^^^

Extra Facts:

1. Because of its history as a game bird, the Northern Bobwhite is one of the most intensively studied bird species in the world. Scientists have researched the impacts of various human activities, from pesticide application to prescribed burning, on both wild and captive bobwhites.
2. Northern Bobwhites are divided into 22 subspecies, some of which were formerly considered to be separate species—such as the Masked Bobwhite, the Rufous-bellied Bobwhite, and the Black-headed Bobwhite. Although the females mostly look alike, the males vary dramatically from one subspecies to the next.
3. Northern Bobwhites were thought to be monogamous until researchers began radio-tracking individuals to follow their activities. It turns out that both male and female bobwhites can have multiple mates in one season.

4. The bobwhite genus is represented by more than 700 known fossils, dug up in sites ranging from Florida to Arizona to the Yucatan Peninsula of Mexico. Some of these fossils are at least 2.5 million years old.
5. The oldest Northern Bobwhite on record was 6 years, 5 months old. They have short life spans but make up for it with prolific breeding abilities. Under good conditions, a bobwhite pair can produce 2 or 3 broods, totaling 25 offspring or more, in a single breeding season.

Notable Species:

- Eastern Group

1. *C. v. aridus* (Lawrence, 1853) - Jaumave bobwhite - west-central Tamaulipas to southeastern San Luis Potosí
2. *C. v. cubanensis* (GR Gray, 1846) - Cuban bobwhite - Cuba and the Isle of Pines
3. *C. v. floridanus* (Coues, 1872) - Florida bobwhite - peninsular Florida
4. *C. v. insulanus* (Howe, 1904) - Key West bobwhite - Florida Keys†
5. *C. v. maculatus* (Nelson, 1899) - spot-bellied bobwhite - central Tamaulipas to northern Veracruz and southeastern San Luis Potosí
6. *C. v. marilandicus* (Linnaeus, 1758) - Pennsylvania bobwhite – coastal New England to Pennsylvania and central Virginia
7. *C. v. mexicanus* (Linnaeus, 1766) - eastern United States west of Atlantic Seaboard to Great Plains
8. *C. v. taylori* (Lincoln, 1915) - plains bobwhite - South Dakota to northern Texas, western Missouri and northwest Arkansas
9. *C. v. texanus* (Lawrence, 1853) - Texas bobwhite - southwest Texas to northern Mexico
10. *C. v. virginianus* (Linnaeus, 1758) - Virginia bobwhite - Atlantic coast from Virginia to northern Florida and southeast Alabama

- Grayson's Group

1. *C. v. graysoni* (Lawrence, 1867) - Grayson's bobwhite - west central Mexico
2. *C. v. nigripictus* (Nelson, 2015) - puebla bobwhite - eastern Mexico
3. Black-breasted Group
4. *C. v. godmani* (Nelson, 1897) - Godman's bobwhite - eastern slopes and mountains of central Veracruz
5. *C. v. minor* (Nelson, 1901) - least bobwhite - northeast Chiapas and Tabasco
6. *C. v. pectoralis* (Gould, 1883) - black-breasted bobwhite - eastern slopes and mountains of central Veracruz
7. *C. v. thayeri* (Bangs and Peters, 1928) - Thayer's bobwhite - northeast Oaxaca

- Masked Group

1. *C. v. atriceps* (Ogilvie-Grant, 1893) - black-headed bobwhite - interior of western Oaxaca
2. *C. v. coyolcos* (Statius Müller, 1776) - Coyolcos bobwhite - Pacific Coast of Oaxaca and Chiapas
3. *C. v. harrisoni* (Orr and Webster, 1968) - southwest Oaxaca
4. *C. v. insignis* (Nelson, 1897) - Guatemalan bobwhite - Guatemala and southern Chiapas
5. *C. v. ridgwayi* (Brewster, 1885) - masked bobwhite - north central Sonora
6. *C. v. salvini* (Nelson, 1897) - Salvin's bobwhite - coastal and southern Chiapas