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# American Coot

*Fulica americana* ORDER: GRUIFORMES FAMILY: RALLIDAE

 IUCN Conservation Status: Least Concern



© Greg Bishop

The waterborne American Coot is one good reminder that not everything that floats is a duck. A close look at a coot—that small head, those scrawny legs—reveals a different kind of bird entirely. Their dark bodies and white faces are common sights in nearly any open water across the continent, and they often mix with ducks. But they're closer relatives of the gangly Sandhill Crane and the nearly invisible rails than of Mallards or teal.

## Size & Shape

The American Coot is a plump, chickenlike bird with a rounded head and a sloping bill. Their tiny tail, short wings, and large feet are visible on the rare occasions they take flight.

- **Color Pattern**

Coots are dark-gray to black birds with a bright-white bill and forehead. The legs are yellow-green. At close range you may see a small patch of red on the forehead.

- **Behavior**

You'll find coots eating aquatic plants on almost any body of water. When swimming they look like small ducks (and often dive), but on land they look more chickenlike, walking rather than waddling. An awkward and often clumsy flier, the American Coot requires long running takeoffs to get airborne.

- **Habitat**

Look for American Coots at ponds in city parks, in marshes, reservoirs, along the edges of lakes, and in roadside ditches, sewage treatment ponds, and saltwater inlets or saltmarshes.

## Measurements

*Both Sexes*

### Length

15.5–16.9 in  
39.4–42.9 cm

### Wingspan

23–25 in  
58.4–63.5 cm

### Weight

21.2–24.7 oz  
600–700 g

### Relative Size

About two-thirds the size of a Mallard.

## Cool Facts

- Although it swims like a duck, the American Coot does not have webbed feet like a duck. Instead, each one of the coot's long toes has broad lobes of skin that help it kick through the water. The broad lobes fold back each time the bird lifts its foot, so it doesn't impede walking on dry land, though it supports the bird's weight on mucky ground.
- American Coots in the winter can be found in rafts of mixed waterfowl and in groups numbering up to several thousand individuals.
- The ecological impact of common animals, like this ubiquitous waterbird, can be impressive when you add it all up. One estimate from Back Bay, Virginia, suggested that the local coot population ate 216 tons (in dry weight) of vegetation per winter.
- The oldest known American Coot lived to be at least 22 years 4 months old.

## Habitat

The American Coot inhabits a wide variety of freshwater wetlands from prairie potholes to swamps and marshes to suburban park and sewage ponds to the edges of large lakes. Two features generally characterize all bodies of water where coots breed: (1) heavy stands of emergent aquatic vegetation along at least some portion of the shoreline and (2) at least some depth of standing water within those stands of vegetation. Seasonal wetlands used during years of high water, while drought years cause breeding to be limited to permanent wetlands.

## Food

Eats mainly aquatic plants including algae, duckweed, eelgrass, wild rice, sedges, hydrilla, wild celery, waterlilies, cattails, water milfoil; when on land they also pick at terrestrial plants and sometimes eat grains or leaves of oak, elm, and cypress trees. They're not exclusively vegetarian. You may also see them eating insects (beetles, dragonflies, and others), crustaceans, snails, and small vertebrates such as tadpoles and salamanders.

## Nesting

### Clutch Size

8–12 eggs

### Number of Broods

1-2 broods

### Egg Length

1.7–2.2 in

4.3–5.5 cm

### Egg Width

0.8–1.5 in

2–3.7 cm

### Incubation Period

23–25 days

### Egg Description

Buff, pinkish buff or buff-gray speckled with dark brown, purplish brown, or black.

### Condition at Hatching

Covered in down, alert, ready to leave the nest within 6 hours of hatching.

### Nest Description

The nest material is woven into a shallow basket with a hollowed interior lined with finer smooth material to hold the eggs. The entire nest is generally a floating structure anchored to upright stalks. Average diameter is 12 inches, with a 12 to 15-inch ramp and an egg cup of about 1 inch in depth and 6 inches in diameter.

### Nest Placement- Floating

Nests are almost always built over water on floating platforms and almost always associated with dense stands of living or dead vegetation such as reeds, cattails, bulrushes, sedges, and grasses. Occasionally, the nest may be built on the edge of a stand of vegetation, where it is clearly visible.

### **Behavior- Surface Dive**


A slow and meticulous forager, the American Coot plucks at plants while walking, swimming, dabbling with its head just underwater, or in full dives. In flight coots are clumsy and labored (though less so than Common Moorhens). To get airborne, coots typically have to beat their wings while running across the water for many yards. Coots sometimes gather in winter flocks of several thousand, sometimes mixing with other waterfowl. They sometimes steal food from others including ducks. Coots sometimes lay their eggs in the nests of other coots as well as Franklin's Gulls, Cinnamon Teal, and Redheads.

### **Conservation- Least Concern**

Common and widespread. Coots aren't hunted nearly as much as ducks since many hunters consider them inedible. Some hunters shoot them for sport, particularly in Louisiana, California, Florida, Wisconsin, and Minnesota. In 1999 the annual harvest of coots in the U.S. was about 720,000. Because they live in wetlands, coots can accumulate toxins from pollution sources including agricultural runoff, industrial waste, and nuclear facilities. Because coots are so common and widespread, scientists sometimes monitor them as a way of monitoring these problems in the environment at large.

# Blue-winged Teal

*Anas discors* ORDER: ANSERIFORMES FAMILY: ANATIDAE

 IUCN Conservation Status: Least Concern



© Ganesh Jayaraman

Pairs and small groups of this tiny dabbling duck inhabit shallow ponds and wetlands across much of North America. Blue-winged Teal are long distance migrants, with some birds heading all the way to South America for the winter. Therefore, they take off early on spring and fall migration, leaving their breeding grounds in the United States and Canada well before other species in the fall.

## Size & Shape

A small dabbling duck, a Blue-winged Teal is dwarfed by a Mallard and only a touch larger than a Green-winged Teal. Head is rounded and bill is on the large side.

- **Color Pattern**

Breeding males are brown-bodied with dark speckling on the breast, slaty-blue head with a white crescent behind the bill, and a small white flank patch in front of their black rear. Females and eclipse males are a cold, patterned brown. In flight, they reveal a bold powder-blue patch on their upperwing coverts.

- **Behavior**

Pairs and small groups dabble and up-end to reach submerged vegetation. You'll often find Blue-winged Teal with other species of dabbling ducks. They are often around the edges of ponds under vegetation, choosing a concealed spot to forage or rest.

- **Habitat**

Look for Blue-winged Teal on calm bodies of water from marshes to small lakes. The prairie-pothole region is the heart of their breeding range, where they thrive in grassy habitats intermixed with wetlands.

## Measurements- Both Sexes

<b>Length</b>	14.2–16.1 in 36–41 cm
<b>Wingspan</b>	22–24.4 in 56–62 cm
<b>Weight</b>	8.1–19.2 oz 230–545 g

## Cool Facts

- The Blue-winged Teal is among the latest ducks to migrate northward in spring, and one of the first to migrate southward in fall.

- The Blue-winged Teal migrates over long distances. One individual banded in Alberta was shot in Venezuela a month later.

## **Habitat- Lake/Pond**

Blue-winged Teal nest among grasses or herbaceous vegetation and forage in summer in shallow ponds or pond-marsh mixes. They are flightless during their late summer molt, and they spend this time in prairie potholes or large marshes. Migrants use marshes, vegetated wetlands around lakes, and rice fields, and typically stop in freshwater or brackish areas rather than saltwater. On their U.S. wintering grounds they live in fresh or brackish vegetated wetlands with lots of decaying organic matter. South of the U.S., they may use different habitats including estuaries and mangroves.

## **Food- Seeds**

Blue-winged Teal eat aquatic insects such as midge larvae, crustaceans, clams, and snails as well as vegetation and grains. Laying females eat mostly protein-rich animal matter. In winter, seeds such as rice, millet, water lilies are the predominant foods.

## **Nesting**

### **Clutch Size**

6–14 eggs

### **Number of Broods**

1 broods

### **Egg Length**

1.5–2 in  
3.8–5.2 cm

### **Egg Width**

1.1–1.5 in  
2.9–3.7 cm

### **Incubation Period**

19–29 days

### **Nestling Period**

40 days

### **Egg Description**

Creamy white.

### **Condition at Hatching**

Covered in yellow down with a gray-brown eye stripe. Able to leave nest soon after hatching.

## **Nest Description**

The female builds the nest by scraping with her feet to make a circular depression. She then lines it with dried grasses picked from around the nest, adding down and breast feathers. Vegetation conceals most nests on all sides and from above. The finished nest is about 8 inches across, with an inside diameter of about 6 inches and 2 inches deep.

## **Nest Placement- Ground**

Females decide where to nest by flying over possible areas, landing in an opening, and then walking into grassy cover. She may take several days to decide on the site. Males wait nearby. Nests are typically at least a foot above the nearest water and covered by vegetation.

## **Behavior- Dabbler**

Blue-winged Teal feed by dabbling—dipping their bill into the water, submerging their entire head, or tipping up to reach for prey or vegetation deeper underwater. They dive rarely. Like many ducks, Blue-winged Teal have a range of exaggerated motions that they use as displays. Often male will make these displays while oriented to the side of the female he is courting. They include pumping the head up and down, dipping the head under water rapidly, and tipping up or dabbling in the water with body feathers raised. Females may respond by "inciting": lowering her head, pointing her bill at the male, and then raising her head. Pair bonds typically dissolve during incubation, and adults form new pair bonds

with different mates in the winter or spring. Many males court the same female at once until she chooses a mate. Forced copulations by males with females other than their mate—a common occurrence in many duck species—is comparatively rare in Blue-winged Teal.

### **Conservation- Least Concern**

Blue-winged Teal are the second most abundant duck in North America, behind the Mallard. Their numbers fluctuate between about 2.8 million and 7.4 million birds, mainly as a response to water conditions, with drought causing populations to fall. By funding farmers to leave some of their fields fallow, the USDA Conservation Reserve Program has helped increase grassland nesting habitat by about 1.8 million acres in this species' prairie pothole breeding range. Blue-winged Teal are early migrants, so they're gone from much of the U.S. before duck-hunting season begins in many states. Still, hunters shoot 200,000 to upwards of 500,000 Blue-winged Teal per year (this hunting pressure is carefully managed to maintain population goals). Blue-winged Teal, like other ducks, are vulnerable to wetland loss or degradation, pesticide contamination (particularly on their wintering grounds, in countries where DDT is still legal), and consumption of lead shot where it is still used.

# Bobwhite Quail



## INTRODUCTION

The Northern Bobwhite Quail (*Colinus virginianus*) occurs throughout all or parts of 38 states and is a particularly prominent game bird in the South. In Georgia, bobwhites are present from the mountains to the coast and occupy a special place in the state's wildlife heritage, having been designated as the State Game Bird in 1970. However, due to large-scale changes in land use, quail populations have been declining since the early 1900s. The quail decline has primarily resulted from the loss of adequate nesting cover, brood range and escape thickets. In Georgia and across the South major efforts are underway to restore and maintain bobwhite habitat and populations.

## LIFE HISTORY

Wildlife biologists classify bobwhites as a grassland-forb-shrub habitat dependent species. In the Southeast this type of habitat is often referred to as early succession. To prosper, bobwhites need large expanses of clumped native warm season grasses mixed with annual weeds, legumes, briars and other woody thickets that are thick above but open underneath. The average annual home range size is around 40 acres, but depending on habitat quality, home range size can vary from 10 acres to more than 200 acres.

Bobwhites are relatively small ground dwelling gallinaceous (chicken-like) birds. Adults stand six to seven inches in height and typically weigh about six ounces. The male can be easily identified by a prominent white stripe above the eye, whereas hens (females) have cream or buff colored head stripes.

The bobwhite nesting season extends from March through October with the peak occurring during May through August. Bobwhites nest on the ground using the previous year's dead vegetation, with both hens and cocks (males) collecting materials for nest construction. The average clutch size is 12 eggs with an incubation period of 23 days. Chicks are precocial, meaning they leave the nest with the adult shortly after hatching.

During the early fall bobwhite adults and broods form into social groupings called coveys, with an average covey size of 12 birds. Coveys roost or spend the night on the ground, in a circle with their heads pointed outward, which allows them to conserve heat and more easily escape nocturnal predators. As mortality occurs throughout the winter and covey size decreases, the remaining birds often join with other coveys for the remainder of the winter. Quail remain in coveys until the "spring breakup" at which time they disperse to begin the mating season. Males then begin to make the familiar "bob-bob-white" call to attract hens for breeding.

Bobwhites are what ecologists refer to as an r-selected species, which means they are subject to high annual mortality rates but are able to offset this mortality with high reproductive rates. Annual mortality rates may reach 70 to 80 percent depending on habitat quality, weather, predator densities, hunting pressure and other variables. Providing high quality habitat at all seasons of the year best controls predation on bobwhites.

The Northern Bobwhite Quail (*Colinus virginianus*) occurs throughout all, or parts, of 38 states and is a particularly prominent game bird in the South. However, due to large scale changes in land use, quail populations have been declining since the early 1900s. The quail decline has primarily resulted from the loss of adequate nesting cover, brood range and escape thickets. Across the U.S., major efforts are underway to restore and maintain bobwhite habitat and populations, with Quail Forever leading the way.

### Description

Bobwhites are relatively small ground dwelling gallinaceous (chicken-like) birds. Adults stand six to seven inches (24-27 cm) in height and typically weigh about six to seven ounces. The male's upper parts are reddish-brown, while the belly is pale and streaked. There is a white stripe above the eye and white patch framed in black on the throat. These patches are caramel-colored on the females. The bobwhites usually travel in coveys (flocks of two or more families). Their name derives from their distinctive whistle ("bobwhite").

### History

Native Americans utilized bobwhite quail for food, and as they changed from a hunter/gatherer to a more agrarian society, bobwhite numbers increased around cropped fields. In 1557, Hernando DeSoto's expedition reportedly received a gift of wild turkeys and partridges (probably bobwhite quail) at a Native American village in what is now Georgia, comprising the earliest record of white man eating bobwhites. As European settlers carved small farms from vast forests, bobwhites became more common.

Initially, bobwhites provided a subsistence food for settlers. Markets developed and hunting and trapping of quail were practiced from the early 1800s to the early 1900s.

Market hunting eventually impacted numbers, and some northern states implemented quail game laws as early as the 1830s. Market hunting began later in the southern states. During the winter of 1905-06, over 500,000 bobwhites were shipped from Alabama to northern and eastern markets.

Over time, quail sport hunting became known as a gentleman's pastime, but most all hunters willing to follow a pointing dog across fields and forties easily succumbed to its princely appearance, familiar call, challenging sport hunting opportunities and excellent table fare. Finding coveys was consistently possible, but not always easy. Birds held well for pointing dogs and their rapid, unpredictable flight provided a strong shooting challenge. Bird hunting provided rich social opportunities among hunters and a common bond of mutual accomplishment and affection between hunters and their dogs.

Bobwhite numbers peaked during the mid-1800s in northern states and from around 1890 to the mid-1940s in the Southeast, and then began a consistent and drastic decline. Over the last several decades and across their ranges, bobwhite quail and other game species associated with early forest succession and grasslands have declined to historically low population levels. In fact, over the past 20 years, northern bobwhite population numbers have declined by over 65%. In some states, the rate of decline has escalated from 1-2% per year during the 1960s and 1970s to over 5% per year during the 1980s and 1990s. The population decline has been attributed to many factors, including predators, pathogens and pesticides, but the primary cause is the cumulative effect of deteriorating bobwhite habitat due to land use changes. Advanced natural succession, intensive monoculture farming, exotic and invasive grasses, intensive timber management and declining use of prescribed burning have negatively impacted quail habitat.



## Distribution and Population

The northern bobwhite, or bobwhite quail, is the most widespread of the 6 quail species in this country. The range of its 5 subspecies covers the southeastern and mid-western U.S. The Northern Bobwhite is most commonly found in its range in the eastern and central U.S. High population numbers occurring during the bobwhite's heyday were an accidental byproduct of diverse land use practices. As forests were cleared, small patch row crop farms, fallow areas, grass fields and woodlots emerged. Annual burning of fields and forests, rotational cropping and open grazing of livestock improved ground level habitat conditions and set back succession within this habitat mosaic and bobwhites flourished.

During the early fall, bobwhite adults and broods form into social groupings (coveys), with an average covey size of 12 birds. Coveys roost or spend the night on the ground, in a circle with their heads pointed outward, which allows them to conserve heat and more easily escape nocturnal predators. As mortality occurs throughout the winter and covey size decreases, the remaining birds often join with other coveys for the remainder of the winter. Quail remain in coveys until the "spring breakup" at which time they disperse to begin the mating season. Males then begin to make the familiar "bob-bob-white" call to attract hens for breeding.

## Biology

The male bobwhite begins singing in early spring to attract a mate, signaling the start of the mating season, the peak of the singing occurring during May through August. Nesting occurs from May to September. Both hens and cocks (males) choose the breeding sites and collect materials for nest construction and brooding. Two or three females will share a nest if bobwhites are abundant and cover is scarce. A typical nest is a shallow, saucer-shaped depression in the ground, lined with plants and covered with grass and the previous year's dead vegetation. Clutch sizes vary from 10 to 20 eggs, with an average of 12 eggs, laid one-a-day. Incubation lasts 23 to 24 days. The downy young are rapidly mobile (precocial) and follow their parents upon hatching. They fledge in six to seven days.

Bobwhites are what ecologists refer to as an r-selected species, which means they are subject to high annual mortality rates but are able to offset this mortality with high reproductive rates. Nesting loss is fairly high at 60-70%. Females will re-nest until successful or until it becomes too late in the season. With persistent nesting, 75% of females will produce young. Chick mortality is about 30%. Most deaths occur within the first two weeks of life, when the young are most vulnerable to weather. The life expectancy of the bobwhite quail is less than one year.

The average annual home range size is around 40 acres but, depending on habitat quality, home range size can vary from 10 acres to more than 200 acres. Annual mortality rates may reach 70-80% depending on habitat quality, weather, predator densities, hunting pressure and other variables. **Providing high quality habitat at all seasons of the year best controls predation on bobwhites.**

### Threats

Harsh winters, habitat loss and increasingly intensive agricultural practices are major factors in the decline of the Northern Bobwhite. Excessive snow and ice crusts are also detrimental; both cover seeds necessary for the birds' survival. Pesticides can be damaging, since the species feeds on insects. Domestic cats and other predators, such as skunks, foxes, owls, raccoons, dogs and snakes, are also contributing factors. Late-season hunting has proven deadly as well as hunters will flush a covey and while they will eventually regroup, with their original covey or another, often times it is too late and the birds will freeze. Captive-bred, non-native bobwhites seriously harm genetically distinct wild populations through inter-breeding.

### Habitat

Wildlife biologists classify bobwhites as a grassland-forb-shrub habitat dependent species. In the Southeast, this type of habitat is often referred to as 'early succession'. To prosper, bobwhites need large expanses of clumped native warm season grasses mixed with annual weeds, legumes, briars and other woody thickets that are thick above but open underneath. The bobwhite prefers areas where half the ground is exposed and the remainder contains upright growth of herbaceous and woody vegetation. Specific requirements change with the seasons. In spring and summer, the bobwhite needs grassland, drainage ditches and roadside and pond edges for nesting, feeding and roosting cover. In summer and fall, it requires cropland for feeding, loafing, dusting and roosting. It depends on dense, brushy areas for food during fall and winter and for escape and roosting cover year round.

Changing land use practices have simplified the landscape by promoting the abundance of one habitat component (grassland, agricultural crops or woodlands) to the exclusion of others. Consequently, modern agricultural and forestry practices that emphasize optimal crop and fiber production have supplied world markets but eliminated the landscape complexity bobwhites require.

Prescribed fire dramatically enhances bobwhite habitat. Native Americans patch-burned forests and fields to manage game, increase hunting success, and improve access. Historically, controlled burning was employed annually or bi-annually to our agricultural and pinelands. Its use has all-but-disappeared due to alternative techniques, conflicts surrounding smaller landowner tract size, and health and liability risks associated with smoke and fire. In the absence of fire, a forest understory mosaic of bare ground, grasses, weeds and woody vegetation is replaced by dense woody brush that shades and eliminates herbaceous vegetation essential for foraging, nesting and brooding.

Grazing practices have also changed. Thirty years ago, sheep and cattle were rotationally grazed between native grasses and woodlots. Today, open range grazing practices that produced an irregular mosaic of grazed and ungrazed patches have been replaced with more uniform, intensive grazing practices. Most pastures are planted to large, clean, exotic grass fields of fescue, Bermuda or Bahia, providing quality grazing but poor quail habitat. Higher stocking levels better utilize forage resources but do not produce the beneficial, diverse plant communities that resulted from the earlier grazing practices.

Though other factors cloud the bobwhite quail picture, changing land use practices and patterns have reduced bobwhite habitat quantity and quality, and unless active management is pursued at both the micro- and macro-habitat levels, we may never see the abundant bobwhite populations of yesteryear.

While the decline in bobwhite populations is discouraging, the bright side of the picture is that bobwhites are a prolific species and can respond rapidly to appropriate habitat management practices. Bobwhite quail populations can be restored, and this has been demonstrated on numerous individual properties. However, it is important to recognize that the magnitude of response is related to the scale and intensity of management. A little management will produce a small response and an intensive, aggressive habitat management approach can elicit a very favorable population response.

## Habitat/Land Management

The backbone of Quail Forever is the unique system of county chapters that provides incentive for chapter leaders to raise money for pheasant habitat in their own area. All net funds (100%) raised by chapters remains at the local level.

Local control of the funds and the freedom to spend those funds means county-by-county prioritization of habitat needs. Local control means access to the network of contacts that chapter leaders have to the landowning public and to natural resources professionals. Local control means there is an incredible incentive to raise more to do more, and to wisely shepherd funds. Local control also means the ability to generate tremendous support from both the general membership and local businesses by presenting a product that local sportsmen and women can see, touch and walk on.

As an open country bird species, quail have the ability to range all over North America. They are able to adapt to a vast array of climates, from Canada to the gulf coast and from the east coast to Colorado. Unfortunately, quail populations have drastically declined over the last 30 years due to a lack of

habitat. Quail need grasslands, bare ground, seed-producing plants and shrubs for nesting, food and cover. Urban sprawl and an increase in intensified agriculture have resulting in the largest decrease of quail habitat. Quail Forever concentrates its habitat project efforts on fulfilling the biological needs of the bobwhite, as well as on the preservation of permanent areas for other wildlife. Keep reading for more information on quail habitat structure.

*The following information was generously contributed from "On the Edge" a publication of the [Conservation Commission of Missouri](#)*

## Crop Fields

Quail need a vast array of types of food in their diet to be thriving during the winter months and to have a high reproductive year during the growing season. This diet consists of crops such as corn, milo, millet, sorghum, sunflowers and soybeans. Receiving a wide variety of these nutrients allows for quail to meet all of their energy needs.

In places with very few types of grassland it is necessary that crop fields use a variety of applications for cropping in order to assist quail populations.

Some examples include:

- Strip cropping - 50 to 100 foot grass strips allow for greater nesting and brood rearing.
- Plant and rotate quail-friendly crops - Crops such as cotton, rice and cucumbers provide few benefits to quail. Rotate various crops such as those listed above. The crops that provide the greatest benefits for quail are corn and milo.
- Create Buffers - These protect against soil erosion as well as provide nesting, brooding and roosting habitat.
- Use less herbicides - herbicides that eradicate all weeds are great for crops, but not for quail. Eliminate use of herbicides on the outer two rows of your fields that allows for quail cover and protection.
- Over-seed winter wheat - Leave the field idle after harvest. This allows for a great brood habitat during the latter summer months and winter.

## Grasslands

Grasslands were the primary source of nesting and brooding for quail, when their populations were at climax. Today, grasslands are fewer and far between, but when managed properly it can be used successfully for the improvement of quail populations.

There are a variety of ways in which you can protect and maintain your pastures and grassland for quail populations. If not maintained tall-fescue pastures can be extremely harmful for quail. These can be maintained by planting and protected various shrubs, not mowing your pastures, grazing and over-seeding to encourage seed-producing plants for quail food and disking to reduce tall fescue.

Additional type's grasslands include cool and warm season pasture grasses as well as cool and warm season grass hayfields, all of which provide excellent habitat for quail. These can be maintained in a variety of ways. Planting different varieties of grasses, three-four year burning intervals, controlling woody invaders and planting native legumes and wildflowers allow for a great range of diversity in nesting and brooding cover for quail populations.

## Forest and Woodlands

Essential for a quail's winter cover, forest and woodlands are great places for quail to remain concealed and covered from predators as well. Maintain a good forest edge of briars, brambles, grasses and weeds that are ideal for quail on the edge of forests. You can also plant blackberry, plum, greenbriar, coral berry, sumac, grape and rough-leaved dogwood along the outside edge. Allow the forest canopy to be broken in order to establish lower growing plants. This can be done in woodland areas through forest thinning.

## Idle Areas

Many landowners have idle areas in which land cannot be used for cropland, grazing or haying. These areas can be great assets for quail. They must be maintained and still need disturbance to stay productive for quail. Tall fescue crowds quail and can be removed by using limited herbicides, burning or disking areas. Trees also should be thinned out to allow for greater quail habitat. Too many trees shades out grasses, shrubs, native legumes, wildflowers and annual weeds which quail utilize for cover.

## Fencerows and Drainages

Additional habitat for quail can be in fencerows and drainage ditches if it is left undisturbed and populated with fescue, brome and trees. Maintain these by trimming hedges and spraying fescue and trees. Spot spray invading trees and fescue in the fall or spring. Finally, leave your brush piles to provide immediate cover for quail. These allow for quail to walk through, but inhibit large animals from doing the same.

## Savannas

Savannas consist of a scattering of post and blackjack oak trees or short-leaf pine trees as well as variety of shrubs. Ground cover allows for quail to thrive in these areas where grass, legumes and wildflowers are highly abundant. Savannas appear less often than ever and restoring them is hard work. Cutting trees and allowing for periodic burning are the best ways to establish this form of quail habitat.

## REASONS FOR THE QUAIL DECLINE


Intensification of agriculture and forestry coupled with increased urbanization are the primary factors responsible for the decline in bobwhite quail and a number of other early successional wildlife species.

## RESTORATION EFFORTS

At present, efforts are underway to improve habitat for bobwhites and other declining early successional wildlife. Georgias Bobwhite Quail Initiative and a number of federal programs promote habitat restoration practices, including establishing early successional habitat around and across agricultural fields and pine forests.

# Canada Goose

*Branta canadensis* ORDER: ANSERIFORMES FAMILY: ANATIDAE

 IUCN Conservation Status: Least Concern



© ashockenberry

A familiar and widespread goose with a black head and neck, white chinstrap, light tan to cream breast and brown back. Has increased in urban and suburban areas in recent years; just a decade or two after people intentionally introduced or reintroduced “giant” Canada Geese to various areas, they are often considered pests.

## Size & Shape

Canada Geese are big waterbirds with a long neck, large body, large webbed feet, and wide, flat bill.

- **Color Pattern**

Canada Geese have a black head with white cheeks and chinstrap, black neck, tan breast, and brown back.

- **Behavior**

Canada Geese feed by dabbling in the water or grazing in fields and large lawns. They are often seen in flight moving in pairs or flocks; flocks often assume a V formation.

- **Habitat**

Just about anywhere near lakes, rivers, ponds, or other small or large bodies of water, and in yards, park lawns, and farm fields.

## Measurements

*Both Sexes*

### Length

29.9–43.3 in  
76–110 cm

### Wingspan

50–66.9 in  
127–170 cm

### Weight

105.8–317.5 oz  
3000–9000 g

### Relative Size

Larger than a Mallard, smaller than a Mute Swan

## Cool Facts

- At least 11 subspecies of Canada Goose have been recognized, although only a couple are distinctive. In general, the geese get smaller as you move northward, and darker as you go westward. The four smallest forms are now considered a different species: the Cackling Goose.

- Some migratory populations of the Canada Goose are not going as far south in the winter as they used to. This northward range shift has been attributed to changes in farm practices that makes waste grain more available in fall and winter, as well as changes in hunting pressure and changes in weather.
- Individual Canada Geese from most populations make annual northward migrations after breeding. Nonbreeding geese, or those that lost nests early in the breeding season, may move anywhere from several kilometers to more than 1500 km northward. There they take advantage of vegetation in an earlier state of growth to fuel their molt. Even members of "resident" populations, which do not migrate southward in winter, will move north in late summer to molt.
- The "giant" Canada Goose, *Branta canadensis maxima*, bred from central Manitoba to Kentucky but was nearly driven extinct in the early 1900s. Programs to reestablish the subspecies to its original range were in many places so successful that the geese have become a nuisance in many urban and suburban areas.
- In a pattern biologists call "assortative mating," birds of both sexes tend to choose mates of a similar size.
- The oldest known wild Canada Goose was 30 years 4 months old.

## Habitat

Canada Geese live in a great many habitats near water, grassy fields, and grain fields. Canada Geese are particularly drawn to lawns for two reasons: they can digest grass, and when they are feeding with their young, manicured lawns give them a wide, unobstructed view of any approaching predators. So they are especially abundant in parks, airports, golf courses, and other areas with expansive lawns.

## Food

In spring and summer, geese concentrate their feeding on grasses and sedges, including skunk cabbage leaves and eelgrass. During fall and winter, they rely more on berries and seeds, including agricultural grains, and seem especially fond of blueberries. They're very efficient at removing kernels from dry corn cobs. Two subspecies have adapted to urban environments and graze on domesticated grasses year round.

## Nesting

### Nesting Facts

#### Clutch Size

2–8 eggs

#### Number of Broods

1 broods

#### Egg Length

3.3 in

8.3 cm

#### Egg Width

2.2 in

5.6 cm

#### Incubation Period

25–28 days

#### Nestling Period

42–50 days

#### Egg Description

Creamy white.

#### Condition at Hatching

Hatchlings are covered with yellowish down and their eyes are open. They leave the nest when 1-2 days old, depending on weather, and can walk, swim, feed, and even dive. They have enough energy remaining in their yolk sac to survive 2 days before feeding.

#### Nest Description

A large open cup on the ground, made of dry grasses, lichens, mosses, and other plant material, and lined with down and some body feathers.

## Nest Placement

On the ground, usually on a muskrat mound or other slightly elevated site, near water. They prefer a spot from which they can have a fairly unobstructed view in many directions. Female selects the site and does much of nest construction. She adds down feathers and some body feathers beginning after the second egg is laid. She does all the incubation while her mate guards her and the nest.

## Behavior

Canada Geese eat grain from fields, graze on grass, and dabble in shallow water by tipping forward and extending their necks underwater. During much of the year they associate in large flocks, and many of these birds may be related to one another. They mate for life with very low “divorce rates,” and pairs remain together throughout the year. Geese mate “assortatively,” larger birds choosing larger mates and smaller ones choosing smaller mates; in a given pair, the male is usually larger than the female. Most Canada Geese do not breed until their fourth year; less than 10 percent breed as yearlings, and most pair bonds are unstable until birds are at least two or three years old. Extra-pair copulations have been documented.

During spring, pairs break out from flocks and begin defending territories. Spacing of these pairs is variable and depends on availability of nest sites and population density; where population is large, even after a great many fights birds may end up nesting in view of one another, and some populations are semi-colonial.

Canada Goose threat displays may involve head pumping, bill opened with tongue raised, hissing, honking, and vibrating neck feathers. When an intruding goose doesn't retreat, geese may grab each other by breast or throat and hit each other with their wings. Fighting may result in injuries.

Female selects nest site, builds nest, and incubates eggs. She may brood goslings in cold, wet, or windy weather and while they're sleeping for first week after hatching. Male guards the nest while female incubates. Soon after they hatch, goslings begin pecking at small objects, and spend most of their time sleeping and feeding. They remain with their parents constantly, though sometimes “gang broods” form, especially in more southern latitudes. These can include at least two broods, and sometimes five or more, that travel, feed, and loaf together, accompanied by at least one adult.

Young often remain with their parents for their entire first year, especially in the larger subspecies. As summer wanes birds become more social; they may gather in large numbers at food sources; where food is limited and patchy, may compete with displays and fights.

In winter, Geese can remain in northern areas with some open water and food resources even where temperatures are extremely cold. Geese breeding in the northernmost reaches of their range tend to migrate long distances to winter in the more southerly parts of the range, whereas geese breeding in southern Canada and the conterminous United States migrate shorter distances or not at all. Individuals tend to return to the same migratory stopover and wintering areas year after year. Spring migration may be difficult for observers to track because of over-wintering birds and movements between nighttime resting areas and feeding areas, but the bulk of spring migratory movements tend to move north behind the retreating snow line, where the temperature is averaging 35 degrees.

Migrating flocks generally include loose aggregations of family groups and individuals, in both spring and fall. Flights usually begin at dusk, but may begin anytime of day, and birds fly both night and day. They move in a V formation, with experienced individuals taking turns leading the flock.

## Conservation

Canada Geese are common and increasing in much of North America. The proliferation of lawns, golf courses, and parks offers Canada Geese such reliable habitat that in some areas the birds stay all year round instead of migrating like they used to do. Recently, some communities have had to begin considering some Canada Geese as nuisances (for eating grass or fouling lawns) or even hazards (around airports, where collisions with planes can be very dangerous). Some 2.6 million Canada Geese are harvested by hunters in North America, but this does not seem to affect its numbers.

# American Crow

*Corvus brachyrhynchos* ORDER: PASSERIFORMES FAMILY: CORVIDAE



IUCN Conservation Status: Least Concern



© Kevin J. McGowan



American Crows are familiar over much of the continent: large, intelligent, all-black birds with hoarse, cawing voices. They are common sights in treetops, fields, and roadsides, and in habitats ranging from open woods and empty beaches to town centers. They usually feed on the ground and eat almost anything – typically earthworms, insects and other small animals, seeds, and fruit but also garbage, carrion, and chicks they rob from nests. Their flight style is unique, a patient, methodical flapping that is rarely broken up with glides. Crows are rarely found alone.

- **Size & Shape**

A large, long-legged, thick-necked bird with a heavy, straight bill. In flight, the wings are fairly broad and rounded with the wingtip feathers spread like fingers. The short tail is rounded or squared off at the end.

- **Color Pattern**

American Crows are all black, even the legs and bill. When crows molt, the old feathers can appear brownish or scaly compared to the glossy new feathers.

- **Behavior**

American Crows are very social, sometimes forming flocks in the millions. Inquisitive and sometimes mischievous, crows are good learners and problem-solvers, often raiding garbage cans and picking over discarded food containers. They're also aggressive and often chase away larger birds including hawks, owls and herons.

- **Habitat**

American Crows are common birds of fields, open woodlands, and forests. They thrive around people, and you'll often find them in agricultural fields, lawns, parking lots, athletic fields, roadsides, towns, and city garbage dumps.

## Adult

- Large black bird
- Thick, sturdy bill
- Medium-length, square tail
- Gray bases to neck feathers

## Measurements

*Both Sexes*

### Length

15.7–20.9 in  
40–53 cm

### Wingspan

33.5–39.4 in  
85–100 cm

### Weight

11.1–21.9 oz  
316–620 g

### *Relative Size*

Nearly twice the size of a Blue Jay; about two-thirds the size of a Common Raven

## Cool Facts

- American Crows congregate in large numbers in winter to sleep in communal roosts. These roosts can be of a few hundred up to two million crows. Some roosts have been forming in the same general area for well over 100 years. In the last few decades some of these roosts have moved into urban areas where the noise and mess cause conflicts with people.
- Young American Crows do not breed until they are at least two years old, and most do not breed until they are four or more. In most populations the young help their parents raise young for a few years. Families may include up to 15 individuals and contain young from five different years.
- The American Crow appears to be the biggest victim of West Nile virus, a disease recently introduced to North America. Crows die within one week of infection, and few seem able to survive exposure. No other North American bird is dying at the same rate from the disease, and the loss of crows in some areas has been severe.
- In some areas, the American Crow has a double life. It maintains a territory year round in which the entire extended family lives and forages together. But during much of the year, individual crows leave the home territory to join large flocks at dumps and agricultural fields, and to sleep in large roosts in winter. Family members go together to the flocks, but do not stay together in the crowd. A crow may spend part of the day at home with its family in town and the rest with a flock feeding on waste grain out in the country.
- Despite its tendency to eat roadkill, the American Crow is not specialized to be a scavenger, and carrion is only a very small part of its diet. Though their bills are large, crows can't break through the skin of even a gray squirrel. They must wait for something else to open a carcass or for the carcass to decompose and become tender enough to eat.
- Crows are crafty foragers that sometimes follow adult birds to find where their nests are hidden. They sometimes steal food from other animals. A group of crows was seen distracting a river otter to steal its fish, and another group followed Common Mergansers to catch minnows the ducks were chasing into the shallows. They also sometimes follow songbirds as they arrive from a long migration flight and capture the exhausted birds. Crows also catch fish, eat from outdoor dog dishes, and take fruit from trees.
- Crows sometimes make and use tools. Examples include a captive crow using a cup to carry water over to a bowl of dry mash; shaping a piece of wood and then sticking it into a hole in a fence post in search of food; and breaking off pieces of pine cone to drop on tree climbers near a nest.
- The oldest recorded wild American Crow was 16 years old. A captive crow that died in New York lived to be 59 years old.

## Habitat

American Crows are highly adaptable and will live in any open place that offers a few trees to perch in and a reliable source of food. Regularly uses both natural and human created habitats, including farmland, pasture, landfills, city parks, golf courses, cemeteries, yards, vacant lots, highway turnarounds, feedlots, and the shores of rivers, streams, and marshes. Crows tend to avoid unbroken expanses of forest, but do show up at forest campgrounds and travel into forests along roads and rivers. Avoids deserts.

## Food

American Crows eat a vast array of foods, including grains, seeds, nuts, fruits, berries, and many kinds of small animals such as earthworms and mice. They eat many insects, including some crop pests, and also eat aquatic animals such as fish, young turtles, crayfish, mussels, and clams. A frequent nest predator, the American Crow eats the eggs and nestlings of many species including sparrows, robins, jays, terns, loons, and eiders. Also eats carrion and garbage.

## Nesting

### Nesting Facts

**Clutch Size**

3–9 eggs

**Number of Broods**

1–2 broods

**Egg Length**

1.4–1.9 in

3.6–4.7 cm

**Egg Width**

1–1.2 in

2.6–3.1 cm

**Incubation Period**

16–18 days

**Nestling Period**

20–40 days

**Egg Description**

Pale bluish-green to olive green with blotches of brown and gray toward the large end.

**Condition at Hatching**

Naked except for sparse tufts of grayish down, eyes closed, clumsy.

### Nest Description

Both members of a breeding pair help build the nest. Young birds from the previous year sometimes help as well. The nest is made largely of medium-sized twigs with an inner cup lined with pine needles, weeds, soft bark, or animal hair. Nest size is quite variable, typically 6–19 inches across, with an inner cup about 6–14 inches across and 4–15 inches deep.

### Nest Placement

Crows typically hide their nests in a crotch near the trunk of a tree or on a horizontal branch, generally towards the top third or quarter of the tree. They prefer to nest in evergreens, but will nest in deciduous trees when evergreens are less available.

## Behavior

American Crows are highly social birds, more often seen in groups than alone. In addition to roosting and foraging in numbers, crows often stay together in year-round family groups that consist of the breeding pair and offspring from the past two years. The whole family cooperates to raise young. Winter roosts of American Crows sometimes number in the hundreds of thousands. Often admired for their intelligence, American Crows can work together, devise solutions to problems, and recognize unusual sources of food. Some people regard this resourcefulness and sociality as an annoyance when it leads to large flocks around dumpsters, landfills, and roosting sites; others are fascinated by it. American Crows work together to harass or drive off predators, a behavior known as mobbing.

## Conservation

Populations slightly but significantly increasing over last half of twentieth century. Severe susceptibility to West Nile virus may cause population decreases in near future.

## Migration

Short-distance migrant or resident. Most of the crows that breed in Canada winter in the United States, and no crows regularly winter in Mexico.



Crows are perhaps one of the most widely recognized birds in the United States. While some people view them favorably, others consider crows to be a nuisance. But whether liked or not, almost every one agrees that crows are adaptable, inquisitive and intelligent birds. In fact, crows have become the subject of many myths and legends.

Georgia is home to both the American Crow (*Corvus brachyrhynchos*), and the Fish Crow (*Corvus ossifragus*). Crows belong to the family Corvidae, which also includes ravens, jays and magpies. In addition to crows, Common Ravens (*Corvus corax*) are the only other large solid black birds occurring in Georgia. Ravens are found in extreme northern Georgia and are somewhat easily distinguished from crows by being much larger in size, having wedge-shaped tails, a soaring flight pattern and a deep croaking call.

### SPECIES DESCRIPTIONS

#### **American Crow**

American crows occur throughout Georgia occupying a wide range of habitats including rural to urban and farmland to woodland. They are most abundant in areas with a mixture of open land that provides ground feeding; and scattered trees and woodlots that provide nesting and roosting sites. Adults have glossy black to purplish feathers with stout black bills and black feet. They are about 17 - 21 inches in length and range in weight from 12 ounces to a little over one pound.

#### **Fish Crow**

Fish crows are very similar in appearance and biology to American crows. However, they primarily occur in the southern half of the state in association with large watercourses, reservoirs and coastal waterways. Fish crows are about 10 percent smaller in size than American crows and have plumage that is somewhat more iridescent in color, but these traits are difficult to distinguish in the field. The most easily distinguishable characteristic is the more nasal and often double call (ca or ca-ha) of fish crows as opposed to the somewhat deeper and often singular call (caw) of American crows. However, even this criterion is not 100 percent accurate as juvenile American crows can make very similar sounds and all crows have a great repertoire of vocalizations. Due to the great similarity of American and fish crows, and the lack of detailed scientific knowledge regarding the biology of fish crows, the information provided in the remainder of this fact sheet will be combined for both species.

### BIOLOGY

Crows are gregarious during the fall and winter, forming flocks of 20 to several hundred birds. During this time they may also congregate into communal roosts with numbers in the tens of thousands. At northern latitudes crows exhibit migratory behavior but are commonly year-long residents in Georgia.

Crows are best classified as opportunistic omnivores. They consume a wide variety of animal and vegetable foods including commercial agricultural crops, fruits, nuts, insects, small mammals, salamanders, lizards, fledgling birds, bird eggs, carrion and human garbage. As with many other aspects of their life history, they exhibit great ingenuity in feeding including dropping hard-shelled nuts and other foods from great heights to break the items into consumable amounts.

Crows begin nesting as early as late February and construct a new nest each year from sticks, twigs and other materials. Nests are often in the fork of a tree next to the trunk, 20 - 60 feet above the ground. Conifer trees are preferred nesting trees when available. Both sexes participate in nest construction and sub-adult birds may assist as helpers. The average clutch is 4 - 5 pale bluish green to olive green eggs that are typically splotched with browns and grays. The incubation period is about 18 days with the young fledging in 28 - 35 days. Both sexes assist in rearing the young and only one brood is raised per nesting season.

Like most birds, crows and their eggs are vulnerable to a variety of mortality factors. Predators include owls, hawks, eagles, rat snakes and a variety of mammals. Crows often respond to predators with a behavior referred to as "mobbing" where a flock will relentlessly chase a predator while calling (cawing) vociferously. In addition to predators, crows are also susceptible to a variety of diseases. One of the most recently noted is West Nile Virus, which was discovered in the U.S. in 1999 and is particularly virulent to crows and other members of the family Corvidae. It remains to be seen how this disease will impact crow populations in the Southeast.

### NUISANCE

Crows have a reputation as agricultural pests and predators on songbirds and various other wildlife species. In this regard humans have often attempted to control their numbers. However, crow populations have remained stable and even increased in many areas, which is a testament to their adaptability. At present in Georgia crows can be controlled by lethal means anytime they are causing damage to agricultural crops.

### UTILIZATION

Crows are a migratory game species in Georgia and can be legally taken as specified in the state hunting regulations. They are typically hunted in a manner similar to waterfowl using mouth calls and decoys. They are a challenging and sporting game bird and also provide excellent table fare when properly prepared.

# Green-winged Teal

*Anas crecca* ORDER: ANSERIFORMES FAMILY: ANATIDAE

 **IUCN** Conservation Status: Least Concern



© Ian Davies

A very small, brightly patterned duck, the Green-winged Teal prefers shallow ponds with lots of emergent vegetation. Along the coast, it prefers tidal creeks, mudflats, and marshes to more open water.

## Adult Description

- Small duck.
- Iridescent green patch in wings, with white stripe in front.
- Yellowish tail stripe.
- Male with white stripe up shoulder, dark reddish and green head.

## Measurements

Both Sexes

<b>Length</b>	12.2–15.4 in 31–39 cm
<b>Wingspan</b>	20.5–23.2 in 52–59 cm
<b>Weight</b>	4.9–17.6 oz 140–500 g

## Cool Facts

- The American and Eurasian forms of the Green-winged Teal were formerly considered different species. The Eurasian teal differ from the American by lacking the vertical white shoulder stripe and having a horizontal white stripe along the back instead. Eurasian teal show up casually each year along both the Pacific and Atlantic coasts.

**Habitat-** Marsh

**Food-** Seeds

**Nesting Facts**

**Condition at Hatching**


Covered in down and able to leave the nest soon after hatching.

**Nest Placement-** Ground

**Behavior-** Dabbler

# Hooded Merganser

*Lophodytes cucullatus* ORDER: ANSERIFORMES FAMILY: ANATIDAE

 **IUCN** Conservation Status: Least Concern



© Christopher L. Wood

“Hooded” is something of an understatement for this extravagantly crested little duck. Adult males are a sight to behold, with sharp black-and-white patterns set off by chestnut flanks. Females get their own distinctive elegance from their cinnamon crest. Hooded Mergansers are fairly common on small ponds and rivers, where they dive for fish, crayfish, and other food, seizing it in their thin, serrated bills. They nest in tree cavities; the ducklings depart with a bold leap to the forest floor when only one day old.

- **Size & Shape**

Hooded Mergansers are small ducks with a thin bill and a fan-shaped, collapsible crest that makes the head look oversized and oblong. In flight, the wings are thin and the tail is relatively long and rounded.

- **Color Pattern**

Adult male Hooded Mergansers are black above, with a white breast and rich chestnut flanks. The black head has a large white patch that varies in size when the crest is raised or lowered, but is always prominent. Females and immatures are gray and brown, with warm tawny-cinnamon tones on the head.

- **Behavior**

Hooded Mergansers dive to catch aquatic insects, crayfish, and small fish. Males court females by expanding their white, sail-like crests and making very low, gravelly, groaning calls. Hooded Mergansers fly distinctively, with shallow, very rapid wingbeats.

- **Habitat**

Look for Hooded Mergansers on small bodies of freshwater. In summer, these small ducks nest in holes in trees, often near freshwater ponds or rivers. For winter, they move to larger bodies of freshwater, marshes, and protected saltwater bays.

## Measurements

*Both Sexes*

<b>Length</b>	15.7–19.3 in 40–49 cm
<b>Wingspan</b>	23.6–26 in 60–66 cm
<b>Weight</b>	16–31 oz 453–879 g

Smaller than a Red-breasted Merganser; larger than a Bufflehead.

## Cool Facts

- Along with Wood Ducks and other cavity-nesting ducks, Hooded Mergansers often lay their eggs in other females' nests. This is called "brood parasitism" and is similar to the practice of Brown-headed Cowbirds, except that the ducks only lay eggs in nests of their own species. Female Hooded Mergansers can lay up to about 13 eggs in a clutch, but nests have been found with up to 44 eggs in them.
- Hooded Mergansers find their prey underwater by sight. They can actually change the refractive properties of their eyes to improve their underwater vision. In addition, they have an extra eyelid, called a "nictitating membrane," which is transparent and helps protect the eye during swimming, like a pair of goggles.
- Hooded Merganser ducklings leave their nest cavity within 24 hours of hatching. First, their mother checks the area around the nest and calls to the nestlings from ground level. From inside the nest, the little fluffballs scramble up to the entrance hole and then flutter to the ground, which may be 50 feet or more below them. In some cases they have to walk half a mile or more with their mother to the nearest body of water.
- On the bird family tree, Hooded Mergansers (genus *Lophodytes*) lie between goldeneyes (*Bucephala*) and the other North American mergansers (*Mergus*). They share many courtship behaviors and calls with both of those groups.
- The Hooded Merganser is the second-smallest of the six living species of mergansers (only the Smew of Eurasia is smaller) and is the only one restricted to North America.
- The oldest Hooded Merganser on record was 14 years, 6 months old.

## Habitat- Lake/Pond

Hooded Mergansers breed in forested wetlands throughout the eastern half of North America and the Pacific Northwest, and may also nest in treeless wetlands where people have put up nest boxes. They are most common in forests around the Great Lakes. Their habitat ranges from spruce-fir forest in the Northwest to pine-hardwood forest and cottonwood-elder riparian forest in the Midwest, to oak-cypress-tupelo forest in the Southeast. Families of newly hatched ducklings forage in shallow water such as marshes, small lakes, ponds, beaver wetlands, swamps, and forested rivers—and rest on exposed rocks, logs, or sandbars. They winter in these habitats as well as on shallow freshwater and brackish bays, estuaries, and tidal creeks, where they often concentrate along the edge of ice. During migration they stop in a wider range of habitats, including open waters of rivers and lakes, brackish coastal bays, tidal creeks, and seasonally flooded forest.

## Food- Fish

Hooded Mergansers eat small fish, aquatic insects, crustaceans (especially crayfish), amphibians, vegetation, and mollusks—their diet is broader than in other mergansers, which eat fish almost exclusively. Hooded Mergansers dive in clear, shallow forest ponds, rivers, and streams and locate prey by sight, with eyes that are specially adapted to seeing underwater. They propel themselves with their feet and use their slender, serrated bills to grasp their prey. Ducklings can dive for food right after leaving the nest, at one day old, though their dives are short and shallow during their first week. They also feed by swimming with just their heads underwater.

## Nesting Facts

### Clutch Size

5–13 eggs

### Number of Broods

1 broods

### Egg Length

1.7–2.4 in  
4.3–6.2 cm

### Egg Width

1.5–2.1 in  
3.9–5.4 cm

### Incubation Period

26–41 days

### Nestling Period

1 days

### **Egg Description**

White, nearly spherical, and unusually thick shelled.

### **Condition at Hatching**

Well-developed and downy, with brown backs, yellowish or reddish cheeks, white underparts, and grayish spots on wings and tail.

### **Nest Description**

The female makes a shallow bowl in the material already present in the cavity, gradually adding down from her belly after she starts laying eggs.

### **Nest Placement- Cavity**

The female chooses the nest site, and may start scouting for next year's tree cavity at the end of each breeding season. Nest cavities can be in live or dead trees and are usually close to water. Cavities are typically 10–50 feet off the ground, up to about 90 feet. Hooded Mergansers nest readily in boxes, preferring those with wood shavings or nest material from previous uses. They prefer cavities with 3–5 inch openings.

### **Behavior- Surface Dive**

Unlike dabbling ducks, Hooded Mergansers swim low in the water. Their legs are far back on their bodies, which helps in diving but makes them awkward on land. They take flight by running across the water, flying with fast wingbeats and never gliding until they are about to land (by skidding to a stop on the water). Hooded Mergansers are usually in pairs or small groups of up to 40 birds. They court in groups of one or more females and several males. The males raise their crests, expanding the white patch, often while shaking their heads. Their most elaborate display is head-throwing, in which they jerk their heads backwards to touch their backs, with crests raised, while giving a froglike croak. Females court by bobbing their heads and giving a hoarse gack. Once a female begins incubating eggs her mate abandons her, and it's not known if they reunite the following season. Incubating females may use a broken-wing display to protect eggs or nestlings from raccoons, mink, black rat snakes, black bears, pine martens, European Starlings, Northern Flickers, Red-headed Woodpeckers, and Red-bellied Woodpeckers.

### **Conservation- Least Concern**


Hooded Mergansers are fairly common and their populations are stable. They were overhunted in the early twentieth century, but hunting pressure has declined markedly since then: hunters take about 95,000 Hooded Mergansers per year in the U.S., out of roughly 15 million ducks shot each year. Even before the twentieth century, humans cleared and altered many forests where Hooded Mergansers nest, in the process reducing or displacing breeding birds from regions of their original range. As with all birds that nest in tree holes, dead trees are important habitat components and landowners can improve Hooded Merganser habitat by leaving dead trees standing on their property. In addition, Hooded Mergansers take readily to nest boxes of the appropriate size, and programs in Missouri, Maine, Iowa, and Oregon have helped local populations increase.

### **Migration**

Resident to medium-distance migrant. In eastern North America, many Hooded Mergansers move south and southwest in winter, but some actually migrate north to spend winters in the Great Lakes and southern Canada. Most of the Hooded Mergansers that breed in the upper Midwest migrate along the Mississippi River. Hooded Mergansers breeding west of the Rockies migrate west and south toward the Pacific. Hooded Mergansers are late fall migrants, sometimes moving just ahead of winter ice. In spring they arrive early at breeding grounds, within a few days of the ice melting.

# Mallard

*Anas platyrhynchos* ORDER: ANSERIFORMES FAMILY: ANATIDAE

 **IUCN** Conservation Status: Least Concern



© Cameron Rognan

If someone at a park is feeding bread to ducks, chances are there are Mallards in the fray. Perhaps the most familiar of all ducks, Mallards occur throughout North America and Eurasia in ponds and parks as well as wilder wetlands and estuaries. The male's gleaming green head, gray flanks, and black tail-curl arguably make it the most easily identified duck. Mallards have long been hunted for the table, and almost all domestic ducks come from this species.

- **Size & Shape**

Mallards are large ducks with hefty bodies, rounded heads, and wide, flat bills. Like many “dabbling ducks” the body is long and the tail rides high out of the water, giving a blunt shape. In flight their wings are broad and set back toward the rear.

- **Color Pattern**

Male Mallards have a dark, iridescent-green head and bright yellow bill. The gray body is sandwiched between a brown breast and black rear. Females and juveniles are mottled brown with orange-and-brown bills. Both sexes have a white-bordered, blue “speculum” patch in the wing.

- **Behavior**

Mallards are “dabbling ducks”—they feed in the water by tipping forward and grazing on underwater plants. They almost never dive. They can be very tame ducks especially in city ponds, and often group together with other Mallards and other species of dabbling ducks.

- **Habitat**

Mallards can live in almost any wetland habitat, natural or artificial. Look for them on lakes, ponds, marshes, rivers, and coastal habitats, as well as city and suburban parks and residential backyards.

## Measurements

*Both Sexes*

**Length**  
19.7–25.6 in  
50–65 cm

**Wingspan**  
32.3–37.4 in  
82–95 cm

**Weight**  
35.3–45.9 oz  
1000–1300 g

## Relative Size

A fairly large duck, noticeably larger than teal but much smaller than a Canada Goose.

## Cool Facts

- The Mallard is the ancestor of nearly all domestic duck breeds (everything except the Muscovy Duck). Domestic ducks can be common in city ponds and can be confusing to identify—they may lack the white neck ring, show white on the chest, be all dark, or show oddly shaped crests on the head.
- The widespread Mallard has given rise to a number of populations around the world that have changed enough that they could be considered separate species. The "Mexican Duck" of central Mexico and the extreme southwestern United States and the Hawaiian Duck both are closely related to the Mallard, and in both forms the male is dull like the female. The Mexican Duck currently is considered a subspecies of the Mallard, while the Hawaiian Duck is still given full species status.
- Mallard pairs are generally monogamous, but paired males pursue females other than their mates. So-called "extra-pair copulations" are common among birds and in many species are consensual, but male Mallards often force these copulations, with several males chasing a single female and then mating with her.
- Mallard pairs form long before the spring breeding season. Pairing takes place in the fall, but courtship can be seen all winter. Only the female incubates the eggs and takes care of the ducklings.
- Ducks are strong fliers; migrating flocks of Mallards have been estimated traveling at 55 miles per hour.
- The standard duck's quack is the sound of a female Mallard. Males don't quack; they make a quieter, rasping sound.
- Mallards, like other ducks, shed all their flight feathers at the end of the breeding season and are flightless for 3–4 weeks. They are secretive during this vulnerable time, and their body feathers molt into a concealing "eclipse" plumage that can make them hard to identify.
- Many species of waterfowl form hybrids, and Mallards are particularly known for this, hybridizing with American Black Duck, Mottled Duck, Gadwall, Northern Pintail, Cinnamon Teal, Green-winged Teal, and Canvasback, as well as Hawaiian Ducks, the Grey Duck of New Zealand, and the Pacific Black Duck of Australia.
- The oldest known Mallard lived to be at least 27 years 7 months old.

## Habitat

Mallards can be found in almost any wetland habitats, including permanent wetlands such as marshes, bogs, riverine floodplains, beaver ponds, lakes, reservoirs, ponds, city parks, farms, and estuaries. They also occur in prairie potholes and ephemeral wetlands; they may be found feeding along roadside ditches, pastures, croplands and rice fields.

## Food

Mallards are generalist foragers and will eat a wide variety of food. They don't dive, but dabble to feed, tipping forward in the water to eat seeds and aquatic vegetation. They also roam around on the shore and pick at vegetation and prey on the ground. During the breeding season, they eat mainly animal matter including aquatic insect larvae, earthworms, snails and freshwater shrimp. During migration, many Mallards consume largely agricultural seed and grain. In city parks, they readily accept handouts from parkgoers.

## Nesting

### Nesting Facts

<b>Clutch Size</b>	1–13 eggs
<b>Number of Broods</b>	1–2 broods
<b>Egg Length</b>	2.1–2.5 in 5.3–6.4 cm
<b>Egg Width</b>	1.5–1.8 in 3.9–4.5 cm
<b>Incubation Period</b>	23–30 days

### **Egg Description**

Unmarked creamy to grayish or greenish buff.

### **Condition at Hatching**

Newly hatched birds are covered in down and alert; they are ready to leave the nest within 13–16 hours.

### **Nest Description**

The female forms a shallow depression or bowl on the ground in moist earth. She does not carry material to the nest but rather pulls vegetation she can reach toward her while sitting on nest. During egg-laying phase, she lines the nest with grasses, leaves, and twigs from nearby. She also pulls tall vegetation over to conceal herself and her nest. After incubation begins, she plucks down feathers from her breast to line the nest and cover her eggs. The finished nest is about a foot across, with a bowl for the eggs that is 1–6 inches deep and 6–9 inches across.

### **Nest Placement**

Mallards nest on the ground on dry land that is close to water; nests are generally concealed under overhanging grass or other vegetation. Occasionally, Mallards nest in agricultural fields, especially alfalfa but also winter wheat, barley, flax, and oats. Both urban and wild populations readily nest in artificial nesting structures. Pairs search for nest sites together, typically on evening flights circling low over the habitat. Occasionally nests are placed on floating mats of vegetation or woven into plant stems that rise out of the water.

## **Behavior**

Mallards are an abundant city and suburban park duck and because of constant feedings by park visitors, they can become very tame and approachable. In more natural settings and where Mallards are heavily hunted, they can be very wary of approaching people. They commonly associate with and may hybridize with other dabbling ducks. Mallards have a huge variety of displays that can be fascinating to watch and decipher. Most displays are ritualized versions of common motions: males may face off with a head-bob, threaten an aggressor with an open bill, or push against each other, breast to breast. Paired males defend their territories with vigorous acrobatic chases. Males court females by shaking or flicking the head side to side, looking over their shoulder, or raising up in the water and flapping their wings. Several males often gather around a female to display. A female encourages a male by nodding her head back and forth or paddling with her head held low.


## **Conservation**

Mallards are the most widespread and abundant duck in North America. Their numbers increase during wet periods and decline when there are droughts in the middle of the continent—over the last 50 years their estimated numbers have cycled between about 5 million and 11 million. Mallards are also the most heavily hunted North American ducks, accounting for about 1 of every 3 ducks shot. State and federal wildlife agencies keep close track of the numbers shot—visit [www.flyways.us](http://www.flyways.us) to see summaries of duck numbers and hunting statistics. Like other waterfowl, Mallards can be poisoned when they ingest lead shot while feeding. In 1977, a mandatory switch to steel shot along the Mississippi Flyway helped greatly alleviate lead poisoning in Mallards. This species can also be affected by poor water quality, including mercury, pesticide, and selenium pollution, wetland clearing or drainage, and oil spills.



# Mourning Dove

*Zenaida macroura* ORDER: COLUMBIFORMES FAMILY: COLUMBIDAE

 IUCN Conservation Status: Least Concern



© Don Rash/GBBC

A graceful, slender-tailed, small-headed dove that's common across the continent. Mourning Doves perch on telephone wires and forage for seeds on the ground; their flight is fast and bullet straight. Their soft, drawn-out calls sound like laments. When taking off, their wings make a sharp whistling or whinnying. Mourning Doves are the most frequently hunted species in North America.

- **Size & Shape**

Plump-bodied and long-tailed, with short legs, small bill, and a head that looks particularly small in comparison to the body. The long, pointed tail is unique among North American doves.

- **Color Pattern**

Mourning Doves often match their open-country surroundings. They're delicate brown to buffy-tan overall, with black spots on the wings and black-bordered white tips to the tail feathers.

- **Behavior**

Mourning Doves fly fast on powerful wingbeats, sometimes making sudden ascents, descents, and dodges, their pointed tails stretching behind them.

- **Habitat**

You can see Mourning Doves nearly anywhere except the deep woods. Look for them in fields or patches of bare ground, or on overhead perches like telephone wires.

## Measurements

*Male*

### Length

9.1–13.4 in  
23–34 cm

### Wingspan

17.7 in  
45 cm

**Weight**

3.4–6 oz

96–170 g

*Female***Wingspan**

33.9–17.7 in

86–45 cm

**Weight**

3–5.5 oz

86–156 g

**Relative Size**

Smaller, slenderer than Rock Pigeon

**Cool Facts**

- During the breeding season, you might see three Mourning Doves flying in tight formation, one after another. This is a form of social display. Typically the bird in the lead is the male of a mated pair. The second bird is an unmated male chasing his rival from the area where he hopes to nest. The third is the female of the mated pair, which seems to go along for the ride.
- Mourning Doves tend to feed busily on the ground, swallowing seeds and storing them in an enlargement of the esophagus called the crop. Once they've filled it (the record is 17,200 bluegrass seeds in a single crop!), they can fly to a safe perch to digest the meal.
- Mourning Doves eat roughly 12 to 20 percent of their body weight per day, or 71 calories on average.
- Perhaps one reason why Mourning Doves survive in the desert: they can drink brackish spring water (up to almost half the salinity of sea water) without becoming dehydrated the way humans would.
- The Mourning Dove is the most widespread and abundant game bird in North America. Every year hunters harvest more than 20 million, but the Mourning Dove remains one of our most abundant birds with a U.S. population estimated at 350 million.
- The oldest known Mourning Dove was 31 years 4 months old.

**Habitat**

Primarily a bird of open country, scattered trees, and woodland edges, but large numbers roost in woodlots during winter. Feeds on ground in grasslands, agricultural fields, backyards, and roadsides.

**Food**

Seeds make up 99 percent of a Mourning Dove's diet, including cultivated grains and even peanuts, as well as wild grasses, weeds, herbs, and occasionally berries. They sometimes eat snails. Mourning Doves eat roughly 12 to 20 percent of their body weight per day, or 71 calories on average.

**Nesting****Nesting Facts****Clutch Size**

2 eggs

**Number of Broods**

1-6 broods

**Egg Length**

1–1.2 in

2.6–3 cm

**Egg Width**

0.8–0.9 in

2.1–2.3 cm

**Incubation Period**

14 days

**Nestling Period**

12–15 days

**Egg Description**

Unmarked, white.

**Condition at Hatching**

Helpless, eyes closed, sparsely covered in cream-colored down, unable to hold up head, dependent on adults for warmth.

**Nest Description**

A flimsy assembly of pine needles, twigs, and grass stems, unlined and with little insulation for the young. Over 2 to 4 days, the male carries twigs to the female, passing them to her while standing on her back; the female weaves them into a nest about 8 inches across. Mourning Doves sometimes reuse their own or other species' nests.

**Nest Placement- Tree**

Typically nests amid dense foliage on the branch of an evergreen, orchard tree, mesquite, cottonwood, or vine. Also quite commonly nests on the ground, particularly in the West. Unbothered by nesting around humans, Mourning Doves may even nest on gutters, eaves, or abandoned equipment.



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© René Corado / WFVZ

**Behavior-** Ground Forager

Mourning Doves feed on the ground and in the open. They peck or push aside ground litter, but don't scratch at the ground. Males have favorite "cooing perches" they defend from other males. Members of a pair preen each other with gentle nibbles around the neck as a pair-bonding ritual. Eventually, the pair will progress to grasping beaks and bobbing their heads up and down in unison.

**Conservation-** Least Concern

Mourning Doves are common across the continent, and generally have prospered as people settled the landscape. This is despite their status as the continent's most popular game bird: hunters shoot more than 20 million Mourning Doves each year. Because of the birds' popularity, game managers monitor their numbers to set hunting limits. Although Mourning Doves seem to do well in the face of hunting pressure, they also face the less visible problem of lead poisoning. Mourning Doves forage on the ground, and in heavily hunted areas they may wind up eating fallen lead shot (records show some doves have eaten up to 43 pellets). Studies have found this problem is worst around fields specifically planted to attract the doves, and that about 1 in 20 doves wind up eating lead.

The mourning dove (*Zenaida macroura*) is one of the most common birds in Georgia known both to hunters as a challenging game bird and to homeowners as an occasional visitor to feeders. Almost everyone recognizes its mournful cooing song from which it gets its name.

### RANGE AND HABITAT

The mourning dove is one of twelve species of doves and pigeons in North America. It ranges widely over the continent, from Canada to Mexico and the Caribbean Islands, and from coast to coast. The northern extent of its range has gradually expanded over the last several years. Mourning doves are habitat generalists, meaning they are able to live in many different habitat types. They can be found in the mixed-use landscapes of the east, the vast farmlands of the midwest, and dry, desert regions in the west. The only habitat where doves rarely are seen is the interior of large tracts of unbroken, mature forest. In Georgia, doves are abundant and found throughout the state. There is little doubt that they were one of the bird species that benefited from man's clearing of large forests and subsequent cultivation of land. Newly created forest openings and agricultural fields provided habitat for the growth of native forbs, grasses and agricultural crops where doves found abundant seeds.

### BIOLOGY

One reason doves are so adaptable is their diet. Doves eat seeds from a variety of different plants, including those from cultivated crops and native vegetation. Many of the seeds are small and difficult for a person to see. Doves also ingest small pebbles, or grit, that aid in the digestion of hard-coated seeds. Unlike some birds, which can satisfy their water requirement from dew or various food items, doves need to drink surface water, at least occasionally. They often drink water from ponds, creeks, and even water-filled ditches and potholes. With respect to nesting habits, doves are adaptable and may utilize a number of different nesting sites. Dove nests are rather flimsy when compared to nests of other birds. In Georgia, dove nests commonly are located in the branches of pine trees, but also have been found on vine-covered trellises, window ledges and even old abandoned vehicles.

Mourning dove nesting cycles are relatively brief about 28 days for the entire cycle. The first half is spent incubating the eggs (almost always two) while the second half involves brood rearing of young doves (called squabs). Part of brood rearing involves feeding squabs on pigeon milk - a milk-like substance secreted by the crop gland of adult doves and pigeons. Pigeon milk is nutritious and energy rich and the squabs grow quickly.

Doves use this short nesting cycle to their advantage, as they will attempt to nest several times a year, especially in Georgia and other southern portions of their range. Adult males and females will pair for the year and both sexes are actively involved in the nesting cycle, from nest building, to egg incubation, to feeding of squabs. The brief mourning dove nesting cycle, and the fact that they will attempt to nest multiple times a year, is better understood if consideration is given to their short lifespan, which averages only one and a half years. Primary sources of mortality include predation and diseases. Natural predators of doves include a number of predatory birds, mammals and snakes. Major diseases include avian pox and trichomoniasis, which are not transmissible to humans.

### MANAGEMENT


Mourning doves are migratory especially doves in northern portions of their range. As a migratory species, the U.S. Fish and Wildlife Service (USFWS) ultimately is responsible for mourning dove management in the United States. In states with a dove hunting season, such as Georgia, state wildlife agencies are allowed to set seasons and bag limits within a framework established by the USFWS. State wildlife agencies also cooperate with the USFWS in monitoring the annual dove population status through various surveys, such as the call-count survey and breeding bird survey.

Presently, doves are hunted in thirty-seven states. In terms of harvest, they are the number one game bird in the country and in Georgia. In fact, more doves are harvested than all other migratory game birds combined. In 2002, there was an estimated 22 million and 1.6 million doves bagged in the U.S. and Georgia, respectively. Furthermore, there are about 60,000 active dove hunters in Georgia. Dove hunting provides recreation and good table fare. Additionally, in southern states like Georgia, dove hunting often is a highly social affair with friends and families enjoying a day of hunting, eating and socializing.

Most dove hunting is done on or around agricultural fields. Doves congregate around recently harvested crop fields of corn, peanuts, millet, and sunflowers. Dove hunters often will plant fields in these crops and/or other favored plantings for the sole reason of providing a dove hunting opportunity. Other field features, such as nearby watering sources and perching places such as snags (dead trees) and power lines, add to the fields appeal to doves. Shooting doves over baited fields is illegal, thus it is important to know what constitutes legal dove hunting. Two publications by the Georgia DNR-Wildlife Resources Division, [Dove Hunting And Agricultural Practices in Georgia](#) and [Small Game Management in Georgia](#), provide more information on legal dove hunting. Hunters also may contact a local WRD Law Enforcement or WRD Game Management office for more information on dove hunting legalities.

# Redhead

*Aythya americana* ORDER: ANSERIFORMES FAMILY: ANATIDAE

 **IUCN** Conservation Status: Least Concern



© Brian L. Sullivan

An aptly named diving duck, the Redhead can be easily identified by its bright red head and gray back. Many female Redheads make no nests of their own, but instead lay their eggs in the nests of other ducks.

## Adult Description

- Medium-sized duck.
- Rounded head.
- Bill blue with black tip.
- Male with bright red head, gray back, and black chest and rear end.

## Immature Description

Similar to adult female.

## Measurements

*Both Sexes*

### Length

16.5–21.3 in  
42–54 cm

### Wingspan

29.5–31.1 in  
75–79 cm

### Weight

22.2–52.9 oz  
630–1500 g

## Cool Facts

- The Redhead is known to lay eggs in the nests of other Redheads, at least 10 other duck species, and even nests of the American Bittern and Northern Harrier. Many parasitically laid eggs fail to hatch.

**Habitat-** Lake/Pond

**Food-** Plants

**Nesting**


**Nest Placement-** Floating

**Behavior-** Surface Dive

Ring-necked Duck

# Ring-necked Duck

*Aythya collaris* ORDER: ANSERIFORMES FAMILY: ANATIDAE

 **IUCN** Conservation Status: Least Concern



© Glenn Bartley

The male Ring-necked Duck is a sharply marked bird of gleaming black, gray, and white. Females are rich brown with a delicate face pattern. At distance, look for this species' distinctive, peaked head to help you identify it. Even though this species dives for its food, you can find it in shallow wetlands such as beaver swamps, ponds, and bays. Of all the diving duck species, the Ring-necked Duck is most likely to drop into small ponds during migration.

- **Size & Shape**

A compact diving duck with a distinctive head shape—a sloping forehead and peaked rear crown. The crown flattens when they are diving. In flight, Ring-necked Ducks appear large-headed with a thin neck and a short, round body.

- **Color Pattern**

Males are bold black-and-gray ducks with a dark head, black back, and gray sides with a white hash mark on the chest. Females are rich brown with a contrastingly pale cheek, a white patch near the bill, and a whitish eyering. Adult males have a prominent white ring on the bill.

- **Behavior**

Ring-necked Ducks are often in small flocks and pairs, diving to feed on mollusks, invertebrates, and submerged aquatic vegetation. Sometimes they flock with scaup; other times you may see them with dabbling ducks.

- **Habitat**

Look for Ring-necked Ducks on smaller bodies of water than other diving ducks. In winter and on migration, this can include beaver ponds, small lakes, marshes, cattle ponds, or even flooded agricultural fields across North America. Ring-necked Ducks breed in freshwater marshes, bogs, and other shallow, often acidic wetlands.

## Measurements

*Both Sexes*

### Length

15.4–18.1 in  
39–46 cm

### Wingspan

24.4–24.8 in  
62–63 cm

**Weight** 17.3–32.1 oz  
490–910 g

*Relative Size*

Smaller than a Mallard or Redhead; about the same size as Lesser Scaup.

## Cool Facts

- This bird's common name (and its scientific name "*collaris*," too) refer to the Ring-necked Duck's hard-to-see chestnut collar on its black neck. It's not a good field mark to use for identifying the bird, but it jumped out to the nineteenth century biologists that described the species using dead specimens.
- During fall migration, Ring-necked Ducks can form immense flocks. Several hundred thousand congregate each fall on certain lakes in Minnesota to feed on wild rice.
- Ring-necked Ducks on their breeding grounds occasionally get attacked by the much larger Common Loon, the Red-necked Grebe, and even the much smaller Pied-billed Grebe.
- The oldest known Ring-necked Duck was 20 years 5 months old. It was banded in 1964 in Louisiana and was shot during hunting season in 1983, in Minnesota.

## Habitat- Lake/Pond

Ring-necked Ducks breed in freshwater marshes and bogs across the boreal forest of northern North America. Although they're diving ducks, they're frequently seen in quite shallow waters (four feet deep or less), where patches of open water are fringed with aquatic or emergent vegetation such as sedges, lilies, and shrubs. They also use beaver ponds and other impoundments. On migration, Ring-necked Ducks stop to rest and feed on shallow lakes and impoundments with dense stands of cattails, bulrushes, and other emergent vegetation. They can form very large flocks on some lakes. During the winter, look for them in swamps, river floodplains, brackish portions of estuaries, shallow inland lakes, sloughs, marshes, reservoirs, and other managed freshwater impoundments.

## Food- Plants

Ring-necked Ducks eat submerged plants and aquatic invertebrates. The plants they eat include leaves, stems, seeds, and tubers of pondweed, water lilies, wild celery, wild rice, millet, sedges, and arrowhead. They also eat mollusks (swallowing them whole and crushing the shells in their gizzard) as well as snails, caddisflies, dragonfly nymphs, midges, earthworms, and leeches. Protein-rich animal food is important during the breeding season, when adults are raising their young. Adult females eat almost entirely animal food during the time they're feeding young. Plant foods become much more important in the diet during fall migration.

## Nesting

### Nesting Facts

**Clutch Size** 6–14 eggs  
**Number of Broods** 1 broods  
**Egg Length** 0.7–0.9 in  
1.9–2.4 cm  
**Egg Width** 0.6–0.7 in  
1.4–1.7 cm  
**Incubation Period** 25–29 days  
**Nestling Period** 1–2 days  
**Condition at Hatching**

Independent, with a fine coat of down; ducklings leave nest within 2 days of hatching.



## **Nest Description**

Ring-necked Ducks don't do much nest building until the female begins to lay eggs; at this time the nest is typically just a flimsy collection of bent-over plant stems. The female then makes a simple bowl out of sedges and other plants that she gathers from nearby the nest. She lines the nest with her own down feathers. The finished nest is up to 11 inches across, with a cup 2-4 inches deep. Nests are 1–10 inches above the water surface, and there's usually a ramp built to help the incubating female get in and out of the nest.

## **Nest Placement- Ground**

Ring-necked Ducks put their nests among dense sedges and other emergent plants in marshes. Pairs choose these sites by swimming at the vegetation edge or by making low circling flights over potential spots. They typically build their nests directly over the water or on floating vegetation; this helps protect the nests from land-based predators.

## **Behavior- Surface Dive**


Ring-necked Ducks feed by diving underwater, rather than by tipping up as "dabbling" ducks do. When diving, they leap forward in an arc to plunge underwater, and they swim using only their feet for propulsion. They tend to remain in pairs during the breeding season but group into flocks of several to several thousand during migration and winter. Like many other ducks, the Ring-necked Duck uses many kinds of displays to ward off rivals and to seek mates; almost any group of ducks offers an opportunity to watch these displays at work. When warning away another bird, Ring-necked Ducks lower their bill to meet their chest or push against each other, breast to breast, while swimming. This can intensify to bites and blows with the wings, particularly during the breeding season. When courting, males often throw their head sharply backward, touching the back; swim rapidly while nodding the head; or act as if they are preening their wing. As pairs begin to form, the two birds may perform exaggerated neck stretches or dip their bills in the water as if drinking. Pairs tend to form in spring and stay together at least until incubation begins.

## **Conservation- Least Concern**

Duck populations can fluctuate markedly from year to year because of wetland conditions on the breeding grounds. In general, Ring-necked Duck numbers are stable or slightly increasing. They are among the most likely of North American ducks to eat spent shot they find on the wetland bottoms where they feed. The 1991 ban on lead shot for waterfowl hunting helped alleviate this, but old lead shot remains in wetlands where Ring-necked Ducks continue to find it. Ring-necked Ducks are sensitive to development or degradation of wetland habitat on their breeding grounds, wintering grounds, and migration routes. About 450,000 Ring-necked Ducks are taken each year by hunters, according to the U.S. Fish and Wildlife Service, which carefully manages duck populations to avoid overhunting.

# Ruffed Grouse

*Bonasa umbellus* ORDER: GALLIFORMES FAMILY: PHASIANIDAE

 IUCN Conservation Status: Least Concern



© Tim Lenz

Many people's first experience with the Ruffed Grouse is when it explodes from the forest floor in a flurry of wings. Often, it's gone before they can turn around. The grouse's cryptic coloration and slow, deliberate walk make it virtually invisible.

## Adult Description

- Medium to large chicken-like bird.
- Thick bodied.
- Tail moderately long, rounded.
- Rounded wings in flight.
- Short crest on head.
- Cryptic coloring of gray and brown mottled with dark and light spots.

## Male Description

Large neck ruff. Large crest. Rump feathers with two or more whitish dots.

## Female Description

Crest and tail shorter. Ruff smaller, sometimes not apparent. Rump feathers with one rounded or oval dot. Dark tail band usually broken or blotchy.

## Immature Description

Juvenile looks like female, but does not have black band on tail. Immature looks similar to adult.

## Measurements

*Both Sexes*

### Length

15.7–19.7 in  
40–50 cm

### Wingspan

19.7–25.2 in  
50–64 cm

### Weight

15.9–26.5 oz  
450–750 g

## Cool Facts

- The toes of Ruffed Grouse grow projections off their sides in winter, making them look like combs. The projections are believed to act as snowshoes to help the grouse walk across snow.
- In winter, the Ruffed Grouse may dive into soft snow to spend the night. Falling snow can hide the evidence of its entry. A grouse bursting at one's feet from flat snow covered ground can be quite startling.
- In much of their range, Ruffed Grouse populations go through 8 to 11 year cycles of increasing and decreasing numbers. Their cycles can be attributed to the snowshoe hare cycle. When hare populations are high, predator populations increase too. When the hare numbers go down, the predators must find alternate prey and turn to grouse, decreasing their numbers.
- Ruffed Grouse nests occasionally are parasitized by Ring-necked Pheasants or Wild Turkeys that lay eggs in the nests.

## Habitat- Forest

Aspen woodlands and early succession mixed deciduous forests, with small clearings.

## Food- Omnivore

Buds, twigs, catkins, leaves, ferns, soft fruits, acorns, and some insects.

## Nesting

### Nesting Facts

#### Egg Description

Milky to cinnamon-buff, usually plain, but may have reddish spots.

#### Condition at Hatching

Covered in brownish down and eyes open. Leave the nest within 24 hours and feed themselves immediately.

#### Nest Description

A bowl-like depression in dead leaves and vegetation on the ground, typically at the base of a tree, stump, or boulder.

## Nest Placement- Ground

## Behavior- Foliage Gleaner

Male drums from fallen log to attract females. Male may mate with more than one female, and females may visit several males. After copulation, male has nothing more to do with reproduction; the female raises the young alone.

## Conservation- Least Concern

The Ruffed Grouse is an important game bird in most of its range. Management efforts seek to maintain early to mid-successional habitats. Eastern populations are likely to decline as deciduous forests mature and are fragmented by rural and suburban development.

### BIOLOGY

Although males and females are similar in appearance, males generally have longer tails and a more pronounced neck ruff. Drumming - beating the wings while standing on a stump or horizontal log - begins in March. This uniquely male behavior is used to call mates and defend territories within a range of about 5 acres. Females build simple, bowl-shaped nests at the base of a tree or stump in early April. Only the females incubate eggs and brood young. They sometimes even feign a broken wing to distract predators from their chicks. While hens can average 11 eggs per nest, actual brood sizes in North Georgia average five eggs or less due to natural mortality and predation. Hens may cover over 25 acres while foraging with their insect-eating chicks as they feed in relatively open areas. Estimates based on hunter harvest data, drumming surveys and field observations show a somewhat cyclic fluctuation in grouse populations over the past 25 years with a general decrease in numbers since 1996.

### HABITAT & RANGE

Habitat suitability limits the ruffed grouse population to a range extending from Canada to North Georgia. Early stage hardwood forest mixed with some mature mast trees provides ideal habitat. Adult ruffed grouse are opportunistic feeders, foraging on over 300 different plant species. Early-stage forests with a dense growth of small trees interspersed with shrubby vegetation and some larger mast trees provide the best source of food. Diverse, mixed-forest vegetation also provides concealment from predators (mainly owls and hawks), good nesting and brood rearing habitat, and protection from winter weather. In the Southern Appalachians, where there is insufficient snowfall for grouse to burrow into, conifers and other evergreen plants may provide protection from the cold. Evergreen plants found in Georgia, such as mountain laurel and rhododendron, are consumed by grouse during the winter, but are relatively low in nutritive value.

### HABITAT IMPROVEMENT

Managing the habitat to create not only better foraging conditions, but also better sites for breeding, nesting, brood rearing and winter protection may increase existing grouse populations. Stands of mixed hardwoods between 7 and 15 years old provide the best overall habitat. For this reason, ruffed grouse are dependent upon periodic forest manipulation and renewal from either prescribed fire or logging.

### MANAGEMENT RECOMMENDATIONS

Management recommendations on large parcels of land where a ruffed grouse population already is established include prescribed burning or clear-cutting areas of 5 to 20 acres. Oak seedlings and saplings as well as clumps of other food producing trees or shrubs should be left standing when possible. Seeding old roadbeds with mixed clovers, salvaging oak saplings in clearcuts, creating shrubby edge zones and establishing or fertilizing fruit producing vegetation such as grape-thickets, dogwoods, blueberries, and hawthorns may help improve grouse survival and reproduction.

Smaller acreage may be improved by a variety of methods. Clearing 2 to 3 acre openings while allowing a few mast trees to stand can create patchy shade that encourages the growth of herbaceous sprouts. Clear-cutting strips of land 60 to 90 feet wide also is beneficial if brushy undergrowth is allowed to regrow. These strips should periodically be cut on a ten-year rotation to maintain quality habitat for grouse.

An alternative is to create 30-foot wide bands that gradually increase in tree density from field to forest. This creates variable sun-shade areas that will support a wide variety of plants beneficial to grouse and other wildlife. Management practices that enhance plant diversity and provide both open areas and brushy edge zones also will benefit white-tailed deer, black bears and rabbits as well as many nongame species and songbirds.

In general, open areas can be improved by allowing woody vegetation to invade naturally, especially along streams. Some food producing trees should be left standing in clear cuts. Cutting single trees or limited thinning of woodlots to selectively improve timber stands is of little benefit to grouse.

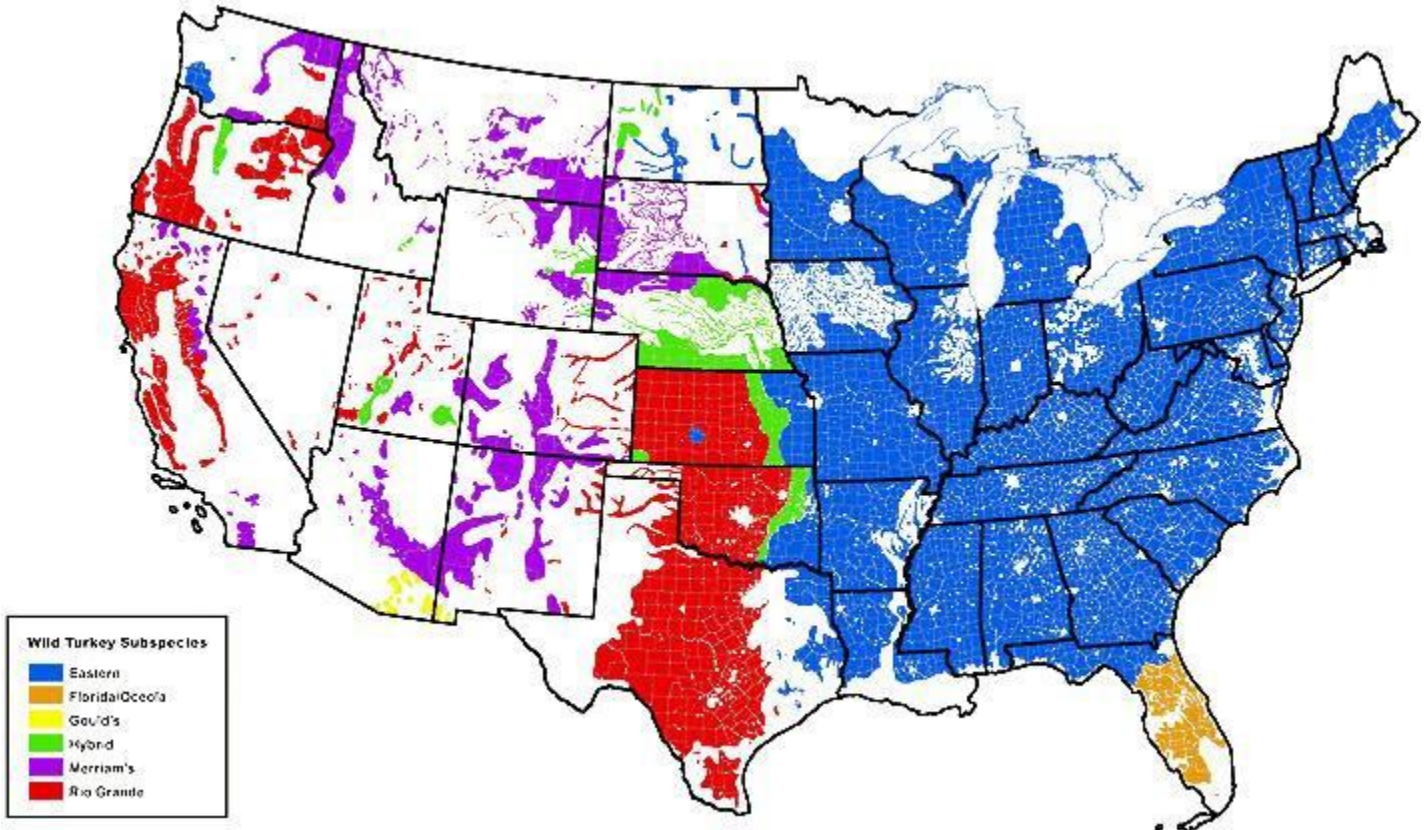
### PREFERRED FOODS

Although chicks eat insects, spiders and snails, adult grouse feed almost exclusively on plant material. Soft, fleshy fruits, buds and hardmast such as nuts and acorns are eaten when available. During the fall and winter a grouse's diet consists mainly of leafy material and some twigs. Mountain laurel and other evergreen leaves are foraged as a last resort, although these leaves may comprise more than 20 percent of the overall volume consumed by birds in the winter. The following includes a variety of preferred plants:

- Oak (acorns)
- Wild grape
- Greenbrier
- Aster
- Hazelnut
- Blueberry
- Christmas fern
- Beech
- Foam flower
- Chokecherry
- White clover Sumac
- Hawthorn
- Gooseberry
- Viburnum
- Birch
- Dogwood
- Elderberry
- American holly
- Apple
- Buttercup
- Wild rose
- Blackgum
- Crabapple
- Mountain laurel
- Serviceberry
- Hophornbeam

# All About Wild Turkeys

## The Wild Turkey's Range



## What Does a Wild Turkey Look Like?

### What Does a Wild Turkey Look Like?

#### Size:

- The wild turkey is the largest of North America's game birds.
- Adult males, known as toms or gobblers, normally weigh between 16 and 24 pounds.
- Females, known as hens, are smaller than males and usually weigh between 8 and 10 pounds.
- The largest wild turkey on record weighed 37 pounds.



#### Feathers:

- **Males:** Gobblers have iridescent red, green, copper, bronze and gold feathers. They use these bright colors to great advantage when attracting females during breeding season.
- **Females:** Hens have drab, usually brown or gray feathers. They make great camouflage and hide hens when they sit on their nests.
- **Color Phases:** A few wild turkeys grow unusually colored feathers. These are known as color phases. There are four color phases, a smokey gray color phase, a melanistic color phase (all black), an erythritic color phase (reddish coloration) and an albino color phase (very rare).



**Head:**

- **Males:** Males have brightly colored, nearly featherless heads. During breeding season the color of their heads alternates between red, white and blue, often changing in a few seconds.
- **Hens:** A hen's head is gray-blue and has some small feathers for camouflage.
- **Caruncles and Snoods:** Both males and females have fleshy growths on their heads known as caruncles. They also both have snoods, fleshy protrubances that hang over their bills and can be extended or contracted at will. The snood of an adult male is usually much larger than that of a female. No one knows for sure what these growths are for, but both probably developed as ways to attract mates.



**Beard:**

- A male turkey grows a cluster of long, hairlike feathers from the center of its chest. This cluster is known as the turkey's beard.
- On adult males, these beards average about 9 inches long.
- 10 to 20 percent of hens also grow beards.
- The longest beard on record is more than 18 inches long.



**Legs:**

- Wild turkey legs are reddish-orange.
- They have four toes on each foot.
- Male wild turkeys grow large spurs on the backs of their lower legs. These spurs are pointed, bony spikes and are used for defense and to establish dominance.
- Spurs can grow up to 2 inches in length. The longest spurs on record are 2.25 inches long.

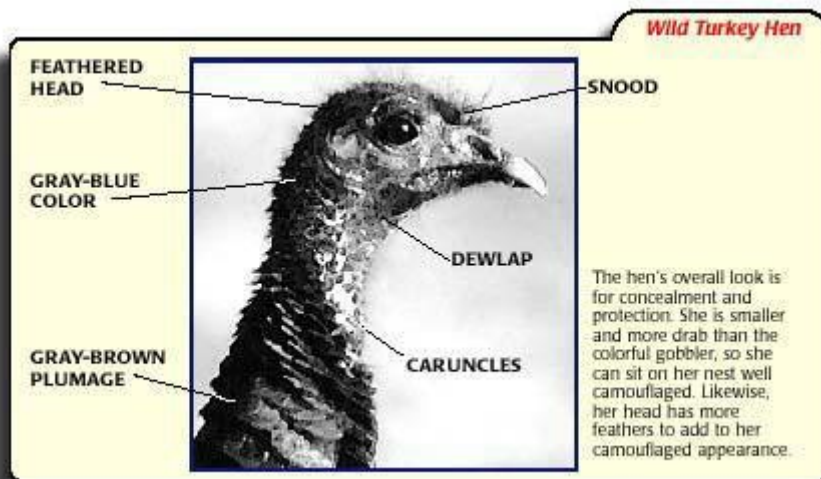
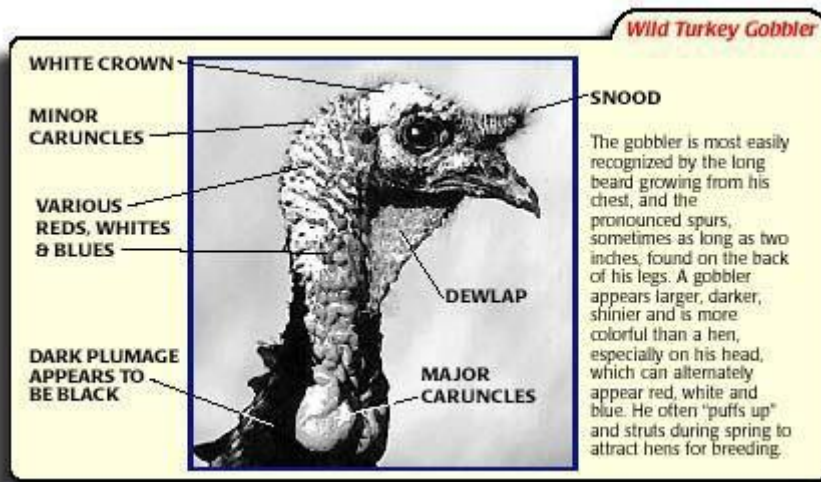


**Tail:**

- Wild turkey tails are usually 12 to 15 inches long and are banded at their tips. The color of the bands in the tail varies by subspecies.
- Male wild turkeys fan their tails when displaying to attract a mate.
- You can usually tell the difference between an adult male (a tom) and a juvenile male (a jake) turkey by looking at a turkey's tail. All tail feathers of adult males are the same length. The feathers forming the center of a jake's tail are usually longer than the rest of the feathers in the tail.



- Differences Between Gobblers and Hens



### Wild Turkey Subspecies

- Osceola (Florida) Subspecies: 80,000 to 100,000 wild turkeys
- Rio Grande Subspecies: 1,022,700 to 1,025,700 wild turkeys
- Merriam's Subspecies: 334,460 to 344,460 wild turkeys
- Gould's Subspecies: 650 to 800 wild turkeys
- Ocellated Turkey

### Wild Turkey Species and Subspecies

- Eastern Subspecies: 5.1 to 5.3 million wild turkeys

### (Meleagris gallopavo silvestris)

Since the eastern wild turkey ranges the farthest north, individuals can also grow to be among the largest of any of the subspecies. The adult male, called a gobbler or tom, may measure up to 4 feet tall at maturity and weigh more than 20 pounds. Its upper tail coverts, which cover the base of the long tail feathers, are tipped with chestnut brown and tail tips with dark buff or chocolate brown. In contrast, the breast feathers are tipped in black. Other body feathers are characterized by rich, metallic, copper/bronze iridescence. The primary wing feathers have white and black bars that extend from the outer edge of each all the way to the shaft. Secondary wing feathers have prominent white bars and are edged in white, producing a whitish triangular area on each side of the back when the wings are folded on the back. A mature female, called a hen, may be nearly as tall but is usually lighter, weighing between 8 and 12 pounds.

Females are similar in color to the males but more brown, and the metallic reflections are less brilliant. Feathers of the hen's breast, flanks, and sides are tipped with brown rather than the black and white tips of the male. The head of the female is considered feather covered with smaller, dark feathers extending up from the back of the neck. Females lack the caruncles or fleshy protuberances of skin at the base of the front of the neck that are bright red on the male. Beards and spurs are generally considered secondary sex characteristics in males. Beards may be present on about 10 percent of the hens, however, they are thinner and shorter than those of adult males. Spurs on hens are uncommon but, when present, are usually rounded and poorly developed.

The reproductive cycle for the eastern wild turkey usually begins in late February or early March in its southernmost ABOVE: The eastern wild turkey inhabits the eastern half of the United States. The gobbler exhibits the characteristic red, white and blue head, the black-tipped breast feathers and copper/bronze iridescence. The eastern wild turkey is the most widely distributed, abundant, and hunted turkey subspecies of the 5 distinct subspecies found in the United States. It inhabits roughly the eastern half of the country. The eastern wild turkey is found in the hardwood, mixed, and pine forests from New England and southern Canada to northern Florida and west to Texas, Missouri, Iowa, and Minnesota. It has also been successfully transplanted in California, Oregon, and Washington, states outside its suspected original range.

L.J.P. Vieillot first described and named the eastern subspecies in 1817 using the word *silvestris*, meaning "forest" turkey. Eastern gobbler wings folded on the back show a whitish triangular patch. Eastern wild turkeys are found in 38 states and four Canadian provinces. It is the most abundant of the five subspecies found in the U.S. and Canada.

Likewise, the cycle is complete with the hatching of poults by June or as late as mid-summer further north. Birds that re-nest may bring off broods as late as August. Breeding behavior is triggered primarily by the increasing day length in spring, but unusually warm or cold spells may accelerate or slow breeding activity. This behavior begins

while birds may still be in large winter flocks prior to separating as individuals or into small groups.

The basic social organization of these flocks is determined by a pecking order with the most dominant bird at the top and the least on the bottom. Males and females have separate hierarchies, and there can be pecking orders within and between flocks of the same sex; while stable pecking orders within flocks of the same sex seem to be common to all wild turkey subspecies. Turkeys have home ranges, not territories where individuals defend space within a given habitat from other members of the same sex. Instead they fight for dominance recognizing individuals within the pecking order while sharing overlapping home ranges. Courtship behavior patterns include gobbling and strutting by the males. Gobbling attracts hens to males who court the hens by strutting. If the hen selects the gobbler for mating she crouches, which signals the male to copulate. The first peak of gobbling activity is associated with the beginning of the breeding period when gobblers are searching for hens.

The second peak occurs a few weeks later, when most hens begin incubation. Hens become secretive while searching for a site to nest prior to laying eggs. Laying hens may continue to feed with other hens and mate with gobblers, but this social activity will be away from the nest site. Nests are shallow depressions formed

mostly by scratching, squatting, and laying eggs rather than by purposeful construction. The arrangement of twigs and leaves is minimal in sites chosen for their moderately dense understory which still allows the hen a view but gives protection from avian predators. Laying a clutch of 10 - 12 eggs takes about 2 weeks and unincubated eggs are

usually covered with leaves. Continuous incubation begins about the time the last egg is laid at which time the hen no longer tries to conceal her eggs when she leaves for short periods to feed. The hen will incubate for 26 - 28 days.

## Wild Turkey Facts

Imagine going on a turkey hunt only to find there are no wild turkeys! It sounds far fetched, but in the early 1930s this grand game bird was on the verge of extinction. But today, thanks to hunters and wildlife restoration programs, the wild turkey is abundant and thriving in its homeland.

Wild turkeys are native to North America and there are five subspecies: [Eastern Osceola \(Florida\)](#), [Rio Grande](#), [Merriam's](#) and [Gould's](#). All five range throughout different parts of the continent. The eastern is the most common and ranges the entire eastern half of the United States. The Osceola (Florida) is only found on the Florida peninsula, while the Rio Grande ranges through Texas and up into Oklahoma, Kansas and Colorado. Rios are also found in parts of the northwestern states. The Merriam's subspecies ranges along the Rocky Mountains and the neighboring prairies of Wyoming, Montana and South Dakota. And you can find Gould's throughout the central portion of Mexico into the southernmost parts of New Mexico and Arizona.

Between 5,000 and 6,000 feathers cover the body of an adult turkey in patterns called feather tracts. A turkey's feathers provide a variety of survival functions – they keep him warm and dry, allow him to fly, feel and show off for the opposite sex. The head and upper part of the neck are featherless, but if you look close, you can see little bumps of skin on the bare area.

Most of the feathers exhibit a metallic glittering, called iridescence, with varying colors of red, green, copper, bronze and gold. The gobbler, or male turkey, is more colorful, while the hen is a drab brownish or lighter color to camouflage her with her surroundings.

Two major characteristics distinguish males from females: spurs and beards. Both sexes have long, powerful legs covered with scales and are born with a small button spur on the back of the leg. Soon after birth, a male's spur starts growing pointed and curved and can grow to about two inches. Most men's spurs do not grow. Gobblers also have beards, which are tufts of filaments, or modified feathers, growing out from the chest. Beards can grow to an average of 9 inches (though they can grow much longer). It must also be noted that 10 to 20 percent of hens have beards.

Wild turkeys have excellent vision during the day but don't see as well at night. They are also very mobile. Turkeys can run at speeds up to 25 mph, and they can fly up to 55 mph.





When mating season arrives, anywhere from February to April, courtship usually begins while turkeys are still flocked together in wintering areas. After mating, the hens begin searching for a nest site and laying eggs. In most areas, nests can be found in a shallow dirt depression, surrounded by moderately woody vegetation that conceals the nest.

Hens lay a clutch of 10 to 12 eggs during a two-week period, usually laying one egg per day. She will incubate her eggs for about 28 days, occasionally turning and rearranging them until they are ready to hatch.

A newly-hatched flock must be ready to leave the nest within 12 to 24 hours to feed. Poults eat insects, berries and seeds, while adults will eat anything from acorns and berries to insects and small reptiles. Turkeys usually feed in early morning and in the afternoon.

Wild turkeys like open areas for feeding, mating and habitat. They use forested areas as cover from predators and for roosting in trees at night. A varied habitat of both open and covered area is essential for wild turkey survival.

Lack of quality habitat was a problem in the past, but with the passing of the Pittman-Robertson Act in 1937, an excise tax on sporting arms and ammunition, wildlife restoration programs now have money to use to restore wild turkeys and wild turkey habitat. And with the invention of the rocket net, wildlife agencies and the NWTf can trap and transfer turkey populations to areas of suitable habitat.

From only 30,000 turkeys in the early 1900s to more than 7 million today, this intriguing species has truly made an awesome comeback.

## Lots of Hens Don't Mean Fewer Gobblers

Large numbers of hens in the woods can mean lots of hung-up gobblers in the spring, but an abundance of female turkeys only helps gobbler populations, say wild turkey biologists.

With lots of hens breeding in the spring, turkey populations can rise quickly. But turkeys aren't like deer, which can overpopulate a given area and strip it of available food. Because turkeys eat a variety of foods, large populations won't damage their habitat.

"The wild turkey feeds primarily on acorns, waste grain, insects and grasses, which are unlikely to be depleted at the same time," said Dr. Darren Miller, the southern wildlife program manager for Weyerhaeuser. "A turkey's ability to forage from a variety of sources enables large populations to thrive in small areas."

A high hen-to-gobbler ratio is not a problem for turkey populations. Male turkeys will mate with multiple hens in a given breeding season or even in a single day. This allows many hens to be bred, even when a much lower number of gobblers than hens exists, ensuring an adequate hatch to sustain the population.

Because the success of a seasons' offspring can be directly affected by poor weather in the spring, an abundance of hens can make it easier for a population to recover from poor hatch years. Populations with an abundance of hens have rebounded from poor hatch years in as few as two years, producing more gobblers than areas without an abundance of hens.

"The gobbler population in a given area is directly related to the reproductive success of hens in the population," said James Earl Kenamer Ph.D., the NWTf's Chief Conservation Officer. "Simply put, the more hens there are to be bred, the more gobblers a hunter can expect to see in future seasons."

## Wild Turkeys and Predators

From death comes life in the scheme of nature. It is eat or be eaten. This food web begins with microscopic plants, extends through various levels of animals, depending on the ecosystem, and results in a series of predator-prey relationships. A predator lives by killing and eating other species, which are called prey. Wild turkeys eat insects and other small animals, so they are predators, in a sense, but they become the prey of other birds, reptiles or mammals.

### Predator-Prey Relationships

Predator-prey relationships have evolved over thousands of years. Predators are usually opportunistic feeders, looking for the easiest meal. Normally, they have target species they prefer, but will take other species if given the opportunity. Prey species must produce many more offspring than will survive, to offset the multitude of predators that use them for food.

Populations of a prey species maintain themselves because of the collective interests of the group, not by the survival of specific individuals. Individuals who are less suited to survive are cropped from the breeding population as well as those that are old, sick or diseased, assuring the population survives. Fit individuals maintain a healthy breeding population, which is the result of selection pressure by predators.



## Where Do Turkeys Fit?

From the time an egg is laid, there is a predator looking for a ready-made omelet. Snakes of all descriptions, skunks, crows, ravens, opossums, raccoons, rodents, dogs and coyotes, to name a few, are on the lookout for a nest and an easy lunch. About half of the turkey nests make it to hatching.

Life is no easier for a turkey poult either. The above listed predators, along with hawks, owls, foxes, and other large predators like cougars and eagles in some parts of the country, will grab a young unsuspecting poult. The point to remember is that all of these predators will take turkey eggs, poults or, under the right circumstances, adults; but most of their diet consists of small birds, rodents and rabbits.

## Role of Habitat

Habitat quality is also an important part of how a species survives pressure from predators. Early successional plant stages, or those that follow a habitat disturbance and need full sunlight, provide shelters for high numbers of small mammals, including rats and mice, which are the normal diet of many predators. This benefits wild turkeys, too.

The location of these habitats, and their plant diversity, can mean life or death to individual wild turkeys. Case in point: If the ground-level vegetation is sparse, the hen and poults become vulnerable to predators. On the other hand, if suitable habitat with good cover is available to the brood group, the poults have a better chance of living. This is the essence of what Aldo Leopold realized in the 1930s when he wrote that game management was "the art of making land produce sustained annual crops of wild game for recreational use." How we manage the plant communities, and where they are located, is critical to wildlife populations — and it doesn't matter whether you are dealing with songbirds or wild turkeys. Habitat quality and its distribution are more important than the number of predators.

## Predator Management

Controlling predator populations has always been a controversial issue. There are situations where it may have a place, such as an area with a newly established population of a rare species. However, making an impact on a predator population is very expensive and labor intensive. Even after going to the trouble of removing hundreds of wild turkey predators from an area over several years, it is doubtful that you would see a significant increase in the numbers of wild turkeys. This is due in part to the movement of more predators from surrounding habitats into the area.

Predators are important components of the ecosystem and really benefit the prey species in the long run. Wild turkey numbers have increased dramatically over the last two decades, while at the same time predator populations have also increased. While certain predators may need to be controlled in specific instances, the long-term solution to maintaining wild turkey populations at huntable levels will be dependent not on the predator control, but on man's activities and good habitat management.

## Land Management for Turkeys and Doves on a Budget

While you're chasing longbeards this spring, start thinking about where you'll dove hunt next year. A few hours mowing and applying herbicide in the spring can get you ready for a fun time in the dove field while also helping wild turkey poults.

"All you need is 3 to 5 acres of abandoned agricultural field or old pasture, 3 to 5 acres is ideal," said Scott Vance, assistant vice president of conservation programs administration for the NWTF. "Really, you want to have some trees along the field edges for roosting, water nearby and you'll need some basic farm equipment."

The following steps will help you prepare an affordable and productive dove field:

- **Step 1:** Brush hog the field in early spring.
- **Step 2:** Allow the field to grow for one to two weeks; 4 to 6 inches of new growth is ideal.
- **Step 3:** Spray the field with two quarts of glyphosate herbicide per acre to control unwanted grasses and weeds.
- **Step 4:** Disk the field 4 to 6 inches deep. This step is not necessary but will improve the plant density. Without disking, natural regeneration will produce grasses and weeds, but breaking the surface of the field will help the plants grow that doves like to eat.
- **Step 5:** About two weeks before the opening day of dove season, brushhog one-third of the field into parallel strips. Mow as low to the ground as possible to create bare ground covered with weed seeds. Doves will flock to the field to eat the seeds.

While seeds from grasses in the field will attract doves, the new growth of grass in the spring will also attract insects — the major ingredient in a young wild turkey's diet. "You can plant any number of seeds that doves love such as millet, sunflowers or proso," Vance said, "but this is a great way to prepare a dove field without spending a lot of time and money."

Turkey Gold® Chufa (chêw-fa) is one of the most popular crops planted for wild turkeys. Turkeys will readily come to a chufa patch and continue using it for several months. If you want to attract and keep turkeys on your land, chufa should be a part of your habitat management plan. Chufa, *Cyperus esculentus* var. *sativus*, is an African variety of the native nutsedge, which is a warm season perennial plant. Native nutsedge can be a problem weed in some areas. Chufa is not aggressive like the native nutsedges and will not create problems when other crops are planted after it. Chufa foliage, which grows 1-3 feet tall, is not utilized by wildlife, rather, the small, nut like tubers, which grow under the ground, are what is relished by wild turkeys, ducks and other wildlife. Each plant produces a handful (15-75) of golden tubers a couple of inches under the ground. Turkeys begin scratching out the tubers in the fall, after the tops have turned brown. In southern areas they will continue using chufa throughout the winter and into the spring. In areas where the ground freezes and snow accumulates, it does not provide a source of food during the winter. Once turkeys begin using chufa, they will visit the field regularly until the tubers are gone or spring greenup provides a more desirable food source. A chufa patch that is being used regularly by turkeys looks like a herd of hogs has been rooting in the field or takes on the appearance of craters on the moon. The tubers are high in carbohydrates and protein. They are edible by humans, having a sweet taste described by some as being like raw peanuts or almonds.

**RANGE:**

The general rule of thumb is that chufa will grow anywhere corn will grow. The recommended range of chufa includes the entire southern part of the United States from Florida to California, and northward to Pennsylvania, Ohio and Iowa. Chufa is now being grown in most other states as well. Extreme northern range, such as northern Minnesota, may not be suitable for chufa because of short growing seasons and limited use by turkeys during the winter.

**PLANTING TIME:**

In the South, chufa is normally planted from April through July, depending on rainfall. In more northern areas the best planting time is April or May. Chufa will mature in approximately 90-110 days. In areas with shorter growing seasons, make sure you have 90-110 conWildlife does not feed on the lush chufa foliage. Turkeys scratch the tubers out of the ground. As it matures, the tops will turn a golden brown color. After the tops have turned brown, the turkeys will begin scratching the chufa tubers out of the ground. For those planting chufa for the first time, make sure to plant Turkey Gold® Chufa in areas where turkeys frequent. You want to make it as easy as possible for turkeys to find it. It may be a good idea to pull some of the plants out of the ground or disk a strip so the turkeys will find them.

**SOIL CONDITIONS:**

Chufa will grow in a variety of soil types, but it does best in moderately to well-drained soils. Sandy or loamy soils are preferred, but it will grow even in clay soils. Turkeys can have a more difficult time scratching the tubers out of hard clay soil. If you plant in clay soil, run a disk lightly over the patch in the fall or early spring, after the chufa has matured, to break up the soil.

**SOIL PREPARATION:**

Prior to planting chufa seed, the soil should be plowed or disked. A soil test will reveal the proper amount of fertilizer and lime to add to the soil. Using the proper amounts may actually save you money. If you cannot get the soil tested, use 400 pounds of 10-10-10 or 13-13-13 fertilizer and 1,000 pounds of lime per acre. Work the fertilizer and lime into the soil with a disk or drag.

**SEEDING RATE:**

Chufa can be drilled or broadcast. Broadcast seeding is the most common way of planting chufa. It can be spread by hand or with a handheld seeder. The rate for broadcasting is 40-50 pounds per acre. After the seed is scattered it should be covered to a depth of 1-2 inches with a harrow or drag. When broadcasted properly, there will be approximately 3-4 plants per square foot. If drilled, plant in 36-inch rows at a rate of 30 pounds per acre at 6-inch spacing. Drilling is not recommended because the drill can crush the seed because of the large seed size.

**PLOT SIZE:**

Plots as small as 1/4 acre or as large as several acres can be planted for wild turkeys. The optimum plot size is probably 1/2 - 1 acre.

**GRASS & WEED CONTROL:**

Herbicides are normally not used in chufa plantings for wildlife but occasionally grasses and weeds can become such a problem that certain herbicides have to be applied. The following herbicides have been found to be effective. Apply the herbicides only once during the life of the crop.

**PREPLANTING (incorporated into the soil):**

Treflan.....1 quart per acre  
Prowl.....1 quart per acre

**AFTER THE CROP IS ESTABLISHED**

(sprayed over the top):

Poast + oil surfactant (controls grasses)..1.5 pts. + 10.6 oz. per acre  
or  
Fusilade + oil surfactant (controls grasses).....1.5 pts. + 10.6 oz. per acre  
or  
2.4-DB (controls weeds, Sicklepod, Cocklebur).....1-2 pts. per acre

**REGROWTH:**

For best production chufa should be replanted each year but it is possible to get a second year's growth out of it as long as the turkeys do not eat it all. Simply disk plot during normal planting dates to evenly distribute seed. Apply normal amount of fertilizer and lime to the soil. After two years, rotate the chufa to another field to prevent potential problems with soil pests.

## Save the Habitat. Save the Hunt. The Coming Challenges

When the NWTf was founded, there were approximately 1.5 million wild turkeys in North America. After 40 years of dedicated work, that number hit a historic high of almost 7 million turkeys. However, in recent years national turkey populations have been declining and the hunting community is facing other critical challenges:

- Turkey populations are declining, having decreased 15 percent from a historic high.
- For example, New York is facing a 20-year low and Mississippi's turkey populations declined by more than 40 percent from 2004 to 2009.
- This is the same situation Bobwhite quail were in 50 years ago.
- 6,000 acres of wildlife habitat disappear every day - area the size of Yellowstone each year.
- A long-term slide in hunter numbers has finally stopped, but it is still not keeping pace with population growth, which limits sportsmen's ability to stand up for their rights.
- Many hunters struggle to find a place to hunt - a top reason why people quit hunting.
- 

## 40 Years of Conservation and Hunting Heritage

Since its foundation in 1973, the NWTf has achieved some amazing accomplishments. With the help of its dedicated volunteers and partners, the NWTf has been able to facilitate the investment of \$412 million dollars in conservation and the preservation of our hunting heritage. These investments have helped improve more than 17 million acres of wildlife habitat and expose 100,000 people to the outdoors each year. The NWTf is dedicated to having the same significant impact over the next 40 years as it did over its first 40. That is why the NWTf has created the Save the Habitat. Save the Hunt. initiative.

## Save the Habitat. Save the Hunt.

The NWTf and its committed volunteers believe in doing what's necessary to create more wild turkeys. We believe it is our duty to create vibrant and healthy upland habitat. We believe our hunting heritage is worth fighting for.

The Save the Habitat. Save the Hunt. initiative will help tackle these difficult challenges the sporting community is facing.

### Save the Habitat.

We will increase wild turkey populations by conserving and enhancing 4 million acres of critical upland wildlife habitat. These habitat improvements will not only help support wild turkey populations but they will also benefit quail, deer and many other wildlife species that share the habitat.

The NWTf will:

- Focus our efforts based on the priorities established by science
- Work in areas where it is possible to have a meaningful impact on habitat and wildlife populations
- Begin the process at the local level, which will then build to support the regional and national goals
- Focus on four key habitat types
  - Forests
  - Streamside corridors
  - Fields and meadows
  - Scrubland and grasslands

### Save the Hunt.

We will save the hunt by creating 1.5 million new hunters who will embrace the outdoors and protect our conservation legacy. It will include focused outreach opportunities for people of all ages, and increased hunter access. This includes creating half a million additional acres of hunting access across the nation.

The NWTf will:

- Evolve its outreach efforts from introduction to include hands-on hunting experiences and mentoring to create long-term hunting license holders
- There is no one-size-fits-all solution and each state will drive its approach
- Develop partnerships with a wide range of organizations, like state wildlife management agencies, hunters education instructors, mentored hunting and other organizations, that share the common interest of promoting our hunting heritage
- Make it easier for people to hunt by lowering barriers to introducing new hunters to the sport and increasing the number of publicly available acres

## Get Involved

Your support is critical to making these lofty goals a reality. [Join the NWTf](#) today and [contact your local regional staff](#) to see how you can get involved and help make a real difference.



**SAVE THE HABITAT. SAVE THE HUNT.**


We are at a critical juncture in the future of wildlife habitat conservation and the preservation of our hunting heritage. Wild turkey numbers are diminishing in many areas, mostly because of a loss of essential habitat. This can only be reversed through proper management of our fields and forests. We're losing 6,000 acres of critical wildlife habitat every single day to development. That's 2.2 million acres a year, an area the size of Yellowstone National Park. We must make every remaining acre count. And finally, hunters and our hunting rights are under attack. Hunters pay for wildlife and habitat conservation. If we don't stand our ground today, there is no hope for the future of conservation and hunting. Our mission is no less urgent today than when we started in 1973. What we do in the next 10 years will be instrumental in not only enhancing wild turkey populations, but in the continuation of hunting and quality wildlife habitat for countless species. The NWTf's ready for the challenge and will be a leader for the next 40 years, standing as one team with one mission. Your continued support is essential. Thank you,

George C. Thornton, CEO

Jim Hinkle, Chairman, Board of Directors

# Wood Duck

*Aix sponsa* ORDER: ANSERIFORMES FAMILY: ANATIDAE

 **IUCN** Conservation Status: Least Concern



© Brian L. Sullivan

The Wood Duck is one of the most stunningly pretty of all waterfowl. Males are iridescent chestnut and green, with ornate patterns on nearly every feather; the elegant females have a distinctive profile and delicate white pattern around the eye. These birds live in wooded swamps, where they nest in holes in trees or in nest boxes put up around lake margins. They are one of the few duck species equipped with strong claws that can grip bark and perch on branches.

- **Size & Shape**

Wood Ducks have a unique shape among ducks—a boxy, crested head, a thin neck, and a long, broad tail. In flight, they hold their head up high, sometimes bobbing it. Overall, their silhouette shows a skinny neck, long body, thick tail, and short wings.

- **Color Pattern**

In good light, males have a glossy green head cut with white stripes, a chestnut breast and buffy sides. In low or harsh light, they'll look dark overall with paler sides. Females are gray-brown with white-speckled breast. In eclipse plumage (late summer), males lose their pale sides and bold stripes, but retain their bright eye and bill. Juveniles are very similar to females.

- **Behavior**

Unlike most waterfowl, Wood Ducks perch and nest in trees and are comfortable flying through woods. Their broad tail and short, broad wings help make them maneuverable. When swimming, the head jerks back and forth much as a walking pigeon's does. You often see Wood Ducks in small groups (fewer than 20), keeping apart from other waterfowl. Listen for the female's call when these wary birds flush.

- **Habitat**

Look for Wood Ducks in wooded swamps, marshes, streams, beaver ponds, and small lakes. They stick to wet areas with trees or extensive cattails. As a cavity nester, Wood Ducks take readily to nest boxes.

## Measurements

*Both Sexes*

### Length

18.5–21.3 in  
47–54 cm

### Wingspan

26–28.7 in  
66–73 cm

**Weight**

16–30.4 oz  
454–862 g

**Cool Facts**

- Natural cavities for nesting are scarce, and the Wood Duck readily uses nest boxes provided for it. If nest boxes are placed too close together, many females lay eggs in the nests of other females.
- The Wood Duck nests in trees near water, sometimes directly over water, but other times up to 2 km (1.2 mi) away. After hatching, the ducklings jump down from the nest tree and make their way to water. The mother calls them to her, but does not help them in any way. The ducklings may jump from heights of up to 89 m (290 ft) without injury.
- The Wood Duck is a popular game bird, and is second only to the Mallard in numbers shot each year in the United States.
- Wood Ducks pair up in January, and most birds arriving at the breeding grounds in the spring are already paired. The Wood Duck is the only North American duck that regularly produces two broods in one year.

**Habitat- Lake/Pond**

Wood Ducks thrive in bottomland forests, swamps, freshwater marshes, and beaver ponds. They are also common along streams of all sizes, from creeks to rivers, and the sheer extent of these make them an important habitat. Wood Ducks seem to fare best when open water alternates with 50–75% vegetative cover that the ducks can hide and forage in. This cover can consist of downed trees, shrubs such as alder, willow, and buttonbush, as well as emergent herbaceous plants such as arrowhead and smartweeds.

**Food- Insects**

Wood Ducks eat seeds, fruits, insects and other arthropods. When aquatic foods are unavailable they may take to dry land to eat acorns and other nuts from forests and grain from fields. Diet studies indicate a lot of variability, but plant materials make up 80% or more of what the species eats. Examples of food eaten include acorns, soybeans, smartweed, water primrose, panic grass, duckweed, millet, waterlily, blackberries and wild cherries, as well as flies, beetles, caterpillars, isopods, and snails.

**Nesting****Nesting Facts****Clutch Size**

6–16 eggs

**Number of Broods**

1-2 broods

**Egg Length**

1.8–2.4 in

4.6–6.1 cm

**Egg Width**

1.4–1.7 in

3.5–4.2 cm

**Incubation Period**

28–37 days

**Nestling Period**

56–70 days

**Egg Description**

Glossy creamy white to tan.

**Condition at Hatching**

Chicks hatch alert and with a full coat of down. A day after hatching they leave the nest by jumping out of the entrance.

## **Nest Description**

Nest cavities can have openings as small as 4 inches across, and these may be preferred because they are harder for predators to enter. Wood Ducks sometimes use much larger openings, up to a couple of feet across. Cavity depths are variable; they average about 2 feet deep but in rotten trees can be 15 feet deep (the young use their clawed feet to climb out). Nest boxes of many designs have proved very popular and successful with Wood Ducks, though plastic nest boxes can overheat in strong sun. The female lines the nest with down feathers she takes from her breast.

## **Nest Placement- Cavity**

Breeding pairs search for nest cavities during early morning. The male stands outside as the female enters and examines the site. They typically choose a tree more than 1 foot and often 2 feet in diameter, with a cavity anywhere from 2–60 feet high (higher sites seem to be preferred). These cavities are typically places where a branch has broken off and the tree's heartwood has subsequently rotted. Woodpecker cavities are used less frequently. Wood Ducks cannot make their own cavities. The nest tree is normally situated near to or over water, though Wood Ducks will use cavities up to 1.2 miles from water.

## **Behavior- Dabbler**

Wood Ducks feed by dabbling or short, shallow dives. They are strong fliers and can reach speeds of 30 mph. Wood Ducks are not territorial, with the exception that a male may fight off other males that approach his mate too closely. Courting males swim before a female with wings and tail elevated, sometimes tilting the head backwards for a few seconds. Males may also perform ritualized drinking, preening, and shaking movements. Both members of a pair may preen each other. Egg-dumping, or "intraspecific brood parasitism" is common in Wood Ducks—females visit other Wood Duck cavities, lay eggs in them, and leave them to be raised by the other female. This may have been made more common by the abundance and conspicuousness of artificial nest boxes; in some areas it happens in more than half of all nests. Individual females typically lay 10-11 eggs per clutch, but some very full nests have been found containing 29 eggs, the result of egg-dumping.

### BIOLOGY

About half the size of a mallard, the wood duck is a type of dabbling duck, meaning it forages on the water's surface for food as opposed to diving to find food on the bottom. During the fall and winter, woodies need foods such as acorns that are high in fat to carry them through the harsher months and prepare them for breeding and laying eggs. Spring requirements shift towards higher protein foods like insects to promote growth. Wood ducks begin courtship rituals several months before the nesting season, which usually begins in February and lasts through June. Pair bonds normally last through the brood-rearing season. Once egg laying begins, a hen will lay one egg each day until she reaches an average clutch size of 10-15 eggs. If something happens to the nest, hens will renest in an effort to hatch a successful brood. Incubation begins after the last egg is laid, and hatching occurs about 30 days later. About 24 hours after hatching, the hen begins calling them out of the nest to explore their new world on water. By the time the chicks are 5 weeks of age, they are quite independent from the hen. As maturity progresses, ducks will begin the courtship ritual and breed at one year of age.

### HABITAT

Wood ducks are closely associated with forested wetland habitats throughout North America. Woodies seldom venture far from woodlands and associated water areas. Their distribution is essentially confined to riparian corridors and other areas of lowland forest interspersed with freshwater ponds, lakes, marshes, and swamps. Beaver ponds form some of the finest wood duck habitat around. Flooded emergent vegetation that protrudes above the surface of the water provides good brood-rearing cover. Buttonbush, alder, or other shrubs that grow out of the water provide protection from aerial predators. Other emergent vegetation such as sedges and rushes also provide places for young ducklings to hide.

### NEST BOX MANAGEMENT

Erecting wood duck nest boxes can help raise local populations in your area. For maximum benefit, proper placement of wood duck boxes is extremely important. Farm ponds may not be a good place for duck boxes as most have steep sides, deep edges and no emergent vegetation. Without emergent vegetation, the ducklings have no place to hide, and rapidly fall prey to various predators, such as snapping turtles and largemouth bass.

### NEST BOX CONSTRUCTION

There are several different designs for wood duck nest boxes, however all boxes should be between 20-27" in height and 10-12" square. The preferred lumber for building wood duck nest boxes is rough-cut 1" thick cypress, however cedar or yellow pine is acceptable. Do NOT use treated lumber. The box should be held together with 1 ½" zinc coated or galvanized wood screws. To allow ducklings to climb up and escape, ½" wire mesh should be mounted to the inside of the box under the front hole. See the reverse side for instructions on building a wood duck box and predator guard.


### GUIDELINES FOR MOUNTING NEST BOXES

1. Boxes should be placed so there is a 40' flight line in front of the box that is free from obstructions such as tree limbs or bushes.
2. Wooden 4"x4" or 2" diameter metal posts can be used to mount boxes. Post should be 10-12 feet long. No box should be mounted without a predator guard around the post.
3. Position the box as nearly vertical as possible, with a very slight tilt forward. The tilt will enable ducklings to climb out more easily.
4. Boxes should be placed one per acre of suitable brood-rearing habitat.
5. Boxes should be placed so that the bottom of the box is at least 4' above the high water mark.
6. Do not place more than one box per post, as this may increase the possibility of "dump nesting."
7. When attaching the box to the post, use 3" to 5" lag bolts instead of nails. Bolts make it easier to remove boxes in the future for replacement or repair as necessary.
8. Wasps can be kept out of the boxes using a small piece of no-pest strip stapled or tacked inside the box.
9. Once erected, boxes should be lined with about 4" of wood shavings, not sawdust. Cedar shavings are acceptable to use.
10. Boxes should be checked and cleaned annually during December or January, prior to the nesting season.



# American Woodcock

*Scolopax minor* ORDER: CHARADRIIFORMES FAMILY: SCOLOPACIDAE

 IUCN Conservation Status: Least Concern



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A shorebird that lives in forests, the American Woodcock is most frequently encountered at dusk when the male's chirping, peenting aerial displays attract attention. Otherwise the superbly camouflaged bird is difficult to discover on the forest floor where it probes for earthworms.

## Adult Description

- Plump, with round head.
- No apparent neck.
- Long bill.
- Brown and black concealing pattern.

## Immature Description

Juvenile like adult, but slightly duller.

## Measurements

*Both Sexes*

### Length

9.8–12.2 in  
25–31 cm

### Wingspan

16.5–18.9 in  
42–48 cm

### Weight

4.1–9.8 oz  
116–279 g

## Cool Facts

- The flexible tip of the American Woodcock's bill is specialized for catching earthworms. The bird probably feels worms as it probes in the ground. A woodcock may rock its body back and forth without moving its head as it slowly walks around, stepping heavily with its front foot. This action may make worms move around in the soil, increasing their detectability.
- The American Woodcock is one of the few shorebirds that is regularly hunted for sport.
- The male American Woodcock has an elaborate display to attract females. He gives repeated "peents" on the ground, often on remaining patches of snow in the early spring. After a time he flies upward in a wide spiral. As he gets higher, his wings start to twitter. After reaching a height of 70-100 m (230-328 ft) the twittering becomes intermittent, and the bird starts chirping as he starts to descend. He comes down in a zig-zag, diving fashion, chirping as he goes. As he comes near the ground he silently lands, near a female if she is present. Then he starts peenting again.
- The male American Woodcock gives no parental care, but continues to display long after most females have laid eggs. Some males display at several, widely separated singing grounds and will mate with several females. A female may visit four or more singing grounds before nesting, and she may keep visiting even when she is caring for her young.
- Unlike many birds that leave their nests at hatching, newly hatched woodcocks cannot feed themselves. They are dependent on the mother for food for the first week. The chicks start to probe in dirt at three or four days after hatching.

## Habitat- Forest

Forests with openings, shrubby areas.

## Food- Insects

Invertebrates, especially earthworms.

## Nesting

### Nesting Facts

#### Clutch Size

1–12 eggs

#### Egg Description

Creamy buff with brown spots concentrated near large end.

#### Condition at Hatching

Downy chicks leave nest soon after hatching.

#### Nest Description

Shallow depression on ground.

## Nest Placement- Ground

## Behavior- Probing

Probes in dirt and leaf litter for worms.

## Conservation- Least Concern

May be decreasing in some areas as shrubby areas revert to forest.

## Woodcock Fact Sheet

The American Woodcock (*Scolopax minor*), a member of the sandpiper family Scolopacidae, is essentially a migratory shorebird that utilizes forests, fields, wetlands and riparian systems. Woodcock occur throughout central and eastern North America from southern Canada into the southern Gulf States.

In Georgia, woodcock occur both as a yearlong resident and winter migrant. They are known by a variety of common names including snipe, timberdoodle, night partridge and bog sucker. Woodcock might be confused with Dowitchers (*Limnodromus sp.*) and Common Snipe (*Gallinago gallinago*) but these species have different coloration, flocking behavior, flight patterns and habitat needs.

### SPECIES DESCRIPTION

Woodcock are sexually monomorphic meaning that both males and females have essentially the same feather coloration and pattern. Their plumage consists of various shades of brown to light buff and gray. They are plump in shape, with short stocky necks, large round heads with a broadly barred crown and large brown eyes. Eyes are set far back on the head which facilitates a wide field of view to detect predators, even when feeding. Woodcock are about 10-12 inches in length with up to a 19-inch wingspan, and weigh up to 10 ounces. Females tend to be larger than males. Perhaps the most distinguishing characteristic of the species is a long narrow bill that ranges in length from 2½ - 3 inches. The bill is used to probe in moist earth for earthworms, insects and other foods; and has a prehensile tip that can be opened while inserted into the ground so as to facilitate food intake. Bill length, along with the combined widths of the three outer wing primaries, and the length of the wing chord (from wrist notch to tip of longest primary feather) can be used to distinguish the sexes; with females having bills that are typically greater than 2.8 inches, combined widths of outer three primaries greater than or equal to one-half inch and the wing chord length greater than or equal to 5.3 inches. The combination of these characteristics minimizes overlap when determining gender.

### BIOLOGY

In Georgia migratory woodcock begin arriving around mid-October with peak numbers in mid-December. They begin returning north as early as February and birds remaining after March are most likely resident birds. Most migration occurs at night.

During the breeding season male woodcock perform a magnificent courtship display sometimes referred to as "sky dancing". This acrobatic show occurs for a relatively short window of time at dusk and dawn. Males fly or walk from nearby cover to fields, pastures, orchards, clearcuts, wetland bogs, roadbeds or other openings. There they strut on the ground and make a "peenting" call that can be described as a short buzzing note repeated several times in rapid succession. The bird then flies in wide spirals above the display ground while making chirping or warbling sounds and then rapidly descends back to the ground where the process begins anew. This display attracts females for mating. Sky dancing is most commonly observed in Georgia from December through February.

Female woodcock nest on the ground by making a shallow depression in the leaves and other dead vegetation on the forest floor. They typically nest in young forests and often within close proximity to the base of a tree or shrub. Woodcock will readily re-nest if their first nest is destroyed. The average clutch consists of four eggs that are pinkish buff to cinnamon and are speckled with varying shades of brown. The female incubates the eggs for 21 days. Upon hatching the chicks leave the nest within a few hours. The chicks require maternal feeding for the first week after hatching and begin flight at around 18 days of age.

Woodcock require a variety of habitat types to meet their daily and seasonal needs. Openings are needed for courtship display and ideally are interspersed with moist-soil riparian forest systems that have well-developed shrub layers, cane thickets and other cover to provide feeding grounds, loafing areas and protection from predators. Additionally, young sapling forests are preferred for nesting and brood rearing.

Woodcock feed primarily on animal matter, particularly invertebrates and especially earthworms. They do consume plant materials; such as seeds, but these constitute a low percentage of the total diet volume.

Like most other wildlife species woodcock are subject to a wide variety of mortality factors including pollutants, predators and disease. Since a high percentage of the woodcock diet is earthworms they may be particularly vulnerable to pesticides and other environmental contaminants. They have been shown to carry DDT, dieldrin, PCBs, mercury, heptachlor and mirex. Furthermore, it is safe to assume that numerous predators, including hawks, owls, various snakes, raccoons, opossums, bobcats, coyotes and many others readily eat the birds and/or their eggs.

Woodcock populations have declined throughout much of their range in recent decades. In fact, between 1985 and 2004 the U.S. Geological Survey Breeding Bird Survey data indicate woodcock populations declined by 2.7 percent per year in the Atlantic Flyway. This decline is suspected to be primarily the result of changes in land use, which have reduced or degraded early succession habitat and wetlands. Examples of landscape changes that may negatively impact woodcock in Georgia include, loss of old field habitat, reduction in the use of prescribed fire, lack of forest management, conversion of wetlands to other uses and increased urbanization.

### UTILIZATION

Woodcock are a migratory gamebird in Georgia and are often hunted with pointing and retrieving dogs, commonly in association with quail hunting. When properly prepared they provide excellent table fare. Consult the current hunting season regulations for season dates and bag limit.

## **Canvasback**

*Aythya valisineria*

**ORDER:** Anseriformes

**FAMILY:** Anatidae



## **Basic Description**

Often called the aristocrat of ducks, the Canvasback holds its long sloping forehead high with a distinguished look. Males stand out with a rusty head and neck and a gleaming whitish body bookended in black. Females are pale brown overall, but that Canvasback head shape still gives them away. This diving duck eats plant tubers at the bottom of lakes and wetlands. It breeds in lakes and marshes and winters by the thousands on freshwater lakes and coastal waters.

## **Cool Facts**

The species name of the Canvasback, *valisineria*, comes from *Vallisneria americana*, or wild celery, whose winter buds and stems are the duck's preferred food during the nonbreeding period.

In the world of ducks, females abide by the saying, "don't put all your eggs in one basket." Female Canvasbacks sometimes lay eggs in another Canvasback's nest; and Redheads and Ruddy Ducks sometimes lay their eggs in a Canvasback's nest.

The oldest recorded Canvasback was a male, and at least 22 years, 7 months old when he was shot in California in 1991. He had been banded in the same state in 1969.

## **Find This Bird**

In the continental United States, spring, fall, and winter are the best times to go looking for a Canvasback. They gather in large groups on open water, where their white bodies gleam and the sloping forehead helps them stand out from other waterbirds. Because Canvasbacks are hunted, they tend to be wary and readily flush. To get a look before they take off, it's useful to have a spotting scope (or join a bird club outing where the trip leader is likely to bring one). Staying in a car or blind are also ways to get good views without agitating them.

## **Habitat**

Lakes and Ponds

Canvasbacks breed in small lakes, deep-water marshes, bays, and ponds. They tend toward waters with a dense border of cattails, rushes, and reed grass, but in the boreal forest they use open marshes. During migration and on the wintering grounds, Canvasbacks use marine and freshwater areas including estuaries, lagoons, rivers, ponds, marshes, lakes, and occasionally flooded agricultural fields.

## **Food**

### Plants

Canvasbacks are omnivores, eating everything from seeds to plant tubers and from mussels to insects. During the breeding season they eat both plant and animal foods, but during migration and winter they primarily eat rhizomes and tubers from aquatic plants. Canvasbacks dive straight down to depths of around 7 feet to extract pieces of aquatic plants with their bill. Other food is taken from or just below the surface of the water.

## **Nesting**

Nest Placement: Floating

Female Canvasbacks select the nest spot, typically in shallow wetlands with cattails, rushes, sedges, and reeds. The nest is most frequently built over water, but sometimes on land.

## **Nest Description**

Female Canvasbacks build a large bulky platform of sedges, reeds, cattails, and rushes. Females loosely weave the material together and attach it to emergent stalks of vegetation, such that the nest floats on the water. Many nests are also covered from above by a canopy of plant stalks. Females continue to add material and down feathers to the nest for the first 10 days of incubation.

## **Nesting Facts**

Clutch Size: 5-11 eggs

Number of Broods: 1 brood

Egg Length: 2.4-2.6 in (6-6.7 cm)

Egg Width: 1.6-1.8 in (4.2-4.6 cm)

Incubation Period: 24-29 days

Egg Description: Greenish drab.

Condition at Hatching: Covered in down and able to leave the nest soon after hatching.

## **Behavior**

Surface Dive

Canvasbacks are diving ducks at home in the water, seldom going ashore to dry land. They sleep on the water with their bill tucked under the wing, and they nest on floating mats of vegetation. To get airborne Canvasbacks need a running start, but once in the air they are strong and fast fliers, clocking airspeeds of up to 56 miles per hour. Canvasbacks are social outside of the breeding season; they gather in large rafts by the thousands to tens of thousands. Only when winter food is scarce or clumped do they defend foraging areas against other Canvasbacks. During spring and early in the breeding season, they act more aggressively. Threat displays include putting the bill in the water or on the chest,

jabbing, pumping the head, or chasing. Pairs begin forming during spring migration and continue on the breeding grounds. Courting male ducks gather around one female, assessing each other with a series of head movements until the female chooses one of them. Males stretch their necks, lower their heads while giving a coughing sound, and toss their head all the way back until it reaches the top of the back. Females stretch their necks and raise and lower their head to signal acceptance of a male. About halfway through incubation, males move to large fresh and brackish wetlands in central and western Canada to molt before migrating south in the fall. During this flightless period, males stay away from the shore, feeding on submerged vegetation and resting on islands. Females continue to incubate and feed hatchlings until it is time to migrate south.

### **Conservation**

#### Low Concern

Canvasback populations have fluctuated widely since the 1950s. Low numbers in the 1980s put the Canvasback on species of special concern lists, but numbers increased greatly in the 1990s. The North American Breeding Bird Survey suggests that the population has been stable from 1966 through 2015. In 2017, the U.S. Fish and Wildlife Service estimated the U.S. population at around 700,000 individuals. Partners in Flight estimated the global breeding population at 670,000. The species rates a 10 out of 20 on the Continental Concern Score, which means it is not on the Partners in Flight Watch List and is a species of low conservation concern. Fluctuations in numbers are likely due to wetland loss and to changes in water levels that reduce the number of available nest sites. The suggestion is that Canvasbacks did well in wet years and poorly in dry years. In the Prairie Provinces in Canada around 40% of original wetlands were lost between 1951 and 1981. In North and South Dakota 3.6 million acres of wetlands have been lost and another 3.6 million were lost in Minnesota. Loss of wild celery, a primary food source, due to pollution, siltation, and eutrophication also made some areas useless for Canvasbacks; their migration routes and wintering sites changed during the last 40 years as a result. Hunting may also contribute to fluctuations as harvest limits have changed over the last 3 decades. The U.S. Fish and Wildlife Service manages duck hunting and limits the number of individuals hunters can take every year based on population size. From 2012–2016, hunters took on average 114,495 Canvasback annually.

## **Wilson's Snipe**

*Gallinago delicata*

**ORDER:** Charadriiformes

**FAMILY:** Scolopacidae

### **Basic Description**



Though the long tradition of “snipe hunt” pranks at summer camp has convinced many people otherwise, Wilson’s Snipes aren’t made-up creatures. These plump, long-billed birds are among the most widespread shorebirds in North America. They can be tough to see thanks to their cryptic brown and buff coloration and secretive nature. But in summer they often stand on fence posts or take to the sky with a fast, zigzagging flight and an unusual “winnowing” sound made with the tail.

### **Cool Facts**

- Wilson’s Snipe look so stocky thanks in part to the extra-large pectoral (breast) muscles that make up nearly a quarter of the bird’s weight—the highest percent of all shorebirds. Thanks to their massive flight muscles this chunky sandpiper can reach speeds estimated at 60 miles an hour.
- Wilson’s Snipe feed by burying their bills deep into soft, wet soil to probe for insect larvae, worms, and other invertebrate prey. The bill’s flexible tip can open to grasp food while the base of the bill stays closed. Snipe can slurp small prey from the mud without having to remove their bill from the soil.
- Because a Wilson’s Snipe’s eyes are set far back on its head, it can see almost as well behind as in front and to the sides. This arrangement makes it difficult for a potential predator to sneak up on a feeding snipe—it almost literally has “eyes in the back of its head.”
- The word “sniper” originated in the 1770s among British soldiers in India who hunted snipe as game. The birds are still hunted in many countries, including the U.S., though their fast, erratic flight style means they are difficult targets.
- Although only the female tends the eggs and nestlings, Wilson’s Snipe parents split up the siblings once they’re ready to fledge. The male takes the two oldest; the female takes the younger two with her. After they leave the nest the mates have no further contact.
- Researchers have done wind tunnel tests with Wilson’s Snipe feathers to try and duplicate the “winnowing” sound that’s made as birds fly with their tail feathers fanned. They found that it’s the outermost tail feathers, or rectrices, that generate the sound, which apparently happens at airspeeds of about 25 miles per hour.
- The oldest known Wilson’s Snipe was at least 9 years, 3 months old, based on a band recovered from a bird that was shot in Newfoundland and Labrador, Canada, in 1973.

## **Find This Bird**

The old practical joke of a snipe hunt involves getting someone to wait out in a marsh at night, holding a bag, with promises of flushing a snipe into the bag. We don't recommend this technique for seeing snipe: a much better way is to look for the birds in open wetlands during spring and summer. Listen and watch for their aerial winnowing displays, performed high in the sky by fast-flying, swooping birds. When they're not flying, these birds often perch and call from fence posts and other exposed spots. In migration and during winter, carefully scan the edges of muddy ponds, ephemeral pools of rainwater, ditches, small streams, and other such places. As you walk, you might flush a snipe unexpectedly from close by and hear its raspy call as it takes off. These birds tend to be most active around dawn and dusk.

## **Habitat**

Marshes Wilson's Snipes can be found in all types of wet, marshy settings, including bogs, fens, alder and willow swamps, wet meadows, and along rivers and ponds. They avoid areas with tall, dense vegetation, but need patches of cover to hide in and to provide a safe lookout for predators. In the western U.S., look for Wilson's Snipes in wetlands with sedges, rushes, and cattails, including wet pastures and other agricultural fields. In the South, Wilson's Snipes winter in rice and sugarcane fields.

## **Food**

Aquatic invertebrates

Wilson's Snipes feed mainly on insect larvae, including flies such as crane, horse and deer flies as well as beetles, dragonflies, crickets, grasshoppers, ants, mayflies, butterflies, caddis flies and moths. Other invertebrate prey includes snails, crustaceans, and worms. Wilson's Snipes use their flexible bills to probe for food in wet soil and can swallow small prey without having to pull their bill from the soil. They occasionally eat small vertebrates including lizards, frogs, fish, and nestling birds. Plant materials make only a minor contribution to their diets.

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## **Nesting**

Nest Placement: Ground

Followed by her partner, the female Wilson's Snipe makes several scrapes before selecting a nest site on the ground close to or even surrounded by water. The nest is often placed atop or on the edge of a hummock and well hidden by sedges, grass, or sphagnum moss. Willow, alder, or other brush may obscure the nest from above.



## **Nest Description**

The female Wilson's Snipe makes a shallow scrape in moist soil, then weaves a lining of coarse grasses to build a nest up to 7 inches across and 3 inches deep. She adds finer grasses to the inside, creating a more elaborate nest than the simple scrapes most shorebirds make. Before and after laying each egg, the female adds a few grasses or sedges from the edge of the nest site.

## **Nesting Facts**

Clutch Size: 2-4 eggs

Egg Length: 1.4-1.7 in (3.5-4.3 cm)

Egg Width: 1.0-1.2 in (2.6-3 cm)

Incubation Period: 18-20 days

Egg Description: Olive brown splotched with dark brown, black or purple.

Condition at Hatching: Active, covered with tan to chestnut down blotched with black, with a white streak on crown and over eye. The chicks leave the nest on the day of hatching.

## **Behavior**

Probing

This elusive bird sleeps much of the day, then feeds around dusk and dawn. They probe for insect larvae and other prey in marshes, bogs, along pond and river edges, and in other wet settings, using the sensory receptors at the tip of their long, straight bills to locate food. Despite their somewhat pudgy, unbalanced look, Wilson's Snipe are strong, fast flyers reaching speeds of more than 60 miles per hour. If you flush one, it will burst from cover with a characteristic zigzagging flight that distinguishes it from other sandpipers. These birds are best known for their dramatic "winnowing" courtship displays: as a snipe (usually a male but sometimes a female) circles and dives over the breeding territory, air rushes over the outspread tail feathers. This creates a haunting, whirring hu-hu-hu sound. Both males and females winnow as part of courtship or to rebuff potential predators, and males perform the winnowing flight when advertising and defending territory. Like many sandpipers, a Wilson's Snipe with eggs or chicks will attempt to distract a predator with an elaborate show of feigned injury, fluttering up from the nest and falling to the ground, or flopping on its side or breast and beating its wings.

## **Conservation**

Low Concern

Wilson's Snipe is widespread, and overall, populations remained stable between 1966 and 2019, according to the North American Breeding Bird Survey. Partners in Flight estimates the global breeding population at 2 million individuals and rates them 9 out of 20 on the Continental Concern

Score, indicating a species of low conservation concern. In the U.S., approximately 93,000 Wilson's Snipe were taken annually by hunters between 2019 and 2021. This number was probably several times higher during the mid-twentieth century. Wilson's Snipes depend on wetlands, and as such, the draining or conversion of wetland habitat is detrimental to this species. Other threats include collisions with lighthouses, radio, TV, and cell towers, buildings, and cars.