



# Woodcock and Wilson's Snipe

The American woodcock (*Scolopax minor*) is known by a host of folk names: timberdoodle, night partridge, big-eye, bogsucker and mudsnipe. It has big eyes and a bill that looks too long for its body. Most active at dusk and dawn, a woodcock uses its bill to probe rich moist soil for earthworms.

Taxonomically, the species is placed in Order Charadriiformes, which includes gulls, oystercatchers, plovers and others. Within the order, the woodcock belongs to Family Scolopacidae, a group of snipe and sandpipers with more than 80 species distributed over most of the world.

The American woodcock is closely related to the European woodcock (*Scolopax rusticola*). The Old World bird resembles its American counterpart and has a similar life history, but it is larger and almost twice as heavy.

## Biology

A woodcock's plumage is an overall mottled russet and brown. The beige breast, back and sides are overlaid with black and browns; the forehead and crown are ashy gray to black, and barred with gold. The short tail is a combination of brick-red and black, tipped with gray. Feet and toes are bare and gray to flesh-colored.

A woodcock is 10 to 12 inches in length (a little longer than a bobwhite quail), has a standing height of about 5 inches and a wingspread of 16 to 19 inches. Body conformation is "chunky"—short and heavy, with a short, thick neck and a large head. Wings are short and bluntly rounded. Sexes look alike, although females generally average a bit heavier than males (6.2 vs. 5.6 ounces). Weights for both sexes vary according to time of year.

A woodcock's bill is long and thin. A female's bill measures  $2\frac{3}{4}$  inches or slightly longer, while a male's is usually less than  $2\frac{1}{2}$  inches. Sensitive nerve endings in the lower third



American woodcock

of the bill help a woodcock locate earthworms. A special bone-muscle arrangement lets the bird open the tip of its upper bill, or mandible, while it is underground. The long tongue and the underside of the mandible are both rough-surfaced to grasp and pull slippery prey out of the ground.

Eyes are large and set well back and high on the sides of a woodcock's head. This positioning lets the bird look all around—behind, above and to the sides, as well as ahead—while it probes for food. Nostrils are set high on the bill, close to the skull. A woodcock's ears are ahead of the eyes, between the base of the bill and the eye sockets. Hearing and sight are acute.

The woodcock's brain is unique among birds. Its cerebellum is located below the rest of the brain and above the spinal column. (In most birds, the cerebellum occupies the rear of the skull.) One theory suggests that as the woodcock evolved into a ground-probing lifestyle, the eyes moved back in the skull, the bill lengthened, and the nostrils approached the base of the bill—forcing the brain to change its position within the skull. The woodcock of today, in essence, has an upside-down brain.

When woodcock flush from the ground, air passing through their rapidly beating wing primary feathers produces a whistling sound. The birds usually flutter up out of cover, level off and fly from 10 to several hundred yards before setting down. Being migratory birds, they are capable of sustained flight.

Earthworms, high in fat and protein, make up more than 60 percent of a woodcock's diet. The remainder of the diet is comprised largely of insect larvae, caterpillars, other invertebrates, and less often, plant seeds. Use of insects, larvae and seeds is especially pronounced during late summer dry periods when earthworms have gone deep into the soil. Timberdoodles do most of their feeding in the early evening and just before dawn. Digestion is rapid; an adult may eat half its body weight or more each day.

Woodcock are quite vocal, with at least four recognized calls used by males in courtship. During the mating season, a male woodcock on the ground will sound a nasal, buzzing, insect-like note usually described as *peent*. Preceding each *peent* is a two-syllable gurgling note, *tuko*. While the *peent* carries several hundred yards, the much softer *tuko* is audible only within about 15 feet of the bird.

The flight song—a series of liquid, gurgling *chirps*—is sounded on the wing by a male trying to attract a mate. A male defending breeding territory against another male makes a menacing cackle, *cac-cac-cac-cac*, as he flies toward his rival.

A female will squeal and often feign a broken wing to lure intruders away from her young. Other calls express alarm or provide communication between hens and offspring.

In spring, males establish territories known as “singing grounds.” These are woodland clearings spotted with low brush, or open fields next to brush or woods; they vary in size, but a quarter-acre seems big enough. While on the ground, the males *peent* to attract females. A male will take off and fly upward 200 to 300 feet on twittering wings; then he'll spiral or zigzag back to earth, sounding a liquid, warbling song as he descends. Courtship occurs for short periods at dawn and dusk; courtship displays are most active when temperatures are above freezing and winds are calm.

Females seek out males on the singing grounds. Males may mate with several females. In Pennsylvania, most breeding takes place from early March to mid-May. Hens usually nest within 150 yards of the singing grounds where they mated; males play no role in nest selection, incubation or rearing of young. Favored nesting habitat includes damp woods near water, hillsides above moist bottomlands, old fields with



American woodcock

low ground cover, briar patches, or 10 to 12-year-old shrub thickets and the edges of young conifer stands. There may be little overhead cover (old fields) or up to 25 feet of vegetation (young hardwood stands). The average cover height is 12 feet.

A typical woodcock nest is a slight depression on the ground in dead leaves. Some nests are rimmed with twigs or lined with pine needles. An egg-laying or incubating hen is difficult to spot, as her mottled, brown plumage usually blends in with the background.

In Pennsylvania, woodcock nest from late March into June. Located near nesting sites are feeding areas of open woods, abandoned fields, brushy areas, and mixed forests, where incubating hens feed. Although they are solitary nesters, hens may share feeding grounds with other woodcocks. A female lays one egg a day until she completes the normal clutch of four. Eggs are oval, 1½ by 1 inch, which are large for the bird's size. The shells are smooth, with a slight gloss, colored pinkish-buff to cinnamon and covered with light brown blotches overlaid with darker speckling.

Incubation takes 19 to 22 days. It begins after the last egg is laid, so all eggs receive equal incubation and hatch at about the same time. If a hen is disturbed early in the incubation period, she may abandon the nest. The longer she sits on the eggs, however, the less likely she will desert them. Nest predators include domestic cats, raccoons, skunks and snakes. Nests also fail due to desertion when an incubating hen is disturbed by humans and dogs. This is especially damaging during the early portion of incubation, so many bird dog trainers refrain from allowing their dogs to enter woodcock habitats during March and April. Hens losing their first clutch may re-nest, often laying only three eggs. Eggs hatch from early April until mid-June, with 70 percent of hatching occurring in the last two weeks of April and the first week of May.

Eggs split lengthwise (unique among birds) as the woodcock chicks emerge. Chicks are precocial, able to leave the nest a few hours after hatching. They are covered with fine down, pale brownish to buff with brown spots and stripes above, and rufous below; a dark line runs from the bill back to the eye. From the day of hatching, chicks "freeze" when threatened or in response to the hen's alarm call. During the first few days, the hen broods her chicks frequently, especially during rain, snow or cold. At first she finds worms for them, but after a few days, they are probing for and capturing worms by themselves.

Chicks grow rapidly. After two weeks they can fly short distances, and at the end of four weeks they are almost fully grown, fly strongly and look like adults. The family breaks up when juveniles are 6 to 8 weeks old.

As days grow shorter and temperatures drop, woodcocks begin to head south. Woodcock migrate at low altitudes (about 50 feet), flying at night and resting and feeding in secluded thickets during the day. They typically travel alone, though conducive weather conditions can result in 'flights' of many birds arriving in a location at once. Birds from farther

north may start to pass through Pennsylvania in October; the migration peaks in late October and early November, with stragglers up until the end of November. Heavy northwest winds and cold nights may start large numbers of woodcock winging south. Woodcock winter in the Carolinas, Georgia, and northern Florida west to eastern Texas and Arkansas, concentrating in Louisiana and southwestern Mississippi. During an exceptionally mild season, some birds remain in Pennsylvania throughout the winter.

Wildlife biologists believe that woodcock have several migration routes. Most woodcock nesting east of the Appalachian Mountains, appear to winter mainly in the south Atlantic states. Woodcock breeding west of the Appalachians are thought to winter in the Gulf States. In late winter and early spring, woodcock reverse direction and return north. Like many migratory birds, woodcock home strongly to the areas where they hatched. Migrating woodcock have turned up in Pennsylvania as early as February 25, with most birds arriving in March. Migration is largely complete by mid-April.

Woodcock are hardy and seem able to recover from injuries that would kill most other birds. If a woodcock reaches adulthood, its life expectancy is about two years. Wild woodcock have been known to live eight years, and one wild bird banded in Pennsylvania was recovered six years after banding. Mortality factors include predators; collisions with human structures during night flight; hunting; disease; parasites, and bad weather. Woodcock heading north too early in spring may be caught by late-season snows or hard freezes, which seal off their food supply and can lead to starvation.

As migratory birds, woodcock fall under the jurisdiction of the U.S. Fish & Wildlife Service. This agency works in cooperation with the states comprising the woodcock's range to monitor the species' population and set the framework for hunting seasons and bag limits.

## Population

Compared to most other game birds, woodcock have low reproductive potential. A female raises only one brood each year, and each brood consists of four (and sometimes only three) young. Fortunately, the species has a high nesting success rate—60 to 75 percent—and low juvenile mortality.

Population densities vary in any one locale. Woodcock may be scattered, concentrated, or absent, depending on time of year, weather conditions, or habitat. In autumn, concentrated groups of woodcock may not reflect the carrying capacity of land on which they are found, as they may just be passing through. The overall population can fluctuate greatly over the years.

From 1968 to 2012 (when this note was updated), woodcock populations have experienced a one percent average annual decline throughout their range. Most biologists attribute this decline to loss of habitat quantity and quality. In Pennsylvania, intensive logging, farm abandonment and wildfires that create new and young forests—highly desirable woodcock habitat—are relatively rare today. Development also destroys

or fragments existing woodcock habitat. This long term decline has made the woodcock a conservation priority species for state and federal partners. Fortunately, populations in the Eastern Region have largely stabilized over the past ten years, perhaps due to this renewed conservation attention. Expanding human development into farmlands and woodlands and the steady maturation of Pennsylvania forests remain long-term threats.

## Habitat

Habitat requirements for woodcock change throughout the year. In spring, they need areas for courtship displays and nesting; in summer, for brood-rearing; during fall and spring migrations, for feeding and resting; and they require wintering habitat in the southern states. Food must be available during all seasons.

Woodcock are attracted to moist young forestland and shrublands. They tend to use edges rather than interiors of big, even-aged thickets. The following plants are closely-associated with woodcock: alder, aspen, hawthorn, gray dogwood, crab apple, blue beech (hornbeam) and gray birch. These species can be planted, or, if they already grow in a given area, encouraged by cutting down large trees which may be shading them and stunting their growth. For courtship, males need singing grounds: clearings a quarter-acre or larger with a straight, unimpeded take-off strip 15 to 20 yards long. As trees and shrubs in the clearing grow larger, woodcock will seek out other areas. To keep a singing ground functioning, it must be cleared periodically. Larger clearings (five acres or more) also are used as nocturnal roosting habitat for much of the year; it is believed night predation risk is lower in these more open areas.

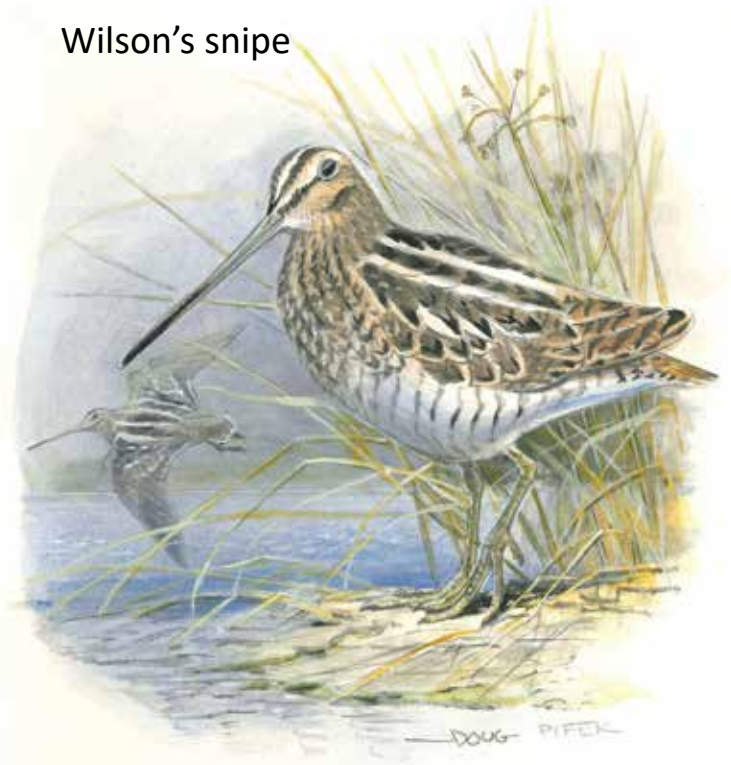
Females nest and raise broods near breeding grounds. Good cover includes edges of thickets, young conifer plantations and old, brushy fields. The best feeding areas are shrub patches near streams, springs, or marshy ground. Resting cover often is on high, drier ground. Feeding and resting cover is used by woodcock of all ages and sexes during the breeding season and migration.

The life of good woodcock cover is about 20 to 25 years in Pennsylvania. As the cover matures, different tree species take over, and it grows less suitable. Removing tree species as they invade shrub thickets will prolong the life of a woodcock covert. Over-mature shrubs, aspen and alder can be cut or burned and the resulting shoot growth will restore good habitat.

## Wilson's Snipe (*Gallinago delicata*)

The Wilson's snipe is a small, stocky shorebird (and game bird) that can be easily confused with a woodcock. Snipe are slightly smaller in size than woodcock with adults measuring 10 to 12 inches in length with a 16 – to 17-inch wingspan. Like woodcock, the body is mottled brown on top. However, snipe can be distinguished by their dark vertical stripes

## Wilson's snipe



running longitudinally over the head and body and their pale undersides. They have a dark stripe through the eye, with light stripes above and below it. The wings are pointed.

Snipe forage in soft mud, probing or picking up food by sight. They may eat insects, earthworms and plant material. This well-camouflaged bird is usually shy and conceals itself within vegetation. They flush only when approached closely, flying off in a series of aerial zigzags with a harsh *scaipe* call. Pennsylvania habitats tend to be more open than the forested areas preferred by woodcock and include marshes, wet meadows and pastures. Snipe in the East migrate to the southern United States and to northern South America. The male performs a “winnowing” display during courtship and in defense of territory, flying high in circles and then taking shallow dives to produce a distinctive sound made by the wind rushing over modified tail feathers with each wingbeat. Snipe nest in a well-hidden location on the ground. The clutch size is almost always four eggs. The male snipe leaves the nest with the first two chicks to hatch. The female takes the last two and cares for them. Apparently the parents have no contact after that point. Like woodcock, populations of this once-popular game bird have been reduced by habitat loss as wet pastures and meadows were drained for development or allowed to grow into forests.