

## 2024 Lancaster County Junior Envirothon

### Forest Birds

Forest Birds	
Saw-whet Owl and <i>Call</i>	Barred Owl and <i>Call</i>
Goshawk	Wild Turkey
Black-capped Chickadee	Tufted Titmouse
Wood Thrush and <i>Call</i>	Pileated Woodpecker
Scarlet Tanager	White-breasted Nuthatch
Eastern Towhee and <i>Call</i>	Ruffed Grouse and <i>Call</i>

#### References:

<http://www.pgc.pa.gov/Education/WildlifeNotesIndex/Pages/default.aspx>

<https://www.allaboutbirds.org/guide/search/>

#### Bird Call links

For 1, 2, and 3, listen to the sound on the page that opens (green oval). For the Barred Owl (4), listen to the top 3 to hear a variety of typical calls. Listen to the drumming for the Ruffed Grouse (5).

1. Saw-whet Owl: [https://www.allaboutbirds.org/guide/Northern\\_Saw-whet\\_Owl/](https://www.allaboutbirds.org/guide/Northern_Saw-whet_Owl/)
2. Wood Thrush: [https://www.allaboutbirds.org/guide/Wood\\_Thrush](https://www.allaboutbirds.org/guide/Wood_Thrush)
3. Eastern Towhee: [https://www.allaboutbirds.org/guide/Eastern\\_Towhee](https://www.allaboutbirds.org/guide/Eastern_Towhee)
4. Barred Owl: [https://www.allaboutbirds.org/guide/Barred\\_Owl/sounds](https://www.allaboutbirds.org/guide/Barred_Owl/sounds)
5. Ruffed Grouse: [https://www.allaboutbirds.org/guide/Ruffed\\_Grouse/sounds](https://www.allaboutbirds.org/guide/Ruffed_Grouse/sounds)



## Saw-Whet Owl

With a body length of eight inches and an 18-inch wingspan, the saw-whet is the smallest Pennsylvania owl. Its plumage is dull chocolate-brown above, spotted with white, and its undersides are white spotted with dark reddish-brown. Juveniles have rich chocolate-brown color over most of their bodies. This species has no ear-like feather tufts. The saw-whet's call is a mellow, whistled note repeated mechanically, often between 100 and 130 times a minute: too, too, too, too, too, etc. This sound

suggests the rasping made when sharpening a saw — hence the bird's name. The saw-whet is nocturnal and seldom seen. By day, it roosts in young, dense hemlocks or thickets. Saw-whet owls breed from March to April; they nest in deserted woodpecker and squirrel holes, hollow trees or stumps, and nesting boxes. Females lay 4-6 eggs that hatch after 21-28 days. Immatures leave the nest when about a month old. Saw-whets feed on insects, mice, frogs, bats, voles, shrews, and small birds. In turn, they are preyed upon by barred and great-horned owls.

### Fun facts:

- The main prey items of the Northern Saw-whet Owl are mice, especially deer mice of the genus *Peromyscus*. Saw-whets usually eat adult mice in pieces, throughout two meals.
- The female saw-whet keeps the nest very clean, but a mess starts to accumulate when she leaves. By the time the young owls leave the nest, 10 days to 2 weeks later, the nest cavity has a thick layer of feces, pellets, and rotting prey parts.



## Northern Goshawk

The largest of our *accipiter* group, goshawks are 20 to 26 inches long with a wingspread of 40 to 47 inches and weight of 1½ to 3½ pounds. Both immatures and adults have a prominent white line over each eye; the eyes of adults are bright red. Adults are blue-gray above and white below, with light barring on the breast. Immatures are brown above and creamy white below, with heavily streaked undersides. In PA, goshawks are seen in greatest numbers in winter, when food scarcities force many south. Also called "blue darters," goshawks are swift, maneuverable, and

relentless, sometimes pursuing prey — birds and small mammals — through thick underbrush on foot. Goshawks breed in wooded areas and prefer wild territory, such as the mountainous areas of northern Pennsylvania. They nest up to 75 feet above the ground in trees, building bulky nests (3 to 4 feet in diameter). A pair often uses the same nest year

after year. Females lay 3 to 4 off-white and usually unmarked eggs which they alone incubate for 36 to 38 days. Goshawks defend their nests fiercely; the voice is a harsh ca ca ca around the nest.

#### **Fun facts:**

- The name goshawk comes from the Old English word for “goose hawk,” a reference to this raptor’s habit of preying on birds. Falconers have trained goshawks for more than 2,000 years; the birds were once called “cook’s hawk” for their success at snaring meat for the pot.
- Northern Goshawk pairs build and maintain up to eight alternate nests within their nesting area. Even with options available, they may use the same nest year after year or may switch to a new nest after a brood fails. Pairs may add fresh conifer needles to the nest during breeding. Aromatic chemicals (terpenes) in the needles may act as a natural insecticide and fungicide.



#### **Black-Capped Chickadee**

A black cap and bib, buffy flanks, and a white belly mark this small (five-inches long), spunky bird. Chickadees have short sharp bills and strong legs that let them hop about in trees and cling to branches upside down while feeding. They fly in an undulating manner, with rapid wingbeats, rarely going farther than 50 feet at a time.

The species ranges across northern North America, living in deciduous and mixed forests, forest edges, thickets, swamps, and wooded areas in cities and suburbs. Black-capped chickadees are common throughout Pennsylvania, except for the state’s southwestern and southeastern corners, where they’re replaced by the similar Carolina chickadee. About two-thirds of a chickadee’s diet consists of animal protein: moth and butterfly caterpillars (including early growth stages of gypsy moths and tent moths), other insects and their eggs and pupae, spiders, snails, and other invertebrates. In late summer and fall, chickadees eat wild berries and the seeds of ragweed, goldenrod, and staghorn sumac. In the fall chickadees begin storing food in bark crevices, curled leaves, clusters of pine needles, and knotholes. The birds rely on these hoards when other food becomes scarce. Chickadees also eat suet from feeding stations and fat from dead animals. In winter, chickadees live in flocks of six to 10 birds with one dominant pair. Listen for the chick-a-deedee-dee calls that flock members use to keep in contact while foraging around a territory of 20 or more acres. A flock will defend its territory against other chickadee flocks. At night chickadees roost individually in tree cavities or among dense boughs of conifers. Chickadees mate for life. In spring, the winter flocks break up as pairs claim nesting territories ranging from 3 to 10 acres in size. Chickadees nest in May and June. The usual site is a hole in a tree, dug out by both sexes. The birch tree is a favorite because this tree’s tough outer bark stays intact

after the inner wood rots and becomes soft enough for chickadees to excavate. Chickadees also clear out cavities in aspen, alder, willow, and cherry trees, and use abandoned woodpecker holes. The cavity is usually 4 to 10 feet above the ground. The female assembles the nest by laying down a base of moss and then adding softer material such as animal fur or plant fiber. House wrens compete for nest cavities and may destroy chickadee eggs and broods; raccoons, opossums, and squirrels raid nests. Chickadees will re-nest if a first attempt fails. Only one *brood* is raised per year. The five to nine eggs are white with reddish-brown dots. The female incubates them, and the male brings her food. The eggs hatch after 12 days. Juveniles beg loudly and are fed by both parents. Young fledge about 16 days after hatching. Some three to four weeks after fledging, the young suddenly disperse, moving off in random directions. As winter approaches, they join feeding flocks. Some become “floaters,” moving between three or more flocks, ready to pair with an opposite-sex bird should its mate die. Chickadees are taken by many predators including sharp-shinned hawks, American kestrels, Eastern screech owls, saw-whet owls, and domestic and feral cats. Sometimes chickadees mob these enemies while sounding zee-zee-zee alarm calls. The average life span for a chickadee is two and a half years, and the current longevity record is 12 years, nine months. Every few years long-distance movements take place within the population, “irruptions” that may be launched by failure of seed crops or high reproductive success.

### **Fun Fact**

- A roosting chickadee tucks its head under a wing to conserve body heat. On cold nights, a chickadee’s temperature drops from a normal 108° F to about 50° F, causing the bird to enter a state of regulated hypothermia which saves significant amounts of energy. Chickadees lose weight each night as their bodies slowly burn fat to stay alive; they must replace those fat stores by feeding during the next day.
- The Black-capped Chickadee hides seeds and other food items to eat later. Each item is placed in a different spot and the chickadee can remember thousands of hiding places.
- Every autumn Black-capped Chickadees allow brain neurons containing old information to die, replacing them with new neurons so they can adapt to changes in their social flocks and environment even with their tiny brains.
- Chickadee calls are complex and language-like, communicating information on identity and recognition of other flocks as well as predator alarms and contact calls. The more dee notes in a chickadee-dee-dee call, the higher the threat level. Most birds that associate with chickadee flocks respond to chickadee alarm calls, even when they don’t have a similar alarm call.



## Wood Thrush

Mid-April to early May is when the first calls of wood thrushes are likely to be heard percolating through the woods in central Pennsylvania. The flutelike song is usually rendered as ee-o-lay, and it goes on increasingly through May, especially at dawn and dusk. Wood thrushes have reddish heads, olive backs and tails, and prominently spotted breasts; they are not as shy as other forest

thrushes nor as bold as robins. Wood thrushes feed on beetles, caterpillars, crickets, ants, moths, and sowbugs, plus spiders, earthworms, and snails. They also eat many fruits and berries. Wood thrushes nest throughout eastern North America. They are statewide in Pennsylvania in moist *lowland* woods, dry *upland* forests, wooded ravines, orchards, city parks, and wooded suburbs. Territories range in size from a quarter of an acre to two acres. The female builds her nest on a branch or in a fork of a tree 6 to 50 feet above the ground (on average, 10 feet high), using grasses, moss, bark, and leaves cemented together with mud. An inner cup is lined with rootlets. The eggs are pale greenish blue. The young hatch after two weeks and leave the nest some 12 days later. Brown-headed cowbirds frequently *parasitize* wood thrush nests, although in some cases the unrelated cowbird young may not affect the growth or success of the host's young. House cats, black rat snakes, flying squirrels, grackles, blue jays, weasels, and white-footed mice take eggs, nestlings, and young. Wood thrushes stop singing in late summer but continue to sound bwubububub contact notes and bweebbeebeebee alarm calls. They head south in August and September to forests from southeastern Mexico to Panama. The wood thrush population has declined markedly since the 1980s, perhaps because fragmented forests in the Northeast make wood thrush nests more accessible to predators and to cowbirds, which dwell in more open country. Wood thrushes have also lost crucial habitat through deforestation in their wintering range.

### Fun facts:

- A songbird like the Wood Thrush requires 10 to 15 times as much calcium to lay a clutch of eggs as a similar-sized mammal needs to nurture its young. That makes calcium-rich food supplements like snail shells crucial to successful breeding. These are rare in soils subject to acid rain, which may help explain patterns of population decline in the Wood Thrush.
- The Wood Thrush is a consummate songster and it can sing “internal duets” with itself. In the final trilling phrase of its three-part song, it sings pairs of notes simultaneously meaning at the same time, one in each branch of its y-shaped *syrinx*, or voicebox. The two parts harmonize with each other to produce a haunting, *ventriloquial* sound.



## Scarlet Tanager

Males arrive on the breeding range in southeastern PA where Lancaster County is located from late April to early May, just as trees are beginning to leaf out. Their bodies are red, and their wings and tails are jet-black. Females, which show up a few days later, are a greenish yellow that blends with the leaves in which they rest and feed.

Adults are about seven inches in length. Scarlet tanagers favor dry, *upland* oak woods. They also inhabit mixed and *coniferous* forests and shade plantings in suburbs and parks. Males claim two- to six-acre territories by singing almost constantly from prominent perches and driving away competing males. Insects and fruits form the bulk of the diet. Scarlet tanagers nest in late May and June. Females forage higher in the tree canopy than males. Both males and females work slowly and methodically, inspecting leaves, twigs, and branches and picking at leaf clusters near the ends of twigs. Scarlet tanagers leave Pennsylvania in September and early October. They migrate mainly through the Caribbean lowlands of Middle America and spend most of the year east of the Andes in remote forests of Colombia, Ecuador, Peru, and Bolivia. Scarlet tanagers nest statewide in Pennsylvania and are more common than many people think. The highest populations occur in mature, extensive forests. Scarlet tanagers are absent from treeless urban areas and intensively farmed lands.

### Fun Fact:

- Scarlet Tanagers often play host to eggs of the Brown-headed Cowbird, particularly where the forest habitat has been *fragmented*. When a pair of scarlet tanagers notices a female cowbird approaching, they aggressively drive her away. If they don't notice, the cowbird gets rid of a scarlet tanager egg in the nest and replaces it with one of her own. The scarlet tanagers apparently can't tell the difference, either before or after the egg hatches, and they raise the imposter along with the rest of their brood.





## Eastern Towhee

Formerly called the rufous-sided towhee, this large (seven to eight inches), long-tailed sparrow breeds statewide in Pennsylvania. Adults have rusty sides, white bellies, and solid-colored backs and heads that are black in the male and brown in the female. The eyes are red. Males sing a distinctive “drink your tea,” with the middle syllable low and the last syllable drawn out and quavering. Both males

and females frequently give an emphatic chewink or tow-hee call. A way to locate the birds is to listen for the rustling they make while searching for food in leaf litter. Towhees energetically turn up leaf litter on the ground by hopping back and forth, scratching with both feet. They pick up various insects, spiders, millipedes, and snails as well as seeds, small fruits, berries, and acorns. In April, males arrive from southern states in small bands, disperse, and, singing from high perches, proclaim individual territories of one-half to two acres. Females show up about a week later. They scuff out shallow depressions in the ground and build bulky but well-camouflaged nests of leaves, bark strips, and other plant matter, lined with fine grasses and pine needles. In Pennsylvania, the Eastern towhee nests from late April into August with most pairs producing two broods. The estimated life span of a towhee is four to six years. Eastern towhees are found mainly in second-growth forests, overgrown fields, woods edges, clear-cuts, hedgerows, thickets, dense brush, and the understory of open deciduous woods. The clearing of the Eastern *deciduous* forests in the late 1800s helped the Eastern towhee populations to expand. More recently, as old fields have matured into woods, the population of this species has declined noticeably. Rarely do they live in suburban yards, cities, or intensively farmed areas.

### Fun fact:

- The Eastern Towhee and the very similar Spotted Towhee of western North America used to be considered the same species, the Rufous-sided Towhee. The two forms still occur together in *the Great Plains*, where they sometimes interbreed. This is a common evolutionary pattern in North American birds – a holdover from when ice sheets split the continent down the middle, isolating birds into eastern and western populations that eventually became new species.



## Barred Owl

The barred owl is a large bird of the deep woods. It has a smooth, rounded head, and brown eyes (it's the only brown-eyed Pennsylvania owl except for the barn owl; all others have yellow eyes). The barred owl ranges over the eastern United States, its distribution often coinciding with that of the red-shouldered hawk. A barred owl weighs up to two pounds, with a 44-inch wingspan and body length up to 20 inches. It has gray-brown plumage

with white spots on the back; whitish or grayish underparts are barred with buff or deep brown, the barring crosswise on the breast and lengthwise on the belly. The barred is the most vocal of our owls. Its hoots are more emphatic than those of the great horned owl, but not as deep or booming. The barred owl's call is eight accented hoots, in two groups of four hoots: hoo-hoo-hoo-hoo . . . hoo-hoo-hoo-hooaw (described as "Who cooks for you, who cooks for you all?"). It usually calls early in the night, at dawn, and occasionally on cloudy days. Barred owls almost always nest in hollow trees, laying 2-4 eggs that hatch in 28-33 days. Pairs may show strong attachment to the same nest area, returning year after year.

### Fun facts:

- Barred Owls don't migrate, and they don't even move around very much. Of 158 birds that were banded to be studied by scientists and then found later, none had moved farther than 6 miles away.
- Young Barred Owls can climb trees by grasping the bark with their bill and talons, flapping their wings, and walking their way up the trunk.



## Wild Turkey

The wild turkey is a shy, permanent resident of Pennsylvania's woods and mountains. Turkeys have long been important to humans in North America. Native Americans hunted them for food, and some natives even domesticated the big birds. Later, the wild turkey became a steady food source for settlers. It earned a symbolic role as the main course of the Thanksgiving meal, which

epitomized the successful harvest. The wild turkey is native only to the North American continent. Turkeys are related to grouse, quail, pheasants, and chickens. Adult males, also called gobblers or toms, stand 2½ to 3 feet tall and are 3 to 4 feet long. Females, or hens, are about one-third shorter and weigh about half as much. Gobblers weigh up to 25



pounds, averaging 16. Adult hens weigh 9 to 10 pounds, and 6-month-old birds, 6 to 13 pounds. Tail feathers and tail coverts are tipped chestnut brown. The plumage is an overall rich brown. In shadows, turkeys appear black; in bright sunlight, their feathers gleam with copper, blue, green, and mahogany highlights. A hen's plumage is duller and not quite as *iridescent*, and her breast feathers end in a brown or buff band, while those of a gobbler are tipped with black. Gobblers have *spurs*—sharp, bony spikes on the backs of their legs that are used in fighting—and rough, black “beards,” growths of rudimentary, hair-like feathers called *mesofiloplumes*, which protrude from their breasts. Usually, hens have neither spurs nor beards. A gobbler's head is practically bare, while the hen has fine feathers on the back of her neck and head. A fleshy, pencil-like appendage called a *caruncle*, or *snood*, dangles from between the gobbler's eyes. The heads of hens are bluish-gray, and their necks may appear somewhat pinkish, whereas gobblers' heads are pink to red. The bulk of a turkey's diet is plant-based though in summer, they eat more insects, arachnids including ticks, as well as snails and slugs. Turkeys can range up to several miles a day in search of food and water, sometimes establishing regular feeding areas if left undisturbed. Turkeys hide cleverly, fly an estimated 40 to 55 mph, cover more than a mile while airborne, and swim with ease, but turkeys usually rely on their feet to escape danger. The strides of chased gobblers have been measured at 4 feet and their top running speeds are estimated at 18 mph. Each evening, turkeys fly into trees to spend the night. They prefer the shelter of conifers during inclement weather. Turkeys make a wide range of sounds. The best known is the male's gobble (described ill-obble-obble-obble), used in spring to attract females and proclaim territory. Foxes, bobcats, and great horned owls prey on nesting hens; eggs are eaten by these predators plus minks, raccoons, opossums, black snakes, skunks, crows, red squirrels, and even house cats. Young turkeys are called *poults*. Easy game for predators, their main defense is to hide. They scatter and freeze at the hen's warning call, remaining motionless until she sounds the all-clear. A hen might feign injury to lure intruders away from her young. Although susceptible to diseases, turkeys are hardy animals. Periodically, a harsh winter might lead to starvation, especially if there is deep, powdery snow, which makes it difficult for birds to become airborne. In the year 1900, few turkeys were left in the eastern United States, largely because widespread logging of trees had destroyed their woodland habitat. The Pennsylvania Game Commission works to improve turkey habitat, especially brood and winter-range habitat, which tend to be limiting factors for populations. Wild turkeys can now be found in every county within Pennsylvania. Turkeys seem to do best with a mix of forested, actively farmed, and reverting farmland habitat types. Trees such as oaks, beech, and cherries are most beneficial to turkeys when producing the maximum *mast*; this occurs when trees are 50 to 100 years old. Planting shrubs such as crabapple, serviceberries, high-bush cranberry, and Washington hawthorn, or allowing clumps of brush such as blackberries and raspberries to grow will provide abundant and persistent winter foods. Forest clearings are especially used by hens and poults. Here, sunlight penetrates the tree canopy and allows grasses to

spring up. Increased plant life gives rise to increased insect life, and insects form a key part of a young turkey's diet.

#### **Fun Facts:**

- Benjamin Franklin so admired the big bronze bird that he wanted it for our national emblem. Comparing it to the bald eagle, he said: "The turkey is a much more respectable bird, and withal a true original Native of America."
- The English name of the bird may be a holdover from early shipping routes that passed through the country of Turkey on their way to delivering the birds to European markets.
- When they need to, turkeys can swim by tucking their wings in close, spreading their tails, and kicking.



#### **Tufted Titmouse**

This trim bird has gray-and-white plumage, a prominent head crest, and black "shoebutton" eyes. The species ranges through eastern North America into southern New York and New England. It has extended its range northward over the last half-century, perhaps because of climatic warming and an increase in bird feeding by humans. In the early 1900s the tufted titmouse was absent from northern Pennsylvania; today it breeds

statewide. Titmice eat insects, spiders, snails, seeds, nuts and berries. Like the chickadee, the titmouse forages by hopping about in tree branches, and often hangs upside down while inspecting the underside of a limb. To open a nut or seed, the bird holds the object with its feet and pounds it open with its bill. Titmice cache many seeds; with sunflower seeds, the birds usually remove the shell and hide the kernel within 120 feet of the feeding station, under loose bark, in cracks or furrows in bark, on the ground, or wedged into the end of a broken branch or twig. Winter flocks are often made up of parents and their young of the previous year. Titmice are early breeders: males start giving their "Peter-Peter" territorial song in February. In Pennsylvania, pairs begin building nests in late March and early April. Titmice are believed not to excavate a nest cavity on their own; instead, they use natural cavities or abandoned woodpecker holes. Breeding territories average 10 acres. The female lays five or six eggs, which are white with dark speckles and incubates them for two weeks. The young fledge about 18 days after hatching. Sometimes yearling birds stay on in the territory of their birth and help their parents rear the next year's brood.

**Fun facts:**

- Tufted Titmice nest in tree holes (and nest boxes), but they can't excavate nest cavities to use. Instead, they use natural holes and cavities left by woodpeckers. These species' dependence on dead wood for their homes is one reason why it's important to allow dead trees to remain in forests rather than cutting them down.
- Tufted Titmice often line the inner cup of their nest with hair, sometimes plucked directly from living animals. The list of hair types identified from old nests includes raccoons, opossums, mice, woodchucks, squirrels, rabbits, livestock, pets, and even humans.

**Pileated Woodpecker**

The largest American woodpecker (except for the rare, if not extinct, ivorybill woodpecker) has a length of 12 - 17 inches and a wingspread of up to 27 inches. The Pileated woodpecker is crow-size but with a long, slender neck. Also called the Indian hen and log cock, a pileated woodpecker has a solid black back and tail and a conspicuous red crest for which it is named (from the Latin word for cap, pilleus). The female resembles the male but does not have red cheek patches and has less red in the crest. Flight is strong, with irregular wing

flapping accompanied by white flashing of wing undersurfaces. Foods include ants, beetles, wood-boring larvae, and wild fruits. Pileated woodpeckers inhabit mature coniferous and deciduous forests, valley woodlots, and remote mountain territory. They nest in a new hole excavated each year in the same nest area, 15 - 70 feet up a tree (average 45 feet). The entrance hole is usually oval, and the cavity is 10 - 24 inches deep. Females lay 3 or 4 eggs which are incubated for 18 days. These birds are uncommon residents in all seasons. They do not migrate but breed all over the eastern US and Canada. A pileated's powerful beak can break loose fist-size chunks of wood; the bird twists its head and beak as it strikes to add leverage. Pileateds cut large rectangular holes in dead trees, spars, live conifers and utility poles. They drum loudly and rapidly, then more slowly, trailing off softly at the end. They call loudly with a wick-uh wick-uh wick-uh, in a series; also kuk, kuk, kuk, kuk-kuk-kuk.

- **Fun facts:**

The Pileated Woodpecker digs large rectangular holes in trees to find ants. These excavations can be so broad and deep that they can cause small trees to break in half.

- The Pileated Woodpecker prefers large trees for nesting. In young forests, it will use any large trees remaining from before the forest was cut. Because these trees are larger than the rest of the forest, they present a lightning hazard to the nesting birds.



## White-Breasted Nuthatch

The white-breasted nuthatch has a slate-gray back, white breast and face, and a cap that is black in the male and ashy gray in the female. Nuthatches inhabit deciduous forests throughout Pennsylvania and the East. They climb around in trees, walking in a herky-jerky manner up and down and around the trunks, along branches, and the undersides of limbs. Both males and females sound a nasal ank ank call. Pairs

live in home territories of 20 to 35 acres. White-breasted nuthatches feed on insects and spiders in summer and on nuts and seeds in winter. They relish suet at feeding stations and carry away sunflower seeds for caching. Sometimes they forage on the ground. Nuthatches wedge acorns and hickory nuts into tree bark and then hammer the shells off with blows from their awl-like beaks. During courtship, the male bows to the female, spreading his tail and drooping his wings while swaying back and forth; he also feeds her morsels. Before building the nest, the birds rub or sweep crushed insects back and forth over the inside and outside of the nest cavity. Ornithologists speculate that this sweeping behavior leaves chemical secretions behind that may repel predators or nest competitors. The female builds a nest inside the cavity (commonly a rotted-out branch stub or an abandoned squirrel or woodpecker hole) using twigs, bark fibers, grasses and hair. She lays 5 to 9 white, brown-spotted eggs and incubates them for 12 to 14 days while her mate brings her food. Both parents feed insects and spiders to the young, which fledge after two or three weeks, usually in June.

### Fun facts:

- In winter, White-breasted Nuthatches join foraging flocks led by chickadees or titmice, perhaps partly because it makes food easier to find and partly because more birds can keep an eye out for predators. One study found that when titmice were removed from a flock, nuthatches were more wary and less willing to visit exposed bird feeders.



## Ruffed Grouse

The Ruffed Grouse has been Pennsylvania's official state bird since 1931. Where mature forests dominate the landscape, grouse, while present, are limited. But wherever brushy conditions are found, there's a good possibility grouse can be found there, too. Grouse are year-round PA residents and are related to quail, turkeys, pheasants, and ptarmigan. The ruffed grouse is found throughout much of the

northern part of our continent in areas of suitable habitat. Although its take-off is thunderous and powerful, a grouse cannot fly long distances. Individuals rarely range more than a few hundred yards a day; in fact, the same bird may be flushed from the same area in the woods several days in a row. A grouse weighs about 1½ pounds, is 15½ to 19 inches long, and has a wingspread of 22 to 25 inches. The plumage is rich brown sprinkled with white and black above, and white with horizontal dark brown bars on the breast and undersides. The tail is brown and has a wide, black band between two narrower grayish bands. The name "ruffed" comes from a ruff of iridescent black feathers that almost completely encircles the neck. Males have much more prominent ruffs, which can be fluffed up for a courtship display. Grouse rarely — if ever — die of old age in the wild. Juvenile mortality is great; most grouse die before they are a year old, and few live to be two years of age. Grouse are shy birds and their range has shrunk where cities and towns have expanded; they don't readily adapt to civilization. In the summer, grouse eat many types of food including protein-rich insects, blackberries, blueberries, and other wild fruits. In fall, when insects are scarce, their diet is almost exclusively plant foods including small acorns, beechnuts, cherries, barberries, wild grapes, apples, hawthorn and dogwood fruits, and various buds and leaves. Buds form the basis of the grouse's winter diet: aspen, birch, beech, maple, cherry, and apple buds are favored. Ferns, green leaves, and other evergreen foods are eaten until food becomes more plentiful in the spring. Grouse roost in conifers and hardwoods and shelter under conifers during storms. They may spend winter nights beneath the snow, sometimes flying directly into a soft snowbank at dusk. During winter, a grouse's feet develop snowshoe-like properties through the growth of a horny fringe around the toes. During mating season — March and April — male grouse attract females by drumming. With their tail fanned, the male stands on a large, prominent log or rock and beats the air sharply with his wings. The rush of air created by his wingbeats sounds much like drumming.

### Fun Facts:

- In early fall, juvenile ruffed grouse may exhibit a strange period of restlessness known as the "fall shuffle" or "crazy flight." During this time, some young grouse take off in apparently undirected flight, and a few are killed when they crash into trees,



fences, windows and the sides of buildings. The fall shuffle may serve to scatter broods and expand or disperse the population.

- 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.
- The male Ruffed Grouse's signature drumming display doesn't involve drumming on anything but air. As the bird quickly rotates its wings forward and backward, air rushes in beneath the wings creating a miniature vacuum that generates a deep, thumping sound wave that carries up to a quarter of a mile.

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