



American Redstart *Setophaga ruticilla* © Rob Curtis/The Early Birder



Eastern Kingbird *Tyrannus tyrannus* © Richard Day/Daybreak Imagery



Common Nighthawk *Chordeiles minor* © Richard Day/Daybreak Imagery



Belted Kingfisher *Ceryle alcyon* © Richard Day/Daybreak Imagery



Eastern Towhee *Pipilo erythrophthalmus* © Richard Day/Daybreak Imagery



Rose-breasted Grosbeak *Phoenicurus ludovicianus* © Richard Day/Daybreak Imagery



Indigo Bunting *Passerina cyanea* © Richard Day/Daybreak Imagery

Illinois common BIRDS



Yellow-rumped Warbler *Dendroica coronata* © Richard Day/Daybreak Imagery



Eastern Meadowlark *Sturnella magna* © Rob Curtis/The Early Birder



Ruby-throated Hummingbird *Archilochus colubris* © Richard Day/Daybreak Imagery



Greater Yellowlegs *Tringa melanoleuca* © Richard Day/Daybreak Imagery



Red-tailed Hawk *Buteo jamaicensis* © Richard Day/Daybreak Imagery



Green Heron *Butorides virescens* © Richard Day/Daybreak Imagery



Red-bellied Woodpecker *Melanerpes carolinus* © Richard Day/Daybreak Imagery



American Coot *Fulica americana* © Richard Day/Daybreak Imagery



Ring-billed Gull *Larus delawarensis* © Richard Day/Daybreak Imagery



Orchard Oriole *Icterus spurius* © Rob Curtis/The Early Birder



Scarlet Tanager *Piranga olivacea* © Rob Curtis/The Early Birder



Cedar Waxwing *Bombicilla cedrorum* © Todd Fink/Daybreak Imagery



Turkey Vulture *Cathartes aura* © Richard Day/Daybreak Imagery



Wood Thrush *Hylotrichia mustelina* © Rob Curtis/The Early Birder



Yellow-billed Cuckoo *Coccyzus americanus* © Richard Day/Daybreak Imagery



White-throated Sparrow *Zonotrichia albicollis* © Richard Day/Daybreak Imagery



Common Loon *Gavia immer* © Rob Curtis/The Early Birder



Ruby-crowned Kinglet *Regulus calendula* © Rob Curtis/The Early Birder



Cedar Waxwing *Bombicilla cedrorum* © Todd Fink/Daybreak Imagery

Birds are found worldwide in many habitats. Highly developed animals, birds are sensitive and responsive, colorful and graceful, with habits that excite interest and inquiry. Of the 9,000-plus species of birds in the world, about 800 have been found in North America. More than 400 species have been recorded in Illinois, 205 of which have been documented as nesting in the state. These numbers are subject to change, however, because birds are generally mobile animals and may move into Illinois from other areas. The 25 species depicted here are commonly found in Illinois and were selected to represent the variety of birds that reside in or pass through our state. Many obstacles are placed in front of birds, whether they're feeding, flying, nesting, migrating or simply surviving. The back of this poster describes several aspects of bird life, including the diverse situations they encounter.

Species List

Scientific Classification: All birds belong to the class Aves, which is subdivided into 27 orders.

Color Key:

- Aquatic species
- Grassland, woodland-edge, and open-area species
- Woodland species

Source: American Ornithologists' Union, *The Check-list of North American Birds, Seventh Edition*

Species Selection: H. David Bohlen, Illinois State Museum

Birds are not shown in proportion to actual size.

- American coot *Fulica americana*
- belted kingfisher *Ceryle alcyon*
- common loon *Gavia immer*
- greater yellowlegs *Tringa melanoleuca*
- green heron *Butorides virescens*
- ring-billed gull *Larus delawarensis*
- cedar waxwing *Bombicilla cedrorum*
- common nighthawk *Chordeiles minor*
- eastern kingbird *Tyrannus tyrannus*
- eastern meadowlark *Sturnella magna*
- eastern towhee *Pipilo erythrophthalmus*
- indigo bunting *Passerina cyanea*
- orchard oriole *Icterus spurius*
- red-tailed hawk *Buteo jamaicensis*
- turkey vulture *Cathartes aura*
- white-throated sparrow *Zonotrichia albicollis*
- yellow-billed cuckoo *Coccyzus americanus*
- American redstart *Setophaga ruticilla*
- red-bellied woodpecker *Melanerpes carolinus*
- rose-breasted grosbeak *Phoenicurus ludovicianus*
- ruby-crowned kinglet *Regulus calendula*
- ruby-throated hummingbird *Archilochus colubris*
- scarlet tanager *Piranga olivacea*
- wood thrush *Hylotrichia mustelina*
- yellow-rumped warbler *Dendroica coronata*

This poster was made possible by:

Illinois Department of Natural Resources
Division of Education
Division of Natural Heritage
Illinois State Museum



U.S. Fish and Wildlife Service

Funded Cooperatively by the IDNR and the U.S. Fish and Wildlife Service

Characteristics

Like mammals, birds are **warm-blooded** vertebrates, maintaining a constant internal body temperature regardless of external conditions. Birds have three characteristics that readily distinguish them from other animals: feathers; lightweight bones; and hard-shelled eggs.

Feathers assist in a variety of functions, such as flight, regulation of body temperature, protection, attraction of a mate and differentiation of species. **Contour** and **down feathers** are the most common. Contour feathers cover the body of a bird and have a strong, hollow **shaft** and network of hooks, or **barbules**. The contour feathers on the tail and wings are modified for flight. Down feathers are small and lie under the contour feathers. They insulate the body and protect against sunburn. **Preening** spreads oils over the feathers and "re-hooks" barbules. Feathers become worn and are usually replaced at least once a year through the process of **molt**ing. Feathers generally comprise 15 to 20 percent of a bird's weight.



Extremely lightweight bones are necessary for flight. Bird bones are strong and porous, with internal braces. Many bird bones are filled with air and are connected to the respiratory system. Other bones are fused together, increasing their strength.

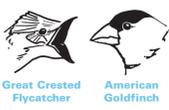
Birds lay hard-shelled eggs made mostly of **calcium carbonate**. The hard shell keeps the egg from **dehydrating** and allows parents to sit on the eggs during **incubation**. The shell possesses microscopic pores that allow exchange of oxygen and carbon dioxide with the atmosphere. Eggs occur in a variety of colors and shapes. Colored and speckled eggs are laid in areas where they can be **camouflaged**. Blue or green eggs are laid by species such as the American Robin (*Turdus migratorius*) to blend in with the dappled sunlight of their shaded nest sites. White eggs are laid by **cavity-nesting** birds, such as owls and the Wood Duck (*Aix sponsa*). Patterned eggs are laid by birds that nest on the ground (gulls, sandpipers) among grasses or small stones. Egg shape is related to where the bird nests. The most common shape for eggs is oval. Birds that lay their eggs on ledges (vultures) have eggs with a pointed end so they will not roll off. Round eggs are generally laid by birds (owls) nesting in a protected area, such as a cavity. Birds that lay many eggs, such as the Northern Bobwhite, (*Colinus virginianus*), typically have pointed eggs to allow incubation of several eggs in a small area.



Killdeer eggs
(*Chondestes vociferans*)
Blue-Headed Vulture Egg
Photograph by Anne Hoots
© Illinois Department of Natural Resources

Adaptations

Beaks, or bills, are used for capturing and eating food, feeding young, gathering nesting materials, building nests, preening, scratching, courting, defending, and attacking. The shape and size of each species' bill is specific for the type of food it gathers. Seed-eaters, such as the Northern Cardinal (*Cardinalis cardinalis*), have a heavy, thick bill to crack seeds. Meat-eaters, such as the Bald Eagle (*Haliaeetus leucocephalus*), have a sharp, hooked bill to tear flesh. The American Robin (*Turdus migratorius*) and other birds with a varied diet have a bill shape that allows them to eat many types of foods, such as worms and fruit. The American Woodcock (*Scolopax minor*) has a **prehensile** tip on its bill, adapted for grasping and allowing it to probe the soil and grab earthworms.



Bald Eagle
Great Crested Flycatcher
American Goldfinch

Birds have a high **metabolic rate**. To survive, they must eat great quantities of food. Small birds eat large amounts of food in proportion to their size. Hummingbirds must eat twice their weight in food daily, while songbirds consume 10 to 30 percent of their weight in food each day. Most birds must search for food continually. Only a few birds, such as the Blue Jay (*Cyanocitta cristata*), American Crow (*Corvus brachyrhynchos*), woodpeckers, and nuthatches, store food for future use.



Blue Jay

Birds have a **crop** that holds food until it is transferred to the gizzard, another part of the digestive tract. The crop also begins the breakdown of food in digestion. In the gizzard, small stones and grit picked up while feeding act to grind food. The gizzard is made of extremely strong muscles and can grind hard food items including acorns and small clams.



Northern Cardinal

State Symbol

In 1928, Illinois schoolchildren selected the Northern Cardinal as the State Bird of Illinois. The General Assembly made that designation official in 1929.

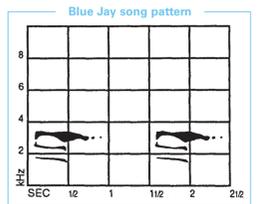
This bird's characteristic color (scarlet) in males, buff-brown and red in females, pronounced crest, heavy bill, and distinctive song make it one of the most readily identified birds in the state.

The Northern Cardinal is also the state bird for six other states: Indiana, Kentucky, North Carolina, Ohio, Virginia, and West Virginia.

Communication

Birds communicate by vocalizations, such as songs and calls, other noises, such as tapping and **drumming**, and behaviors including courtship flights and dances. Without communication, many birds would starve, lose their way during migration, and be unable to defend a territory or find a mate.

Birds do not have vocal cords. To produce sounds, vibrations are sent across the syrinx (voice box) of a bird. The more muscles a bird has attached to the syrinx, the more vocalizations it can make. For instance, the Northern Mockingbird (*Mimus polyglottos*) has many muscles and can produce a variety of sounds, while the Rock Pigeon (*Columba livia*) singular pair of muscles results in only a single "coo" sound.



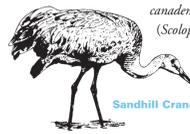
Songs are specific patterns of different types of notes (frequencies) repeated in succession and forming a recognizable pattern. Calls are brief one- or two-syllable sounds, usually with no more than four or five notes (frequencies) and with no organization or pattern. Songs are used to attract a mate and mark the territory necessary for production and rearing of young. Some birds hatch knowing how to sing, while others must listen to adults of their species and then practice. Each species has its own specific sounds. Some birds, such as the Northern Cardinal (*Cardinalis cardinalis*), have more than a dozen calls and songs. The Gray Catbird (*Dumetella carolinensis*) and Northern Mockingbird are among bird species that can mimic bird songs, humans, and human products (for instance, a car alarm).

When alerting others of danger, birds call. Calls are also made when feeding or migrating. **Precocial** young communicate with their parents through a location call. When a **covey** of Northern Bobwhite (*Colinus virginianus*) is split up, they locate each other and rejoin the group through a gathering call.



Greater Prairie-Chicken

A variety of other types of communications are used by birds. Nestlings peck at their parents' beaks or open their mouths wide to beg for food. Greater Prairie-Chickens (*Tympanuchus cupido*) **boom** to attract a mate. Sandhill Cranes (*Grus canadensis*) and American Woodcocks (*Scolopax minor*) have elaborate mating dances and flights. A male Wild Turkey (*Meleagris gallopavo*) will spread its tail and drop and "rattle" its wings to attract a mate.



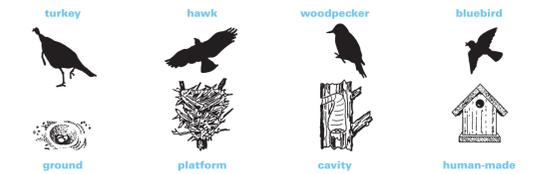
Sandhill Crane



Wild Turkey

Nesting

Some birds spend days or weeks building a nest, while others scrape a depression in the soil or pile a few twigs together. It is common for the female to work on nest-building alone. However, in some species, just the male or both the male and female are responsible for nest construction. Nesting materials may include sticks, mosses, lichens, plant seeds, hair, spider webs, snakeskins, and feathers. Chimney Swifts (*Chaetura pelagica*) use their own saliva to bind nest materials. The Barn Swallow (*Hirundo rustica*) and American Robin (*Turdus migratorius*) are among the birds using mud to hold nest materials together.



Habitat influences the type of materials included in the nest and its placement. Prairie birds, such as meadowlarks and the Bobolink (*Dolichonyx oryzivorus*), often construct a nest of grasses on the ground. Some woodland birds build a nest of plant fibers, twigs and leaves, and place it in the branches of shrubs or trees (Northern Cardinal (*Cardinalis cardinalis*), Blue Jay (*Cyanocitta cristata*), orioles). Birds nesting in a tree cavity include nuthatches, woodpeckers, the Eastern Bluebird (*Sialia sialis*), and Eastern Screech-Owl (*Otus asio*). Whip-poor-wills (*Caprimulgus vociferus*) and Killdeer (*Chondestes vociferus*) lay their eggs directly on the ground. Urban birds, such as the Chimney Swift and House Sparrow (*Passer domesticus*), may nest in chimneys, stoplights, or business signs. Some wetland birds nest on floating mats of vegetation [American Coot (*Fulica americana*), Pied-billed Grebe (*Podilymbus podiceps*), rails]. Other birds, such as the Great Horned Owl (*Bubo virginianus*), do not build their own nest but use an abandoned nest of another bird or mammal (squirrels). Brown-headed Cowbirds (*Molothrus ater*) **parasitize** other birds' nests by laying their own eggs in the host's nest, leaving, and allowing the host to incubate and raise the cowbird young.

A nest of eggs is called a clutch. A clutch of eggs is laid over a period of many days. Each species has an average number of eggs laid in a clutch and may lay several clutches during the breeding season. The time from when the last egg is laid until the last egg is hatched is called the incubation period, which varies among species from 10 days to 12 weeks. Hatching may take hours or days. Chicks use their egg tooth, a bony tip on the top of their bill that falls off shortly after hatching, to break through the shell in a process called "pipping." They begin pecking at the blunt end of the shell where the air sac is located. Chicks have a special muscle to help them with this task.

The Northern Bobwhite (*Colinus virginianus*) is among the species with **precocial** young, chicks hatched fully feathered and able to see. These chicks follow their parents and feed themselves soon after hatching. Other species hatch with their eyes closed and without feathers (**altricial**). These chicks remain in the nest to be fed by a parent until they are able to fend for themselves (American Robin, Blue Jay).

Migration

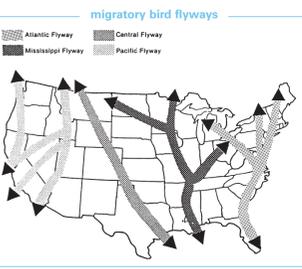
More than one-third of the world's birds migrate. Migration is an adaptation to changes in the environment. Generally, these changes are seasonal (weather, lack of food, need for nesting space). From the small Ruby-throated Hummingbird (*Archilochus colubris*) to the large Bald Eagle (*Haliaeetus leucocephalus*), birds move from the area where they raise young to their winter home and back again.



Some birds are diurnal, or daytime, migrants. Diurnal migrants are generally large (geese) and predatory (hawks) species that navigate by sight and have few, if any, predators. Many hawks begin their flight at midday taking advantage of rising warm air columns. Diurnal migrants fly along broad air routes established by physical features such as major rivers, coastlines, mountains, and lakes. Many birds use the Mississippi River as a **flyway**. Songbirds are nocturnal migrants, flying under the cover of darkness. Their daylight hours are spent searching for food and resting for the next part of their trip. The position of the stars and moon and the earth's magnetic field are used to orient nocturnal migrants.



The urge to migrate is stimulated by a variety of factors. Changes in the angle and amount of light rays that occur seasonally may trigger migration. Low barometric pressure in the fall starts southward migration, while high barometric pressure in the spring encourages movement to the north. Lack of food sources in the fall and winter may also send birds toward areas where food supplies are more readily available.



Birds encounter many hazards during migration. Nocturnal and low-flying migrants risk crashing into an assortment of human-made objects such as tall buildings, power lines and towers, windows and aircraft. Some birds, such as ducks, geese and doves, are hunted. Predators, such as domestic cats and some species of hawks, pose a danger to migrating birds. Habitat destruction and pollution are serious migrational hazards in North and South America. Storms also kill many migrants.

Common Illinois Species

Use the following descriptions to learn more about the 25 bird species shown on the opposite side of this poster. Further information can be obtained from bird field guides or by using the *Biodiversity of Illinois* CD-ROM series from the Illinois Department of Natural Resources' Division of Education (see "Agency Resources" section).

American Coot A common migrant in Illinois and member of the rail family, the American Coot (13-16 in.) may also breed in the northern half of the state and winter in southern Illinois. It frequents areas of short grasses around water where it eats insects, crayfish, snails, and aquatic plants.

American Redstart The American Redstart (5 in.) flits through the trees of its woodland home searching for insects. It is a common migrant and summer nesting resident of the state. The male and female birds have a different appearance.

Belted Kingfisher Male and female Belted Kingfishers have the same appearance, except that the female has a rust-colored stripe on her chest. The kingfisher (11-14 in.) lives along or around rivers, streams, ponds, and lakes. It fishes by hovering over water and plunging in head first to catch a fish in its strong beak. This common migrant species occasionally nests and winters in Illinois.

Cedar Waxwing The "waxwing" name refers to the red waxy tips on this bird's wings. It is a migrant and uncommon winter and summer nesting resident of Illinois. The Cedar Waxwing (7 in.) frequents open woodlands, orchards and residential areas searching for insects and fruits, particularly crab apples, wild cherries, and mulberries.

Common Loon This large (28-36 in.) aquatic bird has a strong, pointed bill that it uses to catch fishes. The Common Loon makes distinctive wailing, yodelling, and laughing sounds. It is a common migrant, winter resident, and nonbreeding summer resident of the state.

Common Nighthawk The choppy flight and white bar on each wing help to identify the Common Nighthawk (10 in.) as it searches for insects at dusk and dawn. A common migrant and summer resident, the nighthawk is a bird of open areas, including urban habitats, where it nests on gravel rooftops.

Eastern Kingbird The white band at the tip of the tail is a good trait to help you identify the Eastern Kingbird (8 in.), a bird of open areas, especially fields and pastures. It feeds on insects, spiders, and some fruits. The kingbird is a common migrant and summer nesting resident of Illinois.

Eastern Meadowlark The yellow breast with a large black "V" marking helps to identify the Eastern Meadowlark (9 in.), a migrant species through the state, a nesting summer resident, and a winter resident (southern two-thirds of Illinois only). It is a bird of open areas, such as pastures and hay fields, where it feeds on insects, seeds and grains and nests on the ground.

Eastern Towhee The Eastern Towhee (7-8 in.) may be found in forest edge, thicket, and open woods habitats. It feeds on seeds, insects, and small fruits. This bird is a common migrant, with some birds nesting in the state in summer and others residing here in winter. Its song says "Drink your tea."

Greater Yellowlegs This wading bird (13-15 in.) can be seen around marshes, flooded fields, mud flats, streams, and ponds as it migrates through Illinois. It uses its long bill to capture fishes, insects, and snails. Its common name refers to the yellow color of its legs. This bird does not nest in Illinois.

Green Heron At 16 to 22 inches, the Green Heron is one of the smallest herons. Its stout, pointed bill is used to catch the insects, crayfish, and fishes that it feeds upon as it wades along the shores of lakes, ponds, marshes, swamps, and streams. The Green Heron is a common migrant and a nesting summer resident in Illinois.

Indigo Bunting The Indigo Bunting may be found in open areas near cultivated fields or woods, foraging for the insects, fruits and seeds that it eats. A small bird (5-6 in.), it is a common migrant and nesting summer resident. The male is bright blue, while the female's coloration is brown.

Orchard Oriole Male and female Orchard Orioles have different coloration, with the male being black and mahogany, and the female colored green-yellow. A small bird (6-7 in.) of open woods, orchards, fence rows and riverbanks, it builds a distinctive nest of woven grasses. The Orchard Oriole eats insects and fruits. It nests in Illinois.

Red-bellied Woodpecker Forests, residential areas, and parks are home to the Red-bellied Woodpecker (9-10 in.), as much of its original savanna habitat in Illinois has been destroyed. This common permanent resident eats acorns, fruits, and insects.

Red-tailed Hawk Often seen perched on fence posts and poles along roadways, the Red-tailed Hawk (19-25 in.) hunts from these and other locations for its prey of rabbits, squirrels, mice, birds, reptiles, and amphibians. Some of these birds live permanently in the state, while others migrate through or only live in Illinois during the winter or to nest in summer.

Ring-billed Gull Found near lakes, rivers, garbage dumps, flooded fields, airports, golf courses, and plowed fields, the Ring-billed Gull (18-20 in.) is commonly seen in Illinois. Some of these birds are residents in the winter and nest here in the summer, while others only migrate through. Its common name is derived from a black ring that can be seen around the tip of the yellow bill. The Ring-billed Gull eats plant material, insects, snails, garbage, and other items.

Rose-breasted Grosbeak The male Rose-breasted Grosbeak is red, black, and white, while the female is brown and white. This bird averages about 7 to 8 inches. It is a common migrant statewide and a summer nesting resident in the northern two-thirds of the state. Woods, thickets, residential areas, orchards, and parks are the habitats that it uses to seek its diet of insects and fruits.

Ruby-crowned Kinglet The tiny (4 in.) Ruby-crowned Kinglet is a common migrant statewide and a winter resident in the southern half of the state. It does not nest in Illinois. Inhabiting woodlands, it captures insects and their larvae with its slender bill.

Ruby-throated Hummingbird At about 3 inches, the Ruby-throated Hummingbird is the smallest bird in eastern North America. Found throughout the state as a nesting and migrant species, this aggressive bird is a resident of woodlands, wood edges, weedy areas and gardens, where it feeds on flower nectar and insects.

Scarlet Tanager The male Scarlet Tanager is brilliant red with black wings. The female is olive and yellow. This medium-sized bird (7 in.) can be seen statewide as it migrates. It is an uncommon summer nesting resident in the northern two-thirds of the state. Living in forest interiors, it feeds on insects and fruits.

Turkey Vulture Soaring on its nearly six-foot wingspan, the Turkey Vulture searches a wide area for the dead animals that it eats. This large bird (26-32 in.) has a bare red head and red feet as an adult. It is a common migrant and nesting summer resident in Illinois and may winter in the southern two-thirds of the state.

White-throated Sparrow This common migrant is also a winter resident of Illinois. Averaging about 6 to 7 inches, it lives in thickets, undergrowth of woods and brushy areas. Its diet includes seeds, insects, and fruits. Its song sounds like "Old Sam Peabody, Peabody, Peabody."

Wood Thrush The Wood Thrush is about 8 inches long. It is a common migrant and summer nesting resident of bottomland woods and wooded ravines on river bluffs. It searches on or close to the ground for insects, millipedes, and fruits. It is noted for its beautiful flutelike song.

Yellow-billed Cuckoo The Yellow-billed Cuckoo averages about 11 to 15 inches. It is a common migrant and nesting summer resident in Illinois, inhabiting open woods, woodland edges, orchards, and thickets. It feeds on insect larvae and cicadas.

Yellow-rumped Warbler This small bird (5-6 in.) is a common migrant and uncommon winter resident in the forests of Illinois. It does not nest in the state. The Yellow-rumped Warbler feeds on poison ivy berries, cedar berries, and insects.

Agency Resources

More information about birds is available from the Illinois Department of Natural Resources (IDNR). Illinois Natural History Survey and Illinois State Museum researchers study bird distributions and population levels and maintain a research collection of birds. The Office of Realty and Environmental Planning reviews development plans proposed by local and state governments and recommends measures to reduce or avoid adverse impacts to endangered and threatened species and their habitats. The Office also provides information about the distribution of endangered and threatened species in Illinois. The Division of Natural Heritage monitors population health of nongame species and offers and implements management options. The Division of Education provides educational materials on a variety of natural resources topics, including birds, and sponsors Project WILD and Project WILD Aquatic. They also offer the *Biodiversity of Illinois* CD-ROM series for educators.

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