

Big, **BOLD,** and Blue

The **blue jay** can be noisy and rowdy, but this bird is not a bully.

By Christine Petersen

ALMOST 200 YEARS AGO, a young naturalist named John James Audubon decided to paint pictures of all the birds of North America. Wherever Audubon went to look for birds, he saw blue jays. These long-tailed, robin-size birds show up in woodlands, farm fields, parks, and back yards. They are hard to miss, traveling in flocks that stay in touch by calling out loudly—*Jay! Jay jay jay.*

Audubon thought the blue jay (*Cyanocitta cristata*) was beautiful, but he didn't always understand its behavior. His painting shows three jays eating another bird's eggs. He wrote that blue jays attack rival birds and mammals. Today, scientists know that blue jays are not likely to go after other birds unless usual foods are scarce.

When Audubon heard jays mimicking hawk calls, he mistakenly thought jays were trying to scare smaller birds away from food. Some people still think blue jays are bullies that chase other birds away from bird feeders. In fact, blue jay calls can alert other birds when a predator is nearby.

Though sometimes noisy and rowdy, blue jays are actually good neighbors.

BILL MARCHEL



Big Talkers

Blue jays have a large vocabulary. Jays whistle, peep, squawk, mew, buzz, twitter, click, clack, and cluck. They imitate all kinds of sounds, from a cat's meow to a screech owl's whinny.

How does a blue jay make all those sounds? Birds have a Y-shaped voicebox called the *syrinx*. The two sides of the syrinx reach down toward the lungs. A jay, like many other songbirds, can control the flow of air through each side to produce two different sounds at once.

Alarm calls. People might find blue jay calls irritating. But that noise usually has a purpose. When a jay sees a hawk, an owl, or another predator, it starts to call. *Jeer! Jeeer!* The metallic sound carries far across the landscape. Other jays fly in to help make noise to drive the predator away. Smaller birds seem to recognize the jays' warning calls. They quickly go into hiding, letting jays do the dangerous work.

Contact calls. A female blue jay perches



CHRISTINE PETERSEN

The blue jay is known for a loud, shrill call—Jaaaay. This songbird can mimic lots of sounds.

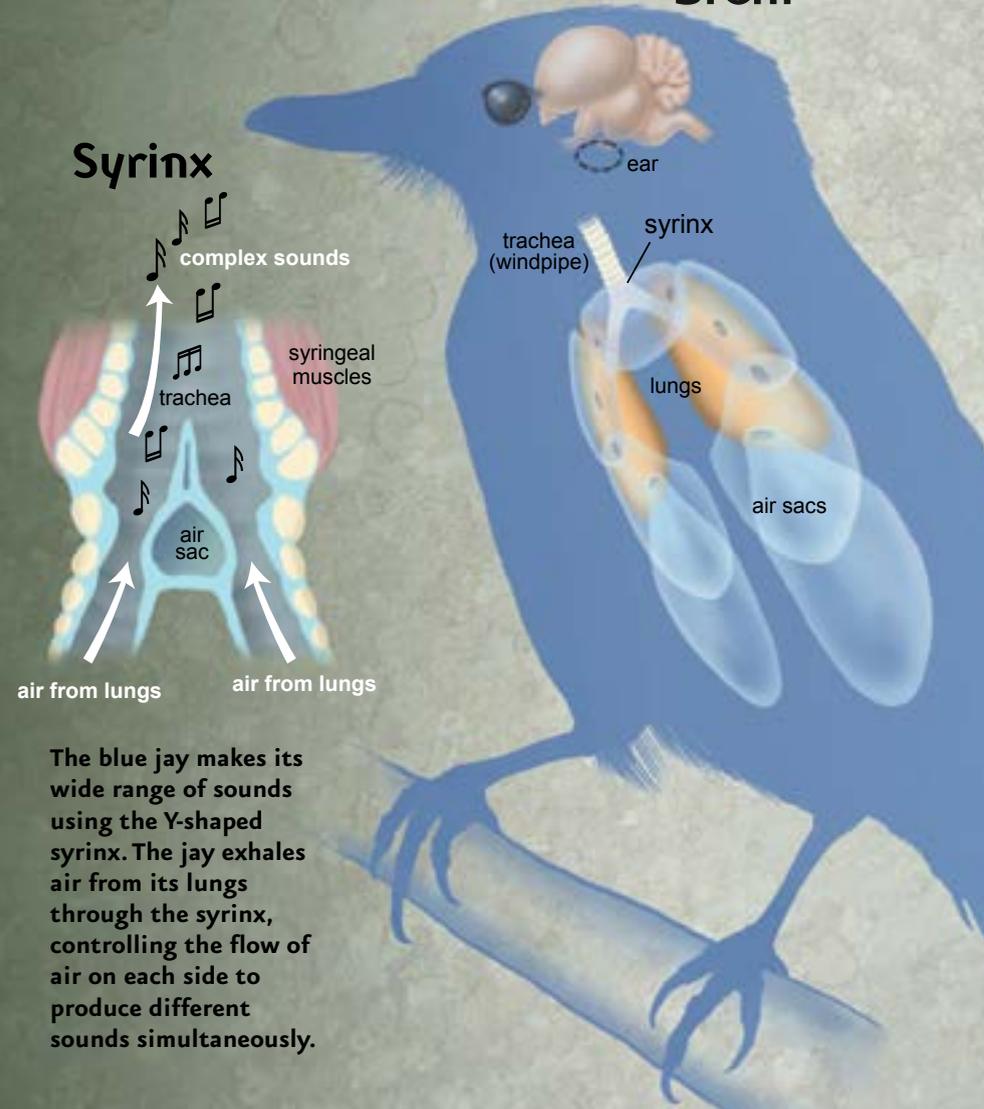
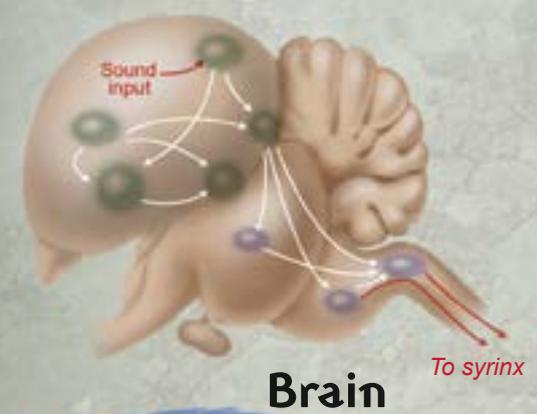
on a bare branch. She bows and bounces. Then, stretching her long, gray legs, she throws back her head and calls in a high-pitched, harsh voice. This call is not the familiar *jay!* that gave the species its name. It sounds more like a creaky, old wagon. *Squeedle-dee! Squeedle-dee!*

Other jays copy her call, like kids playing a game of “telephone.” Then the female takes off. Male jays immediately appear and fly in line behind her. She leads them on a winding aerial chase that curves around trees, between buildings, and over fields.

After a while, she and one of the males land in a clump of bushes. Sitting close, they exchange whisperlike sounds. These “conversations” help to form the pair's lifelong bond. Most jays live about seven years, but if these mates are lucky they could live more than 16 years.

Feeding sounds. A lone jay makes a soft cluck as it eats seeds at the bird feeder. A pair of jays might also make this sound as they forage for food in the forest.

Specific areas in the blue jay's brain control the sounds the bird makes. One set of these areas (green) controls song and sound learning. Another set (purple) controls the muscles of the bird's syrinx and respiratory (breathing) system.



The blue jay makes its wide range of sounds using the Y-shaped syrinx. The jay exhales air from its lungs through the syrinx, controlling the flow of air on each side to produce different sounds simultaneously.



Quiet Zone

Jays become quieter and more secretive in early spring as they begin to nest. They build a nest in a well-hidden place, such as where a branch meets the tree trunk. Each parent brings twigs, grasses, and mud to make a cup-shaped nest. The birds don't rush this important job. After a few weeks, the female lays several speckled eggs. Then she sits low across the nest to keep the eggs warm and hidden from predators. For about 18 days, she leaves only briefly to stretch her wings or bathe.

Meanwhile, the male bustles around the neighborhood gathering insects and other

food. Once the eggs hatch, this becomes a full-time job. The blind, featherless *hatchlings* grow amazingly fast. The female joins her mate in constantly delivering insects to these hungry mouths.

Three weeks after hatching, young jays have *fledged*, grown feathers to fly. Standing on the edge of the nest, they flap their wings to build strong muscles. Within two or three days, the fledglings begin making short, wobbling flights to nearby branches. Soon they can fly with their parents. The family makes daily rounds to familiar places to find food.

Big Eaters

Blue jays are *omnivores*—they eat a variety of plants and animals. Blue jays find most of their insect food by peeking under leaves and bark or using sharply pointed bills to poke in the grass. They eat beetles, grasshoppers, and spiders. Sometimes blue jays catch moths and dragonflies right out of the air. Fledglings must learn which insects to eat and which to avoid. For example, they should not eat monarch butterflies because these insects carry toxins that cause jays to vomit.

Forest tent caterpillars are a healthier item on the menu. These fuzzy, blue-and-black moth larvae chomp on the leaves of oak trees, aspen, basswood, and other *deciduous* trees and shrubs. Blue jays help the forest by eating hungry caterpillars before they eat all the leaves on a tree.

Jays visit farm fields and orchards to gather grains and berries. Bird feeders are popular too—especially those with peanuts, sunflower seeds, and cracked corn.

In autumn, acorns and other hard nuts are the most important food for blue jays.

When food is hard to find, blue jays eat whatever is available. Sometimes they hunt small mammals or eat *carrion*, the meat of dead animals. Once in a while, blue jays eat eggs and chicks of other birds. In a study of 530 blue jays, only six had parts of eggs or chicks in their stomachs. Jays have been known to grab kibble from dog bowls.



Blue jay parents build a nest (left) in a secret spot in a city, on a farm, or in a forest. At first the father brings food to the chicks. Later both parents feed them. When they hatch, the chicks are featherless with closed eyes. After seven days, their eyes have opened and pinfeathers have popped out. At 21 days old, they have their flight feathers.

BILL MARCHEL

STANTEKIELA

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Not TRUE Blue

Blue jay feathers contain no blue pigment. They look blue because of the movement of light waves through millions of hollow, transparent cells in the feathers. Light bounces through these cells. Only blue light is reflected back. This is what we see when we look at a blue jay.

False Alarms

Chickadees, goldfinches, and other small birds usually fly away in alarm when blue

When a blue jay raises the feathers on its head, the crest shows the bird is alert and watching.

jays approach. Since Audubon's time, people have taken this as a sign that blue jays are bullies. But if you watch a bird feeder for a while, you might see that woodpeckers, grackles, and doves also cause little songbirds to scatter. To be safe, they flee when any larger bird appears. The smaller birds watch from a hidden perch to make sure no hawks or other predators are nearby. They soon return to feed, even if jays are still around.

Jays on Guard

Picture this scene at a backyard feeder: A family of jays is feeding when one gives an alarming squawk. As most of the flock scatters into the shadows of nearby trees, the squawking jay takes a position atop the feeder pole. The bird raises the feathers atop its head. This sharp, triangular *crest* is a sign of agitation and alertness.

Tipping its head, the guard bird peers this way and that. Suddenly, a sharp-shinned hawk plummets out of the sky. Hardly bigger than the jay, this young hawk is hungry. The blue jay rockets into flight, making a tight turn around the feeder. The hawk's sharp *talons* (claws) narrowly miss the jay.

In a heartbeat, the jay flies back to its perch. The hawk flaps away in search of an easier meal. The jay bobs smartly up and down as it scolds the departing predator. *Jeer! Jeer jeer!*

Jays never make easy prey. Still, the family was lucky this time.

Friendly Travelers

As summer ends, young blue jays leave their parents. Young jays from many nests may join together to form a large social group.

Ornithologists studying blue

jays have noticed that some blue jays stay near their nests throughout the year. Other jays move around a lot, except when they are nesting. Some migrate long distances in the fall or winter. Ornithologists are not sure whether these wandering jays return in spring to the same nesting places or to new ones.

Like travelers stopping at a restaurant, different jays might visit your feeder each day.



Blue Jays. John James Audubon painted this watercolor of jays eating another bird's eggs, which they might do if they could not find any other food.

COURTESY OF THE BELL MUSEUM

STAN TERKELA

In fall, the blue jay stores a favorite food—acorns from oak trees—in a cavity in a maple tree. In winter the jay will return to this and other storehouses, or caches, to eat the nuts.



Seed Savers

Jays that stay in Minnesota for the winter have a single goal: finding and storing a supply of food to last through the cold, snowy months. Acorns are their favorite. A blue jay can *cache* several thousand acorns in just a few weeks.

The jay inspects each acorn for insect holes. The bird also shakes each acorn. If the jay hears a rattling sound, that acorn is dropped because an insect larva has gotten inside. The nut will not be good to eat.

All oaks produce acorns. The blue jay looks first for pin oaks because these trees produce small acorns. The jay's throat bulges as it swallows the acorns down—1 ... 2 ... 3 ... 4 ... 5! An expandable throat pouch temporarily stores them. The jay grabs an extra acorn in its beak, then flies away to store all six.

The jay flies up to three miles to find an opening in the woods where sunlight reaches the ground. Landing there, the jay coughs up its load of acorns. The bird tucks one under a layer of leaves and others under loose soil. Sometimes the bird jams an acorn's point into the soil and whacks the nut with its bill. The jay's extra-thick skull absorbs vibrations from this pounding.



STAN TEKIELA

Tree Planters

Blue jays have exceptional memories, so they can find many of their stored acorns, even months later under deep snow. A certain part of the brain recalls places and directions. In blue jays, this part of the brain is large compared with that of a bird that doesn't cache food.

Still, some acorns are always forgotten and left behind. Fortunately, blue jays cache acorns in just the right places for trees to grow. Poked into crumbly soil

in a sunny spot, the acorn sprouts and a young oak seedling shoots upward.

Until 12,000 years ago, glaciers covered much of what is now Minnesota. After rising temperatures melted the ice, plants began returning to the landscape. Blue jays carrying acorns north onto open land may have helped oak trees spread faster than they would have otherwise.

Today, jays continue to plant acorns in parks, woodlands, and empty spaces in Minnesota.



A NOTE TO TEACHERS

Find links to teachers guides to this and other stories online at www.mndnr.gov/young_naturalists.

To learn more about the color of blue jay feathers, see "The Nature of Feathers," Jan.-Feb. 2004, in the MCV archives at <http://go.usa.gov/48hx>.

