

Illustrations by Bill Reynolds

# Peck, Pluck, Probe, Preen

*Birds use their specialized beaks or bills to do all sorts of things.*

By Mary Hoff

**I**magine having a tool you could use to prepare a meal, eat, drink, cool off, build a house—even convince other people you’re bigger or stronger or smarter than they are. That’s what a bird has in its beak or bill.

A beak or bill is a hard, often pointed structure that surrounds a bird’s mouth. Birds don’t have front legs, paws, or hands, so they use this adaptable tool to do many of the things other animals do with those body parts.

Long ago people used the word “beak” for birds of prey and “bill” for other birds. Today people use both terms for all kinds of birds. We’ll use the most familiar terms for each bird we describe in this story.

Some beaks or bills are long and sharp. Others are stubby and strong. Still others are shaped like spoons or shovels. Every kind of bird has its own kind. And like a tool, every kind of beak or bill has its own kind of job.

## **Ruby-Throated Hummingbird** (*Archilochus colubris*) **bill = soda straw**

A ruby-throated hummingbird’s long black bill allows it to reach deep into trumpet-shaped flowers so it can slurp up *nectar*—the sweet substance inside—with its tongue. The bill has a hinge that makes it possible for the bird

to open and close its bill partway along its length. This ability, called *rhynchokinesis*, is also found in shorebirds, swifts, and cranes. It may help hummingbirds to capture insects to supplement their nectar diet.





**Fun Fact:** Bird species found in cold climates tend to have smaller bills than those living in warm climates.



**Common Loon** (*Gavia immer*)  
**bill = needle-nose pliers**

Some people think a loon's bill looks like a dagger or a spear, and it's true that this water-loving bird will sometimes use the bill as a weapon. But more often, a loon uses its bill like a needle-nose pliers, opening its mouth wide and snapping down

on a fish, a frog, or other *prey*—animals it hunts and eats underwater. Tiny ridges called *denticles* on the top bill help the bird hang onto its slippery prey.

Loons also use their bills to turn their eggs in the nest and to tell other loons "I like you" or "I don't like you." And a loon's bill comes in handy for smoothing and spreading water-resistant oil on its feathers.



**Barn Swallow** (*Hirundo rustica*)  
**bill = butterfly net**

Swooping through the sky like aerial acrobats, barn swallows capture insects on the wing and gobble them down. A barn swallow's triangle-shaped bill acts like a butterfly net, giving it a wide space to scoop up its prey. If it has nestlings to feed, the bird will make a little ball of food and share it using its bill. Swallows drink on the fly too, skimming the sur-

face of a lake or stream with their lower bill as they zip on by. And they use their versatile bills to make their nests, gathering mud and mixing it with bits of plants to make small sticky balls they assemble into bowl-shaped nests. Barn swallows also use their bill to make a clacking sound when they are around other barn swallows.





**American White Pelican** (*Pelecanus erythrorhynchos*)

**bill = scoop**

Most fish-eating birds catch and swallow their prey one at a time. The American white pelican has them beat—by a bucketload! A pelican paddles along the surface of a lake. When it spies fish it lowers its foot-long bill into the water. A pouch, called a *gular sac*, on the lower bill expands, filling with up to 3 gallons

of water and hopefully fish! The pelican squeezes out the extra water, then points its bill high to the sky and swallows whatever fish it scooped.

In hot weather, pelicans sometimes flutter their gular sac to force cooling air past the blood vessels it contains, helping cool their bodies.



**Fun Fact:** Like your fingernails, beaks and bills grow continuously and wear down as they're used.



**Goldfinch** (*Spinus tristis*)

**bill = nutcracker**

Goldfinches eat seeds from thistles and other plants. To get the seed out of the *hull*—the hard casing that's like a nut-shell—a goldfinch uses its tongue to place the seed between the top and bottom parts of its bill. When it closes its mouth,

the edge of the bottom bill forces the seed into a crevice in the top bill and the hull breaks open. The bird uses the rough inside surface of its top bill to help separate the hull and the seed. Then it spits out the hull and swallows the seed.



**Peregrine Falcon** (*Falco peregrinus*)

**beak = scissors**

Strong and sharp with a deep curve and a pointy structure called a *tomial tooth*, a peregrine falcon's beak looks like a deadly weapon. And it is! Soaring through the sky, a peregrine falcon spies a songbird on the wing. Dropping into a fast dive, it grabs the bird in the sharp claws, or *talons*, on its feet. With a snap, it uses its sharp beak and tomial

tooth to quickly break its prey's neck. The point and curve of the beak help it bite off the head, pull off feathers, and tear bits of bird to eat.

Before falcons hatch they have another structure, called an *egg tooth*, on the top of their beak. They use the egg tooth to crack their way out of the egg. It disappears a few days after hatching.



**Great Blue Heron** (*Ardea herodias*)

**bill = spear**

Great blue herons will eat pretty much any animal they can wrap their long, thin throats around. To hunt, a heron might wait silently near the edge of a pond or wetland. Or it might stalk slowly through shallow water, watching for a movement beneath the surface. If

it sees a small fish, it will snap it up in a flash, using its neck like a whip to move in quickly before its victim can escape. With a bill that does double duty as a spear, it can also stab rather than grab its prey, hauling it out of the water like an avian spearfisher.





**Fun Fact:** A bird drinks by filling its lower beak with water, then tilting its head back and letting the water run down its throat.



**Yellow-Rumped Warbler** (*Setophaga coronata*)

**bill = tweezers**

The first part of the yellow-rumped warbler’s scientific name means “moth eater.” That provides a good clue as to how it uses its bill. Thin and sharp, the warbler’s bill functions like a tweezers, allowing it to pluck ants, caterpillars, and other tiny in-

sects off leaves, twigs, and other surfaces. Yellow-rumped warblers also eat berries and may catch insects on the wing, too.

Yellow-rumped warblers use their bills to fashion nests out of grass, twigs, and other plant material.



**Mallard** (*Anas platyrhynchos*)

**bill = sieve**

If a mallard were a human, we would call it a messy eater. But we wouldn’t call the duck a fussy eater—mallards eat everything from insects and earthworms to acorns and discarded human food. While paddling on a pond or lake, a mallard uses its long bill and tongue to gather a mouthful of water, plants, and whatever else is floating about. Then it closes its bill as the water squeezes out through comblike structures called *lamellae* that line the sides of the bill. Left behind in the duck’s mouth are tiny plants and animals. Swallow and repeat!

If you look closely at a mallard’s bill, you’ll see that the top part has a point. That structure, called a *nail*, helps it capture small bits of food and tear plants so it can eat them. The tip of a mallard’s bill also has structures called *touch papillae* that help it tell what’s food and what’s not. In one study a mallard was able to tell the difference between real and fake peas using its touch papillae!

A mallard also uses its bill to preen its feathers and to defend its territory from other ducks.



**Fun Fact:** A European starling's bill turns bright yellow in spring.

### **Hairy Woodpecker** (*Dryobates villosus*)

**bill = chisel**

“Rat-a-tat-tat!” The sound of a hairy woodpecker’s bill hitting wood echoes through the forest. What’s the bird up to? It could be tapping on a tree in search of insects to eat. It could be pecking away at rotten wood to excavate a nest. It might be sending a message to its mate: “Here I am!” Or it might just be sending messages to other woodpeckers: “This is my territory—stay away!”

How does a woodpecker avoid getting a giant headache from all that pounding?

One thing that helps is a joint at the base of its upper bill. That joint allows the bird to move its bill without moving the rest of its head. It also absorbs some of the energy from the impact, protecting the skull from the shock of pounding against a hard surface.

If you look closely at the place where a woodpecker’s bill meets its nostrils, you might see some hairlike feathers. These bristles help keep the bird from inhaling wood chips as it goes about its business.



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

**bill = probe**

Some birds are known for their bright feathers. Others are famous for their songs. What stands out for a snipe is its long, skinny bill. In fact, even its name is a tribute to this striking feature: “Snipe” comes from the same root word as “snout.”

A snipe’s food is out of sight. But it doesn’t need its eyes to find it. When searching for worms and grubs to eat, a snipe sticks its toothpick-like bill down

into the ground. The tip of the snipe’s bill has little dents that contain nerves the bird can use to feel around for wiggly things. The bird pokes and feels until it finds a treat. Then it opens its bill and gobbles up the morsel.

Like other baby birds, snipes use their bill to chip their way out of their egg. Adult snipes use their bill to clean and tidy their feathers. 🌱

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