

Jewels of the Sky

A year in the life
of the remarkable
ruby-throated
hummingbird.

By **Mary Hoff**

IMAGINE A BIRD that weighs about as much as a penny, lays eggs the size of a pea, and can fly backward. Now stop imagining and start looking, because there's a good chance this bird lives in your neighborhood for part of the year!

The ruby-throated hummingbird (*Archilochus colubris*) is one of Minnesota's most astounding animals. It can flap its wings up to 200 times in a single second and fly 1,200 miles without stopping. It can zip through the air at 45 miles per hour, but also hover and go in reverse. It has a tongue that's one-third the length of its body. Male ruby-throated hummingbirds have bright red throats and do a fancy dance designed to attract mates. In short, this tiny creature is big on amazing traits that are on display all year round.

PAUL SUNDBERG





BILL MARCHEL

A male ruby-throated hummingbird feeds on wild honeysuckle.

Spring

It's early May and Minnesota has awakened from its long winter nap. The grass is green. The sky is blue. Flowers are blooming everywhere. And *whirrrr!* A tiny creature suddenly buzzes your bright red hoodie. It's a male ruby-throated hummingbird, just returned from a thousand-mile journey from his wintering grounds in Central America.

"Welcome back, little bird!" you say. But he is too busy to hear you. Flitting about from flower to flower, the male hummingbird is staking out his territory in preparation for the arrival of female hummingbirds.

Good news! A female flies by. The male shows his affection in a uniquely hum-

mingbird way: by fluffing out his bright red throat feathers and dive-bombing his potential mate. Interested, she perches on a nearby branch. Like a pendulum swinging over her head, the male swoops back and forth, showing off his speed and prowess. Eventually they mate.

Next, the female hummingbird looks for a spot to build her nest. She finds a nice horizontal branch with a flat surface to hold a nest. She gathers the down from dandelions that have gone to seed and weaves it together with bits of spider web to create a tiny cup. She adds bits of scales from leaf buds stuck together with yet more spider web. She stomps on the bot-



PAUL SUNDBERG

Female hummingbirds feed their babies by regurgitating food into their bills.

tom of the nest to pack it down and molds the sides by pinching them between her bill and chest. She sticks bits of camouflaging lichens to the outside. After a week or so, the ping-pong ball-sized nest is complete. She lays two tiny eggs inside it.

Two weeks later, a scrawny, grayish baby bird emerges from each egg. The mom hummingbird feeds them by regurgitating food she ate into their gaping bills. After a couple of days, the nestlings' eyes open. A few days later they start to grow pin feathers. About three weeks after they hatch, they are ready to leave the nest. If lots of food is available, the female may raise two batches of babies over one summer.

Changing Colors

If you look closely, you might notice that sometimes the ruby-red feathers that decorate a male hummingbird's throat appear to shimmer and shine. Other times they look almost black. That's because the color doesn't come from pigment, as the colors in your T-shirt or markers do. Rather, it's an example of something called structural color. Microscopic features of the bird's feathers bend and reflect different wavelengths of light in different ways, creating a miniature light show. Though not as striking, the green feathers on the backs of both sexes also use structural coloration.



MICHAEL FURTMAN

A ruby-throated hummingbird's long tongue helps it drink nectar—one of its favorite foods.

Summer

Ruby-throated hummingbirds spend their summers throughout Minnesota. They use part of each day to look for food. Hummingbirds sometimes eat insects. They catch them while flying, using their wide-open bills like baseball gloves or snatching them out of spiderwebs. But their main source of food is sugar-rich nectar from red or orange flowers. The flower's color tells the hummingbird that there is a sweet treat inside. As a hummingbird drinks the nectar, it also picks up some pollen. It carries the pollen with it as it flits from plant to plant. The plants use the pollen to make seeds, so it's a win-win!

To extract nectar from a flower, a

hummingbird sticks its long bill into the middle of the flower. It opens its mouth and sticks out its tongue, which is as long as its bill. At a glance, a hummingbird's tongue looks like a straw, and you might imagine that it sucks nectar like you slurp a milkshake. But it's more like a toothbrush. The end of the tongue is forked, and each fork has tiny bristles. When the bird inserts its tongue into the nectar, the nectar clings to the bristles. As the bird draws its tongue back into its mouth, it brings the nectar with it.

The sugary nectar gives a hummingbird energy. And a hummingbird needs a lot of energy! When a ruby-throated



SPARKY STENSAAS

A male hummingbird feeds on an azalea. Hummingbirds can tap as many as 200 flowers in 15 minutes!

hummer is in flight, its heart can beat more than 1,000 times per minute and it takes more than five breaths per second. A hummingbird can use more than 200 calories per hour while flying. It may visit thousands of flowers over the course of a day and slurp up half of its weight in nectar to get enough energy to fuel its body and feed its babies.

While in search of food, hummingbirds need to keep an eye out for other creatures looking for meals of their own. Sharp-shinned hawks, kestrels, orioles, kingbirds, pet cats, and even dragonflies and frogs are among the animals that have been known to eat hummingbirds.

Do Hummingbirds Really Hum?

Why does a hummingbird hum? Jokesters say, "Because it doesn't know the words." But the real answer is more complicated! Hummingbird wings trace a figure eight as they flap up and down. They flap so quickly—between 75 and 200 beats per second—that the moving air makes a buzzing sound. The figure eight movement allows the bird not only to fly forward, but also to fly backward and side to side and even hover in place.



MIKE LENTZ

A female hummingbird perches on a lily.

Fall

You might think of ruby-throated hummingbirds as Minnesota residents. In reality, they're here for a short time. They spend most of their lives traveling to and from, and living in, Mexico, Central America, the West Indies, and parts of the southern United States.

As daylight hours grow shorter in late summer, a hummingbird prepares for its long flight to its winter home. The decreasing light changes the bird's hormone levels. Hormones are chemicals in the

bird's bloodstream that carry messages from one part of the body to another. The changing hormone levels make the hummingbird want to eat a whole lot more. And so it does! Between nectar and insects, a hummingbird can increase its weight by 15 percent in a single afternoon. All told, a hummingbird may double its weight before it's ready to fly south for the winter.

Hummingbirds usually start to leave Minnesota in late August. Rather than fly-



SPARKY STENSAAS

Wildflowers such as rough blazing star, shown here, give hummingbirds energy to fly south for the winter.

ing in flocks, they make solo journeys. The adult males leave first. Next, the adult females follow. Last, the young that hatched that summer head toward the wintering grounds hundreds of miles away. They fly mainly in the daytime. Including food and rest stops, the trip takes about two weeks.

How do they end up in the right place with no one to show them the way? They follow their instincts, using stars, sound-waves, smells, and other cues to help them navigate.

A Very Long Trip

To reach their winter homes in Mexico and Central America, some hummingbirds fly along the western coast of the Gulf of Mexico. But some take a shortcut straight across open water! The trip across the gulf is hundreds of miles long and takes 18 to 24 hours. Ruby-throated hummingbirds can live five years or longer, so they could make this epic journey many times in their lives.



A hummingbird feeds on a tropical flower in the bird's winter home of Guatemala.

Winter

Winter is sort of like a vacation for ruby-throated hummingbirds. Instead of spending their time raising young, they spend it eating and drinking. There are lots of flowers in the fruit orchards, forests, and pastures on their wintering grounds. As spring approaches, they once again go into eating overdrive to prepare for their trip back to their northern homes.

Ruby-throated hummingbirds not only find bountiful food in their wintering

grounds, but they also find lots of company. Mexico and Central America are home to more than 100 different species of hummingbirds!

Ruby-throated hummingbirds begin moving north again in March or so. Once again, the males travel first, followed by the females. The females tend to move faster than they did in fall because they are eager to nest and raise young. They often time their arrival in Minnesota with the bloom-

COURTESY OF CARROL HENDERSON



PAUL SUNDBERG

A feeder is a great way to attract a hummingbird to your own backyard—or bike helmet!

ing of spring flowers, but it's not unusual for them to arrive even earlier, when they can slurp sap from holes that sapsuckers drilled in tree trunks.

How do we know so much about hummingbird migration? Citizen scientists report when they see hummingbirds so scien-

tists can compile a record of when and where the birds are. Bird banders catch hummingbirds in nets, clip tiny rings to their legs, and let them go again. If a bird is recaptured or a person finds a dead hummingbird with a band, they can record the information written on it to learn about the bird's travels. ✓

Invite a Hummingbird to Your Backyard

Winter is a good time for you to prepare for hummingbirds to return to Minnesota. Here are a few things you can do to attract migrating hummingbirds to your yard:

1) Plan to plant flowers. Native plants that hummingbirds love include:

- wild columbine
- wild honeysuckle
- bee balm
- cardinal flower
- jewelweed

2) Make a hummingbird feeder. Hummingbirds enjoy drinking "nectar" from artifi-

cial feeders too. Make a hummingbird feeder out of a plastic bottle and other common items you likely have at home. With the help of an adult, fill the feeder with a mixture of $\frac{1}{4}$ cup sugar and 1 cup of water, boiled for several minutes to kill germs and then cooled. In mid-April, hang the feeder outside in a shaded, well-protected place. Clean the bottle and fill it with fresh nectar every three to five days. Once a hummingbird makes your home its summer home, it may come back to the exact same spot year after year!

TEACHERS RESOURCES. Find a Teachers Guide and other resources for this and other Young Naturalists stories at mndnr.gov/young_naturalists.