



# Species Spotlight

## Ruby-throated Hummingbird *Archilochus colubris*

2018 | YEAR OF  
THE BIRD



2018 marks the centennial of the Migratory Bird Treaty Act, considered by many to be the most powerful and important bird-protection law ever passed. In honor of this milestone, National Geographic, the National Audubon Society, the Cornell Lab of Ornithology, and BirdLife International are joining forces with more than 100 other organizations, including the National Park Service, and millions of people around the world to celebrate 2018 as the “Year of the Bird.” As part of this celebration, NETN’s Species Spotlight series will focus on a different bird species each month throughout the year.

### What is it?

3,860,000. That’s how many times a Ruby-throated Hummingbird could flap it’s wings without a break on a 500-mile, 18-20 hour migratory flight across the Gulf of Mexico. For comparison, the average adult human would only cover about 60 miles if they walked nonstop during that same time span. Pretty impressive for a bird that weighs less than a U.S. 5-cent nickel when it makes it’s departure in the spring.

Mature males are easily recognized by their bright-red iridescent throat patch. Females and young males lack the red patch but still display jewel-green iridescent feathers over their heads and down their backs.

### Aerial Acrobats

Possessing the ability to hover, fly forwards, backwards, straight-up, even upside-down, and at speeds up to 60

miles-per-hour when diving, these little aerialists make all other birds look slow and plodding by comparison. On more than one occasion they’ve even been observed doing backwards somersaults in pursuit of tiny insect prey.

They are able to achieve these flights-of-fancy through wing movements unique to the bird family. They don’t so much flap their wings as they do rotate them in a figure eight pattern - at a rate of about 50 times per second. This generates lift on both

the forward and backward strokes, allowing for rock-steady hovering and practically instantaneous direction change on-the-wing through only a slight adjustment of wing-angle. Scientists are used to seeing this ability among insects, such as with dragonflies, but this wing-pattern is unique in the bird world. Science is still learning how hummingbirds are able to achieve their fascinating flight. Complex research techniques that involve ultraviolet light and wind tunnels are helping to improve our understanding of exactly how hummingbirds fly.

### Welcome to the Gun Show

You wouldn’t know it to look at them, but Ruby-throats are packing some pretty serious muscle under those shiny feathers. In order to achieve their powerful flight, they have relatively enormous pectoral (chest) muscles, making up about 25-30 percent of their total body weight.

Other flight adaptations include very tiny feet which only allow them to kind-of scoot along a perch, but shave-off excess weight that would otherwise slow their flight, and a large heart (beating 1200 times per minute) to supply those wing-muscles with plentiful oxygen.

### Extreme Sugar Rush

By July in the Northeast, many flowers and gardens are finally reaching full blooming capacity. Like a kid in a candy store, hummingbirds are busying themselves buzzing from flower-to-flower to suck up as much sugary nectar as they can. Because they burn so many calories a day to power their flights, hummingbirds need to eat a lot - almost constantly during daylight hours. An adult Ruby-throated hummingbird can eat twice its body weight each day. Much of this is consumed in the form of nectar, but these birds are actually omnivorous. They’ll also eat spiders, tiny flies, gnats and aphids for fats and protein. This is especially important when bulking up to attempt a Gulf of Mexico crossing during migration. They almost double their body weight (3.25 grams to 6 grams) during this time.



Ed Sharron

The bright-red throat patch of a male Ruby-throat actually contains no pigmentation. The perceived color is a result of iridescence in the arrangement of their feathers. Just how bright and colorful it appears depends upon light levels, moisture, angle of viewing, and general wear and tear of the feathers.



Ed Sharron

With their tubular shaped red flowers, beebalms are a very popular fuel-up stop for hummingbirds.



Ed Sharron

The figure-8 pattern of a hummingbird's wing beat is visible in this high-speed photograph.

Hummingbirds appear to be most attracted to flowers with red or orange coloration, long, tubular flower shape, and lots of nectar. Some of their favorites in the northeast include native flowers such as beebalm, jewelweed, wild bergamont, cardinal flower, and columbine. There are a wide variety of flower-bed plants you can put in your garden as well sure to attract hummingbirds.

Many people choose to supplement the flowers in their yards with artificial hummingbird feeders. These are very easy to set-up and can be a great way to bring the action closer to a good observation area. Special cautions must be taken however to ensure the health of the birds.

It's important to clean hummingbird feeders at least once a week or so. Waiting longer could allow mold to grow in the nectar and a hummingbird's tiny organs could get infected causing illness or even death.

### Who You Callin' Yellow-bellied?

When Ruby-throats begin arriving on their breeding grounds in the northeast in April and May, there are relatively few nectar-rich blooming flowers on which to feed. Enter: the Yellow-bellied Sapsucker. Though it's name sounds like an insult to be hurled around a schoolyard, it is actually a species of woodpecker that breeds in the Northeastern U.S., and is a special friend to the Ruby-throated Hummingbird. Sapsuckers winter in the southeastern U.S. and Central America and migrate

*A flash of harmless lightning,  
A mist of rainbow dyes,  
The burnished sunbeams brightening  
From flower to flower he flies.*

- John B. Tabb  
*The Hummingbird*

north in the early spring when the tree sap starts flowing on which they feed. Analysis shows that tree sap is very similar to the nectar hummingbirds take from flowers with both containing sucrose and trace amounts of amino acids. The relatively deep tap-holes used by maple syrup

makers pulls sap that contains about 2-3 percent sugar.

The shallow wells created by Sapsuckers, however, tap into phloem sap, which contains up to 20-30 percent sugar.

Ruby-throated Hummingbirds take full advantage of these sugar-rich sapwells, especially in early spring, but throughout the summer as well. They

feed not only on the sap but also the tiny insects that are attracted to them. Hummers have been observed closely tailing sapsuckers as they fly from one sap tree to another. They'll even chase away other bird species who visit the wells, leaving the Sapsucker to slurp in peace and maybe drill more holes for them both to feed on.

### For more information

- To see slow-motion video of a Ruby-throated Hummingbird's wings, go to: [https://www.youtube.com/watch?time\\_continue=38&v=yIfTSc9D34g](https://www.youtube.com/watch?time_continue=38&v=yIfTSc9D34g).

- For info on NETN's long-term Breeding Landbird monitoring program see <https://www.nps.gov/im/netn/breeding-landbirds.htm>.

