

THE GREAT OUTDOORS



Hummingbirds typically visit 1,000 to 2,000 blossoms a day. This one is feeding on tahonia or Mexican sunflower it is an annual but not a native species. Monarchs are especially fond of tahonia as well, in the lates summer early fall. ALL PHOTOS BY AUTHOR

Hum, Hum, Hummertime

What's the buzz about hummingbirds? The ruby-throated hummingbird that frequents our region from mid-April to autumn is unique in the avian world –and ours.

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If you read articles about birds you possibly know a great deal about

hummingbirds. With their ability to fly both backward and forward they attract a lot of attention and “buzz” - or possibly “hum” - for such a tiny species. In this piece I’d like you to learn something you did not already know.

It has only been recently discovered what specifically causes the hum. At 70 strokes per second a hummingbird’s wing-beat takes some pretty sophisticated instrumentation to analyze. With 3D acoustic modeling and high-speed cameras synchronized, Ben Hightower and a team of other scientists were able to narrow the sound’s source to the bird’s upstroke (2021). The upstroke of a hummingbird actually gives it “lift,” while conversely in other birds it’s the downstroke that helps the bird rise. And it is on the upstroke that sound is created. At 4,000 beats per minute what we hear is an insect-like buzz.



The rapid strokes of a hummingbirds wings 50-80 beats per second is perceived as simply a blur by our eyes. Pictured here feeding on monarda.

Hummingbirds begin to arrive here in New Jersey around mid-April from their Mexican/Central American winter digs. Despite their small size, ruby-throated hummingbirds can fly over 3000 kilometers, crossing over 1000 kilometers of the Gulf of Mexico in just one flight. Their goal is to breed here in North America and escape the competition and predation in their tropical climes. They breed in the eastern half of the United States and southern Canada.

The ruby is our only Eastern hummingbird with the exception of the rufous; whose range is the southeast although we occasionally see it in New Jersey if one wanders off its usual flight

pattern during southbound fall migration. The western United States has a number of species of hummingbirds.

Hummingbirds' southward return is believed to be triggered by the shorter days at the end of August and beginning of September. This is when they really fatten up, and activity at bird feeders noticeably increases.

What wasn't known until recently is the technique they employ to store fat. Canadian University professors Kenneth Welch and Christopher Guglielmo (2021) have discovered that in preparation for and during migration hummingbirds build fat reserves. If body mass fat falls below 5% of a hummingbird's weight they employ a strategy known as torpor, primarily in the evening when not feeding. They lower their body temperature and slow their metabolism up to 95%, thus enabling them to increase fat storage up to 20% of their body weight. Since ruby-throats weigh less than nickel, these measurements have to be very precise.

Other birds have similar methods of conserving energy, most notably vultures. Their meals are opportunistic since they rely on carrion vs. live captures. So they employ torpor to

conserve energy each evening when meals may not be readily available.



Exhausted hummingbird in torpor. Note the light is not being refracted on this male's neck so the red is not visible.

Hummingbirds migrate alone rather than in groups, so it is an inherent ability; you could say it's

preprogrammed – that they know where to go.

Let's talk about what hummers are doing while they are here in North America. The males are attracting females with their bright red 'gorget' or neck and their fancy diving courtship maneuvers. They will fly to heights of as much as 10-150' (depending on source) and dive repeatedly in a swooping 'U' pendulum-like course in front of the female.

I've seen them do this at about 30' and it surely gets your attention. They chatter and their wing sounds are especially loud; they will not be ignored in their rapid speed dives. If an individual is selected by the female they will drop to the ground for copulation.

The red irradiance of the male's neck feathers is caused by structural refraction. Microscopic structures at the surface of the feathers reflect in one direction only. This is why the hummingbird male seems to flash red in a now-you-see-it-now-you-don't fashion (Sibley).

After mating the male will likely court other females. There are more females than males and a promiscuous mating system helps to sustain the species.

The female will have the sole responsibility for raising the brood. She will line her quarter-sized cup-shaped nest with spiderwebs and typha/cattail seeds. I've watched a female gather the soft heads of typha, kiting along the hotdog-shaped seedhead and plucking a piece off into the front of her bill. Each subsequent pinch pushed back the prior pieces until she looked as if the length of her bill was whiskered by a cinnamon-colored mustache!



The nest of the hummingbird is about the diameter of a bottle cap. It is well camouflaged in lichen and often looks like part of the branch itself.



Hummingbirds lay one to two eggs, rarely three. Three generally means the brood will fail because the female can't provide adequately for three chicks.

Hummingbirds are not the only ones to discover the many uses of these seedheads. N. American pioneers gathered the cottony seeds, referred to as "swamp down," for pillows, quilts, and doll stuffing, as well as for insulation.

Hummer nests will be set on the top of a horizontal limb and be heavily camouflaged in lichen and moss. Their appearance will be as if they are part of the branch where a limb broke away. A bird will lay two white jelly-bean sized eggs and incubate them for two weeks.

This may be extended to 20+ days if the weather is chilly.

When the chicks are born the female will feed them a regurgitated mixture of nectar and insects. The chicks will fledge in about three weeks, with juveniles closely resembling the females. David Sibley suggests that adult females tend to fan their tails more when hovering than do young birds, and juveniles' tails are held more stationary.

Females will often raise two clutches and begin building the second nest before the first brood has fledged. Raising chicks requires a lot of food deliveries. Hummingbirds drink 100% of their body weight daily, consuming up to half of their weight in sugar daily. On average they visit 1,000- 2,000 blossoms a day. But they need more than nectar to sustain them. Insects provide protein for them and their young.

Part one of two part story.

Sources:

What It's Like to Be A Bird, by David Sibley

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