

Attracting Ruby-throated Hummingbirds to Your Yard

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Of the approximately 359 known species of hummingbird throughout the Americas, only one breeds in eastern North America. The ruby-throated hummingbird (*Archilochus colubris*; Figure 1) is regularly found east of the Mississippi River during the summer months, frequenting just about any habitat that contains appropriate food resources. Although ruby-throated hummingbird populations have been increasing since 1966, their survival and reproductive success largely depends on the availability of quality habitat. The use of non-native plants in landscaping and the spread of invasive plants in natural areas are threatening habitat and diminishing available resources for hummingbirds and many other native bird species across North America. In this fact sheet, we provide helpful guidelines for attracting ruby-throated hummingbirds to your yard and offer viewing tips to increase your chances of seeing them.

Ecology of the Ruby-throated Hummingbird

Description and Habitat

Ruby-throated hummingbirds are incredibly small birds, measuring 2.8–3.5 inches long and weighing an average of 2.9–3.8 grams (that's less than a nickel!). Both sexes have a shimmering bright green back and crown with a grayish white belly, but only the males boast an iridescent ruby-red throat. Hummingbirds do not sing, but rather they will make a variety of sharp chattering or buzzing noises, especially in courtship or during territorial disputes. Their wings, which beat 50–70 times per second, produce a distinctive humming sound and allow hummingbirds to hover in mid-air while drinking nectar from delicate flowers.

Because they do not need to perch when feeding (although they still can), hummingbirds have evolved very short legs, which makes them even lighter.



Figure 1: A male ruby-throated hummingbird.
Photo by Tibor Nagy

Ruby-throated hummingbirds show no stringent habitat preferences. They can be found in old fields, forest edges, meadows, and stream borders across eastern North America during the summer breeding months; and they can be quite common in backyards and gardens. The primary factor determining habitat suitability is the presence of sufficient tubular flowers to provide adequate foraging resources for survival and reproductive success.

Migration

Ruby-throated hummingbirds are *early* migratory birds, leaving the breeding grounds in late July through early September to overwinter in Florida and Central America. Leaving artificial nectar feeders outside will not cause ruby-throated hummingbirds to stay throughout the winter in New Jersey. If you do see a hummingbird visit your feeder in winter, it is probably a vagrant western species such as the rufous hummingbird (*Selasphorus rufus*).

Although small, ruby-throated hummingbirds are powerful flyers and capable of crossing 500 miles over the Gulf of Mexico in a single non-stop flight lasting 20 hours. During the winter months, ruby-throated hummingbirds remain solitary and seek reliable food sources of nectar and insects in tropical deciduous and dry forests, second growth scrub, pastures, and edge habitat. Individuals leave their wintering grounds in early spring and arrive in New Jersey in mid-April to stake out territories and begin a new breeding season.

Reproduction

Hummingbirds are solitary except during the breeding season, which begins in early May after individuals have returned from their southern wintering sites. Males typically return 7–10 days before females to establish breeding territories. Males will aggressively defend their territories from other hummingbirds and avian species, as well as bees and wasps. When a female enters the male's territory, he performs an elaborate courtship display that includes diving down from a height of 50 feet above the female in a U-shaped flight pattern. He will then make short horizontal flights directly in front of the female. If she accepts his courtship, they will perform alternating ascending and descending flights together before mating. They part after mating, and the female begins the nest-building process alone.

Reproductive females will aggressively defend the space around their nest, which they build 10–40 feet above ground, typically in a deciduous tree or shrub species but sometimes in a pine or spruce. The cup-shaped nest measures 2 inches across and 1 inch deep, and is made of twigs and plant fibers held together with spider webbing and pine resin, then camouflaged with moss and lichen. After mating, a female will lay 2–3 eggs and incubate them for 12–14 days until they hatch. She then cares for the nestlings for 18–22 days, keeping them warm and feeding them regurgitated nectar and insects (Figure 2). Newly fledged hummingbirds may stay near their nest for another week until the female chases them away to live on their own.



Figure 2: A female ruby-throated hummingbird feeding her young. Photo by Bud Hensley

Foraging

Hummingbirds have an impressively high metabolism that requires them to eat very often. Their diet consists primarily of nectar, which they lick up from tubular flowers using their long, grooved tongue. Because the stems and branches of flowering plants are not typically strong enough for perching, hummingbirds have evolved specialized muscular and skeletal adaptations in their wings and shoulders that allow them to hover in place (Figure 3). They can also spontaneously move in any direction, allowing them to quickly dart from flower to flower thereby maximizing foraging efficiency. Despite their gentle appearance, hummingbirds are fierce predators that consume a diversity of insects and spiders, which add essential nutrients to their diet. When food resources are scarce, or during bouts of cold weather, hummingbirds can decrease their metabolic rate and enter a state of torpor for up to 12 hours. When in torpor, their breathing rate, heart rate, and internal body temperature are reduced (similar to hibernation) to help conserve energy.



Figure 3: A female ruby-throated hummingbird feeding from coral honeysuckle (*Lonicera sempervirens*). Photo by Bud Hensley

Attracting Ruby-throated Hummingbirds to Your Backyard and Garden

Plants

Ruby-throated hummingbirds have coevolved with at least 19 species of flowering plants in the eastern United States. These plants have ornithophilous (bird-loving) flowers that are adapted for bird pollination. Since birds rely on sight to find the right plant species, ornithophilous flowers are typically brightly colored but odorless. For example, the cardinal flower (*Lobelia cardinalis*; Figure 4) has bright red tubular flowers and reproductive parts that curve over each flower's entrance, ensuring pollen is brushed onto a hummingbird's head and bill each time it consumes nectar from the flower. Hummingbirds then transfer the pollen to other cardinal flowers, thus completing pollination.



Figure 4: A female ruby-throated hummingbird feeding from a cardinal flower. Photo by Jason Means

Although ruby-throated hummingbirds will feed on all tubular flowers, their color preference is red or orange. By planting a variety of species with bloom times spanning late spring to early fall, you can provide adequate food resources for hummingbirds throughout the entire breeding season.

Quick Guide for Turning Your Yard into a Hummingbird Haven

- Arrange plants in conspicuous displays of the same species or the same bloom color to increase visibility (check your local soil and light conditions before choosing which species to plant).
- Add vertical structure to your yard using shrubs and small trees to provide a variety of perching and nesting sites.
- Use native plants when possible because they have evolved to support a variety of bird and wildlife species. A list of recommended nectar-producing plant species that attract hummingbirds and are native to New Jersey can be found in Table 1.
- Hummingbirds prefer oak, maple, beech, birch, hornbeam, poplar, hackberry, pine, and spruce species for nesting.
- Watch out for nests before trimming your shrubs and hedges. Hummingbirds typically build their nest on top of thin branches in dense parts of the tree or shrub for protection from bad weather and predators.
- Planting native thistle, milkweed, and fern species will help provide female hummingbirds with nest building materials.
- Eliminate or reduce insecticides from your yard. A female hummingbird may catch up to 2000 insects and spiders to feed herself and her young during the breeding season.
- Provide a shallow bird bath or water mister in your yard. Hummingbirds satisfy most of their water needs by consuming nectar but will also utilize shallow wet areas for bathing and drinking.

Supplemental Nectar Feeders

Artificial feeders (Figure 5) are another way to attract ruby-throated hummingbirds when flowers are not in bloom, or to entice them into specific areas of your yard for better viewing. However, it is important to know that feeders require relatively high maintenance compared to typical seed-feeders, and sugar water does not provide the same nutrients as nectar naturally found in plants. **WARNING:** Sugar water quickly ferments in hot weather, producing alcohol which is toxic to hummingbirds. Clean out your feeder every 2–3 days, especially when temperatures are high. To clean your feeder, place all parts of the feeder in the dishwasher with the open side of the feeder facing down. To wash by hand, scrub the feeder then soak in a mild bleach solution ($\frac{1}{2}$ cup bleach in 1 gallon of water). Make sure to rinse off all detergent and bleach before filling the feeder with sugar water.



Figure 5: A female ruby-throated hummingbird perched at a supplemental nectar feeder. Photo by Dennis Church

Sugar Solution Recipe

Ingredients: 1 part granular white sugar to 4 parts tap water by volume

Directions: Mix 1-part sugar to 1-part water and boil the mixture until all the sugar is dissolved. Turn off the heat and add the additional 3 parts of cold water. Refill your feeder and store any remaining sugar solution in the refrigerator for up to 1 week. **Do not add red food coloring** to the solution because it is unnecessary and might not be safe for the birds to ingest.

Supplemental feeders are most beneficial to hummingbirds when nectar and insects are scarce, usually when the birds arrive from migration in early spring, and when they are preparing to migrate south after the breeding season. Prevent hummingbirds from falling easy prey to outdoor cats by placing your feeder at least 15 feet from low vegetation where cats can hide. Also, remember to place your feeder in a safe location away from glass windows to avoid accidental collisions.

Soil Moisture Key

- Mesic = moist soil, adequate moisture retention
- Sub-mesic = moist soil, water drains readily
- Sub-xeric = moist to dry soil, water drains rapidly

Table 1: Native plants that attract ruby-throated hummingbirds in New Jersey

Plant Name	Habit	Height	Flower Color	Flowering Time	Sun	Soil Moisture	Soil
Butterfly Milkweed <i>Asclepias tuberosa</i>	Herb	1–3'	Orange	Jun–Aug	Full	Sub-mesic, Sub-xeric	Loam Sand
Canada Lily <i>Lilium canadense</i>	Herb	2–3'	Yellow, Orange, Red	Jun–Aug	Full	Mesic	Loam
Cardinal Flower <i>Lobelia cardinalis</i>	Herb	2–5'	Red	Jul–Sep	Full, Partial, Shade	Mesic	Clay Loam Sand
Common Jewelweed <i>Impatiens capensis</i>	Herb	2–5'	Orange	Jun–Sep	Partial, Shade	Mesic	Clay Loam Sand
Coral Honeysuckle <i>Lonicera sempervirens</i>	Vine	8–15'	Red, Pink, Orange	May–Jun	Full, Partial, Shade	Sub-mesic	Clay Loam Sand
Coralberry <i>Symphoricarpos orbiculatus</i>	Shrub	3–6'	White, Green	Apr–Jul	Partial, Shade	Sub-mesic, Sub-xeric	Clay Loam Sand
Dense Blazing Star <i>Liastris spicata</i>	Herb	2–4'	Purple	Jul–Sep	Full	Mesic	Clay Loam
Eastern Columbine <i>Aquilegia canadensis</i>	Herb	1–3'	Red, Yellow	Apr–May	Full, Partial, Shade	Sub-mesic, Sub-xeric	Loam Sand
Great Blue Lobelia <i>Lobelia siphilitica</i>	Herb	1–3'	Blue	Jul–Sep	Full, Partial, Shade	Mesic	Clay Loam Sand
Pink Azalea <i>Rhododendron periclymenoides</i>	Shrub	4–10'	White, Pink	April–May	Full, Partial	Sub-mesic	Clay Loam Sand
Red Elderberry <i>Sambucus racemosa</i>	Shrub	6–12'	White	May–June	Full, Partial, Shade	Mesic	Loam
Redbud <i>Cercis canadensis</i>	Tree	15–30'	Pink, Red	April	Full, Partial	Sub-mesic	Clay Loam Sand

Plant Name	Habit	Height	Flower Color	Flowering Time	Sun	Soil Moisture	Soil
Scarlet Bee-balm <i>Monarda didyma</i>	Herb	2–5'	Red	Jun–Aug	Full, Partial, Shade	Mesic	Clay Loam
Tuliptree <i>Liriodendron tulipifera</i>	Tree	60–90'	Yellow	May–June	Full	Mesic	Loam
Trumpet Creeper <i>Campsis radicans</i>	Vine	12–36'	Red, Orange, Yellow	Jun–Sep	Full	Sub-mesic	Clay Loam Sand
Swamp Lily <i>Lilium superbum</i>	Herb	3–7'	Red, Orange, Yellow	Jul–Sep	Full	Sub-mesic	Loam Sand
Turtlehead <i>Chelone glabra</i>	Herb	2–3'	White, Pink	Aug–Sep	Full, Partial, Shade	Mesic	Clay Loam Sand
Wild Bergamont <i>Monarda fistulosa</i>	Herb	2–5'	Purple, White, Pink	Jul–Sep	Full, Partial, Shade	Sub-mesic	Clay Loam Sand
Woodland Phlox <i>Phlox divaricata</i>	Herb	1–2'	Blue, Purple, White, Pink	April–May	Full, Partial	Mesic	Clay Loam

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