



Hummingbird Gardening In Tennessee

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Cover photo by Vickie Henderson. Immature male ruby-throated hummingbird (red-speckled throat) feeding from cardinal flowers (*Lobelia cardinalis*) in late summer. Young males don't start getting their red throats until late summer.

Hummingbird Gardening In Tennessee

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Introduction

Ruby-throated hummingbirds never fail to delight hummingbird enthusiasts who eagerly await the arrival of the first migrants each spring. Ruby-throats winter in southern Mexico and Central America and arrive in Tennessee as early as late March. The tiny ruby-throat is the only hummingbird species to nest in Tennessee. Although many migrant Ruby-throats remain in Tennessee to nest each spring, most are just passing through on the way to more northern breeding areas extending into Canada.

It is not difficult to attract migrating ruby-throats into your yard. The secret is to enhance your yard with flowers and other plantings and to provide several hummingbird basic necessities. Ruby-throats require an abundance of both nectar-bearing flowers and insects for food. They also need water, perches, shelter and nest sites. The sugar and water solution in hummingbird feeders substitutes for nectar from flowers. Feeders can attract hummers into your yard and help the birds meet their very high energy requirements.

Habitat

To attract hummingbirds, it's important to understand the key features of their habitat. Ruby-throated hummingbirds often nest in forests and woodlands or near the edges of forests and woodlands during spring in Tennessee. Nest materials include thistle, dandelion down, soft plant fibers, rootlets, tree sap and animal hair. The tiny nest, bound together with spider webs and camouflaged with lichen, is often anchored to the fork of a downward-sloping tree branch with a canopy of leaves above. Nesting ruby-throats are most abundant in Tennessee's bottomland forests near rivers, streams, ravines and other wet areas where insects are more abundant.

Flower nectar and insects are the main foods of ruby-throats. Insects and other small invertebrates make up about 50 percent of the daily diet and up to 75 percent during the nesting season. Wooded areas with lots of leafy vegetation near water usually support more insects than other areas.

If your yard is not near a wooded area, or it lacks small insects and nectar-rich flowers for food, you may not see hummingbirds in your yard during the



photo: Marcia Davis

Adult male ruby-throat with solid red throat.

nesting season. However, you should be able to attract them during migration with flowers and hummingbird feeders if your neighborhood has enough patches of woods, trees, shrubs, meadows, weeds and nectar-producing flowers. Habitat quality for ruby-throats around your home — including the quantity of food available from flower nectar, hummingbird feeders, and insects — will influence when and how many hummers visit your yard.

Ruby-Throated Hummingbird Calendar

Typically, you will attract the most hummers into your yard during midsummer after young hummingbirds fledge and during fall migration when people see large numbers of ruby-throats at nectar-bearing flowers and hummingbird feeders. Fewer hummers are seen in spring.

By understanding the annual activity cycle of ruby-throats, you can create a flower garden emphasizing nectar-bearing hummingbird plants that bloom and attract the most hummers during the two migration periods: spring and midsummer through early fall. These are the two periods when the most hummingbirds will visit your yard, and providing an abundance of nectar during these times will help keep them well fed.

SPRING MIGRATION: Late March Through Mid-May

The earliest spring migrants arrive in Tennessee by late March. Though many people may not see their first hummingbird until about the second week in April, the migrants will continue to pass through until approximately mid-May. The timing of migration is why it is important to put hummingbird feeders up by April 1 each year.

TENNESSEE NESTING SEASON: Early May Through July

Hummingbirds may reuse their old nests the following year. It is important to note that both nests and eggs are protected by federal and state laws and must never be collected. Hummers will begin laying eggs in early May and laying peaks by the second half of the month. By late May there are nests with young nestlings. The young fledglings will start appearing out of the nest by mid-June.

Don't worry if you don't see hummingbirds during the month of May. Adult female hummingbirds are busy catching protein-rich insects and may visit feeders less frequently while nesting and feeding nestlings. Unless a hummingbird is maintaining a nesting or feeding territory near your yard, you may not see any hummingbirds during nesting season. You can expect feeder and flower visits to increase after nestlings leave the nest. Nonetheless, keeping your feeder stocked can provide necessary calories during this time.



Female ruby-throat feeding from 'Million Bells' (*Calibrachoa*)

photo: Vickie Henderson

FALL MIGRATION: Early July Through October

Fall migration is when you will see the most hummingbirds. The population is greatest in late summer because of the addition of recently hatched young birds. Each successful nest usually produces two young hummers.

Hummingbirds must constantly replenish their fat reserves during migration. They feed heavily on flower nectar and sugar water from feeders as they continue on their journey. Planting a garden with lots of nectar-rich hummingbird favorites that bloom during this period will attract migrants.

In contrast to spring when migrating hummers pass through an area quickly because they're in a hurry to get to the breeding grounds, fall migration is more leisurely and stretched out over a longer period of time. This means better hummingbird watching with more birds. Migrant hummer numbers often peak between mid-August and early September in Tennessee.

WINTER: November Through Late March

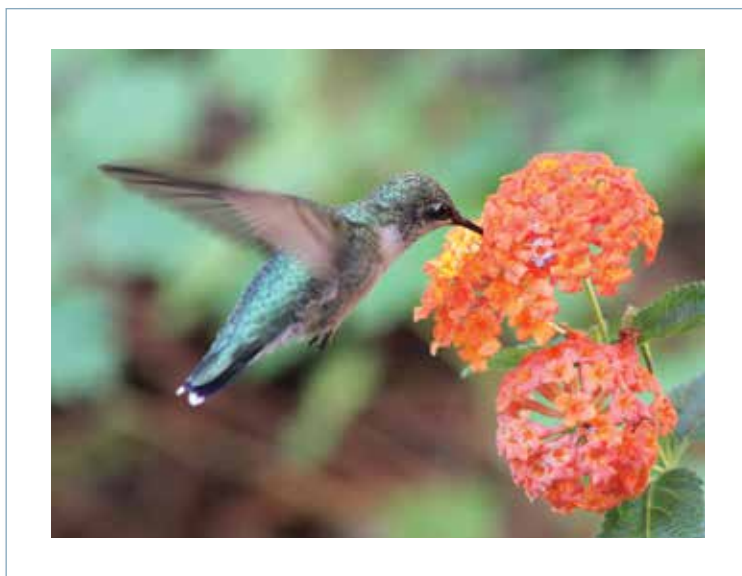
Every winter, a few hummingbirds nesting in the western U.S. and Canada show up in Tennessee and other southeastern states. Most are rufous hummingbirds, but rarer possibilities include black-chinned, Allen's, Anna's, Calliope, and broad-tailed hummingbirds. Only rarely does a winter hummer turn out to be a ruby-throat. Winter hummers often select yards with late-blooming, nectar-bearing flowers such as salvias and lots of evergreen trees and shrubs that provide winter cover for insects and for wintering hummers.

Importance of Insect Food

Creating and maintaining good ruby-throat habitat involves encouraging insects to live in your yard. Ruby-throat food includes mosquitoes, spiders, gnats, fruit flies, small bees, larvae, aphids and insect eggs. Small soft-bodied insects provide hummers with protein not available from flower nectar.

Ruby-throats eat small insects that are attracted to flowers and they also explore plant foliage to glean insects from leaf and bark surfaces. In early spring, hummingbirds eat insects attracted to sap from wells drilled in trees by yellow-bellied sapsuckers. Hummers also act like flycatchers and snatch small insects out of midair.

You can encourage insects to live in your yard by establishing an un-mowed, natural area with tall grasses and self-established plants to attract insects. Almost any type of foliage provides a home for insects, so if you want hummingbirds, fill your yard with plants. Purple coneflowers and bee balm both produce nectar that attracts many small insects suitable for hummingbird food. Trees with mushy, rotting fruit attract many different insect-eating birds. Hummers may defend feeding territories around fruit trees, like crabapples, when lots of small insects are attracted to the rotting fruit.



Ruby-throat feeding on Lantana

photo: Vickie Henderson

Another way to attract hummingbirds is to use a homemade fruit fly feeder. Stock a wide-mouthed plastic jug — opening to the side — with pieces of banana, cantaloupe and scraps of other fruits, and place it within sight of a hummingbird feeder. Hummers will fly in to pick off tiny fruit flies or other insects feeding on the rotting fruit.

One of the most important things you can do to provide insect food for hummingbirds and to keep birds healthy is to avoid unnecessary use of pesticides. Besides killing beneficial insects and other invertebrates used for food by hummers and many other birds, broad-spectrum pesticides might sicken birds that eat poisoned insects.

Importance of Flower Nectar Food

Flowers favored by hummingbirds share characteristic colors and shapes. Many hummingbird-pollinated plants have red flowers. In addition to red, hummingbirds are also attracted to purple, hot pink, orange, blue, as well as white and yellow. Many of the tubular and trumpet-shaped flowers that hold more nectar than other flowers are irresistible to hummers. The birds hover while inserting long bills and tongues into the throats of tubular flowers to reach the nectar. Pollination occurs after pollen rubs off onto a hummingbird's head and is carried by the hummer to other flowers of the same species. Both plants and hummingbirds benefit from this age-old relationship.

Other important factors in flower selection by hummers include nectar concentration, nectar volume and corolla (flower tube) length. Nectar consists mainly of sugar, water and salts. Hummers seem to show a preference for flowers with a nectar concentration of 20-30 percent, ample nectar supplies, and flowers with longer corollas (i.e., tubular shaped) to ensure that competition for nectar from other pollinators is limited. By choosing flowers that are limited to other pollinators, such as bees, hummingbirds can maximize the amount of nectar they collect with each energy intensive visit.

Many different nectar-bearing flowers attract hummers. However, you don't need to plant vast varieties of flowering plants. The goal is to provide a constant supply of nectar-bearing flowers from early spring through late fall. Get started by focusing on some easy-to-grow plants that are best suited for your growing conditions. Consider plants native to Tennessee that produce a lot of nectar, such as jewelweed and trumpet creeper. Hummingbirds seem to remember locations of flower gardens and feeders, often returning to highly rewarding locations the following year.

Different Flowers for Different Seasons — The Hummingbird Gardener's Calendar

EARLY SPRING

When ruby-throated hummingbirds first arrive in early spring, welcome them with native wildflowers. By including native plants in your garden, you will observe the mutually beneficial association that has existed between hummingbirds and Tennessee's native plants for hundreds of years. Perennials like wild columbine and wild blue phlox are early spring favorites. Plant columbine with its drooping pendants of red-orange and yellow, as well as pink tubular flowers

in a rock garden or semi-shaded area. Wild blue phlox is lovely when it spreads throughout a moist, shaded garden. Early blooming crossvines and yellow Carolina jessamine are ideal on a trellis, arbor or post. Flowering quince and azaleas also attract hummers. Another option is a small native tree, *Aesculus pavia* (red buckeye). Red buckeye is covered with red tubular flowers that hummingbirds depend on for nectar as they migrate north each spring.

When the hummers first return it's too early to plant annuals due to danger of frost. However, a hanging basket with brilliant red fuchsia or a cascading mass of red petunia-shaped Million Bells (*Calibrachoa*) along with a red hummingbird feeder will attract attention. If the planters are hung so that they are visible from above it will encourage hummers to check out your yard. Just bring hanging baskets indoors when the temperature drops too low.

LATE SPRING TO EARLY SUMMER

Late April is the time to plant a variety of ornamental annuals to provide a succession of nectar-rich flowers to support hummingbirds from spring until late fall. Imagine your yard from above, a bird's eye view as a hummer would see it, and create a target of bright red color to draw them in like a beacon.

Hummingbirds seem to associate the color red with nectar-rich food sources. Indian pink is a red and yellow option for shady areas. Lantana, especially in shades of red, coral, pink, orange and yellow, is a favorite for sunny areas.

Consider accenting the garden with window boxes, hanging baskets and large flower pots. Fill them with brightly colored petunias, fuchsias and geraniums. Try coral honeysuckle on a lamppost or mailbox. This plant will provide copious amounts of tubular coral trumpets that may bloom from mid-spring to fall. Favorite spring wildflowers include penstemons and pinks. Hummers also love the red or pink star-clustered flowers of pentas.

SUMMER

Summer is the season for hummingbird vines. Both cypress vine and cardinal climber provide an abundance of small, tubular, red flowers. Plant them in a hanging basket or on a trellis, or let them cascade over the railing of a deck or a wall. Orange trumpet creeper, the classic hummingbird vine, is another excellent choice.

A bed of bee balm is a must for an open sunny area. Each red flower head is a mass of tiny, nectar-bearing tubes. Butterfly bush in shades of purple, lilac, white or yellow is a favorite for its long-lasting flowers. It also attracts butterflies, as do many of the hummingbird plants. Include a showy hibiscus, spreading mounds of verbena, or tall graceful lilies.

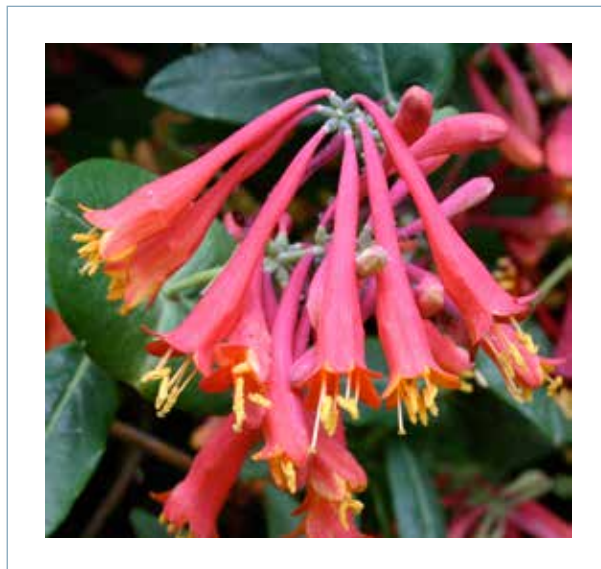


photo: Marcia Davis

Trumpet honeysuckle (*Lonicera sempervirens*)



photo: Vickie Henderson

Ruby-throat feeding on pineapple sage (*Salvia elegans*)

Even a small, sunny apartment balcony or porch has enough space for a hummingbird garden. Blanket a railing with cypress vine, cover a trellis with mandevilla, add a few hanging baskets, and put out a large container of lantana. Don't forget the hummingbird feeder.

LATE SUMMER INTO FALL

The greatest numbers of hummingbirds are usually observed in late summer and early fall. They feed heavily and “tank up” in preparation for fall migration, which takes some on a nonstop flight across the Gulf of Mexico to wintering grounds. Masses of cardinal flowers and butterfly weed are favorite wildflowers for late summer and early fall. Lantana and marigolds also persist during this time as they are drought-tolerant heat-lovers in Tennessee and are growing with a full spread. Choose the brightly colored orange and red varieties to attract the most attention from hummers. In shady moist areas, patches of *Impatiens capensis*, (orange Jewelweed) a native wildflower, have been known to attract hummers in droves.

Salvias are a must for any hummingbird garden. *Salvia coccinea* has several cultivars including hummingbird favorites ‘Coral Nymph’ and ‘Lady in Red.’ Plant it in spring from a potted plant and enjoy the blooms throughout summer and even into fall, if deadheaded. Autumn sage and pineapple sage, with their scented leaves, bloom in spring as well as into fall. Mexican bush sage, with its very unusual purple velvety spikes, is another late bloomer. Anise sage is another fall-flowering favorite.

WINTER HUMMINGBIRDS

Most ruby-throated hummingbirds leave Tennessee by late October, but every fall a few rufous hummingbirds arrive in Tennessee and spend part or all of the winter here. Late-blooming salvias and other flowers provide nectar for these hummers until the first killing frost; then hummingbird feeders and insects will support the birds until they depart.

Hummingbird Feeders

While nectar-rich flowers that also attract insects are a preferred food source for hummingbirds, hummingbird feeders have their role in the garden. A hummingbird feeder filled with a solution of sugar and water is a substitute for nectar from flowers when flowers are scarce or food competition is high. By supplementing a hummer's natural diet of nectar and insects, properly maintained feeders help hummers meet their very high energy requirements, especially during peak migration periods.

The standard recipe for hummingbird feeders mimics the preferred range of nectar solution found in favorite hummingbird flowers (between 20 and 30 percent). This sugar-water solution is made of 1 cup white cane sugar dissolved in 4 cups of water. Use room temperature water and stir well. Heating or boiling the water is not necessary. Using red dye might attract the birds but



Jewelweed (*Impatiens capensis*)

photo: Marcia Davis



Anise sage (*Salvia guaranitica*)

photo: Marcia Davis

is not necessary and may even be harmful. Store extra sugar-water in the refrigerator, but always let it reach room temperature before serving it to hummers.

Hummingbird feeders require maintenance. When temperatures exceed 90 degrees, the solution must be changed every two days. Higher temperatures encourage spoilage and growth of black mold that may sicken birds, so do not offer more than will be eaten in a few days. Place feeders in the shade of trees and under eaves. Remember to rinse feeders in plain water and clean as necessary every time you change the nectar.

Most problems with hummingbird feeders are easy to prevent if you take care not to allow any nectar to get on the outside of the feeder, which can attract unwanted insects. Prior to purchase, be sure to investigate which feeders do not leak and buy feeders that are easy to take apart and clean. After filling or after strong winds that may cause feeders to swing and slosh, wipe feeders with a wet paper towel. You also can choose feeders that do not have yellow flowers, a favorite color for bees. Ant guards filled with water or feeders with built-in ant moats solve ant problems as long as feeders are not in direct contact with plants. Consult your local bird supply store to find a suitable feeder for hummers.



Photo: Billie Cantwell

Choose easy-to-clean feeders that discourage bees from reaching sugar-water.

Water, Perches, Shelter and Safety in the Garden

In addition to flowers, insects and a hummingbird feeder, hummers will look for a few other things in your yard. All birds need water and hummers are no exception. Hummingbirds get most drinking water from nectar, but they also need water to bathe. Hummers bathe in very shallow water, about 1/4-inch deep, in small birdbaths and shallow pans. They also bathe by flying back and forth through a very fine spray produced by a mister or garden hose. After a rain, they like to leaf bathe by squirming around in small pools of water remaining on the surfaces of large leaves. For this reason, incorporate plants with large broad leaves shaped to hold a little water. Make sure you wet the leaves with a hose during dry spells.

Because their feet are so tiny, hummers require plants with small branches for perching while they rest and scan for small insects. Branches about the thickness of an old-fashioned wire coat hanger are ideal. Shrubs with many thin branches, such as forsythia and butterfly bush, and trees with many tiny bare twigs are used as perch sites. Hummers often have a favorite perch they use repeatedly.

Evergreen trees and shrubs provide hummingbirds with shelter from wind and rain, roosting sites, and protection from predators. Good cover is a basic requirement for all birds. When creating a landscape, include evergreens to enhance habitat for ruby-throats.

Reducing hazards in your yard also can help protect hummingbirds. Outdoor domestic cats and some dogs may kill low-flying hummingbirds. If you have outdoor cats, you can plant hummingbird plants in hanging baskets instead of planting them in the ground to protect the hummers while they feed.

Hummers and other birds mistake landscapes reflected in windows for the real world. They may fly to reflections of plants, hit the glass, and suffer injuries or die. For this reason, do not place hanging baskets and containers planted with hummingbird flowers in locations where they create reflections in windows.

If you provide a good combination of their basic requirements, hummers will likely remember the location of your home and return the following year. Be sure to include some of Tennessee's native, nectar-rich, perennial wildflowers and shrubs, especially plants with many small flowers. Providing these kinds of flowers in your landscape will provide food for many years and encourage hummingbirds to visit your garden each season.

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Internet Website Resources

American Bird Conservancy

<http://www.abcbirds.org>

Cats indoors, pesticides, herbicides

Fine Gardening

<http://www.finegardening.com>

Plant database

Hummer/Bird Study Group

<http://www.hummingbirdsplus.org>

Hummingbirds, winter hummingbird banding

Hummingbirds.net

<http://www.hummingbirds.net>

Hummingbirds, migration maps, species profiles, frequently asked questions

Hummingbird Society

<http://www.hummingbirdsociety.org>

Dedicated to international understanding and conservation of hummingbirds

Lady Bird Johnson Center

<http://www.wildflower.org>

Promotes cultivation and conservation of native plants, provides publications, information on sources of wildflower seeds and nursery stock.

Missouri Botanical Garden

<http://www.missouribotanicalgarden.org>

Plant database

USDA PLANTS Database

plants.usda.gov/java/

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Hummingbird Plant List For Tennessee

About the Plant List

Readers of the Knoxville News Sentinel’s Birdlife column, birdwatchers, members of the Tennessee Ornithological Society across the state, and gardeners were asked to share information about favorite hummingbird plants that grow in Tennessee. The Tennessee hummingbird plant list was compiled by Meredith Clebsch, Marcia Davis, Emily Gonzalez and Terumi Saito Watson and was edited by Emily Gonzalez and Carol Reese, Ph.D. While these plant lists are not exhaustive, they do contain many of the favorite plants visited by the ruby-throated hummingbird in Tennessee that are available to the home gardener (See Appendix A and B). We listed colors that are commonly available; however, depending on the species other colors may be available as well. Some of the genera listed contain multiple species that would be visited by hummingbirds and do well in our area; in that case we listed the genus name followed by species (spp). We also recognized that many wildlife gardeners try to create what they consider “native habitat,” so we also listed specific native species that we would recommend. As proper soil is the foundation for healthy plants, we took extra effort to list conditions that would be favored by each species rather than just tolerated, although many of these plants will grow in a variety of conditions. We referenced the USDA PLANTS database in an attempt to use the “standard” nomenclature for these plants.

Appendix A. Favorite Flowering Plants for Hummingbirds in Tennessee

A=Annual SP=Spring Lav = Lavender P = Pink Y=Yellow Separate flower colors are indicated by (,)
 P=Perennial S = Summer PP= Purple W = White O=Orange Aggregate colors are indicated by (/)
 F = Fall R = Red

○ = Full Sun
 ◐ = Part Sun
 ● = Shade

Plant	Common Name	Color(s)	Season	Habit	Native	A/P	Light	Preferred Soil Conditions
<i>Aesculus pavia</i>	Red buckeye	R	SP	Tree	Yes	P	○ ◐	moist, well-drained fertile soil
<i>Agastache</i> 'Desert Sunrise'	Hummingbird mint	P,R,O	S	Forb	No	P	○	dry to moist, fertile, well-drained soil
<i>Antirrhinum majus</i>	Snapdragon	R,P,PP,O	S	Forb	No	P	○	moist, well-drained loam
<i>Aquilegia canadensis</i>	Wild columbine	R,P,Y	SP	Forb	Yes	P	◐	moist, well-drained loam
<i>Asclepias tuberosa</i>	Butterfly weed	O	S	Forb	Yes	P	○	dry to moist, poor to average, well-drained soil
<i>Bignonia capreolata</i>	Crossvine	R,Y,O	SP	Vine	Yes	P	○ ◐ ●	moist, well-drained soil
<i>Buddleia davidii</i>	Butterfly bush	O,PP,W, Y	S	Shrub	No	P	○	dry to moist, well-drained soil
<i>Calibrachoa</i> 'Million Bells'	'Million Bells'	P, Y, PP, W,O, R	S,F	Forb	No	A	○	moist, well-drained soil
<i>Campanula persicifolia</i>	Peachleaf bellflower	B	S	Forb	No	P	◐	moist, well-drained soil
<i>Campsis radicans</i>	Trumpet creeper	R,O	S	Vine	Yes	P	○ ◐	poor to average, dry to moist soil
<i>Canna generalis</i>	Canna lily	R,O,Y	SP,S	Forb	No	P	○ ◐	moist, well-drained loam
<i>Chaenomeles spp.</i>	Flowering quince	R,P,W	SP	Shrub	No	P	○ ◐	moist, well-drained soil
<i>Cleome hassleriana</i>	Spider flower	P,PP,W	S,F	Forb	No	A	○ ◐	dry to moist, well-drained soil
<i>Cuphea ignea</i>	Firecracker plant	R	S,F	Forb	No	A	○	moist, well-drained loam
<i>Epilobium angustifolium</i>	Fireweed	P	S	Forb	Yes	P	○ ◐	dry to moist, well-drained soil
<i>Fuchsia spp</i>	Fuchsia	P/PP, R/PP	S	Forb	No	A	◐	moist, well-drained fertile loam
<i>Gelsemium sempervirens</i>	Carolina jessamine	Y	SP	Vine	Yes	P	○ ◐ ●	moist, well-drained loam
<i>Glandularia canadensis</i>	Verbena, rose mock vervain	PP,P	S	Forb	Yes	P	○	dry to moist, well-drained soil
<i>Hemerocallis fulva</i>	Daylily	R,O,Y	S	Forb	No	P	○ ◐	dry to moist, well-drained soil
<i>Heuchera sanguinea</i>	Coralbells	R	SP	Forb	No	P	◐ ●	moist, well-drained loam
<i>Hibiscus spp</i>	Hibiscus (hardy)	R,P,PP,Y,W	S	Shrub	No	P	○	moist, well-drained loam
<i>Hibiscus syriacus</i>	Rose of Sharon	R,P,W,PP	S	Shrub	No	P	○ ◐	moist, well-drained loam
<i>Hosta spp</i>	Hosta	W,Lav	S	Forb	No	P	◐ ●	moist, well-drained loam
<i>Impatiens capensis</i>	Jewelweed	O,Y	S,F	Forb	Yes	A	◐ ●	moist to wet, clay or loam
<i>Ipomoea quamoclit</i>	Cypress vine	R	S,F	Vine	No	A	○ ◐ ●	moist, well-drained soil
<i>Ipomoea x multifida</i>	Cardinal climber	R	S,F	Vine	No	A	○ ◐	moist, well-drained soil
<i>Kniphofia uvaria</i>	Red-hot poker	R,O	SP	Forb	No	P	○	moist, well-drained loam
<i>Lantana spp</i>	Lantana	R,O,P,Y	SP,S,F	Forb	No	A	○ ◐	dry to moist, well-drained soil
<i>Lilium superbum</i>	Turk's-cap lily	O	S	Forb	Yes	P	○ ◐	moist to wet, well-drained loam
<i>Lobelia cardinalis</i>	Cardinal flower	R	S,F	Forb	Yes	P	○ ◐	moist to wet, well-drained loam
<i>Lobelia siphilitica</i>	Great blue lobelia	B	S	Forb	Yes	P	◐	moist to wet, well-drained loam
<i>Lonicera sempervirens</i>	Trumpet honeysuckle	R	SP,S,F	Vine	Yes	P	○ ◐	moist, well-drained loam
<i>Mandevilla</i>	Mandevilla	P	S,F	Vine	No	A/P	○	moist, well-drained loam
<i>Monarda didyma</i>	Bee balm	R	S,F	Forb	Yes	P	○ ◐	moist to wet loam

Appendix A. Favorite Flowering Plants for Hummingbirds in Tennessee (continued)

A=Annual SP= Spring Lav = Lavender P = Pink Y=Yellow Separate flower colors are indicated by (,)
 P=Perennial S = Summer PP= Purple W = White O=Orange Aggregate colors are indicated by (/)
 F = Fall R = Red ○ = Full Sun
 ● = Part Sun
 ● = Shade

Plant	Common Name	Color(s)	Season	Habit	Native	A/P	Light	Preferred Soil Conditions
<i>Monarda fistulosa</i>	Wild bergamot	P,Lav	S	Forb	Yes	P	○ ●	dry to moist, well-drained soil
<i>Nicotiana glauca</i>	Flowering tobacco	R,P,W	S	Forb	No	A	○ ●	moist, well-drained loam
<i>Pelargonium</i>	Geranium	R,O,PP	S,F	Forb	No	A	○ ●	dry to moist, well-drained soil
<i>Penstemon smallii</i>	Small's beardtongue	PP	SP	Forb	Yes	P	○ ●	dry to moist, well-drained loam
<i>Pentas lanceolata</i> 'New Look Red'	Egyptian star clusters	R	SP,S	Forb	No	A	○ ●	moist, well-drained loam
<i>Petunia</i>	Petunia	R,PP,W	SP,S,F	Forb	No	A	○ ●	moist, well-drained soil
<i>Phaseolus coccineus</i>	Scarlet runner bean	R	S	Vine	No	A	○	moist, well-drained soil
<i>Phlox divaricata</i>	Wild blue phlox	B,Lav	SP	Forb	Yes	P	● ●	moist, well-drained loam
<i>Phlox paniculata</i>	Summer phlox	R,P,W,PP	S	Forb	Yes	P	○ ●	moist, well-drained fertile soil
<i>Physostegia virginiana</i>	Obedient plant	P,W	S,F	Forb	Yes	P	○ ●	moist, well-drained soil
<i>Platycodon grandiflorum</i>	Balloon flower	PP	S	Forb	No	P	○ ●	moist, well-drained soil
<i>Rhododendron calendulaceum</i>	Flame azalea (east TN)	O,Y,R	SP	Shrub	Yes	P	●	moist, acidic, well-drained loam
<i>Rhododendron canescens</i>	Mountain azalea (east TN)	P,W	SP	Shrub	Yes	P	●	moist, acidic, well-drained loam
<i>Rhododendron catawbiense</i>	Catawba rhododendron (east TN)	PP	SP	Shrub	Yes	P	●	moist, acidic, well-drained loam
<i>Rhododendron spp</i>	Rhododendron (east TN)		SP	Shrub		P	●	moist, acidic, well-drained loam
<i>Ribes odoratum</i>	Golden currant	Y	SP	Shrub	No	P	○ ●	moist, well-drained loam
<i>Salvia greggii</i>	Autumn sage	PP,P	S,F	Forb	No	P	○ ●	moist, well-drained soil
<i>Salvia coccinea</i>	Blood sage, Texas sage	R	S,F	Forb	No	A	○ ●	moist, well-drained soil
<i>Salvia elegans</i>	Pineapple sage	R	F	Forb	No	A/P	○	moist, well-drained loam
<i>Salvia farinacea</i>	Mealy-cup sage	B,PP	S,F	Forb	No	A	○ ●	moist, well-drained soil
<i>Salvia guaranitica</i>	Anise sage	B	S,F	Forb	No	P	○ ●	moist, well-drained soil
<i>Salvia leucantha</i>	Mexican bush sage	PP,W	S,F	Forb	No	P	○	moist, well-drained soil
<i>Salvia splendens</i>	Scarlet sage	R	S,F	Forb	No	A	○ ●	moist, well-drained soil
<i>Silene caroliniana</i>	Sticky catchfly, Carolina pinks	P	SP	Forb	Yes	P	○ ●	dry to moist, well-drained soil
<i>Silene regia</i>	Royal catchfly	R	S	Forb	Yes	P	○ ●	dry to moist, well-drained soil
<i>Silene virginica</i>	Fire pink	R	SP	Forb	Yes	P	○ ●	dry to moist, well-drained clay soil
<i>Spigelia marilandica</i>	Indian pink	R,Y	SP,S	Forb	Yes	P	● ●	moist, well-drained loam
<i>Tithonia rotundifolia</i>	Mexican sunflower	O	S,F	Forb	No	A	○	dry to moist, well-drained soil
<i>Tropaeolum majus</i>	Nasturtium	O,Y,R	S,F	Forb	No	A	○ ●	moist, poor to average, well-drained soil
<i>Vitex agnus-castus</i>	Lilac chaste tree, chaste tree	Lav	S	Tree	No	P	○	moist, well-drained loam
<i>Weigela spp</i>	Weigela	R,P	SP,S	Shrub	No	P	○ ●	moist, fertile, well-drained soil
<i>Wisteria frutescens</i>	American wisteria	Lav	SP	Vine	Yes	P	○	moist, slightly acidic, well-drained loam

Appendix B. Additional Native Flowering Plants for Hummingbirds in Tennessee

Plant	Common Name	Habit
<i>Agastache nepetoides</i>	Yellow giant hyssop	Forb
<i>Agastache scrophulariifolia</i>	Purple giant hyssop	Forb
<i>Castilleja coccinea</i>	Scarlet Indian paintbrush	Forb
<i>Ceanothus americanus</i>	New Jersey tea	Shrub
<i>Cercis canadensis</i>	Eastern redbud	Tree
<i>Chelone glabra</i>	White turtlehead	Forb
<i>Chelone lyonii</i>	Pink turtlehead	Forb
<i>Chelone obliqua</i>	Red turtlehead	Forb
<i>Crataegus mollis</i>	Downy hawthorn	Tree
<i>Crataegus phaenopyrum</i>	Washington hawthorn	Tree
<i>Delphinium carolinianum</i>	Carolina larkspur	Forb
<i>Dicentra canadensis</i>	Squirrel corn	Forb
<i>Dicentra cucullaria</i>	Dutchman's breeches	Forb
<i>Dicentra eximia</i>	Turkey com, wild bleeding heart	Forb
<i>Eupatorium maculatum</i>	Joe Pye weed	Forb
<i>Heuchera villosa</i>	Hairy alumroot	Forb
<i>Hibiscus laevis</i>	Halberd leaf rosemallow	Forb
<i>Hibiscus moscheutos</i>	Crimson-eyed rosemallow	Forb
<i>Iris cristata</i>	Dwarf crested iris	Forb
<i>Iris fulva</i>	Copper iris	Forb
<i>Iris versicolor</i>	Harlequin blueflag	Forb
<i>Iris virginica</i>	Virginia iris	Forb
<i>Kalmia latifolia (east TN)</i>	Mountain laurel	Shrub
<i>Liatris spicata</i>	Dense blazing star	Forb
<i>Liatris pycnostachya</i>	Prairie blazing star	Forb
<i>Liatris aspera</i>	Tall blazing star	Forb
<i>Lilium canadense</i>	Canada lily	Forb
<i>Lilium philadelphicum</i>	Wood lily	Forb
<i>Liriodendron tulipifera</i>	Tuliptree, yellow-poplar	Tree
<i>Mertensia virginica</i>	Virginia bluebells	Forb
<i>Monarda media</i>	Purple bergamot	Forb
<i>Mondarda punctata</i>	Spotted bee balm	Forb
<i>Oxydendrum arboreum</i>	Sourwood	Tree
<i>Penstemon canescens</i>	Eastern gray beardtongue	Forb
<i>Phlox drummondii</i>	Annual phlox	Forb
<i>Phlox glaberrima</i>	Smooth phlox	Forb
<i>Phlox maculata</i>	Wild sweetwilliam	Forb
<i>Polygonatum biflorum</i>	Smooth Solomon's seal	Forb
<i>Rhododendron periclymenoides</i>	Pink azalea (east TN)	Shrub
<i>Robinia pseudoacacia</i>	Black locust	Tree
<i>Salix nigra</i>	Black willow	Tree
<i>Salvia urticifolis</i>	Nettleleaf sage	Forb
<i>Silene rotundifolia</i>	Roundleaf catchfly	Forb
<i>Tilia americana</i>	American basswood	Tree
<i>Verbena hastata</i>	Swamp verbena	Forb
<i>Vernonia noveboracensis</i>	New York ironweed	Forb

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