



United States Department of Agriculture

Maintaining and Improving Habitat for Hummingbirds in Oklahoma and Texas



A Land Manager's Guide



Forest Service National Headquarters

**POLLINATOR
PARTNERSHIP**

Introduction



Hummingbirds play an important role in the food web, pollinating a variety of flowering plants, some of which are specifically adapted to pollination by hummingbirds. Some hummingbirds are at risk, like other pollinators, due to habitat loss, changes in the distribution and abundance of nectar plants (which are affected by climate change), the spread of invasive plants, and pesticide use. This guide is intended to help you provide and improve habitat for hummingbirds, as well as other pollinators, in Oklahoma and Texas. While hummingbirds, like all birds, have the basic habitat needs of food, water, shelter, and space, this guide is focused on providing food—the plants that provide nectar for hummingbirds. Because climate, geology, and vegetation vary widely in different areas, specific recommendations are presented for each ecoregion in Oklahoma and Texas. (See the *Ecoregions in Oklahoma and Texas* section, below.)

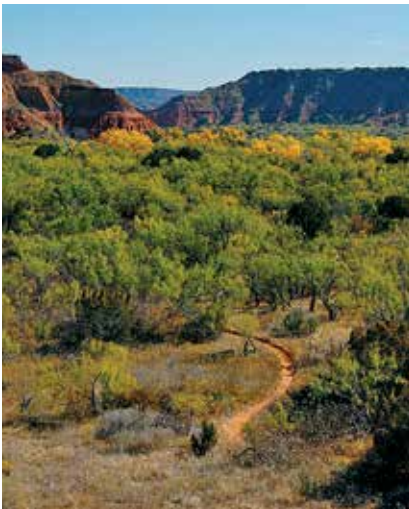
This guide also provides brief descriptions of the species that visit Oklahoma and Texas, as well as some basic information about hummingbird habitat needs.

Whether you're involved in managing public or private lands, large acreages or small areas, you can make them attractive to our native hummingbirds. Even long, narrow pieces of habitat, like utility corridors, field edges, and roadsides, can provide important connections among larger habitat areas.



Anna's Hummingbird Nest
Courtesy of Steve Berardi
Wikimedia Commons

Hummingbird Basics



Palo Duro Canyon near Amarillo, Texas
Courtesy of the National Park Service
Wikimedia Commons

Some of the hummingbird species of Oklahoma and Texas are migratory, generally wintering in Mexico and southern Texas and pushing northward through Nevada and California for summer breeding. The winter migration takes them back south, generally following the Rocky Mountains. Stray individuals are sometimes found nesting along the Gulf Coast. For hummingbird species to thrive, they need to find suitable habitat all along their migration routes, as well as in their breeding, nesting, and wintering areas. Even small habitat patches along their migratory path can be critical to the birds by providing places for rest and food to fuel their journey.

Food

Hummingbirds feed by day on nectar from flowers, including annuals, perennials, trees, shrubs, and vines. Native nectar plants are listed in the table near the end of this guide. They feed while hovering or, if possible, while perched. They also eat insects, such as fruit-flies and gnats, and will consume tree sap, when it is available. They obtain tree sap from sap wells drilled in trees by sapsuckers and other hole-drilling birds and insects.



Hummingbird in search for nectar of fuchsia
Courtesy of Togzhan Ibrayeva
Wikimedia Commons

Water

Hummingbirds get adequate water from the nectar and insects they consume. However, they are attracted to running water, such as a fountain, sprinkler, birdbath with a mister, or waterfall. In addition, insect populations are typically higher near ponds, streams, and wetland areas, so those areas are important food sources for hummingbirds.



Lake Okmulgee, Oklahoma
Courtesy of Thomas & Diane Jones
Wikimedia Commons

Hummingbird Species in Oklahoma and Texas

Following are brief descriptions of the hummingbird species most commonly found in Oklahoma and Texas, as well as a list of other species that are uncommon or rare visitors.

Black-chinned Hummingbird (*Archilochus alexandri*)

RANGE—Black-chinned Hummingbirds occur in all five Bird Conservation Regions (BCRs) in Oklahoma and Texas, which are BCRs 18, 20, 35, 36. (See the *Bird Conservation Regions* section, below.) They breed during summer throughout the west and central U.S., and they winter in the lowlands of western Mexico. They are most common in areas below 6000 feet and inhabit a variety of habitats associated with water (less than 1/2 mile), including canyons and gulches, riparian corridors, open woodlands, oak and scrub areas, and urban settings.



Black-chinned—male
Courtesy of Scott Carpenter



Black-chinned—female
Courtesy of Scott Carpenter

NESTING—Habitat includes canyons or flood-plain riparian communities, especially near sycamore or cottonwood. In urban areas, they prefer settings with tall trees and many flowering shrubs and vines. After breeding, they may move to more elevated mountain habitats to feed on nec-

tar-producing flowers. Many will move or stay in urban areas, where flowering plants and feeders are attractive. Typically arriving in April, they migrate south in August.

APPEARANCE—Unlike other North American hummingbirds, the wingtips of the Black-chinned Hummingbird look relatively broad and curved when the bird is at rest. While hovering, they pump their tail almost constantly. The adult male is dull green to emerald green above, pale gray to whitish below, becoming dull green on the sides. It has a velvety black gorget with an iridescent purple band below; the purple band can look black in poor light. White on the breast extends around the sides of the neck, contrasting strongly with the all-dark head. The central two tail feathers are green; the others are black, often with a purplish sheen.

The adult female is dull green to golden green above and pale gray below. The sides are gray-green and often have a tawny or cinnamon-colored patch on the lower flank. The throat of the female can be unmarked or have dusky streaking or spotting in the center of the gorget. The tail is greenish or blackish, with the three outer pairs of tail feathers broadly tipped with white. Immature birds look similar to adult females; refer to a field guide for more information.

Broad-tailed Hummingbird (*Selasphorus platycercus*)



RANGE—The Broad-tailed Hummingbird is a long-winged, high elevation hummingbird whose migratory breeding populations range north across the Rocky Mountains to southern Montana, west through forested regions of Nevada, just barely making it into eastern California, and as far east as the Chihuahuan desert in western Texas. They breed above 6000 feet (and so only rarely overlap with the lower-elevation Black-chinned Hummingbird). Occurring in BCR 35 in Texas, this species breeds in high-elevation Chihuahuan Desert



Broad-tailed Hummingbird—male
Courtesy of David Inouye

mountain habitats, including piñon-juniper, pine-oak, montane riparian areas, and areas of open mixed conifers including fir, spruce, and pine. The Broad-tailed Hummingbird is generally not found in Oklahoma. (See the *Bird Conservation Regions* section, below.)

FOOD—Broad-tailed Hummingbirds primarily consume nectar from flowers such as red columbine, Indian paintbrush, sage species, currants, and scarlet mint.

Broad-tailed Hummingbirds also feed from flowers that are not typically used by other hummingbirds, including pussywillows, and glacier lilies. They will also eat small insects, gleaning them from leaves and snatching them from midair.

NESTING—Nest site selection and construction is done entirely by the female and can begin as early as late April, and ends by late July. Nests are typically observed on low horizontal branches of willows, alders, cottonwoods, pines, firs, spruces, or aspens, generally 3-13 feet above ground. Their nests are often located over water. Broad-tailed Hummingbirds mainly breed between 6,000-10,000 feet, but have been observed nesting at elevations over 10,700 feet. After breeding, they follow the path of blooming plants.

APPEARANCE— These mid-sized hummingbirds have longer tails and wings than any other North American *Selasphorus* species. The male is green above and white below with an iridescent, rosy-red gorget. The male may be known at once due to the loud, cricket-like wing trill sound it produces with its wings. These specialized flight feathers allow him to be heard from about a 100-yard distance, making his presence obvious.

The female is green above and white below with rusty sides and rust at the base of the tail. Females can be distinguished from other *Selasphorus* species by a white eye-ring and long rectrices, which make their tails look longer and broader when fanned.



Broad-tailed Hummingbird—female
Courtesy of David Inouye

Rufous Hummingbird (*Selasphorus rufus*)



RANGE— The pugnacious Rufous Hummingbird travels roughly 3,900-miles (one-way) – the longest documented hummingbird migration – and breeds farther north than any other hummingbird. Traveling in an enormous loop, it moves northward along the Pacific Coast from wintering sites in Mexico to summer breeding grounds as far north as Alaska, following the Rocky Mountains on the return trip south. Although a relatively small hummingbird, it has an aggressive nature and frequently chases larger hummingbirds from nectar sources. Its presence in Texas is

solely migratory, as it passes southward through western Texas on its return trip to wintering grounds in Mexico. Fall migration begins in June and is split between the Pacific and Rocky Mountain Flyways. Stray Rufous Hummingbirds are increasingly found wintering in the Gulf Coast states, as well, including southeastern Texas. As with other hummingbirds, the Rufous Hummingbird typically moves to



Rufous Hummingbird—male
Courtesy of Jim Cruce

higher elevations for the fall migration, following nectar flowers. During migration, the Rufous Hummingbird occurs in BCR 18 and BCR 35 in Texas, and does not generally occur in Oklahoma. (See the Bird Conservation Regions section, below.) Rufous Hummingbirds are found in a wide variety of habitats.

NESTING—For breeding, they prefer second-growth forest communities and openings, but they will also use mature forests, parks, and residential areas—from sea level to 4,000 feet. This species does not breed or nest in Oklahoma or Texas, but is a common migrant spotted in western Texas.

APPEARANCE—The back of the adult male Rufous Hummingbird is cinnamon-colored (rufous), sometimes spangled with green and rarely more than half green. The underparts are creamy white with a rufous “vest.” The crown is bright green, and the gorget is iridescent scarlet to orange, appearing golden or yellow-green from some angles. The tail extends past the wingtips. The rufous tail feathers are black-tipped and pointed.

The adult female is bright green above and white below, strongly washed with rufous on the sides, flanks, and undertail coverts. The face and sides of the gorget are also



Rufous Hummingbird—female
Courtesy of Jim Cruce

washed rufous. The gorget is off-white, spangled with green to bronze (concentrated on the sides). The throat is marked with red-orange, from just a few spangles to a large patch. The rounded tail extends past the wingtips; it is rufous at the base and banded with black. The outer three pairs of tail feathers have white tips. Immature birds look similar to the adult female, although the immature males typically show more rufous on the rump and lower back as well as heavier markings on the throat.

Buff-bellied Hummingbird (*Amazilia yucatanensis*)



Buff-bellied Hummingbirds
Courtesy of Richard Crossley Wikimedia Commons

RANGE— The Buff-bellied Hummingbird is a common year-round resident in southern Texas and Mexico. Some individuals have been observed wintering along the Gulf Coast from southeastern Texas to the Florida panhandle. The Buff-bellied Hummingbird is found in Texas in BCR 36 and BCR 37, and is not found in Oklahoma. (See the *Bird Conservation Regions* section, below.)

NESTING— The Buff-bellied Hummingbird is the only hummingbird known to regularly nest throughout Texas's southernmost extent. Nesting in Texas spans from spring to late-summer. The females construct nests in large shrubs or small trees using bark, leaves, spider webs, and plant stems and fibers. Lichen and flower petals are often used to help conceal the nest from predators. Females lay two white eggs, perhaps twice a year, and incubate for two or more weeks. As with all hummingbirds, nesting and rearing and feeding of the young are solely performed by the female.

APPEARANCE— Upper parts, including back, throat, and crown, are metallic green. The bill is red with a dark tip. The tail, flanks, and primary wings are rufous, while the belly is a lighter cinnamon-buff shade. Females have duller coloration than males but are very similar in appearance.



Buff-bellied Hummingbird—female
Courtesy of HarmonyonPlanetEarth
Wikimedia Commons

Ruby-throated Hummingbird (*Archilochus colubris*)



RANGE—Ruby-throated Hummingbirds are the only hummingbirds that breed in eastern North America, including southern Canada from Newfoundland to just west of the Alberta-British Columbia border. They occur regularly in 38 eastern states but only rarely as vagrants in the western U.S. By mid-October nearly all ruby-throats migrate to central Mexico or Central America as far south as western Panama, returning to Gulf Coast states as early as February before dispersing northward. Migration routes are not well-understood; some ruby-throats have been observed in trans-Gulf migration, but it is likely others migrate overland through Mexico. Ruby-throated Hummingbirds show remarkable site fidelity; banded individuals have been captured



Ruby-throated Hummingbird—male
Courtesy of Hugh Vandervoort

in the same nesting areas for as many as nine years, and recent studies have shown similar site fidelity on the species' wintering grounds in Costa Rica and Belize.

Ruby-throated Hummingbirds occur in BCR 19, BCR 20, BCR 21, BCR 22, BCR 24, BCR 25, BCR 36, and BCR 37 in Oklahoma and Texas. (See the *Bird Conservation Regions* section, below.) Ruby-throated Hummingbirds are common summer breeders in eastern Texas and eastern Oklahoma, becoming less common towards the central parts of each state. They are common migrants through the central parts of each state, becoming less common to the west and absent in the westernmost parts.

NESTING— Ruby-throats are birds of the edge; the female typically builds her nest near an open area on a downward-angled branch, sometimes overhanging water. They are far more common in hardwoods than in coniferous forests, from sea level to at least 6,000 feet in the Appalachian Mountains. Because of the density of green vegetation in the eastern U.S., Ruby-throated Hummingbird nests are often less obvious (and more poorly studied) than those for western hummingbirds. Nests have been reported in deciduous and evergreen trees at heights from eye level to 60 feet above ground.

APPEARANCE— The adult male Ruby-throated Hummingbird's bright metallic red gorget gives the species its name. Adult males also have iridescent green backs, dark flanks, and forked tails with pointed dark feathers. Females of any age are green-backed and all white beneath, including the throat; tips of the outer three tail feathers are rounded and white. Immature (first year) males resemble females—including the tail;



Ruby-throated Hummingbird—female
Courtesy of Hugh Vandervoort

their throats may be all white, streaked in green or black, and/or with one or more red feathers. Although adult males in some other western North American species have metallic red gorgets (e.g., Broad-tailed Hummingbirds), they should not be called or confused with “ruby-throats.”

Female ruby-throats are up to 25% larger than males. Both sexes have straight black bills. Because all Ruby-throated Hummingbird colors except white and black are iridescent, even individual birds will look different as light conditions change.

Others

A few other hummingbird species are sometimes, though rarely, seen in Oklahoma and Texas. They include:

White-eared Hummingbird (*Basilinna leucotis*)

Lucifer Hummingbird (*Calothorax lucifer*)

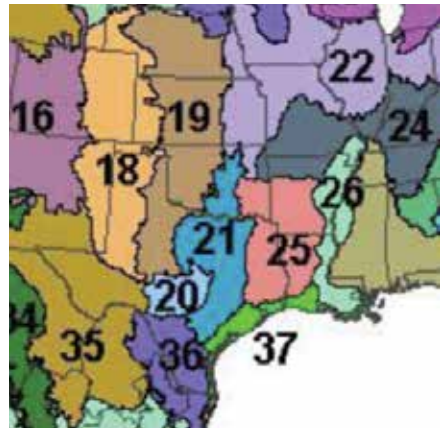
Magnificent Hummingbird (*Eugenes fulgens*)

Blue-throated Hummingbird (*Lampornis clemenciae*)

Calliope Hummingbird (*Selasphorus calliope*)

Bird Conservation Regions in Oklahoma and Texas

The United States North American Bird Conservation Initiative Committee is a coalition of government agencies, private organizations, and bird initiatives in the United States. The committee is working to ensure the long-term health of North America’s native bird populations. Bird conservation initiatives have produced national and international conservation plans for birds as well as regional plans for numerous BCRs, which are ecologically distinct regions in North America with similar bird communities, habitats, and resource management issues. The regional plans provide more detailed information on population objectives and habitat needs for birds in specific landscapes.



The ten BCRs in Oklahoma and Texas, the Shortgrass Prairie (BCR 18), the Central Mixed-grass Prairie (BCR 19), Edwards Plateau (BCR 20), Oaks and Prairies (BCR 21), the Eastern Tallgrass Prairie (BCR 22), the Central Hardwoods (BCR 24), the West Gulf Coastal Plain/Ouachitas (BCR 25), the Chihuahuan Desert (BCR 35), the Tamaulipan Brushlands (BCR 36), and the Gulf Coastal Prairie (BCR 37), are shown on the map (above left).

Ecoregions in Oklahoma and Texas

Land within Oklahoma and Texas lies within thirteen ecoregions (see below—codes in parentheses), which are shown on the map: *Ecoregions in Oklahoma and Texas*. The ecoregion boundaries differ from those of the BCRs and their relationship is as below.

(222) Eastern Broadleaf Forest (Continental) Province – lies within BCR 24

(M222) Ozark Broadleaf Forest – Meadow Province – lies within BCR 24 and BCR 25

(231) Southeastern Mixed Forest Province – lies within BCR 25 and BCR 37

(M231) Ouachita Mixed Forest – Meadow Province – lies within BCR 25

(232) Outer Coastal Plain Mixed Forest Province – lies within BCR 25

(251) Prairie Parkland (Temperate) Province – lies within BCR 21 and BCR 22

(255) Prairie Parkland (Subtropical) Province – lies within BCR 21, BCR 25, and BCR 37

(311) Great Plains Steppe and Shrub Province – lies within BCR 19

(M313) Arizona-New Mexico Mountains Semi-Desert – Open Woodland – Coniferous Forest – Alpine Meadow Province – lies within BCR 35

(315) Southwest Plateau and Plains Dry Steppe and Shrub Province – lies within BCR 18, BCR 19, BCR 20, and BCR 36

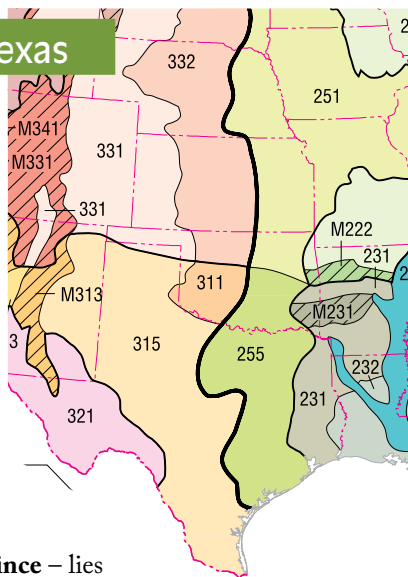
(321) Chihuahuan Semi-Desert Province – lies within BCR 35

(331) Great Plains-Palouse Dry Steppe Province – lies within BCR 18 and BCR 19

(332) Great Plains Steppe Province – lies within BCR 19

Note: Ecoregion map adapted from <http://www.fs.fed.us/rm/ecoregions/images/maps/ecoregions-united-states-sample.jpg>

The Pollinator Partnership website (www.pollinator.org) will show you which ecoregion you are in just by entering your postal zip code (under “Planting Guides” on the website). If you wish to supplement the information presented in this guide, for example, to attract other pollinators or to learn about other ecoregions, the Pollinator Partnership offers planting guides for ecoregions throughout the United States. The website provides additional tools and connections to useful resources for pollinator and plant information.



Hummingbird Nectar Plants for Ecoregions in Oklahoma and Texas

The following table (*Hummingbird Nectar Plants for Ecoregions in Oklahoma and Texas*) lists some plants that are nectar sources for hummingbirds. These plants are native to Oklahoma and Texas, and are adapted to conditions in the ecoregions indicated in the table. The table also provides basic information on habitat and light, soil, and water needs. Finally, the tables provide seed sources for each plant valid as of November 2016. A directory of the seed sources follows the tables. Use locally-adapted genetically appropriate plants in all your restoration and pollinator enhancement work. Seed zones—areas with genetically similar plants—help determine the right plant materials to use; poorly chosen plants usually fail to thrive. See http://fs.bioe.orst.edu/web_maps/Seed_Zones.html for provisional seed zones of Oklahoma and Texas, and select plant materials from your zone. Planting non-natives to attract hummingbirds is against policy and destructive: these plants can become invasive and disrupt ecosystems. For example, yellow toadflax (*Linaria vulgaris*, also called “butter and eggs”) is attractive to hummingbirds but is a noxious weed.



Yellow Toadflax
Courtesy of Colorado State
University Extension–Adams County

Hummingbird Nectar Plants for Ecoregions in Oklahoma and Texas

Botanical Name	Common Name	Ecoregions ¹								
		222	M222	231	M231	232	251	255	311	M313
Trees and Shrubs										
<i>*Agave parryi</i>	Parry's Agave									X
<i>Agave havardiana</i>	Harvard Agave									
<i>Arctostaphylos</i> spp.	Manzanita (various species)									
<i>Arctostaphylos pungens</i>	Pointleaf Manzanita									
<i>Calliandra eriophylla</i>	Fairyduster									
<i>Ceanothus</i> spp.	Ceanothus	X	X	X	X		X	X	X	X
<i>Chilopsis linearis</i>	Desert Willow					X		X		X
<i>*Fouquieria splendens</i>	Ocotillo							X		
<i>Lycium pallidum</i>	Pale Desert-thorn							X		X
<i>Mahonia repens</i>	Creeping Barberry									X
<i>Malvaviscus arboreus</i>	Turk's Cap			X				X		
<i>Ribes</i> spp.	Currants (various species)			X			X	X	X	X
<i>*Ribes aureum</i>	Golden Currant						X	X	X	
<i>Ribes cereum</i>	Squaw Currant									
<i>Ribes leptanthum</i>	Trumpet Gooseberry									
<i>Robinia neomexicana</i>	New Mexico Locust									X
<i>Rosa woodsii</i>	Woods' Rose									X
<i>Salvia</i> spp.	Various salvias	X		X	X		X	X	X	X
<i>Salvia coccinea</i>	Scarlet Sage			X				X	X	
<i>Salvia regia</i>	Mountain Sage									

				Bloom Season	Sun- light	Soils, Water	General habitat/ elevation	Seed Sources ²
315	321	331	332					
	X			Jun-Aug	Full sun	Rocky, well drained	High desert	PS
	X			Jul-Sep	sun	Dry, well drained	High desert	
	X			Dec-May	Sun	Dry		PS
	X			Jan-Feb	Partial shade	Well drained, sandy	Mixed shrub and sagebrush communities, pinyon-juniper woods, canyons, lower mountain slopes	
X				Feb-Mar	Full sun	Dry, gravelly	Dry, gravelly slopes & mesas	
X	X	X	X	Apr-Aug	Sun, part shade, shade	Dry, rocky, well-drained soils	Dry, open flats and slopes, often at higher elevation (3,000 to 9,500 ft.)	
X	X			Apr-Sep	Sun	Dry, well drained	Desert washes	PS, TPF
	X			Feb-May	Full sun	Rocky, well drained	Desert washes	
	X			Apr-Jun	Full sun	Various	Sandy to rocky flats, washes in deserts, to 6000'	PS
	X			May-Jul	Partial shade	Dry to moist, well drained	Dry, open woods & hills at high elevations	PS
X				May-Nov	Part shade to shade	Moist, well-drained, woodland soils best	along streams, on the edges of woods, and on wooded limestone slopes and ledges	NAS, TPF
X	X	X	X	Jan-May				
X	X	X	X	Apr-May	Sun to partial shade	Dry to moist	Moist to drier hillsides & river valleys	PS
		X		Apr-Jul	Sun to partial shade	Dry to moist, rocky to sandy	Pine forests; wood openings; dry slopes & ridges	PS
	X			Apr-Jul	Sun to partial shade	Moist, well drained	Montane streamsides	PS
		X		May-Jul	Sun	Dry	4000 and 8500' along streams, in the bottoms of valleys, and on the sides of canyons	PS
X	X	X		late spring	Partial sun	Moist	Understory of dry and moist forest communities, sagebrush, chaparral, pinyon-juniper	PS
X	X	X	X					NAS
X				Feb-Oct	Sun to shade	dry to moist	Thickets, chaparral, in open woods and edges	NAS, WF
	X			Jul-Oct	shade to partial shade	well-drained rocky soils	rocky wooded slopes	

Hummingbird Nectar Plants for Ecoregions in Oklahoma and Texas...continued

Botanical Name	Common Name	Ecoregions¹								
		222	M222	231	M231	232	251	255	311	M313
<i>Salvia azurea</i> var. <i>grandiflora</i>	Blue Sage	X	X	X	X	X	X	X	X	X
<i>Symphoricarpos longiflorus</i>	Desert Snowberry									X
<i>Symphoricarpos occidentalis</i>	Western Snowberry									
<i>Symphoricarpos oreophilus</i>	Mountain Snowberry									X
<i>Sesbania drummondii</i>	Rattlebush			X				X		
<i>Cylindropuntia imbricata</i>	Tree Cholla									
<i>Cordia boissieri</i>	Mexican Olive									
<i>Aesculus pavia</i>	Red Buckeye			X				X		
<i>Chilopsis linearis</i>	Desert Willow							X		
<i>Ungnadia speciosa</i>	Mexican Buckeye							X		
<i>Tecoma stans</i>	Esperanza/Yellow bells							X		
<i>Erythrina herbacea</i>	Coralbean					X		X		
<i>Bauhinia lunarioides</i>	Anacacho Orchid Tree									
<i>Leucophyllum frutescens</i>	Texas Ranger							X		
<i>Lantana urticoides</i>	Texas Lantana			X				X		
<i>Hesperaloe parviflora</i>	Red Yucca							X		
<i>Symphoricarpos rotundifolius</i>	Round-leaved snowberry									
Perennial Herbs										
<i>Aquilegia canadensis</i>	Red columbine	X	X	X	X	X	X			X

315	321	331	332	Bloom Season	Sun-light	Soils, Water	General habitat/elevation	Seed Sources ²
X	X	X	X	Sep-Nov	sun to part shade	well drained, dry	Dry prairies & openings	PS, TPF
	X			May-Jun	Sun	Dry	Moister spots in the desert mountains	
		X		Jun-Aug	Partial shade	Moist, well drained	Dry, rocky hillsides; sand plains; prairies; open woods	
	X			May-Aug	Partial shade	Moderate to well drained	Brushy, mt. hillsides & valleys, often on river banks; 5000-10,000'	
X				Jun-Sep	sun	moist wetland soil	edges of lakes, ponds and streams and wet meadows	
X	X	X		May-June	sun	dry, sandy or gravelly	deserts, mesas	
				Jan-Dec	sun, part shade	well drained	Meadows, Savannahs, Hillsides, Slopes, Pastures, Roadsides	
X				Mar-May	part shade	moist, well drained	woods, along streams, in thickets, and on rocky hills	
X	X			Apr-Sep	sun	well drained limestone	Ditches, ravines, depressions, streams, river banks	PS
X	X			Mar-Jun	sun, part shade	rocky, dry soils	Rocky canyons & ridges	
X	X			Apr-Oct	sun, part shade	dry, well drained	High elevations, hillsides, slopes, canyons	
X	X			Mar-Oct	sun, part shade	dry, sandy	Open, sandy woods & clearings of the coastal plains	
X	X			Mar-May	part shade	dry, sandy or limestone	canyons and arroyos in limestone hills in Kinney, Presidio, and Gillespie or Llano counties	
X	X			Jan-Dec	sun, part shade	rock, well drained	Ditches, Ravines, Depressions, Hillsides, Slopes	
X	X			Apr-Oct	sun	poor, well drained	Fields, thickets, swamps, rich sandy woods, scrub, gravelly hills, flats	
X				Mar-Jul	sun	sandy to clay, dry well drained	Prairies; rocky slopes; mesquite groves	
	X			Jun-Aug	Sun	Dry, rocky	Subalpine and alpine woodlands	
X				Apr-Jul	Partial shade, shade	Sandy, well drained	Calcareous, shaded woodlands	NAS, TPF

Hummingbird Nectar Plants for Ecoregions in Oklahoma and Texas...continued

Botanical Name	Common Name	Ecoregions¹								
		222	M222	231	M231	232	251	255	311	M313
<i>Asclepias incarnata</i>	Swamp Milkweed	X					X	X		
<i>Asclepias speciosa</i>	Showy Milkweed								X	
<i>Asclepias tuberosa</i>	Milkweed, butterfly weed			X				X		X
<i>Astragalus canadensis</i>	Canadian Milkvetch			X	X	X	X	X		
<i>Campanula rotundifolia</i>	Bluebell Bellflower									X
* <i>Castilleja</i> spp.	Various Castilleja	X		X	X	X	X	X	X	X
<i>Castilleja integra</i>	Wholeleaf Indian Paintbrush							X		X
<i>Castilleja lanata</i>	Wolly Paintbrush									
<i>Cleome serrulata</i>	Rocky Mountain bee plant						X			
* <i>Echinocereus coccineus</i>	Scarlet Hedgehog Cactus									X
<i>Erysimum capitatum</i>	Wallflower									X
<i>Frasera speciosa</i>	Elkweed									X
<i>Hibiscus lasiocarpus</i>	Rose-Mallow			X		X		X		
<i>Ipomopsis aggregata</i>	Scarlet Gilia									X
<i>Ipomopsis aggregata</i> ssp. <i>Formosissima</i>	Scarlet Gilia									X
<i>Lilium michiganense</i>	Michigan Lily	X								
<i>Lobelia cardinalis</i>	Cardinalflower	X	X	X	X	X	X	X	X	X
<i>Lupinus perennis</i>	Sundial Lupine			X		X				
<i>Mimulus glabratus</i>	Yellow Monkeyflower	X	X					X	X	X

315	321	331	332	Bloom Season	Sun-light	Soils, Water	General habitat/ elevation	Seed Sources ²
X	X			Jun-Oct	Sun to partial shade	Moist	Grows in prairies, open woods, canyons, and hillsides	NAS
X		X	X	May-Sep	Sun	Dry to moist	Savannahs, prairies, road-sides, old fields, and meadows	JSC, NAS, PS
	X			May-Jul	Sun to partial shade	Dry	Wet Meadow, Prairie, Field, Riparian, Swamp, Marsh	BS, JSC, NAS, PS, TPF, WF
X				May-Jul	Sun to partial shade	Moist to wet	Moist to dry prairies; stream banks; open woods	
	X			Jun-Sep	Sun to shade	Dry, well drained	Moist, rocky, montane slopes; dry meadows & prairies; open woods; limey cliffs; beaches	
X	X	X	X					LOK, NAS, PS
X	X			May-Sep	Full sun	Rocky mineral	Arid hills, plains and mesa	PS
	X			May-Aug	sun	well drained	deserts	
X		X		Jul-Sep	Sun, part shade	Well-drained, sandy soils	Prairies, open woods, wash areas, disturbed sites	PS
X	X			Apr-Jun	Sun	Dry, well drained	Rocky desert slopes, dry mountain woodlands	
X	X			Mar-Jul	Sun	Dry, well drained	Plains; foothills; high elevation coniferous forests	
	X			May-Aug	Sun to partial shade	Rich, moist	Woodland openings, from moderate to high elevations	
X	X			Apr-Sep	Sun	Wet	Borders of sloughs, ponds & ditches; low, wet woods	
X	X	X		Jun-Sep	Sun to partial shade	Dry, sandy to loamy	Hillsides, Slopes	PS
X	X	X		May-Oct	Full sun to partial shade	Rocky mineral	Desert canyons and cliffs, montane meadows, and subalpine rock fields	
				Jul-Aug	Partial shade	Moist	Prairies	
X	X	X	X	Jun-Aug	Shade to sun	Wet to moist	Depressions, Woodlands edge, Opening, Stream banks	LOK, NAS, PS, TPF
				Apr-Jul	Sun to partial shade	Dry, sandy	Sand hills & clearings; open woods	WF, SSF
X	X	X	X	Jun-Aug	Sun	Wet, rich	Marshes, springs	PS

Hummingbird Nectar Plants for Ecoregions in Oklahoma and Texas...continued

Botanical Name	Common Name	Ecoregions¹								
		222	M222	231	M231	232	251	255	311	M313
Mimulus ringens	Allegheny Monkeyflower						X	X	X	
Monarda fistulosa	Wild Bergamot	X		X	X		X	X	X	
Oenothera elata	Evening Primrose									X
Penstemon spp.	Various Penstemons	X	X	X	X	X	X	X	X	X
*Penstemon barbatus	Beardlip Penstemon									X
Phlox spp.	Phlox	X	X	X	X	X	X	X	X	X
Salvia farinacea	Mealy blue sage							X		
Salvia roemeriana	Cedar Sage							X		
Penstemon havardii	Harvard Penstemon									
Anisacanthus linearis	Dwarf Anisacanthus									
Penstemon spp.	Foxglove/Beard tongue	X	X	X	X	X	X	X	X	X
Penstemon baccharifolius	Rock Penstemon									
Penstemon albidus	White Penstemon								x	
Penstemon buckleyi	Buckley's Penstemon								X	
Penstemon Murrayanus	Scarlet Penstemon			x				x		
Penstemon laxiflorus	Nodding Penstemon			x	x	x		x	x	
Verbena stricta	Hoary Verbain	X	X	X	X	X	X	X	X	
Delphinium tricornes	Dwarf Larkspur	X	X	X	X	X	X	X		

315	321	331	332	Bloom Season	Sun-light	Soils, Water	General habitat/elevation	Seed Sources ²
				Jun-Aug	Sun	Moist	Wet meadows and streambanks	PL
X	X			May-Sept	Sun to partial shade	Well drained, moist, sandy, loamy, clay	Dry open woods, fields, wet meadows and ditches	PS
	X	X	X	Jun-Sep	Sun	Moist	Sandy stream banks; low, marshy areas	NAS, PS, TPF, WF
X	X	X	X	Mar-Aug				NAS, PS, TPF
X	X			May-Jul	Full sun to partial shade	Well drained, mineral	Semi-desert, foothills. Woodlands, openings	PS
X	X		X	Mar-Jun	Sun to partial shade	Dry		
X	X			Apr-Oct	Sun	Moist	Prairie, Plains, Meadows, Pastures, Savannahs, Woodlands edge, Opening, Dry calcareous substrates	NAS, TPF, WF
X	X			Mar-Aug	part shade	Dry, well drained	the shade of cedar brakes and oak woods: shaded, rocky, limestone areas	
	X			Apr-Jun	sun to part shade	well drained	Prairie, Plains, Meadows	
	X			Jun-Dec	sun	dry, well drained	canyons and along dry stream beds and arroyos	
X	X	X	X	Apr-Sept				NAS, TPF
	X			Jun-Sept	Sun, part shade	well drained limestone	Limestone crevices & bluffs	
x		x	x	Apr-Jun	sun	sandy well drained soil	Gravelly or sandy grasslands	
X		X	X	Apr-May	sun	deep sandy soil	Sand dunes; high plains	
x				Apr-Jun	part shade	well drained, sandy	Woodlands edge, Opening, Prairie, Plains, Meadows, Pastures, Savannahs	
				Mar-Jun	part shade	dry acidic soils	sandy open woods and prairies	NAS
		X	X	Jul-Sep	sun	dry, sandy	Fields; prairies	
				Apr-May	part shade	rich, moist	Moist woods; stream banks; wet thickets	

Hummingbird Nectar Plants for Ecoregions in Oklahoma and Texas...continued

Botanical Name	Common Name	Ecoregions ¹								
		222	M222	231	M231	232	251	255	311	M313
<i>Monarda citriodora</i>	Horsemint	X	X	X	X	X	X	X	X	X
<i>Stachys coccinea</i>	Texas Betony									
<i>Ipomopsis rubra</i>	Standing Cypress	x	x	x	x		x	x	x	x
<i>Salvia greggii</i>	Autumn Sage							X		
<i>Anisacanthus quadrifidus (wrightii)</i>	Flame Acanthus							X		
<i>Silene laciniata</i>	Cardinal Catchfly									X

Vines										
<i>Campsis radicans</i>	Trumpet Vine or Creeper	X		X	X	X	X	X		
<i>Clematis ligusticifolia</i>	Western Virgin's Bower									
<i>Lonicera dioica</i>	Limber Honeysuckle							X		
<i>Campsis radicans</i>	Trumpet Vine	X	X	X	X	X	X	X	X	X
<i>Bignonia capreolata</i>	Cross Vine			X	X			X		
<i>Lonicera sempervirens</i>	Coral Honeysuckle	X	X	X	X	X	X	X		X
<i>Maurandella antirrhiniflora</i>	Snapdragon Vine									

*Hummingbird adapted or preferred nectar sources - indicated with purple highlight

¹ Ecoregions:
222 = Eastern Broadleaf Forest (Continental) Province
M222 = Ozark Broadleaf Forest – Meadow Province
231 = Southeastern Mixed Forest Province
M231 = Ouachita Mixed Forest – Meadow Province
232 = Outer Coastal Plain Mixed Forest Province
251 = Prairie Parkland (Temperate) Province
255 = Prairie Parkland (Subtropical) Province
311 = Great Plains Steppe and Shrub Province
M313 = Arizona-New Mexico Mountains Semi-Desert – Open Woodland – Coniferous Forest – Alpine Meadow Province
315 = Southwest Plateau and Plains Dry Steppe and Shrub Province
321 = Chihuahuan Semi-Desert Province
331 = Great Plains-Palouse Dry Steppe Province
332 = Great Plains Steppe Province

315	321	331	332	Bloom Season	Sun- light	Soils, Water	General habitat/ elevation	Seed Sources ²
X	X	X	X	May-Jul	sun, part shade	sandy loam to rocky, dry	Prairie, Plains, Meadows, Pastures, Savannahs, Hillsides, Slopes	LOK, NAS
	X			Mar-Oct	part shade	moist	Moist crevices of steep slopes & canyons	
x			x	May-Jul	sun, part shade	sandy or rocky, well drained	Dry, sandy or rocky fields; open woods	NAS, PS, WF
X	X			Mar-Nov	sun	well drained, rocky	Well-drained, rocky slopes	TPF
X	X			Jun-Oct	sun, part shade	well drained	Rocky banks and floodplains of streams, shrublands (matorral), and grasslands	TPF
	X			Apr-Jun	sun to partial sun	Moist to dry	Pine forests; grassy or brushy slopes	PS
			X	Jul-Sep	Sun to partial shade	Moist, well drained	Trees of moist woods or along fence rows in old fields	NAS, TPF
	X			May-Aug	Sun to partial sun	Moist	Woods along streams; moist, brushy coulees	
				May-Jun	Sun to shade	Dry to moist	Open woods, woodland edges & thickets	
X			X	Jun-Sep	sun	various well drained soils	moist woods, fencerows, old fields	NAS, TPF
X				Mar-May	sun, part shade	Moist, well-drained, acidic or calcareous soils	Forested floodplains and uplands, hammocks, fencerows, limestone escarpments	TPF
X				Mar-Jun	sun, part shade	well drained, rich	woodlands	TPF
X	X			Mar-Oct	part shade	various well drained soils	Dunes, Hillsides, Slopes, Woodlands edge, Opening	

² Seed Sources:

BS = Bamert Seed
JSC = Johnston Seed Company
LOK = Lorenz's OK Seeds, LLC

NAS = Native American Seed
PS = Plants of the Southwest
TPF = Tawakoni Plant Farm
WF = Wildseed Farms

Directory of Seed and Plant Sources

Bamert Seed
1897 County Road 1018
Muleshoe, TX 79347
(800) 262-9892
www.bamertseed.com

Johnston Seed Company
319 West Chestnut
Enid, OK 73701
(800) 375-4613
johnseed@johnstonseed.com
www.jeinc.com

Lorenz's OK Seeds, LLC
PO Box 835
Okeene, OK 73763
Phone: (800) 826 3655 or
(580) 822-3655
Fax: (580) 822-3630
www.lorenzokseedsllc.com

Native American Seed
3791 U.S. 377
Junction, TX
(800) 728-4043
info@seedsource.com
www.seedsource.com

Plants of the Southwest
Agua Fria Rt. 6 Box 11-A
Santa Fe, NM 87501
(800) 788-7333
plantsofthesouthwest@gmail.com
www.plantsofthesouthwest.com

Tawakoni Plant Farm *
PO Box 820
Wills Point, TX 75169
(800) 880-6728
ejoslin@tplantfarm.com
www.tawakoniplantfarm.com

Wildseed Farms
100 Legacy Drive
P.O. BOX 3000
Fredericksburg, TX 78624
Phone: (800) 848-0078
Fax: (830) 990-8090
www.wildseedfarms.com

* Specializes in nursery plants rather than seed

This list of seed sources is not exhaustive, and is only meant to serve as a starting point for land managers. Seed inventories are constantly fluctuating, and some species are offered on a seasonal basis. Please check the availability of specific species before visiting a particular seed source. Wholesale suppliers sometimes require a minimum quantity to place an order.

In addition, the Native Seed Network (www.nativeseednetwork.org) is an online resource that provides search tools and information on all aspects of native seed. You can search the network to find additional sources for native seeds.

Additional Resources

Lady Bird Johnson Wildflower Center
<https://www.wildflower.org/>

The Western Hummingbird Partnership (WHP) is a developing network of partners collaborating to build an effective and sustainable hummingbird conservation program:
www.westernhummingbird.org

Native Seed Network: www.nativeseednetwork.org

North American Bird Conservation Initiative: www.nabci-us.org

e-bird is a real-time, online checklist program and a way for the birding community to report and access information about birds: www.ebird.org

Partners in Flight is a coalition of partners working to combine, coordinate, and increase resources of public and private entities in order to conserve bird populations:
www.partnersinflight.org

Pollinator Partnership: www.pollinator.org

Texas Native Seeds <http://www.ckwri.tamuk.edu/research-programs/texas-native-seeds/>



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