

The Hummingbird

*Attracting and
Enjoying Wyoming's
Most Fascinating
Bird*



By

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Hummingbird Feeding

- Do remove perches from feeders
- Do change the sugar-water mix every two to three days
- Do keep feeders clean and free of mold
- Do hang feeders in shade and away from wind
- Do plant nectar-bearing flowers
- Do put a one to four sugar-to-water mix in feeders (no honey)
- Do hang feeders in spring for early arrivers
- Do maintain feeders until all birds migrate

Hummingbirds provide enjoyment for all ages, especially during the summer months. When summer approaches, many urban and rural residents around the state will prepare to attract hummingbirds. These tiny, iridescent birds with needle-like bills for sipping nectar provide hours of viewing entertainment. Hummingbirds can be a unique wildlife addition to a home, ranch, or farm with just a little pre-season planning.

Species Description

There are about 340 species of hummingbirds throughout the world, and all are found only in the western hemisphere. About 15 species inhabit the United States. In Wyoming, three commonly observed species are the rufus hummingbird (*Selasphorus rufus*), broad-tailed hummingbird (*Selasphorus platycercus*), and calliope hummingbird (*Stellula calliope*). They can live for up to 12 years although they may survive only three to five years in the wild.

Weighing about one-tenth of an ounce, these birds maneuver in the air like helicopters with the ability to hover or fly forward, backward, or to their sides at any time. Wing beats have been measured at 20 to 200 beats per second.

Because flying requires a considerable amount of energy, hummingbirds feed at frequent intervals from dawn until dusk. Their primary diet consists of flower nectar although tiny insects (small flies, ants, bees, and beetles) and spiders are consumed to satisfy high-protein demands for flying. In addition, they often consume daily water amounts up to eight times their body weight to satisfy metabolic requirements.

Although their normal body temperature is about 103 degrees Fahrenheit, it may drop to 70 degrees Fahrenheit on cool nights. Hummingbirds endure temporary cool weather or cool nights by reducing metabolic functions and entering a partial dormancy period until environmental temperatures increase.

Iridescent hummingbird feathers are some of the most specialized of all bird feathers. On the throat patch, for example, only the outer one-third of each feather is iridescent. The feathers contain layers of minute structures called platelets that are filled with tiny air bubbles. Partial reflection of light from platelets in these flat feath-

ers cause the brilliant shining shades of reds, purples, and blues commonly seen. Feathers on a hummingbird's back are also iridescent but concave. In contrast to the throat-patch feathers, which reflect light in only one direction, the back feathers reflect light in all directions.

Because hummingbirds cannot smell floral odors due to the absence of olfactory nerve endings in their nasal passages, visual floral color (predominately red) serves as the primary stimulus to attract these tiny birds. Scientists theorize that hummingbirds evolved using red flowers as a major attractant mainly because bees, their major competitor for nectar, cannot perceive red colors. Therefore, hummingbirds have few competitors for the nectar produced by red flowers. In addition, they also learn through feeding experience that red tubular flowers often contain more nectar than flowers of other colors.

Scientists originally believed that hummingbird tongues were hollow and extracted nectar through a sucking action. However, recent studies show that hummingbird tongues are forked at the end. Each



The black-chinned hummingbird, a rare summer resident of Wyoming, can be found near deciduous or juniper woodlands near streams in extreme southwestern Wyoming. (Photo courtesy of Trixie Kautzmann.)

fork forms a membranous, curled trough to gather nectar. Capillary action draws nectar from the flower into the membranous trough of the tongue, the tongue is retracted, and the nectar is swallowed in the usual manner. The outer half of the tongue often has fringed edges that aid in catching tiny insects found inside flowers.

Facts about Hummingbirds

Hummingbirds are fascinating creatures to those who observe them. There are many interesting facts about hummingbird body size, eating habits, flying speed, and flight patterns.

The bee hummingbird (*Calypte helenae*) of Cuba is the smallest hummingbird in the world, measuring only $2\frac{1}{4}$ inches long (about the length of a little finger). The ruby-throated hummingbird (*Archilochus colubris*) weighs three grams, which is comparable to one-tenth the weight of a first-class letter.

Hummingbirds lay the smallest eggs of all birds. A hummingbird's egg is less than half an inch long or half the size of a jellybean. However, they have the largest relative heart size of all birds, at 2.4 percent of their body weight.

Hummingbird eating habits are amazing relative to their small size. A hummingbird will eat five to eight times each hour, but the feeding time only lasts 30 to 60 seconds per session. Each day an average hummingbird consumes half its weight in sugar to maintain a very high metabolic rate. If an average man had the same metabolic rate as a hummingbird, he would have to consume 285 pounds of hamburger every day to sustain his weight.

Wing beats during flight and diving, normal heart beats, and respiration rates provide interesting numbers. During regular flight, a male ruby-throated hummingbird's wings can beat 78 times per second and up to 200 times per second during a display dive. A hummingbird's heart beats 1,260 times per minute while a resting hummingbird takes 250 breaths per minute.

A small hummingbird's flight can also be fascinating to observe. It can hover better than any other bird due to the unusual structure of its wings. Unlike the wings of other birds, which have several mov-



This female broad-tailed hummingbird is commonly seen in Wyoming at lower elevations in the spring and mountainous areas in mid-summer. (Photo courtesy of the Wyoming Division of Travel.)

able joints, hummingbird wings are permanently fixed and rigid except at the shoulder joint, where the wing can move freely in all directions. When hovering, the wings move forward, and the leading edge rotates nearly 180 degrees and moves back again. During this movement the wing tips trace a horizontal figure eight in the air.

Hummingbirds can briefly fly upside down by spreading their tail feathers and doing a backward somersault. During a dive display, a male Allen's hummingbird (*Selasphorus sasin*) can fly 45 miles per hour. Its flight or pectoral muscles comprise one quarter of a hummingbird's total weight. These flight muscles are required for extensive spring and late-summer migratory flights.

Because hummingbirds cannot store excessive body fat for use as a fuel source, they enter a short dormancy period each night. The heart beat slows to about 50 beats per minute, and breathing becomes irregular. Functioning body systems are shut down to conserve energy.

Behavioral Patterns

Migration

Seasonal movements of hummingbirds vary according to species and stages of breeding. Generally, hummingbirds have long migration flights. Among all hummingbird species, the rufus hummingbird has the longest migration route, flying up to 3,000 miles from its breeding range in Alaska to wintering grounds in Mexico.

The timing of hummingbird migration is different from most other well-known birds. Most birds fly south in the fall when cold weather develops and then migrate north in the spring as favorable climatic conditions return to breed in areas such as Wyoming. These tiny birds also spend winters in southern tropical regions and migrate northward to summer breeding grounds in Wyoming and other parts of the northern United States. However, due to the migration distances involved, hummingbirds initiate migration earlier than other birds.

For example, during January and February, the rufus hummingbird begins the northward journey to breeding sites. During the early summer months of May or June, the rufus hummingbird slowly starts its southward migration. This difference in migration is important in understanding hummingbird behavior patterns.

Following the breeding season, all hummingbirds make shorter journeys to coincide with the sequence of flower blossoms in different habitat types. Hummingbirds continually move to areas where new flower blossoms develop in search of fresh nectar. In the West, hummingbirds fly to higher mountainous areas later in the growing season to take advantage of late-blooming flowers.

Migration routes differ among the various species. In Wyoming, broad-tailed, calliope, and rufus hummingbirds make their northerly migrations at lower altitudes. When flying south, they choose routes at higher elevations along the mountain ranges to feed on wildflowers.

Establishing Territories

Hummingbirds establish territories differently than most songbirds. Males rather than females usually reach the breeding area first and establish territories. Females will arrive later to set up individual territories that will contain the nesting location. Other hummingbirds that enter a male's territory are greeted with aggression. Females also protect their territories but not as aggressively. Their main responsibility is to raise young birds.

During migration, hummingbirds can be very territorial. Along their journey, they often stop at feeders or large areas of flowers to build up energy reserves. Even though hummingbirds are there for only a short time, they remain very protective of this territory.

Courtship

Information on courtship behavior in hummingbirds primarily comes from studies of the Anna's hummingbird (*Calypte anna*). However, similar patterns of courtship exist among other species. After the male establishes a territory, the female soon follows, attracted to nectar or nesting materials within male territories. Initially, the male is aggressive toward females, often chasing them. Soon, courtship behavior starts as the male performs aerial displays such as the shuttle or dive.

Following the courtship ritual, the female hummingbird leads the male to her territory and initiates copulation while the birds are perched in dense, low shrubbery. Following copulation, the male returns to his territory and continues mating with other females while the female starts nesting. Male and female hummingbirds do not spend much time together after copulation; in fact, hummingbirds are not seen together very often except for females with their offspring, young sibling groups, or during courtship.

Nesting

Females are solely responsible for raising their young without assistance from males. Hummingbird nests are constructed with downy fibers and plant material. Spider and insect silk are added to secure nests to trees, shrubs, and other supporting objects. Nest construc-

tion, incubation, and raising young are an important, time-consuming responsibility.

Nests are frequently built in the same place each year on top of the previous year's foundation, providing a layered appearance. A characteristic feature of hummingbird nests is black spots around the nest rim from fecal material deposited by both the adult female and young. Hummingbirds back up to the edge of the nest when defecating. Adults usually defecate beyond the nest rim while small young birds deposit fecal material on the rim.

Because feeders provide a readily available food supply, most hummingbird behavior at feeders is territorial and aggressive. Hummingbirds commonly chase other birds away from a feeder because they do not like to share. New birds will challenge original "settlers" for the right to claim a feeder. When this approach is unsuccessful, they commonly steal food when the other bird is away.

Habitat Requirements

When developing backyard hummingbird habitat, concentrate on providing a diversity of plants along with open, sunny areas. Hummingbirds enjoy a variety of different plant species that provide both sun and shade. An optimum mixture of vegetation would include some tall trees, medium-height trees, shrubs, flowers, and open grassy areas. This allows hummingbirds to choose feeding, resting, or perching sites in the yard.

Flowers are an exceptional attraction for hummingbirds. They provide nectar and attract insects, which hummingbirds use as food. Plant an array of flowers that bloom at different times of the season. This strategy provides variety throughout the blooming period for hummingbirds.

Hummingbirds like both sun and shade. If the backyard is predominately sunny, plant some shrubs and trees to supply shade. A shady backyard could be converted to a more sunny condition by just trimming some trees. A balance between sun and shade is optimal.

Water is also important for hummingbirds, primarily for bathing. They commonly fly through sprinklers or spray from waterfalls, flut-

ter in wet foliage, or dip in shallow puddles to bathe. Most drinking liquids are obtained from sipping flower nectar.

Birdbaths are attractive additions for backyards and provide areas for hummingbird bathing. Birdbaths should have areas of shallow water to attract hummingbirds. Rocks placed in the birdbath will create both shallow and deep-water areas preferred by most birds.

Along with flowers, trees, shrubs, and water, hummingbirds need nesting materials and nest sites. It is much easier to attract hummingbirds with feeders than with nesting habitat. However, maintain a variety of plants (flowers, shrubs, and trees) in the backyard for hummingbird nesting material and nest sites.

Most hummingbird nests contain downy plant fibers held together with spider silk and saliva with an outside coating of lichens. In the spring, willow seeds are commonly collected by hummingbirds to construct nests. These seeds are connected to numerous fine, downy fibers for easy wind dispersal. Planting willows provides three advantages when creating hummingbird habitat: (1) making nest material available, (2) providing nectar from willow flowers, and (3) attracting insects for supplemental food sources.

Hummingbirds like to survey an area for perches. Wooden dowel rods can be purchased at any hardware store and attached to trees, fence posts, or other objects in the backyard. Locate perches overlooking garden or flower beds. Hummingbirds search for dead tree limbs to perch on, so avoid removing dead branches from existing trees. Just remember to offer a variety of perching sites in the yard for hummingbirds.

Red tubular flowers that produce nectar and support small insect populations are especially attractive for hummingbirds. In North America, there are more than 160 native plants that depend exclusively on hummingbirds for pollination. Many red-flowered annual and perennial plant species that attract hummingbirds can be purchased from local garden centers or mail-order supply companies.

Remember that hummingbirds like many types of flowers and not just red tubular ones. Other non-red-colored flowering plants attract small insects that are an essential part of a hummingbird's diet.

Some of the wild plant species found in Wyoming that hummingbirds prefer for feeding include: scarlet gilia (*Ipomopsis aggregata*), Jacob's ladder (*Polemonium branddgei*), Garrett's firechalice (*Epilobium canum* ssp. *garrettii*), crimson columbine (*Aquilegia formosa*), wild bergamot (beebalm) (*Monarda fistulosa*), longleaf phlox (*Phlox longifolia*), monkeyflowers (*Mimulus lewisii* and *M. rubellus*), various species of fireweed (*Epilobium paniculatum*, *Chamerion angustifolium*, *E. ciliatum* spp. *glandulosum*, and *E. ciliatum* spp. *watsonii*), and species of Indian paintbrushes (*Castilleja angustifolia*, *C. applegatei*, *C. chromosa*, *C. crista-galli*, and *C. linariaefolia*).

Cultivated plants that can be purchased from local garden centers or mail order sources that appeal to hummingbirds include: gladiolus, petunia, iris, fuchsia, nasturtium, columbine, mimosa, acacia, larkspur, and clematis. Consult a local greenhouse to determine which species will grow best for a particular location in Wyoming before purchasing these plants.

An alternative to purchasing plants is to buy commercially available seed mixtures often marketed as "hummingbird flower garden." These mixtures contain seeds from a variety of different hummingbird flowers. When using these mixtures, prepare seedbeds carefully and water thoroughly to produce an attractive mixture of flower colors and heights.

Feeding Hummingbirds

Feeders are a great way to attract hummingbirds. Although there is a large assortment of feeders to choose from at local stores, select one that is easy to disassemble. This will make it easier to clean and refill. Feeders are made of either glass or plastic. Glass is easier to clean; however, plastic will not break. When purchasing the first feeder for a yard, buy a small one. Once hummingbirds are familiar with the feeding location, purchase a larger feeder. Choose a feeder that has appeal and looks attractive in the backyard.

Avoid using perches on hummingbird feeders because they can cause a high mortality rate. Hummingbirds begin feeding around 5 a.m. while the air temperature is still quite cool. If perches are



In Wyoming, anchor hummingbird feeders to a fencepost or locate them in an area protected from the wind to avoid losing the sugar water feeding solution. For maximum effectiveness, remove all perches, put feeders out in early spring to attract early arrivers, and keep them clean. (Photo courtesy of author.)

present, hummingbirds will avoid hovering and consume cold sugar water sitting on perches. Because the birds do not have to fly, the cold temperatures combined with cold sugar water causes them to become lethargic. As their muscles become chilled, they often fall to the ground when trying to leave the feeder, making them easy prey for predators. If there are no perches on feeders, hummingbirds have to fly while drinking, thus keeping their muscles warmed for flight. Perches on feeders are believed to be responsible for thousands of hummingbird deaths each year.

Feeders are most effective when located close to flowers. Flowers serve as an initial attractant until hummingbirds discover the feeder. To avoid wind problems in Wyoming, place the feeder in a protected area. This will reduce the amount of sugar solution spilling from the feeder and/or actual wind damage to the feeder. Direct sunlight will discolor the sugar solution and accelerate spoilage, so place feeders in areas receiving some shade during the day.

Hummingbird feeders require maintenance. Sugar solutions are susceptible to fermentation, mold, and bacterial production if feeders are not regularly cleaned. Ignoring the cleaning of a feeder could jeopardize hummingbird health.

Every two to three days or when refilling, wash the feeder with a mild detergent in hot water and be sure to rinse well before refilling. During hot weather, pathogens can multiply rapidly, posing potential health risks to hummingbirds. If mold is present, use a small amount of vinegar in hot water for cleaning. Small bottle brushes or pipe cleaners will help clean hard-to-reach places.

Sugar mixtures should be comprised of four parts boiled water to one part white refined sugar, or use a commercial “nectar” mix available at most food and department stores. This ratio of sugar to water most closely approximates the sugar concentration found in the nectar of many flowers. Never use a stronger sugar-to-water mix because it can damage a bird’s kidneys and is harder to digest.

Commercial “nectar” mixes are usually red colored to enhance the attracting of hummingbirds. A red-colored commercial mix can be used initially to attract hummingbirds in a new feeding area, followed by a gradual switch to a clear sugar solution. Do not use honey solutions in hummingbird feeders because they may produce a fungal disease that could kill hummingbirds. Likewise, avoid artificial sweeteners because they do not provide the required calories for metabolic functions or offer any other food value. Sugar water is best for hummingbirds.

A common problem associated with feeders is dealing with bees, ants, and wasps attracted to the sugar mixtures. Many of these insects naturally feed on flower nectar and often take advantage of easily accessible hummingbird feeders. Bees and wasps commonly fly directly to a feeder while ants march up to feeder holders. To prevent ants from reaching a feeder, put petroleum jelly or special sticky substances such as Tanglefoot products from garden stores around the wire or pole holding the feeder.

Bees and wasps are more difficult to discourage. However, there are a few preventative techniques to try. When purchasing a feeder, buy one with “bee guards.” These are little screen-like devices that fit

over the feeder holes, preventing insects from reaching the sugar solution. Petroleum jelly, salad oil, or mineral oil can also be put around the feeding holes with a cotton swab. This makes it difficult for insects to gain a foothold on the feeding ports. Be careful not to contaminate the sugar solution by getting oil inside the feeding holes.

Some people wrap a strip of cloth that has been soaked in insect repellent around the stake supporting the feeder. Be extremely careful when using insect repellent, especially if using a spray. Make sure none gets in the feeding solution.

Sometimes it takes time to attract hummingbirds to a backyard. Provide a variety of flowers, shrubs, or trees in the yard and be patient. If there is an inviting area, hummingbirds will eventually move in. Remember, they may be visiting the feeder when no one notices.

Hummingbirds will provide hours of entertaining observation around natural flower gardens or commercial feeders. Male hummingbirds develop strong territorial behavior, spending hours chasing away intruders from an established sentry post not far from the feeder. A few simple techniques to provide an attractive habitat will ensure years of summer fun and recreation in observing hummingbird behavior.

Appendix A. Descriptions of Commonly Observed Hummingbirds in Wyoming

Broad-tailed hummingbird (Selasphorus platycercus)

Commonly found in the Rocky Mountain region, broad-tailed hummingbirds feed on flowers in the mountains and nest along streams or dry creek beds. They are often observed bathing in streams during early morning hours.

Male broad-tailed hummingbirds make prominent, loud, and steady sounds with their wings called wing whistles while flying. This noise is created as air moves through the main wing feathers. When the bird is threatened or feeling aggressive, this sound becomes louder. Described as a buzzing noise similar to that made by a cricket, wing whistles can be detected from 75 to 100 yards away.

During early to midsummer, broad-tailed hummingbirds protect territories ranging in size from a third of an acre to more than an acre. Male broad-tailed hummingbirds are very aggressive toward potential intruders, chasing away other birds and/or eliciting a distinct chattering sound. They also perform various aerial displays while defending territories. A circuit flight is where a male flies around his territory in repetitive circles to inform other hummingbirds of territorial boundaries. This dive display is U-shaped and varies from 20 to 40 feet in height. At the bottom of the U-shaped dive, the hummingbird elicits a clicking sound with his tail feathers to attract females.

During the breeding season, broad-tailed hummingbirds follow the blooming patterns of mountain flowers, beginning at lower elevations and moving to higher elevations over summer. This habit provides a continual supply of nectar.

Female broad-tailed hummingbirds select nesting sites that provide some protection from the sun, wind, and rain. After finding a suitable location, the female will spend two days or more building a nest with downy fibers found in willow or cottonwood seeds, lichens, bits of bark, or other plant fibers. She will return to the same site year after year and add to the nest structure.

The broad-tailed hummingbird is commonly seen in Wyoming (Figure 1). Look for these birds at lower elevations in the spring and mountainous areas in midsummer as they follow the blooming season of mountain flowers.

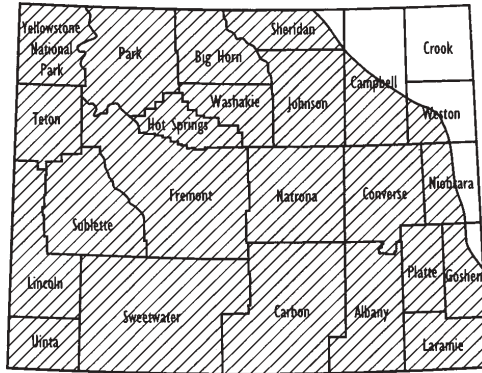


Figure 1. Summer breeding areas of the broad-tailed hummingbird (*Selasphorus platycercus*) in Wyoming.

Brief Summary: Broad-tailed hummingbird

Identification: The male has a rose-red throat patch, green crown, and wings make a loud high-pitched trill; the female has buffy sides and a touch of rufus at the side of her tail.

Similar Species: The female calliope is smaller with a shorter bill; rufus females and immature birds have more rufus in the tail and less iridescent green on back.

Status and Seasonality: Common summer resident; April to September

Habitat: Meadows, parks, and thickets, often along streams, mostly in the mountains

Food Requirements: Nectar, insects, spiders, tree sap

Territory: 1/3 to 1 1/3 acres

Nest-Building: Materials – downy plant fibers, spider silk, bark bits, lichens, leaves. Placement – horizontal limbs 5-15 feet high

Eggs: two, white

Incubation: 16 to 17 days, by female only

Fledgling Phase: 21-26 days

Broods: Usually one, sometimes two

Migration: Spring: March into May. Fall: August into October

Non-Breeding Range: Mountains of Mexico, south to Guatemala

Good Places to Find: Along willow-lined streams adjacent to meadows and parklands in the Medicine Bow and Big Horn mountains in eastern Wyoming and the western mountain ranges of Wyoming

Calliope hummingbird (Stellula calliope)

The calliope hummingbird, the smallest bird in North America, is only about 3 inches long and weighs less than one-tenth of an ounce. As a comparison, a typical first-class letter weighs about an ounce. Other species of hummingbirds are 3½ to 4 inches long, making identification of this species easy. Male calliope hummingbirds are particularly attractive with individual streaks of purple iridescence on the throat.

Nests are commonly camouflaged to provide extra protection from predators and inclement weather. In some instances, nests have been found situated in pine cone clusters on coniferous tree branches. Nests are built as close as 2 feet from the ground up to 70 feet and are usually oriented in an easterly direction to catch early morning warming from the sun. Overhanging branches or dense greenery from adjacent trees or shrubs provide additional protection. Nests are often located at the edge of woods and open meadows where males actively defend their territories.

Bark shreds, tree and ground moss, pine needles, and spider silk are used for nesting materials. The calliope also builds nests on the same site each year by adding additional materials to the existing nest foundation.

Male calliope hummingbirds exposed to cold temperatures at night, especially in mountainous areas, often enter into a torpid state or temporary metabolic shutdown to conserve energy. When this occurs, body temperatures drop and breathing becomes irregular. This state of torpor, lasting from 8 to 14 hours, occurs when energy levels are low.

Nesting females cannot afford to enter a state of torpor because body temperatures must be maintained to keep eggs and young warm. To maintain body temperature, females crouch down in their nests for protection against cold temperatures. Also, nests are built with high walls and abundant insulation for additional protection. Nest locations under overhanging branches and facing an easterly direction also provide additional warmth.

Female calliope hummingbirds lay two eggs over a three-day period before beginning a 15-day incubation period. After hatching, the female intensively broods the young for the first 11 to 12 days until young birds can develop enough feathers to regulate their own body temperature. Calliope hummingbirds are very protective of their young, attacking anyone who approaches the nest by diving down on the intruder.

When fall migration approaches, male calliope hummingbirds depart first, leaving one to two weeks before females and young. Their southward course follows the mountain ranges to take advantage of late-blooming flowers.

Northward spring migrations occur in March or April when they follow the Pacific Coast to utilize early-blooming flowers.

The calliope hummingbird is predominately found in western Wyoming (Figure 2). Look for this tiny hummingbird along coniferous woodland edges in mountain foothills, shrub lands, and riparian shrub habitats in mountainous areas.



Figure 1. Summer breeding areas of the calliope hummingbird (*Stellula calliope*) in Wyoming.

Brief Summary: Calliope hummingbird

Identification: Wyoming's smallest hummingbird is about 3 inches long; the male throat patch is rose-purple rays and the bill short.

Similar Species: Other hummingbirds are larger with longer bills; females and immature birds often show more rufus coloring on their sides and tail.

Status and Seasonality: Common summer resident, mid-May to September

Habitat: Meadows, parks, and thickets in coniferous forests, riparian shrublands

Food Requirements: Nectar, insects, spiders, tree sap

Territory: Size not known

Nest-Building: Materials – plant down, moss, bark, lichens, insect and spider silk. Placement – often on horizontal branch or cone of a coniferous tree beneath shielding branch or leaves (needles)

Eggs: two, white

Incubation: Approximately 15 days

Fledgling Phase: 18-23 days

Broods: probably only one

Migration: Spring: March through May; fall: late July through September

Non-Breeding Range: Central Mexico

Good Places to Find: Jackson Hole, Yellowstone National Park, Big Horn Mountains, Wind River Mountains

Rufus hummingbird (Selasphorus rufus)

Among hummingbirds that breed in northerly areas, the rufus hummingbird occupies the most northerly range of all species. For this reason, rufus hummingbirds are observed predominately in the northwestern reaches of Wyoming between migration periods and along western mountain ranges during fall migration. It is the only hummingbird that is regularly found in Alaska. These birds can be seen in mountain meadows, parks, and open woodlands during the summer in northwestern Wyoming.

Adult males can be distinguished by their iridescent red to red-orange throats and gorgets. Their backs are strongly rufus in color, sometimes with scattered flecks of green. Females are more difficult to identify; however, they display rufus color on the rump and basal parts of the tail with a wash of rufus on the sides. Immature birds are very similar in color to the females.

Nests of rufus hummingbirds are commonly located quite close to one another and are extremely abundant. In spring, nests are close to the ground in conifer trees while late nesters build nests high in deciduous trees. In early spring, temperatures are most constant within coniferous tree branches low to the ground while in late summer temperatures remain more constant high in deciduous trees. Scientists believe that birds minimize the effects of temperature on nesting areas by choosing different sites for nesting during different seasons.

Nests are commonly constructed from moss, willow down, and spider or caterpillar silk with a covering of lichens or tree/shrub rootlets. Rufus hummingbirds also use the same nest sites each year, building additional layers on previously constructed nests. Rufus hummingbird nests commonly become flattened on top as nestlings outgrow the nest area and stretch out the nest. Young rufus hummingbirds readily fly from the nest to a nearby perch as fledglings; however, they often have trouble balancing on perches for a few days. For this reason, the young often frequent certain perch sites for several days while the female continues feeding them.

During courtship displays, the male rufus hummingbird flies before the female in a U-shaped or sometimes a complete oval pattern. The male ascends with his back toward the female and dives with his gorget facing her (similar to other hummingbirds). A whining note is elicited at the bottom of the dive, caused by air rushing through the wing feathers. Rufus hummingbirds defend nest areas in a very quarrelsome and belligerent manner. Males will arrive in advance of females on breeding grounds.

Studies on temporary territories established around food sources verify that rufus hummingbirds vigorously defend food sources for several days at a time. For example, rufus hummingbirds have been observed defending certain coniferous trees where sapsuckers have bored sap-collecting holes through the bark. Rufus hummingbirds consume large quantities of tree sap when available because sap is very similar in sugar concentration to flower nectar. These food sources are important feeding locations, especially during migration periods.

During migration, rufus hummingbirds are the most aggressive in defending temporary feeding territories. Several displays are used during aggressive interactions with other birds including tail fanning, gorget spreading, shuttle flights, and dive displays. These behavioral activities effectively display the iridescent plumage in an intimidating manner. During dive displays, the male makes a series of sounds on the downward part of the flight which include a wing buzz, three or four short whines, followed by a rattle. These displays are usually directed at a territorial intruder.

Rufus hummingbirds have the longest migration route of any North American hummingbird. Northerly spring routes follow the Pacific Coast while southerly fall routes follow the inland Rocky Mountains. These birds fly long distances followed by short stops at nectar-rich flowers to replenish body fat reserves. Rufus hummingbirds migrate south in two waves: adult males in late summer, followed by females and immature birds about one to two weeks later.

In Wyoming, look for the rufus hummingbird primarily in extreme north-western areas of the state near Yellowstone National Park and Jackson Hole during the summer (Figure 3). In late summer and early fall they may be observed in mountain towns and high-elevation meadows throughout western Wyoming during migration.

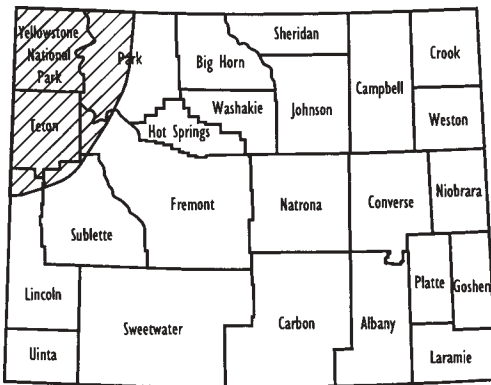


Figure 1. Summer breeding areas of the rufous hummingbird (*Selasphorus rufus*) in Wyoming.

Brief Summary: Rufus hummingbird

Identification: The male has orange-rufus plumage with bright orange-red gorget, and its wings make a dull buzz. The female has rufus on its rump and the basal part of its tail with a wash on the sides; immature birds look similar to the females.

Similar Species: A female calliope is smaller with a shorter bill and less rufus on the tail and rump; other female hummingbirds show less rufus on the tail and rump.

Status and Seasonality: Common summer resident, mid-June to mid-September

Habitat: Mountain meadows, parks, open woods, riparian shrublands, and mountain foothill shrublands

Food Requirements: Nectar, insects, spiders, tree sap

Territory: Size not known

Nest-Building: Materials – downy plant fibers, moss, leaves, shredded bark, spider silk, lichens. Placement – usually on a drooping limb of a coniferous or deciduous tree; nest often clustered

Eggs: two, white

Incubation: Approximately 14 days

Fledgling Phase: Approximately 20 days

Broods: One, occasionally two

Migration: Spring: February through May; fall: late June to October

Non-Breeding Range: Southern to south-central Mexico

Good Places to Find: Between migration peaks – Yellowstone National Park, Jackson Hole, Wind River Mountains; during fall migration peak – mountains and towns in western, southwestern, and southeastern Wyoming

Acknowledgements

Information presented in this bulletin was extracted primarily from the following references:

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