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Maintaining and Improving Habitat for Hummingbirds in Alaska

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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. Hummingbird numbers are declining, like those of 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 pesticides. This guide is intended to help you provide and improve habitat for hummingbirds, as well as for other pollinators. 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 or shelter the insects that hummingbirds favor as prey. Because climate, geology, and vegetation vary in different areas, recommended plants are presented for each ecoregion in Alaska within which hummingbirds occur.

Rufous Hummingbird nest
Courtesy of Martin Hutten

This guide also provides brief descriptions of the hummingbirds that occur within Alaska, as well as some basic information about their habitat needs.

Whether you manage large tracts or a small yard, you can make the land attractive to hummingbirds. Even long, narrow pieces of habitat, like utility corridors, field edges, and roadsides, can provide important connections among larger habitat areas.

Hummingbird Basics

Hummingbirds only occur in the Americas, with the greatest diversity of species found along the equator. Only two species, the Rufous and Anna's Hummingbirds, are known to occur in Alaska. Rufous Hummingbirds are highly migratory, travelling between Alaskan breeding grounds to winter in Mexico and the southern US. Anna's Hummingbirds are increasingly found spending their winters in coastal Alaskan communities, where winters are temperate.

Isolated foraging opportunities
Courtesy of Cheryl Carrothers

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.

Food

The first hummingbirds typically arrive in Alaska by mid-April. Snow may still cover much of the ground that time of year and few flowers are available. Insects, such as mosquitoes and gnats, provide critical nutrients for these newly arrived hummingbirds as they establish territories and begin nesting. Hummingbirds feed by day on nectar from flowers, including annuals, perennials, trees, shrubs, and vines once they are available.

Early season Rufous Hummingbirds at feeder
Courtesy of Merrill Jensen

Western columbine—*Aquilegia formosa*
Courtesy of Bob Armstrong

Hummingbirds feed while hovering or, if possible, while perched. They will continue to eat insects, and will consume tree sap when it is available. They obtain tree sap from sap wells drilled in trees by sapsuckers and other similar bird species. Native nectar plants and other foraging resource plants are listed in the table near the end of this guide.

Feeding at sap well
Courtesy of Bob Armstrong

Water

Hummingbirds get adequate water from the nectar and insects they consume. However, they are attracted to running water which is abundant within their range in Alaska. Fountains, sprinklers and birdbaths with misters provide more urban attractants. Insect populations are typically higher near ponds, streams, muskegs, bogs and other wetlands, those areas also provide important foraging habitats for hummingbirds.

Courtesy of Cheryl Carrothers

Hummingbird Species in Alaska

Following are brief descriptions of the two hummingbird species found in Alaska, Anna's (*Calypte anna*) and Rufous (*Selasphorus rufus*). There have been a few documented hybrids between Anna's and Rufous Hummingbirds. Any hummingbirds observed that don't seem to quite meet the descriptions provided below, should be photographed if possible and reported to local experts.

Anna's Hummingbird (*Calypte anna*)

Anna's Hummingbird—male
Courtesy of Bob Armstrong

APPEARANCE—Anna's Hummingbirds are mostly green and gray, without any rufous or orange marks on the body. The male's head and throat are covered in iridescent reddish-pink feathers that can look dull brown or gray without direct sunlight. Adult males (and some young males) have an iridescent rose/red crown and gorget with elongated feathers projecting to the sides. Males turn their head from side to side as they sing, flashing their iridescent head as a signal to other hummingbirds. They have a green back and are grayish below. Outer tail feathers are gray, darker at the edges. The tail extends well beyond the wingtips. Males are more vocal than any other North American hummingbird. The male has a dry, scratchy, buzzy "song" that it sings throughout the year.

Adult females also have a green back and grayish underparts. Gorget markings vary from bronzy-gray mottling to a central splotch of rose/red feathers. Very rarely, rose feathers may occur on the crown. The tail extends to or beyond the wingtips. Tail feathers are broad, rounded, banded in dull gray-green, blackish, and white. Immature birds look somewhat similar to the adult females, although immature males have heavier mottling in the gorget. The Anna's Hummingbird typically holds its tail still while hovering.

RANGE—The Anna's Hummingbird is the largest hummingbird occurring in Alaska. It is a year-round resident of the Pacific coast, from Alaska to Baja California. Since the mid-1930s, its range has expanded greatly, possibly due to its effective use of cultivated plants and feeders in urban and suburban areas. Anna's Hummingbirds occur in Bird Conservation Region (BCR) 5 (Figure 1)

which overlaps the Tongass and Chugach National Forests. They are locally uncommon in spring and summer with increasing regularly in coastal Alaskan communities in winter.

HABITAT—Anna's Hummingbirds are conspicuous in yards, parks, and residential neighborhoods. Further south, they use riparian woodlands, savannahs and coastal scrub. They readily come to hummingbird feeders and flowering plants, including cultivated species in gardens. Although this species has not been confirmed nesting in Alaska, breeding habitat elsewhere includes urban areas and parks at low to mid elevations. After breeding, they may move to higher elevations in search of nectar resources.

Anna's Hummingbird—male
Courtesy of Gwen Baluss

MIGRATION—is not well understood. In Alaska, they appear to not migrate in the traditional sense. Instead, they migrate more altitudinally, with birds from higher elevations moving to lower coastal climates, as temperatures drop. Known wintering locations are almost always near people's homes with an availability of supplemental food sources and dense cover for nighttime roosting.

COURTSHIP—The courtship display of the male Anna's Hummingbird lasts about 12 seconds, and includes diving from a height of over 100 feet which ends a unique short high-pitched noise made by air whipping through his tail feathers. As courtship progresses, the male chases a receptive female, who leads him toward her nest site, and perches again. The male then performs a "shuttle display," where he swings back and forth about a foot above the female, keeping his body horizontal and his head down toward the female, often singing an intense song.

Anna's Hummingbird—female
Courtesy of Scott Carpenter

NESTING—The female builds the 1 inch tall by 1.5 inches in diameter nest out of plant down, shed animal fur and spider webs, sitting in the nest and building the cup rim up around her. She may decorate the outside with lichens, mosses or even paint chips, sometimes stealing these materials from other active nests.

Anna's Hummingbirds, however, are not known to nest in Alaska.

Rufous Hummingbird (*Selasphorus rufus*)

Rufous Hummingbird—male
Courtesy of Bob Armstrong

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 washed rufous. The gorget is off-white, spangled with green to bronze. The throat is marked with red-orange, from just a few spangles to a large patch depending on the individual. 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.

RANGE—The Rufous Hummingbird is the most common and widespread hummingbird species in Alaska, and can be found in a wide variety of habitats. This species travels farther north than any other hummingbird, wintering in Mexico and Southeastern US and migrating to breeding sites as distant as Prince William Sound, Alaska.

Although a relatively small hummingbird, it has an aggressive nature and frequently chases larger hummingbirds from nectar sources. It is thought to be an important pollinator in the cool, cloudy rainforests of southeast and south-central Alaska. Pollination by Rufous Hummingbirds supports development of wild berry crops such as blueberry, salmonberry, and elderberry, providing locally important food resources to wildlife and humans.

HABITAT—Rufous Hummingbirds use a diversity of forested and wetland habitats from shoreline to alpine, as well as parks and residential areas. They commonly utilize hummingbird feeders when available. All ages and both sexes are aggressive in defense of territory and forage resources, including feeders. They are thought to be closely associated with the Red-breasted

Rufous Hummingbird—female
Courtesy of Jim Cruce

Sapsucker, nesting near sap wells and may follow the woodpecker around during the day, feeding at the wells the sapsucker keeps flowing.

MIGRATION—The Rufous Hummingbird makes one of the longest migratory journeys of any bird in the world from Alaska to Mexico. Rufous Hummingbirds usually begin arriving in Southeastern Alaska by April, with males arriving earliest and beginning their migration south by July. Females are also present in April, but in smaller numbers and typically stay through July during incubation and rearing of young. Successful nests start incubating between late May and late June with fledging in July. As with other hummingbirds, Rufous Hummingbirds typically move to higher elevations for the fall migration, following nectar producing flowers.

Spring migration is mostly north along the coast and mountains of the Pacific Flyway. In the fall, Rufous head south and more interior along the Rockies, with an increasing number of individuals dispersing further east toward the Atlantic before heading to their wintering areas in Mexico and the Gulf Coast of the United States.

COURTSHIP—Male Rufous Hummingbirds perform a steep oval or J-shaped courtship display for females. If the female perches in a male's breeding territory, he may perform a low, horizontal figure-8 display.

NESTING—Female Rufous Hummingbirds construct nests alone using soft plant matter bonded with spiderwebs. She finishes the outside with flecks of lichens, mosses, and tree bark and cements it to the drooping branches of coniferous or deciduous trees up to 30 feet off the ground, and occasionally in shriubs, ferns, or vines. Nests have an outside diameter of 2 inches, the inner cup diameter is about an inch. Nests can be reused multiple seasons if in good condition, and may not be used by the same female. Females lay 2–3 white eggs and only raise one brood per season. Incubation lasts up to 17 days and nestlings are raised in as little as 19 days.

Rufous Hummingbird—female
Courtesy of Bob Armstrong

Bird Conservation Regions (BCR) in Alaska

The United States North American Bird Conservation Initiative (NABCI) 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.

There are five BCRs in Alaska: Aleutian/Bering Sea Islands (BCR 1), Western Alaska (BCR 2), Arctic Plains and Mountains (BCR 3), Northwestern Interior Forest (BCR 4), and Northern Pacific Rainforest (BCR 5). (Figure 1).

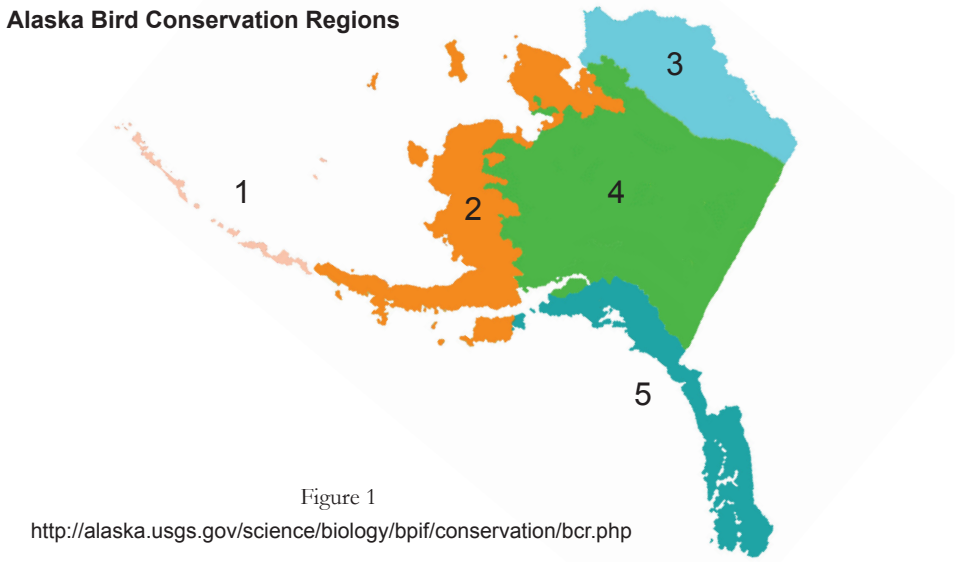

Figure 1

http://alaska.usgs.gov/science/biology/bpif/conservation/bcr.php

The Chugach and Tongass National Forests are within BCR 5 and support the majority of the breeding habitat for Rufous Hummingbirds in Alaska. The maritime climate of BCR 5 is characterized by heavy precipitation and mild temperatures. In Alaska, the region is dominated by forests of western hemlock and Sitka spruce, with Lutz spruce more common in the north and occurrences of western red cedar farther south. Deciduous forests in this region trend from paper birch and aspen on the Kenai, transitioning to greater representation from red and Sitka alder in more southern locations, with black cottonwood found throughout.

Some use of BCR 4 by hummingbirds has been documented. Coniferous, deciduous and mixed forest types are found in this BCR and are dominated by white spruce, black spruce, cottonwoods and paper birch. Tall shrub communities occur along rivers, drainages, and near treeline. Bogs, consisting of low shrubs and shrub-graminoid communities, are common in the lowlands.

Courtesy of Cheryl Carrothers

Courtesy of Cheryl Carrothers

Copper River Delta aerial view

Courtesy of Ron Niebrugge

Courtesy of Mary Stensvold

Courtesy of Cheryl Carrothers

Ecoregions in Alaska

Ecoregions are delineated based on the site-specific combination of geology, topography, soils, vegetation, climate, water, wildlife, and human influences which may be present. Ecoregion boundaries differ from those of the BCRs. Nowacki et al. (2001) delineated Alaska into 32 ecoregions within three more comprehensive associations of Boreal, Polar and Maritime. Hummingbird occurrence in Alaska is currently limited to the five ecoregions within the Coastal Rainforest and Alaska Range Transition areas of the Boreal and Maritime associations. The list of occupied ecoregions and vicinity map (Figure 2) are provided below.

B5 – Cook Inlet Basin
M2 – Boundary Ranges
M4 – Alexander Archipelago
M5 – Gulf of Alaska Coast
M6 – Chugach-St. Elias Mountains

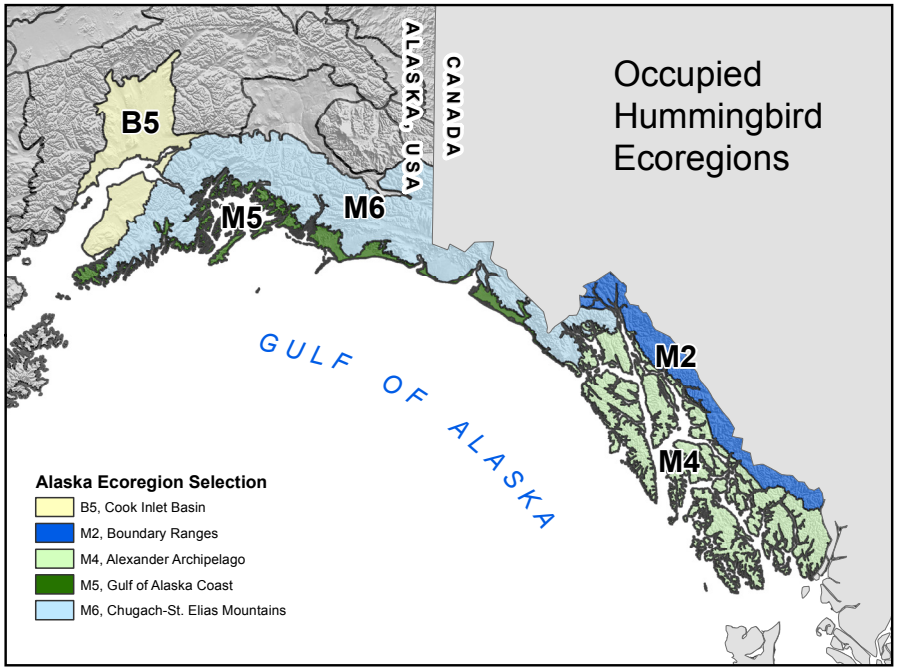

Figure 2
http://agdc.usgs.gov/data/usgs/erosafo/ecoreg/

Plants Important to Hummingbirds in Alaska

The following table provides a list of important nectar plants, and lists plants commonly associated with an abundance of hummingbird prey insects or other attractants. These plants are native to Alaska and are adapted to the ecoregions (Figure 2) indicated in the table. The table also provides basic information about the plant's habitat. Many of these plants may be available commercially, can be obtained from local growers, or collected with permission from the landowner.

To collect plants or plant material from lands managed by the Chugach or Tongass National Forests, authorization can be obtained at a USDA Forest Service District Office. Forest Service personnel will identify whether a permit is required and if so, what type. Permitting is implemented for the protection of both resource and collector. Individuals are prohibited from selling or exchanging material harvested or gathered under free use permit.

Forest Service representatives can also suggest potential plant collection locations. The use of locally-adapted genetically appropriate plants in restoration and pollinator enhancement work contributes to healthier gardens and a natural abundance of hummingbird forage resources. In addition, native plants can be maintained without the use of insecticides which can pose a serious threat to birds as well as the target insects. Some commercially available plants may look pretty but may not have flowers accessible to hummingbirds or other pollinators, they may not provide any nectar at all, or may be non-native plants. Please refer to the attached list for recommended plants to use in your area.

Goatsbeard—*Aruncus dioicus*
Courtesy of Mary Stensvold

Devil's club—*Oplopanax horridus*
Courtesy of Mary Stensvold

Plants Important to Hummingbirds in Alaska

Scientific Name	Common Name	Ecoregions[1] B5 CI	M2 BR	M4 AA	M5 GC	M6 CSE	Flowering or time of use	General Habitat
Shrubs and Trees							**— Shrubs and Trees**	
Alnus spp.	alder	X	X	X	X	X	April—-Jun	Early succession areas of glacial retreat and disturbed sites, host plant for sapwells and associated insect prey
Luetkea pectinate	Partridgefoot	X	X	X	X	X	Jun—-Sept	Subalpine, alpine
Malus fusca	Oregon crabapple			X	X		May—-Jun	Forest edges, beach/forest ecotone, muskegs
Menziesia ferruginea	rusty menziesia	X	X	X	X	X	May–Jun	Forest understory, forest edges, openings; sea level to subalpine
Oplopanax horridus	devil's club	X	X	X	X	X	late May–early July	Well drained forest and forest edges. Host plant for insect prey.
Ribes bracteosum	stink currant			X	X	X	May–Jun	Forest understory, forest edges, openings; sea level to subalpine
Ribes laxiflorum	trailing black currant	X		X	X	X	May–Jun	Open areas, forest edges, beach/forest ecotone
Rubus spectabilis	salmonberry			X	X	X	April–Jun	Open areas, forest edge. Magenta flowers attract hummingbirds
Salix spp.	Willow spp.	X	X	X	X	X	April–Aug	Riparian edges and wetlands, provide for an abundance of insect prey and may also be used for sapwells
Sambucus racemosa	red elderberry	X	X	X	X	X	May–Jun	Early successional species, growing in recently disturbed areas, forest edges, open areas
Vaccinium ovalifolium	early blueberry	X	X	X	X	X	Apr–Jun	Forest understory, forest openings; sea level to subalpine
Perennial Herbs							**— Perennial Herbs**	
Angelica spp.	angelica	X	X	X	X	X	June–July	Meadows, beach meadows, subalpine meadows. Host plant for insect prey.
**Aquilegia formosa*	western columbine	X	X	X	X	X	Jun–Aug	Forest edges, meadows from sea level to subalpine
Aruncus dioicus	goatsbeard	X		X	X	X	Jun–Jul	Open areas, disturbed areas, forest edges. Hummingbirds attracted to abundance of tiny insect pollinators
**Castilleja miniata*	scarlet paintbrush			X	X		May–Aug	Upper beach meadows
**Castilleja parviflora*	mountain Indian paintbrush		X	X	X	X	Jun–Aug	Subalpine meadows
**Castilleja unalaschcensis*	Unalaska paintbrush	X	X	X	X	X	Jun–Aug	Upper beach meadows, subalpine meadows
Chamerion angustifolium	Fireweed	X	X	X	X	X	Jun–Aug	Disturbed areas, open areas from sea level to subalpine
Lupinus nootkatensis	Nootka lupine	X	X	X	X	X	May–Aug	Upper beach meadows, subalpine meadows

*Hummingbird adapted or preferred nectar source

[1]Ecoregions:

B5 – Cook Inlet Basin
M2 - Boundary Ranges
M4 – Alexander Archipelago
M5 – Gulf of Alaska Coast
M6 - Chugach-St. Elias Mountains

Important Hummingbird Plants—continued

Mountain Indian paintbrush—
Castilleja parviflora
Courtesy of Brad Krieckhaus

Unalaska paintbrush—*Castilleja unalaschcensis*
Western columbine—*Aquilegia formosa*
Courtesy of Mary Stensvold

Resources

The Western Hummingbird Partnership (WHP) is a developing network of partners collaborating to build an effective and sustainable international 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

Observations reported by citizen scientists on Journey North helps track hummingbird migration: www.learner.org/jnorth/humm/

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

The Alaska Hummingbird Project conducts research promoting conservation and education about hummingbirds in Alaska (The Alaska Hummingbird Project, Inc.)

USDA PLANTS database. The PLANTS Database provides standardized information about the vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and its territories: http://plants.usda.gov/java/

Pollinator Partnership: www.pollinator.org

The Birds of North America Online: http://birds.cornell.edu/bna/

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Tongass National Forest, Ketchikan, Alaska: www.fs.usda.gov/tongass/

Chugach National Forest, Anchorage, Alaska: www.fs.usda.gov/chugach/

Images
Bob Armstrong

Front cover images:
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Bottom— Cheryl Carrothers

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WESTERN HUMMINGBIRD Partnership

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