

**Songbird
ReMix**

Characters

Volume 1



**Includes many of the most popular
and beloved birds in North America**

Avian Models for 3D Applications
Characters and Texture Mapping by Ken Gilliland

Songbird ReMix

Characters

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Songbird ReMix Characters

Manual & Field Guide

Introduction

Songbird ReMix Characters includes many of the most popular and beloved birds in North America. As with all Songbird ReMix birds, one model can fly and perch with wings tucked, with one easy-to-use morph. Many seasonal and color variants have been included. For instance, the American Goldfinch looks different in breeding season than during the Fall, and how much good seed a male House Finch eats will determine whether he's red, orange or yellow. Songbird ReMix Characters provides for these subtle nuances.

Overview and Use

The set is located within the **Animals : Songbird ReMix** folder. Here is where you will find a number of folders, such as **Bird Library**, **Manuals** and **Resources** . Let's look at what is contained in these folders:

- **Bird Library:** This folder holds the actual species and poses for the "premade" birds. Birds are placed into a "type" folder (such as "Birds of Prey (Order Falconiformes)" which for example would hold falcons, hawks and eagles). The birds for this set can be found in the following folder(s):
 - **Perching Birds (Order Passerines)**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your birds
 - **Bird Base Models:** This folder has the blank, untextured model(s) used in this set. These models are primarily for users who wish to experiment with poses or customize their own species of bird. When using physical renderers such as Iray and Superfly, SubD should be turned to at least "3". For DAZ Studios 3Delight renders, the SubD must be turned from the "High Resolution" setting to the "Base" setting (otherwise some areas will render incorrectly transparent).

Poser Use

Select **Figures** in the **Runtime** Folder and go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer *Firefly* or *Superfly*) folder you want and simply click it to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs.

You will need to click on the attached part to access those controls. Associated poses can be found in the same folder- **Bird Library : (Type) : Poses**.

DAZ Studio Use

Go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer (*3Delight* or *Iray*) folder you want and simply click it to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs. You will need to click on the attached part to access those controls. Associated poses can be found in the same folder- **Bird Library : (Type) : Poses**. **Note:** Using the "Apply this Character to the currently selected Figure(s)" option **will not** properly apply the correct scaling to the bird selected. It is better to delete the existing character first and load the one you want to use.

Where to find your birds

Type Folder	Bird Species
Perching Birds (Order Passeriformes) Crows, Jays and their Allies	American Crow
Perching Birds (Order Passeriformes) Finches, OW Sparrows & their Allies	American Goldfinch House Finch Purple Finch
Perching Birds (Order Passeriformes) Orioles, Blackbirds & their Allies	Red-winged Blackbird Tri-colored Blackbird
Perching Birds (Order Passeriformes) Silky Flycatchers & their Allies	Cedar Waxwing Phainopepla
Perching Birds (Order Passeriformes) Thrushes, Oxpeckers & their Allies	Northern Mockingbird Swanson's Thrush Western Bluebird
Perching Birds (Order Passeriformes) Wrens, Nuthatches & their Allies	Cactus Wren

Where to find your poses

Type Folder	For what species?
Perching Birds (Order Passeriformes) Poses can be found in "Universal Poses" & "type" folders	All Songbirds

One Folder to Rule Them All

When I reworked the entire Songbird ReMix library starting in 2018, I decided to abandon the way the birds were sorted (by product name) and choose an Ornithological approach. All birds are found in the Bird Library folder and are arranged by type of bird. This approach is hopefully easier for most to find what bird they are looking for. Admittedly, it will take some getting use to for some longtime users, but I've always approached the Songbird ReMix series as a learning tool as well as a graphics tool, so hopefully some knowledge will rub off by seeing how birds are grouped.

Probably the most deceiving subfolder in the **Bird Library** is “**Perching Birds (Order Passeriformes)**”. This is folder you probably will end up “favoriting” because this one folder (Passeriformes) **holds more than 50% of all birds**. Perching birds range from cardinals and jays to chickadees, crow and swallows.



Finding the bird you want within the “**Perching Birds (Order Passeriformes)**” folder can be daunting, even for an experienced birder (such as myself), so I've included an online reference tool within this folder that helps to make your search easier. Click the “**Perching Birds Finder**” icon and when loaded, look at the first column and search for the type of bird you want. For example, I want a “manakin” (a bird common to Central and South America). Scroll down the first column alphabetically and stop on “manakin”. Looking across to the second column, you will now know that manakins can be found in the “Tyrant Flycatchers & their Allies” subfolder.

Physical-based Rendering

Iray and **Superfly** requires more CPU and memory horsepower than the legacy renderers because of ray-trace bounces and higher resolution meshes needed for displacement. Poser's **Superfly** renderer will require that the “Min Transparent Bounces” be set to **at least 16** and that the “Max Transparent Bounces” be set to **at least 32** in render settings. Superfly renders may show artifacts in the head area. This is a known Poser issue and may be addressed in the future. Increasing the SubD may minimize this issue.

Posing & Shaping Considerations

This volume has various species, so when using generic poses not every pose will work perfectly with every bird. You may find that some minor alteration on the stock poses may be warranted.

Here are some of the most common alterations you may need to make:

- Birds will not be flat on the zero plane due to leg size and overall scale.

- Because of the numerous beak shapes, closing the beak may range from 0.5 to 1. Usually 0.8 is about right.
- **Raise Upper Beak** (*in Action Controls*): This morph is a “one size fits all” control. Because of the variety of beak shapes. It may not work with all birds.
- **Tongue poke-through** (especially when the beak is open). This can be easily solved by using the **Throat-Fuller1 & 2** morphs (*found in Creation Control/Head Shapes*).

IK Concerns

Some poses may go askew when IK is turned on. By default, Poser’s IK feature is turned off when loading a bird. To turn it on, select the “Figure” category from the main tool bar and “Use Inverse Kinematics” from the submenu.

By default, DAZ Studio’s IK feature is turned on when loading a bird. This will cause the thigh and shin rotations change when the character is moved. The **CTRL K** keypress will turn IK on and off in DAZ Studio. IK doesn’t work that well in Studio, so I suggest selecting the character in the **Scene tab** and simply deleting the two IK body parts to remove IK.

Songbird ReMix Characters

Field Guide

American Goldfinch

American Crow

Cactus Wren

Cedar Waxwing

House Finch

Northern Mockingbird

Phainopepla

Purple Finch

Red-winged Blackbird

Tri-colored Blackbird

Swainson's Thrush

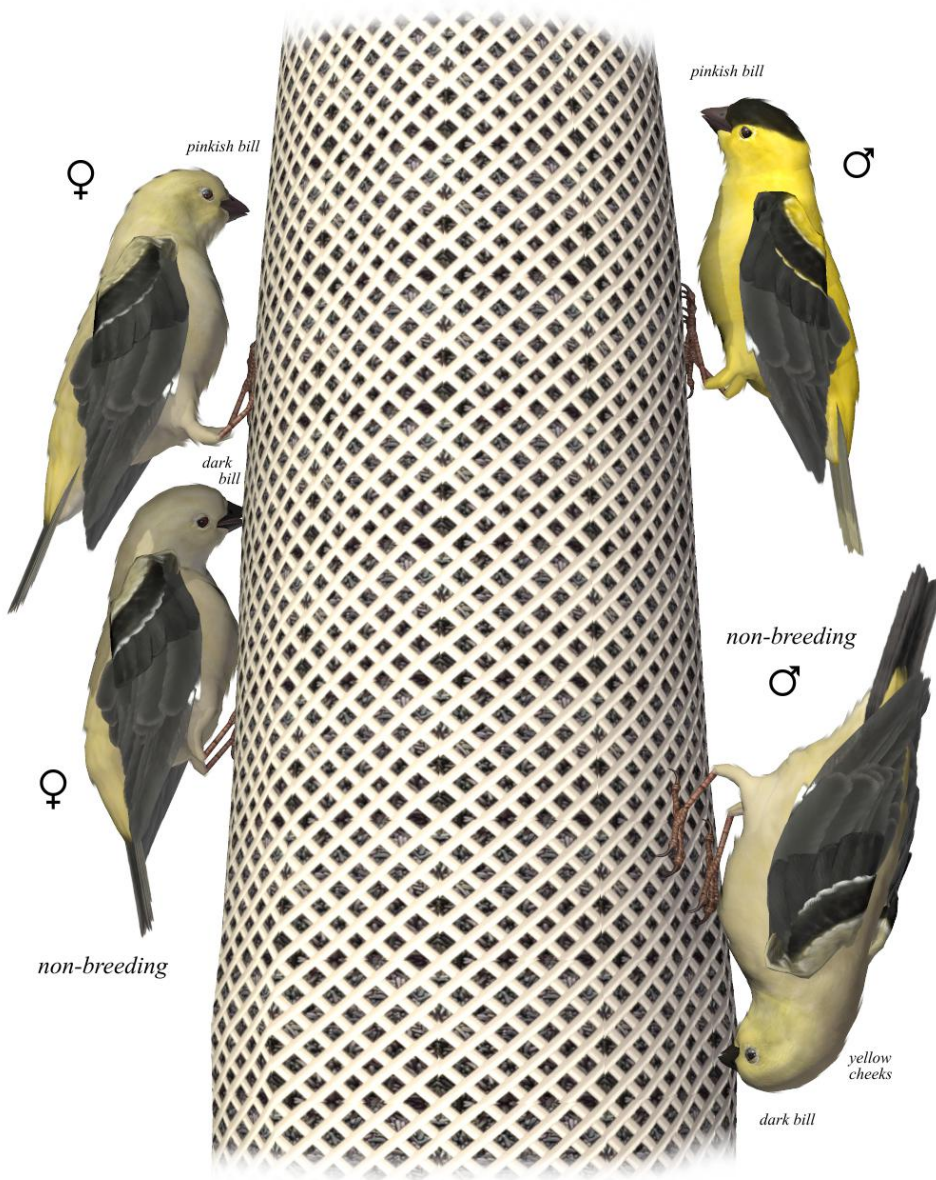
Western Bluebird

Common Name: American Goldfinch
Scientific Name: *Spinus tristis*

Size: 4.3-5.1 inches (11-13 cm)

Habitat: North America; throughout the United States, Southern Canada and Northern Mexico.

This goldfinch's main natural habitats are weedy fields and floodplains, where plants such as thistles and asters are common. They're also found in cultivated areas, roadsides, orchards, and backyards. They can be found at feeders any time of year, but most abundantly during winter.



Status: Least Concern. **Global Population:** 42,000,000 mature individuals with a slight decreasing population trend. There has been a small decline between 1966 and 2014, according to the North American Breeding Bird Survey. Partners in Flight estimates that 91% of the population spends some part of the year in the U.S., 33% in Canada, and 6% wintering in Mexico.

Diet: Seeds from composite plants (in the family Asteraceae: sunflowers, thistle, asters, etc.), grasses, and trees such as alder, birch, western red cedar, and elm. At feeders prefers

nyjer and sunflower seeds.

These are active and acrobatic little finches that cling to weeds and seed socks, and sometimes mill about in large numbers at feeders or on the ground beneath them. Goldfinches fly with a bouncy, undulating pattern and often call in flight, drawing attention to themselves.

Breeding: Adult males in spring and early summer are bright yellow with black forehead, black wings with white markings, and white patches both above and beneath the tail. Adult females are duller yellow beneath, olive above. Winter birds are drab, unstreaked brown, with blackish wings and two pale wingbars.

The nest is an open cup of rootlets and plant fibers lined with plant down, often woven so tightly that it can hold water. The female lashes the foundation to supporting branches using spider silk, and makes a downy lining often using the fluffy “pappus” material taken from the same types of seedheads that goldfinches so commonly feed on. It takes the female about 6 days to build the nest. The finished nest is about 3 inches across on the outside and 2-4.5 inches high.

Two to seven blue-white eggs with faint brown spots on the large end. Nests are made with plant fibers and sewn together with spider silk. Nesting does not start until July.

Cool Facts: The American Goldfinch changes from winter plumage to breeding plumage with a complete molt of its body feathers. The goldfinch is very gregarious throughout the entire year staying in flocks.

It is believed that the late timing of the goldfinches nesting may be related to the availability of suitable nesting materials and seeds for feeding young.

While the American Goldfinch is mostly monogamous, a number of females switch mates after producing a first brood. The first male takes care of the fledglings while the female goes off to start another brood with a different male.

Four subspecies that differ in extent of white or pale markings in the wings and tail and in saturation and tone of mantle coloration. Body size is useful to distinguish extreme individuals.

- *S. t. tristis*. First reported by Linnaeus in 1758. The nominate species breeds northward to eastern Manitoba eastward to southwestern Newfoundland, but resident from Great Lakes and New England south to northeastern Texas east to western South Carolina and coastal North Carolina. It winters southward to northwestern Mexico, Gulf Coast, and throughout Florida. It is vagrant to central Arizona. Its plumage rich yellow and has a white or pale markings in remiges and rectrices restricted.

- *S. t. pallidus*. First reported by Mearns in 1890. It breeds in the Rocky Mountains, Intermountain West, and western Great Plains from central Alberta and western Manitoba southward to at least northern Utah and northern Colorado. It winters from northern Great Basin southward to northern Sonora and western Texas. It is similar to the nominate, but paler overall and white or pale markings in remiges and rectrices more extensive. Its body size averages larger, particularly compared to nominate subspecies at western fringe of its range.
- *S. t. salicamans*. First reported by Grinnell in 1897. A resident on the Pacific Coast (west of the Cascades and Sierra Nevada) from southern Oregon to southernmost California. Some winter southward to northwestern Baja California and eastward into the Mojave and Colorado Deserts as far as southeastern California and western Arizona. It is similar to the nominate species, but browner overall and white or pale markings in remiges and rectrices more extensive, matching pattern in *S. t. pallidus*. Its body size averages slightly smaller than in the nominate. It differs from other subspecies in the extent of its prealternate molt, which is reduced greatly.
- *S. t. jewett*. First reported by van Rossem in 1943. It breeds in the Pacific Northwest from southwestern British Columbia, including Vancouver Island, and resident from northern Washington south to southwestern Oregon and perhaps northwestern California. It is like *S. t. salicamans*, but overall darker and browner still.

Common Name: American Crow
Scientific Name: *Corvus brachyrhynchos*

Size: 16-21 inches (40-53 cm)

Habitat: North America; its range extends from the Pacific Ocean to the Atlantic Ocean in Canada, on the French islands of Saint-Pierre and Miquelon, south through the United States, and into northern Mexico.

American Crows are found in a wide variety of habitats, particularly in open landscapes, with scattered trees and small woodlots. The clearing of hardwood and coniferous forests, planting of trees around prairie homesteads and urban centers, and tilling of agricultural land has created additional habitat for the species, which is now more abundant than it was when the first European settlers arrived.



Status: Least Concern. **Global Population:** 31,000,000 mature individuals. Populations are common and widespread with a slight increase since 1950. Crows have been killed in large numbers by humans, both for recreation and as part of organized campaigns of extermination.

American crows are protected internationally by the Migratory Bird Treaty Act of 1918. Despite attempts by humans in some areas to drive away or eliminate

these birds, they remain widespread and very common. Populations may decrease due to the high susceptibility from West Nile Virus.

Diet: Omnivorous. A wide variety of invertebrates (terrestrial and marine); amphibians; reptiles; small birds and mammals; birds' eggs, nestlings and fledglings; grain crops; seeds and fruits; carrion; and discarded human food.

It forages alone, in pairs, in families, or in small to large flocks. It is vigilance while feeding in an urban environment decreased as group size, time of day, relative distance to source of disturbing factor (e.g., car traffic, degree of human activity), and duration of current day's precipitation increased. The group size alone was best predictor of vigilance while foraging. It obtains most its food on the ground by walking, sometimes hopping, when sees prey at a distance. It probes with bill into turf, flicking aside debris, and grabs or tilts larger objects, such as dry cow pies, sideways or forward with bill, to let them fall over and to expose hidden food.

Breeding: Sexes are alike, however male crows are slightly larger than females. Adults have glossed black feather tinged with violet. It has a stout, glossy black bill. The nares covered with stiff, bristle-like feathers. The iris is brown. The tips of the folded wings do not reach tip of tail at rest and the tail is slightly rounded. It is very similar in appearance to the Northwestern Crow (*Corvus caurinus*), this species is larger, has a higher-pitched voice, and is less social during the breeding season. The American Crow is also similar in appearance to the Fish Crow (*Corvus ossifragus*), which is smaller and has a distinct nasal voice. Where American Crow overlaps Northwestern Crow (e.g., Puget Sound, Washington) and Fish Crow (Atlantic seaboard and southeastern U.S.), identification is difficult, with voice the most reliable character.

American crows are socially monogamous cooperative breeding birds. Mated pairs form large families of up to 15 individuals from several breeding seasons that remain together for many years.

The nest is built by both sexes and is a large open cup of sticks lined and grass and mud. For one to 3 days prior to onset of incubation, the female sits in or next to the nest and gives a "Food-Begging" call. The male (and helpers) feed the female. Three to six pale blue-green eggs with brown markings are laid. Incubation lasts about 16-18 days. Brooding lasts 9-14 days.

Cool Facts: Crows are extremely intelligent birds. They are known for their problem-solving skills and amazing communication skills. For example, when a crow encounters a mean human, it will teach other crows how to identify the human. In fact, research shows that crows don't forget a face.

While crows are carrion eaters they are not specialists at being scavengers. Their bills are not strong enough to break through the skin of road kill mammals;

they must wait for others to open up their meal or wait for the carrion to decompose.

American Crows communally roost. Roosting areas are established and often are used for decades. Some are reported to be hundreds of years old. Roosts can be of a few hundred, several thousand, or even up to several million crows.

Crows often lead a double life. They may spend part of the day at home with its family in town and the rest of the day with a flock feeding in the country.

Large-scale persecution during the nineteenth century and first half of the twentieth made crows shy of people. They learned quickly, however, that there is safety from guns in villages and cities and that food is abundant there.

There are four recognized subspecies:

- *C. b. brachyrhynchos*. First reported by Brehm in 1822. The nominate species, the Eastern Crow, is found in eastern North America (northern populations migratory) from southwestern Northwest Territories eastward to Newfoundland southward to eastern Texas and southern New Jersey (excluding southeast U.S.). Boundary in west uncertain, range extended westward to include Montana and Wyoming south to central Arizona by Johnston (Johnston 1961b), who also synonymized *C. b. paulus* with nominate *brachyrhynchos*. Birds in Great Basin region (s. Idaho, Utah, and Nevada) were ascribed to *C. b. brachyrhynchos* by Richards (Richards 1971), who noted small bill in these populations matched *C. b. hesperis*. Large; bill long, decurved, and blunt (nares to tip 31.4–44.0 mm); tarsus relatively short: 50.8–64.4 mm; female: wing 284–327 mm, tail 158–187 mm (n = 100); male: wing 295–341 mm (n = 75), tail 162–199 mm (n = 71).
- *C. b. paulus*. First reported by Howell in 1913. The Southern Crow is a resident in the eastern and southeastern U.S. from Delaware and Maryland southward through south and eastern West Virginia, southeastern Kentucky, and eastern Tennessee and southwestward to southeastern Texas including Louisiana, southeastern Arkansas, and Mississippi; southern limit uncertain but at least to northwestern Florida. The validity of this race has been doubted, but authors disagree on how to treat them. Synonymized with the nominate *brachyrhynchos*. Although practically inseparable from *C. b. hesperis* based on measurements (wing and tail lengths; but more data needed with weights and bill lengths of known adults), suggestion by Rea that *paulus* be synonymized with *hesperis* would seem to have little biogeographic support. May intergrade in northern Florida Peninsula with *C. b. pascuus*, as characteristics for latter race most distinct only in southern two-thirds of peninsula.

- *C. b. pascuus*. First reported by Coues in 1899. The Florida Crow is a resident in the Florida Peninsula. It has proportionately large feet and a relatively long tarsus and bill. Characteristics best developed in southern portion of peninsula (see *C. b. paulus*, above), where also differs behaviorally (see Geographic variation, above). Measurements: bill (nares to tip) 32.7–41.9 mm; tarsus relatively long (55.4–65.9 mm); female: wing 278–320 mm (n = 49), tail 156–179 mm (n = 48); male: wing 288–327 mm, tail 159–188 mm (n = 32).
- *C. b. hesperis*. First reported by Ridgway in 1887. The Western Crow is a resident (northern populations migratory) from northern British Columbia, central Alberta, central Saskatchewan southward to northwestern Baja California, central Arizona, and north-central New Mexico. Birds in Great Basin region (central-southernmost Idaho and southeastern Wyoming southward to central Arizona and central New Mexico) said to have slender bill that is laterally compressed (especially distally) ascribed to race “*C. b. hargravei*” by Phillips. Small; bill small, straight, and sharp (nares to tip 28.3–40.1 mm); tarsus 48.8–63.5 mm; female: wing 272–317 mm, tail 147–179 mm (n = 100); male: wing 277–330 mm, tail 153–188 mm (n = 100). Measurements for “*hargravei*” in Pyle 1997c: large; bill small, straight, and sharp (nares to tip 30.0–38.0 mm); tarsus relatively short (50.5–65.3 mm); female: wing 305–323 mm (n = 15), tail 169–183 mm (n = 14); male: wing 310–333 mm (n = 15), tail 178–196 mm (n = 14).

There is debate of whether the Northwestern Crow (*C. b. caurinus*) is a true subspecies. Its ancestors became separated by Ice Age glaciation west of the Rocky Mountains. It is endemic to Pacific temperate rain forests where it all but replaces the American crow. Only in the Seattle region do they co-occur to any extent. There is a marked difference in voice.

Common Name: Cactus Wren

Scientific Name: *Campylorhynchus brunneicapillus*

Size: 7-9 inches (18-22cm)

Habitat: North America; a non-migratory resident of scrub communities of the southwestern United States and northern and central Mexico.

This wren is considered one of the keystone bird species in the creosotebush (*Larrea tridentata*) scrub communities of the “warm” Chihuahuan, Sonoran, and Mojave Deserts; also inhabits Tamaulipas thorn-shrub and coastal sage scrub.



Status: Least Concern. **Global Population:** 8,000,000 mature individuals with a declining population trend. Although the Cactus Wren is considered a hardy species that readily adapts to various human activities and landscape modifications in the desert, populations that occupy coastal sage scrub in southern California are declining in the wake of several large wildfires, and in

response to other stressors not completely understood, but presumably linked to fragmentation of habitat and urbanization in general.

Diet: Primarily insectivorous; typical prey consists of beetles (*Coleoptera*), ants and wasps (*Hymenoptera*), grasshoppers (*Oedipodinae*), butterflies and moths (*Lepidoptera*), true bugs (*Hemiptera*), and spiders (*Arachnida*), although fruit also readily consumed.

It generally forages on the ground, turning over fallen leaves and other debris in search of insects. It also searches through bushes and probes tree bark that might be housing insects

Breeding: Sexes alike. Adult iris red; bill long and slightly curved; upperparts brownish with distinct white supercilium, white-streaked back; wings and tail heavily barred with black and white; underparts white becoming cinnamon-buff on flanks and belly, and heavily spotted and streaked throughout with black. First-year birds with gray to reddish brown iris; compared with adult, bill shorter and straighter, crown darker, markings on back and wing with less contrast, underparts typically buffier, with sparser and less distinct spotting

The female initiates building of breeding nest. A domed nest with a tunnel entrance is created usually in cactus or a thorny tree. 2-7 pink eggs with small red-brown spots on the larger end are laid.

Cool Facts: The Cactus Wren is the largest wren in North America and can survive without any freestanding water.

Cactus wrens are very aggressive, territorial and bold. They frequently will destroy other birds nests found within their territory. Cactus wrens will mob nest predators. In one account, "A pair was observed attacking a Yuma antelope squirrel so vigorously that the squirrel became impaled on the thorns of a cactus called the cholla. The wrens continued to peck the squirrel until it was knocked to the ground where it escaped."

The extreme cold of the desert nights has more impact than the heat of the day on a Cactus wren's nesting success.

There are 7 recognized subspecies:

Peninsular group (Baja California):

- *C. b. affinis*. First reported by Xantus in 1859. It is a resident on southern Baja California peninsula south through the Cape Region. All rectrices apart from the innermost are black with white bars throughout; flanks whitish; ventral spots large and distributed uniformly; pectoral spots doubled on each feather (i.e., black is separated by pale along the shaft); dorsal streaks

confined (or nearly so) to the shaft; chin spotted; and dorsum dark rusty brown.

- *C. b. bryanti*. First reported by Anthony in 1894. A resident in northwestern Baja California from San Telmo southward to Punta Prieta. It is similar to *C. b. affinis*, but the dorsum is darker; the crown less rufescent, the feathers without pale median spots; and dorsal streaks narrower. Apparently intergrades with *C. b. affinis* from Punta Prieta southward to San Andrés and with *C. b. sandiegensis* northward to Punta Banda and Ojos Negros.

Continental group (southwestern United States and mainland Mexico):

- *C. b. brunneicapillus*. First reported by Lafresnaye in 1835. The nominate subspecies is a resident from southeastern Arizona and central Sonora eastward to central Texas and south to northwestern Sinaloa eastward through northern Chihuahua, northern Coahuila, and central Nuevo León to northern Tamaulipas. The rectrices largely black, with only the outer rectrix (R6), or perhaps also R5, barred with white in adult (juvenile rectrices may have white barring or markings on the inner rectrices); flanks washed buff, contrasting with a pale belly. The abdominal spots fine and linear; pectoral spots ovoid and not separated by white along shaft. The chin immaculate white or nearly so; dorsal streaks often interrupted along shaft; and the dorsum grayish brown.
- *C. b. seri*. First reported by van Rossem in 1932. It is a resident on Isla Tiburón, Sonora. It is like *C. b. brunneicapillus* but the ventral spots are large (roughly twice as wide) and the flanks less buff (whiter, as on peninsular birds); also the bill averages short.
- *C. b. anthonyi*. First reported by Mearns in 1902. A resident from north-coastal southern California (south Ventura and Los Angeles Counties) eastward through the deserts of southern California, southern Nevada, and e. Arizona and southward to northeastern Baja California (south to San Felipe) and northwestern Sonora. It is like the nominate subspecies but with the crown more rufescent (and thus more contrasty) and the mantle paler and grayer.
- *C. b. sandiegensis*. First reported by Rea in 1986. A resident in coastal sage scrub of southwestern California from south Orange County southward to extreme northwestern Baja California. In general, the subspecies is similar to *C. b. anthonyi* but differs in its "larger ventral spotting, reduced abdominal buff, and greater white tail barring". It differs from *C. b. bryanti* in "its less brown dorsum, less barred tail, generally single-spotted chest feathers, and tendency toward a chest patch".
- *C. b. guttatus*. First reported by Gould in 1837. A resident on the central Mexican Plateau from southern Chihuahua east to central Tamaulipas and southward to the Mexico's Transvolcanic Belt. It is like *C. b. brunneicapillus* but the tail is short, the interscapular area is less grayish, and the flank spots are rounder.

Common Name: Cedar Waxwing
Scientific Name: *Bombycilla cedrorum*

Size: 6-7 inches (14-17cm)

Habitat: North America; the northern limits of breeding range include southeastern Alaska, west.-central and northeastern British Columbia, southeastern Yukon, northern. Alberta, central Saskatchewan, southern Manitoba (rare and local), southern Ontario, central Quebec, the Magdalen Islands, and Newfoundland (except for the northwest). It is widespread in the Maritime Provinces.

The breeding range extends south to extreme northwestern California, southern Oregon, southern Idaho, northeastern Nevada (rare but regular, Ruby Mountains and Lamoille Valley), north-central Utah, Wyoming (primarily riparian corridors, up to ca. 2,400 m elevation), west-central to southwestern Colorado (uncommon and irregular, up to 2100 m elevation), Nebraska, eastern Kansas, southern Missouri, northwestern Arkansas, central and eastern Tennessee, extreme northeastern Georgia (7 counties in the mountains and upper Piedmont), western South Carolina, and western North Carolina.

It winters south with concentrations in southeastern coastal plain and central Texas due to the high densities of



junipers (*Juniperus spp*). It also winters from southernmost Canada (southern portions of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, extreme southern Quebec, southern New Brunswick and southern Nova Scotia southward throughout the U.S. and Central America to Panama. From main wintering area in southern U.S., it becomes progressively less common southward into Central America. It is found throughout Mexico, but becomes uncommon to rare in the Yucatán Peninsula and south coastal lowlands.

The reliance of Cedar Waxwings on the fruits of shrubs and small trees, and their mutualistic role as seed dispersers, prescribes their habitat as open woodlands and shrubby fields that harbor these fruit-bearing plants. However, their mobility enables them to feed even on fruit crops that are relatively isolated in manicured parks and urban areas. As true seed dispersers in mutualism with fruiting plants, waxwings facilitate the development and/or maintenance of habitats upon which they depend.

Status: Least Concern. **Global Population:** 15,000,000 mature individuals. Populations are increasing throughout its range.

Diet: Fleshy fruits; also insects, taken by fly-catching or gleaning from vegetation. Cedar berries have historically dominated its winter diet. In recent years, species has relied increasingly on crops of ornamental fruits planted in urban areas, especially during winter.

It typically plucks fruit while grasping a branch, either upright or dangling. It may also briefly hover to snatch fruits. It takes insect prey either by aerial sallies or by gleaning from vegetation. It often sallies over ponds or streams from adjacent vegetation to capture emergent insect prey. It typically forages from a prominent perch. The sallies are slower and less agile than those of flycatchers. Fly-catching of snowflakes has been reported. Sometimes it executes extended foraging flights over water, making quick turns to capture aerial prey. It visually examines foliage or bark while gleaning prey from vegetation.

Breeding: It is the smaller of the 2 North American waxwings. It is a sleek, crested bird, with overall gray-brown plumage. Adults have a sharp black face mask edged with white, black chin-patch, variable numbers of red, waxlike “droplets” on tips of secondaries, and pale yellow belly feathers. The bill is small, the wings pointed and the tail is square with distinct yellow band at terminal tip. The legs and feet are relatively small.

Sexes differ little, but a male can be distinguished by a more extensive, and darker, black chin-patch, although this is extremely difficult to discern in the field. In the breeding season, female slightly heavier than male.

Individuals with orange-tipped rectrices have appeared in the last 35 years, a result of ingestion of exotic honeysuckle fruits (*Lonicera spp.*) during molt.

Pairing occurs as early as mid-April, during spring migration. Courtship-Hopping frequently occurs at least into mid-June in Ohio and Ontario. Nest building begins in early June and peaks in by the end of June. Nests are usually started on the day a site is chosen.

Both mates gather material and deliver it to nest site together, but the female does most of the nest construction, weaving materials into the nest while sitting in the nest cup. The nest is usually located in the fork of a horizontal branch; occasionally placed in a fork at the trunk of a tree, in a vine supported by the tree or shrub, or saddled on a horizontal branch. Four to five eggs are laid. During the incubation, the female turns her eggs frequently (at about 5-min intervals), preens, stretches, and freezes and erects her crest when alarmed. The male typically perches in a high, exposed place (guarding perch) overlooking the nest standing guard. Female broods young at night until they are about 12 days old. Adults feed the young for 6–10 days after young leave the nest, if there is a second brood, only the male feeds the fledged young.

Cool Facts: Cedar waxwings lead nomadic lives following the ripening of fruit. Winters are spent in the southern regions of North American and summers in the north.

The name "waxwing" comes from the waxy red areas found in variable numbers on the tips of the secondary feathers of some birds. It is believed that these red areas may be a signaling function in mate selection.

While most Cedar Waxwings have yellow tail tips, ones with orange found in the Northeast began appearing in the 1960's. The coloration is caused by berries from an introduced species of honeysuckle to the area. If a waxwing eats the honeysuckle berries while it is growing a tail feather, the tip of the feather will be orange.

Unlike most birds that regurgitate fruit seeds that they eat, the Cedar waxwing defecates the seeds. Waxwings can live entirely on fruit for several months but are vulnerable to alcohol intoxication and death from eating fermented fruit.

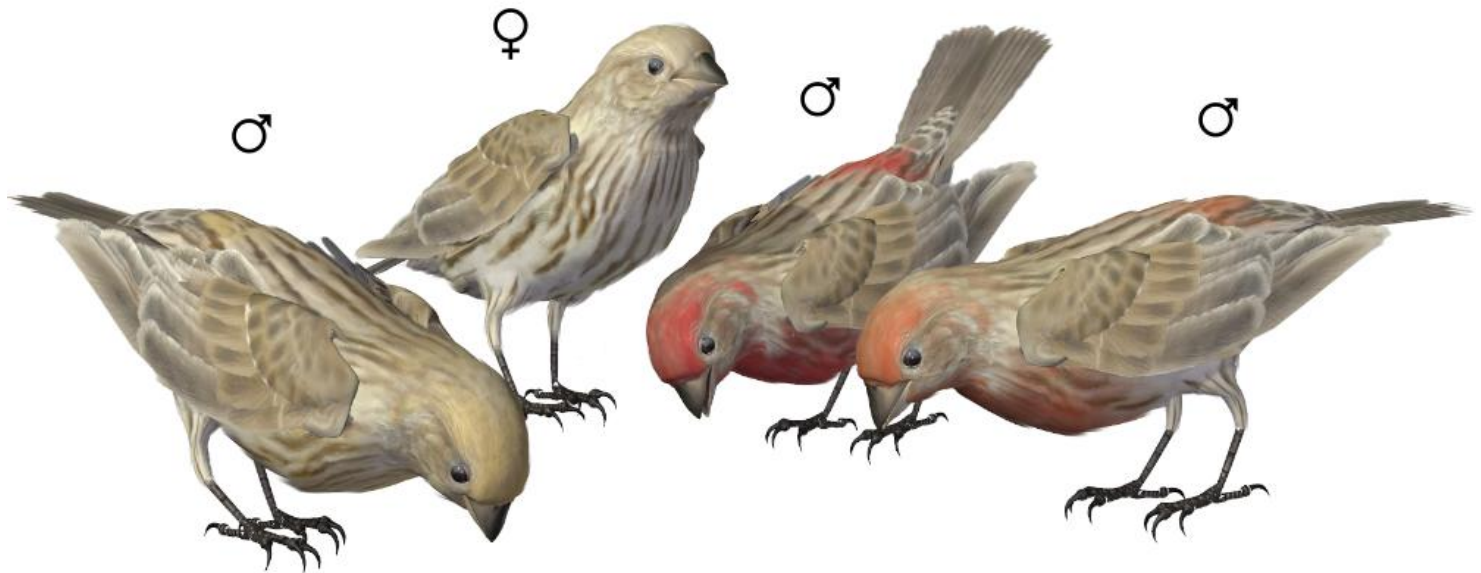
Common Name: House Finch

Scientific Name: *Haemorhous mexicanus*

Size: 5-6 inches (13-14 cm)

Habitat: North America; found throughout the United States and Mexico with the exception of the Midwest. Introduced to Hawai'i and the eastern U.S.

In the West, the house finch prefers a variety of undisturbed habitats such as dry desert, desert grassland, desert shrubland, particularly areas with cholla cactus stands, chaparral, oak savannah, juniper-oak woodland, riparian areas, open coniferous forest, and subalpine bushes at elevations up to 3,500 m, as well as disturbed areas in association with humans. It avoids dense coniferous stands, although is common along edges. In urban areas, it prefers areas with decorative ornamental shrubs, in particular, junipers. It occupies open grasslands and northern short grass prairie in areas where abandoned farm equipment or buildings provide structures for nesting and perching.



In the East, it almost exclusively prefers settled areas. Areas with buildings, lawns, and small conifers, but also found in urban centers where commonly nests in high-rise buildings are most common. Smaller numbers occur in rural areas around houses and out-structures on farms. It is rare in extensive coniferous and deciduous forests away from human settlements. However, the breeding habitats often associated with coniferous trees and evergreens, especially in the northern

part of the range. They avoid mature pine stands and 20-30 year old monoculture pine plantations.

In Hawai'i, it is widespread in human settlements, agricultural areas, grasslands, and native forests, particularly the mamane-naio (*Sophora chrysophylla-Myoporum sandwicense*) 'ohi'a-koa (*Metrosideros collina-Acacia koa*) forests. Water troughs for livestock and gamebirds allow large populations to inhabit dry interior of Hawaiian Islands. It is absent from extensive areas of virgin rainforest.

Status: Least Concern. **Global Population:** 21,000,000 mature individuals. Common and benefiting from human development. Eastern populations have been cut in half due to finch eye disease.

Diet: In all seasons, 97% of diet includes seeds, buds, flowers, leaves, and fruits. It is the same diet for nestlings, but they also consume and feed to young nestlings, fly larvae, small insects and suet.

Finches exhibit highly variable foraging behavior. Most often they feed on the ground, perches on grasses, shrubs, cacti, trees and bird feeders. In the western U.S., they frequently hover to fruits and flowers and can feed and drink water droplets while hovering.

Breeding: A small, sexually dichromatic finch. It is generally drab gray-brown with heavy streaking below and plain head pattern. Males have carotenoid pigmentation ranging in color from pale yellow to bright red variously on crown, back, eyebrow stripe, cheek, shoulder patch, rump, and ventral plumage. Some females show faint carotenoid pigmentation on the rump, crown, and breast, but never as bright as males, and usually wholly brownish. Juveniles resemble adult females but are more finely streaked below with loosely-textured body plumage, and buffy fringed wing coverts, and they acquire adult plumage at 30-60 days of age.

Pair Formation occurs primarily in winter flocks in January through March, but may continue less actively throughout the breeding season as a result of mate switching and long distance breeding dispersal. Nest building starts in mid-March but can occur as early as February, weather dependant.

Both sexes participate in nest site prospecting, which can last up to 2 weeks, but usually 1-8 days. Relative participation of sexes varies among pairs – sometimes one sex leads and the other follows, sometimes males and females prospect in different, nearby locations simultaneously and independently. Frequently, pairs start building at two sites before abandoning one or both and prospecting more or continuing with one site. A wide variety of nest sites including pine, spruce, and palm trees, olive trees, cacti, rock ledges, vents, ledges or ivy on buildings, street lamps, hanging planters, windowsills on high-rise buildings, and very

occasionally abandoned nests of other birds. It rarely uses broad-leaf deciduous trees or cavities.

In all populations, only the female builds the nest. The male generally closely follows the female during nesting material gathering trips. The male occasionally brings materials to the nest. One to six eggs are laid in an open cup nest of grasses and small twigs.

Cool Facts: The house finch is not endemic to the eastern United States. In 1939, a small number of finches were turned loose on Long Island, New York, and within the next 50 years spread across the entire East Coast.

The red or yellow coloring of a male House Finch comes from its food it eats during the molting period. The more pigment contained in the food, the redder the male will become. Coloration plays an important part of the mating cycle. Females look for the reddest males they can find, assuring their nestlings of a good food provider.

Eleven subspecies are recognized:

- *H. m. frontalis*. First reported by Say in 1823. A resident in the western United States from the Pacific Coast, including on the Channel Islands, eastward to the western Great Plains and southward to northwestern Mexico, including islands off northwestern Baja California. On the male, the throat and upper breast are red (varying to orange or yellow); the ventrum moderately dark grayish brown; ventral streaks are broad; the dorsum is medium gray-brown; crown suffused with red. The bill size is moderate to small and the body size is large.
- *H. m. amplus*. First reported by Ridgway in 1876. It is a resident on Isla Guadalupe off east-central Baja California. It is similar to *H. m. frontalis* but the dorsum darker and browner (less gray) and the bill is heavy and long, also the body averages larger overall.
- *H. m. mcgregori*. First reported by Anthony in 1897. A former resident on Isla San Benito, Baja California Sur; now extinct. It was like *H. m. frontalis* except the dorsum was both paler and grayer and bill larger and compressed basally.
- *H. m. ruberrimus*. First reported by Ridgway in 1887. A resident in the southern Baja California peninsula. It is like *H. m. frontalis*, but the body size is small and the ventral streaks moderately narrow.
- *H. m. sonoriensis*. First reported by Ridgway in 1901. A resident in northwestern Mexico from southern Sonora to southwestern Chihuahua to northern Sinaloa. It is like *H. m. ruberrimus* but the red on the ventrum is more saturated and extends farther into the breast.
- *H. m. coccineus*. First reported by Moore in 1939. A resident in montane western Mexico from southern Nayarit to Michoacán. It is similar to *H. m.*

frontalis but the dorsum is dark gray-brown, the crown is brown (i.e., lacking red suffusion).

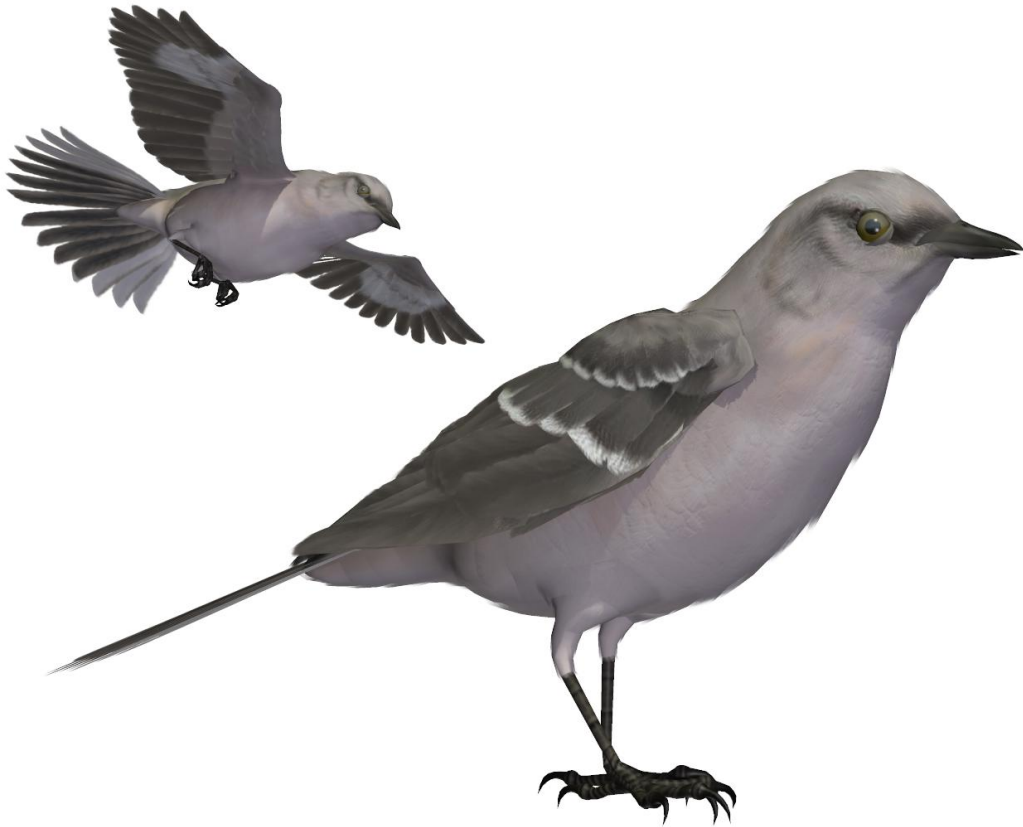
- *H. m. potosinus*. First reported by Griscom in 1928. It is a resident in the northern Mexican Plateau from central Chihuahua and southwestern Texas southward to Zacatecas, southernwestern Tamaulipas, and San Luis Potosí. It is like *H. m. coccineus* but redder on the throat and the breast, lacking orange tones.
- *H. m. centralis*. First reported by Moore in 1937. A resident in the central Mexican Plateau from northeastern Jalisco eastward through Aguascalientes and southern Zacatecas to western Hidalgo and southward to northern Michoacán eastward to Querétaro. It is similar to *H. m. potosinus* but generally less dark overall and larger.
- *H. m. mexicanus*. First reported by Müller in 1776. The nominate species is a resident in the southern Mexican Plateau from eastern Michoacán eastward to Puebla and southward to Morelos and northern Oaxaca. It is like *H. m. centralis* but the breast is browner (i.e., reddish color confined, or nearly so, to the throat) and the red of throat is less saturated.
- *H. m. griscomi*. First reported by Miller in 1939. A resident in the Sierra Madre del Sur of Guerrero. It is like *H. m. mexicanus* but the abdomen and flanks are paler.
- *H. m. roseipectus*. First reported by Sharpe in 1888. A resident in central Oaxaca. It is similar to *H. m. griscomi* but with a red breast (not brown) and ventral streaks more narrow.

Common Name: Northern Mockingbird
Scientific Name: *Mimus polyglottos*

Size: 8-10 inches (21-26cm)

Habitat: North America; found throughout the United States and Mexico. Perhaps open areas and urban settings.

Status: Least Concern. **Global Population:** 45,000,000 mature individuals. Common and widespread. Populations are in decline but also spreading northward. Because of their use of human-dominated habitats mockingbirds are exposed to environmental contaminants. Urban mockingbirds were found to have more than ten times the concentration of lead in blood samples compared to rural mockingbirds.



Diet: Omnivorous, a wide variety of arthropods and fruits, also earthworms. Occasionally eats small lizards (*Anolis* spp.) and flowers.

It forages throughout the day and sometimes into crepuscular hours. In urban areas near bright lights, observed foraging until midnight. Most arthropods are

taken by walking, running, or hopping along the ground. It typically runs a short distance, stops, and lunges at prey on the ground. It also catches insects flying just above the ground. From a perch, flies down directly onto an arthropod at the ground surface, killing and dismembering prey there or carrying it back to the perch.

Breeding: Sexes are alike in appearance but males are generally heavier than females. The legs and tail are long, the wings are short for its size and rounded. The bill is moderately long and somewhat decurved. Adults have upper-parts gray to gray-brown with black posterior border to the wing. Two parallel, narrow white wing bars on proximal half of wing connected to broad, white wing patch which is conspicuous in flight. The central rectrices black, lateral rectrices partially to entirely white and are conspicuous in flight. The under-parts are white to white-gray. Albinism is reported, but very rare. Juveniles are gray, and largely similar to adult with the breast spotted, and the under-parts slightly buff. The eye color is darkish on juveniles but the iris of adults is bright yellow.

Mockingbirds build and use several nests during a breeding season. In Florida and North Carolina, nest building starts as early as late February, although March is more common. Two to six eggs are laid in an open cup nest made with twigs, grasses and leaves. It is built low in trees or shrubs.

Cool Facts: Mockingbirds are notoriously aggressive and attack anything they deem a predator; hawks, crows, cats and even humans.

The Mockingbird is known as the "American Nightingale" and sings loudly all day and into the night. Most nocturnal singers are usually single males and singing at nighttime is more common during the full moon cycle. The Mockingbird throughout its life adds new phrases to its song. While mimicking other birds' song, mockingbirds also mimic man-made sounds such as telephone rings and car alarms. Studies have found that mockingbirds have two distinct repertoires; one used in Spring/Summer and one used in Fall/Winter. Females also sing though they are quieter than the males and rarely sing in the summer.

Mockingbird frequently gives a "wing flash" display, where it half or fully opens its wings, showing off the big white patches. There's debate why this is done, some believe it is a territorial display.

There are three subspecies, one continental, the other two insular. Variation across mainland North America has been claimed to correspond to a larger, shorter-tailed, paler subspecies in the Southwest, but reported variations can be attributed to soiling or staining of specimens.

- *M. p. polyglottos*. First reported by Linnaeus in 1758. The nominate species is a resident through much of North America, from southern Canada southward to central Mexico and the northern Bahamas. Northern

populations are partially migratory. The chest is buffy gray; the inner web of rectrix 4 (third from outermost) is mostly dusky; the white at base of the primaries restricted.

- *M. p. orpheus*. First reported by Linnaeus in 1758. It is a resident on Grand Cayman, Jamaica, Cuba (including Isle of Pines), Inagua (the Bahamas), and Puerto Rico. The chest is whitish; the inner web of rectrix 4 white for at least half of length; the white at base of primaries restricted.
- *M. p. dominicus*. First reported by Linnaeus in 1758. A resident on Hispaniola. The chest is whitish; the inner web of rectrix 4 white for at least half of length; white at base of primaries extensive, with inner-most primary largely to completely white.

Common Name: Phainopepla
Scientific Name: *Phainopepla nitens*

Size: 7.1-8.3 inches (18-21 cm)

Habitat: North America; found throughout the American Southwest.

Found in saguaro cactus forests, desert washes with abundant mistletoe, orchards, chaparral, Joshua tree woodlands, oak and sycamore woodlands..

Status: Least Concern. **Global Population:** 3,200,000 mature individuals with a



declining population trend. Phainopepla populations have declined by an estimated 8% between 1970 and 2016. It is common throughout its range. Habitat loss from conversion of desert riparian areas for agricultural use has led to reductions in the number and size of breeding and wintering populations.

Diet: Small berries and flying insects.

It forages at fruiting shrubs, swallowing berries whole. It spends 4-9% of daylight hours consuming fruit. In Sonoran Desert, it defends fruiting mistletoe against other Phainopeplas and frugivorous birds. In California chaparral, it typically does not defend feeding territory. It occasionally locates fruiting shrubs by following other Phainopeplas.

Breeding: A sexually dimorphic slender, long-tailed songbird with a distinctive crest. Adult males are glossy black with red eyes and large white patches in the wings (visible in flight). Adult females are mousy grayish brown with red eyes. Immatures are similar to the female but with brownish eyes.

Pairs form in late February or March in Colorado Deser. In California, pairs form late April through May in coastal woodlands. The initial site selection is chosen by the male, although the female will choose there are alternative nest sites given. The nest is typically placed 2–5 m above ground on 5–10 cm wide branch of tree, often where branches fork, or on horizontal branch, or within a clump of mistletoe. Typical trees selected for nest sites include palo verde, mesquite, acacia, oaks, and sycamores. Two to three eggs are laid in a woven nest of twigs and fiber. Male and female divide incubation nearly equally during daylight hours. Male occasionally feeds berries to female upon replacing female on nest. Nestling fledge in 14-20 days.

Cool Facts: The name “Phainopepla” comes from the Greek word for “shining robe”. They rarely drink water, getting their moisture from berries instead. Phainopeplas love mistletoe berries and can eat over a thousand berries in a day.

Depending on the habitat, Phainopeplas can be very territorial. In the desert, they perch atop saguaro and ocotillos, fiercely defending their territories. In woodland areas, however, they share nesting areas. Phainopeplas winter in deserts and summer in woodland areas.

Phainopeplas, when pursued by predators or handled by humans, mimics the calls of other birds.

Two subspecies recognized, differentiated by wing and tail length. There is no known variation in plumage coloration.

- *P. nitens lepida*. First reported by Van Tyne in 1925. It is the smaller of the two subspecies: wing 86-94 mm (female), 88-96 mm (male); tail 82-95 mm (female), 86-99 mm (male). It occupies the U.S. portion of species range from California eastward to western Texas and southward to southern Baja California (Cape San Lucas) and northwestern Mexico. It winters southward to southern Tamaulipas and central San Luis Potosí, casually to Veracruz,

Guanajuato, and Aguascalientes. It spreads in summer eastward to southwestern Texas.

- *P. nitens nitens*. First reported by Swainson in 1938. The larger of the two subspecies: wing 91-100 mm (female), 95-105 mm (male); tail 91-100 mm (female), 95-107 mm (male). It ranges (possibly resident in part) from southwestern Texas, southward to the highlands of southwestern Tamaulipas, northwestern Durango, southern Chihuahua, southern Hidalgo, and northwestern Oaxaca. Both races are found in southeastern Sonora, where intergrades apparently exist.

Common Name: Purple Finch

Scientific Name: *Haemorhous purpureus*

Size: 5-6 inches (12-15 cm)

Habitat: North America; breeding habitat is coniferous and mixed forest in Canada and the northeastern United States, as well as various wooded areas along the U.S. Pacific coast. Birds from northern Canada migrate to the southern United States; other birds are permanent residents

Their breeding habitat is coniferous and mixed forest in Canada and the northeastern United States, as well as various wooded areas along the U.S. Pacific coast.

Status: Least Concern. **Global Population:** 6,400,000 mature individuals. Purple Finch populations decreased by almost 1.5% per year between 1966 and 2014, resulting in a cumulative decline of 52%. The purple finch population has declined sharply in the East due to the house finch. Most of the time, when these two species collide, the house finch out-competes the purple finch. This bird has also been displaced from some habitat by the introduced house sparrow.



Diet: Mainly seeds of coniferous trees and elms, tulip poplars, maples, and others. They also eat soft buds, nectar (extracted by biting the bases off flowers),

and many berries and fruit, including blackberries, honeysuckle, poison ivy, crabapples, juniper berries, cherries, and apricots. In winter you may see Purple Finches eating seeds of low plants like dandelions, ragweed, and cocklebur. They eat some insects, including aphids, caterpillars, grasshoppers, and beetles.

These birds forage in trees and bushes, sometimes in ground vegetation. Finches feed on flowers by crushing the base to get the nectar and leaving the upper flower undamaged. Similarly, fruit seeds are picked leaving the pulp.

Breeding: Adults have a short forked brown tail and brown wings. Adult males are raspberry red on the head, breast, back and rump; their back is streaked. Adult females have light brown upper parts and white under parts with dark brown streaks throughout; they have a white line on the face above the eye.

Courting males sing softly while hopping and fluffing feathers in front of the female, often holding a twig or grass stem in the beak. If things go well, the next step is a short flight about one foot straight up, followed by drooping the wings and pointing his beak to the sky. Mating may follow.

This finch nests far out on the limb of a coniferous tree or, particularly to the south of its breeding range, in deciduous trees such as oaks, maples, and cherries. Occasionally nests in shrubs or among vine tangles. Nests can be 2.5 feet up to 60 feet off the ground and are often built under an overhanging branch for shelter. Nests take 3-8 days to build, with the female doing most or all of the work. She makes the base from twigs, sticks, and roots, then lines the cup with fine grasses and animal hair. The finished nest is about 7 inches wide and 4 inches tall. Four eggs are laid in an open cup nest of grasses and small twigs.

Cool Facts: This species and the other "American rosefinches" were formerly included with the rosefinches of Eurasia in the genus *Carpodacus*; however, the three North American species are not closely related to the rosefinches of the Old World, and have thus been moved to the genus *Haemorhous* by most taxonomic authorities.

It's the attitude, not the size that matters... In aggressive actions, the smaller House Finch beats up the larger Purple Finch... this has led to declines in populations.

Aggressive Purple Finches show their agitation by leaning toward their opponent, neck stretched out and bill pointed at the other bird. This can intensify to standing upright, opening the beak or pointing it downward at opponent, and sometimes results in actual pecking attacks. During disputes at food sources and in flocks, females usually win out over males.

The “Western” purple finches have duller colors and have a slightly different wing shape than its east coast cousins. Easy Coasters are a wider variety of song and are more leisurely in sing it.

- *H. p. purpureus*. First reported by Ridgeway in 1896. The nominate species, the “Eastern” Purple finch is found in southern Canada (except in the southwestern portion) and the northeastern United States. It migrates mostly to the southeastern United States southward to central Texas and northern Florida.
- *H. p. californicus*. First reported by Ridgeway in 1896. This species breeds from southwestern Canada (British Columbia) southward along Pacific coast of western United States to California (Coast Ranges, Cascade Mountains and western Sierra Nevada). Non-breeding individuals are also found in southeastern California, Arizona and extreme northwestern Mexico (northwestern Baja California).a. It differs from *H. p. purpureus* in having its first primary longer than its fourth, generally more yellow- to olive-green in its body markings, sides and flanks of male strongly suffused with brownish, and red of male's rump darker and duller.

Common Name: Red-winged Blackbird
Scientific Name: *Agelaius phoeniceus*

Size: 7-9 inches (17-23 cm)

Habitat: North America; They breeds in marshes and uplands from east-central, south-central, and southeastern Alaska, southern Yukon, west-central and

southern Mackenzie, central Manitoba, northern Ontario, south-central Quebec, and Codroy Valley of Newfoundland south to northern Baja California, Arizona, New Mexico, southeastern Texas, the Gulf Coast, and Florida south to Boca Grande Key. In the Caribbean, the Red-winged Blackbird breeds in the northern Bahama Islands (south to Andros and Eleuthera). In Middle America, breeds on Atlantic slope of Mexico from Coahuila and Tamaulipas, and in the interior from Durango (and southern Chihuahua), south from southern Guatemala, the coastal Yucatán Peninsula (including Holbox Island and Cozumel Island), and northern Belize, with local populations in the



Caribbean and Pacific lowlands in Honduras, the Pacific lowlands and northern El Salvador, the Pacific lowlands of Nicaragua, and the Tempisque and lower Bebedero basins of Costa Rica, also in lowland Guanacaste and in Río Frío region of Caribbean slope .

They breed in a variety of wetland and upland habitats. Wetland habitats include freshwater marsh, saltwater marsh, and rice (*Oryza sativa*) paddies. Upland breeding habitats commonly include sedge (*Carex* spp.) meadows, alfalfa (*Medicago sativa*) fields and other crop lands, and old fields; breeds less commonly in wooded areas along waterways and in open patches in woodlands. It roosts during breeding season in habitats with dense cover, especially in wetlands

Status: Least Concern. **Global Population:** 130,000,000 mature individuals. Though they may be one of the most abundant native birds on the continent, Red-winged Blackbird populations declined by over 30% throughout most of their range between 1966 and 2014.

Diet: Mainly insects in the summer and seeds, including corn and wheat;+in the winter, they feed by probing at the bases of aquatic plants with their slender bills, prying them open to get at insects hidden inside. In fall and winter, they eat weedy seeds such as ragweed and cocklebur as well as native sunflowers and waste grains.

Male Red-winged Blackbirds spend much of the breeding season sitting on a high perch over their territories and singing. Females tend to slink through reeds and grasses collecting food or nest material. In fall and winter, Red-winged Blackbirds flock with other blackbirds, grackles, cowbirds, and starlings, feeding on open ground and roosting in flocks of thousands or millions of birds.

Breeding: A stocky, broad-shouldered blackbird with a slender, conical bill and a medium-length tail. Red-winged Blackbirds often show a hump-backed silhouette while perched; males often sit with tail slightly flared. ale Red-winged Blackbirds are hard to mistake. They're an even glossy black with red-and-yellow shoulder badges. Females are crisply streaked and dark brownish overall, paler on the breast and often show a whitish eyebrow.

Male Red-winged Blackbirds spend much of the breeding season sitting on a high perch over their territories and singing their hearts out. Females tend to slink through reeds and grasses collecting food or nest material. Both males and females defend nests from intruders and predators. Red-winged Blackbirds nest in loose groups in part because appropriate marshy habitat is scarce. Typically five or more (up to 15) females have to crowd their nests into any one male's territory. They typically mate with the territory holder, though many also mate with nearby males. In fall and winter, Red-winged Blackbirds flock with other blackbirds, grackles, cowbirds, and starlings, feeding on open ground and

roosting in flocks of thousands or millions of birds. Red-winged Blackbirds are strong, agile fliers.

Red-winged Blackbirds build their nests low among vertical shoots of marsh vegetation, shrubs, or trees. Females choose the nest site with some input from the male. Typically, she puts the nest near the ground (or water surface in a marsh), in dense, grass-like vegetation such as cattails, bulrushes, sedges, and Phragmites in wetlands; goldenrod, blackberry, or willow and alder trees in uplands; and wheat, barley, alfalfa, and rice plants. Females build the nests by winding stringy plant material around several close, upright stems and weaving in a platform of coarse, wet vegetation. Around and over this she adds more wet leaves and decayed wood, plastering the inside with mud to make a cup. Finally, she lines the cup with fine, dry grasses. One nest picked apart by a naturalist in the 1930s had been made by weaving together 34 strips of willow bark and 142 cattail leaves, some 2 feet long. When finished the nest is 4 to 7 inches across and 3 to 7 inches deep. Three to four blue-green eggs with dark streaks or blotches.

Cool Facts: There's many different subspecies of Red-winged Blackbirds that vary markedly in size and proportions. A field experiment was conducted that moved nestlings between populations and found that the chicks grew up to resemble their foster parents. The Bi-color morph Red-winged Blackbird is found primarily in Kern County, California.

Males fiercely defend their territory, spending up a the quarter of the daylight hours standing guard. Blackbirds have been known to attack horses and humans in this defense. Red-winged Blackbirds are highly polygynous, with one male can have up to 15 different females making nests in his territory. While a proud blackbird male might brag about his 15 wives and their offspring, often 25% of those offspring are actually sired by neighboring males.

Red-winged Blackbird forms roosting congregations throughout the year. In the summer it will roost in small numbers but in the winter it can form huge congregations of several million birds. It commonly shares its winter roost with other blackbird species and European Starlings.

Red-winged Blackbirds are considered crop pests and made the news several years back when farmers killed off a large number of blackbirds to defend their "bird seed" crop in an ironic twist.

- *A. p. phoeniceus*. First reported by Linnaeus in 1766. It breeds from southeastern Alaska eastward through northwestern and central Canada to Nova Scotia and Prince Edward Island, and south to east-central Arizona east to southern Georgia (Charleston, South Carolina). It winters across eastern North America, north, at least rarely, to southeastern Canada. Adult male are flat black, with the lesser wing coverts salmon- to cherry-red and

median wing coverts yellowish buff. The adult female is predominantly brown, with the ventrum tan and streaked heavily with fuscous, the throat pink, and the supercilium tan. Variation in this taxon is complex and largely clinal, although some sets of populations that span small geographic areas may constitute diagnosable subspecies.

- *A. p. caurinus*. First reported by Ridgway in 1901. Largely resident coastally from southwestern British Columbia southward to California; some winter inland to central California. It is similar to the nominate, but the bill is longer and slenderer, the dorsum is rustier in winter, and the median wing coverts are rich buff (not straw yellow). The ventral streaks on female are blacker and heavier.
- *A. p. mailliardorum*. First reported by van Rossem in 1926. A resident in central coastal California (Palo Alto, Santa Clara County, California). It is similar to *A. p. caurinus*, but the bill is shorter, the dorsum is less rusty in winter, and the female's ventrum is more extensively blackish.
- *A. p. neutralis*. First reported by Ridgway in 1901. A resident in southwestern California and northwestern Baja California. It is like *A. p. mailliardorum*, but is smaller and the female paler overall.
- *A. p. californicus*. First reported by Nelson in 1897. The California Bi-colored Blackbird is a resident in Great Valley of California, where it is sympatric with *A. tricolor*. It is like *A. p. neutralis*, but male median wing coverts black (not yellow).
- *A. p. aciculatus*. First reported by Mailliard in 1915. A local resident in montane valleys of south-central California (Lake Isabella, Kern County, California). It is like *A. p. neutralis*, but is larger overall with the bill slender (akin to that of *A. tricolor*) and the female is generally paler.
- *A. p. nevadensis*. First reported by Grinnell in 1914. It is largely resident from south-central British Columbia southward through central Washington and northern Idaho to south-central California and southern Nevada. It is similar to *A. p. caurinus*, but the bill is stouter and the female's ventrum is less buffy.
- *A. p. sonoriensis*. First reported by Ridgway in 1887. It is partly resident from southeastern California and southern Nevada east to central Arizona and south to northeastern Baja California and northern Sonora; it winters southward to southern Baja California, southern Sinaloa, and central Durango. It is similar to *A. p. nevadensis*, but bill longer and more slender and the female paler (less buff) with ventral streaks finer.
- *A. p. nyaritensis*. First reported by Dickey and van Rossem in 1925. A resident on the Pacific slope from Nayarit southward to northern El Salvador. It is similar to *A. p. sonoriensis*, but the female darker and more richly colored; the size is moderate (male wing chord 122–130 mm; 53).
- *A. p. gubernator*. First reported by Wagler in 1832. The "Mexican Bi-colored Blackbird" is a resident in central Mexico from Durango southward and eastward through eastern Jalisco to the Valley of Mexico. It is similar to *A. p. californicus*, in that the male's median wing coverts are black (not yellow); female's ventrum nearly uniform blackish (not streaked).

- *A. p. nelsoni*. First reported by Dickerman in 1965. A resident in south-central Mexico from northern Guerrero, Morelos, and northern Puebla. It is like *A. p. nyaritensis*, but larger (male wing chord > 130 mm). It hybridizes with *A. p. gubernator* in northernmost Puebla and adjacent Tlaxcala.
- *A. p. grinnelli*. First reported by Howell in 1917. It is a resident on the Pacific slope from southern El Salvador southward to northwestern Costa Rica. It is similar to *A. p. nyaritensis*, but the female's ventrum is paler with ventral streaks narrower.
- *A. p. richmondi*. First reported by Nelson in 1897. It is a resident chiefly on the Gulf slope from northern Costa Rica north to southern Quintana Roo and west across the southern Yucatan Peninsula (but not the northern and not the Petén) to central Veracruz. It is similar to *A. p. grinnelli*, but the female's dorsum is redder (less brown) and the ventrum is rich ochraceous, with ventral streaks narrower and paler; small (male wing chord < 119 mm; 17).
- *A. p. arthuralleni*. First reported by Dickerman in 1974. A resident in the central Petén, Guatemala. It is similar to *A. p. richmondi*, but the female is browner (less reddish), with the dorsum is darker and ventral streaks are blacker (less brown) and heavier.
- *A. p. pallidulus*. First reported by Van Tyne and Trautman in 1946. A resident in arid northern Yucatán. It is similar to *A. p. richmondi*, but the female is paler and browner (less reddish) yet with ventral streaks that are heavier (less fine). Birds on Isla Cozumel are intermediate toward *A. p. richmondi*.
- *A. p. megapotamus*. First reported by Oberholser in 1919. It is a resident from central Texas southward to southeastern Coahuila and northern Veracruz. It is similar to *A. p. richmondi*, but the female dorsum is less reddish, the ventral streaking heavier and blacker, and the breast and flanks are dull buff (not rich ochraceous). It averages larger overall, but with the bill shorter.
- *A. p. littoralis*. First reported by Howell and van Rossem in 1928. A resident on the Gulf slope from central Texas east to northwestern Florida (Santa Rosa Island, Florida). It is similar to the nominate, but the bill is slenderer and the female is markedly darker (blackier) overall.
- *A. p. mearnsi*. First reported by Howell and van Rossem in 1928. It is a resident over most of Florida peninsula, northward into extreme southeastern Georgia. It is like *A. p. phoeniceus*, but smaller overall with the bill longer and slenderer, and with the female more brownish (less blackish) and ventrally buffier.
- *A. p. floridanus*. First reported by Maynard in 1895. A resident in extreme southern Florida and the Florida Keys, northward to Lake Worth and Collier Counties. It is like *A. p. mearnsi*, but the female is paler (less brownish) and with the supercilium is white (not buff).
- *A. p. bryanti*. First reported by Ridgway in 1887. A resident in the Bahamas on Abaco, Grand Bahama, Eleuthera, New Providence, and Andros. It is similar to *A. p. floridanus*, but the ventrum of female is white (not buff or tan) and the throat is whitish (not pink).

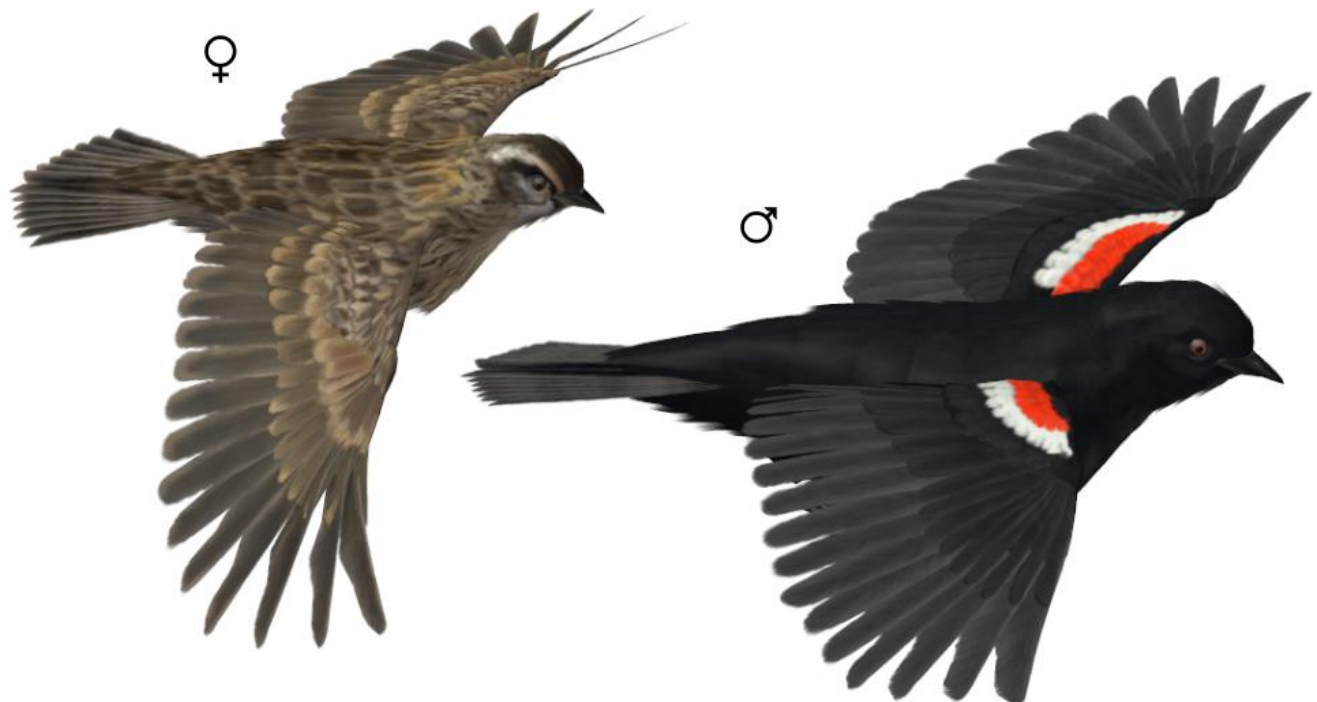
Common Name: Tricolored Blackbird
Scientific Name: *Agelaius tricolor*

Size: 7-9 inches (18-24 cm)

Habitat: North America; endemic to Kern County, California (United States).

Historically, Tricolored Blackbirds bred in wetlands almost exclusively. Because of extensive losses to wetlands along the U.S. West Coast, many now nest in agricultural fields, though some still breed in remnant marshes. They forage in and around dairy farms, fields, and wetlands. They can be found in irrigated pastures, dairy farms, rice fields, and feedlots.

Status: Endangered. **Global Population:** 300,000 mature individuals. A very rapid and on-going decline is estimated directly, based on repeated censuses (using the same methods) of the Central Valley population (which comprises the majority of the global population). Loss of upland nesting habitat, combined with low reproductive success in native habitats and complete breeding failure in harvested agricultural fields, are the most likely causes of recent declines. Additionally, herbicide spraying and contaminated water are suspected to have caused complete breeding failure in several colonies. Historic declines may have occurred because of the loss of native wetlands, loss of grasslands and grasshoppers (a main component of the species' diet), hunting, and large-scale poisoning efforts to control crop depredation that continued until the 1960s. Because breeding success is so poor in native wetlands, protection of these habitats will not reverse population declines in the species - conservation



measures must focus on agricultural land and upland habitats as well.

In April 2018, the California Fish and Game Commission made a final determination to list the Tricolored Blackbird as “Threatened” under the California Endangered Species Act. It has been under petition for Federal Endangered Species protection since 2000.

Diet: Grasshoppers, seeds, beetles, weevils, caterpillars, and snails among other things. They also frequently eat livestock grain. They pick seeds and insects from the ground or from shrubs and occasionally fly up to catch insects in midair. Like other blackbirds, they use their large and sharp bill to pry apart dense grasses to find insects. Sometimes one will even stick its head underwater to grab an aquatic insect in a flooded rice field.

Tricolored Blackbirds are gregarious birds that are often seen in large compact groups year-round. Unlike Red-winged Blackbirds they nest in tight colonies and they routinely fly up to 3 miles from their breeding sites to find areas rich with food. During the non-breeding season, they join flocks of Red-winged Blackbirds, Brewer's Blackbirds, Brown-headed Cowbirds, and European Starlings.

Breeding: Male is entirely black with dull blue gloss, except for striking epaulets made up of deep red lesser coverts and white median coverts. Female is largely dark blackish-brown with a paler throat and streaked underparts. Juvenile is similar to adult female, but duller and buffier.

Courting males perch atop vegetation, sing, preen, and shift their perch over and over until they grab the attention of one or more females. Males routinely mate with one or more females, but tend to have fewer mates than male Red-winged Blackbirds. Like Red-winged Blackbirds, Tricolored males also perform a song-spread display to attract females where they hunch over their perch, spreading out the wings and tail and fluffing up the neck feathers while they sing. Once territories are set and mates secured, males and females perch at the edge of the territory, stick their bill upwards with feathers sleeked and red shoulder patches exposed to proclaim territory ownership.

In the past, Tricolored Blackbirds nested in freshwater marshes with cattail, rushes, and willows. They now nest almost exclusively in triticales fields, especially those with invasive mustard or mallow plants. Females select the nesting site within a male's territory, typically close to freshwater with plenty of concealing vegetation. Females build nests in vegetation from just above ground level up to about 8 feet. An open cup nest made of woven grasses and mud. The female collects leaves from grasses or cattails, but before weaving them into the nest she first soaks them in water. After she completes the sides of the nest, she adds a bit of mud to the bottom and tops it off with softer plant material. Females do the majority of the building with occasional help from the male. Three to four blue-green eggs with dark streaks or blotches.

Cool Facts: Parents use a clever tactic to encourage their young to leave the nesting colony. They fly to the nest with food, but instead of giving it to their young immediately, they fly away with it, encouraging the youngsters to follow.

Of all passerines in North America, they form the largest breeding colonies. In the 1930s one colony covered almost 59 acres and contained around 300,000 birds—about as many as are in the entire present-day population.

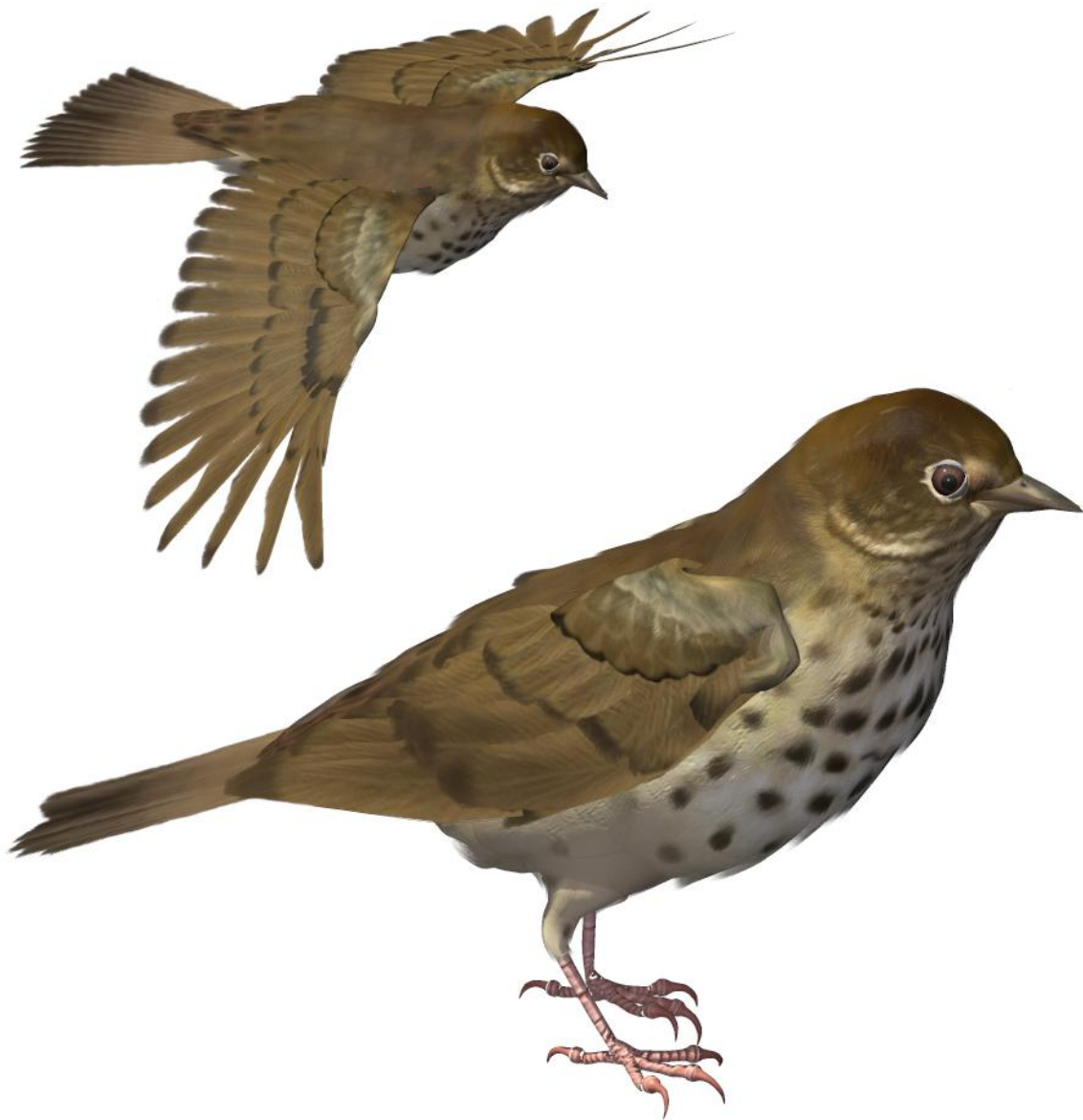
The Tricolored Blackbird can be found at the Audubon Kernville preserve along with the bi-colored Red-winged Blackbird. The Tricolored Blackbird is the bird featured in “[A Field of Birds](#)” produced by Audubon California. Support for Audubon California’s program to save the Tricolored Blackbird from extinction has been the focus of Songbird ReMix’s annual Audubon’s Birthday Charity Sale with the sale raising over \$20,000 (as of 2020) for the cause.

Common Name: Swainson's Thrush
Scientific Name: *Catharus ustulatus*

Size: 6.3-7.9 inches (16-20 cm)

Habitat: North and South America; It summers in northern North America and winters in Central and South America.

It is rarely found far from a closed-canopy forest. The breeding habitat is a mix of deciduous and coniferous forest (though sometimes includes pure deciduous



forest). In the Rocky Mountains and in Pacific states, they prefer dense alder thickets along streams running through coniferous forest.

Status: Least concern. **Global Population:** 100,000,000 mature individuals, populations are declining; about 38% from 1966 to 2014. This species' short breeding season may render it sensitive to disturbance on nesting grounds. Problems on breeding grounds include grazing, development, human activity, and invasions of nonnative plants. During spring and fall migration, significant numbers of Swainson's Thrushes die from collisions with windows, radio and cell-phone towers, and tall buildings.

This species may be displaced by the hermit thrush where their ranges overlap. Possibly, the latter species adapts more readily to human encroachment upon its habitat. At least in the winter quarters, Swainson's thrush tends to keep away from areas of human construction and other activity.

Diet: Fruits and insects; fruits include (elderberries (*Sambucus sp.*), blackberries and raspberries (*Rubus spp.*), twinberries (*Lonicera sp.*), huckleberries (*Vaccinium sp.*), brier (*Smilax sp.*), false Solomon's seal (*Smilacina sp.*), sumac (*Rhus sp.*), and other wild fruits. Insects include beetles (*Carabidae*, *Rhynchochophora*); caterpillars (*Lepidoptera*); ants (*Formicidae*); flies (*Diptera*), crane flies (*Tipulidae*), March flies (*Bibionidae*); grasshoppers (*Orthoptera*); and *Hemiptera* (true bugs).

Breeding and spring migrating populations tend to be insectivorous; fall migrating and wintering populations more frugivorous.

Swainson's Thrushes are shy but vocal birds that skulk in the shadows of their generally dark forest-interior habitat. They forage for insects and other arthropods on or near the ground. It moves in long, springy hops on ground and hops short distances along branches while foraging.

Breeding: These medium-brown birds with pale underparts have spotted chests and large buffy eyerings that extend in front of the eye, creating "spectacles." The whitish throat is bordered on each side with a dark brown stripe. Swainson's Thrushes breeding on the Pacific slope of the U.S. and Canada have warmer brown upper-parts (see subspecies below).

Territorial disputes between males often take the form of singing duels, with song volume and frequency escalating until the combatants' physical exertions are clearly evident. During these contests, rivals very occasionally invert their customary melody so that it spirals downward in pitch. A sing-off can lead to a chase and even occasionally to physical attack.

Nest are constructed in shady sites in the forest under-story, especially in thickets of deciduous shrubs or conifer saplings which are 3–10 feet off the

ground. They build their nests on plants such as willow, fir, spruce, blackberry, alder, aspen, birch, maple, oak, briars, gooseberry, rose, and sumac. The nest is constructed of fine twigs, stems, grass, moss, bark shreds, and decayed leaves, and lined inside with skeletonized leaves, rootlets, lichens, or moss. The female builds the nest by herself over a period of about four days. Like other thrushes, she probably shapes the nest by snuggling low into the cup and thrusting with breast and feet. Four white eggs are laid in an open cup nest fairly low to the ground.

Cool Facts: The Swainson's Thrush's whirling song has a ventriloqual quality that can make it difficult to track. This may happen as the singer moves quickly from one perch to another between songs. It may also have to do with the sounds' reverberation in dense foliage. Swainson's Thrushes also sometimes sing quiet songs that create the illusion that its song emanates from a more distant location. The song of the Swainson's Thrush is the only woodland thrush whose song goes up in pitch.

In New England spruce-fir forests, the nests of Swainson's Thrushes are often lined with root-like cords of horsehair fungus. The fungal filaments can have antibiotic effects and may help deter nest pathogens.

The "russet-backed" Pacific population has more reddish plumage and a slightly different song than the "olive-backed" birds in the rest of the range. The russet-backed birds winter in Central America while the olive-backed ones winter in South America.

Russet-Backed Thrush (*Ustulatus* Group).

- *C. u. ustulatus*. First reported by Nuttall in 1840. The nominate species is found along the Pacific Northwest coastal from southeastern Alaska (Alexander Archipelago) to northern California westward of Cascade Mountains. It winters mainly western Mexico. It is prevalent in interior highlands of Honduras, and possibly elsewhere on Pacific slope in Central America, but not south of Costa Rica. The back, rump, and tail are olive-brown with reddish tinge. The tail is redder than back. It has brownish sides of the lower breast and belly. It has smaller, less distinct, sparser breast-spots.
- *C. u. oedicus*. First reported by unknown. It breeds from northern California and the western slope of Sierra Nevada southward and westward to southern California. Its winter range goes from western Mexico to Nicaragua, casually southward to Costa Rica. It is similar to the nominate except the upper-parts are considerably paler and grayer, contrasting with the slightly reddish upper-tail coverts.
- *C. u. phillipsi*. First reported by Ramos in 1991. It breeds only on Queen Charlotte Island, British Columbia. It winters eastward and the west slopes of

Mexico. It is redder than the nominate species, with the back and rump contrasting with the reddish upper-tail coverts. It is the least spotted form.

Olive-Backed Thrush (Swainsoni Group).

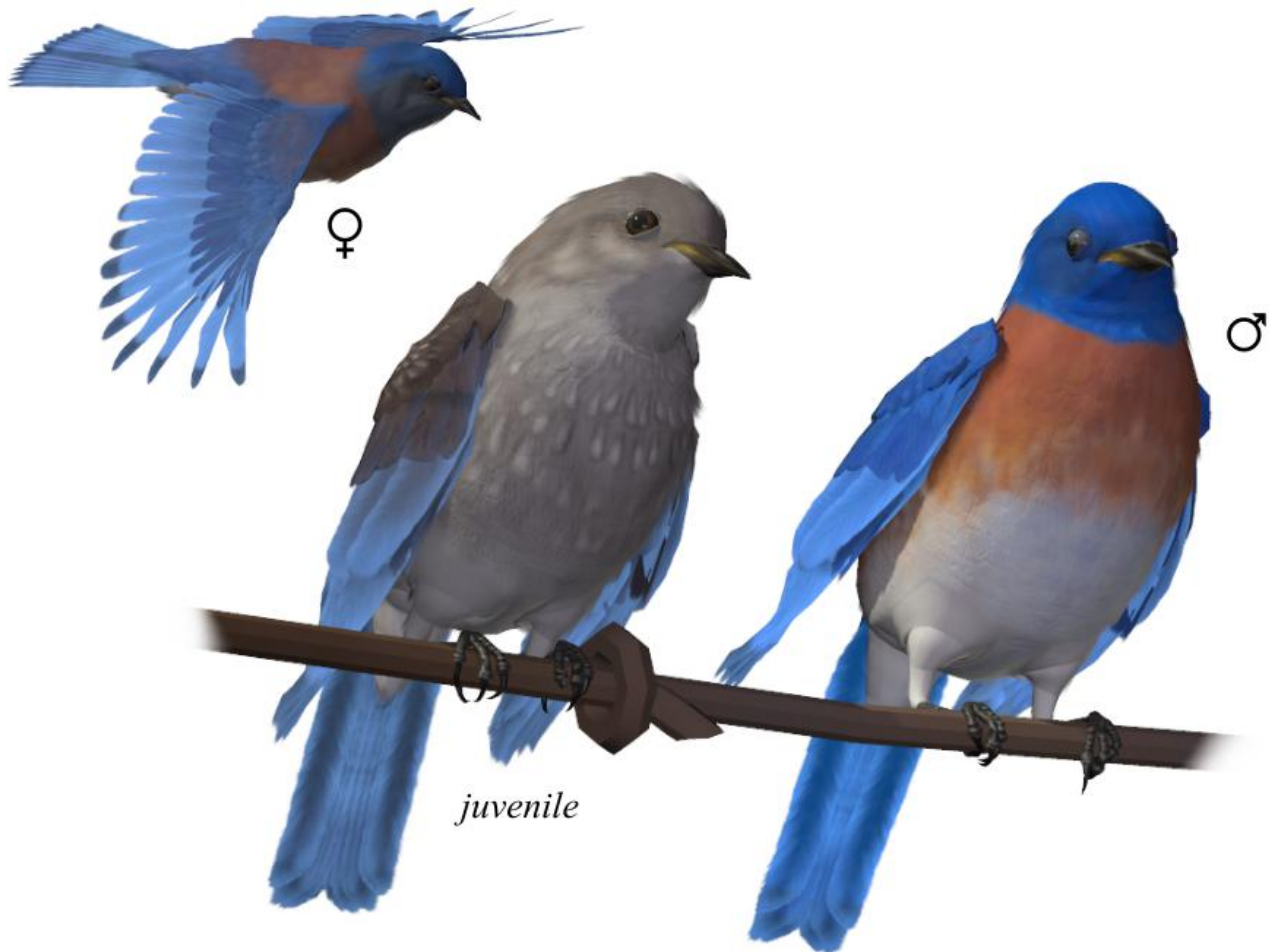
- *C. u. swainsoni*. First reported by Tschudi in 1845. Exclusive of other forms currently considered synonymous, occurs in northern forests across Canada from interior British Columbia eastward to Newfoundland; southward to northern New England (see *C. u. appalachiensis*); northern Michigan, Wisconsin, and Minnesota in central states. Its winter range is central and northwestern South America (most commonly migrating through Panama). It is more olive than *C. u. ustulatus* or *C. u. oedicus*, with little contrast between back and upper-tail coverts; more olive below. Wide, distinct, dense blackish streaks or spots on breast.
- *C. u. incanus*. First reported by unknown. It breeds central and eastern Alaska, southern Yukon, northern British Columbia, and north-central Alberta. It winters in Colombia southward to Peru. It is most similar to *C. u. swainsoni* but with a more rufous tail, grayer above, paler buffy areas of the head, and less buffy coverts and edges of remiges. It is grayer below than *C. u. ustulatus*, with darker and denser breast-spotting.
- *C. u. appalachiensis*. First reported by Ramos in 1991. It breeds south of *C. u. swainsoni* from northern New Hampshire and central New York southward. It winters Colombia to northeastern Peru. It is darker and more rufous than *C. u. swainsoni*.

Common Name: Western Bluebird
Scientific Name: *Sialia mexicana*

Size: 6-7 inches (17-19cm)

Habitat: North America; the Pacific Coast, parts of the Eastern Southwest and Mexico.

They prefer edges of open forests and fields. They are much less frequently seen in large meadows than either Eastern Bluebirds or Mountain Bluebirds. They live in evergreen and deciduous woods, particularly ponderosa pine but also pinyon pine-juniper, mixed conifers, and aspen stands. They thrive in disturbed areas such as burned forests or logged areas that still contain dead trees suitable for nesting and perching. During winter they inhabit pinyon-juniper woods, stands of mesquite, oak, or streamside woods, coastal chaparral, and desert.



Status: Least Concern. **Global Population:** 6,700,000 mature individuals. This species has a stable population trend. Threats to this species primarily stem from

the loss of habitat both from extensive logging and from growth of forests as a result of the suppression of natural fires; also development and grazing have reduced habitat availability. Even in appropriately wooded habitat, people may remove dead trees in an effort to clean up; this limits the places where bluebirds and other cavity nesters can find nest sites. Aggressive, non-native cavity nesters such as House Sparrows and European Starlings may take over many of the nest sites that Western Bluebirds might otherwise use.

Diet: During summer Western Bluebirds eat mainly insects; in winter they switch to eating mostly fruits and seeds, supplemented with insects. They typically catch ground-dwelling insects such as grasshoppers, caterpillars, beetles, ants, wasps, and pillbugs, as well as eating spiders and snails. They've been seen catching marine invertebrates on beaches. Winter foods include many kinds of berries, particularly elderberry, grapes, mistletoe, raspberries and blackberries, serviceberry, sumac, chokecherries, juniper, and poison oak.

These birds are highly social, and usually feed in flocks during the non-breeding season. They hunt for terrestrial insects by dropping to the ground from a low perch. Western Bluebirds also frequently feed on berries in trees. Western Bluebirds rely on trees both for nesting cavities and hunting perches, and also perch on fences and utility lines.

Breeding: A small thrush that usually perches upright. They are stocky with thin, straight bills and fairly short tails. Male Western Bluebirds are shiny blue above with rust-orange extending from a vest on the breast onto the upper back. Females are gray-buff with a pale orange wash on the breast and blue tints to the wings and tail. The throat is blue in males and gray-buff in females, and the lower belly is whitish.

A paired male and female search for nest sites together, inspecting cavities to see if they are suitable. Nests are placed in holes in trees (living or dead). Many kinds of trees are used, including pine, oak, aspen, willow, cottonwood, and sycamore, but they must contain a pre-existing cavity. The preferred nesting shrub is poison oak. Previous-years' woodpecker nest holes are often used as well as natural tree holes, sometimes enlarged by other animals. Western Bluebirds readily take to nest boxes. They occasionally nest inside buildings or in the mud nests of swallows.

Females do almost all of the nest construction, gathering grasses, straw, pine needles, moss, other plant fibers, and fur from the ground and carrying it to the nest. She lines the nest cup with grasses, rootlets, feathers, horsehair, and sometimes bits of plastic. The nests are inside a cavity so they're not as regularly shaped or tightly woven as typical cup nests. She may take 2 weeks to build her first nest of the season, but is much quicker when building a second nest of the year, completing it in under a week. 5 pale blue eggs are laid in the woven nest.

Cool Facts: Western Bluebirds can have help with their nests. Parents of failed nests will help to raise others' young. It has also been reported that violet-green swallows have helped with the feeding and defense of bluebird nests. Paternity is an issue among Western Bluebirds; 19% of all the young were fathered outside the pair bond.

A Western Bluebird weighs about an ounce. It needs about 15 calories per day, or 23 calories if raising young.

What is the difference between a western and eastern bluebird? Well, the Rocky Mountains divides the western and eastern species but beyond that look at the birds throat. On the eastern species the rust colored breast patch extends all the way to its bill; on the western species, the throat is blue.

- *S. m. occidentalis*. First reported by Townsend in 1837. It breeds (partially a resident) along Pacific slope of species' range from southern British Columbia southward to northern Baja California. In the interior, to northern Idaho, northwestern Montana, and Nevada. The male has chestnut on the back occasionally broad, usually narrow medially, and usually present on the anterior scapulars. The blue coloration averages relatively pale (paler and smaller than *S. m. bairdii*).
- *S. m. bairdii*. First reported by Ridgway in 1894. It breeds in interior montane regions of western North America from south and central Utah and Colorado south to southern Sonora and northwestern Chihuahua and southeast to southwestern Texas. It winters at lower elevations of the breeding range into central Texas, southeastern California, and eastern Sonora, Mexico. The males chestnut on back is extensive and including the lower scapulars. The female is more rufescent above than *S. m. occidentalis*. Its size averages larger. Birds of southwestern Colorado possibly distinct, being duller, less reddish on back (especially females), and paler on breast than other *S. m. bairdi*.
- *S. m. jacoti*. First reported by Phillips in 1991. A resident of the Davis Mountains in southwestern Texas and the San Luis Mountains at the Sonora–Chihuahua–New Mexico border. It is a relatively dark and dull race; the back of the female is without reddish tones and the back of the male is more chocolate than *S. m. bairdii* or *S. m. occidentalis*. It is less blue medially than the nominate with the crown pale.
- *S. m. amabilis*. First reported by Moore in 1939. It is a resident in mountains of northwestern Mexico from southwestern Chihuahua to northwestern Zacatecas. It is extensively chestnut on back and the blues are darker.
- *S. m. nelsoni*. First reported by Phillips in 1991: A resident in mountains of northeastern and central Mexico from northern Coahuila to western San Luis Potosí, northern Guanajuato, and northeastern Jalisco. It has reduced (obsolete or lacking) chestnut on upper-parts, the blue is the most extensive of subspecies. Its breast is cinnamon-rufous and the size averages small.

- *S. m. mexicana*. First reported by Swainson in 1832. The nominate species is a resident from Mt. Orizaba (Veracruz/Puebla) northward to northern Puebla and Hidalgo and westward to Michoacán and Aguascalientes. It is extensively chestnut on the back (but less than *S. m. amabilis*); the crown deep is blue and its size averages large.

Special Thanks to...

This package wouldn't have been possible without the support of Rhonda (my wife), B.L.Render (aka Bloodsong) for her contributions to Songbird ReMix, and my dad, for making me do all those birding trips I hated as a kid.

2006 Re-release: Jan, Rhonda and Sandra

2010 Re-release: Ali, Bea, Jan, Kelvin, Sandra & Katt

2020 Re-release: FlintHawk & Carey

Species Accuracy & Reference Materials

Many birds of the same species do vary considerably in color. This package tries to emulate the colors and markings in the most commonly found variants. Also, there are many subspecies of most of the birds represented. Subspecies in a particular area may be significantly different than the one depicted in this set. As a rule, subspecies will be labeled on the bird icon. Usually the nominate (main species) and/or the Southern California subspecies (where the author's home is) is chosen as the represented species. In some cases, additional subspecies, dimorphic females or juveniles will appear in Songbird ReMix "freebie" section (found in the SongbirdReMix.com store area).

The author-artist has tried to make these species as accurate to their real life counterparts as possible. With the use of one generic model to create hundreds of unique bird species, some give and take is bound to occur. The goal is to give a somewhat believable approximation of the bird species rather than a scientifically accurate depiction.

Field Guide Sources:

- "The Sibley Guide to Birds" by David Allen Sibley
 - <https://www.sibleyguides.com/>
- Wikipedia (<https://www.wikipedia.com>)
- BirdGuides.com (<https://www.birdguides.com>)
- BirdLife International (<https://www.birdlife.org>)
- Birds of the World (<https://birdsoftheworld.org>)
- All About Birds (<https://www.allaboutbirds.org>)

Shirts, jerseys, sweatshirts, prints, cards, posters, pillows, coffee cups, calendars & more

The image displays a variety of bird-themed merchandise. At the top left is a white long-sleeved sweatshirt with the text "Birds of Hawaiian Islands" and a grid of small bird illustrations. To its right is a white t-shirt with the text "Pelicans of the World" and a grid of pelican illustrations. Below the Hawaiian sweatshirt is a framed print of birds in flight. In the center is a white t-shirt with a graphic titled "Songbird ReMix" featuring a bird wearing a graduation cap, surrounded by mathematical formulas like $E=mc^2$, $A+B=C$, and $s=q$, with the text "BIRD BRAINS" at the bottom. To the left of this t-shirt is a white mug with a yellow bird illustration. To the right is a calendar for January 2010 featuring a photograph of penguins. Below the calendar is a small sign that reads "NO MINORS ALLOWED PREMISES" with a bird illustration. The text "Songbird ReMix" is prominently displayed in large, bold, yellow letters with a black outline. At the bottom right, the website address "www.empken.com/store" is listed.

Songbird ReMix

www.empken.com/store