

Avian Models for 3D Applications

Characters and Texture Mapping by Ken Gilliland

Songbird ReMix

Cool & Unusual Birds

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Opinions expressed on this booklet are solely that of the author, Ken Gilliland, and may or may not reflect the opinions of the publisher, DAZ 3D.

Songbird ReMix Cool & Unusual Manual & Field Guide

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Introduction

Songbird ReMix 'Cool and Unusual' Birds is an eclectic collection of birds from North America and the Hawaiian Islands. 'Cool and Unusual' Birds adds many new colorful and specialized bird species such as the Red Crossbill, whose specialized beak that allow the collection of pine nuts from pine cones, or the Brown Creeper who can camouflage itself into a piece of bark and the Roadrunner who spends more time on foot than on wing. Colorful exotics are also included like the crimson red 'I'iwi, a Hawaiian honeycreeper whose curved beak is a specialized for feeding on Hawaiian orchids, the Orange and Black Baltimore Oriole, who has more interest in fruit orchards than baseball diamonds and the lemon yellow songster, the western meadowlark who could be coming soon to a field fence post in your imagery.

Overview and Use



Select **Figures** in Runtime Folder and go to the **Songbird ReMix** folder. Here you'll find an assortment of files that are easily broken into 2 groups: **Conforming Parts** and **Bird Base models**. Let's look at what they are and how you use them:

- **Bird Base Models** (SBRM Cool and Unusual birds has two)
 - **SBRM Base Model**- This model is for use with all Songbird Characters included in this package except the Roadrunner.
 - **SBRM Zygodactyl Model**- This Model is used for the Greater Roadrunner which has Zygodactyl feet.
- **Conforming Parts** (All Conforming Crests have alphabetical Icons in the lower right corners such as “C2”. This corresponds with characters in the Pose folders. All MAT/MOR files with the same icon use that particular Conforming Part. **Be sure to read this:** Most conforming parts are Crest which cover the head part. When posing the Base Model, the Conforming Part will follow any Bend, Twist or Rotate Commands. It will not obey any **SCALE** or **MORPH** commands you give the Base Model. You must manually scale the Conforming Part and with morphs such as “OpenBeak”

you must also set it's counterpart in the head part of the Conforming Crest. So Now let's look at what's included in Conforming Parts:

- **<C2> Conforming Crest 2.** For use with the Greater Roadrunner.

Conforming Crest Quick Reference

Load Model(s)	To Create... (apply MAT/MOR files)
	<ul style="list-style-type: none"> • Baltimore Oriole • Brown Creeper • Curve-billed Thrasher • 'Iiwi • Oak Titmouse • 'Omao • Red-breasted Nuthatch • Red Crossbill • Spotted Towhee • Western Meadowlark • Western Scrub-Jay • Western Tanager • White-crowned Sparrow
	<ul style="list-style-type: none"> • Greater Roadrunner

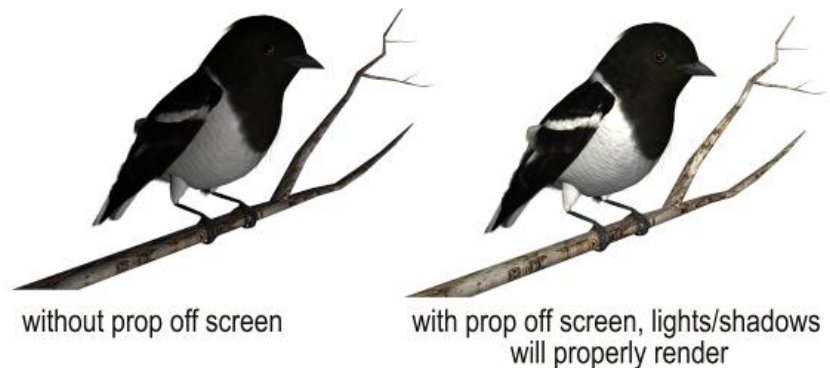
Creating a Songbird ReMix Bird with Poser

Here's a step by step to create a bird in POSER:

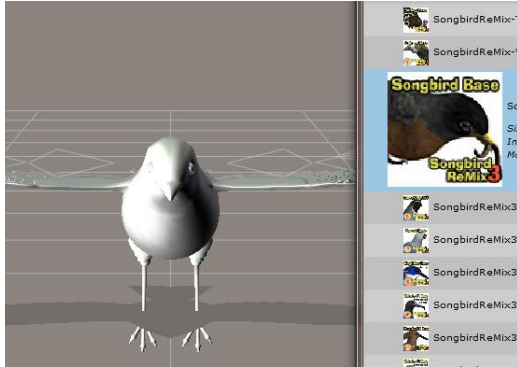
1. Choose what you want to load. For this example, we'll create an "American Robin".
2. Load Poser and select **FIGURES** and the Songbird ReMix folder. Because the "American Robin" uses the basic "Songbird" base model we'll load that.
3. Go to the **POSES** folder and select the appropriate Songbird Remix library. In this case, we'll select the "American Robin" pose and apply it to our loaded Songbird ReMix base model. This pose contains morph and texture settings to turn the generic model into an "American Robin". As explained earlier in the Character Base Section, the Alphabet letter appearing on the base of a bird's Icon refers to what model it expects to adhere to. Thus the "Parrot" character is going to want the <P> Parrot Base Songbird ReMix Model. Birds with no icon usually want the Songbird Base.

Scaling and Square Shadows in Poser

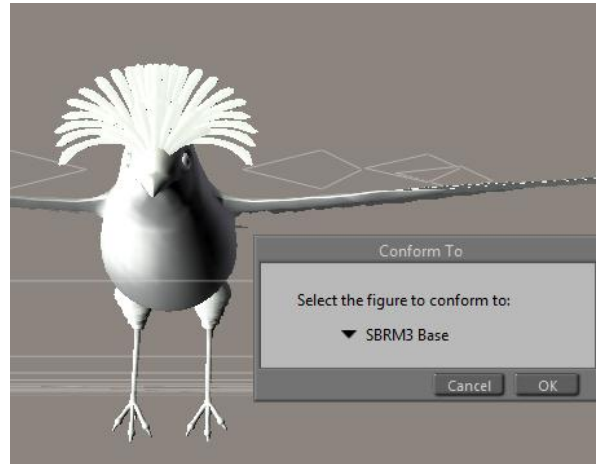
All the birds in this package have to scaled proportionally to DAZ 3D's Victoria and Michael models. The smallest of the included birds (such as the Robins) **MAY** render with a Square shadow or improper lighting. This is a bug in Poser. Poser can't figure out how to render a shadow for something really small, so it creates a square shadow. The solution is to put a larger item that casts a normal Poser shadow in the scene (even if it is off camera) and the square shadows will be fixed or BODY scale the bird to a larger size.



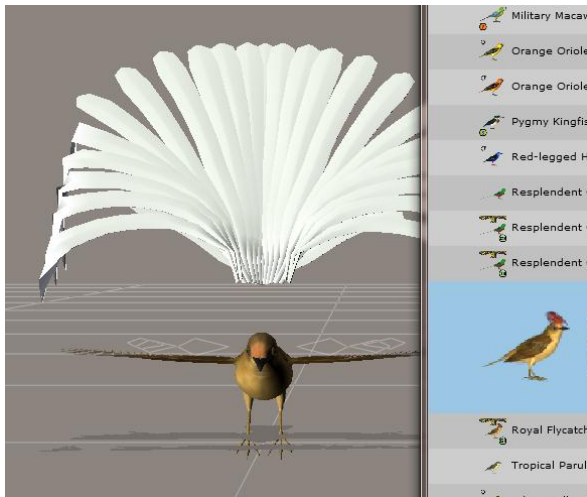
How to build a Songbird ReMix Character with a Conforming Crest in Poser



1. In the Figures section, load a Bird base Model. Then load the appropriate conforming part for the bird you're trying to create.
2. **Conform it** to the bird base model.



3. Select the Base Model and go to **POSES**. Select and apply the appropriate Character/Material pose setting for the bird you're creating.



4. The Conforming part will look wrong. That's okay—we're going to fix that now. Select the conforming part and apply appropriate Character/Material pose for the part.

5. Voila! Your bird is done. Just remember to select the bird base when posing and often there are additional morphs in the conforming part you can use.



Creating a Songbird ReMix Bird with Studio

Here's a step by step to create a bird in DAZ Studio:

1. Choose what you want to load. For this example, we'll create an "American Robin".
2. Load DAZ Studio and in Studio's **Runtime** Folder, select **FIGURES** and the Songbird ReMix folder. Because the "American Robin" uses the basic "Songbird" base model we'll load that.
3. Now, select the Studio **Content** Folder and go to the **Animals : SBRM : !CreateYour Own : Characters** folder and select the appropriate Songbird Remix library. In this case, we'll select the "American Robin" pose and apply it to our loaded Songbird ReMix base model. This pose contains morph and texture settings to turn the generic model into an "American Robin". As explained earlier in the Character Base Section, the Alphabet letter appearing on the base of a bird's Icon refers to what model it expects to adhere to. Thus the "Parrot" character is going to want the **<P>** Parrot Base Songbird ReMix Model. Birds with no icon usually want the Songbird Base,

Known Issues with DAZ|Studio

Propagating Scale Issues

Some versions of DAZ|Studio have problems with the Propagating Scale of the Feet in Songbird ReMix. Unfortunately, the only current solution is to manually scale all the digits on each foot. To determine if manual scaling is needed, look at the SCALE settings on rFoot or lFoot parts in DAZ|Studio. If the amount is more than 100%, then all the digits (rPinky1, rPinky2, rMid1, etc.) will need to be scaled accordingly. The " ! Scale Feet" folder will automatically correct this for you.

All the characters in this product have already been corrected.

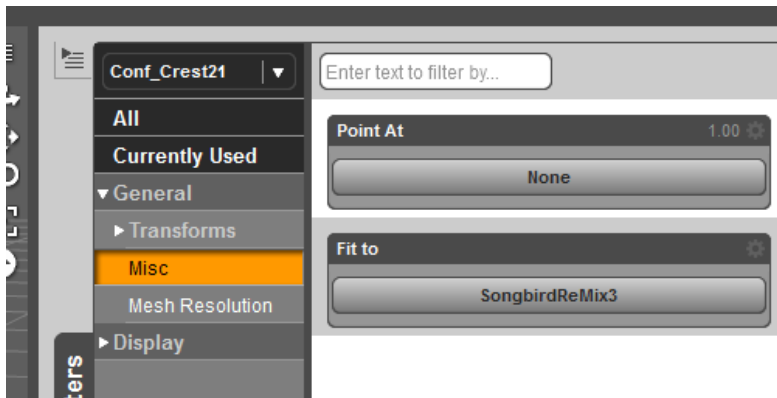
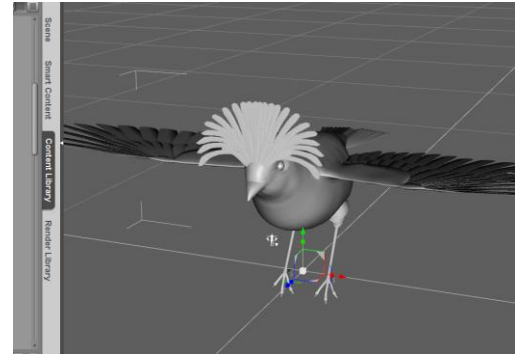
Earlier DAZ Studio versions of this product used Studio's scene files (.daz) to create pre-built birds. Unfortunately the programmers of Studio decided not to support "backwards compatibility" so older pre-built birds saved in .daz may no longer work. It is best to delete the older version of this product.

For more troubleshooting, visit the [Songbird ReMix FAQ](#)

How to build a Songbird ReMix Character with a Conforming Crest in DAZ Studio

In the **Runtime** folder, select **Figures** and load the Songbird ReMix Model and the appropriate Conforming Crest in Studio. Select the Conforming Crest by selecting on the screen or in the **Scene** Tab.

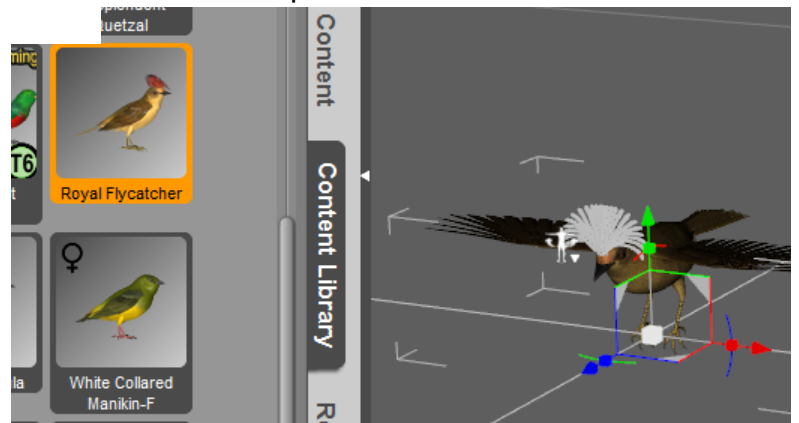
Now, using the "FIT TO" command in the Parameters Tab, Select the Songbird ReMix Model. Go back to the **Scene** Tab and select the Songbird ReMix Model.



Select the Studio **Content** Folder and go to the **Animals : SBRM : !CreateYour Own : Characters** folder and select the appropriate Songbird Remix library. Apply the Character setting to the bird base. It will probably reduce the size significantly and change the shape of the bird.

Now that the bird is sized, select the conforming part and apply the conforming part character settings.

Voila! Your bird is done. Just remember to select the bird base when posing and often there are additional morphs in the conforming part you can use.



Songbird ReMix
Cool & Unusual Birds
Field Guide

Baltimore Oriole

Brown Creeper

Curve-billed Thrasher

Greater Roadrunner

'Iwi

Oak Titmouse

'Omao

Red-breasted Nuthatch

Red Crossbill

Spotted Towhee

Western Meadowlark

Western Scrub-Jay

Western Tanager

White-crowned Sparrow

Common Name: Baltimore Oriole
Scientific Name: *Icterus galbula*

Size: 7 inches (17-19cm)

Habitat: North America; east of the Rockies and the Northern tip of South America. (winter migration). Lives at the outskirts of woodland areas.

Status: Least Concern.

Global Population: 6,000,000 Mature individuals. Populations showing slight decrease across range, but populations probably stable. This species should be monitored closely

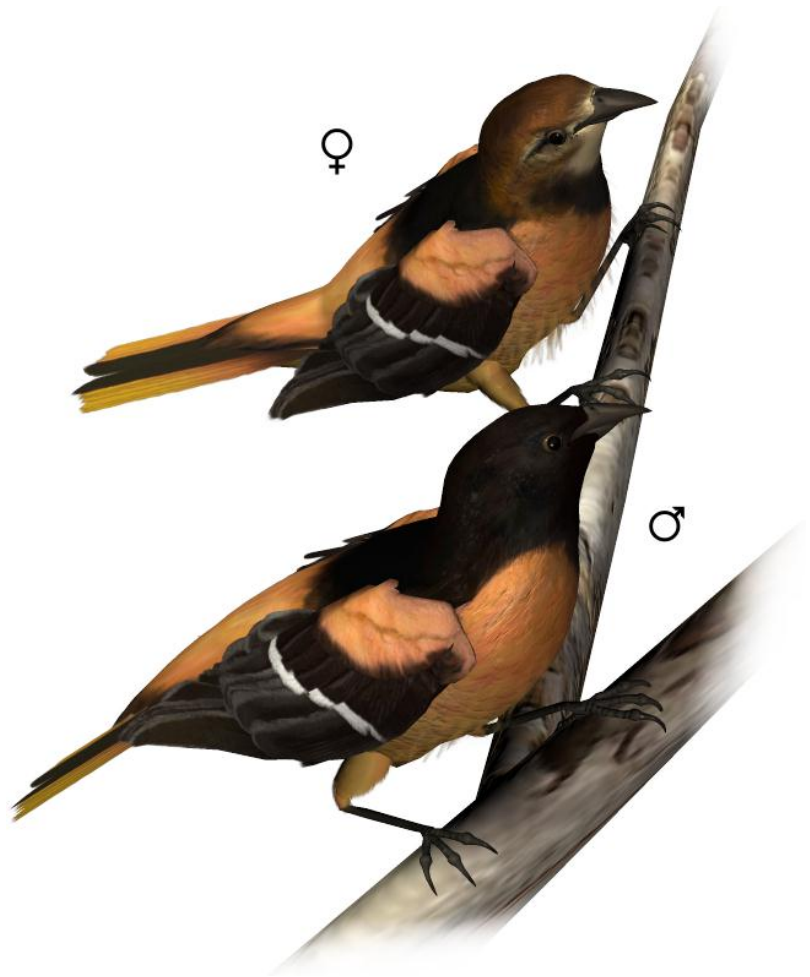
Diet: Fruit, nectar, caterpillars, spiders and insects.

Breeding: Four to five eggs. Nests are gourd-shaped made with plant fibers, hair and synthetic fibers. The nest is hung from small branches or found in the fork of a tree.

Cool Facts: The American "orioles" were named after similarly-appearing birds in the Old World. The American orioles are not closely related to the true orioles in the family Oriolidae. They are more closely related to meadowlarks and blackbirds.

The Baltimore Oriole are known to hybridize Bullock's oriole where their ranges overlap in the Midwest.

Young male Baltimore Orioles plumage look like females when young. It isn't until the second year when they get the more striking adult male colors.



Common Name: Brown or American Treecreeper
Scientific Name: *Certhia americana*

Size: 5-6 inches (12-14cm)

Habitat: North America; throughout the United States and Pacific Northwest. Found in conifer and mixed conifer forests.



Status: Least Concern. **Global Population:** 5,400,000 Mature individuals. Widespread and abundant, but habitat loss and degradation is considered a threat to the species in Kentucky, Illinois, Indiana, Ohio, New Jersey, New York, Idaho, and Montana.

Diet: Insects, spiders, occasionally seed. Forages on tree trunks, creeping, methodically spiraling upward.

Breeding: The nest is cup of spider silk and cocoon cases anchored behind a piece of loose tree bark. It is lined with mosses, feathers and leaves. Five to six eggs are laid. While the sexes look the same, male are slightly larger and have slightly longer beaks than females. Brown Creeper nests in Arizona often have two openings, one that serves as an entrance and the other as an exit. Entrances face downward and exits face upward.

Cool Facts: The Brown Creeper is a camouflage expert. By laying flat on the bark of a tree in patterning helps it to blend in with trees, thus hiding from predators.

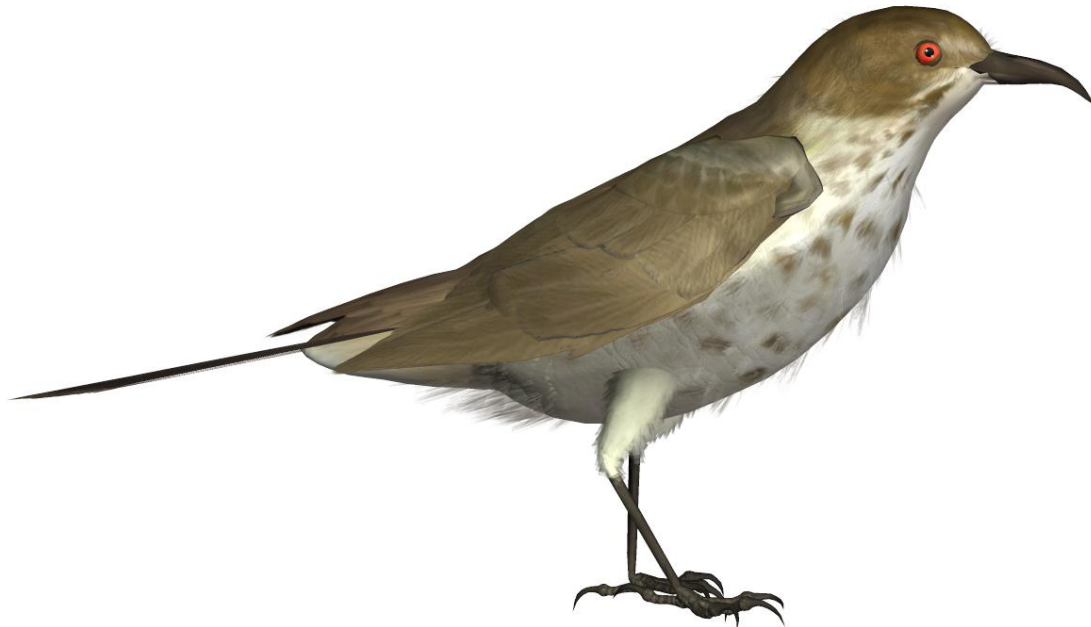
While the Brown Creeper bears an extremely close physical resemblance to the Old world cousins, Eurasian Treecreeper or Short-toed Treecreeper, it is a separate species. At one time, the Brown Creeper considered the same species as the Eurasian Treecreeper. In studies, including experiments having the Eurasian and Brown sing to each other, it was found that they do not respond to each other's songs, thus supporting the theory of them being separate species.

Common Name: Curve-billed Thrasher
Scientific Name: *Toxostoma curvirostre*

Size: 11 inches (27cm)

Habitat: North America; throughout the American Southwest and Mexico. Found in desert areas especially where cholla cactus or mesquite is found.

Status: Least Concern. **Global Population:** 2,000,000 Mature individuals. Common within its area. Populations are decreasing due to habitat loss.



Diet: Mostly Insects, spiders and berries, in rare instances, some seed. Forages on the ground using it's long curved bill to dig holes.

Breeding: 3-5 eggs are laid in a deep cup shaped nest of twigs which is usually found in cholla cactus or a thorny tree.

Cool Facts: The Curve-billed Thrasher that lives in the Sonoran Desert looks different than the form that lives in the Chihuahuan Desert . It is believed that they may be separate species. The Chihuahuan Desert bird has a lighter breast, more contrasting spots, pale wingbars, and white tail corners.

While thrasher is generally secretive birds, the Curve-billed Thrasher has a bold and curious streak. It will often sneak up to picnic areas and it known for it's distinctive whistle-like call; an ascending "whit-weet."

Common Name: Greater Roadrunner
Scientific Name: *Geococcyx californianus*

Size: 20-21 inches (52-54cm)

Habitat: North America; the American Southwest and some instances in Missouri to Louisiana. Found in arid areas.

Status: Least Concern. **Global Population:** 1,100,000 Mature individuals. Populations are stable and its range has expanded eastward.

Diet: Snakes, scorpions, lizards and anything else it can catch.

Breeding: Four to five eggs in an open cup nest placed in the fork of a tree branch.

Cool Facts: While the cartoon roadrunner is adept at getting away from Wyle E. Coyote, the real Greater Roadrunner can reach running speeds of 19 mph. To do so, it holds its head and tail flat and parallel to the ground



To prepare for cold nights, roadrunner will turn their backs to the sun and fluff their feathers. Their skin is black and acts as a solar collector, allowing the bird to stay warm.

Roadrunners eat many venomous prey, including rattlesnakes, scorpions and spiders. While generally solitary hunters. Several roadrunners may gain up on a snake. Roadrunners can also be opportunistic foragers, hiding at bird feeders and nest boxes, in hopes of catching small birds. Male roadrunners will parade their catch by females as part of courtship.

While roadrunners are able to survive on the water content in it's food, it will drink water if available. It uses salt glands in front of its eyes to excrete excess salt from its blood.

Common Name: 'I'iwi

Scientific Name: *Vestiaria coccinea*

Size: 6.5 inches (15cm)

Habitat: Polynesia; found on Hawaii, Maui, and Kaua'i in dense wet forests.

Status: Near threatened. **Global Population:** 350,000. 'Iiwis face many of the same threats facing other native Hawaiian forest birds: habitat loss, avian disease, and introduction of alien plant and animal species. Of these threats, avian diseases, combined with the possible introduction of temperate mosquitoes, may pose the greatest risk to 'Iwi populations. 'Iiwis are extremely susceptible to avian malaria and avian pox, which are both transmitted by mosquitoes. When bitten just once by a malaria-carrying mosquito, nine of ten 'Iiwis tested died within 37 days; when bitten multiple times by infected mosquitoes, all ten 'Iiwis died of malaria. The incidence of malaria in wild 'Iiwis is



greatest during the times of year when birds move to lower-elevation forests where nectar is available, but mosquitoes are also present. Mosquito-transmitted avian diseases seem to have a greater impact on 'Iiwis than on other Hawaiian honeycreepers. Currently, mosquitoes are confined primarily to the lowlands of the Hawaiian Islands, allowing 'Iiwis relief from avian diseases at higher

elevations, but if a temperate, cold-tolerant mosquito species is introduced, it could prove disastrous for 'Iiwis and other native Hawaiian forest birds.

Diet: Flower Nectar and some insects.

Breeding: Two eggs are laid in a cup nest of twigs, mosses, and lichens high in the crown of an 'ohia-lehua tree.

Cool Facts: The long curved bill of the 'Iwi has evolutionally adapted to sip nectar from the long tubular flowers of the native Hawaiian lobelioids. They will pierce a hole in the base of the flower and extract the nectar with their brushy tipped tongues. They are important pollinators for many species of native plants. They forage high up in the mid to upper canopy of forests and will often defend a territory with a heavily flowering tree in it.

As the lobelioids have declined through habitat loss and extinction, 'Iiwis have shifted to feeding more on other native flowers such as the 'ohia-lehua, koa, naio, and mamane. This dietary shift has been reflected in the slight reduction in average bill length seen over the past century.

'Iiwis can produce a wide variety of calls from rusty door hinge sound to clear flute-like sounds.

'Iiwis breed and winter mainly in wet or moderately wet forests with 'ohi'a and koa as the dominant trees. They can also be found in dry forest dominated by mamane, but do not often breed in such forest. Although the species does occur in drier areas on Hawai'i as low as 300 meters, it is most commonly found above 1,250 meters of elevation, where disease-carrying mosquitoes are not present. 'Iiwis spend most of their time foraging on 'ohi'a trees, feeding primarily on 'ohi'a nectar, but also catching butterflies, moths, and other insects. Mamane nectar is another major part of 'Iiwis' diets, and in some areas, the nectar of the introduced banana poka is also an important food source.

Common Name: Oak Titmouse
Scientific Name: *Baeolophus inornatus*

Size: 5.75 inches (12cm)

Habitat: North America; Endemic to California and found only in warm oak woodlands between 1,000 to 2,000' elevation.

Status: Vulnerable. **Global Population:** 900,000 Mature individuals. Remaining oak woodlands in California are under continual threat of development.



Diet: Seed and some small insects. They will wedge seeds in bark and hammer at them to open them.

Breeding: Three to nine eggs are laid in a tree hole or nest box. The nest is generally lined with mosses, feathers and grasses. Oak Titmice mate for life, and pairs defend year-round territories. Most titmice find a mate in their first fall. Those that do not are excluded from territories and must live in marginal habitat until they find a vacancy.

Cool Facts: Titmice are acrobatic and often hang upside down. Unlike other titmice, the Oak Titmouse does not form flocks in winter.

Oak Titmice sleep in dense foliage or tree cavities.

The Oak Titmouse and the Juniper Titmouse were originally called the Plain Titmouse until it was decided that they were actually two separate subspecies.

Common Name: 'Oma'ō
Scientific Name: *Myadestes obscurus*

Size: 7-8 inches (18-21cm)

Habitat: Polynesia; found on Hawaii in high elevation forests. The 'oma'ō occur in mesic and wet montane forests above 1000 meters (3300') in Hamakua, Ka'u, and Kilauea districts of Hawai'i island.

Status: Near Threatened. **Global Population:** 170,000. Population declines due to introduced avian malaria and habitat loss. Despite healthy population numbers, only 30% of this species' former range remains intact.



Diet: Fruits, berries, and insects

Breeding: Oma'os are usually solitary, but individuals can be found in pairs throughout the year, with pair bonds lasting at least one breeding season. Courtship behavior is most often seen between January and March, with most breeding taking place between April and August. Females are responsible for both nest construction and incubation of one or

two eggs. The nest are a woven mix of twigs and fiber. Incubation lasts for about 16 days, and the young remain in the nest for about 19 days before fledging. Both sexes feed nestlings, and both adults provide parental care for more than three weeks after young birds leave the nest.

Cool Facts: The `Oma'ō is also known as the Hawaiian thrush and is an accomplished songster. It is found throughout the native windward rainforests of the Island of Hawaii above 3,000 feet.

It has the curious habit of quivering its drooped wings much like a young bird.

Common Name: Red-breasted Nuthatch
Scientific Name: *Sitta canadensis*

Size: 4 inches (11 cm)

Habitat: North America; United States and Canada in conifer forests

Status: Least Concern. **Global Population:** 18,000,000 Mature individuals. Populations are increasing throughout most of the range.



Diet: Seed and insect. Foraging occurs by probing crevices in tree bark, climbing down tree trunks headfirst

Breeding: Five to six eggs are laid in cavities in trees and branches of a conifer.

Cool Facts: The Red-breasted Nuthatch is the only North American Nuthatch with an eye stripe.

Nuthatches are very aggressive towards many other bird species during nesting season. It will chase away nest hole competitors. The nuthatch's aggressive tendencies subside after the nest is finished, although it remains aggressive towards potential predators and competitors.

Nuthatches apply sticky conifer resin to the entrance of its nest hole. It carries the resin in its bill or on pieces of bark and the bill or bark as an applicator. Males apply the resin to the outside of the hole while the female do the interior. It is believed that the resin helps to keep out predators. The host nuthatches avoid the resin by diving directly through the hole.

Red-breasted Nuthatches migrate southward earlier than most other species. They may begin in early July and may reach their southernmost point by September or October.

Common Name: Red Crossbill
Scientific Name: *Loxia curvirostra*

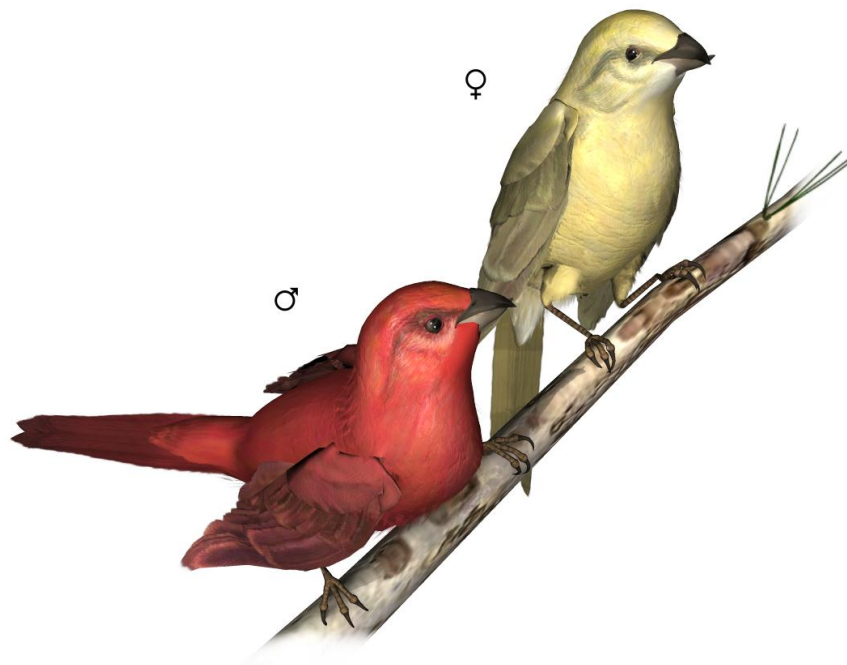
Size: 6-8 inches (14-20cm)

Habitat: North America; throughout most of the United States and Canada. Found in mature conifer forests.

Status: Least Concern. **Global Population:** 30,000,000 - 100,000,000 Mature individuals. Populations appear to be stable in most areas. May be declining in Pacific Northwest rainforests where deforestation is rapid. Formerly common in Newfoundland; now rare, possibly extinct because of competition with the introduced Red Squirrel.

Diet: Conifer seeds, especially spruce, pine, Douglas fir and hemlock.

Breeding: An open cup nest made of twigs, mosses and grasses. Well concealed in dense cover on branches of coniferous tree. Three eggs are laid.



Cool Facts: A crossbill's odd bill shape is an evolutionary design to open tightly closed conifer cones. The bird's biting muscles are stronger than the muscles used to open the bill, so the Red Crossbill places the tips of its slightly open bill under a cone scale and bites down. The crossed tips of the bill push the scale up, exposing the seed inside. Some Red Crossbills show a great deal of variation in bill shape and voice and it may in fact be different subspecies. It is believed these subspecies have slightly differently shaped bills to mirror the indigenous conifer tree species with its specific sized cones.

The Red Crossbills are so dependent upon conifer seeds that it even feeds them to its young. Consequently this allows the Crossbill to breed any time it finds a sufficiently large cone crop even in the coldest of winters.

Common Name: Spotted Towhee
Scientific Name: *Pipilo maculatus*

Size: 7-8 inches (17-21cm)

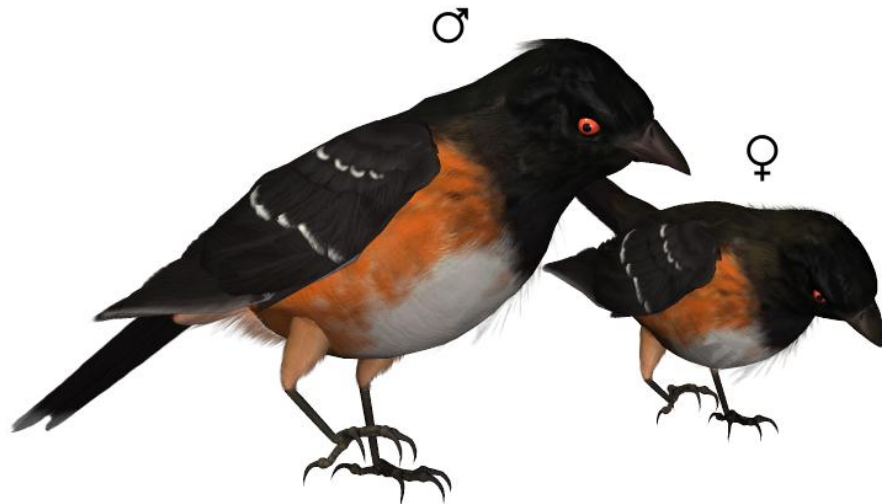
Habitat: North America; United States and Canada; west of the Rockies. Prefers forest edges, shrubby areas with good cover.

Status: Least Concern. **Global population:** 14,000,000 Mature individuals. Widespread and abundant, increasing in some areas. Island forms vulnerable.

Diet: Insects and seed, occasionally fruit. Forages on the ground, scratching in a two-footed, backwards-scratching hop called a "double-scratch".

Breeding:

Two to six eggs are laid in a Nest on ground or in low vegetation. Nest made of strips of bark, dead leaves, dry grass and plant stems and lined with softer materials.



Cool Facts: The Spotted Towhee and Eastern Towhee were once thought to be the same species and called the Rufous Towhee. The Spotted hybridizes with the Eastern in the Great Plains. There are 21 different subspecies of Spotted Towhee; three on islands off the Pacific Coast. The race from Isla Guadalupe off Baja California is extinct. The small race on the island of Socorro off Baja California and the larger race on Santa Catalina Island off southern California are vulnerable to extinction because of their restricted ranges. The Santa Catalina form formerly was found on San Clemente Island, but disappeared from there by 1976.

How determined is a towhee in using its "Double-scratch" foraging technique? In a reported account, "one Spotted Towhee with an unusable, injured foot was observed hopping and scratching with one foot".

Common Name: Western Meadowlark
Scientific Name: *Sturnella neglecta*

Size: 6-10 inches (16-26cm)

Habitat: North America; west of the Mississippi. Found in open field areas, forest edges.

Status: Least Concern. **Global Population:** 32,000,000 Mature individuals. Though widespread, populations are declining.



Diet: Insects, grain, and weed seeds. Forages on the ground, often probing the soil.

Breeding: Three to six eggs are laid in a open cup nest on the ground generally woven into shrubs. The nest of the Western Meadowlark usually is partially covered by a grass roof. It may be completely open, however, or it may have a complete roof and an entrance tunnel several feet long.

Cool Facts: While the Western and Eastern Meadowlark is close to identical, the two species rarely hybridize. Captive breeding experiments found that hybrid meadowlarks were fertile, but produced few eggs that hatched.

Males are polygamous, usually has two mates at the same time. The females do all caring for the eggs and feeding of the fledglings.

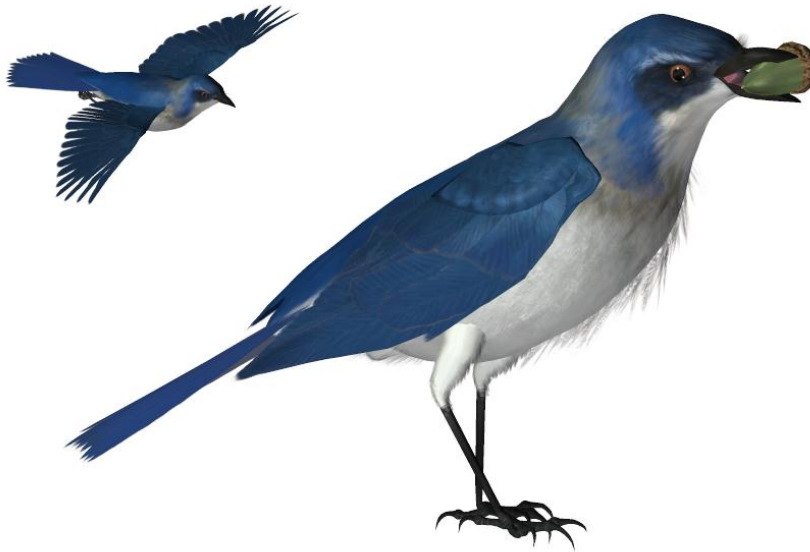
The Western Meadowlark uses a "chase" display during mating season with the male chasing the female. The female usually starts the display, and she determines the speed of the chase. However, males with two mates choose to be discrete, following only one female at a time.

Common Name: Western Scrub-Jay
Scientific Name: *Aphelocoma californica*

Size: 11-12 inches (28-30cm)

Habitat: North America; California, Baja California, Nevada, Utah, Colorado and New Mexico. Throughout much of the western lowlands, especially in areas with oaks and pinyon pines.

Status: Least Concern. **Global Population:** 3,400,000 Mature individuals. Common, populations may be increasing. The isolated subspecies found only in the Eagle Mountains of southeastern California is potentially vulnerable to disturbance, and is listed as a species of special concern in California.



Diet: Acorns, nuts, seed and insects.

Breeding: Two to six eggs are laid in open cup style nest in shrub, vine or low tree.

Cool Facts: Scrub-Jays are very intelligent. Often getting humans to do their bidding. In one account, a pair of scrub-jays directed a

homeowner across a yard to scare off a cat in a tree close to their nest.

Scrub-Jays have been used in laboratory studies of its ability to hide and remember seeds. Jays that had stolen the caches of other jays noticed if other jays were watching them hide food. If they had been observed, they would dig up and hide their food again. Jays that had never stolen food did not pay any attention to whether other jays were watching them hide their food. Scrub-jay have formed a symbiotic relationship with mule deer. They hop over the body and head of the deer to eat parasites. The deer often help the jays by standing still and holding their ears up.

Scrub-Jays in areas where acorns are abundant have deep, stout, slightly hooked bills while those in areas with lots of pinyon pine have long, shallow, pointed bills. This evolutionary change has created the right bill for the right food source.

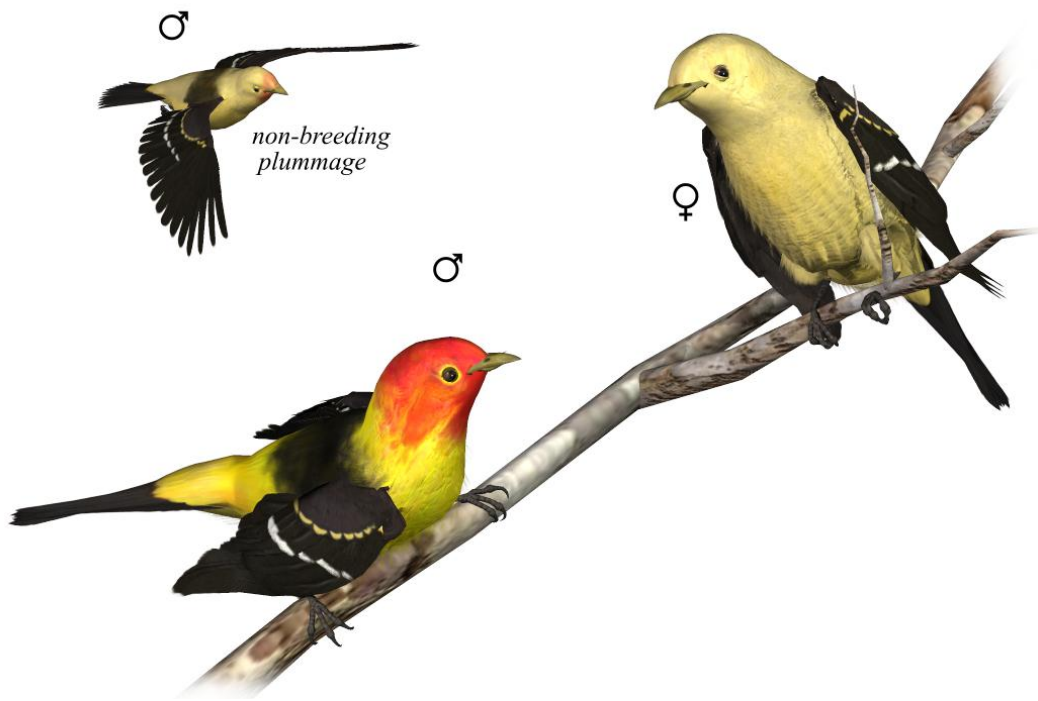
Common Name: Western Tanager
Scientific Name: *Piranga ludoviciana*

Size: 6-7 inches (16-19cm)

Habitat: North America; West of the Rockies. Open conifer and mixed conifer forests.

Status: Least Concern. **Global Population:** 8,900,000 mature individuals.

Diet: Insects, some fruit. Forages in shrubs, does some fly catching and may come to feeders for fruit



Breeding: Four white eggs are laid in a flimsy open cup nest on an outer branch of a tree.

Cool Facts: The Western Tanager breeds farther north than any other member of its mostly tropical family, breeding to nearly 60° N in the Northwest Territories.

The red pigment in the face of the Western Tanager is rhodoxanthin and is acquired through diet. This pigment rare in birds is not the same red pigment found in other red tanagers such as the Scarlet Tanager. The redder the male, the more attractive he is to the females.

Common Name: White-crowned Sparrow
Scientific Name: *Zonotrichia leucophrys*

Size: 6 inches (15-16cm)

Habitat: North America; Summers in the United States and Mexico, and winters in Canada. Breeds in tundra, boreal forest, and alpine meadows over most of range. On West Coast is found in suburban areas and near the ocean in areas with bare ground and shrubs.

Status: Least Concern. **Global Population:** 70,000,000 Mature individuals. Widespread; May be declining in some areas in western United States.

Diet: Seed, buds and insects. Feeds primarily on ground. Scratches in litter with both feet.

Breeding: Three to seven eggs are laid in a loose cup nest found in a low shrub or on the ground.



Cool Facts: A young male White-crowned Sparrow learns the basics of the song it will sing as an adult during the first two or three months of its life. It does not learn directly from its father, but rather from the generalized song environment of its natal neighborhood. Because male White-crowned Sparrows learn the songs they grew up with and do not travel far from where they were raised, song dialects frequently form. Males on the edge of two dialects may be bilingual and able to sing both dialects.

Four of the five subspecies of White-crowned Sparrows are migratory. The sedentary race lives in a very narrow band along the California coast. The most widespread race, breeding across northern Canada and wintering in the eastern United States, is the least-studied and least well known of all the races.

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Population estimates from Birdlife International (birdlife.org)

Authors' Notes:

There has been several times the Songbird ReMix series almost came to a close. This chapter was one of those times. I compiled this chapter with many of the birds "I had to have" believing Cool and Unusual Birds would close the series. As history shown, I revived the series soon after with many volumes to follow. I even created a sequel to this volume... I guess as long as there's interesting birds out there to create, there will be always incentive to create another volume.



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