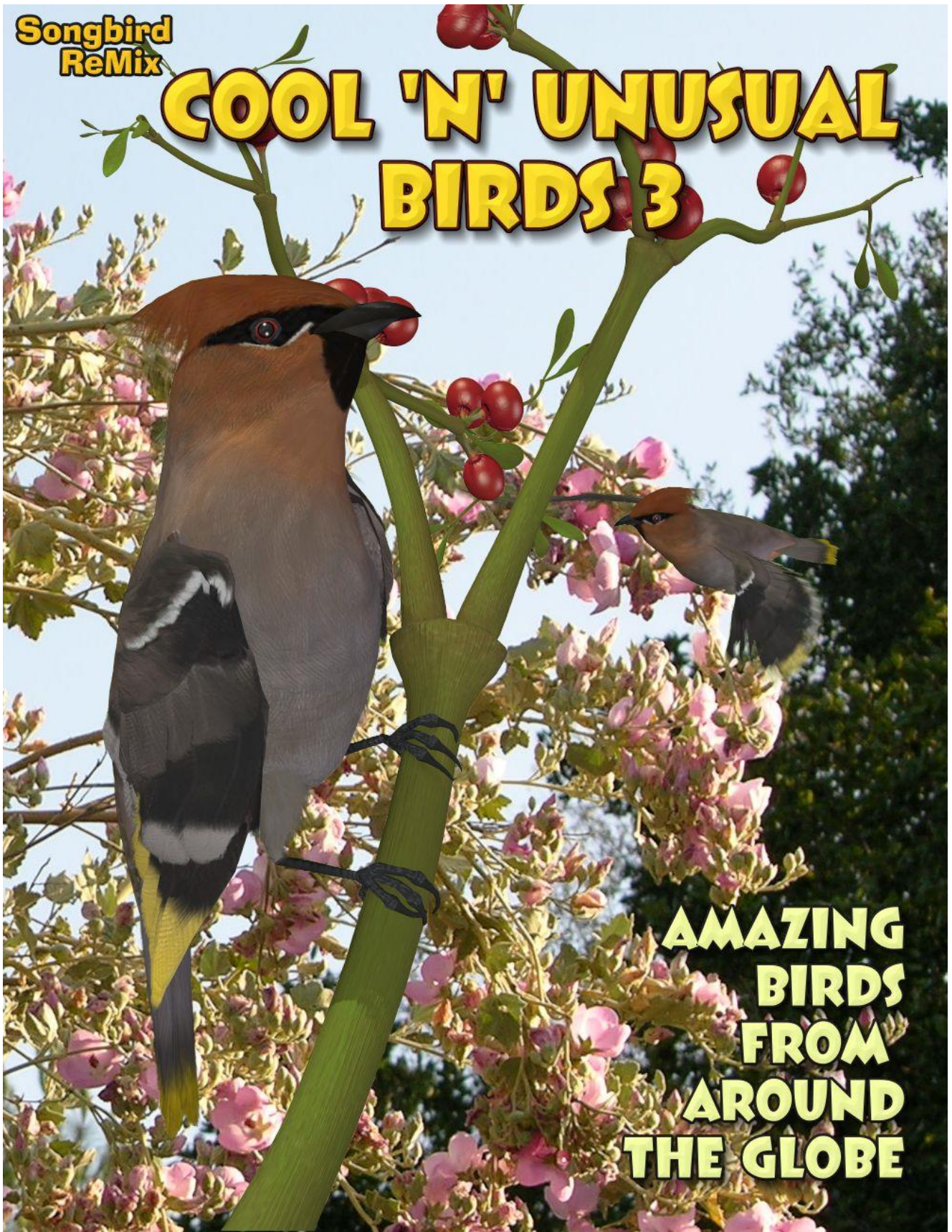


**Songbird
ReMix**

COOL 'N' UNUSUAL BIRDS 3



**AMAZING
BIRDS
FROM
AROUND
THE GLOBE**

Avian Models for 3D Applications
Characters and Procedural Maps by Ken Gilliland

Songbird ReMix

COOL 'N' UNUSUAL BIRDS 3

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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 'N' UNUSUAL BIRDS 3

Manual & Field Guide

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Introduction

The “Cool ‘n’ Unusual Birds” series features two different selections of birds. There are the “unusual” or “wow” birds such as Luzon Bleeding Heart, the sleek Bohemian Waxwing or the patterned Pink-throated Twinspot. All of these birds were selected for their spectacular appearance. The “Cool” birds refer to birds that have been requested by Songbird ReMix users (such as the Hyacinth Macaw, American Redstart and Red-eyed Vireo) or that are personal favorites of the author (American Bushtit, Wrentit and Song Sparrow).

Songbird ReMix Overview


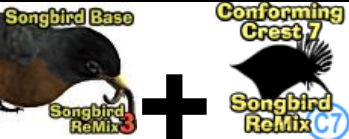



Select **Characters** in Poser and go to the **Songbird ReMix** folder. Here you’ll find an assortment of files that are easily broken into 2 groups: **Conforming Parts** and **Bird Base models**. Let’s look at what they are and how you use them:

- **Bird Base Models**
 - **SBRM Base Model** - This model is used with most birds in this package. Load this model first and then the appropriate Conforming Parts as needed.
 - **<G> SBRM Gamebird Base Model** - This model is specifically for use with Gamebirds, Pigeons and Doves. See the “G” icon in the lower right corner? This corresponds with characters in the Pose folders. All MAT/MOR files with the “G” icon use this model.
 - **<P> SBRM Parrot Base Model** - This model is specifically for use with Parrots. See the “P” icon in the lower right corner? This corresponds with characters in the Pose folders. All MAT/MOR files with the “P” icon use this model.
- **Conforming Parts** (All Conforming Crests have alphanumeric icons in the lower right corners such as “C07” or “C17”. 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 Crests, 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:

- **<C07> Conforming Crest 7.** For use with the Inca Jay. There is a Stretch morph in the head section that mirrors the base model’s Stretch morph.
- **<C33> Conforming Crest 33.** For use with the Male Taiwan Firecrest. There are numerous shaping morphs included.

Model & Add-on Crest Quick Reference

Load Model(s)	To Create... (apply MAT/MOR files)
	<ul style="list-style-type: none"> • Red-eyed Vireo • Green Jay • Formosan Blue Magpie • Wrenit • American Bushtit • Bohemian Waxwing • Horned or Shore Lark • Purple-crowned Fairywren • American Redstart • Song Sparrow • Pink-throated Twinspot
	<ul style="list-style-type: none"> • Inca Jay
	<ul style="list-style-type: none"> • Taiwan Firecrest (Male Only)
	<ul style="list-style-type: none"> • Luzon Bleeding-heart • Pink-necked Green Pigeon
	<ul style="list-style-type: none"> • Hyacinth Macaw

Creating a Songbird ReMix Bird

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 a Sparrow species.
2. Load Poser or DAZ Studio and select **FIGURES** and the Songbird ReMix folder. DAZ Studio users will select the "Poser Formats" → "My Library" → "FIGURES" → "Songbird ReMix".
3. Because all of the Sparrows use the "Songbird" base model we'll load that.
4. Go to the **POSES** folder and **Songbird ReMix** Master folder, then select the appropriate Songbird Remix library. This again, for DAZ Studio users will be found in the "Poser Formats" file section.
5. Select one of the Sparrow Species and load/apply it by clicking the mouse on to our loaded Songbird ReMix base model. This species pose contains morph and texture settings to turn the generic model into the selected Sparrow. It will automatically apply the correct DAZ Studio material settings if you are using DAZ Studio.

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.

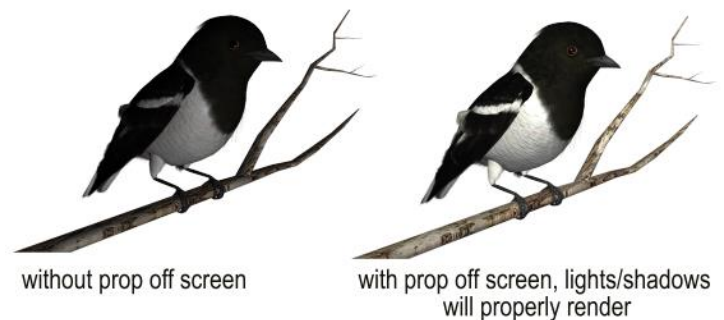
Displacement in Poser 5+

In Poser, several settings will help to bring out the best in this bird set. Under "Render Settings" (CTRL+Y) make sure you check "**Use Displacement Maps**" and (in some rare cases) the "**Remove Backfacing Polys**" boxes. In some poses, the wing morphs will expose backfacing polygons which tend to render black. Clicking the "Remove Backfacing Polys" fixes this.

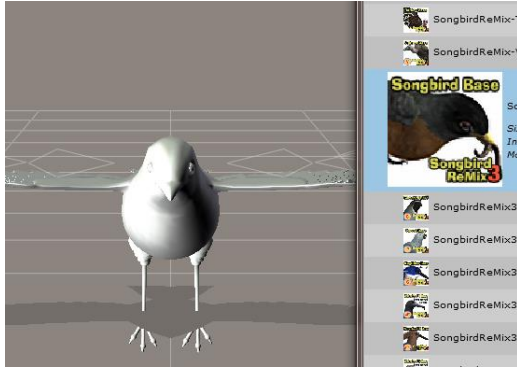
Scaling and Square Shadows in Poser

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

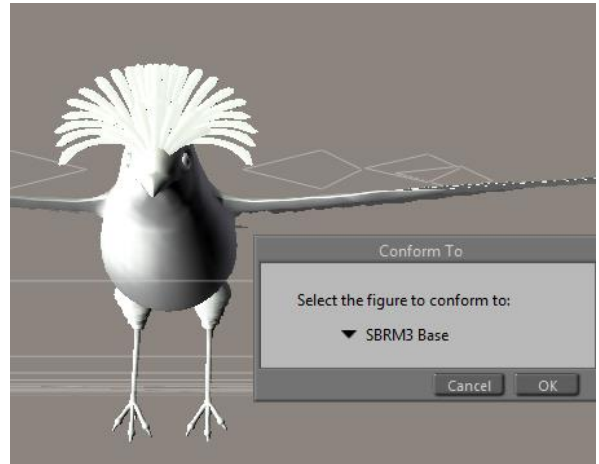
Poser shadow in the scene (even if it is off camera) and the square shadows will be fixed or BODY scale the bird to a larger size.



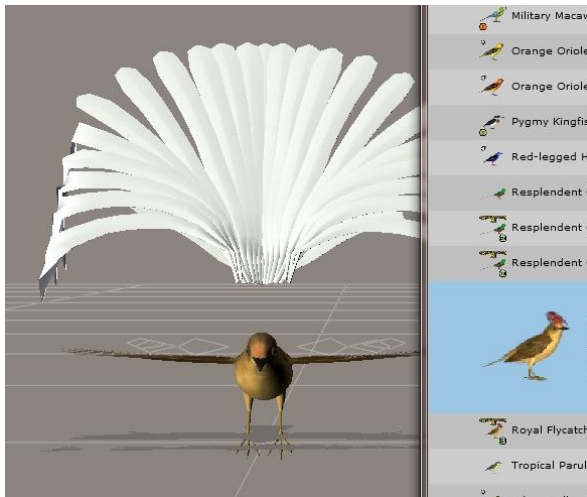
How to build a Songbird ReMix Character with a Conforming Crest in Poser



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.



Updates and Freebies

The Songbird ReMix series is constantly growing and improving. New morphs and additions to upcoming and future products often end up benefiting existing sets with new geometry, morphs and textures.

Songbirdremix.com always has the latest updates and additions to existing Songbird ReMix products (often months before they are updated at DAZ), plus the latest digital and real bird news, tutorials, videos, all the Field Guides, free bird characters, props and much more...

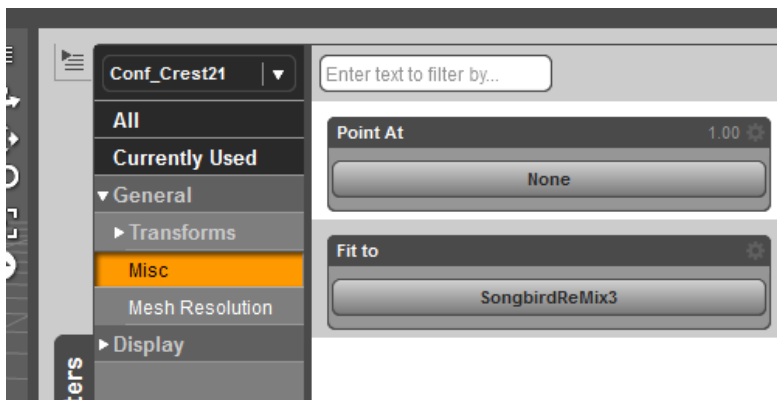
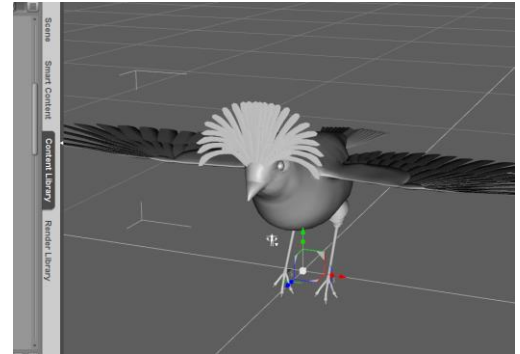
[Songbird ReMix.com](http://SongbirdReMix.com)



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.

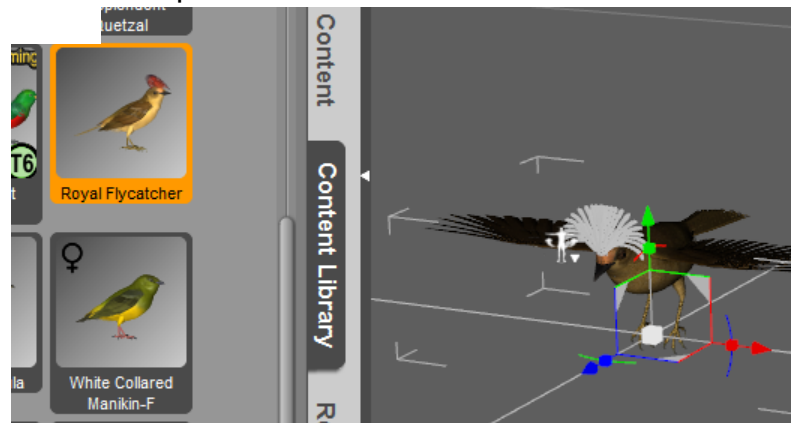
Now, using the “FIT TO” command in the Parameters Tab, Select the Songbird ReMix Model. Go back to the **Scene** Tab and select the Songbird ReMix Model.



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.



COOL 'N' UNUSUAL BIRDS 3

Field Guide

Parrots and their Allies

Hyacinth Macaw

Pigeons and Doves

Luzon Bleeding-heart

Pink-necked Green Pigeon

Vireos

Red-eyed Vireo

Crows, Jays and Magpies

Green Jay

Inca or South American Green Jay

Formosan Blue Magpie

Chickadees, Nuthatches and their Allies

American Bushtit

Old World Warblers, Thrushes and their Allies

Wrentit

Waxwings

Bohemian Waxwing

Larks

Horned or Shore Lark

Crests

Taiwan Firecrest

Fairywrens and their Allies

Purple-crowned Fairywren

Wood Warblers

American Redstart

Sparrows

Song Sparrow

Twinspots

Pink-throated Twinspot

Common Name: Hyacinth Macaw

Scientific Name: *Anodorhynchus hyacinthinus*

Size: 39 inches (100 cm)

Habitat: South America; there are three main populations left in the northern part of South America. These are: 1- in the Pantanal region of Brazil and adjacent eastern Bolivia as well as northeastern Paraguay, 2- in the Cerrado region of the



eastern interior of Brazil (Maranhão, Piauí, Bahia, Tocantins, Goiás, Mato Grosso and Minas Gerais), and 3- in the relatively open areas associated with the Tocantins River, Xingu River, Tapajós River, and the Marajó island in the eastern Amazon Basin of Brazil. It is possible that smaller, fragmented populations occur in other areas.

Hyacinth Macaws prefer palm swamps, woodlands, and other semi-open wooded habitats. They usually avoid dense humid forests, and in regions dominated by such habitats, they are generally restricted to the edge or relatively open sections (e.g. along major rivers). In different areas of their range these parrots are found in savannah grasslands, in dry thorn forest known as 'caatinga', and in palm stands, particularly the Moriche Palm (*Mauritia flexuosa*).

Status: Endangered. **Global Population:** 6,500 mature individuals with a decreasing trend. A very rapid population decline is suspected to have taken place over the last three generations, on the basis of

large scale illegal trade, habitat loss and hunting. This is based on a precautionary assumption of a generation length of 15 years. The Hyacinth Macaw is protected by law in Brazil and Bolivia, and commercial export is banned by its listing on Appendix I of the Convention on International Trade in Endangered Species (CITES). There are a number of long-term studies and conservation initiatives in place; the Hyacinth Macaw Project in the Brazilian State of Mato Grosso do Sul, has carried out important research by ringing individual birds and has created a number of artificial nests to compensate for the small percentage of sites available in the region. The Minnesota Zoo with BioBrasil and the World Wildlife Fund are involved in Hyacinth Macaw conservation.

Diet: Nuts from native palms, such as acuri and bocaiuva palms.

Breeding: Male and female are identical in external appearance, and juveniles resemble adults except they have shorter tails and the yellow on their faces is paler.

Nesting takes place between July and December, nests are constructed in tree cavities or cliff faces depending on the habitat. In the Pantanal region, 90% of nests are constructed in the manduvi tree (*Sterculia apetala*). Hollows of sufficient size are only found in trees of around 60 years of age or older, and competition is fierce. Existing holes are enlarged and then partially filled with wood chips.

The clutch size is one or two eggs, although usually only one fledgling survives as the second egg hatches several days after the first, and the smaller fledgling cannot compete with the first born for food. The incubation period lasts about a month, and the male will tend to his mate while she incubates the eggs. The chicks leave the nest, or fledge, at around 110 days of age, and remain dependent on their parents until six months of age. They are mature and begin breeding at seven years of age. Eggs are regularly predated by corvids, possums, coatis and most prolifically toucans.

Cool Facts: English ornithologist John Latham discovered the Hyacinth Macaw in 1790.

Macaw beaks are so strong that they are even able to crack coconuts.

Common Name: Luzon Bleeding Heart
Scientific Name: *Gallicolumba luzonica*

Size: 12 inches (30 cm)

Habitat: Asia; the Philippines. The species is endemic to the central and southern parts of the large island of Luzon, and the neighboring small Polillo Islands, in the Philippines.

It lives in primary or secondary forests, and can be found at altitudes varying from sea level up to 1400 meters.

Status: Near Threatened. **Global Population:** Unknown amount of mature individuals. There is no data on population trends; however, it is suspected the species is in moderately rapid decline, owing to habitat loss, degradation, and hunting. Local people use it for meat, but its striking appearance means that there is also a market for it in the pet trade. A captive breeding project has been started in Australia.



Diet: Seeds, berries and grubs. It forages on the ground, searching the leaf-litter for seeds, fallen fruits and invertebrates.

Breeding: On its upper surfaces, the Luzon Bleeding-heart is slate grey in color, but because it is iridescent, it can appear to be purple, royal blue, or bottle-green, with the apparent color varying with lighting conditions. The belly and under wing areas are buff or chestnut. As in most pigeons, there is little sexual dimorphism; males tend to be larger and have a more pronounced red patch, and some authorities claim that the female has a purplish iris, though others dispute this. Body shape is typical of the genus, with a round body, a short tail and long legs.

They usually lay two eggs in each clutch.

Cool Facts: They get their name from a splash of vivid red color at the center of their white breasts. The Luzon Bleeding-heart is the species in which this feature is most pronounced, and on first sight it is hard to believe that the bird has not recently been wounded. A reddish hue that extends down the belly furthers the illusion of blood having run down the bird's front.

Common Name: Pink-necked Green Pigeon
Scientific Name: *Treron vernans*

Size: 10.4-12.5 inches (26.5-32cm)

Habitat: Asia; Cambodia, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

Its natural habitats are subtropical or tropical moist lowland forests, subtropical or tropical mangrove forests, and subtropical or tropical moist montane forests.

Status: Least concern. **Global Population:** Unknown amount of mature individuals. The population is suspected to be stable in the absence of evidence for any declines or substantial threats.

Diet: Figs, palm fruit and berries. They also nibble on flower buds. In Sungei Buloh, their favorite food include the fruit of the Macaranga, Cherry Tree (*Muntingia calabura*), small banyan figs (*Ficus benjamina*), and Singapore Rhododendron (*Melastoma malabathricum*).



Breeding: The male Pink-necked is very handsome and colorful. The duller female is easily confused with those of other Green Pigeons and is best identified by her male consort who is usually nearby.

The nest is a flimsy platform of twigs. About 15-20 cm in diameter, and so thin that sometimes the contents can be seen from below. The male collects the nesting materials and passes them on to the female to assemble.. Pairs nest alone, preferring spots near open spaces, in bushes as low as 2m off the ground and up to 10m high in trees and palms. 1-2 white eggs are laid. Both parents take turns incubating them and both raise the young. Fledglings may remain near the nest for up to 1 week.

Cool Facts: The most fascinating feature of pigeons and doves is their ability to produce crop milk. During breeding season, special glands in the crops of both males and females enlarge and secrete a thick milky substance. The chicks drink this milk by poking their bills into the parent's throat. Thus, pigeons and doves can feed their young without having to incessantly hunt or forage for food.

Common Name: Red-eyed Vireo
Scientific Name: *Vireo olivaceus*

Size: 4.7-5.1 inches (12-13cm)

Habitat: North and South America; the breeding habitat is open wooded areas across Canada and the eastern and northwestern United States. These birds migrate to South America, where they spend the winter. The Latin American population occurs in virtually any wooded habitat in their range. Most of these are residents, but the populations breeding in the far southern part of this species' range (e.g. most of its range in Argentina, Uruguay, Paraguay and Bolivia) migrate north as far as Central America.

This vireo is one of the more frequent American passerine vagrants to Western Europe, with more than one hundred records, mainly in Ireland and Great Britain.



Status: Least Concern. **Global Population:** 140,000,000 mature individuals. It is subject to nest predation by cowbirds. This species has undergone a small or statistically insignificant increase over the last 40 years in North America.

Diet: Insects; primarily caterpillars and aphids. Vireos glean insects while moving along branches. It kills

larger prey by crushing or beating it against branches and holds food with its foot while eating. Occasionally vireos will eat berries, especially before migration.

Breeding: Sexes are alike. Immature vireos have brown eyes and yellower under parts than the adults.

The nest is a cup in a fork of a tree branch and is made of twigs, bark strips, grasses, pine needles, and lichen held together with spider web. The inner lining is comprised of grasses, plant fibers, and hair. Dull white speckled with reddish brown eggs are laid.

Cool Facts: One of the most common birds of the Eastern forests, the Red-eyed Vireo is heard far more than it is seen. It appears to be endlessly repeating the same question and answer. Among bird species it holds the record for most songs given in a single day- more than 20,000 songs.

Red-eyed Vireos living year-round in South America may be a separate species.

Common Name: Green Jay
Scientific Name: *Cyanocorax luxuosus*

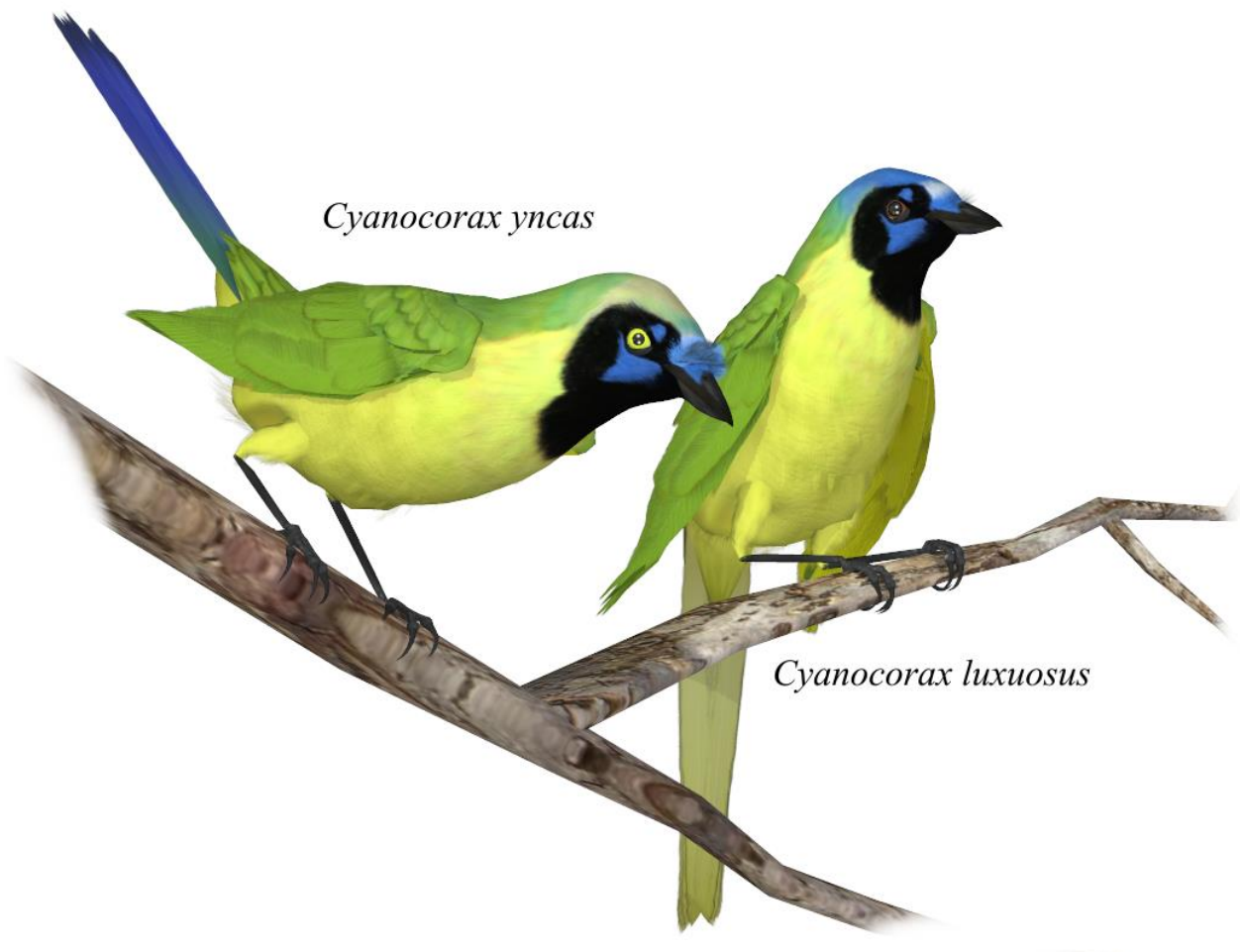
Size: 10-11.4 inches (25-29 cm)

Habitat: North America; Southern Texas south into Mexico and Central America.

Found in open woodland and brushy mesquite thickets.

Status: Least Concern. **Global Population:** Unknown amount of mature individuals. The range appears to be expanding in Texas.

Diet: Arthropods, vertebrates, seeds, and fruit. They take ebony (*Ebenopsis spp.*) seeds where these occur, and also any oak species' acorns, which they will cache. Meat and human scraps add to the diet when opportunity arises. Green Jays have been observed using sticks as tools to extract insects from tree bark.



Breeding: Sexes are alike. They have feathers of yellowish-white with blue tips on the top of the head, cheeks and nape. A black bib forms a thick band up to the

sides of the head as well as a stripe through the eye line and one above it. The breast and under parts typically are bright to dull yellow, or strongly green-tinged in the far northernmost part of its range. The upper parts are rich green. The color of the iris ranges from dark brownish to hazel.

A Green Jay flock consists of a breeding pair, the current year's nestlings, and one-year-old, non-breeding jays from the previous year's nest. The one-year-olds defend the territory, which aids the parents, but they are ejected from the family flock soon after the current year's nestlings have fledged.

Nests are a flimsy open cup of thorny twigs, usually lined with fine roots, vine stems, moss, and dry grass and are placed in trees. The female lays pale greenish white eggs with dark spots near large end.

Cool Facts: The Central American and South American populations of the Green Jay are separated by 1,500 km (900 mi). The two different groups differ in color, calls, and habitat use, and may be different species. The South American Green Jays are larger and have a crest in front of their eyes. It has been suggested that the North American taxa should be considered separate species, *Cyanocorax luxuosus*. If following this taxonomy, the northern species retains the common name Green Jay, while the South American population, which retains the scientific name *Cyanocorax yncas*, is renamed the Inca Jay

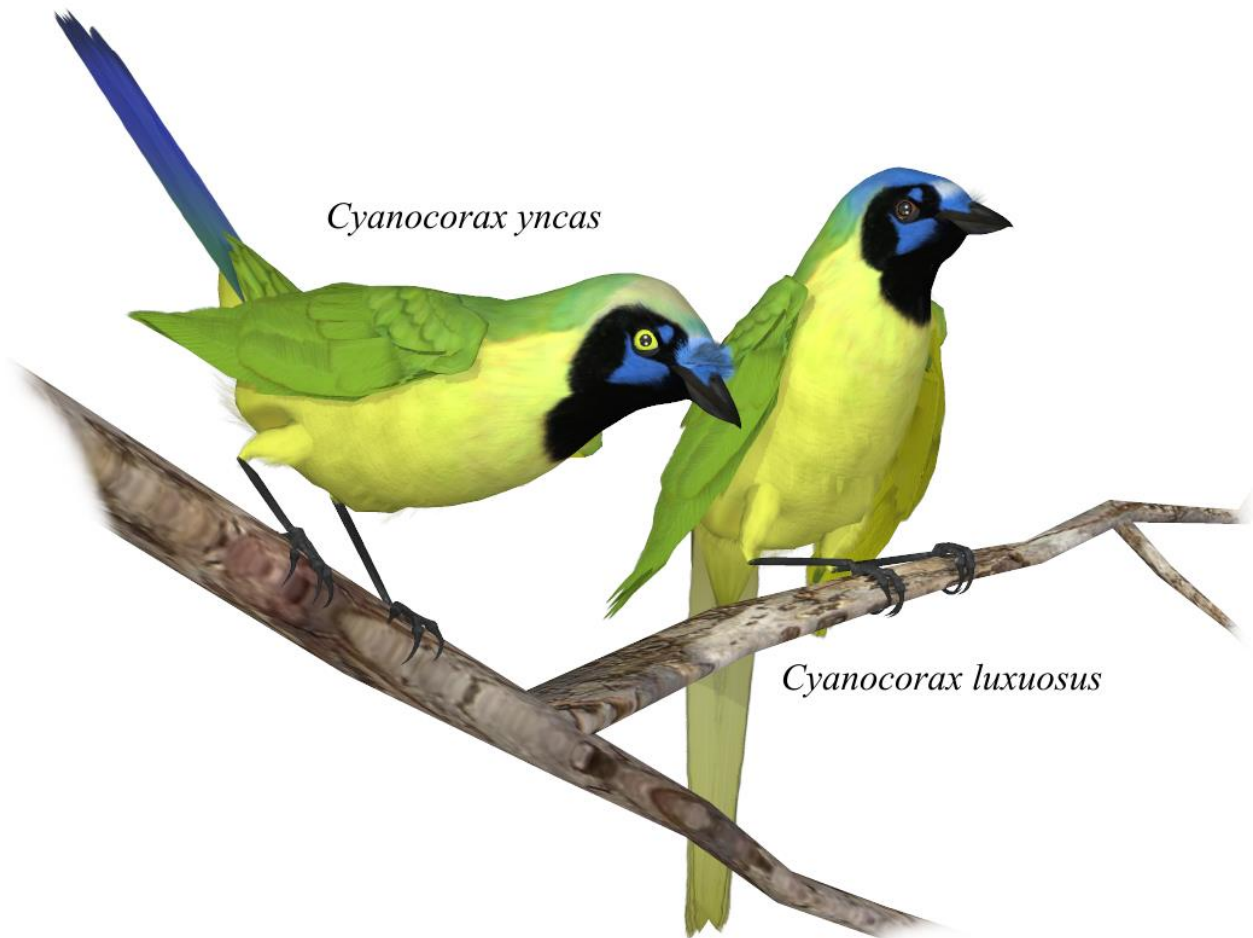
Common Name: Inca or South American Green Jay
Scientific Name: *Cyanocorax yncas*

Size: 11.7-13.6.4 inches (29.5-34.3 cm)

Habitat: South America; broad sweep across the highlands (primarily the Andes) of South America in Colombia, Venezuela, Ecuador, Peru, and Bolivia.

Found in humid forests.

Status: Least Concern. **Global Population:** Unknown amount of mature individuals.



Diet: Arthropods, vertebrates, seeds, and fruit. They take ebony (*Ebenopsis spp.*) seeds where these occur, and also any oak species' acorns, which they will cache. Meat and human scraps add to the diet when opportunity arises. Green Jays have been observed using sticks as tools to extract insects from tree bark.

Breeding: Sexes are alike. The crown can appear almost entirely white, with less extensive blue, and there's a prominent black crest behind the bill. A black bib forms a thick band up to the sides of the head as well as a stripe through the eye line and one above it. The breast and under parts typically are bright to dull yellow, or strongly green-tinged in the far northernmost part of its range. The upper parts are rich green. It has large nasal bristles that form a distinct tuft. The color of the iris is bright yellow.

Nests are a flimsy open cup of thorny twigs, usually lined with fine roots, vine stems, moss, and dry grass and are placed in trees. The female lays 3-5 pale greenish white eggs with dark spots near large end. In Colombia, the Inca Jay retains offspring for several years, and those young help the parents raise more chicks.

Cool Facts: The Central American and South American populations of the Green Jay are separated by 1,500 km (900 mi). The two different groups differ in color, calls, and habitat use, and may be different species. The South American Green Jays are larger and have a crest in front of their eyes. It has been suggested that the North American taxa should be considered separate species, *Cyanocorax luxuosus*. If following this taxonomy, the northern species retains the common name Green Jay, while the South American population, which retains the scientific name *Cyanocorax yncas*, is renamed the Inca Jay.

As with most of the typical jays, this species has a very extensive voice repertoire. The bird's most common call makes a rassh-rassh-rassh sound, but many other unusual notes also occur. One of the most distinctive calls sounds like an alarm bell.

Common Name: Formosan or Taiwan Blue Magpie
Scientific Name: *Urocissa caerulea*

Size: 25-26 inches (64-65 cm)

Habitat: Asia; Taiwan. It is an endemic species living in the mountains of Taiwan at elevations of 300 to 1200m.

Status: Least Concern. **Global Population:** Unknown amount of mature individuals. Due to its endemism, the Taiwan Blue Magpie has been listed as a rare and valuable species (珍貴稀有保育類) and protected by Taiwan's Cultural Heritage Preservation Act (Traditional Chinese: 文化資產保存法) since 1989. There is a small population of Red-billed Blue Magpies that have been introduced to Wuling Farm in Taichung County (now part of Taichung City). In



2007, three hybrids were found in Taichung, which has caused some concern to conservationists, who fear the Taiwan Blue Magpie could be threatened in a similar way to the Taiwan Hwamei. However, the Endemic Species Research

Institute of Taiwan has been working to control Red-Billed Magpie populations by capturing individual birds and relocating their nests.

Diet: Snakes, rodents, small insects, plants, fruits, and seeds, with wild figs and papayas being their favorites. They are known to store leftovers on the ground and cover them with leaves for future retrieval. Sometimes they store food in leaves or branches.

Breeding: The plumage of males and females look alike. Their head, neck and breast are black; eyes are yellow; bill and legs are red; the rest of the plumage on the bird is a rich dark blue to purple in color. They also have white markings on the wings and the tail.

The Blue Magpie is monogamous. Females incubate eggs while males help out with nest building and feeding. Their nests are usually found in the woods and weeds of rendezvous areas. They are woven with twigs and weeds in the shape of a bowl. Most are built on higher branches from March to April. The eggs usually number 3-8 and are olive green in color, with dark brown marks. Hatching takes 17–19 days and the success rate is 78.3%. This will yield 3-7 chicks per nest. Blue Magpies have a strong nest defense behavior, and will attack intruders mercilessly until they retreat.

Cool Facts: In the 2007 National Bird Voting Campaign held by Taiwan International Birding Association, there were over 1 million votes cast from 53 countries. The Blue Magpie defeated the Mikado Pheasant and was chosen as Taiwan's national bird, though it has yet to be formally accepted.

It is also called the Taiwan Magpie (Chinese: 臺灣藍鵲) or the "Long-tailed Mountain Lady" (Chinese: 長尾山娘)

Common Name: American Bushtit
Scientific Name: *Psaltriparus minimus*

Size: 2.8-3.1 inches (7-8 cm)

Habitat: North America; a year-round resident of the western United States and highland parts of Mexico, ranging from Vancouver through the Great Basin and the lowlands and foothills of California to southern Mexico and Guatemala.

The American Bushtit inhabits open woods or scrubby areas, particularly pine-oak woodlands and chaparral, as well as suburbs and parks. They also live in scrub, sagebrush, streamside woods and thickets, in addition to forests of pinyon pine, juniper, and other evergreens up to about 11,500 feet elevation.



Status: Least Concern. **Global**

Population: Unknown amount of mature individuals. Bushtits are common birds that adjust well to suburbs. Their population size and range have gradually expanded during the twentieth century, possibly because of growth in human settlements.

Diet: Small insects and spiders, including the very tiny scale insects that adhere to leaves and twigs, as well as other plant-feeding bugs, beetles, caterpillars, wasps, and ants. They less frequently eat plant material, but have been seen eating olives and willow seeds. American Bushtits are active and gregarious; foraging for small insects and spiders in mixed-species feeding flocks containing species such as chickadees and warblers that number from 10 to over 40 individuals. Members of the group constantly make contact calls to each other that can be described as a short 'spit'.

Breeding: Sexes are alike in appearance. The male and female try out several nest sites by hanging spiderweb from mistletoe or other vegetation. They tend to

build nests on branches or trunks of trees at any height from about 3 up to 100 feet.

Both male and female help build the remarkable hanging nest, a process that may go on for a month or more. The nest hangs up to a foot below its anchor point and has a hole in the side near the top that leads down into the nest bowl. The adults make a stretchy sac using spider webs and plant material, sometimes stretching the nest downward by sitting in it while it's still under construction. They add insulating material such as feathers, fur, and downy plant matter and camouflage the outside with bits taken from nearby plants, including the tree the nest is built in. While the nest is active all the adults associated with it (the breeding pair plus helpers) sleep in it. The pair typically reuses the nest for its second brood of the season.

A breeding Bushtit pair often has helpers at the nest that aid in raising the nestlings. This already rare behavior is made more unusual by the fact that the helpers are typically adult males. For most breeding birds, only one adult at a time sleeps on the nest, but all Bushtit family members sleep together in their large, hanging nest during the breeding season. Once the young fledge, they all leave the nest and thereafter sleep on branches.



Cool Facts: The American Bushtit is the only species in the family *Aegithalidae* found in the New World, and the only member of the genus *Psaltriparus*. It also is the smallest songbird in North America.

The "Black-eared" Bushtit was formerly considered a separate species (*P. melanotis*). It can be identified by its dark ear patch (the auricular). This polymorphism does not occur in the northern part of the American Bushtits' range, but is first noted near the Mexican border, primarily in Texas. Most individuals with the black ear patch in that area are juvenile males, and none are adult females – some have only one or two dark lines on the face instead of a complete patch. The Black-eared form becomes more common southward in the northeastern (but not the northwestern) highlands of Mexico until from central Mexico south, all males have a complete black ear patch and even adult females have a black arc over the eye and usually a black line through the eye.

The oldest known Bushtit was 9 years, 1 month old.

Common Name: Wrentit
Scientific Name: *Chamaea fasciata*

Size: 5.9 inches (15 cm)

Habitat: North America; resident of a narrow strip of coastal habitat in the western coast of North America, being found from Oregon south to Baja California, the north state of the Baja California peninsula.

Found in coastal scrub and montane chaparral, forests with dense shrub understory.



Status: Least Concern. **Global Population:** Unknown amount of mature individuals. This species has had stable population trends however the continued urban development of coastal sage shrub habitats may cause drops in local populations.

Diet: Beetles, caterpillars, bugs, and ants, but also takes small berries and seeds. Gleans insects from twigs and bark.

Breeding: Sexes are alike. The Wrentit has a uniform dull olive, brown, or grayish plumage. It has short wings and a long tail often held high (hence the comparison to wrens). It has a short bill and a pale iris.

Wrentit pairs mate for life, and may be together for more than 12 years. Both sexes incubate and sing to defend the territory. The nest is a tidy open cup made of bark strips held together with insect silk, lined with soap plant or grass, placed in crotch of shrub branches. One to five Greenish blue eggs are laid.

Cool Facts: Wrentits along the coast and in the more humid areas of the north tend to be darker than individuals living in drier and more interior parts of the range.

The Wrentit has been variously placed in its own family, the *Chamaeidae*, or with the long-tailed tits (*Aegithalidae*), the true tits and chickadees (*Paridae*), the "Old World warblers" (*Sylviidae*), and with the "Old World babblers" (*Timaliidae*). The American Ornithologists' Union placed the Wrentit in the latter family, giving it the distinction of being the only babbler known from the New World. This was based on DNA-DNA hybridization studies, which are phenetic (grouped by all overall similarities).

Through DNA sequence analysis, it was subsequently discovered that the Wrentit was more closely allied to *Sylvia* warblers and some aberrant "babblers". They consequently must be placed in the *Sylviidae* family, together with the Wrentit and the parrotbills, which also turned out to be close relatives. Thus, the Wrentit is the only American species of the "true" or sylviid warblers. Peculiarly, the Dartford Warbler and close relatives like Marmora's Warbler bear an uncanny resemblance to the Wrentit; their ecology is quite similar indeed as all are birds of Mediterranean scrub. However, biogeography and the molecular data build a strong case for this similarity being a case of convergent evolution between birds that are close relatives but by far not as close as their appearance would suggest.

Common Name: Bohemian Waxwing
Scientific Name: *Bombycilla garrulus*

Size: 6.3-8inches (16-21cm)

Habitat: North America, Europe and Asia; It breeds in coniferous forests throughout the most northern parts of Europe, Asia and western North America.

It breeds in open coniferous or mixed forests, especially taiga. It winters wherever fruits are found, including gardens, parklands, and cities.

Status: Least Concern. **Global Population:** Unknown amount of mature individuals. Populations are decreasing throughout its range.

Diet: Berries supplemented by insects (especially during the breeding season). They fly-catch for flying insects, glean insects from vegetation and pluck fruit while perched, sometimes hover briefly to snatch fruit. They swallow the fruit whole.

Breeding: It is larger, fatter and greyer than the Cedar Waxwing and has bright yellow, black or rusty orange color on its tail feather tips and a yellow, white, red or black stripe along the wing feathers. Under tail coverts are a deep rust color. Both beak and feet are dark and the brown eyes are set in a narrow black mask underlined with white.

The preferred nest location is usually high in a pine tree, but feeding opportunities determine the location chosen. Each bird or pair may have more than one nest in the same general area. The nests



have an outer diameter of 15 cm to 18 cm and are lined with fine grass, moss, and down. On average, 4 to 6 eggs are laid. The egg shells have a pale bluish color with a heavy sprinkling of blackish spots and some dark, irregular lines. Incubation is around 14 days and the young leave the nest about 13 to 15 days after hatching.

Cool Facts: The name "Bohemian" refers to the nomadic movements of winter flocks. It comes from the inhabitants of Bohemia, meaning those that live an unconventional lifestyle or like that of gypsies.

The Bohemian Waxwing does not hold breeding territories, probably because the fruits it eats are abundant, but available only for short periods. One consequence of this non-territorial lifestyle is that it has no true song. It does not need one to defend a territory.

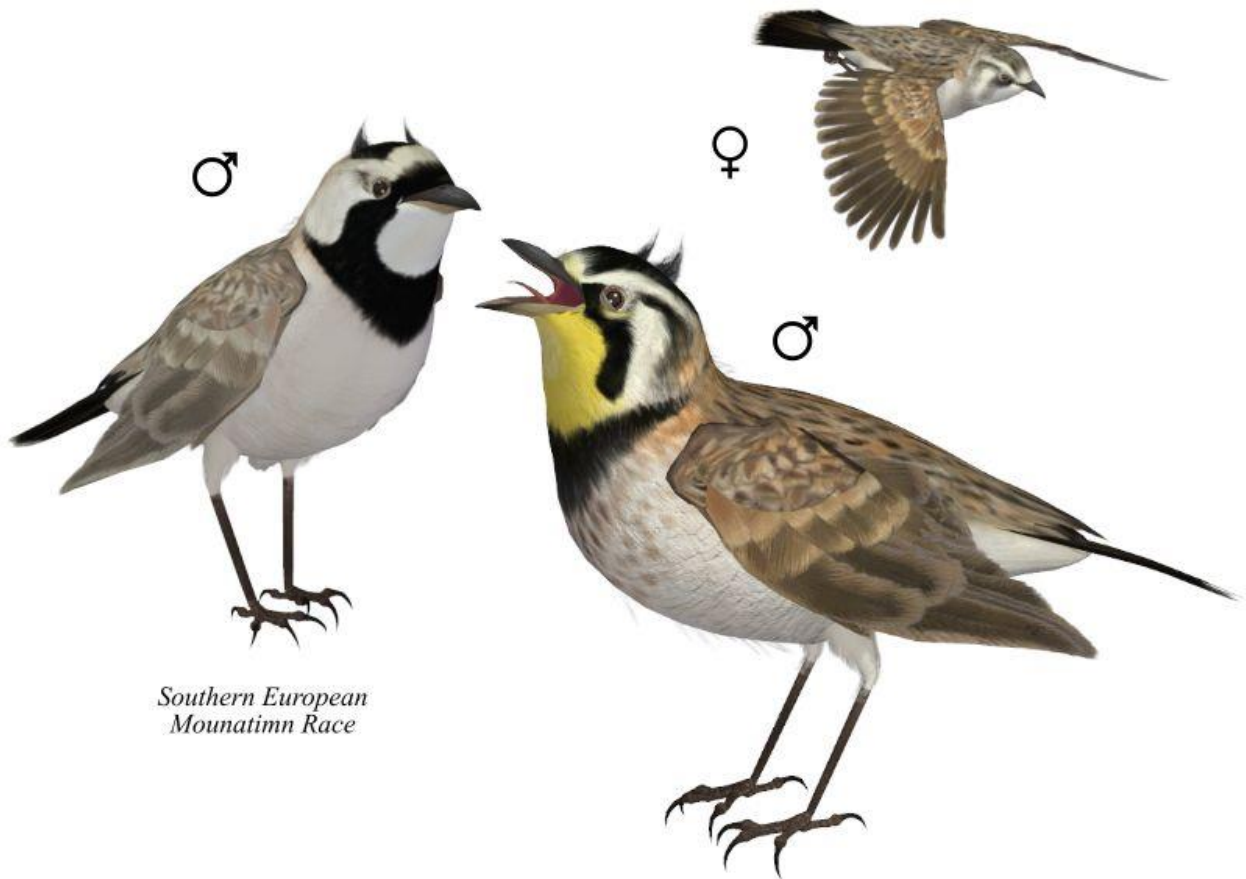
The call is a pleasant ringing sound, similar to that of the Cedar Waxwing but lower-pitched.

Common Name: Horned or Shore Lark
Scientific Name: *Eremophila alpestris*

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

Habitat: North America, Europe and Asia. It breeds across much of North America from the high Arctic south to the Isthmus of Tehuantepec. It is also found in northernmost Europe and Asia and in the mountains of southeast Europe. An isolated population is found on a plateau in Colombia. It is mainly resident in the south of its range, with northern populations of this passerine bird being migratory and moving further south in winter.

This is a bird of open ground. In Eurasia it breeds in the far north and above the tree line in mountains. In much of Europe, during the winter, it is frequently seen



on seashore flats, leading to the European name of Shore Lark. In the UK and in eastern England it can be found as it makes a winter stopover along the coasts. In America, where there are no other larks to compete with, it is also found on farmland, prairies, deserts, golf courses, airports, and the like.

Status: Least Concern. **Global Population:** 140,000,000 individuals worldwide, but this bird is declining in most of its range. National population sizes have been estimated at c.100-10,000 breeding pairs. In China- c.50-1,000 individuals on migration and c.50-1,000 wintering individuals. In Japan- < c.1,000 individuals on migration and < c.1,000 wintering individuals. This bird is declining in most of its range.

In the open areas of western North America, Horned Larks are among the bird species most often killed by wind turbines.

Diet: Adult Horned Larks eat primarily weed and grass seeds, but they feed insects to their young.

Breeding: Unlike most other larks, this is a distinctive-looking species on the ground, mainly brown-grey above and pale below, with a striking black and yellow face pattern. The summer male has black "horns", which give this species its American name. America has a number of races distinguished by the face pattern and back color of males, especially in summer. The southern European mountain race. *Eremophila alpestris penicillata* is greyer above, and the yellow of the face pattern is replaced with white.

The nest is on the ground, with 2-5 eggs being laid. It may be built near corn or soybeans for a source of food, and the female chooses the site.

Cool Facts: In England, this bird is called a "Shore Lark" and in France, "Alouette hausse". In North America, the "Horned Lark" is the only true lark native to North America.

The use of mowed areas around airstrips has allowed the Horned Lark to colonize regions where no other suitable habitat may exist nearby, such as heavily forested areas.

Common Name: Taiwan Firecrest
Scientific Name: *Regulus goodfellowi*

Size: 3.6 inches (9 cm)

Habitat: Asia; endemic to the mountains of the island of Taiwan.

It usually inhabits evergreen trees in coniferous forests over 2,000 m above sea level, though it is commonest above 2,500 m and ranges upward to 3,700 m. Mountains it inhabits include Alishan, Tayuling, Hehuanshan, Yu Shan, and the higher areas of Anmashan. They prefer conifers in which to forage, and are usually found in the forest canopy, but will sometimes venture into lower vegetation.

Status: Least Concern. **Global Population:** Unknown amount of mature individuals. The population is suspected to be stable in the absence of evidence for any declines or substantial threats.



Diet: Feeds primarily on insects, their larvae and eggs. They will occasionally consume seeds and berries. Firecrests are active and restless birds, hopping and fluttering about in the canopy. These lively songbirds are mainly solitary but will move around actively in small, loose flocks of their own species as well as Coal Tits and Eurasian Nuthatches. The flight is weak and whirring.

Breeding: The most distinguishing characteristic is the orange-yellow crest on top of the male's head, for which this bird is named. When excited the male erects this crest. In females the top of the head is pure yellow with black crown stripes, while in males the top of the head is yellow with an orange center with the black crown stripes. White feathers encircle the black eye-patches, giving it the appearance of having two black eyes. The supercilium is very broad and the lores and forehead are whitish. There is a narrow, short black malar stripe. The chin is whitish and the throat, ear-coverts and sides of neck are grey. The mantle is green while the rump and flanks are yellow. The Centre of the belly is buff. The wings have broad white covert tips forming a wing bar. The tarsi are pinkish. Their breeding biology lacks significant research. It is assumed they have breeding habitats similar to kinglets.

Kinglet nests are small, very neat cups, almost spherical in shape, made of moss and lichen held together with spider webs and hung from twigs near the end of a high branch of a conifer. They are lined with hair and feathers, and a few feathers are placed over the opening. These characteristics provide good insulation against the cold environment. The female lays 7 to 12 eggs, which are white or pale buff, some having fine dark brown spots. Because the nest is small, they are stacked in layers. The female incubates; she pushes her legs (which are well supplied with blood vessels, hence warm) down among the eggs. The eggs hatch after 15 to 17 days. The young stay in the nest for 19 to 24 days. After being fed, nestlings make their way down to the bottom of the nest, pushing their still-hungry siblings up to be fed in their turn (but also to be cold).

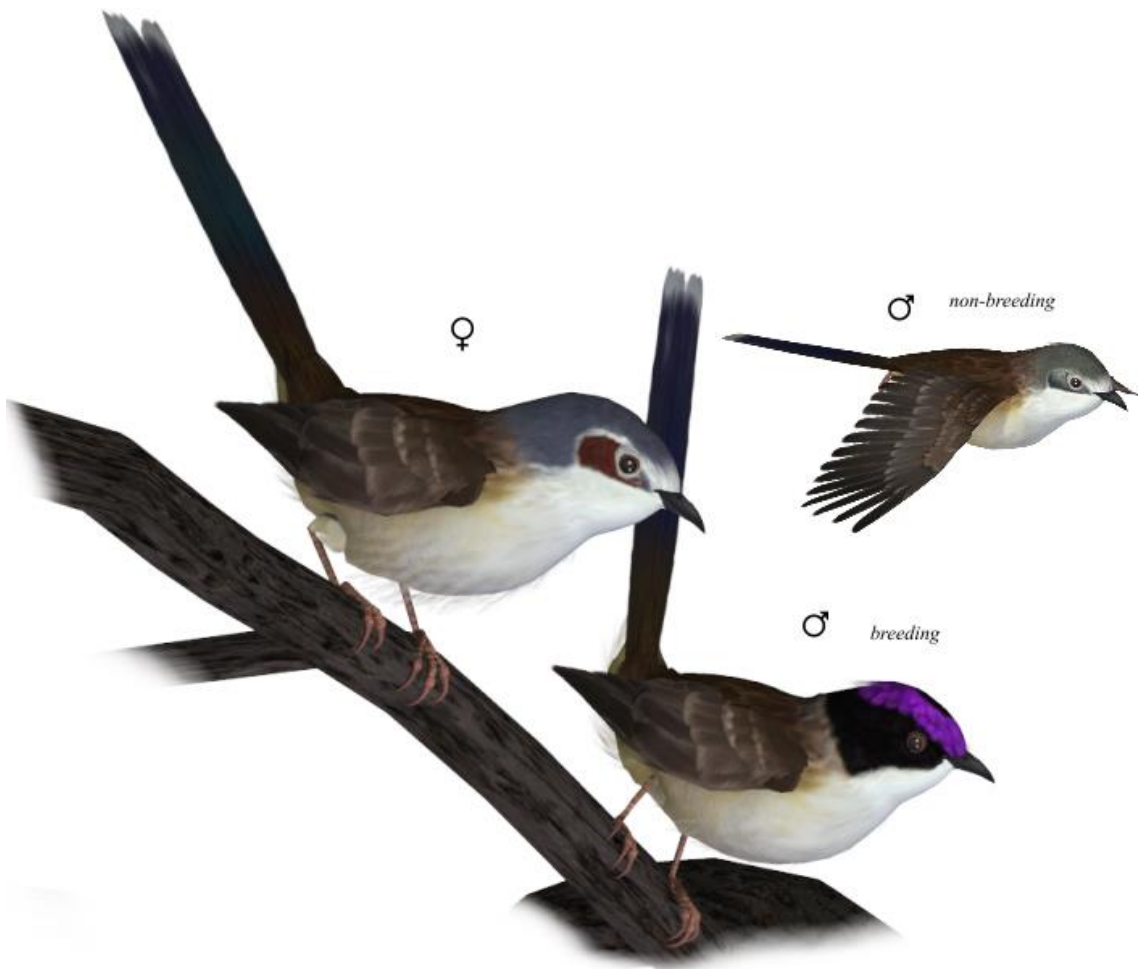
Cool Facts: The Taiwan Firecrest is only 9 cm (3.6 in) in length and 7 grams in weight, making it is the smallest of all Taiwan's endemic bird species. Its plumage is the most vibrant in its family. It is also known as the Taiwan Flamecrest, Firecrest Kinglet, Formosan Fire and the Formosan Goldcrest.

They have a high pitched see-see-see call and the song consists of a series of high notes

Common Name: Purple-crowned Fairy-wren
Scientific Name: *Malurus coronatus*

Size: 5 ½ inches (14 cm)

Habitat: Australia; Purple-crowned Fairy-wrens are divided into two races: - an eastern race (*M. c. macgillivrayi*) that occurs in the sub-coastal region from the Roper River in the Northern Territory to the Flinders River in Queensland; and - a western race (*M. c. coronatus*) that occurs throughout the Kimberley region of Western Australia and the Northern Territory. The two races of Purple-crowned Fairy-wrens never mix and more than 400 km separates them geographically.



Status: Least Concern to Vulnerable **Global population:** 6,700-19,000 mature individuals. Purple-crowned Fairy-wren populations have declined dramatically since they were first discovered 130 years ago and their battle for survival just keeps getting harder.. Livestock eat and trample the species habitat, seeking access to water. Fires are increasing in frequency since the advent of pastoralism, and have been detrimental in some places. These processes expose soil, leading to erosion and, ultimately, denudation and weed invasion of

river banks which are then abandoned by the species. This has been ameliorated along some parts of the Victoria River where several large pastoral stations have excluded stock from riparian areas.

Optus is joining forces with Australian Wildlife Conservancy to help protect the Purple-crowned Fairy-wren at Mornington Wildlife Sanctuary for future generations of Australians. To find out more about this major on-ground program, please see [Protecting the Purple-crowned Fairy-wren](#) at Mornington Wildlife Sanctuary, WA, Australia..

Diet: Insects (including beetles, ants, bugs, wasps, grasshoppers, moths and flies), their larvae, and spiders, which they find in the natural compost that accumulates in the leaf-axils of Pandanus after flooding. They mostly forage for their food on the shaded ground beneath clumps of Pandanus. Individuals forage separately, hopping rapidly over the ground. They always maintain contact with group members by means of 'chet' calls. The next most used foraging site is amongst the leaves of the Pandanus itself, over and through which the birds progress remarkably quickly, using their large feet to grasp the blades of the leaves.

Breeding: The plumage is brown overall, the wings more greyish brown. The bill and feet are dark pink to black. The male in breeding plumage has a purple crown bordered by a black nape and face. On the top of the head is a black rectangular patch. It also has a cream-buff belly and blue tail tipped with white. In eclipse plumage the crown is grey and head mottled black and grey. The female differs in having a blue-tinged grey crown, chestnut ear-coverts, and greenish blue tail. Immature birds have a brown crown, although male birds start to show black feathers on the face by 6 to 9 months.

Purple-crowned Fairy-wrens usually occur in family groups of 5 to 6 birds, comprising a socially monogamous breeding pair and their progeny from previous years. All birds help at the nest to raise the young of the dominant pair – a mating system known as cooperative breeding. Young Fairy-wrens and especially males tend to remain with their parents and help to raise their siblings after reaching maturity. Some helpers may assist their parents for up to four years or more before departing their natal territory and forming a breeding pair. Breeding activity takes place through the year but may not occur at all during very dry years. Only female Purple-crowned Fairy-wrens build the nest and incubate the clutch of 2 – 3 eggs. The male will keep her company and may even feed her while she builds. The nest itself is dome shaped, averaging about 40cm high, and is built close to the ground in thickets of pandanus, river grass or canegrass. Nests are made from rootlets, grass stems, leaves and bark. The nestlings remain in the nest for 10 days. They are barely able to fly when they first leave the nest so they remain in dense cover for about a week.

Cool Facts: Fairy-wrens use song to communicate in many different ways, from romancing their mates to warning other family members of dangers like an

approaching predator. Male and female fairy-wrens even sing co-ordinated duets to ward off itinerant fairy-wrens from their territory.

The surgeon J. R. Elsey was the first to collect the species, on A. C. Gregory's northern Australian expedition in 1855 and 1856. Two specimens were collected at Victoria River and a third at Robinson River, but they were not examined for over 100 years. It was first described by the ornithologist John Gould in 1858. Its species name is derived from the Latin *cōrōna* "crown". The nominate subspecies is found in the Kimberley region of northwestern Australia, while the subspecies *macgillivrayi*, named by Gregory Mathews in 1913, is from the lands bordering the Gulf of Carpentaria. The two subspecies are separated by around 200 km of land inhospitable to them, and have been so for around 10,000 years. Its distinctive plumage led Mathews to place it in a separate genus *Rosina*. However, genetic evidence shows it is most closely related to the Superb and Splendid Fairywren within the genus *Malurus*.

Common Name: American Redstart
Scientific Name: *Setophaga ruticilla*

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

Habitat: North and South America; throughout Canada, the United States (except the Pacific Northwest), Mexico, the Yucatan Peninsula and Northern South America. These birds are migratory, wintering in Central America, the West Indies, and northern South America (in Venezuela they are called "candelitas"). They are very rare vagrants to Western Europe.

Found in moist second growth deciduous forest, with abundant shrubs.



Status: Not Threatened. **Global Population:** 25,000,000 mature individuals. This species has undergone a small or statistically insignificant decrease over the last 40 years in North America.

Diet: Mostly insects; also some small fruits. Gleans insects from leaves, trunks, and branches. Also hawks insects in the air. Actively fans its tail and wings to elicit movement by prey. Also turns body back and forth to flush insects.

Breeding: Adult males have black hoods, backs, wings, tails, and chests. They have white bellies with orange on sides of breast. There are orange patches in wings and sides of base of tail. Females have light gray heads and gray to light green backs with whitish bellies. Yellow patches are found on sides of breast and yellow patches in wing and outer tail feathers. They have a faint, broken white eye ring. Immature birds look like adult females, though the immature males have a darker tail and may have irregular patches of black on head, breast, or back.

The male American Redstart occasionally is polygynous, having two mates at the same time. Unlike many other polygynous species of birds that have two females nesting in the same territory, the redstart holds two separate territories up to 500 m (1,640 ft) apart. The male starts to attract a second female after the first has completed her clutch and is incubating the eggs. The nest is a tightly woven open cup fitted into the branches or forks of trees or shrubs. 1 to 5 cream white eggs with dark speckles around large end are laid.

Cool Facts: The American Redstart is not particularly closely related to the Painted Redstart and the other redstart warblers of the Neotropics. They all are similarly patterned and forage in similar ways, flashing their tails and wings to startle insect prey. In other parts of the world other unrelated species of birds look and act similarly, such as the fantails of Australia and southeastern Asia.

Common Name: Song Sparrow
Scientific Name: Melospiza melodia

Size: 4.7-6.7 inches (12-17cm)

Habitat: North America; the range is continuous from the Aleutians to the eastern United States. There's also an isolated population that lives on the plateau of central Mexico, about 900 miles from the next closest population.

Song sparrows are found in a large variety of open habitats, including tidal marshes, arctic grasslands, desert scrub, pinyon pine forests, aspen parklands, prairie shelterbelts, Pacific rain forest, chaparral, agricultural fields, overgrown pastures, freshwater marsh and lake edges, forest edges, and suburbs. You may also find Song Sparrows in deciduous or mixed woodlands.



Status: Least concern.

Global Population: 54,000,000 mature individuals. Widespread and common across most of North America.

Song Sparrows have vanished from two islands off Southern California, the result of more frequent fires and introduced hares altering the sparrows' habitat. Wetland losses in the San Francisco Bay area have meant declining populations of a saltmarsh race of the Song Sparrow in that area.

Diet: Seeds and fruits, supplemented by many kinds of invertebrates in summer. Prey include weevils, leaf beetles, ground beetles, caterpillars, dragonflies, grasshoppers, midges, crane flies, spiders, snails, and earthworms. Plant foods include buckwheat, ragweed, clover, sunflower, wheat, rice, blackberries, blueberries, strawberries, raspberries, mulberries, and wild cherries. Food types vary greatly depending on what's common across the Song Sparrow's extensive

range. In British Columbia, Song Sparrows have even been observed picking at the droppings of Glaucous-winged Gulls.

Song Sparrows walk or hop on the ground and flit or hop through branches, grass, and weeds. Song Sparrows stay low and forage secretively. In fall, juvenile Song Sparrows may band together in loose flocks around berry trees or water sources. Flight is direct and low on broad, rounded wings. Often flies only short distances between perches or to cover, characteristically pumping the tail downward as it flies.

Breeding: Song Sparrows of different areas can look surprisingly different. The Song Sparrows of the Desert Southwest are pale, while those in the Pacific Northwest are dark and heavily streaked. Song Sparrows of Alaska's Aleutian Islands chain are even darker, and they're huge: one-third longer than the eastern birds, and weighing twice as much. The populations in Mexico have white throats and chests with black streaks.

Males come to exposed perches, including limbs of small trees, to sing. Courting birds fly together, fluttering their wings, with tails cocked up and legs dangling. Song Sparrows are primarily monogamous, but up to 20 percent of all Song Sparrows sire young with multiple mates each breeding season. Song Sparrow pairs search for nest sites together. Nest sites are usually hidden in grasses or weeds, sometimes placed on the ground and occasionally as high as 15 feet; often near water. Not afraid of human habitation, Song Sparrows may nest close to houses, in flower beds.

The female builds the nest, working mainly during the morning. It's a simple, sturdy cup made of loose grasses, weeds, and bark on the outsides, then lined more tidily with grasses, rootlets, and animal hair. Construction takes about 4 days. The finished nest is 4-8 inches across (2-2.5 inches for the inside of the cup), and 2.5-4 inches deep.

Cool Facts: Some scientists think that Song Sparrows of wet, coastal areas have darker plumage as a defense against feather mites and other decay agents that thrive in humid climates. The darker plumage contains more of a pigment called melanin, which makes feathers tougher and harder to degrade than lighter, unpigmented feathers.

Song Sparrows seem to have a clear idea of what makes a good nest. Field researchers working for many years on the same parcels of land have noticed that some choice spots – the base of a rose bush, or a particular hollow under a hummock of grass, for example – get used over and over again, even when entirely new birds take over the territory.

Despite the large differences in size and coloration across the Song Sparrow's range, genetic divergence is low. High rates of immigration and emigration may

keep populations genetically similar, while local selective conditions maintain the physical differences.

Like many other songbirds, the male Song Sparrow uses its song to attract mates as well as defend its territory. Laboratory studies have shown that the female Song Sparrow is attracted not just to the song itself, but to how well it reflects the ability of the male to learn. Males that used more learned components in their songs and that better matched their song tutors (the adult bird they learned their songs from) were preferred.

The Song Sparrow, like most other North American breeding birds, uses increasing day length as a cue for when to come into breeding condition. But, other cues can be important too, such as local temperature and food abundance. A study found that male Song Sparrows from the coast of Washington state came into breeding condition two months earlier than Song Sparrows in the nearby mountains, where the daylight changes were the same, but temperatures were cooler and trees budded out two months later.

Song Sparrows normally only lay one clutch of eggs per breeding season; however, in exceptional circumstances, such as loss of clutches from predation or an excess of resources, Song Sparrows have been recorded laying as many as seven clutches in a single breeding season and successfully rearing up to four clutches.

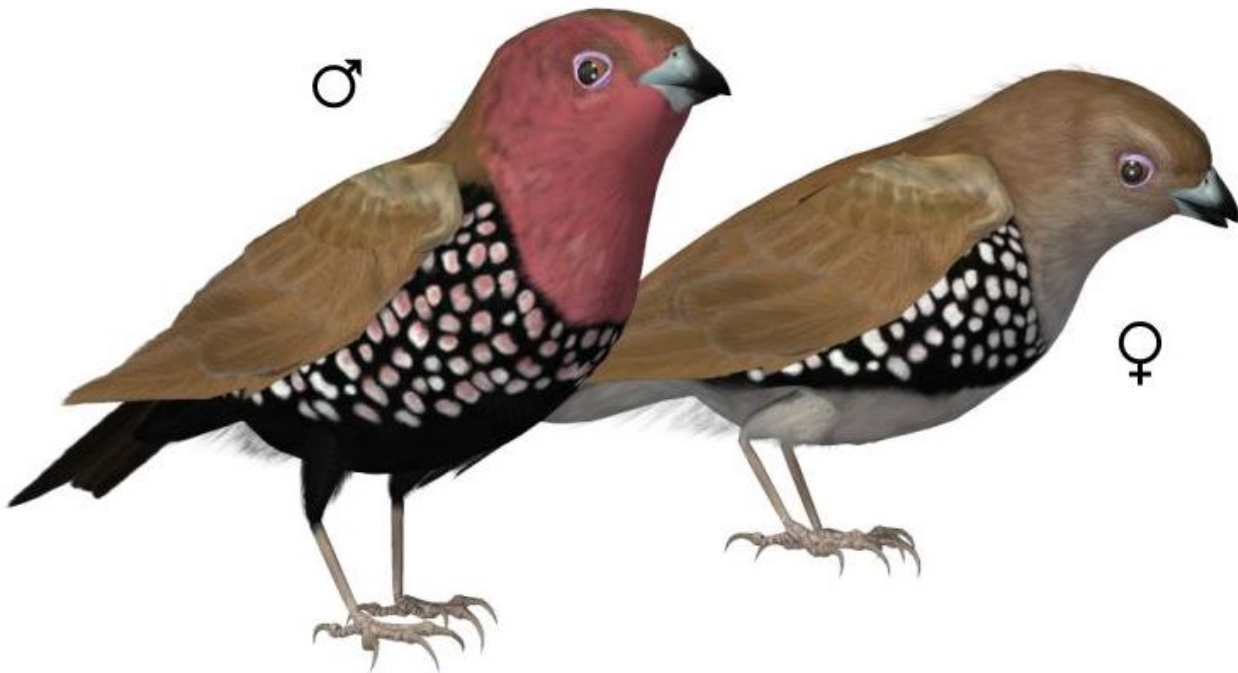
The oldest known Song Sparrow lived to be 11 years, 4 months old.

Common Name: Pink-throated Twinspot
Scientific Name: *Hypargos margaritatus*

Size: 4.7-6.7 inches (12-17cm)

Habitat: Africa; southeast African coast in Mozambique, South Africa and Swaziland.

It generally prefers dry, thick scrub, woodland with dense and tangled undergrowth, thickets, palm savanna and edges of forest.



Status: Least Concern to Near Threatened. **Global Population:** Unknown amount of mature individuals. While not threatened globally, the Twinspot is Near-threatened in South Africa and Swaziland, due to its small distribution range. Both habitat destruction and the cage-bird trade (an estimated 2000 birds are thought to be exported from Mozambique every year) are leading factors in its decline.

Diet: Seeds and insects.

Breeding: Both adults have distinctive white spots below the wings and chest. Males have pinkish throats, face and breasts with brown crowns. Females have grey-brown throats, breasts and bellies. Juveniles are brown above and pale grey below with no spots.

The nest is an untidy ball with a side entrance, made of dry grass or leaf ribs, skeletonized leaves, inflorescences and spider webs, that is lined with palm fibers and leaf litter. It is typically concealed in dense vegetation and leaf litter, less than one meter above ground. Only one clutch of three eggs has been recorded, laid in January, although it can lay up to four eggs in captivity.

Cool Facts: In Afrikaans, they are called "*Rooskeelkolpensie*". The much rarer Pink-throated Twinspot is often mistaken for the Red-throated Twinspot (which has a crimson red marking in the male of the species).

Special Thanks to...

....my betatesters (Jan, FlintHawk, Linda, Kat, Rhonda and Sandra)

Species Accuracy and Reference Materials

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 dozens of unique bird species, some give and take is bound to occur. The texture maps were created in Painter with as much accuracy as possible. Photographic references from photographs from various Goggle searches and several field guides were used.

- **"The Sibley Guide to Birds"** by David Allen Sibley.
- **"A Guide to the Birds of Mexico and Northern Central America"** by Steve N. G. Howell and Sophie Webb
- **"Birds of South America. Non-Passerines: Rheas to Woodpeckers"** by Francisco Erize, Jorge R. Rodriguez Mata and Maurice Rumboll
- **"Birds of East Asia"** by Mark Brazil. Princeton University Press
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- **"Birds of Australia"** by Ken Simpson and Nicolas Day. Princeton University Press
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Field Guide Sources:

- **Cornell Lab of Ornithology** (<http://www.birds.cornell.edu>)
- **Wikipedia** (<http://www.wikipedia.com>)
- **Birdlife International** (<http://www.birdlife.org>)

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