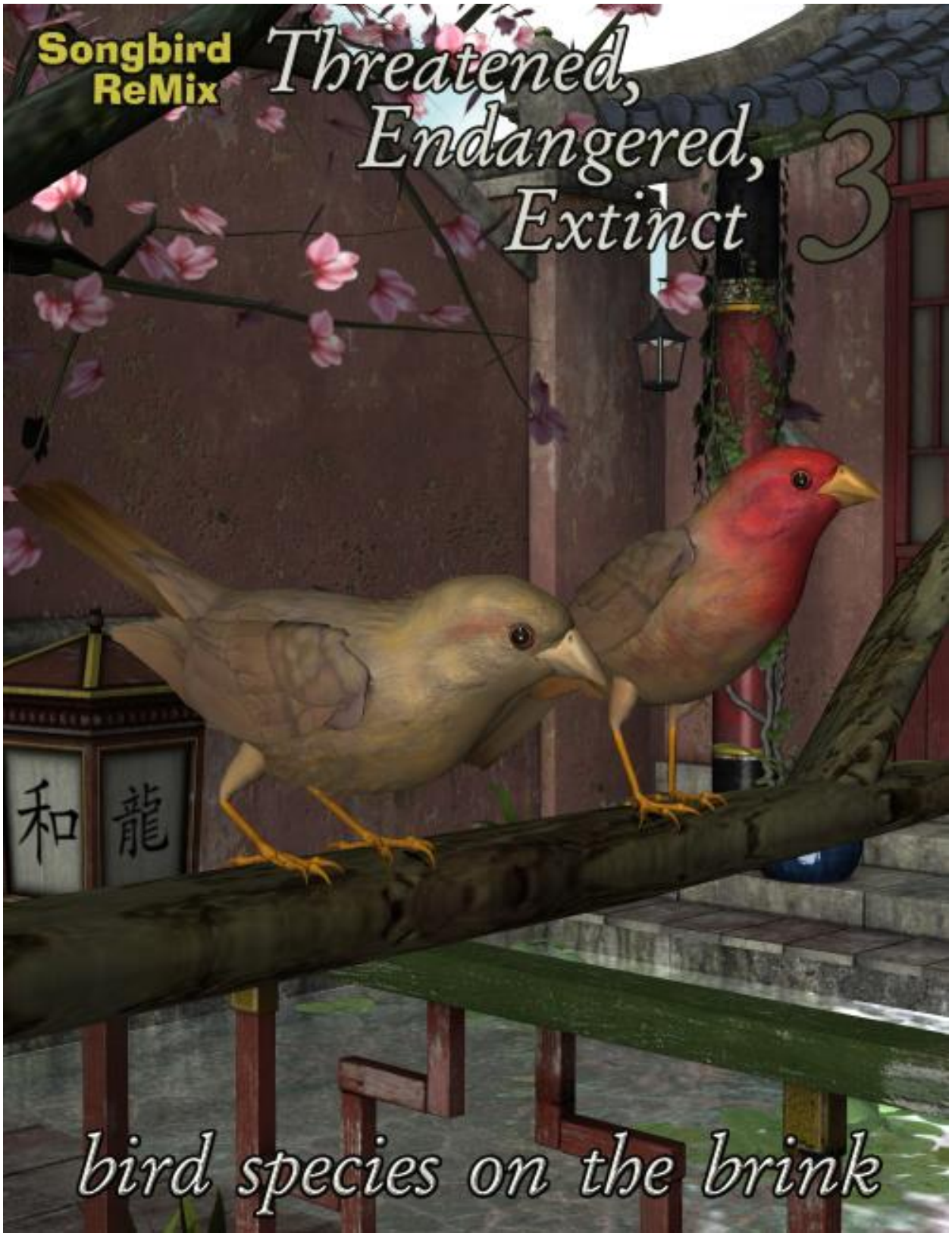

Avian Models for 3D Applications

by Ken Gilliland

Songbird ReMix

Threatened, Endangered, Extinct III

Contents

Near Threatened

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Manual & Field Guide

Introduction

The Threatened, Endangered, Extinct series within the Songbird Remix library is more than a “just another” collection of 3D bird models. It is content with a message and one that enables 3D Artists and Educators to illustrate the struggle and in some case, extinction, of many avian species by creating imagery that not only entertains but educates.

This collection includes the birds found throughout the world that are in trouble, on the brink of extinction or we've lost forever. Critically endangered birds such as the Polynesian Millerbird, Spix‘s Macaw and the threatened Kea.

The Millerbird is facing extinction because of the ripple effect from a seemingly innocent introduction of rabbits to its habitat. The rabbits multiplied and ate all the vegetation, which killed off the insect life that the Millerbird needed to survive. Spix‘s Macaw fate was due to introduction of Africanized “killer” bees into its habitat. The bees took over their nesting cavities. The Kea, an unusual alpine parrot (and consider one of the smartest animals on the planet) is threatened because of its ability to adapt the changes man has given it.

Whether you choose to create art with a message or you are simply looking for realistic and attractive birds for your imagery, this package will easily fulfill those needs.

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 included in this volume:**
    - **Songbird ReMix3 Base** - This model is used with all songbirds. Here it is used with about 60% of the bird species included.
    - **Songbird ReMix3 Gamebird Base** – This model is used with all Doves, Pigeons and other Gamebirds and is identified with the “**G**” icon. Here it is used with the Socorro Dove.

- **Songbird ReMix3 Parrot Base** – This model is used with Parrots and is identified with the "**P**" icon. Here it is used with the Kea, Spix's Macaw and the Moluccan Cockatoo.
- **Waterfowl 3 Base Model** - This model is used with small shorebirds and is identified with the **"WF3"** icon. It is used with the Ashy Storm-petrel character
- **Waterfowl 7 Base Model** - This model is used with small shorebirds and is identified with the **"WF7"** icon. It is used with the Socialable Lapwing character
- **Dodo Base Model** - This model, as expected, is used to create the Dodo character (**Note:** the Dodo Model is a supplemental product to "Threatened, Endangered, Extinct 3" and separate purchase is required).

- **Conforming Parts** (All Conforming Crests have alpha-numeric icons in the lower right corners such as "C02", "C06" or "T4". 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 covers 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 "Stretch" you must also set its counterpart in the head part of the Conforming Crest; "MatchStretch". So Now let's look at what's included in Conforming Parts:
  - **Crest 05.** This model is used with the Moluccan Cockatoo character. Morphs are found in the BODY section. It is identified with the **"C05"** icon.
  - **Feet 02.** This model is used with the Colorful Puffleg character. There are no additional morphs. It is identified with the **"F02"** icon.

Quick Reference Guide

When using Poser or when going the route of using DAZ Studio's "Create Your Own" Base Models, here's a chart to help you figure out what model goes with what character. Load the appropriate base model and apply the character settings.

Load Model(s)	To Create… (apply MAT/MOR files)
	• Bonin Grosbreak • Millerbird • Black-winged Starling • Aquatic Warbler • Corsican Nuthatch • Scarlet-collared Flowerpecker • Sichuan Jay • Golden-cheeked Warbler • Saltmarsh Sparrow
	• Colorful Puffleg
	• Socorro Dove
	• Spix's Macaw • Kea
	• Salmon-crested Cockatoo
	• Ashy Storm-petrel
	• Socialable Lapwing or Plover
	• Dodo

Creating a Songbird ReMix Bird

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

1. Choose what you want to load. For this example, we'll create an "Black Cap".
2. Load Poser and select **FIGURES** and the Songbird ReMix folder. Because the "Black Cap" 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 "Black Cap" 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 "Black Cap". 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.

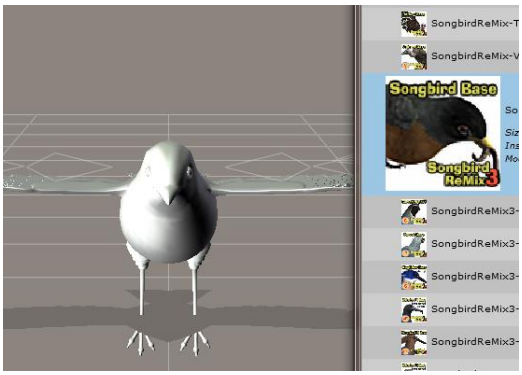
Scaling and Square Shadows in Poser

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.

without prop off screen

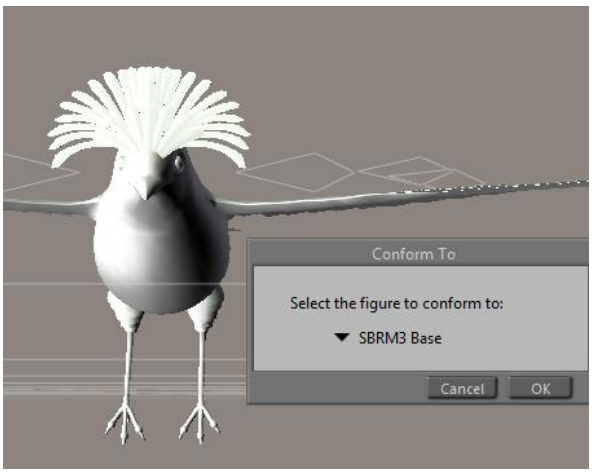
with prop off screen, lights/shadows will properly render

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

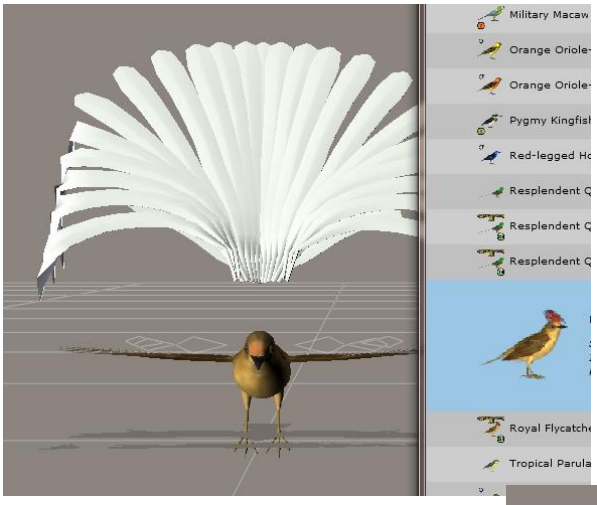


1. In the Figures section, load a Bird base Model. Then load the appropriate conforming part for the bird you're trying to create.

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.

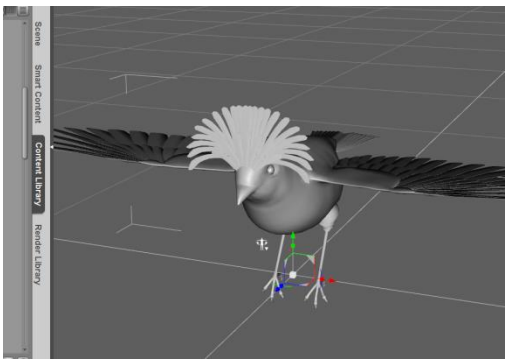
Updates and Freebies

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…

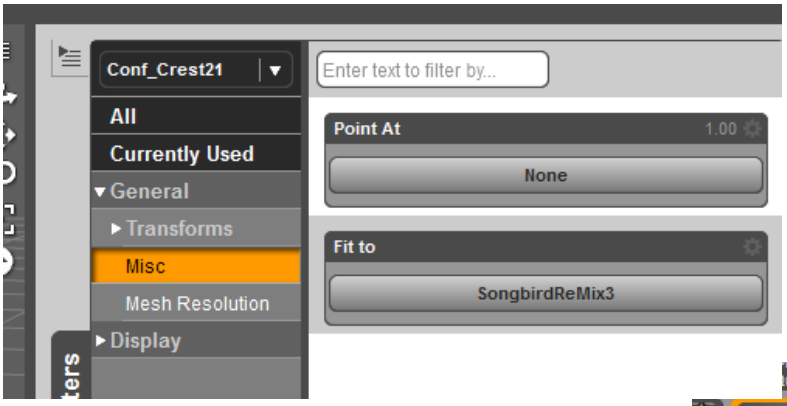
Songbird ReMix.com

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

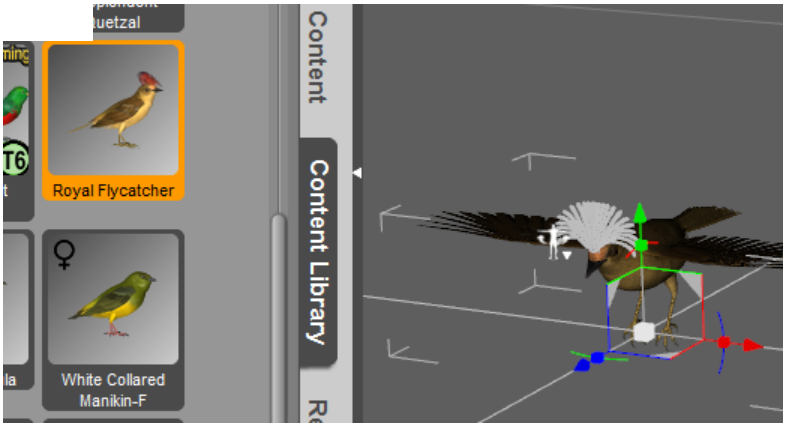


In the **Runtime** folder, select **Figures** and load the Songbird ReMix Model and the appropriate Conforming Crest in Studio. Select the Conforming Crest by selecting on the screen or in the **Scene** Tab.

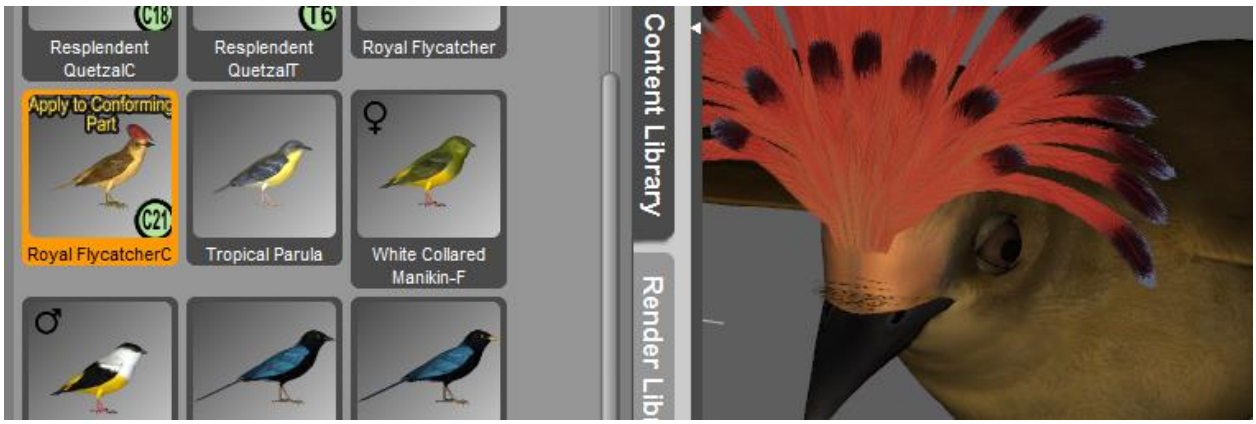
Now, using the “FIT TO” command in the Parameters Tab, Select the Songbird ReMix Model. Go back to the **Scene** Tab and select the Songbird ReMix Model.



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

Threatened, Endangered, Extinct III

Field Guide

Extinct

Dodo
Bonin Grosbeak

Extinct (in the wild)

Socorro Dove

Critically Endangered

Spix's Macaw
Social Lapwing
Millerbird
Colorful Puffleg
Black-winged Starling

Endangered

Golden-cheeked Warbler
Ashy Storm-petrel

Threatened

Aquatic Warbler
Corsican Nuthatch
Salmon-crested Cockatoo
Scarlet-collared Flowerpecker
Sichuan Jay

Near Threatened

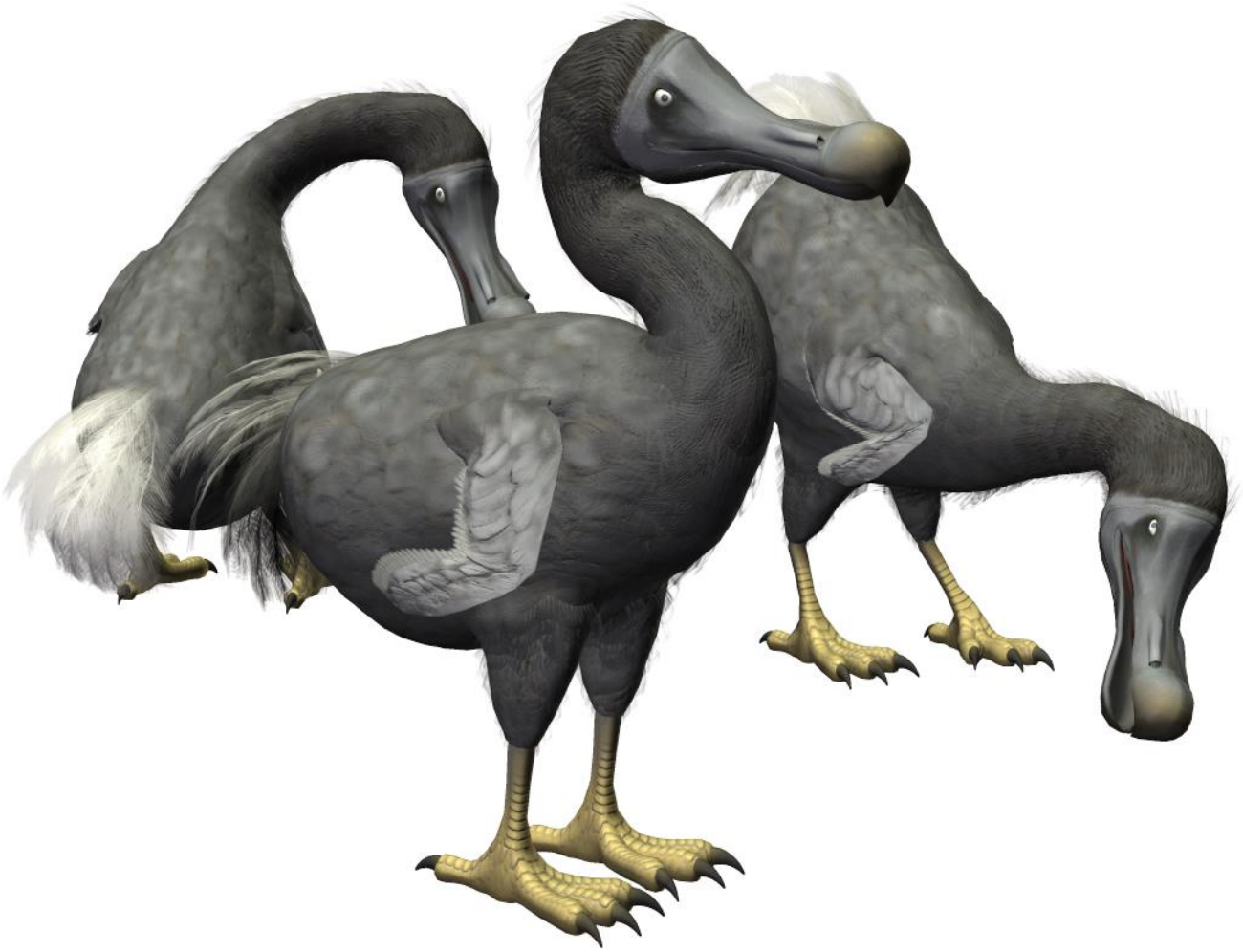
Saltmarsh Sparrow
Kea

Common Name: Dodo
Scientific Name: *Raphus cucullatus*

Size: 39 inches (100 cm)

Habitat: Africa; Island of Mauritius

Status: Extinct. Global Population: 0. The dodo has been extinct since 1681. Its extinction was caused by humans hunting the bird to near-extinction and then introducing dogs and pigs, which became feral and finished the job. Few took particular notice of the bird immediately after its extinction. By the early 19th century it seemed altogether too strange a creature, and was believed by many to be a myth. In 1848, H. E. Strickland and A. G. Melville published a book titled "*The Dodo and Its Kindred; or the History, Affinities, and Osteology of the Dodo, Solitaire, and Other Extinct Birds of the Islands Mauritius, Rodriguez, and Bourbon*" in which they attempted to separate Dodo myth from reality. With the discovery of the first batch of dodo bones in the Mauritian swamp, the Mare aux Songes, and the reports written about them by George Clarke, government schoolmaster at Mahébourg, from 1865 on, interest in the bird was rekindled.



Diet: Fruit. It is believed that the dodo probably fattened itself on ripe fruits at the end of the wet season to live through the dry season when food was scarce.

Breeding: Breeding habits were never observed prior to its' extinction.

Cool Facts: The dodo is commonly used as the archetype of an extinct species ("go the way of the Dodo") because its extinction occurred during recorded human history and was directly attributable to human activity.

The first known descriptions of the bird were made by early Dutch travelers. It was known by the name "*walghvogel*" ("wallow bird" or "loathsome bird"). This name was in reference to its taste. Although many later writings say that the meat tasted bad, the early journals only say that the meat was tough but good, though not as good as the abundantly available pigeons.

The Dodo, having been isolated by its island location from contact with humanity, greeted the new visitors with a child-like innocence. The sailors mistook the gentle spirit of the dodo, and its lack of fear of the new predators, as stupidity. They dubbed the bird "dodo" (meaning something similar to a simpleton in the Portuguese tongue).

According to artists' renditions, the dodo had grayish and brownish plumage, a 23-centimeter (9-inch) bill with a hooked point, very small wings, stout yellow legs, and a tuft of curly feathers high on its rear end. Dodos were very large birds, possibly weighing from 23 to 50 pounds (10.6-23 kg). The sternum was insufficient to support flight; these ground-bound birds evolved to take advantage of an island ecosystem with no predators.

The traditional image of the dodo is of a fat, clumsy bird. The general opinion of scientists today is that the old European drawings showed overfed captive specimens. A 17th century painting attributed to the Mughal artist, Ustad Mansur, shows a dodo alongside native Indian birds. It depicts the dodo as a slimmer, brownish bird, and is regarded by scientists to be one of the most accurate depictions of the bird.

Two live specimens were brought to India in the 1600s according to Peter Mundy, and the painted specimen might have been one of these. As Mauritius has marked dry and wet seasons, the dodo probably fattened itself on ripe fruits at the end of the wet season to live through the dry season when food was scarce; contemporary reports speak of the birds' "greedy" appetite. In captivity, with food readily available, the birds became overfed very easily.

There is a plaster cast at the Brighton Museum of a dried head and leg of a dodo specimen which was brought alive to Europe about the year 1600; the originals are housed in the Natural History Museum. Until recently, the most intact remains, currently on display at the Oxford University Museum of Natural History, were one individual's partly skeletal foot and head which contain the only known soft tissue remains of the species. These remains of the last known stuffed dodo had been kept in Oxford's Ashmolean Museum, but in the mid-18th century, the specimen – save the pieces remaining now – had entirely decayed and was ordered to be discarded by the museum's curator or director in or around 1755. The remaining soft tissue has since been severely degraded, as the head was dissected in the late 19th century, and the foot is in a skeletal state. Until recently, few associated dodo skeletons were known, most of the material consisting of isolated and scattered bones. Dublin's Natural History Museum and the Oxford University Museum of Natural History, among others, have a specimen assembled from these disassociated remains. A dodo egg is on display at the East London museum in South Africa. Manchester Museum has a small collection of dodo bones on display.

In October 2005, part of the Mare aux Songes, the most important site of dodo remains, was excavated by an international team of researchers. Many remains were found, including bones from birds of various stages of maturity, and several bones obviously belonging to the skeleton of one individual bird and preserved in natural position. These findings were made public in December 2005 in the Naturalis in Leiden.

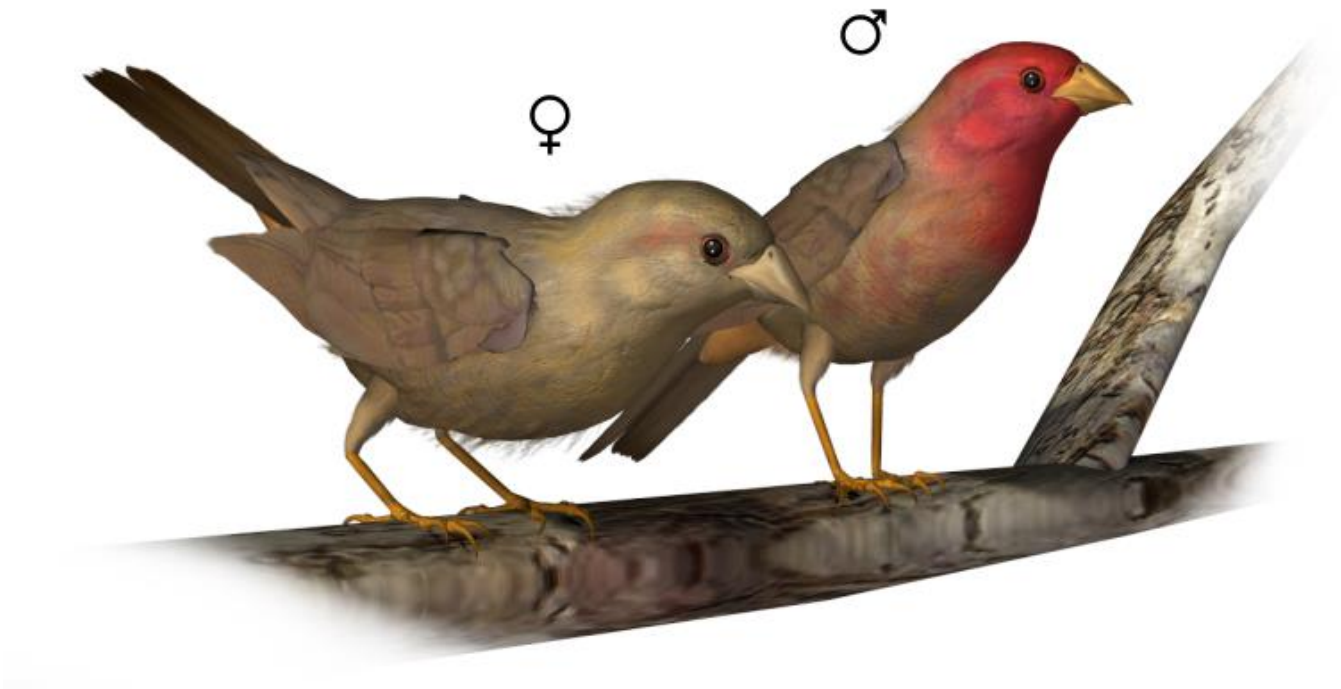
In June 2007, adventurers exploring a cave in Mauritius discovered the most complete and well-preserved dodo skeleton ever.

Common Name: Bonin Grosbeak
Scientific Name: *Chaunoproctus ferreorostris*

Size: 8.25 inches (18-19 cm)

Habitat: Asia; Japan. Nothing is known of its ecology apart from Kittlitz's description, "this bird lives on Bonin-sima, alone or in pairs, in the forest near the coast. It is not common but likes to hide, although of a phlegmatic nature and not shy. Usually it is seen running on the ground, only seldom high in the trees."

Status: Extinct. Global Population: 0. The Bonin Grosbeak was discovered by the Beechey Pacific expedition, which collected 2 specimens on Chichi-jima in 1827. The following year, Kittlitz took several more specimens, but he only gave the locality "as" "Boninsima" . ("Bonin-shima": Ogasawara Islands).



Following the report of two shipwrecked sailors, picked up by Beechey, that the island would make a good stopover station for whalers, settlement was begun in 1830. When the Rodgers-Ringgold North Pacific Exploring and Surveying Expedition called at Chichi-jima in 1854, naturalist William Stimpson could not find the birds. What he did find, however, were rats and feral goats, sheep, dogs and cats, in addition to the pigs that were already present in 1828 (and which might have been left there by Beechey to provision future castaways). Just like the Bonin Thrush, the Bonin Grosbeak probably succumbed soon after 1830 to habitat destruction and predation by the introduced

mammals. The collector A. P. Holst was told by settlers on Chichi-jima in 1889 that some birds had persisted on Haha-jima until the early 1880s. The Bonin Grosbeak probably succumbed soon after 1830 to habitat destruction (deforestation) and predation by the introduced mammals.

Diet: Fruits and flower buds, picked up from the ground or low shrubs.

Breeding: Male had red markings on the crown and throat; females do not have the markings. Breeding and nesting is assumed to be similar to other Grosbeak species. The nest consisted of a loose, open cup of twigs, plant stems, rootlets, and pine needles, lined with hair, string, and some plant materials. The nest is placed in outer branches of a small tree or shrub and often near a stream. 2-5 eggs are laid,

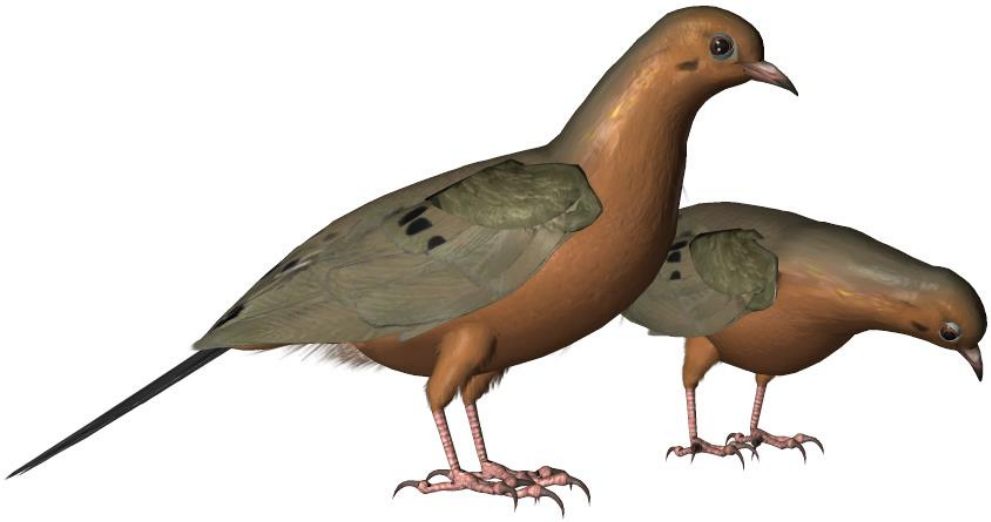
Cool Facts: *Chaunoproctus ferreorostris* is only known from specimens collected in 1827 and 1828 on Chichi-jima, Ogasawara-shoto (Peel Island, Bonin), Japan.

Common Name: Socorro Dove
Scientific Name: *Zenaida graysoni*

Size: 10.4-12 inches (26.5-30.5cm)

Habitat: North America; Socorro in the Revillagigedo Islands, Mexico. It was apparently commonest in forested areas above 500 m, dominated by *Bumelia, Prunus serotina, Guettarda, Ilex, Psidium* and *Ficus*.

Status: Extinct in the wild. **Global Population:** 100+/- Mature individuals. The decline and extinction in the wild of the Socorro Dove has been attributed chiefly to predation by cats. Other factors, such as human predation and high levels of understory grazing by sheep, may have also been significant in its decline. Outbreaks of an introduced locust (*Schistocerca piceifrons*) swarm have occurred twice a year since 1994, resulting in damage to the leaves, flowers and fruit of indigenous forests, thus reducing the extent of prime habitat for the species. The last record of an individual of this species in its natural habitat was in 1972.



The Revillagigedo Islands were declared a biosphere reserve in 1994. In 1995, the European Association of Zoos and Aquaria recognized a breeding program for the species, as initiated by Cologne and Frankfurt Zoos (Germany) and the private interest group Wild Pigeons and Doves, as an official European Endangered Species Program. Individuals have been distributed to zoos and bird parks in Belgium, The Netherlands, UK, Poland, Austria, Luxembourg, France, Spain and Germany. Of 563 individuals listed in December 2006, 104 were known to be alive. In 2006, following an extensive survey of the origin of the founding individuals of the EEP population, a major software based population genetic analysis was conducted and recommendations for new pairs were given by the EEP coordinator. A special breeding unit for the species has been opened at Marlow Bird Park, Germany. A proposal is currently being developed to reintroduce the species, along with a restoration program for Socorro. DNA fingerprinting has revealed extensive hybridization with the Mourning Dove (*Zenaida macroura*) in the USA, however it also showed a high degree of relatedness between the European population and pure individuals kept in California. As a result, the

European population will be used for reintroduction efforts. The construction of breeding aviaries on Socorro began in August 2003 and was completed by 2005. The island's populations of Mourning Dove and Socorro Gound-dove were screened in December 2003 and January 2004 to assess the presence of pathogens that might affect the reintroduction program. Avian malaria and Trichomoniasis were detected in both species, and as a result recommendations were put forward. In 2005, plans were outlined to control the locust outbreaks, restore native vegetation and assess the problem of erosion. The arrival on Socorro of the first captive birds from Germany was planned for June 2005, with the establishment of a captive flock by June 2006. However, there have been problems with import restrictions and permits. In the face of these restrictions a small insurance population will be established in the USA in 2008. Some control of feral cats has been undertaken on Socorro, and there are plans to eradicate cats in 2009, at the earliest. Reports that rats have recently colonized Socorro have proved to be unfounded. The sheep population has been reduced to c.300 by the Mexican Navy. Sheep eradication is planned for 2008-2009

Diet: Preferred fruits; also depended on an intact understory of ferns and euphorbias.

Breeding: Male has deep cinnamon head and underparts, with black streak on lower ear-coverts, blue-grey nape and iridescent pink neck patch. Dark brownish upperparts, boldly spotted with black on scapulars, tertials and inner wing-coverts. Dark grey flight feathers. Dark brown central tail, outer feathers grey with black subterminal band and grey tips. Female duller, with smaller blue-grey nape and pink neck-side patches. Juvenile similar to female, except coarse breast streaking and cinnamon-buff tips to upperparts feathering. In all plumages has pale blue orbital ring, pinkish legs and dark grey bill with reddish-pink base.

Virtually nothing is known about breeding in the wild. In captivity the female generally lays two white eggs in a nestbox 1-2.5 m above ground. The incubation lasts 14–17 days. The young fledge after 14–20 days.

Cool Facts: On October 30, 2006, the Socorro Dove was successfully bred at London Zoo. The bird was named "Arnie", after Arnold Schwarzenegger, with reference to his famous line "I'll be back" (on Socorro Island). However when Arnie was sexed he turned out to be a she. It is hoped that the descendants of Arnie and her relatives can someday soon be reintroduced into the wild.

There is marked behavioral difference to the Mourning Dove. When Andrew Jackson Grayson discussed the species, he called it the "Solitary Dove" because he never saw more than one male and one female together. The doves, particularly the adult males, chase away their young as soon as these can fend for their own and the partners split for the time being. This too, is believed to be an adaptation to the former dominance of aerial predators, lest local concentrations of birds, let alone young, unexperienced ones, would present easy targets for the hawks. Typical of many birds on mammal-less islands, Socorro Doves show little fear of humans or, fatally, cats.

Common Name: Spix's Macaw
Scientific Name: *Cyanopsitta spixii*

Size: 21.5-23.5 inches (55-57cm)

Habitat: South America; near the rio São Francisco in north Bahia, Brazil.

Status: Critically Endangered (possibly Extinct In The Wild). **Global Population:** <50 Mature individuals. The last known individual in the wild was last seen at the end of 2000. The decline of Spix's Macaw has generally been attributed to two principal factors. First, long-term destruction of the specific gallery woodland habitat on which the species apparently depended, the result of the colonization and exploitation of the region along the Rio São Francisco corridor during more than three centuries. Secondly, trapping for the illegal live bird trade in recent decades pushed the species towards extinction. In addition, the colonization of the distributional range by introduced aggressive African bees (taking over their nest cavities), and the building of the Sobradinho hydroelectric dam above Juazeiro may have contributed, perhaps significantly, to the species's decline in the 1970s and 1980s. Direct hunting is considered a factor of minor importance in the overall decline, even though several reports of shooting are on record.

It is protected under CITES Appendix I and II and under Brazilian law. Ten years of protection, habitat restoration and a variety of on-going community conservation programs, will pave the way for future reintroductions. IBAMA established the Brazilian government's Permanent Committee for the Recovery of the Spix's Macaw and cooperation between holders of birds resulted in annual increases in the captive population. This body is succeeded by the Working Group for the Recovery of Spix's Macaw, now overseen by the Chico Mendes Institute for Biodiversity Conservation (ICMBio). This group is responsible for coordinating the captive breeding program and there will be on-site reintroduction facilities later followed by on-site breeding facilities. The official captive population totals 71 individuals, and important proportions of this are currently held by Al-Wabra Wildlife Preservation (AWWP), Qatar and Loro Parque

Fundación (LPF), Tenerife, Spain. Other official holders are in Brazil and Germany. Including birds not registered in the official program, up to 120 individuals are thought to exist in captivity worldwide. Successful breeding has occurred within some registered facilities, most recently in 2010 at AWWP and LPF. The latter has maintained the species since 1984 and in 2007 opened a new breeding centre for Spix's Macaws. A captive management and species recovery handbook is in preparation for this species. In February 2009 Al Wabra Wildlife Preservation (AWWP) announced the purchase of the 2,200 ha Concordia Farm in Bahia state, Brazil, site of one of the last recorded sightings of wild Spix's Macaw, in October 2000. Concordia Farm was also the base of the Spix's Macaw field project, largely financed by the LPF, which operated throughout the 1990s until completion in 2002, and release site for the only captive Spix's Macaw yet to be released back into the wild, in 1995. Concordia Farm abuts the 400 ha Gangorra Farm, previously purchased by a conservation consortium. It is planned to allow both farms to return to a more natural state by removing domestic livestock, with the long term goal of the sites proving to be a valuable habitat resource for future reestablishment of a wild population.

Diet: Feeds primarily on Euphorbiaceae plant species

Breeding: It is various shades of blue, including a pale blue head, pale blue underparts, and vivid blue upperparts, wings, and tail. The underside of the wings and tail are grey/black. They have a bare area of grey/black facial skin which sometimes fades to white when they are juveniles. The beak is entirely black except for juveniles which have a white stripe down the center of the beak. The white beak stripe and facial skin of juveniles disappears after 1–2 years. The birds' feet are light grey as juveniles, then become dark grey, and are almost black as adults. The eyes are dark as juveniles but fade to white as the birds mature.

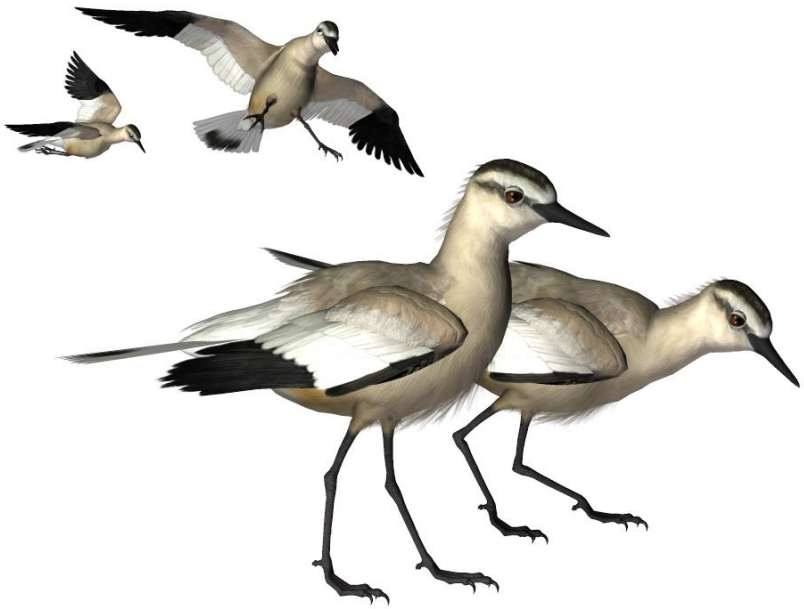
It requires gallery woodland dominated by caraiba (*Tabebuia caraiba*) trees for nesting, but feeds mainly on two regionally characteristic Euphorbiaceae plant species. Breeding occurs during the austral summer. Two or three eggs are laid in the wild (up to five in captivity).

Cool Facts: The Spix's Macaw is named after the German naturalist Johann Baptist von Spix, who discovered the species in 1817.

Common Name: Socialable Lapwing or Plover
Scientific Name: *Vanellus gregarius*

Size: 10.5-12 inches (27-30cm)

Habitat: Eurasia; It breeds on open grassland in Russia and Kazakhstan. These birds migrate south through Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Afghanistan, Armenia, Iran, Iraq, Saudi Arabia, Syria and Turkey, to key wintering sites in Israel, Syria, Eritrea, Sudan and north-west India. Birds winter occasionally in Pakistan, Sri Lanka and Oman. This lapwing is a very rare vagrant in western and northern Europe, where this gregarious bird is usually found with Northern Lapwings.



Prefers grassland steppes where bare saline areas occur near water-bodies. It may be found also in dry wasteland, cultivated, ploughed and stubble fields.

Status: Critically Endangered.
Global Population: 11,000 Mature individuals with a declining trend. Key factors explaining the magnitude of declines remain poorly understood, despite much recent research. On the breeding grounds, it was probably formerly threatened by the conversion of steppe to arable cultivation, plus, perhaps less likely, the reduction in grazing by large herds of native ungulates and, latterly, by the loss of the enormous herds of domestic grazing animals from state-sponsored collective farms. However, since the collapse of the Soviet Union, large areas of arable cultivation have been abandoned and are reverting to natural steppe habitat, herds of domestic livestock have become concentrated around villages (where their permanent presence leads to shorter swards than were created by the vast herds that grazed semi-nomadically under the Soviet system), while an increase in fires (owing to reduced control of fires) may also have contributed to an increase in suitable habitat. These factors may be behind the possible increase in numbers (at least in parts of Kazakhstan) in recent years. Concentration of nests in heavily grazed areas in the vicinity of villages may have increased threats from human disturbance and trampling by sheep, goats and possibly other livestock. Illegal hunting during migration and on the wintering grounds may now be the primary threat. The species may be affected by the increasingly dry climate in its breeding and wintering range, but it is not clear if this benefits or threatens this semi-desert species.

Diet: Insects (including *Orthoptera, Coleoptera*, and moth larvae) and other small prey mainly from grassland or agricultural areas.

Breeding: Summer adults have grey backs and breast, dark belly and white undertail. The head has a striking pattern, with a black crown and eyestripe, the latter being bordered above and below with white. The upper neck is ochre. Its longish black legs, white tail with a black terminal band and distinctive brown, white and grey wings make it almost unmistakable in flight. Winter adults have a less distinct head pattern, slightly browner back and breast, and white belly. Young birds have a scaly back, and only vestiges of the head pattern.

It breeds semi-colonially in small groups of 3-20 pairs from mid-April until July, and begins the migration south in August or September (occasionally as late as October). Flocks of several thousand birds have been known to gather before migration in Siberia and Kazakhstan, but migration itself usually occurs in small groups of 15-20 birds. In Syria, it arrives yearly around mid-February to late March, and again in autumn. It arrives on its wintering grounds in India and Pakistan by September-October and in Sudan by late October. Small flocks of similar size to those observed on migration are usual on the wintering grounds, although very occasionally larger flocks of over 100 birds have been recorded. It departs the wintering grounds in March or early April, arriving on its breeding range from mid April.

It breeds mainly in the transition zones between *Stipa* and *Artemisia* grassland steppes where bare saline areas occur near water-bodies. It uses dry wasteland, cultivated, ploughed and stubble fields. Nests are preferentially placed in areas of *Artemisia* where there is high dung abundance and vegetation is short.

The nest is a scrape that is unlined or lined with plant material, pebbles and debris. It is usually found on bare saline patches or in short vegetation near to water. Three to five eggs are laid. Nest survival during the egg stage varies between years, owing to varying levels of predation by fox (*Vulpes vulpes*), polecat, long-eared hedgehog and souslik species, and trampling by cattle, and in particular, sheep and goats.

Cool Facts: An international species action plan was published in 2004. It is legally protected in Armenia, Kazakhstan, Russia, Turkmenistan, Ukraine and Uzbekistan, but this is generally not enforced. An intensive research project at the breeding sites in central Kazakhstan has been running since 2004, and includes surveys in north and east Kazakhstan. A survey of historical breeding sites in the South Urals was conducted in 2005 and another at passage sites in south-west Russia was carried out in 2006. Coordinated counts were undertaken at key passage/wintering sites in Syria and Turkey in March 2007. Satellite-tags have been placed on birds in central Kazahstan, one of which was tracked to Turkey in October 2007.

The call is a harsh “*kereck”.*

Common Name: Millerbird
Scientific Name: *Acrocephalus familiaris*

Size: 5.1 inches (13 cm)

Habitat: Oceania; Polynesia. It is endemic to the steep, rocky island of Nihoa in the North-western Hawaiian Islands (USA). It previously occurred on Laysan also, where the nominate race was estimated to number 1,500 birds in 1915, but became extinct between 1916 and 1923.

It prefers dense cover near the ground, particularly around the shrubs such as *Chenopodium oahuense, Sida fallax* and *Solanum nelsoni*.

Status: Critically Endangered. **Global Population:** 250-999 Mature individuals with fluctuating trends. Its extinction on Laysan was ultimately caused by the introduction of rabbits, which denuded the island of vegetation (causing severe insect food shortage). On Nihoa, the population size is probably regulated primarily by precipitation levels, which affect the abundance of invertebrate prey (extended droughts for example, are likely to have a negative impact). Severe weather events such as hurricanes may cause direct mortality of millerbirds; a single severe storm could extinguish the population. Fire is a past and potential threat and introduction of detrimental non-native species is a permanent possibility.

Diet: Small beetles, spiders, roaches and larvae. The extinct Laysan population was thought to have fed primarily on moths.

Breeding: Pairs show year-to-year fidelity in specific territories, with nesting apparently correlated with precipitation and most breeding taking place in the winter months (peaking January-March), although the breeding period may be extended in years of

high summer rainfall. Nests are located in dense shrubs (*mainly C. oahuense*) and two eggs are generally laid.

Cool Facts: Nihoa is part of the Hawaiian Islands National Wildlife Refuge and Papahanaumokuakea Marine National Monument. Legal access is controlled by a permit system that is restricted largely to biologists, other researchers, and native Hawaiian cultural practitioners. Strict protocols are followed to ensure that legal permittees do not accidentally introduce new species via seeds, eggs or insects travelling on clothes and equipment. Visiting scientists make efforts to control alien plants by hand weeding.

The Nihoa Millerbird and Laysan Millerbird are the only known Old World warblers (subfamily Sylviinae) that colonized the Hawaiian Archipelago, the most remote group of islands in the world. The Laysan form, discovered first, was named “millerbird” (Henshaw 1902) because of its fondness for feeding on large miller moths (Family Noctuidae: probably Agrotis spp.). The Laysan and the Nihoa millerbirds are generally regarded as (at least) separate subspecies.

Is it acceptable for a species to vanish thanks to us? What about two such species? Or three? When do we decide the world will not be the same without them?

Common Name: Colorful Puffleg
Scientific Name: *Eriocnemis mirabilis*

Size: 3.1 inches (8 cm)

Habitat: South America; Columbia. This species was until recently only known from Cerro Charguayaco, north-east of Cerro Munchique on the Pacific slope of the west Andes in Cauca, south-west Colombia. It has now been found elsewhere in Munchique National Park, Serrania del Pinche and at El Planchón in the Cordillera Occidental.

Studies suggest that it favors the understory to mid-levels (to c.5 m) of lower montane, wet forest, feeding in the forest interior and edges. It is unclear whether the patchy distribution of both sexes throughout the year is due to seasonal altitudinal movements or the paucity of field studies at the type-locality. It has now been recorded from 2,200-3,000 m at least. It feeds on the nectar of *Burmeistera killipii, Burmeistera ceratocarpa*, *Clusia spp*. and *Palicourea angustifolia.*

Status: Critically Endangered. **Global Population:** 250-999 Mature individuals with a declining trend. In the 1960s and 1970s, the local economy was based on the fruit crop "lulo", which was grown under the forest canopy, and hence deterred logging. However, a fungal disease and lepidopteran pest destroyed the crop in the 1980s, and logging returned. An old mule-track below their favored forage/nesting area has recently been

cleared and widened, and small-scale logging has begun in the immediate vicinity. The Serrania del Pinche and Munchique National Park are threatened by habitat clearance for illegal coca cultivation; fires lit to clear forest at lower elevations spread to higher areas destroying sensitive habitats. Other areas of forest which potentially hold the species are threatened with clearance by slash and burn.

Conservation measures currently underway: The type-locality is in Munchique National Park, but logging occurs within the park boundaries. The replanting of lulo fruits is being encouraged, with workshops targeting local communities located in impact zones. These are designed to involve communities in conservation efforts and enable technology transfers in integrated pest-management practices. Funding from Swarovski Optik allowed the purchase of 5,000 acres of forest which could potentially hold the species. There are plans to extend the reserve by planting key tree species. The Hummingbird Conservancy is supporting research on the ecology and population dynamics of this species both in Munchique and Serrania del Pinche.

Diet: Flower nectar; it feeds on the nectar of many Epiphytes (such as bromeliads). Preferred flowers include those from *Burmeistera killipii, Burmeistera ceratocarpa*, *Clusia spp*. and *Palicourea angustifolia.*

Breeding: Spectacular, multi-colored hummingbird. Fairly short, black bill. Pink feet. Male has glittering green frontlet and gorget, otherwise dark shining green. Glittering blue belly and glittering red and coppery-gold undertail-coverts. Enormous white leg-puffs fringed cinnamon. Dark, bronzy, forked uppertail, coppery-gold undertail. Female is very different. Dark shining green above and sides. White median throat and underparts, spotted green with indistinct glittering reddish, golden, and bluish spots on belly, flanks and undertail. Bronze-green tail tipped blackish. Small white leg-puffs.

Because of the rarity of this bird, no studies have been conducted on breeding habits.

Cool Facts: The Colorful Puffleg was once thought extinct, until it was rediscovered in November 1997, when a female Colorful Puffleg was discovered feeding on *Clusia ssp*. It wasn’t until July 1998 that a male was seen feeding on several *Cavendishia sp.*

Common Name: Black-winged Starling
Scientific Name: *Acridotheres melanopterus*

Size: 9 inches (23cm)

Habitat: Asia; Indonesia, Endemic to the islands of Java and Bali, Indonesia, also occurring on adjacent Madura and Nusa Penida, and (perhaps only as a vagrant or escapee) on Lombok.

Small flocks forage on the ground in a variety of habitats, particularly agricultural and livestock-grazed areas, chiefly in the extreme lowlands, although occasionally up to c.1,300 m in west Java and 2,400 m in east Java. It also inhabits primary and secondary monsoon forest, including teak forest (where it was locally abundant), forest edge and open woodland, uncultivated bushy valleys, and even (formerly at least) urban suburbs. Some flocks on Bali were thought to make significant local movements, following the flowering and fruiting of trees.

Status: Critically Endangered. **Global Population:** 1,000-2,499 Mature individuals with a decreasing trend. Capture for trade is the primary threat, and the main cause of its decline. A decline of >79% over the past 13 years is inferred from the increasing rarity of this species in the cage-bird trade on Java, as well as the paucity of records in the field. Given that demand for the species in the cage-bird trade is not likely to decrease, this rate of decline is projected to continue into the future. However, the numbers currently entering trade are worryingly low. This species is one of the most popular cage-birds on Java, an island famed for its huge bird markets and very high cage-bird ownership. It has also been suggested that excessive use of pesticides may present a

significant threat, as the species habitually forages in open agricultural areas. Finally genetic integrity has been lost due to the widespread mixing of the three subspecies when birds escape.

The species has been nominally protected under Indonesian law since 1979. It occurs in at least three protected areas, Baluran National Park and Pulau Dua Reserve (Java) and Bali Barat National Park.

Diet: Feeds on a variety of items, including fruit, nectar and insects. It feeds in small groups and in pairs, both in trees and on the ground.

It roosts communally at night in groups, sometimes with other starlings like the Bali Starling. It is a seasonal breeder, although the exact timing of the breeding season varies by location. Birds in west Java breed from March to May, but in east Bali the season is around June. They are apparently monogamous, nesting in a twig lined hole amongst rocks or in a tree.

Breeding: Adults have a short white crest, naked yellowish or pinkish skin around eye and yellow bill and legs

Cool Facts: The species has often been assigned to the starling genus *Sturnus*, but is now placed in *Acridotheres* because it is behaviorally and vocally closer to the birds in that genus.

There are three recognized subspecies, the nominate race, which occurs across much of the island of Java, *tricolor*, which is restricted to south east Java, and *tertius*, which is found on Bali and possibly Lombok. The validity of the records on Lombok has been called into question, there are only a few records and they may represent escapees from the cagebird trade or natural vagrants.

Common Name: Golden-cheeked Warbler
Scientific Name: *Dendroica chrysoparia*

Size: 4.9 inches (12.5cm)

Habitat: North and Central America; local breeder in Edwards Plateau, Lampasas Cut Plain and Central Mineral Region, Texas, USA. It occurs at an average density of 15 males/km2 in c.350 km2 of occupied habitat, and the population was estimated to number 21,000 individuals in 2004. There was a 25% loss in available territories between 1962 and 1981, and the population has clearly declined. It winters in southern Mexico (Chiapas), Guatemala, El Salvador, Nicaragua, and Honduras, where it is uncommon to fairly common. There are recent reports/records from Costa Rica and Panama.

It breeds in juniper-oak woodlands. In winter, it occurs in mixed-species flocks, foraging at sites with a high density of "encino" oaks (in comparison to pines and other oak species) at 1,500-3,000 m.

Status: Endangered. **Global Population:** 21,000 Mature individuals and decreasing. Breeding habitat is under clearance for land development and agriculture. Fragmentation impairs gene flow and nest survival decreases with increasing forest edge density. However, the main cause of decline may be logging and firewood-extraction, and agricultural conversion for cattle reducing pine-oak habitats in southern Mexico, Guatemala and Honduras.

In the USA, it is listed as Endangered and has a recovery plan. It occurs in Balcones Canyonlands National Wildlife Refuge, Texas, where there is a cowbird trapping

program and regional habitat conservation plans have been approved or are under development in Travis, Hays, Comal, and Williamson counties, Texas. Various small reserves are managed for the species in Texas. Surveys in 1993-1995 improved knowledge of its wintering distribution. It is known or suspected from Rancho Nuevo and Lagunas de Montebello National Parks, Mexico, Sierra de las Minas Biosphere Reserve, Guatemala, and Celaque, Cusuco and Santa Bárbara National Parks, Honduras. Currently there is an ongoing effort involving Pronatura Sur, Defensores de la Naturaleza, and Salva Natura to gather information on the warbler south of the US, including details on its wintering habitat, and a community education initiative is underway. Surveys to monitor breeding populations are ongoing. The Leon River Restoration Project in central Texas is working on a habitat restoration project with Golden-cheeked Warbler and Black-capped Vireo as the primary focus.

Diet: Insects and spiders. Forages by gleaning from foliage and branches, sallying, and hovering at ends of branches. Found often in mixed flocks in winter.

Breeding: Adult male black above with yellow supercilium and cheek-patch split by black eye-stripe extending from bill through eye to rear auricular region where it joins with black nape. Wings black with two white wing-bars and fringing to the flight feathers, black chin, throat and streaks down flanks on white underparts. Female similar but olive to gray streaked black on crown and mantle, chin and centre of throat yellow or white surrounded by variable amounts of black mottling along the sides. Immature drab with indistinct streaking and black eye-stripe.

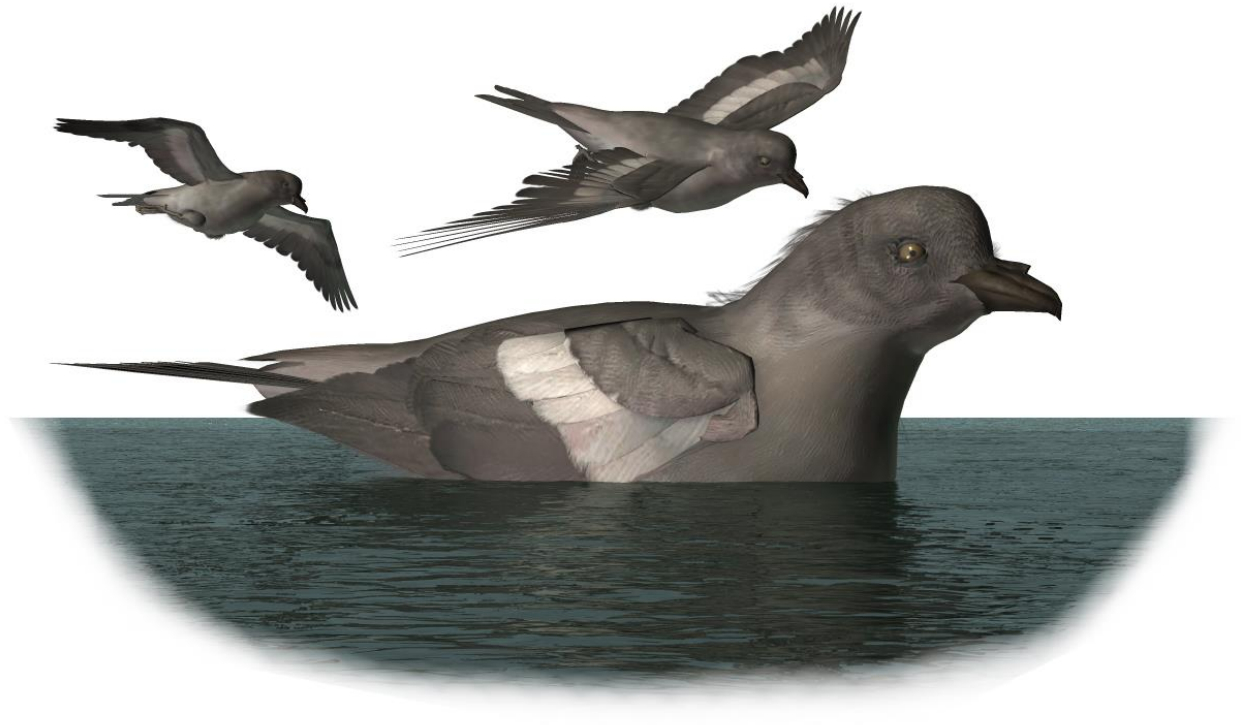
It breeds in juniper-oak woodlands, where it depends on *Juniperus ashei* bark for nesting material. 3-5 eggs are laid in late March-mid May.. Eggs are white with dark speckles concentrated around the large end.

Cool Facts: The Golden-cheeked Warbler is the only bird species whose population nests endemically in the state of Texas. Although the warbler breeds in Texas and winters in Mexico and northern Central America, wayward individuals have turned up in Florida, the Virgin Islands, and off the coast of California.

Common Name: Ashy Storm-petrel
Scientific Name: *Oceanodroma homochroa*

Size: 7.8 inches (20 cm)

Habitat: North America; breeds on a small number of island groups and offshore rocks within the California Current System. Breeding has been confirmed at only six major island groups (South Farallon, San Miguel, Santa Cruz, Santa Barbara, San Clemente, and Los Coronado Islands) and three groups of offshore rocks (Castle Rock/Hurricane Point, Double Point, and Bird Rocks). Major colonies, containing the vast majority of the world population, occur on the South Farallon Islands in central California and the Channel Islands in southern California, primarily at Prince Island off San Miguel Island, Santa Barbara Island, and Santa Cruz Island. At sea, Ashy Storm-petrels remain within the central and southern California Current System year-round, preferring continental slope waters (200-2000 m deep) that are within a few kilometers of the coast in some areas (e.g. Monterey Bay) and more than 50 km offshore in other areas (e.g. Gulf of the Farallones). High densities are known to congregate in some areas, e.g. the continental shelf-break in the western Santa Barbara Channel, and in the Santa Cruz Basin that separates Santa Cruz, San Nicolas, and Santa Barbara Islands. Autumn congregations of 4000-6000 birds have been recorded in Monterey Bay. The breeding population has been estimated at 5,200-10,000 individuals, with about half breeding on the South Farallon Islands and half in the Channel Islands.



Status: Endangered. **Global Population:** 5,200 - 10,000 Mature individuals and decreasing. Foraging areas are threatened by organochlorine and oil pollution. At Anacapa Islands, introduced rats have probably reduced colony size, though these rats have now been eradicated. Predation by expanding Western Gull (*Larus occidentalis*) populations, as well as Burrowing Owls (*Speotyto cunicularia*) and Barn Owls (*Tyto alba*), may be partly responsible for keeping numbers low at South Farallon, Santa Barbara and Anacapa islands. Bright lights used by near-shore squid fishing and other commercial and recreational vessels during the breeding season could increase predation levels, as well as cause mortality by attraction to lighted structures. Ashy Storm-petrels are sensitive to human disturbance at their nest sites and may abandon their nests with frequent disturbance. Consequently, disturbance from sea kayaker visits is a potential threat to nesting birds. Future changes in climate could also affect this species, for example through declines in primary productivity associated with warming and reduced upwelling, sea level rises affecting nest site availability, or the effects of ocean acidification (caused by increasing carbon dioxide absorption) on crustacean prey species.

Most of the Californian population nest on protected and specially managed islands.

Diet: Planktonic crustaceans and small fish (sardines and anchovies). Birds feed at sea and visit the colony at night. Foraging during the breeding season occurs mainly over continental shelves.

Breeding: Breeds in rock crevices and burrows in colonies on offshore islands. The breeding season is protracted, and eggs are laid asynchronously, with some pairs laying eggs while other pairs are in the midst of chick-rearing. At Southeast Farallon Island, Ashy Storm-petrels visit the colony year-round, and most breeding activity is concentrated in February through October. At Santa Cruz Island, Ashy Storm-petrel nesting activity spans March through December. Like in many other seabirds, pairs show both mate and site fidelity, the same pair mating for many years and nesting at the same burrow, despite the pairs spending their lives out of the breeding season separate from each other, and despite the fact that many individuals might seem to compete for burrows at the nesting colonies. A change in mate is usually associated with a change in nesting site.

Cool Facts: The Ashy Storm-petrel is difficult to identify. It is an all dark Storm-petrel with a pale wash on the underwing that forms a distinct bar. That is an important feature, as are the pale grey edges of the uppertail coverts. This is a small, uniformly sooty-brown storm petrel with a forked tail, closely resembling the Black Storm-petrel, however it is smaller and has a more fluttering style of flight, with the upstroke only becoming horizontal to the body before beginning the downstroke (other storm-petrels in its range have a higher upstroke).

The Ashy Storm-petrel is a long-lived bird; a banded individual has been recorded living at least 31 years.

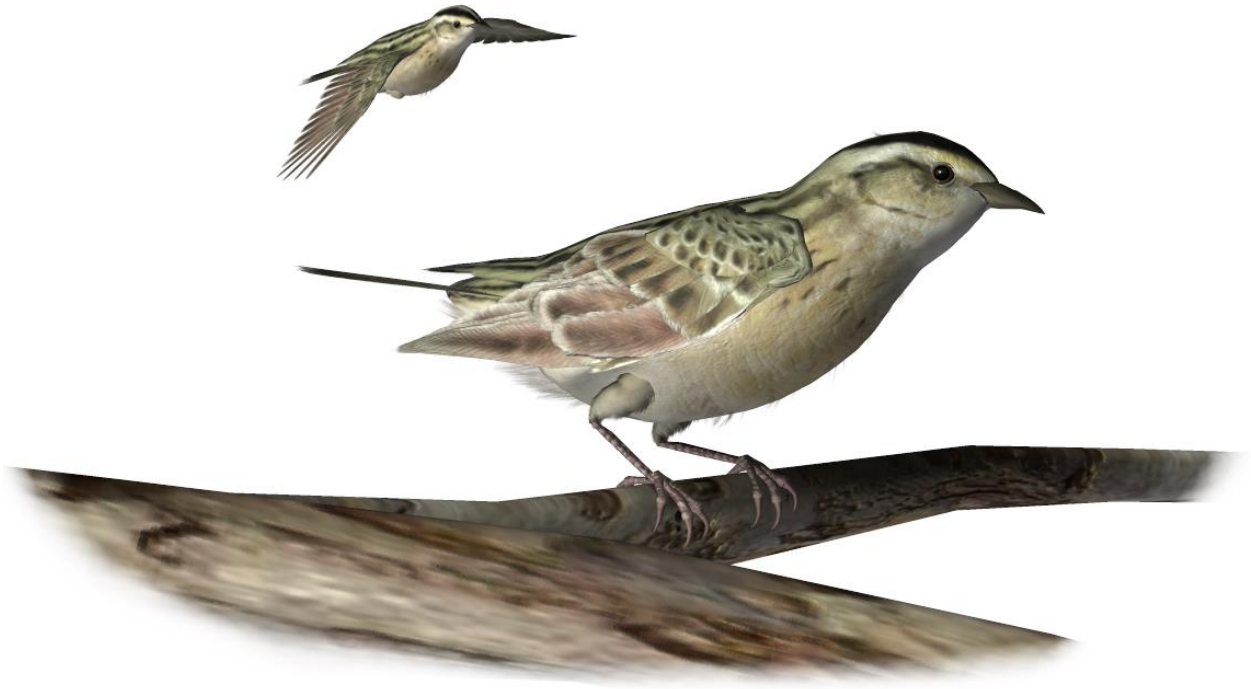
Common Name: Aquatic Warbler
Scientific Name: *Acrocephalus paludicola*

Size: 4.7 – 5.1 inches (12-13cm)

Habitat: Eurasia; Breeds in temperate eastern Europe and western Asia. Winters in West Africa. After many years of uncertainty, the wintering grounds of much of the European population were finally discovered in Djoudj National Bird Sanctuary, Senegal, with between 5-10,000 birds present at this single site. Its south-westerly migration route means that it is regular on passage as far west as Great Britain.

Found in wet sedge beds with vegetation shorter than 30 cm.

Status: Threatened. **Global Population:** 22,000 - 30,000 Mature individuals and decreasing. The most important threats are owing to drainage for agriculture and peat extraction, damming of floodplains, unfavorable water management and the canalization of rivers. Habitat degradation is widespread where traditional fen management has ceased allowing succession to unsuitable overgrown reedbed, scrub or woodland. Uncontrolled fires in spring and summer pose a direct threat to birds and nests, and can burn out the upper peat layer of fens. In the wintering grounds, agricultural cultivation and irrigation (creation of rice and sugar cane plantations), drought, wetland drainage, intensive grazing, succession to scrub, desertification and salinisation of irrigated soils are all potential threats.



It is legally protected in Belarus, Germany, Hungary and Poland. Key breeding sites in Belarus, Germany, Hungary and Poland are within protected areas. Habitat is actively

managed in Poland, Belarus, Ukraine, Lithuania, Hungary and Germany. All breeding range states but Russia have monitoring programs. Studies on halting succession have been conducted in Belarus, Poland and Ukraine. A European action plan was published in 1996 and was updated in 1998 and 2003.

Diet: Insects and occasionally berries.

Breeding: The sexes are identical, as with most warblers, but young birds are unstreaked on the breast below.

It breeds in large open lowland marsh habitats with low grassy vegetation (mostly sedge fen mires) with water mostly less than 10 cm deep. 3-5 eggs are laid in a nest in low vegetation. This species is highly promiscuous, with most males and females having offspring with multiple partners.

Cool Facts: It can be confused with juvenile Sedge Warbler, which may show a crown stripe, but the marking is stronger in this species, which appears paler and spiky-tailed in flight.

Common Name: Corsican Nuthatch
Scientific Name: *Sitta whiteheadi*

Size: 4.7 inches (12cm)

Habitat: Europe; France (endemic to Corsica). It has a limited and fragmented breeding range which follows the distribution of Corsican pine (*Pinus nigra laricio*,) occuring on inland mountain ridges from Tartagine south to Ospedale and Mt Cagna, with main concentrations around the mountains of Cinto, Rotondo, Renoso and Incudine.

Status: Threatened. **Global Population:** 3,100 - 4,400 Mature individuals and decreasing. Forest fires and logging of mature Corsican pine stands appear to be the primary threats to this species. Large trees suitable for the species are also favored by the logging industry and since the 1970s local foresters have attempted to rejuvenate the pine forest by shortening the logging rotation, reducing the size of trees available for the species. It has been estimated that 78-122 territories have been destroyed by logging since 1998, and that a further 50-63 territories were lost during the large forest fires of 2000 and 2003, which severely affected another 47-80 territories. Recovery of this habitat will be hampered by the slow growth rate of the Corsican pine. This species is potentially susceptible to climate change through sea-level rise and shifts in suitable climatic conditions. Climate change may also cause an increase in fire frequency.

No conservation action is known, though its national status of “Near Threatened” in France may afford some protection. Almost the entire global population occurs within the Natural Regional Park of Corse.

Diet: Insects and seeds, especially those of the Corsican Pine, which are stored in food caches.

Breeding: Nests in holes in old Corsican Pines, which are usually self-excavated. Five to eight eggs are laid, white speckled with red.

Cool Facts: The Corsican Nuthatch is the only nuthatch found in Corsica.

Common Name: Salmon-crested or Moluccan Cockatoo
Scientific Name: *Cacatua moluccensis*

Size: 18-20.5 inches (46-52cm)

Habitat: Asia; endemic to Seram, Ambon, Saparua and Haruku in South Maluku, Indonesia. It is largely resident in lowland rainforest up to 1,000 m.

Status: Threatened. **Global Population:** 62,000 Mature individuals and decreasing. By the 1980s the species was being extensively and unsustainably trapped for the cage-bird market, with an estimated 74,509 individuals exported from Indonesia between 1981 and 1990, and international imports averaging 9,751 per annum between 1983 and 1988. Although reported international trade fell to zero in the 1990s, trappers remain highly active and birds are openly sold within Indonesia. This illegal trade was prolific during religious riots during 2004, and baseline estimates suggest 4,000 birds are removed from the wild annually in domestic trade. Commercial timber extraction, settlement and hydroelectric projects, pose the other major threats through resultant forest loss and fragmentation. It is predicted that half the current population on Seram may be lost to conversion of forest in the next 25 years. Most forests has already been lost from Ambon and the coasts and lowlands of Seram. It has also been considered a harmful pest to coconut palms, and, historically at least, it was consequently persecuted.

It has been listed on Appendix I and II of CITES since 1989, a measure that effectively curtailed reported trade at the international level. It occurs in Manusela National Park on Seram, although it is not clear what level of protection this affords. Existing protected areas on Seram could support c.9,800 birds, but there is a worrying 30% overlap between these areas and logging concessions. A program of local awareness, linked with the promotion of ecotourism, has recently been launched. ProFauna Indonesia carried out an investigation into domestic trade in 2003/2004.

Diet: Berries, nuts, seeds, coconuts and insects and their larvae.

Breeding: The female is larger than the males on average. Cockatoos bond for life.

Breeding season in the wild occurs between June and August. They nest in cavities of dead trees (approx. 80 feet (25m) above ground). Wood chips are placed at the base of the cavity nests. Clutch size is generally 2 to 3 white eggs which are incubated for 25 to 30 days. Both parents help with the incubation process, only leaving the nest to feed. The young are on their own at three months of age.

Cool Facts: Under the Wild Bird Conservation Act, the Salmon-crested Cockatoo is prohibited from being imported into the United States. However, US born cockatoos are being bred in captivity. They are popular for their beauty and trainability (which makes them popular in trained bird shows).

Common Name: Scarlet-collared Flowerpecker
Scientific Name: *Dicaeum retrocinctum*

Size: 4 inches (10cm)

Habitat: Asia; endemic to the Philippines (Mindoro, Panay and Negros). On Mindoro it was formerly abundant and still considered fairly common as recently as the 1980s. Data from 1991 surveys show that it remains common in one or two remnant forest tracts on the island but has declined steeply elsewhere. Numbers on Negros, where it is known from just two sites, may be very small. The size of the Panay population is unknown.

It inhabits closed canopy forest, chiefly below 1,000 m but occasionally up to 1,200 m. It also occurs in secondary and logged forest, forest edge and occasionally well-cultivated areas. However, it appears generally intolerant of highly degraded habitat, although it does frequent fruiting or flowering trees in forest patches and scrub.

Status: Threatened. **Global Population:** 10,000-19,999 Mature individuals and decreasing. Extensive lowland deforestation has occurred on all three islands. In the late 1980s, it was estimated that just 120 km of forest remained on Mindoro, with a very small proportion below 1,000 m. On Negros 4% and on Panay 8% of the land area remains forested. Several key sites on Mindoro are threatened. Siburan suffers from

encroaching slash-and-burn agriculture by locally resettled people and occasional selective logging. Dynamite blasting for marble is a threat to forest at Puerto Galera.

The forest at Siburan is effectively part of the Sablayan penal colony and is included in the F. B. Harrison Game Reserve. Site-conservation actions and a Forest Management Plan were produced by the local stakeholders for the Sablayan forests (including Mt. Siburan) and these are now being implemented. More conservation actions are planned for Mt. Siburan with support from Jenzen foundation, EU, CEPF, Body Shop and BirdLife International Species Guardians. IBA Monitoring System was set up in the Mt. Siburan area in May 2007 involving the local partners: LGU Sablayan, DOJ-SPPF, DENR, SASAMAKA (a local NGO) and Haribon Foundation. Funding has also been provided for conservation initiatives at Puerto Galera and a conservation education program has been started at Malpalon. It has been recently recorded in Mt Iglit-Baco National Park (Mindoro), the nominally protected North Negros Forest Reserve, the proposed Central Panay Mountains National Park and the Mt Talinis/Twin Lakes area on Negros, which has been proposed for conservation-related funding.

Diet: Fruit, flower nectar and occasionally insects and spiders.

Breeding: Both sexes alike. Black upperparts with blue gloss and bright red collar on hindneck. Black throat with red central spot, black upper breast, bright red line down centre of breast and belly outlined in black. Rest of underparts whitish. Long, fine bill. 2-4 eggs are laid, typically in a purse-like nest suspended from a tree.

Cool Facts: Voice: Song a series of thin, high-pitched, sweet notes. Call is a hard '*tup tup*'. Often sings from exposed perches. Also frequents fruiting trees.

Common Name: Sichuan Jay
Scientific Name: *Perisoreus internigrans*

Size: 11.8 inches (30 cm)

Habitat: Asia; endemic to China from eastern Tibet to south-east Qinghai to southern Gansu and western Sichuan. It appears to favor high-altitude (3,000-4,270 m), dry coniferous forest of mature spruce, and mixed fir and rhododendron forest, often with a poorly developed understory.

Status: Threatened. **Global Population:** 2,500-9,999 Mature individuals and decreasing. The main threat is likely to be the loss and fragmentation of forest, including substantial areas of the upper temperate and subalpine zone forests in Sichuan, through logging for timber and conversion to agriculture and pasture. Forest cover may also be declining on the Qinghai-Tibetan Plateau because the climate is progressively becoming drier.

Diet: Invertebrates and fruit.

Breeding: Little is known about the breeding habits of this jay other than Juveniles are seen in June and September and a family party was seen in mid-June.

Cool Facts: It is one of three members of the genus *Perisoreus*, the others being the Siberian Jay, *P. infaustus*, found from Norway to eastern Russia and the Gray Jay, *P. canadensis*, restricted to the boreal forest and western montane regions of North America. All three species store food and live year-round on permanent territories in coniferous forests.

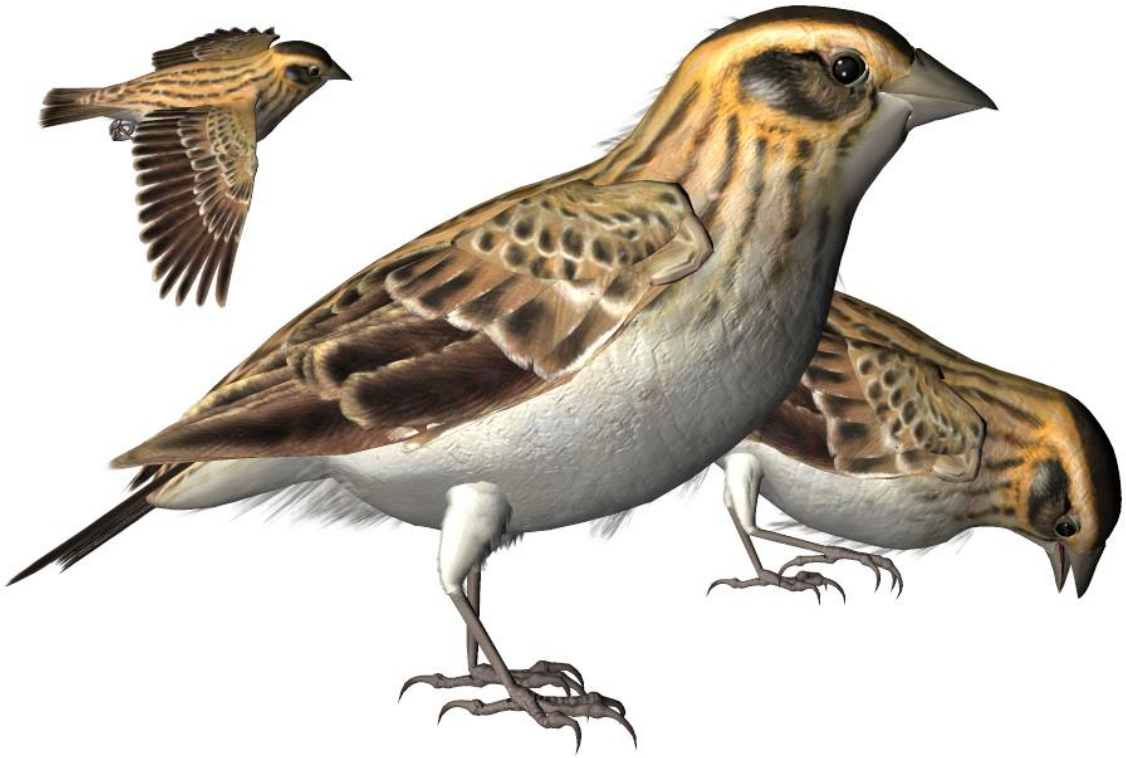
It forms small flocks in autumn, usually of five or six birds, but sometimes more than 10.

Contact calls include high-pitched '*kyip*'notes, sometimes extended to '*kyip kyip kyip kyip kyip ip ip ip ip'*, and mewing, rising '*meeeoo-meeeoo'.*

Common Name: Saltmarsh Sparrow
Scientific Name: *Ammodramus caudacutus*

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

Habitat: North America; distributed along a narrow Atlantic coastal strip of the USA from Maine south to North Carolina, with a southward shift in winter as far as Florida and north to Maryland. Found in tidal coastal marshes where there is dense cordgrass, blackgrass or saltmeadow grass.



Status: Near Threatened. **Global Population:** 250,000 Mature individuals and decreasing. Localized populations have suffered throughout its range from the severe and ongoing loss, degradation and fragmentation of marshes owing to urban development. Further threats include chemical spills and other pollutants, invasive species (particularly Phragmites, which makes the habitat completely unsuitable) and sea level rise. The amount by which sea level will rise owing to climate change remains uncertain but *Spartina patens* dominated marsh (high marsh) may disappear or be greatly reduced in size as the large amount of development along the coast means that there is limited scope for marshes to migrate inland. To date the species has not been

recorded nesting outside of high marsh habitats; the implications of sea-level rise and loss of high marsh habitats are therefore extremely serious.

A current project is attempting to develop population estimates for sites in Connecticut. Using survey data from throughout the species's range this project will estimate the total population size. Research into threats to the species, especially the impacts of climate change and sea-level rise is ongoing. The species occurs within a number of protected areas supporting coastal habitat.

Diet: Insects, spiders, marine invertebrates, and some seeds. They forage on the ground or in marsh vegetation, sometimes probing in mud.

Breeding: The Saltmarsh Sharp-tailed Sparrow is non-territorial and promiscuous, and only females provide parental care. Males occupy large overlapping home ranges, and the mating relationship features forced copulations by males.

An open cup nest of grass stems and blades, lined with finer grass blades and sometimes built up on sides to form partial covering is created. 2-6 Greenish, covered with dark speckles, eggs are laid.

Cool Facts: Breeding success in many Saltmarsh Sharp-tailed Sparrow populations seems limited by storms and especially spring (high) tides, which often flood nests. The most successful pairs in these populations are those that re-nest soon after the flood tides of the new moon.

The Saltmarsh Sharp-tailed Sparrow formerly was considered as the same species as the Nelson's Sharp-tailed Sparrow, collectively known as the Sharp-tailed Sparrow. The two forms have separate breeding ranges that barely overlap in Maine. They differ in genetics, songs, and subtle plumage characters.

In what sounds like a story out of the Maury Povich research labs, scientists in Connecticut have discovered that saltmarsh sparrows have the most promiscuous mating habits of all bird species.

The researchers discovered that 95 percent of females took a roll in the nest with more than one male during each nesting period. DNA analysis further revealed that bird siblings in the same batch frequently have different fathers with the average brood of chicks having 2.5 fathers.

Lead researcher Professor Chris Elphick commented on the study’s frisky findings, saying: “We were not surprised to find some level of promiscuity. But we were quite stunned at just how extreme the rate was.”

Common Name: Kea
Scientific Name: *Nestor notabilis*

Size: 19 inches (48cm)

Habitat: Oceania; New Zealand (occurs in Marlborough and from Nelson to Fiordland on South Island). It mostly inhabits high-altitude forest and alpine basins, although birds will often frequent lowland flats.

Status: Near Threatened. **Global Population:** 5,000 Mature individuals and decreasing. Up until its protection in 1970, over 150,000 were shot in a bounty scheme, established because rogue individuals were found to be attacking sheep as a source of fat. Introduced mammals such as stoat (*Mustela ermine*), cats and brush-tailed possum (*Trichosurus vulpecula*) have spread into most of the species' range, but the extent of

predation is unknown, although it may be significant, and likely to increase in areas where possums have only recently colonized. Possums, thar (*Hemitragus jemlahicus*), red deer (*Cervus elaphus*), hare (*Lepus europaeus)*, chamois (*Rupicapra rupicapra*) and pastoral farming practices may also be depleting crucial winter foods. Farmers kill an unknown number of birds each year. It is suspected that some birds are poisoned by toxins and other hazardous material scavenged from rubbish dumps and sites of human occupation.

Research is being conducted on its ecology and population dynamics. Advocacy is aimed at informing alpine users of ways to minimize adverse impacts and to change the negative image of the species often held by high-country farmers and ski-field operators

Diet: Berries and shoots, although many have adapted to feeding at refuse dumps and ski-fields. Kea will feed on animal fat during winter months.

Breeding: Kea are polygamous, with one male attached to multiple females. They nest in holes, under logs or in rocky crevasses. They are accessed by tunnels leading back 1 m to 6 m into a larger chamber, which is furnished with lichens, moss, ferns and rotting wood. The laying period starts in July and reaches into January. Two to five white eggs are laid, with an incubation time of around 21 days, and a brooding period of 94 days. Males feed the females during incubation and after hatching. Birds breed after three or more years.

Cool Facts: The Kea was described by ornithologist John Gould in 1856. Its specific epithet, the Latin term notabilis, means "noteworthy".The common name is from Māori, probably representing the screech of the bird. The term Kea is both singular and plural.

Kea are known for their intelligence and curiosity, both vital to their survival in a harsh mountain environment. Kea can solve logical puzzles, such as pushing and pulling things in a certain order to get to food, and will work together to achieve a certain objective.

The Kea's notorious urge to explore and manipulate, combined with strong sense of neophilia, makes this bird a pest for residents and an attraction for tourists. Called "the clown of the mountains", it will investigate backpacks, boots or even cars, often causing damage or flying off with smaller items.

People commonly encounter wild Kea at South Island ski areas. The Kea are attracted by the prospect of food scraps. Their curiosity leads them to peck and carry away unguarded items of clothing or to pry apart rubber parts of cars—to the entertainment and annoyance of human observers. They are often described as "cheeky". A Kea has even been reported to have made off with a Scottish man's passport while he was visiting Fiordland National Park.

The oldest recorded bird was over 20 years of age.

Kea, Sheep and Adaptation…

“The Kea has become the stuff of legends, not only in Phillip Temple’s wonderful books but also in the minds of those who have come into contact with this extraordinary bird, the clown of the mountains and, more darkly, the feathered wolf.

In the spring, the Kea digs up large mountain daisies in the alpine grasslands and searches at the edges of the snow mounds and around rocks for low growing plants and

insects. In the summer they forage in the alpine shrubs for fruit, seeds and flowers. They feed from rata or mountain flax, lapping up the nectar and pollen and also catch numerous grasshoppers, beetles and grubs. The autumn they spend in the beech forests, eating shoots, leaves and nuts. But the winter is the cruelest time when many die of starvation. They seek animal fat and will tear open carcasses to consume meat and internal organs.

One small community of Keas haunts a desolate valley where the mountains run steeply down into the sea and where there are also colonies of sooty shearwaters, “mutton birds”. The mature birds are not to be seen during the day as they are out fishing but at night they return to their young in nest holes they have dug in the turf among the boulders. The squabs by the time they are four months old have been fed so well on the semi digested fish brought back by their parents that they are full of fat and weigh a couple of pounds. The locals used to harvest them in great numbers. So do the Keas.

A Kea stalks through the warren of shearwater nest holes, bending down every now and then, head cocked to listen. The shearwater chicks crouch silently in their burrows but occasionally they call. The Kea reacts swiftly and starts to dig. Using its beak like a mattock it tears away the earth around their burrow’s entrance and reaches inside. The mutton–bird is not entirely defenseless and may squirt fish oil into the Kea’s face. The beak that is so effective as a mattock now becomes a billhook and rips the young shearwater to pieces.

It is this murderous behavior of the Kea and its propensity to attack merino sheep on high country stations which has made the bird so controversial and led to its persecution, with the slaughter of as many as 150,000 of these birds over the past 130 years. For more than a century biologists have debated its character but more recent research throws new light on its extraordinary behavior and history.

The ancestor of the three species of parrot in the genus Nestor, the Kea, its brown cousin the Kaka and their close relative the Norfolk Island Kaka, probably came from Australia. The ancestral Nestor may have arrived in New Zealand as many as 20 million years ago. With climate change and the separation into smaller islands in the early Pleistocene, two distinct populations developed. The population in the more benign north became Kakas specializing in exploiting fruit and nectar while the southern population living in the harsher environment where beech forest dominated, became Keas, developing the behavioral strategies and food preferences that would help them survive among the ice fields. There the Kea remained, an uncommon species of harsh and marginal habitats, no doubt following the great eagle and other predators for leftovers as well as plaguing the millions of petrels and shearwaters who bred on the mainland, until the first wave of humans arrived.

When forests were burned and the Moas were hunted to extinction and the Polynesian rat eliminated most of the shearwaters from the mainland, Keas shifted to other sources

of food. As dietary generalists they were relatively resistant to the environmental changes that forced many other birds into extinction.

The second wave of human settlement brought a bonus to the Kea. While the Kaka declined as the bush was felled and burned, the Kea population exploded with the advent of European settlement of the high country during 1840s and 50s. When sheep began to die in snowfields, Keas rediscovered a lucrative livelihood as scavengers and even attacked live sheep. Numbers increased dramatically. This ability to tolerate massive environmental change and make the most of new opportunities sets the Kea apart from nearly every other island species.

This ability to adapt and survive arises out of the Kea's social organization and its propensity to play. Like coyotes, crows and humans, Keas are "open–program" animals with an unusual ability to learn and to create new solutions to whatever problems they encounter. Exploring and manipulating the objects in their environment, Keas were selected primarily for individual rather than social learning. In essence keas were selected to play, since only through play could the requisite level of flexibility be achieved. Its boldness, destructiveness and curiosity are aspects of play, scientists say.[1]"

[1] Kea. http://www.nzbirds.com/birds/kea.html

Why Birds Matter?

Strength in numbers:

- 66 million Americans actively participate in wildlife watching *(USFWS 2001)*
- 46 million Americans are birdwatchers *(conservatively defined as having taken a trip a mile or more from home for the primary purpose of observing and identifying birds or tried to identify birds around the home—USFWS, 2001 survey)*
- Nearly 6 million California consider themselves birders *(Audubon California 2010)*
- Bird watching is the fastest growing form of outdoor recreation-- a 236% increase in participation from 1982 to 2001, from 21 million to 71 million *(National Survey on Recreation and the Environment 2000-01).*

Money Talks:

- For many states within the US, and countries around the world, wildlife tourism is their top economic producer. Damaging environmental protections will damage their economies.
- Wildlife watchers spent $38.4 billion in 2001-- resulting in a $95.8 billion contribution to the nation's economy and producing more than one million jobs. Birdwatchers spent $32 billion in 2001 that in turn generated $85 billion in economic benefits, produced $13 billion in tax revenues and 863,406 jobs *(USFWS 2001).*
- Wildlife watchers spend $3.1 billion on food for birds and other wildlife; $733 million on bird houses and feeders; $2.6 billion on cameras and associated photographic equipment; $507 million on binoculars and spotting scopes.
- The net economic value *(willingness to pay above what is actually spent)* for the chance to see wildlife is $134 a person per day within the US *(National Survey on Recreation and the Environment 2000-01).*
- The combined value of 17 different ecosystem services that birds provide - such as pollination and water catchment - is estimated between $16- 54 trillion per year worldwide, which is around twice the entire world's Gross National Product. These services are not traded in markets and carry no price tags to alert society to changes in their supply or to deterioration of the ecosystems which generate them.

Fun Facts:

- The most common symbol found on any form of currency is a type of bird
- In the US, 3 Baseball teams, 5 NFL teams, 4 NHL teams and 1 NBA team are named after birds
- The decline of birds such as the Passenger Pigeon and Carolina Parakeet led the United States to create its' first environmental law
- The Egyptian Pharaoh liked the Sacred Ibis so much that it led him to create the first-ever recorded environmental protection law to protect it.

Scary Facts:

- Domestic cats are considered primarily responsible for the extinction of 33 bird species since the 1600s. (American Bird Conservancy)
- The Passenger Pigeon was the most populous bird (estimated 5 billion) on the planet in 1850. A little over 50 years later it would be extinct thanks entirely to humans.
- Currently, 1 out of 6 species on this planet is on the brink of extinction, thanks in a good part to humans *(UN Council on Bio-diversity, 2010).*
- Unless something changes, it is predicted we will cause 50% or more of the species on our planet to go extinct within the next 30-100 years, which in turn, will probably bring about our extinction.

The Price of Extinction

By Ken Gilliland

The biggest headline of the year—perhaps the biggest of the millennium went largely unnoticed by the press in November 2010. Perhaps they didn't understand the gravity of the news. Perhaps they felt it was too scary, too controversial or too complex for the public to understand. Perhaps Lindsey Lohan or Charlie Sheen's antics they deemed a more important story. Whatever the reason, the headline faded away without fanfare. What didn't fade away was imminent peril as sure as a comet hurling to earth.

What was the headline we all missed? The United Nations Council of Bio-Diversity announced that **one-in-six species on the planet were on the brink of extinction**.

The majority of peer-reviewed biologists stated that we are in the 6th "great extinction of species" that our planet has known. The difference between this extinction and the previous five is that never before has the planet been attacked so severely on all three regions that contain life (air, water and land). The other significant difference is that this extinction is entirely preventable unlike the other 5 in which natural phenomenas were the cause. What is the cause of this mass extinction? A prolific species called "*Homo sapien".*

The news gets worse. It is conservatively estimated that in the next 50 years one half of the species will disappear forever from our planet. Losing 50% or more of the species without the thousands of years needed to adapt to change for the remaining species will cause a snowball effect. It will accelerate the extinction of even more species and many more symbiotic chains of shared existence will break down.

What few people realize is how important symbiotic chains are. Imagine no pollinators to make crops produce food. No plant systems to cleanse drinking water. No woodpeckers to keep trees healthy. No trees to balance the air we breathe. Imagine no medicines—because without the natural world—most of the ingredients won't exist.

As sure as if a comet were hurling to earth, the story the press didn't tell is that we're on going to be on that extinction list as well.

What can be done? Can anything help at this point? Yes, it will take tough decisions…the ones that involve sharing our planet with all the other species rather than hoarding it for ourselves and thus, restoring balance. These are decisions that most of our politicians, even the forward thinking ones, don't want to make… ones that many of us don't want to make either. It is our job to let our leaders know the time to act is not in twenty years, not in ten, not after the election, but today. Budgets, taxes and jobs won't matter if there's no clean water to drink, if there's no food to eat, or no air to breathe.

Only after the last tree has been cut down.
Only after the last river has been poisoned.
Only after the last fish has been caught.
Only then will you find that money cannot be eaten.

- Cree Indian Prophecy

Special Thanks to…

….my beta team (Ali, Bea, Jan, Kelvin, Rhonda, Sandra)

Species Accuracy and Reference Materials

Many birds of the same species do vary considerably in color. This package tries to emulate the colors and markings in the most commonly found variants.

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 Internet searches and several field guides were used.

Field Guide Sources:

- **Wikipedia** (http://www.wikipedia.com)
- **All About Birds/Cornell** (http://www.birds.cornell.edu/AllAboutBirds/)
- **Birdlife International** (http://www.birdlife,org)
- **Woodpeckers of Europe** (http://woodpeckersofeurope.info)
- **New Zealand Birds** (http://www.nzbirds.com)
- **The CITES Apprendices** (http://www.cites.org)

Other Resources:

- **Songbird ReMix Central** (http://www.songbirdremix.com)
- **Songbird ReMix "Bird Brains" User Group and Forum** (http://artzone.daz3d.com/groups/songbirdremix)

Environmental Activism Resources:

- **Center for Biological Diversity** (http://www.biologicaldiversity.org/)
- **National Audubon** (http://www.audubon.org/)
- **Cat Inside! Program** (http://www.abcbirds.org/abcprograms/policy/cats/materials.html)

Rendering & Posing Tips

Working with Songbird Remix morphs

Because birds in the Songbird ReMix series use generic bird bases and morphs, adding morphs upon morphs more often than not will create undesirable results. Case in point is the Parrot base which defaults with the “Parrot” morph loaded (which is found in the HEAD section (*Creations morphs : Specific Bird morphs*)). Adding the other creation morphs on top of that will be a hit and miss experience. Press **CTRL + E** to clear all the morphs in that section.

The reason why I have chosen to leave non-parrot morphs on for instance the parrot base is for experimentation and creating unique and imaginary species. In some cases, such as with a parakeet, it’s better to shape the parakeet head from the standard Songbird ReMix head than the default parrot morphs.

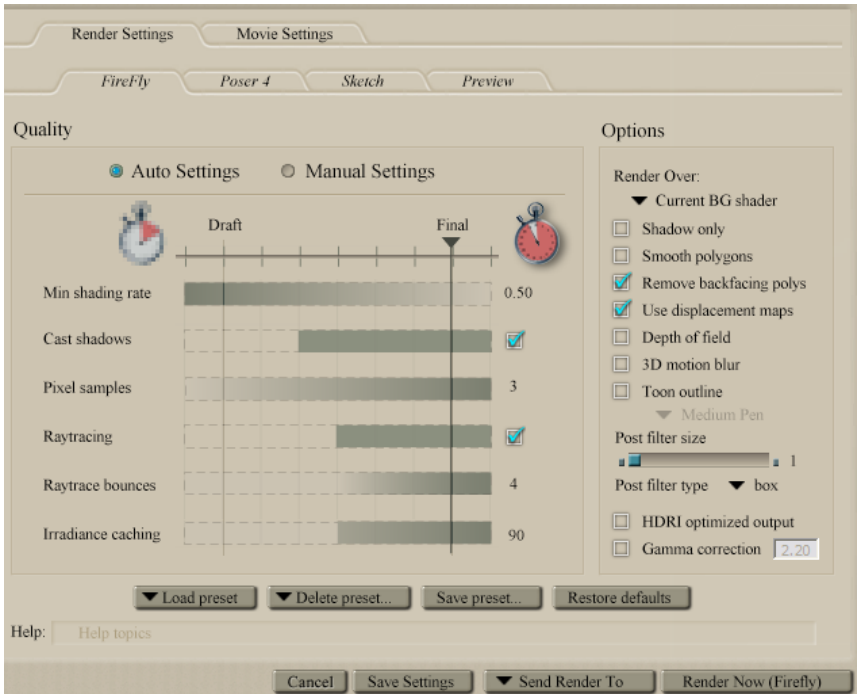
Another example is the BK-Close morph use. When BK-Height or BK-Length morphs are used often the BK-Close will require only a 0.7 or 0.8 setting to close the beak which normally takes a 1.0 setting. When applying a pose to a bird with a thicker or thinner than normal beak, you may need to adjust the BK-Close setting. The same is true with legs with shorten shins or thighs. One size does not fit all with a generic bird model.

Often when BK-Close morph is in use (partially opened) with the Frown morph active some overlapping polygons may show. To resolve this, dialing down the Frown will help (but also alter the “look” of the bird somewhat.)

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.

In VUE…

Vue has trouble with back-facing polygons which tend to show-up in certain wing and “Fluff” poses. The easiest and fast solution is to limit the amount of bending in the Forearm, Hand and Feather controllers and to hide or limit the ‘Fluff’ used

Bake it! The better (but much slower solution) is to in “Polygon Mesh Options”, **bake the model**. You might also click “Force double-sided baking” as well as playing with the Max smoothing angle and checking Dynamic Subdivison. Put Quality boost into the + area. Then bake it—“baking” will take hours on most computers.

The “Eye” material uses a Poser reflection map; since Vue has a built-in environment, it’s better to use the Vue one and cut down the reflection to 20-50% depending on light in the scene.

I also often find it better to also cut down the “Highlight Global Intensity” to 40% and “Highlight Global Size” to 50% on Plumage, Wings and Beak materials in the “Highlights” section.

In Carrara…

Carrara can have multiple issues with Songbird Remix models. The most common are scaling issues; Carrara does not accept internal Propagating Scale (a scale variable tied to the parent that tells all attached children to do the same) so will not import Poser files correctly. Songbird ReMix uses Propagating Scale in the wings, feet and head regions. Most issues seem to be tied to the Foot Scaling. Determine the amount of scaling in the foot and scale the 8 talon parts to match each foot.

The second most common problem is weird shapes or depressions in the rump area. This is because Carrara does not understand how to interrupt the scaling of the thighs. The best and easiest solution is to set each Thigh parts YScale to 100%.

I have seen some issues (primarily with the wings exploding) when importing a Poser scene file (.pz3) into Carrara. This doesn’t appear to happen all of the time. I’ve corrected it by going into the BODY and each WING part and turning off/on the Wing Fold morph and making sure the BODY section’s Wing Shapes are all in the default setting.
There is a Carrara Fix package available in the SongbirdReMix.com downloads that provides foot scaling poses.

In DAZ|Studio…

DAZ Studio can have multiple issues with Songbird Remix models when using the Poser Version**. Download and Use the DAZ|Studio version.** I used to provide each bird as a saved scene (.daz) in Studio but unfortunately which each newer version of Studio, the .daz format from previous versions is less stable; something not loading, sometimes mismapping textures. The current approach (described in the "Creating a Bird in DAZ Studio), while less convenient, does load and display the birds correctly with all versions of DAZ Studio (to 4.0.36).

The primary issue with using the Poser version with DAZ|Studio is Scaling; DAZ|Studio does not accept internal Propagating Scale (a scale variable tied to the parent that tells all attached children to do the same) so will not import Poser files correctly. Songbird ReMix uses Propagating Scale in the wings, feet and head regions. Most issues seem to be tied to the Foot Scaling. Determine the amount of scaling in the foot and scale the 8 talon parts to match each foot.

The second issue is that material setting will be off. The DAZ|Studio version has Material files tuned to DAZ|Studio included. This version also has Character files so it is possible to load the Poser .cr2, then apply the DAZ|Studio character setting which will fix the scaling and material issues. This method can be helped if updated Songbird Remix CR2s are available.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