

Avian Models for 3D Applications by Ken Gilliland

Songbird ReMix Threatened, Endangered, Extinct III

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Songbird ReMix Threatened, Endangered, Extinct III Introduction

The Threatened, Endangered, Extinct series within the Songbird Remix library is more than a "just another" collection of 3D bird models. This particular package has a two-fold purpose; one, to provide high-quality digital birds for the purpose of animation and still imagery and two; to raise awareness for these and other species plights and in doing so, help to turn the tables on possible extinctions. In using these digital birds, it is the author's hope that the users will also help to create public awareness through their art.

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.

Overview and Use

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

- Bird Library: This folder holds the actual species and poses for the "premade" birds. Birds are placed into a "type" folder (such as "Birds of Prey (Order Falconiformes)" which for example would hold falcons, hawks and eagles). The birds for this set can be found in the following folder(s):
 - Albatrosses and Petrels (Order Procellariiformes)
 - Gulls and Waders (Order Charadriiformes)
 - Hummingbirds and Swifts (Order Apodiformes)
 - Parrots and Cockatoos (Order Psittaciformes)
 - Perching Birds (Order Passerines) and subfolders
 - Pigeons and Doves (Order Columbiformes)
- **Manuals:** Contains a link to the online manual for the set.

- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your birds
 - Bird Base Models: This folder has the blank, untextured model(s) used in this set. These models are primarily for users who wish to experiment with poses or customize their own species of bird. When using physical renderers such as Iray and Superfly, SubD should be turned to at least "3". For DAZ Studios 3Delight renders, the SubD must be turned from the "High Resolution" setting to the "Base" setting (otherwise some areas will render incorrectly transparent).

Poser Use

Select **Figures** in the **Runtime** Folder and go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer *Firefly or Superfly*) folder you want and simply click it to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs. You will need to click on the attached part to access those controls. Associated poses can be found in the same folder- **Bird Library :** (Type) : Poses.

DAZ Studio Use

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

One Folder to Rule Them All

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

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



Finding the bird you want within the **"Perching Birds (Order Passeriformes)"** folder can be daunting, even for an experienced birder (such as myself), so I've included an online reference tool within this folder that helps to make your search easier. Click the **"Perching Birds Finder"** icon and when loaded, look at the first column and search for the type of bird you want. For example, I

want a "manakin" (a bird common to Central and South America). Scroll down the first column alphabetically and stop on "manakin". Looking across to the second column, you will now know that manakins can be found in the "Tyrant Flycatchers & their Allies" subfolder.

Physical-based Rendering

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

Posing & Shaping Considerations

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

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

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

The Salmon-crested/Moluccan Cockatoo use the Crest4 settings

IK Concerns

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

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

Type Folder	For what species?
Albatrosses and Petrels (Order Procellariiformes)	Ashy Storm-Petrel
Gulls and Waders (Order Charadriiformes)	Sociable Lapwing
Hummingbirds and Swifts (Order Apodiformes)	Colorful Puffleg
Parrots and Cockatoos (Order Psittaciformes)	Kea Salmon-crested Cockatoo Spix's Macaw
Perching Birds (Order Passeriformes) Poses can be found in "Universal Poses" & "type" folders	All Passerines
Pigeons and Doves (Order Columbiformes)	Socorro Dove

Where to find your poses

Where to find your birds

Type Folder	Bird Species
Albatrosses and Petrels (Order Procellariiformes)	Ashy Storm-Petrel
Gulls and Waders (Order Charadriiformes)	Social Lapwing
Hummingbirds and Swifts (Order Apodiformes)	Colorful Puffleg
Parrots and Cockatoos (Order Psittaciformes)	Kea Salmon-crested Cockatoo Spix's Macaw
Perching Birds (Order Passeriformes) Crows, Jays and their Allies	Sichuan Jay
Perching Birds (Order Passeriformes) Finches, OW Sparrows & their Allies	Bonin Grosbeak
Perching Birds (Order Passeriformes) NW Sparrows & their Allies	Saltmarsh Sparrow
Perching Birds (Order Passeriformes) NW Warblers & their Allies	Golden-cheeked Warbler
Perching Birds (Order Passeriformes) OW Warblers & their Allies	Aquatic Warbler Millerbird
Perching Birds (Order Passeriformes) Sunbirds & their Allies	Scarlet-collared Flowerpecker
Perching Birds (Order Passeriformes) Thrushes, Oxpeckers & their Allies	Black-winged Starling
Perching Birds (Order Passeriformes) Wrens, Nuthatches & their Allies	Corsican Nuthatch
Pigeons and Doves (Order Columbiformes)	Socorro Dove

Songbird ReMix Threatened, Endangered, Extinct III Field Guide

Extinct

Bonin Grosbeak Laysan Millerbird

Extinct (in the wild)

Socorro Dove Spix's Macaw

Critically Endangered

Sociable Lapwing Nihoa Millerbird Colorful Puffleg Black-winged Starling

Endangered

Golden-cheeked Warbler Ashy Storm-petrel Saltmarsh Sparrow Kea

Vulnerable

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

What makes a bird endangered?

While it's easy to understand why a bird like the Black-winged Myna is endangered with less than 50 birds left on the planet, some other species may be harder to figure. So why is a bird such as the 'Akepa from Hawai'i (with an estimated population of 6,000) be more endangered than the Yellow-breasted Bunting which am estimated population >2,300?

The reason is that the number of birds, *while an important factor*, is only part of the consideration in endangerment. The easiest way to explain the criteria is to review the **R-E-D** system.

R-E-D stands for **R**ARITY - **E**NDANGERMENT – **D**IVERSITY. The total number of birds would relate to Rarity. The perils facing the birds would be Endangerment. Diversity relates to how far the species extend over physical terrain. For instance, a species limited to a single island would be more at risk than a species spread over a continent.

So let's take the case of the 'Akepa and Yellow-breasted Bunting and apply the **R-E-D** system:

- *Rarity*: The Bunting population is less than the 'Akepas. Chalk one up for the Buntings.
- **Endangerment:** The 'Akepa require old growth Koa forests that are almost extinct from the Hawaiian Islands. Also the 'Akepa has little to no immunity to avian malaria. The Buntings have issues with nesting and human populations which are much less immediate threats than the 'Akepa so the 'Akepa wins the "E" round.
- **Diversity:** The 'Akepa are on a secluded part of an island within an specific elevation. The Buntings are throughout North-eastern Europe and Asia. Diversity is clearly an issue with the 'Akepa. Chalk one up for the 'Akepa.

While the Bunting won the "**R**" round, the 'Akepas decisively won the "**E**" and "**D**" rounds and that's why the 'Akepas are considered "Endangered" while having greater numbers.

A Word About the Birds Featured in this Volume

Since the initial publishing of "Threatened, Endangered, Extinct v3" in 2011, some birds statuses in the **R-E-D** system have changed. Some birds have declined closer to extinction and others are on the road to recovery. Some birds with the advent of DNA analyst have new scientific names.

The 2021 revision of this manual uses the most current science available.

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.

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: Laysan and Nihoa 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 (United States). 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: Extinct/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: A small reed-warbler that is dark olive and olive brown above with grayish margins on feathers. The wing and rectrices are chaetura drab (nearly neutral slightly olive black that is very slightly darker and more neutral than London smoke). It is whitish below with some grayish olive wash on sides; and buffy brown flanks. The bill is thin and blackish. The feet and legs are dark gray. Sexes are similar, but females tend to be slightly smaller,

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" by Henshaw in 1902 because of its fondness for feeding on large miller moths (probably *Agrotis spp.*).

- *A. f. kingi.* First reported by Palmer and Munro in 1891. The Nihoa Millerbird is found on Nihoa, in western Hawaiian Islands. The Nihoa form is much darker above, and larger than extinct Laysan form.
- *A. f. familiaris.* First reported by Palmer and Munro in 1891. The Laysan Millerbird was found on Laysan, in the northwestern Hawaiian Islands. Tail barring on Laysan Millerbird more noticeable than on Nihoa form.

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: 150+/- Mature individuals in captivity. 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.



A number of conservation measures are underway to protect this species from total extinction. The Revillagigedo Islands were declared a biosphere reserve in 1994. 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 (EEP), in 1995. Modern studbook software has been employed to assist with the genetic and demographic management of the captive population. Individuals have been distributed to zoos and bird parks in countries including Belgium, the Netherlands, U.K., Poland, Austria, Luxembourg, France, Spain, the Czech Republic and Germany. Of 672 individuals listed in the studbook by December 2010, 102 were known to be alive. Since

2006, following an extensive survey of the origin of the founding individuals of the EEP population, major software-based population genetic analyses have been conducted and recommendations for new pairs have been given by the EEP coordinaton. A special breeding unit for the species has been opened at Marlow Bird Park, Germany. A proposal was developed to reintroduce the species, along with a restoration program for Socorro. DNA fingerprinting has revealed extensive hybridization with the Mourning Dove (Z. macroura) in the United States, 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. Resident populations of Z. macroura and Common Ground-dove (Columbina passerina) 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 birds from the EEP was planned for June 2005, with the establishment of a breeding flock by June 2006. However, there have been problems with import restrictions and permits. In the face of these restrictions, a small insurance population was established in the United States in 2008, forming the basis for the return of the species to African Safari Zoo, Puebla, Mexico. Two groups of birds were transferred to Mexico in 2013 and 2014 to form the basis of a population for eventual reintroduction to Socorro dove. The control of feral cats has been undertaken on Socorro. Despite over over five hundred cats being killed on the island between 2011-2016, they still persist throughout the island in low numbers. Furthermore, over 1,700 feral sheep were culled on the island between 2009-2012 and as of 2012, sheep were completely eradicated from the island, facilitating a rapid, remarkable recovery in local vegetation cover. Reports that rats have recently colonized on Socorro have proved to be unfounded although mice remain an issue on the island and must be removed due to their predation of dove chick. Techniques to grow four endemic tree species from Socorro have been successful, with 117 tree seedlings planted on the island. These restored areas will be important when birds are eventually released back onto Socorro. The species is included on the 'Watch List' of the State of North America's Birds as a species of high conservation concern (NABCI 2016).

There are plans to import birds from the EEP and establish a breeding flock on Socorro. Also, the complete the eradication of cats and sheep on Socorro needs to continue. Proposed plans will continue to restore native vegetation on Socorro and then reintroduce the species following satisfactory progress in mammal eradication and habitat restoration programs. Also, measures need to be in place to control, but not eliminate, the locust swarms.

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

Breeding: Male has deep cinnamon head and under parts, with black streak on lower ear-coverts, blue-gray nape and iridescent pink neck patch. Dark brownish upper parts,

boldly spotted with black on scapulars, tertials and inner wing-coverts. Dark gray flight feathers. Dark brown central tail, outer feathers gray with black subterminal band and gray tips. Female duller, with smaller blue-gray nape and pink neck-side patches. Juvenile similar to female, except coarse breast streaking and cinnamon-buff tips to upper parts feathering. In all plumages has pale blue orbital ring, pinkish legs and dark gray 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 nest box 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.

"There are in nature neither rewards nor punishments — there are consequences."

-- Robert Ingersoll

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: Extinct in the wild. Global Population: 100+ mature individuals in captivity.



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.

The following conservation actions have been taken. The Spix's Macaaw is listed in CITES Appendix I and is protected under Brazilian law. It is now considered "Extinct in the Wild" in Brazil and in Birdlife database. A species action plan was produced in 2012 and the 'Projeto Ararinha na Natureza' (Macaw in Nature Project') has been working to conserve the species since 2012. A captive breeding

programme is underway, with the population held in the official captive breeding programme numbering over 100 individuals in 2015, and further captive individuals outside the official program. The majority of the captive individuals are currently held by Al-Wabra Wildlife Preservation (AWWP) in Qatar, which has maintained the species since 1984, with other captive individuals held in Brazil and Germany.



Concordia Farm was also the 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. In 2018, the government officially designated the 30 ha Refúgio de Vida Silvestre Ararinha Azul (Spix's Macaw Wildlife Refuge) and the 90 ha Área de Proteção Ambiental Ararinha Azul (Spix's Macaw Environmental Protection Area) in Curaçá and Juazeiro, Bahia and there are plans to reintroduce the species at these sites, as well as at Concordia Farm. Work has been underway to conserve habitat in areas suitable for reintroduction, including by controlling goats.

Work has also been carried out to engage the local communities to raise awareness of the conservation of Spix's macaw and its habitat, including through cultural activities. Local farmers have been educated about the benefits of supplementary feeding of goats to reduce their impact on the caatinga habitat. A new 'Spix's Macaw Release, Breeding and Research Center was built to act as a base for the species's reintroduction (2019).

Conservation actions proposed are to protect and improve habitat at the identified release sites, including by management of goats. Introduce captive-bred fledglings and ensure protection from trappers. Continue to develop artificial reproduction techniques to boost the population. Analyse the genetic diversity in the captive population. Continue cooperation between holders of captive birds. Continue ecological studies to assess the need for habitat management, Continue the community education and engagement programs.

This species was listed as "Critically Endangered" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been uplisted to "Extinct in the Wild".

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 upper parts, wings, and tail. The underside of the wings and tail are gray/black. They have a bare area of gray/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 gray as juveniles, then become dark gray, 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.

The Spix's Macaws were the main characters in the 2011 animated film "Rio". Blu (played by Jesse Eisenberg) and Jewel (played by Anne Hathaway) were the supposed last pair of Spix's macaws in the world (although they are referred to as blue macaws). The movie even references their extinct-in-the-wild status and at one point ornithologist Túlio Monteiro mentions the species' scientific name. In its 2014 sequel "Rio 2", it is revealed that they are not the last pair at all, but in actuality other Spix's macaws are thriving secretly in the Amazon rainforest.

We say we love flowers, yet we pluck them. We say we love trees, yet we cut them down. And people still wonder why some are afraid when told they are loved.

Common Name: Sociable Lapwing **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: 11,200 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 seminomadically 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: It is an olive-brown lapwing with bold, white supercilia meeting on forehead and nape. The crown and lores are black and there is a thin dark line behind eye. The belly is black and chestnut. The legs are black. Females are less intensely colored than the males, especially on the belly and crown. Non-breeding adults have a buff wash to the supercilia and their bellies are pale. Juveniles appear similar to non-breeding adults, but have clear buff fringes and dark terminal lines to the feathers of their upper parts and the breast is heavily streaked dark brown. First-summer individuals only show the partial under parts pattern of the adult.

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".

"Growth for growth's sake is the ideology of the cancer cell"

-- Edward Abbey

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

Size: 3.1-3.5 inches (8-9 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: Endangered Global Population: 250-999 Mature individuals with a declining population 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.

In 2011, conservation measures were started: Munchique National Park had logging occurring within the park boundaries. Logging was stopped and the replanting of lulo fruits was encouraged, with workshops targeting local communities located in impact zones. These measures were 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. Plans were made to extend the reserve by planting key tree species. The Hummingbird Conservancy supported research on the ecology and population dynamics of this species both in Munchique and Serrania del Pinche.

2021 Update: It was considered "Vulnerable" until 2000, its extremely small range, which is presumably contracting, led to reclassification as "Critically Endangered" in 2000 BirdLife International Species factsheet. A re-evaluation of its range size using a Minimum Convex Polygon in 2017 triggered downlisting to "Endangered". Likewise, it was formerly considered "Critically Endangered in Colombia" it is now assessed as nationally "Endangered". Its known distribution lies within the Munchique National Park (440 km2) and the private Aves Mirabilis Swarovski Nature Reserve (1900 ha) and close to Los Tambitos Nature Reserve, where it might also occur. It appears the conservation measures have worked for now.

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: A spectacular, multi-colored hummingbird that is fairly short with a black bill and pink feet. The male has glittering green crown and gorget, otherwise dark shining green. It has a glittering blue belly and glittering red and coppery-gold under tail-coverts. There are enormous white leg-puffs fringed in cinnamon. It has a dark, bronzy, forked upper tail, and a coppery-gold under tail. The female is very different with dark shining green above and on the sides. It has a white median throat and under parts, spotted green with indistinct glittering reddish, golden, and bluish spots on the belly, flanks and under tail. It has a bronze-green tail that is tipped blackish. It has smaller (than the male) 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 Myna (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:** 20-49 Mature individuals with a decreasing trend. Although this starling was common until recently, the paucity of records in the field and the increasing rarity of individuals in the cage-bird trade suggest that it has undergone an extremely rapid decline over the past 13 years (three generations). This has resulted in the current wild population now numbering fewer than 50 mature individuals. It is clear that the decline is continuing and the extinction of the species' wild populations is imminent.

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.

This species was listed as "Endangered" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been uplisted to "Critically Endangered" as its population has dropped from thousands to under fifty since 2013.

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.

> "Eventually it'll become damned clear that the Earth is warming and the warming is beyond anything we have experienced in millions of years, and people will have to admit-- Well, I suppose (at that point) they will say God is burning us up."

> > -- Clive Hamilton, economist-ethicist

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

Size: 4.9 inches (12.5 cm)

Habitat: North and Central America; it is a 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:** 77,000-176,000 Mature individuals and decreasing. Human population growth is the root cause of all of this species' difficulties. 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. The Defenders of Wildlife sued the U.S. Department of Agriculture in 1991 to stop a malathion spraying program in winter range in Guatemala; suit was joined by city of Austin and Travis Co., TX, who were concerned

that winter range actions by federal government would damage local species-protection efforts.

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. Soft-bodied caterpillars (*Lepidoptera*) are important food source during breeding season.

It is often found in mixed flocks in winter months. It forages by gleaning from foliage and branches, sallying, and hovering at the ends of branches.

Breeding: The adult male has 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. The wings are black with two white wing-bars and fringing to the flight feathers, black chin, throat and streaks down flanks on the white underparts. The female is similar, but has olive to gray streaked with black on crown and mantle. The chin and center of the throat has yellow or white surrounded by variable amounts of black mottling along the sides. Immatures are drab with indistinct streaking and black eye-stripe.

It breeds in juniper-oak woodlands, where it depends on *Juniperus ashei* bark for nesting material. Because nests built and defended mostly by female, she probably selects nest site. However, male may accompany female in search for nest site. 3-5 eggs are laid in late March-mid May. Eggs are white with dark speckles concentrated around the large end. Males do not brood, however feeding trips made are made by both parents and vary with pairs and with the age of young. Adults usually perch on rim of nest to feed. The male generally passes the food to female during brooding, and during remainder of nestling period, if she is at the nest. Adults frequently mouth or "bill" food, pulverizing it, before placing it in nestling's beak. The food may be regurgitated. Various winged insects, spiders, grasshoppers, and caterpillars are fed to the young.

The young fledge 9–12 days after hatching. At fledging, the young are dark gray on top, with a light breast and belly, dark gray streaks on outer edges of breast, 2 white wing-

bars, downy body, the tail about 10 mm long with black and white tail feathers, pinkish legs, and broad pink beak.

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.

"Birds should be saved for utilitarian reasons; and, moreover, they should be saved because of reasons unconnected with dollars and cents...

The extermination of the Passenger Pigeon meant that mankind was just so much poorer... And to lose the chance to see frigate-birds soaring in circles above the storm, or a file of pelicans winging their way homeward across the crimson afterglow of the sunset, or a myriad of terns flashing in the bright light of midday as they hover in a shifting maze above the beach— why, the loss is like the loss of a gallery of the masterpieces of the artists of old time."

—-Theodore Roosevelt, 1916

Common Name: Ashy Storm-petrel Scientific Name: Hydrobates 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:** 3,500-6,700 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: It is a medium-small storm-petrel. The body and limb proportions are typical of Oceanodroma, although wings and tail are proportionally longer. Entirely dusky gray when fresh, except for a paler gray uppertail covert band and paler transverse bar across upperwing. Primaries and secondaries darker than other feathers. In freshest plumage, especially in newly fledged individuals, scapulars, flanks, and wing coverts are edged with light, pearly gray, but this darkens with wear. Larger under wing coverts are silver gray, contrasting with darker surrounding under wing feathers. Ages and sexes are all similar in appearance. Fresh juveniles often show more-distinct or whiter pale wing-covert fringing, and become browner and more worn in spring/summer due to lack of first-cycle molts. Juvenile outer primaries and rectrices are relatively narrower and more worn, and juveniles lack 'molt clines' in feather freshness among and between primaries and secondaries, which older birds show following protracted definitive prebasic flight-feather molt.

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 gray edges of the upper tail 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 down stroke (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.

"The biggest cause of trouble in the world today is that the stupid people are so sure about things and the intelligent folks are so full of doubts".

--Bertrand Russell

Common Name: Saltmarsh Sparrow Scientific Name: Ammospiza caudacuta

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

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: Endangered. **Global Population:** 37,000-69,000 Mature individuals and decreasing. Localized populations have suffered throughout its range from the historical loss and fragmentation of marshes owing to urban development. Recent population declines are associated with the presence and number of downstream tidal restrictions



(levees, roads, train tracks, etc.) that alter natural flow of tide waters in and out of marshes, although the mechanism behind this link is not well known. Further on-going threats include increased tidal flooding (e.g., due to sea level rise and increased storm surge frequency/magnitude), hybridization with Nelson's Sparrows (*A. nelsoni*) (which may reduce fitness and limit the number of pure Saltmarsh Sparrow populations), degradation from chemical spills and other pollutants, and invasive species (particularly *Phragmites*, which makes the habitat completely unsuitable). Predation also presents another notable threat to the species. While the identity and relative impact of the primary predators is uncertain, predation is known to dramatically reduce nest and juvenile survival throughout the species's range, particularly in the southern portion.

This species appears to be extremely vulnerable to a slight rise in sea-level, as nests are lost due to flooding. 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, with the potential for the species to go extinct in the near future; already-low vitality rates, largely attributable to the impact of predation throughout the southern portions of this species's range, are also thought to be generating localized extinctions in the immediate future. 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; and vegetation within marshes is already changing in a manner that suggests marshes are getting wetter. High precipitation during the breeding season is also known to be negatively associated with population growth in Saltmarsh Sparrow populations and given the increased frequency and intensity of rainfall and storm events being witnessed throughout the species's range, this will likely drive further ongoing population declines in the future.

The Saltmarsh Habitat and Avian Research Program (SHARP) and their partners have conducted a number of recent studies to assess the species' status. These include a range-wide population survey and trend assessment, demographic studies, studies of changing habitat conditions, as well as studies on many other aspects of the species' biology. The species occurs within a number of protected areas supporting coastal habitat, and restoration of tidal marshes is on-going. Past efforts to restore tidal flow to marshes appear not to have benefitted saltmarsh sparrows. Over the past few years, saltmarsh sparrows have become more central to coastal marsh planning within the species' range and SHARP has begun investigating the effects of coastal management activities on the species. This work includes investigations of potential methods to increase habitat area (including facilitation of marsh migration into upland habitats and creation of floating habitat structures) and systematic evaluation of a range of marsh management activities throughout the species' range. Partners are working to identify historic and modern marsh manipulations to determine which ones are not healthy for salt marsh regeneration and working to restore areas which are water logged or holding back water. Novel approaches such as thin layer deposition, ditch remediation and revegetation are also underway. The Atlantic Coast Joint Venture (ACJV) have developed a series of objectives to first stabilize, then increase Saltmarsh Sparrow populations, the focus of which centres on restoring and enhancing existing salt marsh patches and protecting adjacent inland areas that buffer existing salt marsh patches and provide corridors to allow marsh migration as sea levels rise in the future. Such plans comprise a primary focus of the ACJV's wider Salt Marsh Bird Conservation Business Plan for the Atlantic Flyway.

Conservation Actions Proposed

Identify, protect and enhance high-elevation marsh suitable for breeding and less susceptible to flooding. Manage areas to reduce nest flooding on extreme high tides, and facilitate marsh migration at the upland edges of marshes. This species was listed as "Near-Threatened" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been uplisted to "Endangered" as it has lost two-thirds of its population since 2013.

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: Endangered. **Global Population:** 4,000 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.

This species was listed as "Near-Threatened" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been uplisted to "Endangered" as it has lost 20% of its population since 2013.

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.

A New Zealand road maintenance crews kept finding their traffic cones mysteriously moved to the middle of the road after they finished for the day. After a close circuit

camera was installed the mystery was unraveled. Local Kea were moving the cones to block the road and get hand-outs from cars stuck in traffic.



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"

Our crude civilization engenders a multitude of wants, and law-givers are ever at their wits' end devising. The hall and the theater and the church have been invented, and compulsory education. Why not add compulsory recreation? ... Our forefathers forged chains of duty and habit, which bind us notwithstanding our boasted freedom, and we ourselves in desperation add link to link, groaning and making medicinal laws for relief. Yet few think of pure rest or of the healing power of Nature.

- John of the Mountains: The Unpublished Journals of John Muir, (1938)

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

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

Size: 4.7 inches (12 cm)

Habitat: Europe; endemic to Corsica, 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.

It habitat is primarily forests of Corsican pine (*Pinus nigra*) which are characterized by heavy autumn and winter rainfall and rather dry summers. It prefers unmanaged pure stands of tall trees (some 300 years old, producing greatest quantities of seeds) with



abundant standing dead and rotting trunks and occasional clearings. Lower densities of nuthatches are found in young forests (20% of optimum population), mature stands under heavy management, and where Corsican pines mixed with cluster pine (*Pinus pinaster*), beech (*Fagus sylvatica*) or silver fir (*Abies alba*), usually below 1000 m (but can reach high densities in stands of cluster pine at c. 800 m); densities low also above 1500 m, where trees scattered and stunted. In the winter, there is some dispersal, occasionally to cork oak (*Quercus suber*) forest, sweet chestnut (*Castanea sativa*) plantations and villages at lower altitudes, although it still favors pines overall.

Status: Vulnerable. **Global Population:** 3,100 - 4,400 Mature individuals with a decreasing population trend. It is a restricted range species. It is uncommon and somewhat local; occurring on inland mountain ridges from Tartagine south to Ospedale and Mt. Cagna, with main concentrations around the mountains of Cinto, Rotondo, Renoso and Incudine. It is absent from Nebbio and Cap Corse.

In 1981–1984, the population was estimated at about 2000 pairs. These figures appear to represent marked decline from estimate of 3000 pairs in 438 km2 of forest in late 1950s, although methodologies are not comparable. In 2008, that number had dropped to 1550-2200. The presence of old stands of Corsican pine (Pinus nigra laricio) appears to be key factor in survival of this species, and main factors limiting its abundance are fire (can destroy habitat for many decades), logging and removal of dead and rotting trees (used as nesting sites). 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. The Corsican Pine distribution is now fragmented, with a total >range restricted to less than 2.5% of the area of Corsica. Its habitat is more likely threatened by an increasing frequency and intensity of wildfires and by logging than by climate change. Although large numbers of Great Spotted Woodpeckers (Dendrocopos major) can result in high predation of chicks, the woodpecker increases availability of suitable nest-sites. This species readily tolerates close proximity of houses, power lines and traffic. Almost the entire global population of the species occurs within the Natural Regional Park of Corse (Corsica). This species was listed as "Threatened" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been downlisted to "Vulnerable".

Diet: Its diet consists of largely insects and spiders from May to August, switching to seeds (especially Corsican pine seed) during rest of year.

It forages in pairs and singly, Outside breeding season, it may join mixed-species flocks. It forages in the same manner of a tit (*Paridae*); forgaing in needle clusters and among small branches, especially in spring and summer. It is found on trunks and larger branches during winter months. It may hover to pick up small items from pine cones and also fly-catch. From late autumn to early spring, and during sunny weather (when pine cones are open), it extracts seeds from cones and caches them behind tree bark, or places seeds on thicker branches and covers them with fragments of bark or lichen. It retrieves cached seeds in cold and wet weather. These stores are essential to its survival, especially in early spring when the snow prevents access to pine cones.

Breeding: It is a small nuthatch with rather long bill and prominent broad white supercilium. The male in fresh plumage (autumn) has glossy black cap from forehead to nape (not well defined at the rear), a faintly buff-washed white supercilium (from nostril) to side of mantle and ending irregularly at rear, a black eye stripe which is finely spotted white behind eye and less well defined at the rear of the ear-coverts. Its upper parts, including lesser and median upper wing-coverts are a bluish-gray, The greater wing-coverts and flight-feathers are dark gray-brown, while the tertials are washed blue-gray on outer webs. The greater and primary coverts, secondaries and inner primaries are narrowly fringed blue-gray. The central tail feathers are dull blue-gray transitioning to a sooty black on the outer rectrices. They are tipped gray (widest on outermost feather), outer three pairs marbled with white subterminally, especially on inner webs. The cheek, ear-coverts, chin and throat are white, washed dirty buff. The sides of neck and under

parts are a pale drab gray, variably tinged buff, especially on flanks, belly and under tailcoverts. The under wing-coverts and axillaries are whitish, while the median under the primary coverts are medium gray. The base of the primaries are white (not strongly contrasting). In worn (summer) plumage, the crown is slightly less glossy, the upper parts are duller and less blue, the flight-feathers appear worn and bleached paler. The supercilium, throat, cheeks and ear-coverts are whiter. The under parts are duller, grayish with little or no buff wash. The iris is a dark brown with a narrow white eye ring. The bill is slate-black to gray-brown, more bluish at base of upper mandible, base of lower mandible pale gray to whitish. The legs are a dark gray-brown or slate-gray, the soles of the feet can sometimes be yellow.

The female resembles the male, but the crown and ear-coverts are a medium blue-gray (as are the upper parts), dark feather centers are largely or totally concealed but may show as slightly darker mottling on (usually) the forecrown and forehead, especially in worn plumage. The eye stripe is gray and less well defined behind eye. The supercilium and under parts tend to be grayer. The juvenile is as the adult but slightly duller overall, with faint brown tips on the greater upper wing-coverts, with a pale base of lower mandible being more extensive. The legs are paler gray. The cap of very young male may be sooty black with no gloss, and the juvenile female lacks blackish feather bases on forecrown.

The breeding season occurs from April through May, with egg laying dates generally at end April or in first ten days May. This species may be double-brooded. Mated partners remain in the territory all year. The nest is built by both sexes and is has a coarse foundation of pine needles, wood chips and bark pieces, lined with hair, feathers, moss, lichen or plant fibers. It is placed in a cavity 2–30 m above ground in medium-sized to large dead or dying Corsican pine. It is usually in dead pine stump (200–300 years old at time of death) 3·5–22 m high and well rotted. The cavity is generally excavated by the birds themselves and the work is carried out by both sexes. The majority of excavations have an exploit hole originally started by woodpeckers. In some very rotten trunks, there may be two entrances. Living pine with a rotting top are occasionally used.

The egg clutch 5–6 eggs which are white, speckled reddish, especially at broader end, and sometimes with light brown or dark violet-gray markings. The incubation is performed by the female who stays on the nest and is fed by male. Chicks fledge after 22–24 days.

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

Common Name: Aquatic Warbler Scientific Name: Acrocephalus paludicola

Size: 4.7 – 5.1 inches (12-13 cm)

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.

It is often found in wet sedge beds with vegetation shorter than 30 cm.

Status: Vulnerable. **Global Population:** 22,000 - 32,000 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 reed bed, 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 salination 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.

This species was listed as "Threatened" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been downlisted to "Vulnerable".

Diet: Insects and occasionally berries. Insects include spiders, dragonflies, grasshoppers and other orthopterans, earwigs, water bugs, aphids, neuropterans, adult and larval lepidopterans, caddis flies, dipteran flies, hymenopterans, beetles and small water snails.

It is secretive, usually foraging in the lowest level of marsh cover. It forages almost exclusively while climbing and scurrying in dense sedges, It is rarely seen to feed in willow bushes. The singing male sometimes flies up rapidly to catch flying insects.

Breeding: This warbler has a "new world" sparrow-like striped head pattern and bluntly pointed wings. The sexes are alike, although the males are on average longer-winged and heavier than females, and females appear to have deeper bills than males. It has a long pale supercilium, dark lateral crown-stripe and pale central crown-stripe. The lores and ear-coverts are yellow-brown and streaked blackish. The upper parts are a pale olive to golden-buff, heavily streaked on the mantle and scapulars, and less so on rump and upper tail coverts. The primaries, secondaries and primary coverts are blackishbrown and edged paler. The tertials, the greater and median wing-coverts are blackish, broadly fringed and tipped yellow or tawny-brown. The lesser coverts are grayish-brown. It is pale cream-buff below; being palest on the chin, throat and belly (chin and belly center almost white). The breast and flanks are almost always finely streaked. The axillaries and under wing coverts are white with dusk centers. The iris is dark and the bill a black-brown. The base of the lower mandible are buff colored. The legs are a vellow brown. Juveniles have a bright straw color om the upper parts while the flanks are a deep buff. The breast and flanks with very little or no streaking and the legs very pale.

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

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

Habitat: Asia; endemic to the Southern Moluccas; Seram, and (perhaps introduced) Ambon; probably extinct on Haruku and Saparua in Indonesia.

It is largely resident in lowland rainforest up to 1,200 m. It is most frequently encountered in primary forest, either disturbed or undisturbed, with large trees, although is also found in riverine forest and relatively low-stature open-canopy forest, but is less often seen in selectively logged forests, second growth and at edges of cultivation, and is rare in non-forested areas

Status: Vulnerable. Global Population: 6,600-67,000 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. Although international trade was declared illegal 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 by growers a harmful pest to coconut palms, and is consequently persecuted.



Conservation Actions Underway... 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 about 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. Conservation actions proposed are to conduct detailed research into its population dynamics, local movements and threats. Monitor trade and promote effective enforcement of regulations to control it. *Quickly resolve apparent overlap of logging concessions with Manusela National Park in favour of the park's integrity. Establish a strict nature reserve in the Wae Fufa valley of northeast Seram, and adjoining catchments. Continue and expand conservation awareness campaigns on Seram, using it as a flagship species to reduce trapping pressure and encourage local support. Extend captive breeding efforts.

This species was listed as "Threatened" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been downlisted to "Vulnerable".

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

Breeding: The female is larger than the males on average, but otherwise are identical in appearance. The overall coloration is white. Its crown is tinged salmon pink, with a 15 cm long backward-curving erectile salmon-pink crest feathers. The undersides of the wings and tail are tinged yellow-orange. Its bill is a grayish black. It has a periophthalmic skin patch around the eye that is bluish white. The legs and feet are gray. The iris is black in male, dark brown in female, and dark gray in juveniles.

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.



Vulnerable. Global **Population:** 6,000-15,000 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. 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 programme 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.

More conservation actions proposed include conducting further surveys to establish its distribution and status on Negros and Panay. Establish a formal, managed protected areas to conserve remnant forest at Malpalon and Puerto Galera. Extend Mt Iglit-Baco National Park to encompass remaining lowland forest tracts. Devise and implement a management plan for the forest at Siburan that reconciles biodiversity conservation with its role as a prison.

This species was listed as "Threatened" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been downlisted to "Vulnerable".

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

Breeding: Both sexes alike. Black upper parts 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.

"The Indian smiles, he thinks that the cowboy is his friend. The cowboy smiles, he is glad the Indian is fooled. Now he can exploit him."

-punk rock group, Gang of Four

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: Vulnerable. **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.

A number of protected areas established for giant panda Ailuropoda melanoleuca contain suitable habitat but the species's distribution and abundance in these is poorly known. It has only been



recorded from one protected area, Jiuzhaigou Nature Reserve in Sichuan. This has an area of 200 km2, where the natural habitats are apparently in excellent condition, but are under pressure from large-scale tourism. The species was the focus of a study in Jone (Zhouni) County, Gansu in 1999-2002.

Additional conservation actions proposed include a mandate to research its habitat requirements and altitudinal range. Study its population status and survey protected areas in or near its known range. Support recommendations to control logging, control fire and restore damaged giant panda habitat where this would benefit this species and other endemic temperate forest bird species. Where re-planting occurs in logged areas, make sure suitable species are planted. Strengthen protection and control tourism at

Jiuzhaigou Nature Reserve and link it to other important protected areas in the Min Shan. List it as a nationally protected species in China.

This species was listed as "Threatened" in its original release of "Threatened, Endangered, Extinct v3"; since then it has been downlisted to "Vulnerable".

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 ip ip ip ip ip ip*', and mewing, rising '*meeeoo-meeeoo*'.

"If you take care of the birds, you take care of most of the big problems of the world"

-Dr. Thomas Lovejoy, Science & Policy, George Mason University

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).* The number as 2021 is now 1 in 5.
- 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.

"Creation (our planet) is not a property, which we can rule over at will; or, even less, is the property of only a few: (Our planet) is a gift, it is a wonderful gift that God has given us, so that we care for it and we use it for the benefit of all, always with great respect and gratitude, but when we exploit (our planet), we destroy the sign of God's love for us, in destroying (our planet) we are saying to God: 'I don't like it! This is not good!' 'So what do you like?' 'I like myself!' – Here, this is sin! Do you see?"

-Pope Francis

The Price of Extinction

By Ken Gilliland (2011)

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

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- 2021 Re-release (FlintHawk and Alisa)

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 (<u>http://www.wikipedia.com</u>)
- All About Birds/Cornell (<u>http://www.birds.cornell.edu/AllAboutBirds/</u>)
- Birdlife International (<u>http://www.birdlife,org</u>)
- Woodpeckers of Europe (<u>http://woodpeckersofeurope.info</u>)
- New Zealand Birds (http://www.nzbirds.com)
- Birds of the World (<u>http://birdsoftheworld.org</u>)

Other Resources:

• Songbird ReMix Central (<u>http://www.songbirdremix.com</u>)

Environmental Activism Resources:

- Center for Biological Diversity (<u>http://www.biologicaldiversity.org/</u>)
- National Audubon (<u>http://www.audubon.org/</u>)
- Cat Inside! Program (<u>https://abcbirds.org/program/cats-indoors</u>)

