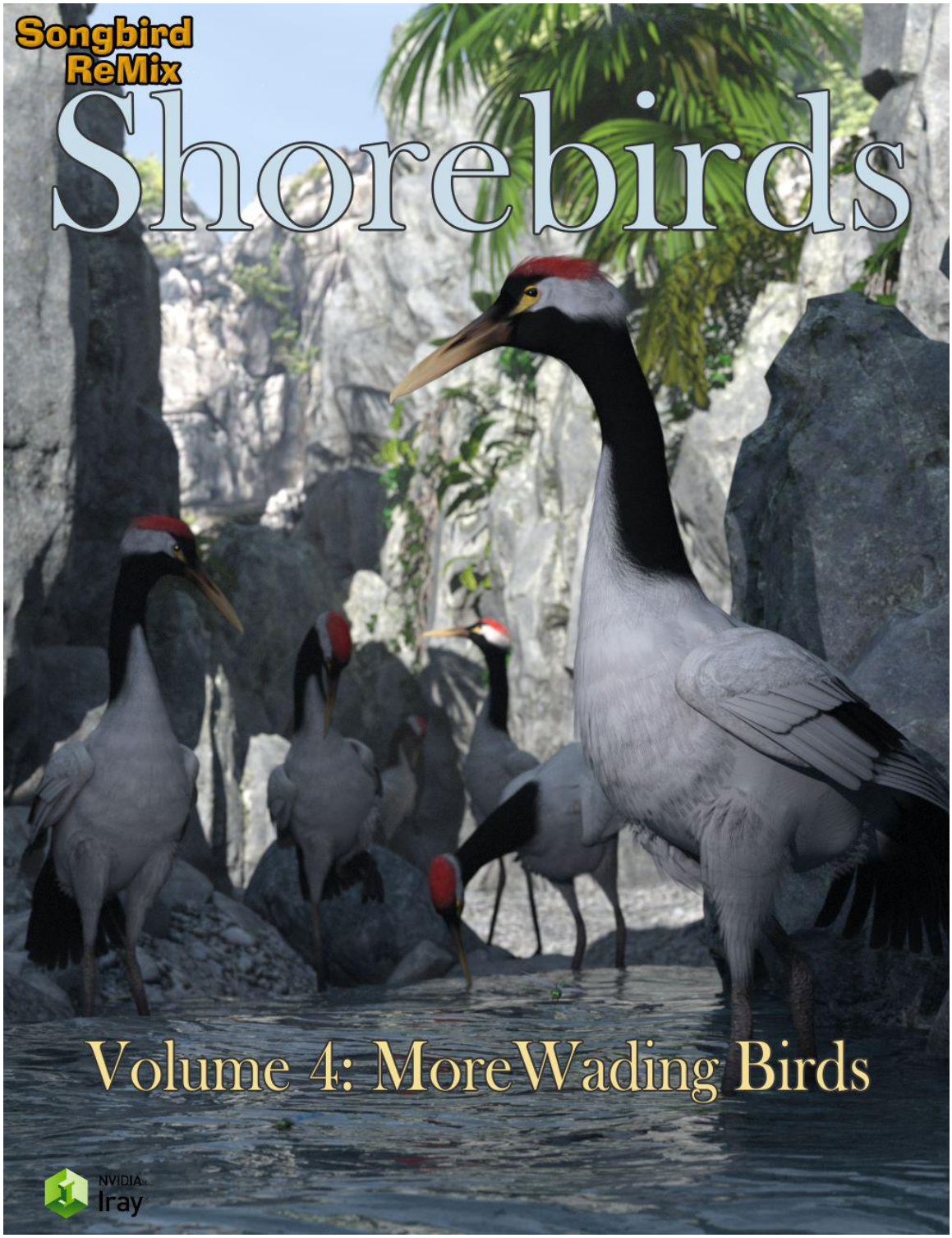


Avian Models for 3D Applications

Characters and Procedural Maps by Ken Gilliland

Songbird ReMix Shorebirds
Volume Four: More Wading Birds

Contents

Songbird ReMix Shorebirds
Volume Four: More Wading Birds

Introduction

“Wading Birds” is a term used to classify birds commonly found along shorelines and mudflats that wade in order to forage for food. “More Waders” features most of the common and unusual birds within the Crane, Spoonbill, Heron, Egret, Ibis and Stork families.

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):
  - **Cranes, Rails and relatives (Order Gruiformes)**
  - **Herons, Ibises and Pelicans (Order Pelecaniformes)**
  - **Storks (Order Ciconiiformes)**
- **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. With using physical renderers such as Iray and Superfly, SubD should be turned to at least “3”. For DAZ Studios 3Delight renders, the SubD must be turned from the “High Resolution” setting to the “Base” setting (otherwise some areas will render incorrectly transparent).

Poser Use

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

DAZ Studio Use

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

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 Tips

Heron Crouch Walk

One of the most distinctive looks that herons often pose in is their "crouch walk" in which their necks resemble a snake ready to strike. The pose included does go well beyond the models neck bending limits. Ignore the limit settings on this pose.

Breast Fluff Bending for the Breeding Plumage Birds

Some "Breeding" birds such as the Black Heron and Yellow-billed Spoonbill have a "bib" of fluff feathers. In the **BODY Section** under "**Fluff Controls**" in the **"Neck Fluff Controls"** subfolder, the **"Breast-Neck Fluff Droop Bend"** morph is specificallyto control these It allows the droopy breast feathers to bend to a more realistic angle.

Where to find your birds

Type Folder	Bird Species
Cranes, Rails and relatives (Order Gruiformes)	Red-crowned Crane Siberian Crane Hooded Crane White-naped Crane
Herons, Ibises and Pelicans (Order Pelecaniformes)	Eurasian Spoonbill Yellow-billed Spoonbill Sharp-tailed Ibis Scarlet Ibis White Ibis Black Heron Chinese Egret Pacific Reef Heron Tri-colored Heron Rufescent Tiger Heron
Storks (Order Ciconiiformes)	Oriental Stork

Where to find your poses

Type Folder	For what species?
Cranes, Rails and relatives (Order Gruiformes)	All Cranes
Herons, Ibises and Pelicans (Order Pelecaniformes)	All Spoonbills, Ibises, Egrets & Herons
Storks (Order Ciconiiformes)	All Storks

Songbird ReMix Shorebirds
Volume Four
Field Guide

Cranes
Red-crowned Crane
Siberian Crane
Hooded Crane
White-naped Crane

Spoonbills
Eurasian Spoonbill
Yellow-billed Spoonbill

Ibises
Sharp-tailed Ibis
Scarlet Ibis
White Ibis

Herons & Egrets
Black Heron
Chinese Egret
Pacific Reef Heron
Tri-colored Heron
Rufescent Tiger Heron

Storks
Oriental Stork

Common Name: Red-crowned Crane
Scientific Name: *Grus japonensis*

Size: 55 inches (140 cm); **Wingspan:** 87-98 inches (220-250 cm)

Habitat: Asia; in the spring and summer, they breed in Siberia and occasionally in northeastern Mongolia. During the fall, they migrate in flocks to Korea, Japan, China, Taiwan, and other countries in East Asia to spend the winter. All Red-crowned cranes migrate, except for a flock that is resident in Hokkaidō. The habitats used are marshes, riverbanks, rice fields, and other wet areas.

Status: **Critically Endangered.** **Global Population:** 1,500 in the wild. The Red-crowned Crane is seriously threatened by loss of habitat throughout its range. Human development, especially agricultural expansion, reed harvesting, river channelization, deforestation, and road building, is destroying many of the historic breeding wetlands. Additional threats include fires that destroy nests, harassment by people, and poisoning from pesticide-treated grain. Because of their size and weight, Red-crowned Cranes do not fly as fast as other cranes, and appear more prone to deadly collisions with utility lines.

Diet: Small amphibians, aquatic invertebrates, insects, and plants that grow in marshes and swamps. Red-crowned Cranes are highly aquatic cranes with large home ranges. They feed in deeper water than other cranes. They also forage regularly on pasture lands in Japan, and in winter they use coastal salt marshes, rivers, freshwater marshes, rice paddies, and cultivated fields.

Nesting: Males and females are virtually indistinguishable, although males tend to be slightly larger in size. Mature

Red-crowned Cranes are snow white with a patch of red skin on their heads. This patch of skin becomes bright red when the crane becomes angry or excited. Mated pairs of cranes, including Red-crowned Cranes, engage in unison calling, which is a complex and extended series of coordinated calls. The birds stand in a specific posture, usually with their heads thrown back and beaks skyward during the display. The male always lifts up his wings over his back during the unison call while the female keeps her wings folded at her sides. Male Red-crowned Cranes initiate the display and the female utters two calls for each male call. All cranes engage in dancing, which includes various behaviors such as bowing, jumping, running, stick or grass tossing, and wing flapping. Dancing can occur at any age and is commonly associated with courtship; however, it is generally believed to be a normal part of motor development for cranes and can serve to thwart aggression, relieve tension, and strengthen the pair bond. Red-crowned Cranes seem to dance more than other species of cranes.

Nests are built on wet ground or in shallow water. Females usually lay two eggs and incubation (by both sexes) lasts 29-34 days. Usually only one chick survives. The male takes the primary role in defending the nest against possible danger. Chicks fledge (first flight) at about 95 days.

Cool Facts: It is also called the Japanese or Manchurian Crane and is considered one of the most endangered species on the planet.

In Japan, this crane, known as tancho (丹頂, origins in China), is said to live 1000 years. A pair of Red-crowned Cranes were used in the design for the Series D 1000 yen note and the crane with out-stretched wings is the logo of Japan airlines. In the Ainu language, the Red-crowned Crane is known as sarurun kamui or marsh kamui.

In China, the Red-crowned Crane is often featured in myths and legends. In Taoism, the Red-crowned Crane is a symbol of longevity and immortality. In art and literature, immortals are often depicted riding on cranes. A mortal who attains immortality is similarly carried off by a crane. Reflecting this association, Red-crowned Cranes are called xian he, or fairy crane. The Red-crowned Crane is also a symbol of nobility. Depictions of the crane have been found in Shang Dynasty tombs and Zhou Dynasty ceremonial bronzeware. A common theme in later Chinese art is the reclusive scholar who cultivates bamboo and keeps cranes.

Because of its importance in Chinese culture, the Red-crowned Crane was selected by the National Forestry Bureau of the People's Republic of China as its only candidate for the national animal of China. But this decision was deterred because the Red-crowned Crane's Latin name translates as "Japanese Crane".

Common Name: Siberian Crane
Scientific Name: *Grus leucogeranus*

Size: 45-50 inches (115-127 cm); **Wingspan:** 83-91 inches (210-230 cm)

Habitat: Eurasia; the breeding area of the Siberian crane formerly extended between the Urals and Ob river south to the Ishim and Tobol rivers and east to the Kolyma region. The populations declined with changes in landuse, the draining of wetlands for agricultural expansion and hunting on their migration routes. The breeding areas in modern times are restricted to two widely disjunct regions. The western area in the river basins of the Ob, Konda and Sossva and to the east a much larger population in Yakutia between the Yana and the Alazeya rivers. The western population winters in Iran and some individuals formerly wintered in India south to Nagpur and east to Bihar. The eastern populations winter mainly in the Poyang Lake area in China.

Like most cranes, this crane inhabits shallow marshlands and wetlands and will often forage in deeper water than other cranes. They show very high site fidelity for both their wintering and breeding areas, making use of the same sites year after year.

Status: **Critically Endangered.**
Global Population: 3,200-4,000 in the wild. Their populations, particularly those in the western range, have declined drastically in the 20th century due to hunting along their migration routes and habitat degradation.

The western population has dwindled to 4 in 2002 and was thought to be extirpated but one 1 individual was seen in Iran in 2010. The wintering site at Poyang in China holds an estimated 98% of the population and is threatened by

hydrological changes caused by the Three Gorges Dam and other water development projects.

Historic records from India suggest a wider winter distribution in the past including records from Gujarat, near New Delhi and even as far east as Bihar. In 1974 as many as 75 birds wintered in Bharatpur and this declined to a single pair in 1992 and the last bird was seen in 2002. In the 19th century, larger numbers of birds were noted to visit India. They were sought after by hunters and specimen collectors. An individual that escaped from a private menagerie was shot in the Outer Hebrides in 1891. The western population may even have wintered as far west as Egypt along the Nile.

Satellite telemetry was used to track the migration of a flock that wintered in Iran. They were noted to rest on the eastern end of the Volga delta. Satellite telemetry was also used to track the migration of the eastern population in the mid-1990s, leading to the discovery of new resting areas along the species' flyway in eastern Russia and China. The Siberian crane is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies and is subject of the Memorandum of Understanding concerning Conservation Measures for the Siberian Crane concluded under the Bonn Convention.

Diet: Small amphibians, aquatic invertebrates, insects, and plants that grow in marshes and swamps. They are very diurnal, feeding almost all throughout the day. When feeding on submerged vegetation, they often immerse their heads entirely underwater.

Nesting: Males are on average larger than females. Adults of both genders have a pure white plumage except for the black primaries, alula and primary coverts. The fore-crown, face and side of head is bare and brick red, the bill is dark and the legs are pinkish. The iris is yellowish. Juveniles are feathered on the face and the plumage is dingy brown. There are no elongated tertial feathers as in some other crane species. During breeding season, both the male and female cranes are often seen with mud streaking their feathers. They dip their beaks in mud and smear it on their feathers. The call is very different from the trumpeting of most cranes and is a goose-like high pitched whistling *toyoya*.

Siberian cranes return to the Arctic tundra around the end of April and beginning of May. The nest is usually on the edge of lake in boggy ground and is usually surrounded by water. Most eggs are laid in the first week of June when the tundra is snow free. The usual clutch is two eggs, which are incubated by the female after the second egg is laid. The male stands guard nearby. The eggs hatch in about 27 to 29 days. The young birds fledge in about 80 days. Usually only a single chick survives due to aggression between young birds. The population increase per year is less than 10%, the lowest recruitment rate among cranes. Their success in breeding may further be hampered by disturbance from reindeer and sometimes dogs that accompany reindeer herders.Captive breeding

was achieved by the International Crane Foundation at Baraboo after numerous failed attempts. Males often killed their mates and captive breeding was achieved by artificial insemination and the hatching of eggs by other crane species such as the Sandhill and using floodlights to simulate the longer day lengths of the Arctic summer.

Cool Facts: They are also known as the Siberian white crane or the snow crane. Among the cranes, they make the longest distance migrations.

For Siberian natives – Yakuts and Yukaghirs - the white crane is a sacred bird associated with sun, spring and kind celestial spirits ajyy. In yakut epics Olonkho shamans and shamaness transform into white cranes.

Common Name: Hooded Crane
Scientific Name: *Grus monacha*

Size: 39 inches (100 cm); **Wingspan:** 74 inches (197 cm)

Habitat: Asia; breeds in south-central and south-eastern Siberia and Mongolia. Over 80% of its population winters at Izumi, southern Japan. There are also wintering grounds in South Korea and China.

It breeds in remote, wooded, upland bogs on gently sloping foothills and flat river terraces, mostly within the permafrost zone. It winters in freshwater marshes, wet grassland, coastal tidal flats and farmland.

Status: Vulnerable. **Global population:** 11,600 individuals with a decreasing population trend. This species's population is suspected to be decreasing at a moderate rate, in line with levels of wetland loss and degradation in its wintering grounds, primarily as a result of reclamation for development and dam building. Based upon winter counts, it is increasing at Izumi in Japan and Suncheon Bay in South Korea but the species is declining at all seven of its other known wintering sites.

Conversion of rice-paddies to cotton fields at Longgan Hu and Dongting Hu has caused declines. A newly discovered wintering site at Suncheon Bay, South Korea, is threatened by development. The artificially high concentration of birds at Izumi, as a result of supplementary feeding, risks a major population reduction from disease or other

catastrophe. Threats in China include pollution of coastal waters, invasive cordgrass (Spartina alterniflora) in tidal areas, pesticide poisoning, increased levels of human disturbance and over-fishing. Some poaching and hunting of breeding birds also occurs.

Diet: Mainly fish, frogs, insects, small birds and reptiles, as well as rodents.

Nesting: The most noticeable feature of the adults is the unfeathered, red crown that is covered with black hairlike bristles. Otherwise the head and neck are snow white, with the white extending down the neck. The body plumage is slate gray. The primaries, secondaries, tail, and tail coverts are black. Eye color is hazel yellow to orange brown. Their legs and toes are nearly black. Males and females are virtually indistinguishable, although males tend to be slightly larger in size. In the juvenile, the crown is covered with black and white feathers during the first year, and they exhibit some brownish or grayish wash on their body feathers.

Mated pairs of cranes, including Hooded Cranes, engage in unison calling, which is a complex and extended series of coordinated calls. The birds stand in a specific posture, usually with their heads thrown back and beaks skyward during the display. The male always lifts up his wings over his back during the unison call while the female keeps her wings folded at her sides. Hooded Crane males initiate the display and utter one call for every two female calls. All cranes also engage in dancing, which includes various behaviors such as bowing, jumping, running, stick or grass tossing, and wing flapping. Dancing can occur at any age and is commonly associated with courtship, however, it is generally believed to be a normal part of motor development for cranes and can serve to thwart aggression, relieve tension, and strengthen the pair bond.

Hooded Cranes nest in isolated, widely scattered bogs in the taiga and in other forested wetlands. Mossy areas are preferred with widely scattered larch trees. Nests are constructed of damp moss, peat, sedge stalks and leaves, and branches of larch and birch. Females usually lay two eggs and incubation (by both sexes) lasts 27-30 days. The male takes the primary role in defending the nest against possible danger. Chicks fledge (first flight) at approximately 75 days.

Cool Facts: Hooded Cranes nest in such remote forested wetlands in southeastern Siberia that it was not until early 1974 that the first nest was located by biologists.

Since the early 1950s, the Government of Japan has allocated funds to feed cranes in winter. From several hundred cranes after the Second World War, the numbers of Hooded Cranes at the feeding station near the town of Izumi in southern Japan, has increased to more than 8,000. Conservationists worldwide are concerned that an outbreak of disease at Izumi could destroy the majority of the world's Hooded Cranes estimated to number about 10,000. The International

Crane Foundation (ICF) has repeatedly communicated their concerns to Japanese officials in Tokyo.

In South Korea a formerly unknown wintering population of about 100 Hooded Cranes was discovered in 1996 on Sunshon Bay, an estuary in the far south peninsula. ICF volunteer, Fran Kaliher, spent much of the winter of 2002 at the site and in concert with Korean colleagues studied the ecology and habitat needs of these cranes. At that time, the population had increased to 130 cranes, including at least 25 immature birds. This area has recently been protected as a special nature reserve.

The ICF is also involved with the protection of wintering sites for Hooded Cranes in China.

Recently, with support from the Henry Luce Foundation, ICF is partnering with educators and nature reserve staff at the Zhalong Nature Reserve and Changlindao Nature Reserve in northeastern China to foster increased cooperation and understanding of the environmental issues affecting important breeding and migration corridors for Hooded, Red-crowned and White-naped cranes.

Common Name: White-naped Crane
Scientific Name: *Antigone vipio*

Size: 44-51 inches (112-130 cm); **Wingspan**: 83-91 inches (210-230 cm)

Habitat: Eurasia; breeds in northeastern Mongolia, northeastern China, and adjacent areas of southeastern Russia where a program at Khingan Nature Reserve raises eggs provided from U.S. zoos to bolster the species. Different groups of the birds migrate to winter near the Yangtze River, the DMZ in Korea and on Kyūshū in Japan. They also reach Kazakhstan and Taiwan..

Like most cranes, this crane inhabits shallow marshlands and wetlands and will often forage in deeper water than other cranes. They show very high site fidelity for both their wintering and breeding areas, making use of the same sites year after year.

Status: Vulnerable. **Global Population:** 4,900-5,400 in the wild. Formerly more abundant and more extensively distributed, but has declined steadily through first half of 1900s due to habitat loss, hunting and effects of warfare.

It began to recover in 1950s but now thought to be declining rapidly mainly due to loss of both breeding and wintering habitat. Most significant threat is extensive loss and alteration of habitat in Amur Basin, Sanjiang Plain in NE China, and other parts of breeding range, primarily as result of agricultural conversion. Prolonged drought, continuing for over a decade post-2000, has also been implicated in marked breeding population decline in Eastern Mongolia.

It is legally protected in all range countries and has benefited from a series of bilateral migratory bird agreements in E Asia, and international agreements to protect key habitats at Lake Khanka on China–Russia border, and in China–Russia–Mongolia border region. These efforts were advanced at the International Workshop on Cranes and Storks of the Amur Basin in 1992 and the International Symposium on the Future of Cranes and Wetlands in Japan in 1993.

Diet: It feeds on roots and tubers of sedges and other wetland plants; also insects, small vertebrates, seeds and rice gleanings. During non-breeding season, they consume relatively more waste grain, seeds and tubers, rice and other cereal grains provided at winter feeding stations in Japan. They dig for roots and tubers and forage at large for animal prey and grain. They are much more territorial when digging.

Nesting: Males are on average larger than females. It has pale legs, gray and white striped neck, and a red face patch.

They breed in shallow open wetlands and wet meadows in broad river valleys and along lake edges. They also frequent grasslands and croplands adjacent to breeding areas. During migration and on wintering grounds, they will use both fallow fields and wetlands (e.g. riparian and brackish marshes), rice paddies and estuarine mudflats.

This crane is a spring breeder, with eggs laid from April to late May. The nest is a mound of dried sedges and grasses in open wetlands. It usually lays two eggs with an incubation time of 28–32 days. Chicks are brownish-yellow with darker spots and fledges in 70–75 days.

Cool Facts: The white-naped crane was formerly placed in the genus Grus but a molecular phylogenetic study published in 2010 found that the genus, as then defined, was polyphyletic. In the resulting rearrangement to create monophyletic genera, four species, including the white-naped crane, were placed in the resurrected genus Antigone that had originally been erected by the German naturalist Ludwig Reichenbach in 1853.

Common Name: Eurasian Spoonbill
Scientific Name: *Platalea leucorodia*

Size: 40-51 inches (100-129 cm); **Wingspan:** 87 inches (222 cm)

Habitat: Eurasia and Africa; breeding from the United Kingdom and Spain in the west through to Japan and also in North Africa. In Europe only The Netherlands, Spain, Austria, Hungary and Greece have sizable populations. Most birds migrate to the tropics in winter, with European breeders mainly going to Africa, but a few remaining in mild winter areas of western Europe south to the United Kingdom. Palearctic breeding populations are fully migratory, but may only travel short distances while other populations are resident, nomadic or partially migratory. In the north of its range the species breeds in the local spring but in the tropics the timing of breeding coincides with the rains.

Spoonbills inhabit either fresh, brackish or saline marshes, rivers, lakes, flooded areas and mangrove swamps, especially those with islands for nesting or dense emergent vegetation (such as reed beds) and scattered trees or shrubs (preferably willow, oak or poplar). It may also frequent sheltered marine habitats during the winter such as deltas, estuaries, tidal creeks and coastal lagoons. It shows a preference for extensive shallow wetlands (less than 30 cm deep) with mud, clay or fine sand substrate. It generally avoids waters with rocky substrates, thick vegetation or swift currents.

Status: Least Concern. **Global population:** 66,000-140,000 individuals with an uncertain population trend. Human exploitation of eggs and nestlings for food has threatened the species in the past. It is now threatened by habitat degradation through drainage and pollution and it is especially affected by the disappearance of reed swamps due to agricultural and hydroelectric development. Over-fishing and disturbance have caused population declines in Greece. Also the species is susceptible to avian influenza so may be threatened by future outbreaks of the virus.

Diet: Mainly adult and larval insects (such as water beetles, dragonflies, caddisflies, locusts and flies), mollusks, crustaceans, worms, leeches, frogs, tadpoles and small fish. It may also take algae or small fragments of aquatic plants.

It is most active during the morning and evening, although in coastal areas it forages at low tide regardless of the time of day.

Nesting: The breeding bird is all white except for its dark legs, black bill with a yellow tip, and a yellow breast patch like a pelican. In the breeding season it also has a crest. Females look similar but are slightly smaller than males. Non-breeders lack the crest and breast patch, and immature birds have a pale bill and black tips to the primary flight feathers. The Eurasian spoonbill differs from the African spoonbill, with which in overlaps in winter, in that the latter species has a red face and legs, and no crest.
The nest is a platform of sticks and vegetation constructed on the ground of islands in lakes and rivers, or alternatively in dense stands of emergent vegetation, bushes, mangroves or deciduous trees. The species usually nests in monospecific colonies or in small, monospecific groups, amidst mixed-species colonies, within which neighboring nests are usually placed 1-2 m apart or touching. Breeding colonies are sited within 10-15 km of feeding areas, often much less. When not breeding the species forages singly or in small flocks of up to 100 individuals.

Cool Facts: They are mostly silent. Even at their breeding colonies, the main sounds are bill snapping, occasional deep grunting and occasional trumpeting noises. Unlike herons, spoonbills fly with their necks outstretched.

The Eurasian spoonbill has three subspecies:

- *P. l. leucorodia.* First reported by Linnaeus in 1758. The nominate species occupies all the range (except for the regions stated in as below).
- *P. l. balsaci.* First reported by Naurois & Roux in 1974. It is found on the islands off the Banc d'Arguin, Mauritania.
- *P. l. archeri.* First reported by Neumann in 1928. It is found on the coasts of the Red Sea and Somalia.

Common Name: Yellow-billed Spoonbill
Scientific Name: *Platalea flavipes*

Size: 30-40 inches (76-100 cm); **Wingspan:** 68 inches (173 cm)

Habitat: Australia; commonly found in eastern, northern and southwestern Australia and occasionally seen on the remainder of the continent. It is a vagrant to New Zealand, Lord Howe Island and Norfolk Island.

It nests in trees, marshes or reed-beds, and often roosts in trees. It occurs in shallows of wetlands and occasionally on dry pasture.

Status: Not Threatened. **Global Population:** 10,000–25,000 in the wild. The population is suspected to be fluctuating owing to fluctuations in wetland habitats. Natural freshwater wetlands used for feeding and breeding have been altered by drainage, clearing, grazing, increased salinity, burning and groundwater extraction. However irrigation and construction of dams and channels have provided new feeding habitats, and the range seems to have expanded during the 20th century, especially in Eastern and Western Australia. It is very vulnerable to human disturbance.

Diet: Fish, amphibians, insects and small animals.

It catches its prey by sweeping its bill through shallow water and swallowing prey once it is detected. When slow sweeping, the spoonbill walks with the bill at an angle at about 60 degrees to horizontal and with the bill tip open about 2 to 4 cm (1 to 1.5 in), sweeping an arc of around 120 degrees in front of the bird. The bird walks slowly, kicking up debris and small animals from the bottom of the water, which it then senses and catches with its bill. When an item is detected, the spoonbill switches to intensive sweeping of the target area.

Nesting: It has all white plumage. The long spoon-shaped bill, bare-skinned face, legs and feet are all yellow, while the iris is pale yellow. The sexes are similar in plumage and coloration. In the breeding season, the face is lined with black, long hackles develop on the chest, and the wings have black tips. The bill of the yellow-billed spoonbill is narrower and works more like a forceps than the larger-ended and more spoon-like bill of the royal spoonbill, which acts like a pair of tongs.

The yellow-billed spoonbill nests once or twice a year, generally when water is plentiful. The breeding season varies: it is usually March to May after the wet season in the north of the country, and in winter–spring (August to October) in more temperate areas.

The nest is a platform constructed of sticks; it has a hollowed center, and can be located on the branches or fork of a tree, the base of which is often submerged in water. Reed beds are another nest location. The clutch consists of two to four dull white eggs. Nests are often located in colonies, with other species such as the royal spoonbill, Australian white ibis, straw-necked ibis, as well as herons, egrets or cormorants.

Cool Facts: A 2010 study of mitochondrial DNA of the spoonbills by Chesser and colleagues found that the yellow-billed and roseate spoonbills were each other's closest relative, and the two were descended from an early offshoot from the ancestors of the other four spoonbill species.

The yellow-billed spoonbill has a row of small blunt knobs known as papillae which line the margins of the upper and lower mandible of the "spoon". These are sensory structures which help the bird sense vibration and hence seize its prey.

Common Name: Sharp-tailed Ibis
Scientific Name: *Cercibis oxycerca*

Size: 29.5-33.9 inches (75-86 cm); **Wingspan:** 54 inches (137 cm)

Habitat: South America; It is native to Venezuela, eastern Colombia, southwestern Guyana, Brazil and Suriname. In Venezuela, it is typically found along or near the Orinoco and Apure rivers. In the llanos of eastern Colombia, it is found along the Casanare and Cravo Sur rivers, as well as the Colombian stretch of the Apure. In Brazil, it often occurs to the northwest of the Amazon and frequents the grasslands near to the Rio Negro and Rio Branco. However, it is also present to the west near Rio Guanco and to the south in northwest Mato Grosso.

The sharp-tailed ibis inhabits wet lowland savannas and riverbanks of northern South America east of the Andes, at less than 300-500m above sea level. This ibis also sometimes uses gallery forests in which to roost and breed.

Status: Not Threatened.
Global Population: 10,000-25,000 in the wild. This species could potentially decline unnoticed due to its solitary lifestyle and hence the potential difficulty in detecting individuals during population monitoring. One natural enemy of this ibis may be the black-collared hawk *Busarellus nigricollis.*

Diet: It feeds primarily on medium-sized insects (especially in the dry season). It also occasionally feeds on amphibians, crustaceans, earthworms and snails.

It is primarily found in male-female pairs and in small groups comprising three to five individuals. It does not associate with other wading bird species, being often largely distanced from other bird species.

Nesting: Males are slightly larger than females. This ibis is distinguished by its notably long tail, which is the longest among all living ibis species; measuring 25-

30 cm in males and 25.6-27 cm in females. The plumage is predominantly black with greenish gloss and with purplish tinges on the upper back, hind neck, wings and tail. The forehead and cheek region are black but can be occasionally grayish-brown. The bill, legs, toes and bare facial skin are orange-red. Juveniles appear similar to adults, but their plumage lacks a metallic sheen.

Unusual for most wading birds of the llanos, this ibis breeds in the dry season months from August until February. The majority of other wading birds breed in the wet season around May to October. The sharp-tailed ibis breeds solitarily in gallery forests, where egg-laying is believed to occur from August to September; and fledged offspring remain with their parents until late February. Its secretive nesting behaviors probably explains its apparent absence from the open llanos grasslands during the normal breeding season.

Cool Facts: The sharp-tailed ibis is monotypic, being the only representative of the genus *Cercibis*. Much remains unknown about this ibis's evolutionary history, however, phylogenetic analyses based on skull morphology and function suggest that it is closely related to the spoonbills.

This ibis is particularly vocal. The call is a loud, distinct single or double *Cuk* or *Turuck*; or "*kut*" and "*kut-kaaaoh*". These calls resemble the sound of a saxophone or toy trumpet. Flight calls have been described as a long drawn-out *"tuuut*", as a *Cuk Cuk Cuk Cuk* and as a loud nasal *TUUR-DEE*. The male is believed to utter the *TUUR* element, and the female utters the following *DEEE* in response. The timbre of the *TUUR-DEE* call has earned it the local Spanish name "Tarotaro".

Common Name: Scarlet Ibis
Scientific Name: *Eudocimus ruber*

Size: 25-28 inches (56-71 cm); **Wingspan:** 37-41.3 inches (94-105 cm)

Habitat: Central and South America. Found in tropical South America and also Trinidad and Tobago. While the species may have occurred as a natural vagrant in southern Florida in the late 1800s, all recent reports of the species in North America have been of introduced or escaped birds.

Status: Least Concern. **Global Population:** 100,000 - 150,000. Several local populations appear to be in decline, however global totals remain relatively large and the current rate of losses is not considered a threat to the species' survival.

Nonetheless, recent losses by established populations in French Guiana and the Florida Everglades have become a concern for conservationists, and in Brazil the bird has been included on a national list of endangered species

Diet: Their diet is fish, frogs, reptiles and crustaceans.

Nesting: Sexes are similar; juveniles are grey and white. They nests in trees in colonies, often with other large wading birds such as herons. They build a stick nest, laying two to four eggs. Both the male and female take turns in guarding the nest site until the chicks are large enough to defend themselves. In addition, both parents help feed the chicks.

Cool Facts: A juvenile Scarlet Ibis is gray and white; they get the pink, orange, and reddish color from the rich source of pigments in the algae and small crustaceans that they eat as they age.

Eggs from Trinidad were placed in White Ibis nests in Hialeah Park in 1962, and the resulting population hybridized with the local ibises, producing "pink ibises" that are still occasionally seen.

It is the national bird of Trinidad and is featured on the Trinidad and Tobago coat of arms along with Tobago's national bird, the Rufous-vented Chachalaca.

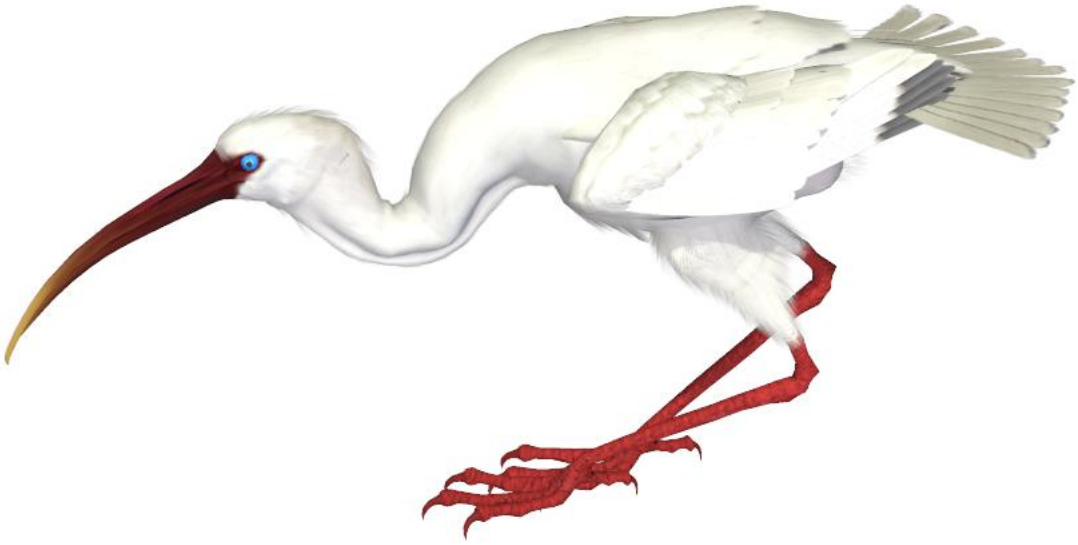
Common Name: American White Ibis
Scientific Name: *Eudocimus albus*

Size: 23-27 inches (56-71 cm); **Wingspan:** 34-39 inches (86.4-99.1 cm)

Habitat: North & South America; mid-Atlantic coast of the United States south through most of the American tropics into Northern South America. They have generally found in marshy wetlands and pools near the coast but can also be found in urban settings such as residential lawns, and has become common in some city parks, where it can be found feeding alone or with other Ibis.

Status: Least Concern. **Global Population:** 150,000. The main conservation concerns for white ibis are hunting and habitat loss. Birds and eggs are hunted for food. When the colony is disturbed by hunting, adults will leave their nests and the young may die. If the disturbance is great enough, the birds will leave the colony altogether. Protection of the wetland habitats where ibis feed and breed is critical to the future of these birds.

Diet: Fish, frogs and other water creatures, as well as insects and small reptiles.



Nesting: Chicks and nestlings are gray. They are brown with white bellies for the first 2 years of life. As they mature, they molt (shed) their brown plumage and grow white feathers. Males and females are virtually indistinguishable, although males tend to be slightly larger in size. They nest in huge colonies in fresh water marshes or along the ocean coast.

Researchers have counted 60,000-80,000 individuals in one colony in the Everglades National Park, Florida. Males arrive at the breeding grounds first. The male preens and points its bill towards the sky to attract a mate. Both the male and female build the nest. The male brings sticks, reeds, leaves and other plant materials to the female who then constructs a platform nest in the crotch of a tree, in a shrub or sometimes on the ground. The female lays 2-5 eggs and both the male and the female incubate them. The eggs hatch in about 21 days. Both parents feed the chicks regurgitated food. The chicks fledge when they are about six weeks old.

Cool Facts: The song of the male is an advertising hunk-hunk-hunk-hunk. The female squeals. When feeding, the birds often give a soft, grunting *croo, croo, croo* as they forage.

The white ibis wades in the water sweepings its heads form side-to-side in search of food. It uses its long, curved bill to probe in the mud for crabs and crayfish. It swallows its prey whole. It also forages for food on land and it may also eat insects, frogs, snails, marine worms, snakes and small fish. Flocks of white ibis will move to different locations in search of food. Other wading birds often follow behind the white ibis and catch prey that has been disturbed by the probing ibis.

Common Name: Black Heron or Egret
Scientific Name: *Egretta ardesiaca*

Size: 16.4-26 inches (42.5–66 cm); **Wingspan:** 36-54 inches (91.4-139 cm)

Habitat: Africa; it occurs patchily through Sub-Saharan Africa, from Senegal and Sudan to South Africa, but is found mainly on the eastern half of the continent and in Madagascar. Vagrants have been observed in Greece and Italy.

It prefers shallow open waters, such as the edges of freshwater lakes and ponds. It may also be found in marshes, river edges, rice fields, and seasonally flooded grasslands. In coastal areas, it may be found feeding along tidal rivers and creeks, in alkaline lakes, and tidal flats.

Status: Not Threatened. **Global Population:** 25,000–100,000 in the wild. Generally scarce, though locally abundant in certain areas, such as 5000–7000 individuals in Tanzania. Unknown at many apparently suitable sites in East Africa, but seasonal concentrations of 100s at Lake Jipe and Lake Bilisa. The status has

changed dramatically in Uganda, where rare prior to 1970s, but has become reasonably widespread and locally frequent in South of country since mid 1980s; rare South of Zambezi. In West Africa, they are commoner along coast than inland, with 10,000–20,000 birds in Guinea Bissau. They seem to be particularly susceptible to disturbance during breeding, and many of the colonies studied have low breeding success. They are found throughout Madagascar, though rarer in South where a marked decline in last 30 years, especially in high central plateau. Large colonies of past have disappeared due to human interference, and nowadays colonies rarely hold more than 40–50 pairs.

Diet: Mainly small fish (15–30 mm in size), but also crustaceans and aquatic insects.

They feeds throughout day or around dusk, normally moving off to communal roost with other species. Some birds feed alone and defend territories, while others form feeding flocks of 5–50 individuals or more.

Nesting: A medium-sized all black heron with black bill, lores, legs and yellow feet. In breeding plumage it grows long plumes on the crown and nape.

Breeding generally peaks around onset of rains and period of flooding with egg laying in August to February in Mali, February to June in Kenya, January to June in Malawi, February to April in Botswana, February to June in Zambia, November to January in South Africa, and year-round in Madagascar.

In Africa, normally with 5–100 nests scattered about colony mixed with other herons (e.g. *Ardea alba*, *E. garzetta*, *Ardeola ralloides*), ibises, cormorants or darters.

The nest of the black heron is constructed of twigs placed over water in trees, bushes, and reed beds, forming a solid structure. The heron nests at the beginning of the rainy season, in single or mixed-species colonies that may number in the hundreds. The eggs are dark blue and the clutch is two to four eggs.

Chicks have dark gray down, with downy white crest, greenish-yellow legs and yellow feet.

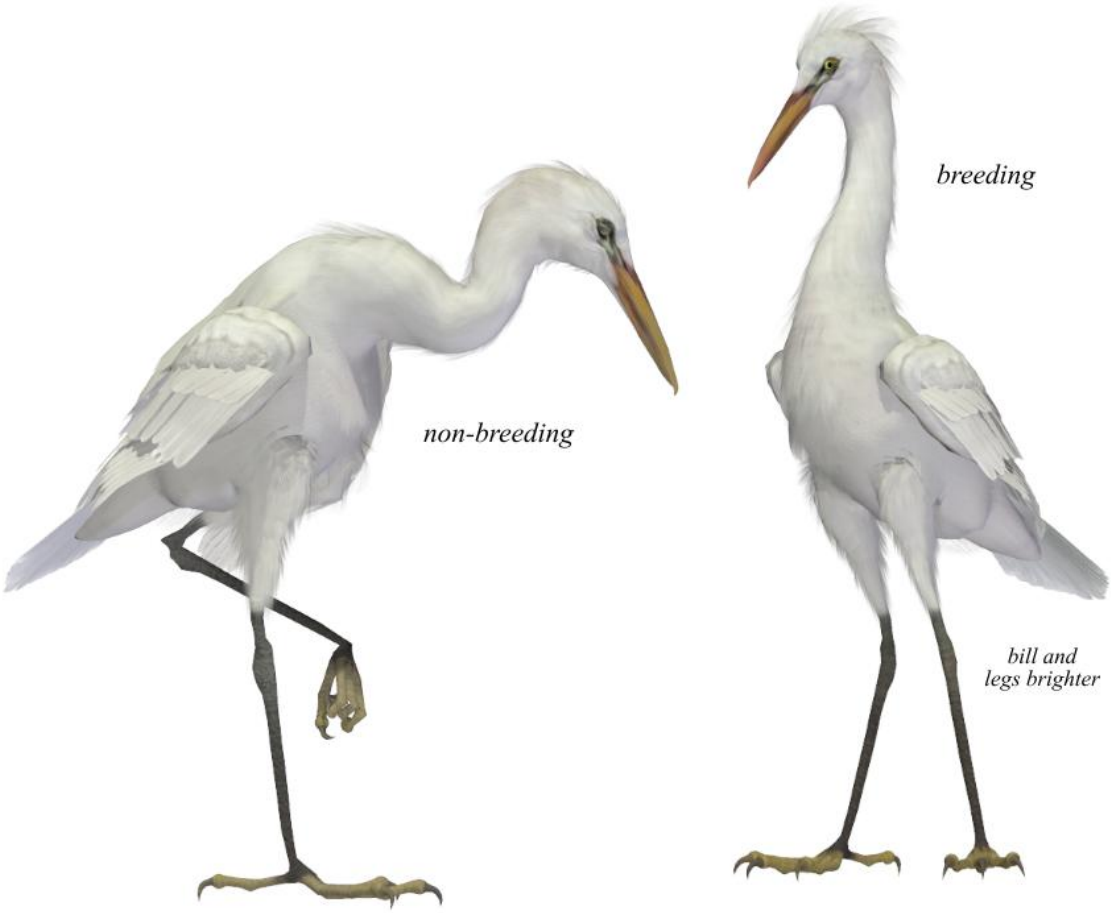
Cool Facts: The black heron uses a hunting method called canopy feeding—it uses its wings like an umbrella, creating shade that attracts fish.

Common Name: Chinese Egret
Scientific Name: *Egretta eulophotes*

Size: 25.6-26.8 inches (65-68 cm); **Wingspan:** 39 inches (99 cm)

Habitat: Eurasia; breeds on coasts of the Russian far east, North and South Korea, the northeast and eastern China coast. Non-breeding birds range south to Vietnam, Peninsular Malaysia, Indonesia and Philippines, and occasionally eastern and northern to Japan (Hokkaido) and Sakhalin.

It prefers mainly coastal areas, in estuaries and bays, feeding in shallow water along margins of mangroves or on inter-tidal mudflats. It also is found in more rarely rocky coasts, rice fields, marshes, coastal freshwater lagoons, salt pans and rivers.



Status: Vulnerable. **Global Population:** 2,500-9,999 in the wild. The nuptial plumes of the Chinese egret, like other egrets, were in demand for decorating hats. They had been used for this purpose since at least the 17th century but in the 19th century it became a major craze and the number of egret skins passing through dealers reached into the millions. This is thought to have contributed to

the decline of all of the white *Egretta* species. The greatest modern threat is habitat loss and reclamation of tidal flats and estuarine habitats, and through pollution.

Diet: Mostly small fish, shrimps, crabs, but other recorded prey includes frogs and grasshoppers.

Prey taken in shallow water less than 7.6 cm deep. Chicks fed on sardines, shrimps and crabs on several times per day. They are very active feeders, following outgoing tide or chasing prey with wings open, or half-spread, and repeatedly stabbing into water. They usually feed alone or in small, tightly-spaced flocks, often occurring alongside other heron species such as the Little Egret, Intermediate Egret, Great Egret and Cattle Egret.

Nesting: All-white egret, with dusky-black bill becoming yellow to pink at base of mandible. It has pale yellow-white eyes, yellow-green, green or gray lores, and pale to dark green legs with yellowish feet in non-breeding season.

Breeding starts in April to June, depending on colony, with young typically fledging in July to August. This occurs normally in or beside colonies of other heron and seabird species, forming dense aggregations. Since 1985 has bred almost only on offshore islands, frequently in tightly-packed aggregations, sometimes with just 14 to 76 cm between nests. Nests are built in trees and bushes on cliffs, or dense stands of mugwort. Normally three pale blue-green eggs are laid and incubate within 21 to 26 days.

Cool Facts: It is also called Swinhoe's Egret (first identified by Swindhoe in 1860)

Common Name: Pacific Reef Heron
Scientific Name: *Egretta sacra*

Size: 22.8-26 inches (58-66 cm); **Wingspan:** 35-39 inches (90-100 cm)

Habitat: Eurasia and Oceania; found in many areas of Asia including the oceanic region of India, Southeast Asia, East Asia, Polynesia, and in Australia, Tasmania and New Zealand.

Status: Not Threatened. **Global Population:** Unknown. Relatively common, abundant in many islands of southwest Pacific, with no evidence for recent changes in abundance.

It is typically coastal, especially rocky shores, coral reefs and offshore islands; also estuaries, mangroves, mudflats and sometimes sandy beaches. It is sometimes found in fields, freshwater marshes, rice fields and garbage dumps. It is occasionally found on inland, typically along rivers, up to 400 m above sea-level, but hardly ever far from sea.

Diet: Predominantly of varieties of ocean-based fish, crustaceans and mollusks.

Nesting: Males are larger than females. This species is polymorphic (non-sexual dimorphism), with white and dark gray morphs. The former has pure, all-white plumage, albeit sometimes with a few dark streaks, while the latter varies in coloration, from slate-gray to brown-gray (including the under-wings), with variable numbers of white feathers on chin and sometimes throat (this feature is most pronounced in Indonesian birds, but entirely absent in some populations in South

and East of range). Intermediate forms also occur, although considered to be rare and some records of such types might actually refer to white-morph juveniles. Australian dark-morph birds are generally darker than those from elsewhere, while in Rarotonga (Cook Island), Samoa and New Zealand virtually only gray birds have been reported. .

The bird has short stout legs (only just projecting beyond tail in flight) and a thick distinctive bill, both of which are all-yellow during the breeding season. Non-breeding adult lacks ornamental plumes (on foreneck and back) and has duller bare parts, with bills ranging from dirty yellow to dusky or gray-brown, with blackish to greenish-horn maxilla; lores yellow-green (white morph) to grey-blue (dark morph); legs very variable from yellow, grayish yellow, greenish yellow or brownish yellow, and usually darker in front and paler behind, while the feet are yellow-green with bright yellow soles.

Juvenile lacks plumes and has paler bare-parts colors (lores greener, bill duller and legs more olive and less obviously bicolored).

Breeding in India begins May to July; September in Malaysia; May, June and November in West Java; September through April in New Zealand; September to December in New Caledonia; January to February in Australia and on many Pacific islands year-round. They nest singly or in small colonies, up to 20–70 pairs, or 200–300 birds in Northern Australia and sometimes in mixed colonies with other species. Nesta are created on ground, cliff ledges, bushes or small trees, up to 3 m high, and sometimes in close proximity to humans. They are constructed of sticks, lined with leaves and grass. Normally 2–3 pale greenish-blue eggs are laid. Chicks have dark gray down, flesh-coloured bill with black tip to maxilla, and flesh-coloured legs and fledge in about 50 days.

Cool Facts: Intra-specific aggression resulting in death has been observed, with a dark-morph bird killing a white-morph bird in Northeastern Australia.

There are two subspecies:

- *Egretta sacra sacra* (J. F. Gmelin, 1789). The nominate species is found in coastal Southeast Asia, east to Japan, and East through Greater and Lesser Sundas to Philippines, New Guinea, islands of Southwestern and south Pacific (as far as French Polynesia), and coasts of Australia and New Zealand.
- *Egretta sacra* albolineata (G. R. Gray, 1859) – New Caledonia and Loyalty Island.

Common Name: Tri-colored Heron
Scientific Name: *Egretta tricolor*

Size: 23.6-27.6 inches (60-70 cm); **Wingspan:** 37.4 inches (95 cm)

Habitat: North and South America; a resident to medium-distant migrant. In the north along the Atlantic Coast of North and Central America, individuals migrate south, whereas those along the Gulf Coast are primarily year-round residents, although some may also migrate farther south.

Found in coastal estuaries, salt marshes, mangroves, and lagoons during the breeding season. Outside of the breeding season they use coastal areas as well as freshwater marshes, lake edges, canals, and ditches.

Status: Not Threatened.
Global Population: >200,000 in the wild. The population trend appears to be stable.

Diet: Small fish, amphibians and occasionally small rodents and insects. Forages alone or at the edge of groups of mixed wading birds. Slowly stalks fish or pirouettes with sharp stops and turns with wings flapping. Flies with head drawn in and feet trailing behind.

Nesting: Males are larger than females**.** A colorful heron with a mix of blue-gray, lavender, and white. Unlike other dark herons, they have a white belly. Breeding

birds have small white plumes extending from the back of the head, a bright blue patch of skin around the bill, and pink legs. Non-breeding birds lack the flourishes of breeding birds and have yellowish legs. Juveniles have a rusty neck and rusty edged feathers.

It builds stick nests in trees and shrubs, often in colonies with other wading birds.

Cool Facts: It was once known as the Louisiana Heron**.**

Tricolored Herons sometimes follow behind Double-crested Cormorants or Pied-billed Grebes snapping up fish that they stir up.

Angsty teenagers aren't just a human phenomenon. As Tricolored Herons get older they often lunge and snap at their parents when they arrive at the nest with food. To appease the youngsters, parents greet them with bows.

There are three subspecies:

- *Egretta tricolor* ruficollis (Gosse, 1847). It is found on the coasts of eastern and southern United States (south from Maine) and both coasts of Mexico south to Central America, West Indies, Northern Colombia and Northwestern Venezuela, and from West Colombia south along coast to Ecuador and Peru (locally south to Arequipa).
- *Egretta tricolor tricolor* (Statius Müller, 1776). The nominate species is found in Northeastern Venezuela (Monagas) to Northeastern Brazil (North Piauí).
- *Egretta tricolor rufimentum* (Hellmayr, 1906. Found in Trinidad and Tobago.

Common Name: Rufescent Tiger Heron
Scientific Name: *Tigrisoma lineatum*

Size: 26-26.4 inches (66-76 cm); **Wingspan**: 60 inches (152 cm)

Habitat: South America; found from Central America through much of South America.

Typically found along wooded banks of slow-flowing rivers, and in swamps and marshes of tropical zone; also in mangroves, and sometimes occurs in hilly areas.

Status: Not Threatened. **Global Population:** unknown. The population trend appears stable and they are widespred throughout South America. The Rufescent Tiger-Heron generally is the least-frequently encountered of the three species of *Tigrisoma*, and is considered uncommon to rare through much of its range. However, towards the southern end of its range, where it becomes the only Tiger-Heron present, they become more common and easier to see.

Diet: Fish (*Hoplosternum, Synbranchus*), aquatic insects, amphibians, crustaceans, snakes, grasshoppers, water beetles and dragonfly larvae and imagines. It may occasionally take colubrid snakes and even small caiman.

It feeds by means of standing or walking slowly in streams, creeks and patches of open water in marshes. It has been observed using tiny pieces of bread as bait for small fishes (*Cichlidae*). It hunts solitary or in pairs, but very rarely in flocks and is usually strongly territorial when feeding. It has been seen joining concentrations of other mainly piscivorous birds such as storks, ibises, spoonbills and other herons.

Nesting: An unmistakable tiger heron with a rich chestnut head and neck, narrowly white-banded slate-colored flanks and under-wings, an ochre-tinged gray abdomen, a blackish back and tail speckled and flecked with brown, dark gray wings, and long dark olive to blackish tarsus. Bare-part colors can be very variable: dark maxilla (olive-black, yellow-brown or black) and pale mandible (yellow, green or pale olive-buff), yellow skin at bill base and periorbital skin, yellow to pale brown eyes, and lores intricately patterned, yellow above and below, and gray in center; during courtship bare parts brighten, the eyes turning bright red.

Cool Facts: Vocalizations include a "*wok, wok*" or "u*uk-uuk-uuk-uuk-uuk...*" in alarm, a "*quoh, h, h*" in contact nocturnally, and song is a rhythmic groaning or nasal humming, rendered "*WOO-HOO, WOO-Hoo, woo-hoo, woo-hoo, woo-hoo, woo-hoo, wu-hu...*", which slows and decreases in volume at end, as well as bill-snapping, in courtship, at dusk and at night.

There are two sub-species:

- *Tigrisoma lineatum lineatum* (Boddaert, 1783). The nominate species is found in eastern Honduras to southwestern Ecuador and east through Amazonia to northern Bolivia and eastern Brazil; reported presence in northeastern Guatemala unconfirmed.
- *Tigrisoma lineatum marmoratum* (Vieillot, 1817). It is found in central Bolivia to eastern Brazil and southward to Paraguay, northeastern Argentina and Uruguay. This subspecies is larger than the nominate species and has gular feathering over the base of the lower mandible. Some adults dark-crowned and boldly streaked.

Common Name: Oriental Stork
Scientific Name: *Ciconia boyciana*

Size: 40-51 inches (100-129 cm); **Wingspan:** 87 inches (195–200 cm)

Habitat: Asia; it breeds in the Amur and Ussuri basins along the border of Russia and mainland China, with small numbers breeding in the lower reaches of the Wuyuerhe river in Heilongjiang province. It is a summer vagrant in eastern Mongolia. The main wintering grounds are in the lower Yangtze basin and southern China, as far south as Taiwan (China) and Hong Kong (China). There are small numbers that winter in North Korea, South Korea and Japan, and irregularly in the Philippines, north-eastern India, Myanmar and Bangladesh.

They are found in marshes with scattered clumps of trees, wet grassland and riverbanks, preferably in woodland. Foraging is generally in wetlands; especially paddyfields, with breeding in nearby woods. Those birds in the Yellow River Delta, China, predominantly use reed swamps and open water areas for breeding.

Status: Endangered. Global population: 11,000-2,499 individuals with a decreasing population trend. Significant declines in breeding birds have been reported in Russia and its overall population is suspected to be decreasing rapidly.
Deforestation and drainage of wetlands for agricultural development are the main causes of reduction in its breeding grounds. In Russia, spring fires threaten breeding sites and kill trees used for nesting. Reclamation of wetlands, particularly in the Yangtze basin, has caused disturbance by reducing the area of habitat for wintering birds, thus making it necessary for birds to move longer distances between sites. Over fishing is a problem at many breeding and

wintering sites in China. A satellite-tracking study indicated very high juvenile bird mortality on passage and in winter. Birds are hunted and collected for zoos, in Russia and China, despite legal protection. Dams on the Amur River and the Three Gorges Dam in China are likely to have detrimental impacts upon the species, although they may affect this species less severely than others as they feed on fish and are therefore less susceptible to changes in water levels.
Diet: Mainly fish, frogs, insects, small birds and reptiles, as well as rodents.

Nesting: Sexes are alike in appearance. They are all white, apart from contrasting black lower scapulars, tertials, greater coverts, primaries and secondaries. The skin around their eyes is red, the iris is yellowish, the bill black and the legs are red. Females are slightly smaller than males. Juveniles have browner greater coverts, duller legs and orange bills.

The Oriental stork is a solitary bird except during the breeding season. It nests on tall trees and artificial structures such as electricity pylons. The female usually lays between two to six eggs.

Cool Facts: Reintroduction programs are underway in South Korea and Japan. In 2008, there were said to be about 100 individuals in Hyogo Prefecture, Japan, following the re-introduction of the species using chicks from Russia. A number of conservation actions have been implemented locally to protect birds breeding near Daqing City, Heilongjiang, China. In May 2007, a hatchling was reported in the wild in Japan for the first time in 40 years. It was the offspring of two storks who were bred in captivity.

The Oriental Stork is closely related to the European white stork and was formerly treated as a subspecies.

Special Thanks to…

….my beta testers on the 2009 team (Bea, Jan, Kelvin, Nancy, Rhonda, Sandra and Walter)

…and on my 2019 Update team (Flinthawk and Szark)

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:

- **"The Sibley Guide to Birds"** by David Allen Sibley (http://www.sibleyguides.com/)
- **All About Birds/Cornell** (http://www.birds.cornell.edu/AllAboutBirds/)
- **Wikipedia** (http://www.wikipedia.com)
- **BirdForum.net** (http://www.birdforum.net)
- **Birdlife International** (http://www.birdlife.org)
- **International Crane Foundation** (http://www.savingcranes.org/)
- **Natureworks** (http://www.nhptv.org/natureworks)
- **Smithsonian National Zoological Park** (http://nationalzoo.si.edu)
- **Threatened Birds of Asia** (http://birdbase.hokkaido-ies.go.jp/rdb/rdb_en/gorsgois.pdf)

Other Resources:

- **Songbird ReMix.com**
- **Songbird ReMix on Facebook**


Songbird ReMix
Merchandise
PENGUINS
www.empken.com/store