

Avian Models for 3D Applications

Model and Morphs by BL Render and Ken Gilliland
Procedural Texture Maps by Ken Gilliland

Songbird ReMix Vultures



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Songbird ReMix

Vultures

Introduction

*They patiently wait, although they hunger... "Vultures" is a **Stand-alone package** from the popular Songbird ReMix Series and contains eight old and new world vultures. These Vultures have been carefully crafted and detailed down to the last hair on their mostly bare heads and necks through a complex series on transparency planes (which are all adjustable through morphs).*

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 Prey1 (Order Falconiformes)" which for example would hold falcons, hobbies and kestrels). The birds for this set can be found in the following folder(s):
 - **Birds of Prey2 (Order Accipitriformes)**
- **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".

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**.

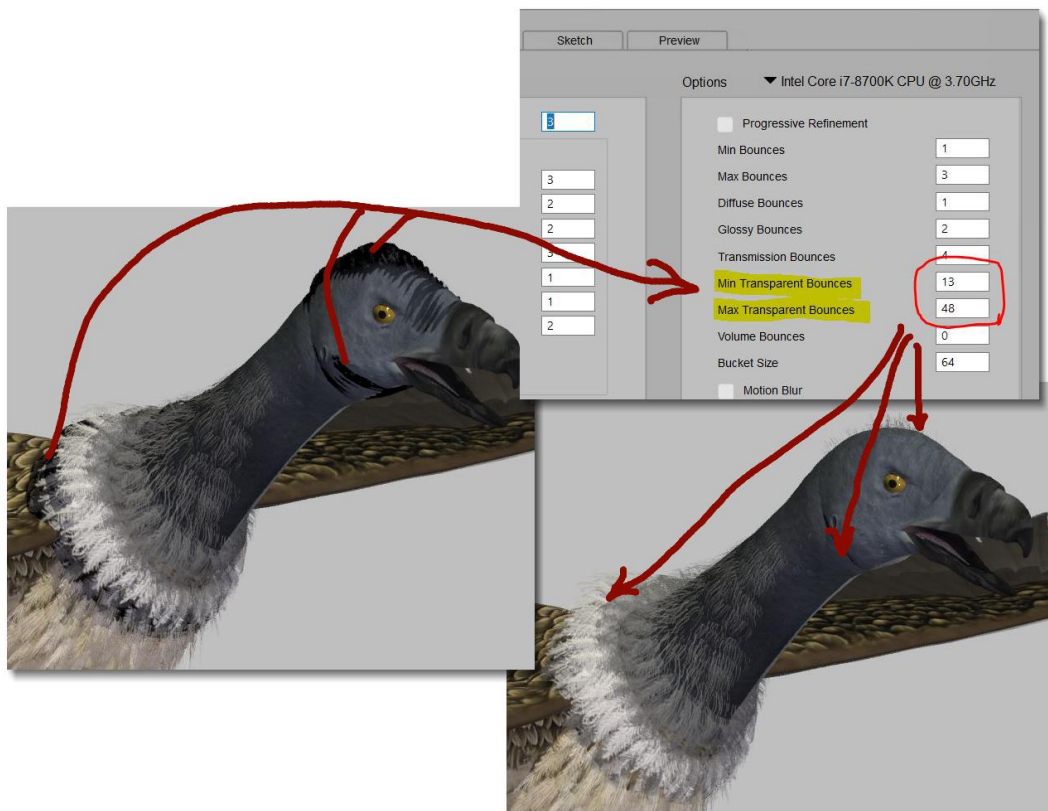
DAZ Studio Use

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.

Physical-based Rendering

Physical-based renderers such as **Iray** and **Superfly** require more CPU and memory horsepower than the legacy renderers for DAZ-Studio and Poser because of ray-trace bounces and higher resolution meshes needed for displacement. Superfly, in particular, may crash *especially* when using the GPU-based options. The best solution is to render using one of the CPU-based options. Limiting the number of ray-trace bounces by setting "Pixel Samples" to "2" or "1" will also reduce crashes and speed renders. Of course, upgrading memory and your CPU will also help.

In order to get this set to work properly in Poser's Superfly renderer, it requires a few special settings.



First of all, the SubD on the Condor/Vulture model is turned to "1". The wings were separately subdivided to "3". In most cases, this should work fine. If tearing is visible in the render, turn off the "Subdivide separately from the

figure” on the left and right shoulder parts (switch is found under the”Properties” tab in each part).

The second issue is how Superfly renders transparency. You will need to adjust the “Minimum” and “Maximum Transparency Bounces” in the Superfly render settings. The number should be at least x3 to x4 the default amount, otherwise the transparencies may appear as their geometry planes rather than the intended effect.

Where to find your birds

Type Folder	Bird Species
Birds of Prey2 (Order Accipitriformes)	American Black Vulture Turkey Vulture Eurasian Black or Monk Vulture Griffon Vulture Egyptian Vulture Red-headed Vulture Lappet-faced Vulture White-headed Vulture

Where to find your poses

Type Folder	For what species?
Birds of Prey2 (Order Accipitriformes)	All Vultures

Tips and Tricks

Being Hip in Poser... you may want to turn off IK for the feet. While IK can affect preset poses and does affect leg movement, IK can be very helpful in **HIP** XYZ rotations and translation.

Displacement... “Vultures” do use displacement maps. You must turn on displacement in the Poser render settings; DAZ|Studio does this automatically.

Being Fluffy... the collar and fluff morphs in **NECK1-3** can be helpful in awkward looking neck/hip bends. Try using neck morphs “Cllr-BottomBendExpand”, “Cllr-TaperBottom”, and various “Fluffs”. You’ll find “FluffUp” morphs very helpful, too.

Varying individuals... Since most vultures feed together you’ll probably want to include more than one Vulture in a scene. You can vary appearance slightly with the arsenal of head and neck morphs included. In **HEAD**, try slight adjustments to beak and facial hair.

Jaw Gaps and Tongue Poke-throughs... Because of the generic nature of the Vulture some species may exhibit jaw gaps and lower beak poke through. Several morphs in the **HEAD’s** Beak section will correct this. “BkB-Fix 1” and “2” control the lower beak width. “Bk-CornerBack” or “Bk-CornerDown”, as well as the Beak joint controller will help on Jaw gaps. Tongue poke-through can be corrected by using the “Throat” sections’ “Jaw-CloseLumpFix” Morph

Throat Issues... Sometimes, the Throat hair bunches together to form a straight line in extreme bend-down angles with the head. The **HEAD** morph (in Hair Morphs Section) called “ChinFuzzGone” will take care of it. Chin hairs showing up in the throat can be corrected by “ChinFuzz-Fix”

Songbird ReMix **Vultures**

Field Guide

New World Vultures

American Black Vulture
Turkey Vulture

Old World Vultures

Eurasian Black or Monk Vulture
Griffon Vultures
Egyptian Vulture
Red-headed Vulture
Lappet-faced Vulture
White-headed Vulture



General Information on Vultures

(edited from Wikipedia.com by Ken Gilliland)

Vultures are scavenging birds, feeding mostly on the carcasses of dead animals. They are found on every continent except Antarctic, and Oceania.

A particular characteristic of many vultures is a bald head, devoid of feathers. Research has shown that the bare skin may play an important role in thermoregulation.

A group of vultures is occasionally called a venue, and when circling in the air a group of vultures is called a kettle. The word Geier (taken from the German language) does not have a precise meaning in ornithology, and it is occasionally used to refer to a vulture in English, as in some poetry.

Classifications

Vultures are classified into two groups: Old World vultures and New World vultures. The similarities between the two different groups are due to convergent evolution. The Old World vultures found in Africa, Asia, and Europe belong to the family Accipitridae, which also includes eagles, kites, buzzards, and hawks. Old World vultures find carcasses exclusively by sight.

New World vultures and condors found in warm and temperate areas of the Americas are not closely related to the superficially similar Accipitridae (Old World Vultures), but belong in the family Cathartidae, which is quite close to the storks. Several species have a good sense of smell, unusual for raptors, and are able to smell the dead they focus upon from great heights.

Feeding

Vultures seldom attack healthy animals, but may kill the wounded or sick. Vast numbers have been seen upon battlefields. They gorge themselves when prey is abundant, until their crop bulges, and sit, sleepy or half torpid, to digest their food. They do not carry food to their young in their claws, but disgorge it from the crop. These birds are of great value as scavengers, especially in hot regions. Botulinum toxin, the toxin that causes botulism, does not affect them, and they can eat rotten flesh containing anthrax and cholera bacteria. When a vulture's dinner has too thick of hide for his beak to open, he waits for another scavenger to eat first.

Diclofenac poisoning has caused the vulture population in India and Pakistan to decline by up to 95% in the past decade, and two or three of the species of vulture in South Asia are nearing extinction. This has been caused by the practice of medicating working farm animals with diclofenac, which is a non-steroidal anti-inflammatory drug (NSAID) with anti-inflammatory and pain killing actions. Diclofenac administration keeps animals that are ill or in pain working on the land for longer, but, if the ill animals die, their carcasses contain diclofenac. Farmers leave the dead animals out in the open, relying on vultures to tidy up. Diclofenac present in carcass flesh is eaten by vultures, which are sensitive to diclofenac, and they suffer kidney failure, visceral gout, and death as a result of diclofenac poisoning.

The decline in vultures has led to hygiene problems in India as carcasses of dead animals now tend to rot, or be eaten by rats or wild dogs, rather than be tidied up by vultures. Rabies among these other scavengers is a major health threat. India has one of the world's highest incidences of rabies.

The decline in vultures causes particular problems for certain communities, such as the Parsi, who practice sky burials, where the human dead are put on the top of Towers of Silence and are eaten by vultures, leaving only dry bones.

Meloxicam (another NSAID) has been found to be harmless to vultures and should prove an acceptable alternative to diclofenac. The Government of India banned diclofenac, but over a year later, in 2007, it continued to be sold and is still a problem in other parts of the world.

In Culture

In Southern Africa, the name for a Nubian vulture is synonymous with the term applied to lovers, because these vultures are always seen in pairs, mother and child remaining closely bonded together. Pairing, bonding, protecting, and loving are essential attributes associated along with the vulture's size and its ability to soar high in the sky.

The Egyptians considered the vulture to be an excellent mother, and the wide wingspan was seen as all-encompassing and providing a protective cover to her infants. The white Egyptian vulture was the animal picked to represent Nekhbet, the mother goddess and protective patron of southern, Upper Egypt. The vulture hieroglyph was the uniliteral sign used for the glottal sound including words such as mother, prosperous, grandmother, and ruler

Although the vulture plays an important natural role, in the Western world, the image of the vulture is quite negative, with 'vulture' used as a metaphor for those who prey on the weak or dying, with associated negative connotations of cowardice and selfishness.

Common Name: American Black Vulture

Scientific Name: *Coragyps atratus*

Size: 24-27 inches (60-68 cm); Wingspan 54-59 inches (137-150 cm)

Habitat: North and South America; a resident from southern New York and southern Ohio southward through Texas to Central and South America.



Status: Least Concern. **Global Population:** 20,000,000 mature individuals.

Diet: Wide variety of carrion, from small mammals to dead cows. Also, some insects, other invertebrates and some fruit.

Nesting: Sexes look alike; Immature is similar to adult, but head darker and without wrinkled skin. It lays its eggs in caves or hollow trees or on the bare ground, and generally raises two chicks each year. Chicks are naked at hatching and later grow down. The parents feed the young by regurgitation. The young are helpless and fledge in 2 to 3 months.

Cool Facts: Its featherless head reduces bacterial growth from eating carrion. The American Black Vulture, as well as the King Vulture, have the weakest sense of smell of the New World Vultures and rely more on vision like their “Old World” counterparts. Black Vultures flap their wings frequently while soaring.

No New World Vulture possesses a syrinx (vocal organ), so they instead make a series of soft hisses and barks.



Black Vultures rarely travel alone; flocks of Black Vultures can quickly take over a carcass and drive the more solitary, but larger Turkey Vultures away.

The American Black Vulture and the King Vulture appear in a variety of Maya hieroglyphics in Mayan codices. In Mayan codices, the American Black Vulture is normally connected with death or shown as a bird of prey, and its glyph is often depicted attacking humans.

Common Name: Turkey Vulture
Scientific Name: *Cathartes aura*

Size: 25-32 inches (64-81 cm); Wingspan: 67-70 inches (170-178 cm)

Habitat: North and South America. **Summer Range:** Breeds from southern Canada throughout the United States and southward through southern South America and the Caribbean. Local or absent in Great Plains. **Winter Range:** Winters from northern California, Mexican border, eastern Texas, southern Missouri, and southern New York southward throughout the southeastern United States and south. It prefers rangeland and areas of mixed farmland and forest. It will roost in large trees or on large urban buildings.

Status: Least Concern. **Global Population:** 5,000,000 mature individuals. Overall North American populations have increased over the last few decades and the breeding range has expanded northward.



Diet: Wide variety of carrion, from small mammals to dead cows. Also, some insects, other invertebrates and some fruit.

Nesting: Sexes appear similar, but female slightly larger. New World vultures and condors do not build nests. Instead, they lay eggs on bare surfaces. Two eggs are laid; Creamy-white with dark blotches around large end. Chicks are naked at hatching and later grow down. The parents feed the young by regurgitation. The young are helpless and fledge in 2 to 3 months.

Cool Facts: The Turkey Vulture uses its sense of smell to locate carrion. The part of its brain responsible for processing smells is particularly large, compared to other birds. Its heightened ability to detect odors allows it to find dead animals below a forest canopy.



The Turkey Vulture maintains stability and lift at low altitudes by holding its wings up in a slight dihedral (V-shape) and teetering from side to side while flying. It flies low to the ground to pick up the scent of dead animals. The Turkey Vulture rarely flaps its wings.

Like its stork relatives, the Turkey Vulture often defecates on its own legs, using the evaporation of the water in the feces to cool itself down.

The Turkey Vulture usually forages alone, unlike its smaller, more social relative, the Black Vulture. No New World Vulture possesses a syrinx (vocal organ), so they instead make a series of soft hisses and barks. The Turkey Vulture routinely hisses at carrion, roosts and nests.

Common Name: Eurasian Black or Monk Vulture
Scientific Name: *Aegypius monachus*

Size: 39-44 inches (98–110 cm); Wingspan: 99-119 inches (250–300 cm)

Habitat: Europe, Africa and Asia; breeds in Spain, Bulgaria, Greece, Turkey, Armenia, Azerbaijan, Georgia, Ukraine, Russia, Uzbekistan, Kazakhstan, Tajikistan, Turkmenistan, Kyrgyzstan, Iran, Afghanistan, north India, northern Pakistan, Mongolia and mainland China, with a small reintroduced population in France. It may occasionally breed in Portugal, F.Y.R.O. Macedonia and Albania. There are wintering areas in Sudan, Pakistan, north-west India, Nepal, Bhutan, Myanmar, Lao People's Democratic Republic, North Korea and South Korea.



Status: Near threatened. **Global Population:** 14,000 - 20,000 mature individuals. The Black Vulture has declined over most of its range in the last 200 years due to poisoning by eating poisoned bait put out to kill wolves and other predators, and to higher hygiene standards reducing the amount of available carrion. It is currently listed as near threatened. The decline has been the greatest in the western half of the range, with extinction in many European countries (Portugal, France, Italy, Austria, Poland, Slovakia, Romania) and northwest Africa (Morocco, Algeria). More recently, protection and deliberate

feeding schemes have allowed some local recoveries in numbers, particularly in Spain, where numbers increased to about 1,000 pairs by 1992 after an earlier decline to 200 pairs in 1970. Elsewhere in Europe, very small, but now increasing numbers breed in Bulgaria and Greece, and a re-introduction scheme is under way in France. Trends in the small populations in Ukraine (Crimea) and European Russia, and in Asian populations, are not well recorded. In the former USSR, it is still threatened by illegal capture for zoos, and in Tibet by rodenticides. Its 2007 global population is estimated to number 7,200-10,000 pairs.

Diet: Wide variety of carrion, from small mammals to dead cows. Also insects,



other invertebrates and some over-ripe fruit.

Nesting: It breeds in high mountains and large forests, nesting in trees or occasionally on cliff ledges, and generally raises two chicks each year. Chicks are naked at hatching and later grow down. The parents feed the young by regurgitation. The young are helpless and fledge in 2 to 3 months.

Cool Facts: It is the second largest bird of prey (Falconiformes) in the world, only the Andean Condor is larger (slightly). At a weight of 7–14 kg (15.5-31 lbs), it is thus one of the world's heaviest flying birds.

Among the vultures in its range, the Eurasian Black Vulture is best equipped to tear open tough carcass skins, using its powerful bill. It is dominant over other vultures at carcasses.

It can fly at a very high altitude. It has a specialized hemoglobin alphaD subunit of high oxygen affinity which makes it possible to take up oxygen efficiently despite the low partial pressure in the upper troposphere.

Common Name: Griffon Vulture
Scientific Name: *Gyps fulvus*

Size: 37-43 inches (95-110 cm); Wingspan: 91-105 inches (230-265 cm)

Habitat: Europe, Africa and Asia; Found in South Europe, Northern Africa, Mesopotamia and Northern India. The largest numbers of Eurasian Griffon Vultures are found in Spain, but there are significant populations in Turkey, Gibraltar, and Bosphorus. They favor the more southern parts of their range, and can tolerate inclement weather such as rain, mist, and snow fairly well. Though they avoid wetlands and marine areas, they are very fond of fresh and running water, for bathing and drinking.

Status: Least Concern. **Global**

Population: 100,000 mature individuals. Populations have declined significantly and expanded throughout Europe over the last century. The griffon is extinct in much of its former range due to habitat loss and use of mammal poisons.

Diet: Wide variety of carrion, from small mammals to dead cows. Also, some insects, other invertebrates and some fruit.

Nesting: Griffons pair for life. They build nests of grass and twigs on cliff ledges. Mating takes place on the same steep cliff faces where the birds construct their nests, and the female lays one or two eggs 2 months after mating. Both parents tend the eggs. Model parents, the griffons incubate their eggs by night, and



shade them by day, as the temperature rises. Incubation lasts from 48 to 52 days.

Cool Facts: Griffon Vultures live about 40 years. Griffons are very social, living and nesting in colonies of 15 to 20 pairs. Sometimes more than 100 pairs compose a colony. After feeding on a carcass, Griffons often gather at a watering hole to bathe.

Since Griffon Vultures cannot smell their meals, they soar high above, scanning for signs of a kill. Once a kill is spotted, they patiently wait and close in once the mammalian scavengers have gone. They have to do this because their beaks are not designed for ripping open fresh hides, thus they depend on predators or larger vultures to begin the work for them. Descending on a carcass, the bird can dive at over 100 miles per hour. They are one of the fastest species of vulture. The crop of a Griffon Vulture can hold up to 13 pounds of meat.



The feather of the Eurasian Griffon Vulture, according to Greek myth, could protect against snake bites, cure blindness, and relieve the pain of childbirth.



At least five different species of vulture (neret) lived in ancient Egypt. The particular species shown in the hieroglyph is the Griffon vulture. The vulture was typically associated with the goddess Nekhebet who was the patroness of the city of El-Kab in Upper Egypt. When El-Kab became important early in ancient Egyptian history, the vulture soon became a heraldic creature for all of Upper Egypt. As such, the vulture was often shown with the cobra (the herald of Lower Egypt) wearing the white crown of Upper Egypt. She also appeared in the nebty or "Two Ladies" name of the pharaoh.

Common Name: Egyptian Vulture
Scientific Name: *Neophron percnopterus*

Size: 33.5 inches (85 cm); **Wingspan:** 67 inches (170 cm)

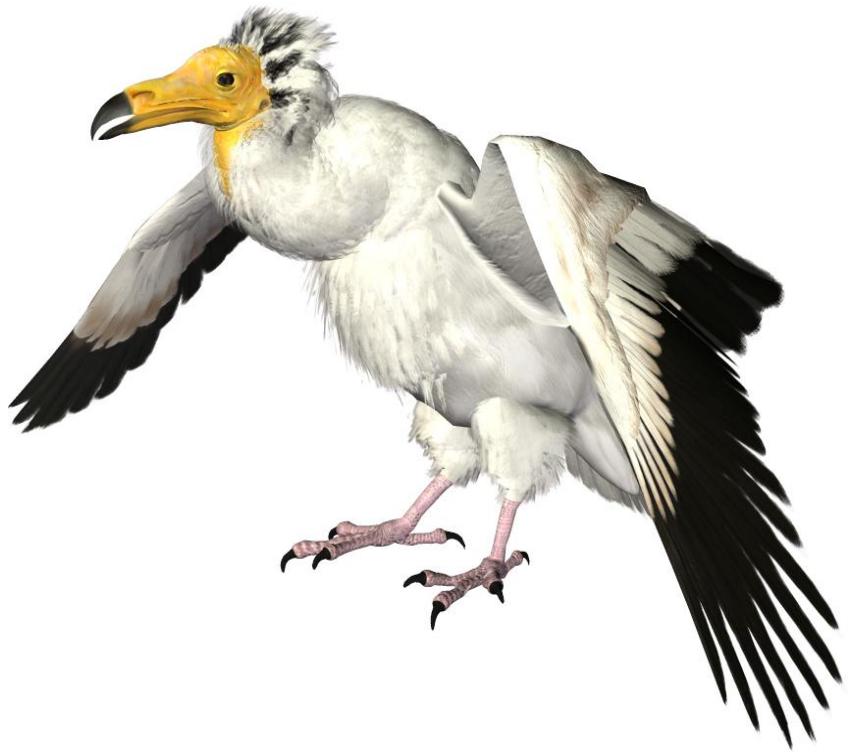
Habitat: Europe, Africa and Asia; Found in South Europe, Northern Africa, Mesopotamia and Northern India.

Status: Endangered. **Global Population:** 21,000 - 67,200 mature individuals. The Egyptian Vulture is declining in large parts of its range, often severely. In Europe and most of the Middle East, it is half as plentiful as it was about twenty years ago, and the populations in India and southwestern Africa have collapsed entirely. In the case of India, this apparently is attributable to the widespread use of the NSAID Diclofenac. Many farmers poison vultures believing they promote disease—in fact, vultures do the opposite by cleaning up potential sites for diseases to spread.



Diet: Egyptian vultures are specialists in egg-eating. They are among the only known birds in the world to use stones as tools. They will repeatedly strike at an abandoned ostrich egg with stones, and then use their beak to enlarge the hole and penetrate membrane. This behavior is not instinctive, but learned from other vultures, as the species is very intelligent. They also eat carrion and overripe fruit.

Nesting: Males and females are alike in plumage, but females are usually slightly larger than their mate. Beautiful breeding displays are performed by both sexes. They fly high into the air and dive back down, grasping claws on the way. They prefer to nest on rocky ledges and in cliffs, preferring well-sheltered areas with many cavities, as the birds are colonial nesters. They lay 1 to 3 eggs, which they incubate for 42 days. They have the ability to lay a new egg if one is destroyed or taken before hatching.



Cool Facts: The Egyptian Vulture is the first ever recorded bird ever to be protected by law. The Egyptian Pharaoh felt a kinship to this vulture and feeling that their job as natural cleaners was very important to the health of his kingdom, he forbade anyone to kill this bird. This crime was punishable by death. After this ruling, the bird came to be called "Pharaoh's Chicken."



At least five different species of vulture (neret) lived in ancient Egypt. The particular species shown in the hieroglyph is the Egyptian Vulture.

The vulture was also a symbol of the goddess Mut, as well as Isis and Hathor. The bird also served as a symbol of the feminine, often in opposition to the scarab who signified the male principle.

This vulture flies with more wing beats than most vultures, but takes off much more gracefully, as it is built lighter and smaller. Once gliding, the bird holds its wings flat, shifting them very little. The bird possesses great endurance, and is able to fly up to 70 kilometers in search of food.

Common Name: Red-headed Vulture
Scientific Name: *Sarcogyps calvus*

Size: 34 inches (85 cm); Wingspan 79 inches (200 cm)

Habitat: Asia; historically abundant with range over south-central and south-eastern Asia extending from Pakistan to Singapore. Today the range of the Red-headed Vulture is localized primarily to Nepal and northern India where it is found in open country and in cultivated and semi-desert areas.



Status: Critically Endangered. **Global Population:** 2,500-9,999 mature individuals. Historically, this species has been slowly declining. In 1994 it was uplisted to Near Threatened from Least Concern by the IUCN. The widespread use of the NSAID Diclofenac in Indian veterinary medicine has caused its population to collapse in recent years. This compound is now known to be extremely poisonous to vultures. The population of this species has essentially halved every other year since the late 1990s, and what once was a plentiful species numbering in the hundreds of thousands has come dangerously close to

extinction in a mere decade-and-a-half or so. Consequently it is uplisted to Critically Endangered in the 2007 IUCN Red List.

Diet: Carrion, including small dead animals neglected by other vultures.

Nesting: It performs spectacular aerial displays, the pair soaring together at a height, diving and twisting over and round one another. Mating normally takes place on a tree branch near the nest, and is accompanied, as is display, by loud roaring calls. Nests are built in trees, at any height from three to a hundred feet above the ground. They are usually situated in cultivated or inhabited areas, but sometimes in uninhabited jungle. Low bushes or Euphorbias will be used if large trees are not available. They do not nest in colonies of their own kind, but may build in the same tree as other vultures, such as White-backed Vultures. The nests are comparatively small and slight when first constructed, but are used year after year and become larger with time, up to five feet across and four feet deep. They are made of sticks, and leafy branches with the leaves on, with oddments such as pieces of skin or hair in the nest cup, which is often filthy. Both birds build the nest; the male is said to bring materials which the female incorporates in the nest. One egg is laid, a broad oval, fine in texture and smoother than other vultures' eggs, sometimes slightly glossy, plain greenish white, or pure white. Both sexes incubate; the female through the night and in the early mornings and evenings, the male through the day. Greeting ceremonies take place at change-over, accompanied by loud roaring calls. The incubation period is about 45 days.

Cool Facts: It is also known as the Asian King Vulture, Indian Black Vulture or Pondicherry Vulture.



Common Name: Lappet-faced or Nubian Vulture
Scientific Name: *Torgos tracheliotus*

Size: 41 inches (95-115 cm); Wingspan: 106 inches (250-290 cm)

Habitat: Africa; found in southern Africa, up the eastern coast, and in the dry northern regions of the continent.

Status:

Vulnerable.

Global

Population: 8,500 mature individuals and declining throughout southern Africa. Have suffered as a result of poisoning by farmers. They have also been known to fall victim to electrocution by high-voltage towers. Also, with the elimination of hyenas in many areas, vultures are unable to gather the bone fragments that these animals once left behind. Such calcium-rich tidbits are highly important to the strength and health of vulture chicks



Diet: Wide variety of carrion, occasionally live animals.

Nesting: Breeding may only occur once every two years for this vulture species. Lappet-faced pairs build a large platform-style nest of sticks in the top of a small thorn tree. After lining it with grass and other soft objects, the female

lays a solitary egg. If a predator makes its way through the thorny obstacles to the nest, the baby can do a very convincing job of feigning death.

Cool Facts: Lappet-faced Vultures, perhaps more than any other vulture, will on occasionally attack young and weak living animals and raid the nests of other birds. Locally, Lesser Flamingoes, among others, have been reported to be culled by Lappet-faces in this way.

Many non-native plants are found in the Negev Desert in Israel. These are thought to have originated from seeds brought over on the feet of migrating vultures.



The Hausas, an African tribe, developed a tale based on this great vulture. According to the legend, there was an enormous bird called the Jipillima, that feasted on humans, but whose droppings had the ability to cure anything. One day, the king's son became ill because an evil witch had forced magic thorns into his body. A young woman in love with the prince went out in search of a cure for him. Coming across a tree full of Jipillimas, she heard them talking of the sick man, after complaining of their hunger--they had only eaten 99 men that day! She heard them telling that the only way the man could be healed was if he were fed their droppings. So the girl hastily gathered up some droppings, took them back to the prince, and fed them to him. He vomited up the painful thorns, and was healed. The girl was rewarded by marrying the prince.

Common Name: White-headed Vulture
Scientific Name: *Trigonoceps occipitalis*

Size: 30 inches (72-82 cm); Wingspan: 85 inches (207-223 cm)

Habitat: Africa; It prefers mixed, dry woodland at low altitudes, avoiding semi-arid thornbelt areas. It also occurs up to 4,000 m in Ethiopia, and perhaps 3,000 m in Kenya, and ranges across the thorny Acacia-dominated landscape of Botswana. It generally avoids human habitation.

Status: Vulnerable. **Global Population:** 7,000 - 12,500 mature individuals and declining. Reductions in populations of medium-sized mammals and wild hoofed animals, as well as habitat conversion throughout its range best explain current decline. Additional threats are indirect poisoning at baits set to kill jackals in small-stock farming areas, although this species is less susceptible than other vultures, owing to its broad diet. Exploitation for the international trade in raptors also poses a threat.



Diet: Wide variety of carrion; it is known to equally often hunt live prey to supplement its diet. This bird, with its strong talons unusual to members of the vulture family, is capable of tackling prey as large as flamingoes, though it will

also feed on small animals such as lizards. It is even rumored that this large bird will occasionally take a small antelope.

Nesting: Females weigh more than males; they usually weigh around 4.7 kg, while males weigh somewhat under 4 kg. White-Headed Vultures build their stick-nests at the top of an acacia tree. The female lays a single egg, which she incubates for up to 43 days.



Cool Facts: The White-headed vulture often flies at lower altitudes than other vultures.

It is a mostly solitary species; this vulture does not even form large congregations at a carcass. It prefers freshly killed prey when available and will not seek out carcasses with the same fervor as its scavenging relatives. When the white-headed vulture visits a carcass, it will push all vultures out of its way, with the exception of the powerful Lappet-Faced Vulture.

Special Thanks to...

....our betatesters (**Bea, Jan, Kelvin, Nancy, Rhonda and Sandra**)

Species Accuracy and Reference Materials

The author-artist has tried to make these species as accurate to their real life counterparts as possible. With the use of one generic model to create dozens of unique bird species, some give and take is bound to occur. The texture maps were created in Painter with as much accuracy as possible. Photographic references from photographs from various Goggle searches and several field guides were used.

- **"The Sibley Guide to Birds"** by David Allen Sibley.
- **"Raptors of the World"** by James Ferguson-Lees and David A. Christie
- **"Vultures: Animal Scavengers"** by Sandra Markle
- **"Condors and Vultures"** by David Houston

Field Guide Sources:

- **Cornell Lab of Ornithology** (<http://www.birds.cornell.edu>)
- **Wikipedia** (<http://www.wikipedia.com>)
- **BirdGuides.com** (<http://www.birdguides.com>)
- **IUCN Red List of Threatened Species** (<http://www.iucnredlist.org/>)
- **Vultures; Nature's Nobel Caretakers** (<http://vultures.homestead.com/>)

Other Resources:

- Songbird ReMix.com
- Songbird ReMix on Facebook

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