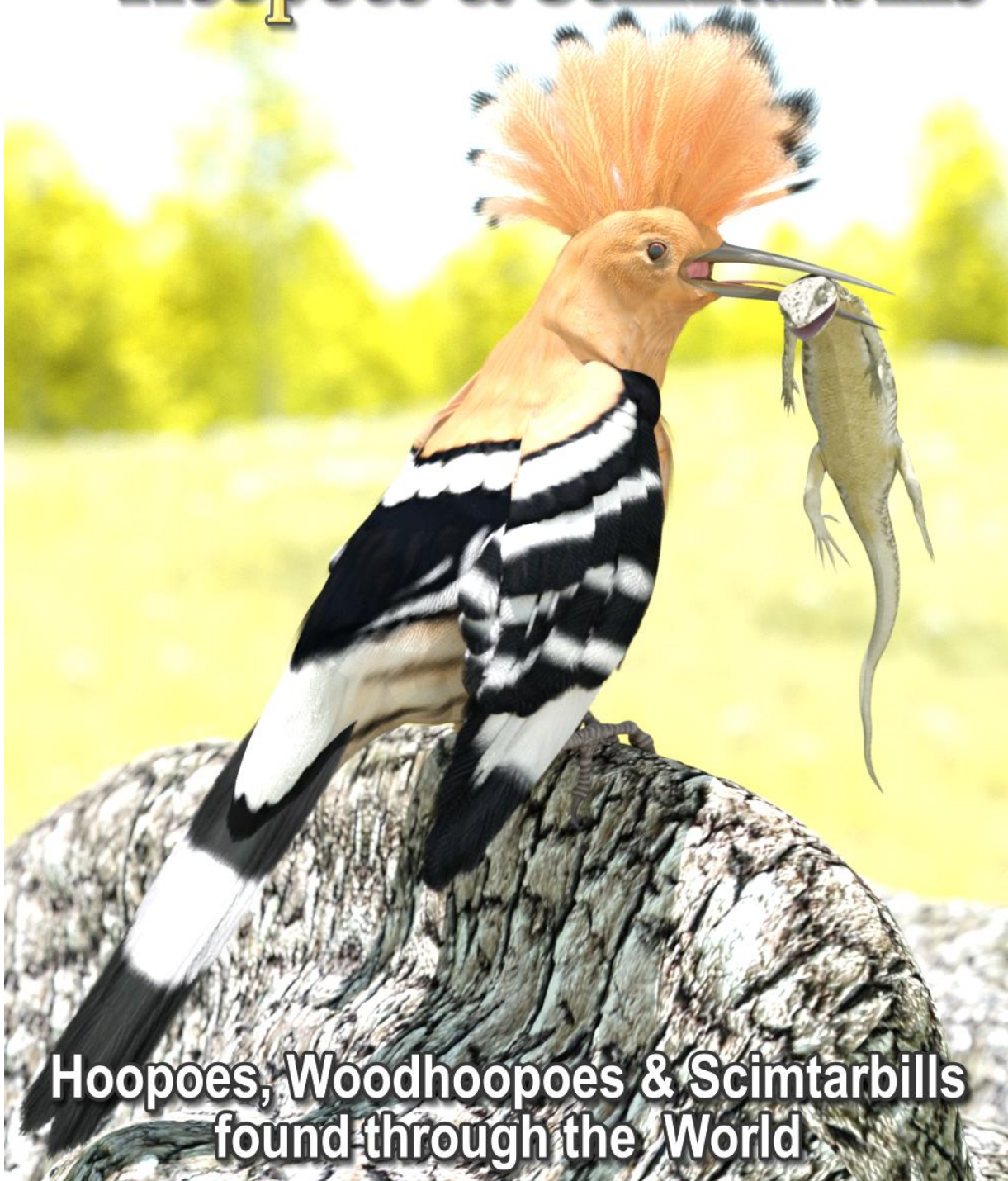


**Songbird
ReMix**

Hoopoes & Scimitarbills



**Hoopoes, Woodhoopoes & Scimitarbills
found through the World**

Avian Models for 3D Applications
by Ken Gilliland

Songbird ReMix

Hoopoes & Scimitarbills

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Songbird ReMix

Hoopoes & Scimitarbills

Introduction

Hoopoes are colorful birds found across Africa, Asia, and Europe and are notable for their distinctive "crown" of feathers. Three living and one extinct species are recognized. They were considered sacred in Ancient Egypt, and were "depicted on the walls of tombs and temples". At the Old Kingdom, the hoopoe was used in the iconography as a symbolic code to indicate the child was the heir and successor of his father. They achieved a similar standing in Minoan Crete. In the Torah, Hoopoes were considered detestable creatures and not Kosher, but over time managed to win over the populace in 2008 becoming the National Bird of Israel. Hoopoes were seen as a symbol of virtue in Persia, a harbinger of war to the Vikings and a symbol of satanic magic to Monks of the Middle Ages.

The Woodhoopoes (Scimitarbills) are a morphologically distinct group and unlikely to be mistaken for any other and are found in Sub-Saharan Africa. They have metallic plumage, often blue, green or purple, and lack a crest. The sexes are similar in all but two species. Their bills are either red or black and distinctly curved giving them their name, Scimitarbill.

This set includes all the species of Hoopoes and Scimitarbills found throughout the world. As with all Songbird ReMix sets, the birds included have fold-able wings, crests that open and retract, and a host of other controls to offer unparalleled bird model articulation.

The set comes in two versions, native Poser and DAZ Studio, with support for Firefly, Superfly, 3Delight and Iray renderers.

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):
 - **Hornbills and Hoopoes** (*Order Bucerotiformes*)
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your birds
 - **Bird Base Models:** This folder has the blank, untextured model(s) used in this set. These models are primarily for users who wish to experiment with poses or customize their own species of bird. When using physical renderers such as Iray and Superfly, SubD should be turned to at least "3".

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 & Shaping Considerations

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

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

- Birds will not be flat on the zero plane due to leg size and overall scale.
- Because of the numerous beak shapes, closing the beak may range from 0.5 to 1.2. Usually 0.9-1.0 is about right.

IK Concerns

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

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

Where to find your Birds and Poses

Type Folder	Bird Species
Hornbills and Hoopoes (Order Bucerotiformes)	Green Woodhoopoe Violet Woodhoopoe Black-billed Woodhoopoe White-headed Woodhoopoe Forest Woodhoopoe Black Scimitarbill Common Scimitarbill Abyssinian Scimitarbill Eurasian Hoopoe African Hoopoe Madagascar Hoopoe

Songbird ReMix
Hoopoes & Scimitarbills
FIELD GUIDE

Family *Phoeniculidae*

*Genus **Phoeniculus***

GREEN WOODHOOPOE
VIOLET WOODHOOPOE
BLACK-BILLED WOODHOOPOE
WHITE-HEADED WOODHOOPOE
FOREST WOODHOOPOE

*Genus **Rhinopomastus***

BLACK SCIMITARBILL
COMMON SCIMITARBILL
ABYSSINIAN SCIMITARBILL

Family *Upupidae*

*Genus **Upupa***

EURASIAN HOOPOE
AFRICAN HOOPOE
MADAGASCAR HOOPOE

Common Name: Green Woodhoopoe
Scientific Name: *Phoeniculus purpureus*

Size: 12.8-15.7 inches (32.5–40 cm)

Habitat: Africa; it is found in western central Africa and eastern southern Africa

It can be found in most places over its huge range and it occurs in wide variety of habitats, including savanna, open woodland, palm groves, riverine forest in arid thornbush country, and wooded gardens. It is only absent from arid zones and dense forests. A key requirement is that the trees are large enough to hold cavities for roosting and nesting.

Status: Least Concern.

Global Population:

22,700,000 mature individuals with a decreasing population trend. It is extremely widespread geographically and in most locations considered common. Destruction of prime habitat, as at Naivasha Lake in Kenya, can devastate local populations, while in South Africa, for example, the removal of fuel-wood can also be detrimental to this and other cavity-nesting birds.

Diet: It is an insect-eating species. It feeds mainly on the ground, termite mounds, or on tree trunks, and forms flocks outside the breeding season. Its specialized claws enable it to cling easily to the underside of branches while closely inspecting the bark for insects.

Nesting: This abundant species is a metallic dark green, with a purple back and very long diamond-shaped purple tail. Distinctive white markings on the wings and white chevrons on the tail edges make it easily identifiable, as does its long, thin, curved red bill. Sexes are similar, although females are slightly smaller. The immatures have a black bill.



The green Woodhoopoe is a cooperative breeder and common resident in the forests, woodlands and suburban gardens of most of sub-Saharan Africa. It is found in groups of up to a dozen or so birds with only one breeding pair. The breeding female lays two to four blue eggs in a natural tree hole or old barbet nest and incubates them for about 18 days. On hatching, she and the nestlings are fed by the rest of the group, even after they have fledged and left the nest hole. The group is fearless in defence of the nestlings against intruders. This species is parasitised by the greater and lesser honeyguide.

Cool Facts: It was formerly known as the Red-billed Woodhoopoe.

There are 6 subspecies recognized. Races differ in the shade of iridescence and in extent of white on the rectrices and remiges. The body size decreases from west to east and from north to south and all subspecies are larger than nominate race (wing of male: 130–150 mm).

- *P. p. guineensis*. It is found in southern Mauritania, northern Senegal and Mali to northern Ghana, Nigeria, southern Chad and Central African Republic. This race is similar to Race *niloticus* but its crown and face are more blue-green, the wing is shorter (wing of male: 129–156 mm) and its tail is longer:
- *P. p. senegalensis*. It is found in southern Senegal and Gambia eastward to southern Ghana. It is like Race *guineensis* but its crown, nape and mantle are duller, the mantle is more violet, and the bill may be partly or completely black (wing of male: 138–157 mm).
- *P. p. niloticus*. It is found in southern Sudan, western Ethiopia, South Sudan and northeastern Democratic Republic of the Congo. It is duller and darker than Race *marwitzi*, with the crown, nape and mantle being a deeper violet-blue (wing of male: 133–158 mm).
- *P. p. marwitzi*. It is found in Uganda and Kenya southward to northeast South Africa (northern KwaZulu-Natal). There have been a few sightings in extreme southern Somalia. Race *marwitzi* is iridescent, with the crown, chin, nape and face blue, neck being blue-green; the mantle, scapulars, throat and breast being green, and it has a white subterminal spot on both webs of the outer 2–3 rectrices and a white bar on middle of the outer webs of the primaries (wing of male: 136–163 mm).
- *P. p. angolensis*. It is found in Angola and Namibia eastern to western Zambia and western Zimbabwe and south to northern South Africa. This race is similar to Race *marwitzi*, but the blue is more extensive on the nape and throat with the tail spots larger than in the nominate race (wing of male 141–156 mm).
- *P. p. purpureus*. The nominate subspecies is endemic to southeastern South Africa from eastern Western Cape eastward to southern KwaZulu-Natal.

Common Name: Violet Woodhoopoe
Scientific Name: *Phoeniculus damarensis*

Size: 13.6-15 inches (34.5-38 cm)

Habitat: Africa; endemic to Angola, Kenya, Namibia and Tanzania.

They frequent dry Acacia scrub and thornbush. It is often around watercourses and palm trees, from sea-level to 1500 m.

Status: Least Concern. **Global Population:** 3,810,000 mature individuals with a decreasing population trend. The population is suspected to be in decline owing to destruction of large trees which provide nesting sites.

Diet: Mostly insects, including beetles, grasshoppers, caterpillars, pupae, beetle larvae. It also takes eggs (which are swallowed whole) from nests of small birds such as weavers.

Like other woodhoopoes, it is agile and arboreal, searching crevices in tree trunks, and sometimes hanging below branches. It is gregarious, and often found in groups of 2–12 birds, sometimes in mixed flocks with Green Woodhoopoes (*P. purpureus*).



Nesting: A very dark, large woodhoopoe. The Nominate race has a dark coppery purple iridescence on the crown, face, nape, mantle, back and rump; the chin and throat are blue-green; the breast and upper belly are coppery purple. There is a white bar on primaries, and subterminal white spots on the outer tail feathers. The bill is decurved and bright red; it is sometimes black at base. The eyes are dark brown and the tarsi and toes are bright red. Sexes are similar, but the female is marginally smaller. The immature is duller than the adult, with short, black bill, and some dark buff on chin and throat.

The nominate race breeds from June to July in Angola and December to February in Namibia. Their mating behavior is not well-known, but group-living behavior like other Woodhoopoes suggests a co-operative breeding system. A nest is created in the cavity of living or dead tree, either natural cavity or woodpecker hole. The same site may be reused in subsequent season. Birds in Namibia have also used nest boxes. The clutch is 3–5 bright blue eggs which the female alone incubates, and is fed by all group members. The incubation period is about 21 days. The breeding female mainly feeds the young alone, although latter sometimes provisioned directly by non-breeding members of the group.

Cool Facts: It was formerly known as Grant's Woodhoopoe and differs from the Green Woodhoopoe (*P. purpureus*) and Black-billed Woodhoopoe (*P. somaliensis*) in having iridescence mostly dark purple-violet, rather than green of former or violet and blue of latter.

- *P. d. damarensis*. The nominate race is found in southwestern Angola and northwestern and central Namibia.
- *P. d. granti*. This subspecies is found in southern Ethiopia and central and southeastern Kenya. This species is smaller (wing of male 140–156 mm, of female 137–142 mm), with iridescence brighter and less coppery, the crown, nape, mantle, scapulars and wings are more violet, and the throat and breast are bluer, with feathers fringed coppery violet. There are variable amounts of black at base of bill, although this feature might be merely age-related.

Common Name: Black-billed Woodhoopoe

Scientific Name: *Phoeniculus somaliensis*

Size: 13-15 inches (33-38 cm)

Habitat: Africa; It is found in eastern Africa, its range including Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan and South Sudan at altitudes of up to about 2,000 m (6,600 ft).

It is a bird of woodland, scrubby areas, forest edges, and gallery forests, and among large trees such as Acacias growing in wadis.

Status: Least Concern. **Global Population:** 1,890,000 mature individuals with a decreasing population trend. The population is suspected to be in decline owing to destruction of large trees which provide nesting sites.

Diet: Mostly insects, including arthropods, millipedes, beetles and other invertebrates.

It forages on trunks and branches by creeping along the bark, sometimes upside-down, and probing into crevices.

Nesting: The Black-billed Woodhoopoe is very similar to the Green Woodhoopoe (*P. purpureus*) in appearance, but lacks the greenish gloss on the head and mantle and has a blackish beak rather than a red one, though there is sometimes a reddish tinge at the base of the beak. Its bill is slightly longer and more decurved than the Green or Violet Woodhoopoe. The sexes are similar, but the female is slightly smaller. The plumage is generally black with a bluish or purplish gloss, and a row of white spots on the flight feathers giving a white bar on the wings in flight. The long, graduated tail has white spots at the edge.

In northern Somalia breeding season is February through September, and in Ethiopia in January–September. Their mating behavior is not well-known, but group-living behavior like other woodhoopoes suggests a co-operative breeding system. A nest is created in the cavity of living or dead tree, either natural cavity or woodpecker hole, about 2–4 m above ground. There is no nesting material used beyond rotted wood in



cavity. There is usually a clutch of 3–5 eggs which are glossy turquoise-blue or greenish to grayish.

Cool Facts: There are three subspecies. These races differ slightly in plumage coloration; *abyssinicus* with crown and nape deep greenish-violet, mantle and breast greener, and bill red at base, especially on lower mandible.

- *P. s. somaliensis*. The nominate race is found in southeastern Ethiopia, Somalia and N Kenya.
- *P. s. neglectus*. It is found in central and southwestern Ethiopia. This race has the iridescence on its crown, nape and mantle greener and its back a brighter violet than the nominate.
- *P. s. abyssinicus*. It is found in northwestern Ethiopia and western Eritrea. This race has the iridescence on its crown and nape a deep greenish-violet. The mantle and breast are greener, and bill is red at the base, especially on lower mandible.

Common Name: White-headed Woodhoopoe

Scientific Name: *Phoeniculus bollei*

Size: 12-14 inches (30-35 cm)

Habitat: Africa; endemic to Burundi, Cameroon, Central African Republic, Democratic Republic of the Congo, Ivory Coast, Ghana, Guinea, Kenya, Liberia, Mali, Nigeria, Rwanda, South Sudan, Tanzania, and Uganda. [

Status: Least Concern. **Global Population:** 4,010,000 mature individuals with a decreasing population trend. The population is suspected to be in decline owing to ongoing habitat destruction.

Diet: Predominantly insectivorous, especially feeding on various arthropods (Larvae, beetles, ants, termites, grasshoppers, spiders, etc.) and invertebrates.

They search tree trunks for prey. Sometimes they also feed on berries and seeds.

Nesting: The female is smaller and has a shorter bill. The nominate race has its forecrown, face, chin and throat a buffish white. The remainder of the plumage is dark and iridescent, with much of the body plumage, rectrices and remiges tinged blue or blue-violet. The wing-coverts are coppery violet. There are no white in either the wings or tail as with other woodhoopoes. The bill is decurved and bright red. The eye is dark reddish-brown. The legs and feet are red.



These birds are very gregarious, forming groups of 2 to 10 individuals. They apparently breed almost throughout year, in both wet and dry seasons. In the east of its range in Kenya and Tanzania it nests only in mountain biotopes above 2000 m. The nests are located in a natural cavity in a dead or healthy tree, up to 40 meters above the ground.

Cool Facts: The bird's scientific species name *bollei* honors Carl August Bolle (1821-1909), a German naturalist and collector.

Subspecies include:

- *P. b. jacksoni*. First reported by Hartlaub in 1858. This race is endemic to the Ruwenzori Mountains to Sudan and Kenya. Its forehead, forecrown, face, chin and throat is white. The tertials are less violet than nominate.
- *P. b. bollei*. First reported by Carl August Bolle in 1858. The nominate race is found from Liberia to the Central African Republic.
- *P. b. okuensis*. First reported by Serle in 1949. It is endemic to Lake Oku in Cameroon. This race has its white restricted to the forehead, chin, upper throat, and sometimes the anterior part of ear-coverts.

Common Name: Forest Woodhoopoe
Scientific Name: *Phoeniculus castaneiceps*

Size: 10.2-11 inches (26-28 cm)

Habitat: Africa; endemic to Cameroon, Central African Republic, Republic of the Congo, Democratic Republic of the Congo, Ivory Coast, Ghana, Guinea, Liberia, Nigeria, Rwanda, and Uganda.

Status: Least Concern. **Global Population:** 2,770,000 mature individuals with a decreasing population trend. Threats to its continued existence consist of destruction of forest habitat. It probably no longer occurs in western Kenya, as a result of deforestation in that region. Several tracts of forest in western Uganda have also been largely or completely destroyed, almost certainly leading to this species' disappearance from those areas (it was considered fairly common there) before the habitat destruction.

Diet: Mostly arthropods, including adult beetles, cockroaches, spiders, ants and termites, caterpillars, various larvae and pupae. It also will consume small fruits, berries and seeds.

It almost always forages high in trees, above 25 m. It is agile, often creeping or hopping along narrow branches, twigs, epiphytes and creepers. It clings with its head down, hanging beneath the branches. It probes crevices for prey. It will also probe fruits and flowers for insects and open rolled-up leaves. Termites are usually captured in flight. The woodhoopoe generally forages alone or in pairs. It will join mixed-species flocks for foraging.



Nesting: This is a small and slender woodhoopoe with long tail. The nominate male has a rich chestnut head. Its back is an iridescent blue-green or green-blue and its tail is violet. The wings are a dark blue with a greenish gloss. There are no white

bars or spots on the wings or tail. Its lower breast and belly dull are greenish-black. Its bill is relatively short and straight, The gray bill, shades to black at its base, with some yellow along the cutting edges. Its eye is a dark brown and the tarsi and feet are gray to black. The female is smaller than male, and with less iridescence. The immature is like the female in Race *brunneiceps*, but duller and smaller than female in the nominate race.

Some birds, found in Ghana, the eastern portion of the DR Congo, Uganda and western Kenya have white heads (more resembling the white variant of Race *brunneiceps* and/or White-headed Woodhoopoe (*P. bollei*).

Nesting and breeding is poorly studied for this species. It nests in early April in Liberia and begins the breeding process in December in Uganda and the Democratic Republic of the Congo. The only known nest was sited in tree hole 35 m above ground in which the young was fed by both parents at ten-minute intervals.

Cool Facts: Taxonomy is uncertain in this species. Although some aspects of plumage indicate affinities with family *Phoeniculus* (Woodhoopoes), its size, bare-part colors and vocalizations (no rattle calls given) are closer to those of family *Rhinopomastus* (Scimitarbills), and species accordingly placed in this genus. Further DNA studies needed to clarify true generic affiliation. Race *brunneiceps* was closer to a separate species status, however, one of the stronger arguments in favor of this split was that birds with white heads occur only in this race, but recent evidence indicates that white-headed birds also occur in the nominate race as well. These birds are described by some scientists as Race *adolfifriederici*.

Currently, only two subspecies are recognized:

- *P. c. castaneiceps*. First reported by Sharpe in 1871. The nominate race (aka “Western”) is found in southeastern Guinea, Ivory Coast, Liberia, southern Ghana and southwestern Nigeria.
- *P. c. brunneiceps*. The “Eastern” race is endemic to southern Cameroon, southwestern Central African Republic and northern Congo through the Democratic Republic of the Congo to Uganda, and southward to Rwanda. It was formerly found in extreme western Kenya.

Common Name: Black Scimitarbill
Scientific Name: *Rhinopomastus aterrimus*

Size: inches (18-23 cm)

Habitat: Africa; endemic to Angola, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Republic of the Congo, Democratic Republic of the Congo, Ivory Coast, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo, and Uganda.

It is found in wooded savanna and dry bush country to the limits of trees. It avoids the forest. It is found from sea-level to over 2000 m.

Status: Least Concern. **Global Population:** 15,500,000 mature individuals with a decreasing population trend. The only current known threat posed by human activities is destruction of trees that species uses for foraging, nesting and roosting.

Diet: Mostly insects, including ants and their larvae, adult beetles, mantids, caterpillars, pupae, some spiders and small berries.



It forages in bushes and trees, mostly in the canopy on twigs, small branches and sometimes, trunks. It is seen occasionally on the ground.

It is an agile bird, hanging upside-down and dropping or diving vertically. It probes crevices and searches flowers for insects. It is seen solitary, in pairs or sometimes

small family groups (up to five individuals). It can also be found in mixed-species foraging parties.

Nesting: The Nominate race is mainly dark and iridescent, with its crown and face a deep blue. The nape, mantle, scapulars, rump and upper tail-coverts are violet. There is a broad white bar across primaries and the primary-coverts are also white. There is no white in the tail. The chin, throat, breast and belly are dull black, tinged with violet. The bill is decurved, black, paler along cutting edges with the gape yellow. The eye is dark brown and the legs and toes a dark grayish-black, (sometimes dark olive-green with yellowish soles). The female is less violet above and brownish-black below. The primary-coverts are more frequently black than in the male. The immature is duller than the adult, with brownish under parts, a shorter and less decurved black bill, and a shorter tail.

Cool Facts: It is also known as the Black Woodhoopoe. The races differ in shades of blue and violet and in amount of white on wings and tail.

- *R. a. aterrimus*. First reported by Stevens in 1826. The nominate race is found in southern Mauritania and Senegambia east to western Sudan, south to the northern Democratic Republic of the Congo.
- *R. a. emini*. It is endemic to the central Sudan to northeastern Democratic Republic of the Congo and Uganda. It is slightly larger than the nominate race. The wings and tail sometimes bluer, while the white of the primaries often restricted to inner webs. Fewer primary-coverts are white (and sometimes invisible on closed wing). The tail of some birds has the white subterminal spot or bar on outer feathers only.
- *R. a. notatus*. It is endemic to eastern Sudan, western Eritrea and Ethiopia (except in the far southeast). It is similar in size to Race *emini*, but bluer. There is no white on primary-coverts or white on innermost only. The tail has a variable broader white spot or bar on the outermost feathers.
- *R. a. anchietae*. It is endemic to southern Gabon, south-central Congo, the southern Democratic Republic of the Congo and Angola to western Zambia. This race is like Race *emini* as well. Its tail is longer and the bill is smaller. Its nape and mantle are a brighter violet-blue, and the wings and tail brighter blue. The white bar on the primaries is broader, but there is no white on the primary-coverts. The tail has a broad white subterminal band on the outer two rectrices, sometimes also on the third rectrix making it a very variable subspecies.



Common Name: Common Scimitarbill
Scientific Name: *Rhinopomastus cyanomelas*

Size: 10.2-12 inches (26–30 cm)

Habitat: Africa; endemic to Angola, Botswana, Burundi, Democratic Republic of the Congo, Kenya, Malawi, Mozambique, Namibia, Rwanda, Somalia, South Africa, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe.

It is found in dry thornbush country, palms, and wooded savanna. It is occasionally seen in thicker woodlands, including miombo, mopane, Acacia–Combretum and other mixed types, but it does avoid true forest and is rare in moister woodlands.

Status: Least Concern. **Global Population:** 8,880,000 mature individuals with a decreasing population trend. The only presently known threat posed by human activities is destruction of trees used for foraging, nesting and roosting. Present in numerous national parks, Akagera (Rwanda), South Luangwa (Zambia), Hwange and Mana Pools (Zimbabwe), Etoshaphoto (Namibia) and Kruger (South Africa).



Diet: Mostly insects, including ants and their larvae from ant-galls, flies, caterpillars, pupae, spiders, cockroaches, king crickets, small fruits, berries, tree seeds, and gecko eggs.

It forages on branches, twigs, foliage and flowers for insects. Some observations suggest that the sexes forage differently, reflecting on their variation in bill size. Males concentrate on main trunks and larger branches while females on smaller outer branches. It frequently hangs upside-down, and climbs down trunk head downwards, but usually lands low down on trunk before climbing initially. It probes small holes in galls of ant-gall acacia and sometimes forages on ground. It has been seen feeding on *Aloe marlothii* nectar in South Africa and drinking water trapped in the leaves of the same tree. It is often solitary, or in pairs to small family groups of 4–6 individuals. It will join mixed-species foraging flocks.

Nesting: The nominate male is dark, iridescent, with its crown and face a deep blue; the nape, mantle and rump are violet. There is a white bar across primaries, some

primary-coverts are white. White subterminal spots may be present or absent on the outer tail feathers. The under parts are dull black with blue tinge. The black bill is long, slender and strongly decurved. The iris is dark brown and the feet are black. The female is like male but smaller, and a little duller and browner below. Its bill is shorter. The immature is duller than adult with a short black bill.

Breeding generally occurs August–February. It is monogamous and a solitary nester; unlike other Woodhoopes-Scimitarbills no helpers at nest have ever been recorded. The nest is in tree cavity (either natural cavity or old woodpecker/barbet hole). Some material such as dead leaves and lichens are brought to nest. There is a clutch of 2–4 eggs laid at one-day intervals and incubated by female alone (provisioned by male at rate of 5-6 visits per hour) for 13–17 days. The female will remain at the nest with her young for 4-5 days when the male continues deliver food to female who then eats the feeds young. After that period, both parents forage, usually together, often returning to nest simultaneously, where each feeds young. Fledging occurs at 21–24 days.

Cool Facts: There are two subspecies of Common Scimitarbill:

- *R. c. cyanomelas*. The nominate subspecies is found in Angola, Namibia, Botswana and northern South Africa.
- *R. c. schalowi*. This race is endemic to southern Uganda, western and central Kenya and southern Somalia south to Zambia and northeastern South Africa (KwaZulu-Natal). This race is longer-tailed but shorter-billed. There is a broad white bar on inner web of primaries. The spot is present on the outer web of primaries 2–9 and the outer half of the primary-coverts is also white. The tail has a variable broad white subterminal bar on the outer three feathers.

Common Name: Abyssinian Scimitarbill

Scientific Name: *Rhinopomastus minor*

Size: 8.3-9.5 inches (21-24 cm)

Habitat: Africa; endemic to Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Tanzania, and Uganda.

It inhabits light woodland, dry Acacia bush and thorn-scrub, especially along dry watercourses. It is often seen in scattered trees in the open grassland in Somalia (1,000-1,300 m elevation).

Status: Least Concern. **Global Population:** 2,960,000 mature individuals with a decreasing population trend. The only known current threat posed by human activities is the destruction of trees used by the species for foraging, nesting and roosting in.

Diet: Mostly insects, including beetles (adults and larva), butterflies, ants, flies, wasps and occasionally, seeds and berries.

It forages on the trunks and branches of trees, probing crevices and under the bark for insects. It will also search flowers and fruits for insects. It descends trunks and will hang beneath branches. It can be seen often solitary, or in pairs to small family groups of 3-4 individuals (in which it moves between the trees in a "follow-the-leader" fashion).



Nesting: The plumage is mainly dark with the feathers on the upper parts having some violet-blue iridescence. The nominate race has its entire upper parts a violet-blue with a broad white bar on the primaries. There are no white spots on the tail. The under parts are slightly brownish. The bill is decurved and a bright orange. The

iris is dark brown and the feet are black. The female is similar to the male but is slightly smaller and duller with much browner below. The immature is duller than adult with brownish underparts and a shorter dusky bill darker at tip.

Most breeding occurs in the dry season; Somalia (April-July), Ethiopia (February–May), Uganda (January and April), and Kenya in (January–July). It is monogamous and a solitary nester with no helpers. It nests in a tree cavity with no nesting materials. The clutch is 2–3 eggs). This species is parasitized by the Greater Honeyguide (*Indicator indicator*).

Cool Facts: It is the smallest member of family and noticeably more slender. There are two recognized subspecies:

- *R. m. minor*. The nominate race is found in eastern Ethiopia (except in the southern part), Somalia and northeastern Kenya.
- *R. m. cabanisi*. This race is found in southeastern South Sudan, southern Ethiopia and Kenya south to central Tanzania. This race is larger than the nominate and its underside, in particular, may be duller. It also lacks the white bar on the primaries.

Common Name: Eurasian Hoopoe

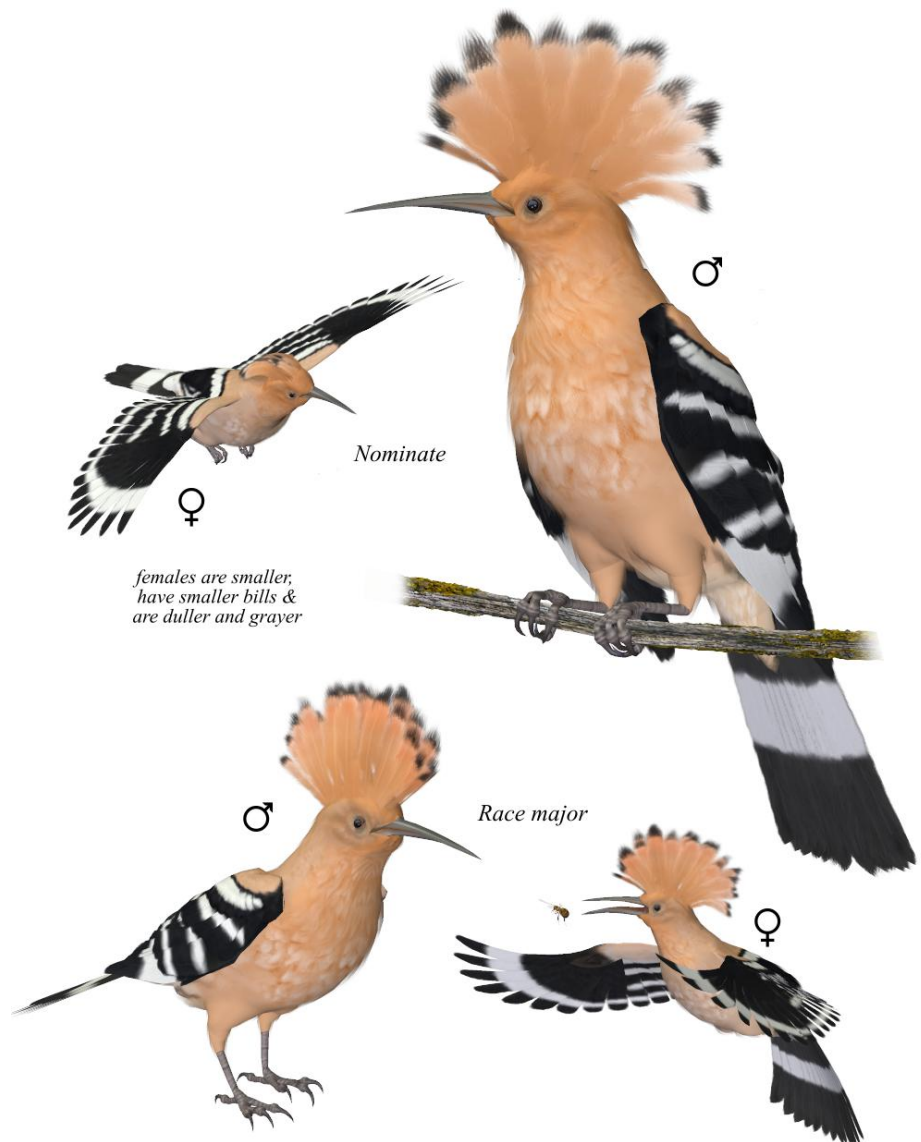
Scientific Name: *Upupa epops*

Size: 9.8-12.6 inches (25-32 cm)

Habitat: Europe, Asia and Africa; most European and north Asian birds migrate to the tropics in winter. In contrast, the African populations are sedentary all year. The species has been a vagrant in Alaska. Race *saturata* was recorded there in 1975 in the Yukon Delta. Hoopoes have been known to breed north of their European range, and in southern England during warm, dry summers that provide plenty of grasshoppers and similar insects, although as of the early 1980s northern European populations were reported to be in the decline, possibly due to changes in climate. In 2015, a record number of hoopoes were recorded in Ireland, with at least 50 birds recorded in the southwest of the country. This was the highest recorded number since 1965 when 65 individuals were sighted.

The hoopoe has two basic requirements of its habitat: bare or lightly vegetated ground on which to forage and vertical surfaces with cavities (such as trees, cliffs or even walls, nestboxes, haystacks, and abandoned burrows) in which to nest. These requirements can be provided in a wide range of ecosystems, and as a consequence the hoopoe inhabits a wide range of habitats such as heathland, wooded steppes, savannas and grasslands, as well as forest glades.

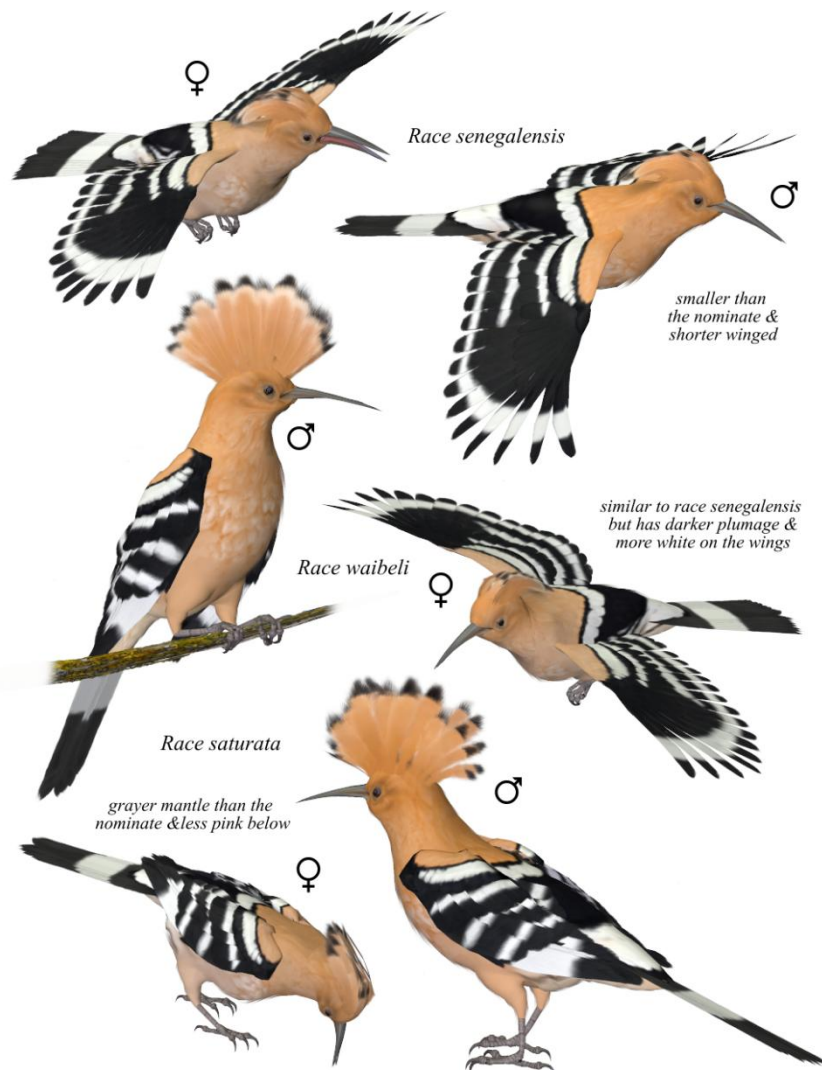
Status: Least Concern. **Global Population:** 78,300,000 to 104,000,000 mature individuals with a decreasing population trend. The species is declining throughout its range as a result of habitat destruction and over-hunting. The species is hunted in the Mediterranean region, Kuwait and in parts of south-east Asia. Hunting and disturbance in the northern Malay Peninsula may have resulted in recent declines.



Food quality and accessibility has been shown to affect reproductive success as has the availability of suitable nesting cavities as a result of habitat changes after agricultural intensification.

Diet: Mostly composed of insects, although small reptiles, frogs and plant matter such as seeds and berries are sometimes taken as well.

It is a solitary forager which typically feeds on the ground. More rarely they will feed



in the air, where their strong and rounded wings make them fast and manoeuvrable, in pursuit of numerous swarming insects. More commonly their foraging style is to stride over relatively open ground and periodically pause to probe the ground with the full length of their bill. Insect larvae, pupae and mole crickets are detected by the bill and either extracted or dug out with the strong feet. Hoopoes will also feed on insects on the surface, probe into piles of leaves, and even use the bill to lever large stones and flake off bark. Larger prey items are beaten against the ground or a preferred stone to kill them and remove indigestible body parts such as wings and legs.

Nesting: The species is highly distinctive with long, thin, decurved bill,

a large crest, black-and-white rounded wings, and a broad black tail with a white band near base. Visible in flight, white and black bands are on the inner wing and wholly black primary-coverts and primaries. The male nominate is a pale sandy-buff, tinged pinkish-orange below. The feathers of the crest have white subterminal spots and black tips. There is a white band across tips of the primaries and white tips on the inner primaries. The bill and feet are gray and the legs are short. Sexes are similar except the female is slightly smaller and duller, the throat more whitish and the bill shorter than the male. The juvenile is like the female, but its crest and bill are shorter and duller.

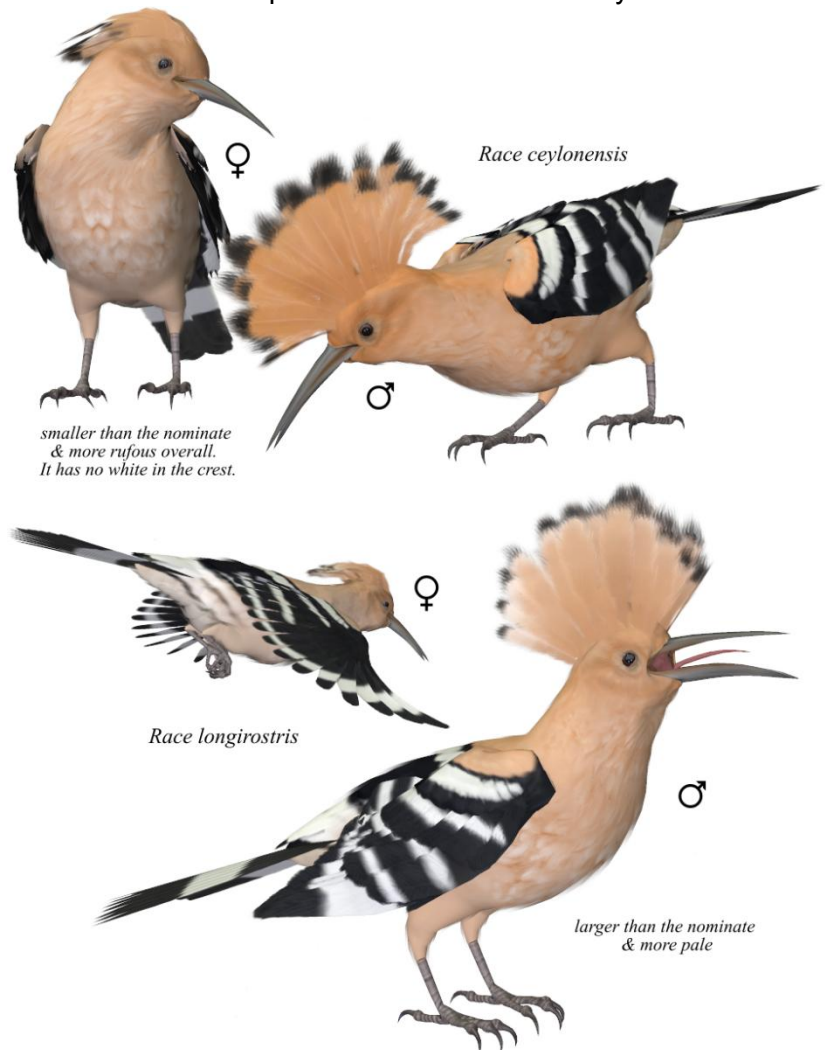
It is a monogamous, solitary and territorial breeder. It nests in cavities and lays 4-7 eggs. The incubation period is about 15–18 days and about 24–32 days to brood.

Cool Facts: In what was long thought to be a defensive posture, hoopoes like to sunbathe by spreading out their wings and tail low against the ground and tilting their head up. They often fold their wings and preen halfway through. They also enjoy taking dust and sand baths.

The strengthened musculature of the head allows the bill to be opened when probing inside the soil. The hoopoe has broad and rounded wings capable of strong flight; these are larger in the northern migratory subspecies. The hoopoe has a characteristic undulating flight, which is like that of a giant butterfly, caused by the wings half closing at the end of each beat or short sequence of beats. Adults may begin their moult after the breeding season and continue after they have migrated for the winter.

Subspecies include:

- *U. e. epops*. First reported by Linnaeus in 1758. The nominate subspecies is found in Northwest Africa, the Canary Islands, and from Europe through to south central Russia, northwest China and south to northwest India.
- *U. e. major*. First reported by C.L. Brehm in 1855. This race is endemic to Northeast Africa. It is larger than the nominate, longer billed, has a narrower tail-band and grayer upper parts.
- *U. e. senegalensis*. First reported by Swainson, 1913. This race is found from Senegal to Ethiopia. It is smaller than the nominate and shorter winged.
- *U. e. waibeli*. First reported by Reichenow in 1913. It is found from Cameroon through to north Kenya. It is similar to race *senegalensis* but has darker plumage and more white on the wings.
- *U. e. saturata*. First reported by Lönnberg in 1909. This race is endemic to Japan, Siberia to Tibet and southern China. It is like the nominate, but has a grayer mantle, and less pink below.
- *U. e. ceylonensis*. First reported by Reichenbach in 1853. This race is found throughout the Indian Subcontinent. It is smaller than the nominate, and more rufous overall. It has no white in the crest.
- *U. e. longirostris*. First reported by Jerdon in 1862. This race is found in Southeast Asia. It is larger than the nominate and more pale.



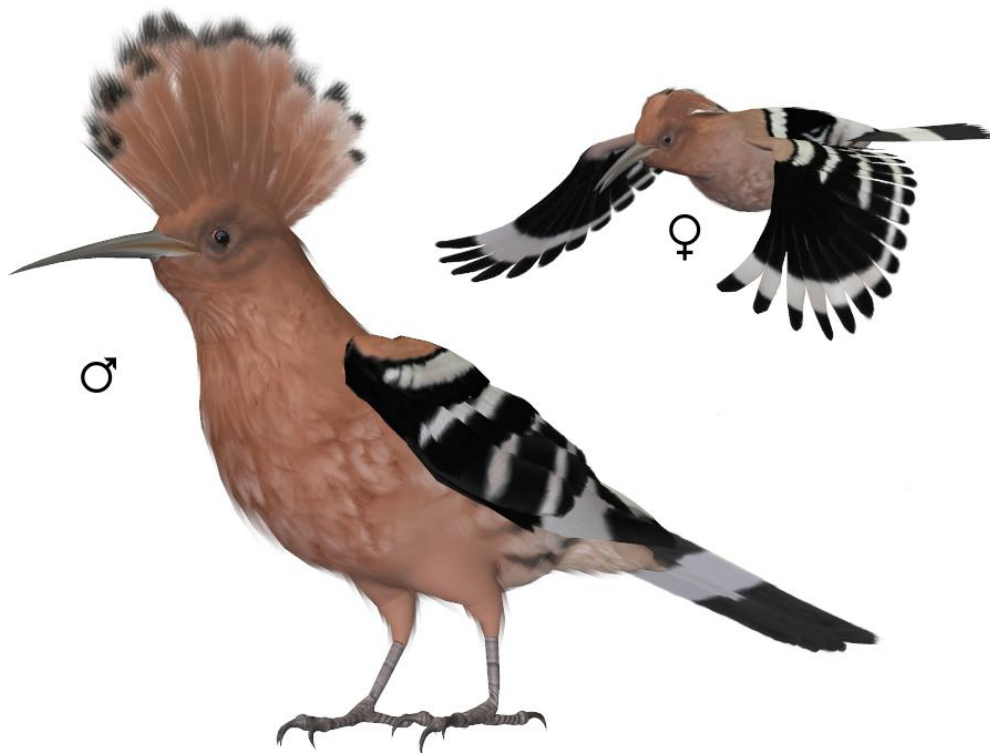
Common Name: African Hoopoe

Scientific Name: *Upupa africana*

Size: 9.8-11.4 inches (25-29 cm)

Habitat: Africa; The African Hoopoe is widely distributed throughout South Africa, as well as from Central Democratic Republic of Congo to Central Kenya and all the way south of the Cape of South Africa. They have even been recorded as far north as the Portuguese islands of Porto Santo. A list of countries where the African Hoopoe has been seen is as follows: South Africa, Lesotho, Eswatini, Namibia, Botswana, Zimbabwe, Mozambique, Angola, Nigeria, Zambia, Malawi, Tanzania, Kenya, Saudi Arabia, Portugal and the southern half of the Democratic Republic of the Congo and recently in Tamil Nadu, the southern part of India. Therefore, they are considered to be of least concern according to the IUCN red list. Although they are of least concern, populations are decreasing and Common Starlings have begun outcompeting them for nesting sites in urban areas. Even though the Eurasian Hoopoe migrates, African Hoopoes do not migrate although some may travel short distances within South Africa and other Southern African countries.

The African Hoopoe prefers open and bushy areas, including thornveld, a landscape with mostly thorny bush and trees, and riverine woodlands in dry areas. It inhabits broadleaf forests and savanna.



Status: Least Concern. **Global Population:** mature individuals with a decreasing population trend.

Diet: Mainly insects. These include Coleoptera, which are beetles, Dermaptera (earwigs) and Orthoptera, grasshoppers, locusts and crickets. Besides these, small

reptiles have been found to be fed to chicks as well as worms, slugs, and small snakes. Small seeds and berries may even be eaten.

To find the insects, the African Hoopoe uses its long beak to penetrate the soil and then may whack the insect or prey onto the ground to break it up into smaller pieces. They prefer to do this in shorter grass. Unlike the rest of the year, African Hoopoes maintain a specific territory throughout the breeding season in which they feed.

Nesting: African Hoopoes have a crown also called a crest which is usually chestnut colored with black on the tips. This crown will raise when the bird has been startled or disturbed, especially when eating. No eyerings or eye-stripes are present, but the bill is long, dark and narrow and slightly down curved. These birds do exhibit sexual dimorphism, therefore the male and female are different colors. The male is typically fully chestnut colored, whereas the female has a grayer body. Both males and females have black and white stripes on their wings and tail which are rounded. This black and white striped pattern leads to a V-formation on their backs. The juveniles are colored similarly to females except they have shorter beaks. You'll notice in adults, the beaks are about the same size of the head.

The African Hoopoe doesn't make its own nest but rather finds holes that are just slightly larger than their bodies to nest. It seems possible that the nests are chosen by males but haven't been studied efficiently enough. The nests are also usually found from the ground to a maximum of about eight meters above the ground.

These birds are double brooded, meaning they may have two sets of chicks per year. Within these broods, 4 to 7 eggs will be laid which are smooth when freshly laid but become rougher. They are also blue-green when laid compared to a faded color after laying. Another bird, the Greater Honeyguide may actually use the nests of African Hoopoes to lay their own eggs making them brood parasites

Cool Facts: It was previously considered as a subspecies (*Upupa epops africana*) of the Eurasian Hoopoe, due to its vocalizations and varying amounts of white in wing, and other minor differences of color pattern in plumage, it is otherwise similar to that species.

Common Name: Madagascar Hoopoe

Scientific Name: *Upupa marginata*

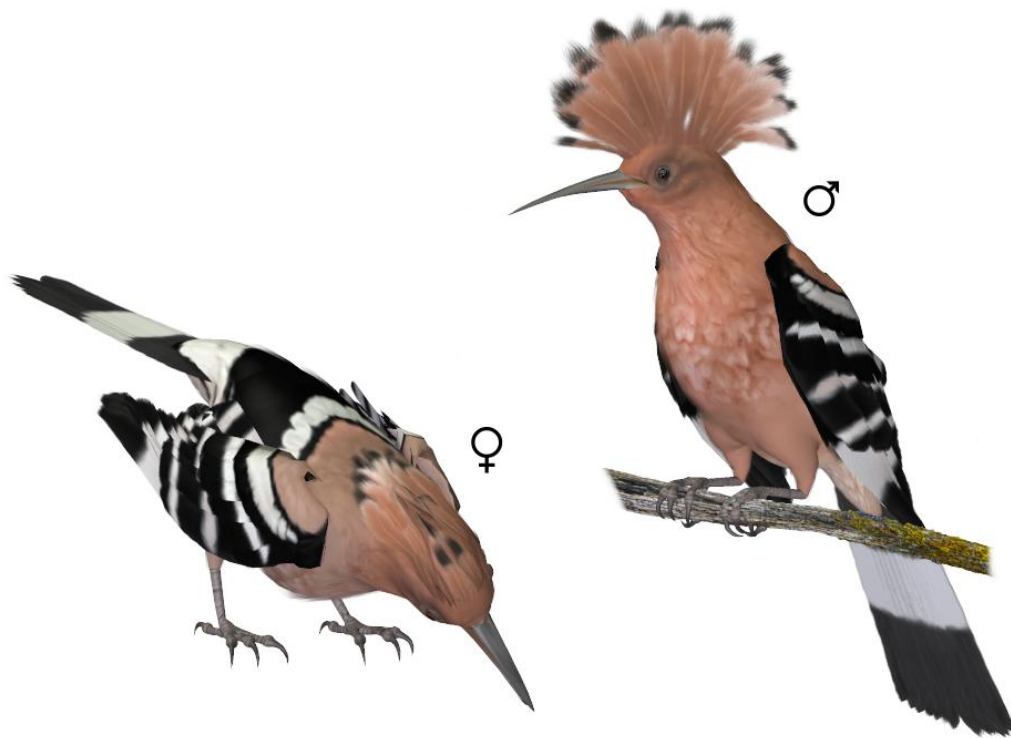
Size: 12.6 inches (32 cm)

Habitat: Africa; endemic to Madagascar where its range includes the north, west, central and southern parts of the country, while it is largely absent from the east.

It inhabits the edges of forests, clearings, glades, savannah, pasture and brushland.

Status: Least Concern. **Global Population:** 689,000 mature individuals with a decreasing population trend.

Diet: Mainly insects. These include Coleoptera, which are beetles, Dermaptera (earwigs) and Orthoptera, grasshoppers, locusts and crickets.



The Madagascar hoopoe usually occurs alone or in pairs, foraging on the ground, walking a few steps and then looking around, bobbing its head, probing the soil and leaf litter with its beak, picking items off the surface of the ground, probing dung and investigating crevices. Its diet consists mainly of insects such as beetles and flies and their larvae, grasshoppers and caterpillars. When disturbed it may fly to a horizontal branch where it perches, flashing its wings and raising and lowering its crest.

Nesting: It has a long, decurved bill, and cinnamon-colored plumage, the wings being boldly barred in black and white. The tail is black and a long, cinnamon crest with black-tipped feathers can be raised when the bird is alarmed. The wings are broad and rounded; the characteristic flight consists of a few beats after which the wings are folded momentarily and the bird glides, before resuming flapping. The female is slightly duller in color than the male, with less white on the wings. Compared to the African hoopoe, it is larger, has a longer tail and a pinker throat.

The song differs markedly from the African hoopoe's "*hoop-hoop-hoop*", being described as a low cooing trill "*rrrrrrroow*", dropping slightly, lasting 1.5–2.5 seconds, repeated every 3–10 seconds"

This species is monogamous and territorial. Breeding takes place between August and December, mostly during October and November. The nest is in a deep cavity in a tree, often within 3 m (10 ft) of the ground. Little nesting material is used and the hole becomes messy and smelly before the young fledge. One nest had a clutch of six bluish-gray eggs. Incubation may possibly be done solely by the female, and the partner has been observed feeding the incubating bird. In other species of hoopoe, the incubation period is 15 to 16 days and the fledging period 26 to 32 days. Both parents are involved in feeding the young.

Cool Facts: It was previously considered a subspecies (*Upupa epops marginata*) of the Eurasian Hoopoe, but was split due to its vocalizations and small differences in plumage.

Special Thanks to my beta testers...

Alisa and FlintHawk

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.

Sources for this Volume and Field Guide

Books, Magazines and Papers

Websites

- **Wikipedia** (<http://www.wikipedia.com>)
- **Cornell Labs Birds of the World** (<https://birdsoftheworld.org>)
- **Birdlife International** (<http://www.birdlife.org>)

**Shirts, jerseys, sweatshirts,
prints, cards, posters, pillows,
coffee cups, calendars & more**

