

= Long @-@ tailed ground roller =

The long @-@ tailed ground roller (*Uratelornis chimaera*) is a species of bird in the ground roller family Brachypteraciidae , placed in the monotypic genus *Uratelornis* . Endemic to arid spiny forests near the coast in southwestern Madagascar , this ground roller occurs at extremely low population densities throughout its habitat . This species requires shade and a deep layer of leaves on the ground , and it is absent from parts of the spiny forest lacking these features . It has no recognized subspecies , and its closest relative is the scaly ground roller . The long @-@ tailed ground roller is the only ground roller to definitively display sexual dimorphism (differences in plumage or size between sexes) . It is a medium @-@ sized bird with a plump silhouette and a long tail . The upperparts are dark brown with black streaks while the underparts are light gray . The white throat is framed by black malar stripes and a black breastband , and a white stripe is present at the base of the bill . Sky @-@ blue feathers are visible at the edge of the wings and the tail . Calls are rarely made outside of the breeding season , though multiple courtship calls are made .

These ground rollers feed primarily on invertebrates , including ants , beetles , butterflies , and worms , which they find by searching through deep leaf litter or by remaining still and watching attentively . The ground roller primarily runs through its habitat on its strong legs , as its wings are relatively weak . The long @-@ tailed ground roller is a monogamous species , and it defends a territory during the breeding season of October to February . The species digs a tunnel in the sand , at the end of which is a wider chamber where it makes its nest out of leaves and earthy pellets . Two to four eggs are laid . After the chicks fledge , the birds continue living in family groups until at least February before dispersing more widely across the scrubland .

This bird is classified as vulnerable by the IUCN and is threatened by habitat destruction . The arid spiny forests in which it lives are not protected by the Malagasy government , and as such the bird is losing habitat to slash @-@ and @-@ burn agriculture , charcoal collection , and logging . This ground roller is also hunted by the native peoples of Madagascar .

= = Taxonomy = =

British banker and naturalist Walter Rothschild first described the long @-@ tailed ground roller in 1895 , giving it the scientific name *Uratelornis chimaera* ; Rothschild published his description in *Novitates Zoologicae* , the periodical of his private museum . The adaptations required for the ancestral long @-@ tailed ground roller to inhabit scrubland led Rothschild to create the monotypic genus *Uratelornis* for the species in his description . The genus name *Uratelornis* is derived from the Ancient Greek word *oura* " tail , " and *atelornis* in reference to another genus of ground roller . *Atelornis* comes from the Ancient Greek words *ateles* " indeterminate or incomplete , " and *ornis* " bird . " The specific name , *chimaera* , is a reference to the Ancient Greek mythological creature known as the chimera . The long @-@ tailed ground roller is placed in the ground roller family , which gets its common name due to its similarity to the rollers and its largely terrestrial nature . Until recently the ground rollers , cuckoo roller , and rollers were all placed in a single family , Coraciidae , in which each of the three groups formed a subfamily . In 1971 , Joel Cracraft proposed a separate family for the ground rollers based on significant differences in behavior , plumage , and post @-@ cranial anatomy between the groups . This position is supported by DNA evidence . It has been suggested , but not widely accepted , that ground rollers are closely related to the puffbirds and jacamars . It has been speculated that the ancestor of the long @-@ tailed ground roller was an arboreal roller that crossed over from Africa to Madagascar and developed a terrestrial lifestyle before moving from the rainforests into the long @-@ tailed ground roller 's arid scrubland . No fossils have been found for this genus , and genetic analysis suggests that this bird 's closest relative is the scaly ground roller . The long @-@ tailed ground roller has no subspecies .

= = Description = =

The long @-@ tailed ground roller 's silhouette is highly distinctive due to its long tail and plump

silhouette . The bird is 34 to 47 centimeters (13 to 19 in) long , although its tail can contribute up to 30 centimeters (12 in) of the length , which makes it the longest tail of any of the ground rollers . This ground roller has short wings and long , pinkish @-@ brown legs . The male has a sandy buff crown and dark brown upperparts with black streaks . Its supercilium is a pale buff color , while the ear @-@ coverts are brown . The eyes are brown , while the short and stout beak is black . Its tongue is long with a brush @-@ like tip to help it collect insects . A white stripe is present at the base of the bill and is surrounded by brown and black malar stripes . These malar stripes and the black breastband frame a white throat . The tail has 15 to 20 dark brown bars marking it , while the outer rectrices are sky blue ; this sky blue is also present on the wing @-@ coverts . In flight , the bird 's two black and white bands on the primaries and secondaries are conspicuous . The underparts are a light gray , and the breast white . The toes are zygodactylous , with the first and fourth toes turned outwards and the middle two toes turned inwards . The female resembles the male , but is smaller and has a narrower chestband and a shorter tail . Also , the female loses her tail while nesting . These differences make the long @-@ tailed ground roller the only ground roller to definitively display sexual dimorphism . Juveniles of both sexes resemble the adult female , but have duller plumage , particularly in the black bands on the chest , neck , and eyes .

Although it is generally a silent species , during the breeding season the vocalizations of the long @-@ tailed ground roller include a " hooting " sound , a " popping " tu @-@ tuc , and a soft boo sound . The low @-@ pitched " hooting " is given by males from a perch 2 to 6 meters (6 @-@ 6 to 19 @-@ 7 ft) above the ground at dusk or at night . The sound carries for a distance of at least 200 meters (660 ft) and may either attract a mate or defend a territory . The bird pumps its tail while giving this call . One territorial call is a series of soft boo notes , typically coming in sets of six to ten and descending in volume near the end . Another call , given by both sexes , is a series of chuckling tu @-@ tuc sounds lasting between 10 and 40 seconds that occasionally ends in a loud snapping sound produced by the wings . This call is given when birds are close to each other either on the ground or on low perches , and it does not carry over long distances . The use of wing @-@ snapping to produce a sound is a rare phenomenon in birds , and in the order Coraciiformes only one other family , the todies , is known to do it . Low gu notes are given by mates as they come in contact with each other .

= = Distribution and habitat = =

Endemic to the island nation of Madagascar , the long @-@ tailed ground roller inhabits a narrow strip of suitable habitat by the coast in the southwestern part of the island . This strip is bordered by the Mangoky River in the north , the Fiherenana River in the south , and lowland hills in the east . It totals about 10 @-@ 500 square kilometers (4 @-@ 100 sq mi) in area ; however , the species is extremely uncommon within its range and occurs at densities of about 0 @-@ 8 to 10 per square kilometer (2 @-@ 1 to 25 per square mile) . This area ranges in elevation from sea level to 100 meters (330 ft) . The long @-@ tailed ground roller does not migrate , though it may disperse across a larger area outside of the breeding season .

This species ' prime habitat is spiny forest , a mix of sub @-@ arid thorn @-@ scrub and deciduous woodland that only receives on average 500 millimeters (20 in) of water a year and is covered in sandy soil . The dominant plants in these spiny forests belong to the cactus @-@ like Didiereaceae family (especially *Didierea madagascariensis*) and more tree @-@ like Euphorbiaceae family (especially *Euphorbia stenoclada*) . Baobab trees are also prevalent . It was formerly believed that the long @-@ tailed ground roller preferred an undisturbed forest habitat , while tolerating small amounts of disturbance . Later studies have concluded that it actually prefers degraded habitat . Despite this , shade is necessary , and the species is not found in deforested habitat or on the shadeless dunes prevalent in its range .

= = Ecology and behavior = =

The long @-@ tailed ground roller is a shy and elusive bird and , if seen by a human observer , it

either freezes or runs away . As its short wings suggest , the species rarely flies , but it is a powerful runner . While largely terrestrial , it roosts in low trees and bushes , and sings from low perches . Long @-@ tailed ground rollers are solitary outside the breeding season . Although diurnal , it does occasionally forage at night unlike most other ground rollers . When calling , this ground roller bobs its head and raises its tail . The long @-@ tailed ground roller also raises its tail when it is excited .

= = = Diet = = =

This species forages almost exclusively from the ground , where it alternates between remaining still and watching attentively and actively searching for it by rummaging through deep leaf litter . It eats a wide range of invertebrates , including ants , beetles , butterflies , caterpillars , cockroaches , grasshoppers , woodlice , and worms , and occasionally small vertebrates . Despite the long @-@ tailed ground roller 's poor flying abilities , it has been seen catching butterflies in midair .

= = = Reproduction = = =

The breeding season coincides with the rainy season , which lasts from October to January . During this period this bird abandons its solitary habits to find a mate , with which it remains monogamous . Males form territories during the breeding season , and they defend their area with territorial calls . These calls are given from a perch up to 6 meters (20 ft) off the ground for an hour after sunrise and occasionally throughout the day and night . During courtship , males have been observed feeding the female .

Male and female long @-@ tailed ground rollers use their bills and feet to excavate a burrow in consolidated , flat sand and construct their nest at the end of it . The burrow , always constructed away from grassy vegetation , is downward @-@ sloping and is between 0 @-@ 8 and 1 @-@ 2 meters (2 @-@ 6 and 3 @-@ 9 ft) long with a diameter of 8 centimeters (3 @-@ 1 in) . The end of the burrow widens into a 20 @-@ centimeter (7 @-@ 9 in) wide chamber with a shallow depression covered in dry leaves and earthy pellets . When digging its nest , the long @-@ tailed ground roller occasionally walks underneath a low branch , tilts its head upwards , and , while remaining motionless , releases a rising crescendo of its tu @-@ tuc calls . At the height of the crescendo the bird breaks off its call and flies upwards onto the branch while producing a " ripping and crackling sound " with its wingbeats . From the perch the bird releases a stream of boo notes . This display is thought to be part of a courtship ritual . Each pair digs one to six nesting burrows during the breeding season ; the extra burrows are known as speculative burrows .

Between October and January , and peaking in November , the species normally lays two smooth , white eggs , though sometimes it lays three or four . The incubation period and fledging time of this ground roller is unknown . After the young fledge , they live in a family group of four to five birds until approximately February , at which point the family disperses .

= = Conservation = =

Classified as vulnerable by the IUCN due to ongoing habitat destruction and a decline in the quality of the remaining habitat , the long @-@ tailed ground roller is believed to be the most threatened species of ground roller . Thirty percent of its already small habitat area was degraded between the mid @-@ 1970s and 2000 . Slash @-@ and @-@ burn agriculture , charcoal production , logging , and cattle grazing have all contributed to the loss of habitat . As of 2012 , no reserves protect any portion of its habitat , and as a result its habitat has been described as the area of Madagascar most in need of conservation efforts . It is also threatened by both hunting and egg @-@ collecting . In addition to humans , dogs hunt this species , and the introduced black rat is a nest predator . This ground roller is capable of tolerating some habitat disturbance , but requires a suitable amount of shade and leaf litter to continue living in the area . Although it was fairly common at the beginning of the twentieth century , its population went into decline and it was considered rare by the 1960s . As of 2012 , the estimated population of the long @-@ tailed ground roller is between 9 @-@ 500 and

32 @, @ 700 birds and declining .

= = Relationship with humans = =

As the long @-@ tailed ground roller is remarkably silent and difficult to see during the non @-@ breeding season , the local inhabitants of Madagascar once believed that this bird hibernated in its burrows . While not particularly tasty , this species is hunted for food due to its large size and the relative ease of capture compared with arboreal birds . In the early twentieth century , it was hunted by herdsman with blowguns . In the 1950s and 1960s , natives trapped this ground roller and dug out its nesting burrows . This bird has been featured on several of Madagascar 's stamps . Only one zoo , Germany 's Weltvogelpark Walsrode , keeps this species . It is considered by birdwatchers to be one of the world 's most elusive birds .