on the brink

AFRICA'S MOST ENDANGERED BIRDS

The IUCN threat category of Critically Endangered is the last resting place for many species before they pass through the final gateway to extinction – gone forever. Critically Endangered species are those defined as facing an extremely high risk of extinction in the wild in the immediate future. Today, worldwide, 190 bird species fall in this category, 27 of which breed in Africa. One of the strategies that has been put in place (by BirdLife International) to help conserve rare birds is the establishment of Important Bird Areas (IBAs). In Africa there are 1 228 IBAs; however, 43 per cent of them have no legal recognition or protection and one half of them are threatened by agriculture.

PHIL HOCKEY explores the factors that are responsible for driving the 27 Critically Endangered African bird species to the brink of extinction. ▷

Tristan Albatross. The world breeding population (about 1 500 pairs per year) of this Critically Endangered species is confined to Gough and Inaccessible islands and is decreasing. The main threats it faces are predation of chicks by introduced mice and mortality at longliners. Prognosis: poor.

PETER RYAN

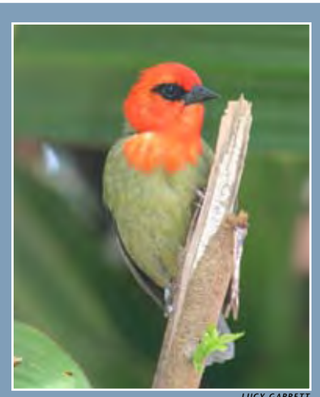
So far as is known, not one bird species has become extinct in mainland Africa since 1600, a continent-level record shared only with Antarctica. The story on Africa's satellite islands is a very different one, with 35 species having passed through the portals of eternity in the same period (see *Africa – Birds & Birding* 6(2):36–40). Although only three of these island extinctions occurred in the 20th century, the most recent being the Aldabra Warbler *Nesillas aldabrensis* in 1986, the cumulative effects of extinctions over the past four centuries have been severe. The Mascarenes, for example, are thought to have lost no fewer than 28 species, with Mauritius and Rodrigues experiencing 10 extinctions each.

In recent years, rigorous management on Mauritius has risen to new heights, with a habitat-restoration and predator-removal project taking place on the offshore island of Île aux Aigrettes. This has provided sanctuary for two other Critically Endangered species, Mauritius Fody and Mauritius Olive White-eye. Hand-reared chicks of both species have been released on the island since 2005, and have established local breeding populations. Île aux Aigrettes now supports approximately half the world population of the Mauritius Fody.

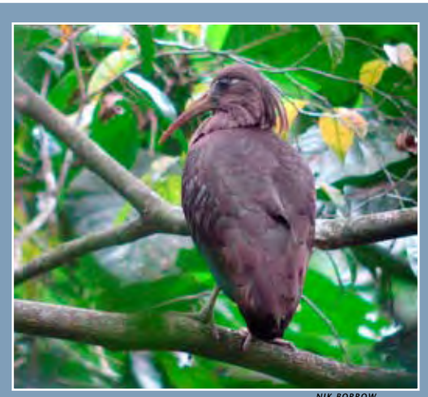
With the exception of Madagascar (which has experienced only two post-1600 extinctions, one of which was on an offshore island), most of Africa's satellites are small, with the inevitable consequence that their endemic bird species have small global ranges, placing them at threat from persecution, alien species, and habitat loss and degradation. Relative to their 35 post-1600 extinctions, Africa's satellites, extending from Gough and St Helena islands in the west to the Seychelles in the east, are currently home to 18 Critically Endangered birds. With one exception, these species have breeding ranges of less than 1 000 square kilometres. At least 13 of them have breeding ranges of less than 100 square kilometres; the known breeding range of Madagascar Pochard is only one square kilometre (although probably larger), and the entire world population of the Cape Verde Islands' Raso Lark occupies only two square kilometres.

Coupled with small ranges, some of these island species also have very small populations: Madagascar Pochard, Alaotra Grebe (possibly extinct), São Tomé Fiscal and São Tomé Grosbeak are all thought to have populations numbering less than 50 birds.

São Tomé Grosbeak MARTIM DE MELO



Mauritius Fody LUCY GARRETT



Dwarf Olive Ibis NIK BORROW

São Tomé Fiscal JONATHAN ROSSOUW

ISLAND POPULATIONS TROUBLED & SAVED

Even in the past 40 years there have been some close calls on the islands. Mauritius has almost lost three species since the 1970s, all of which have been saved by combinations of captive breeding and habitat management. By 1974, the wild population of Mauritius Kestrels *Falco punctatus* had fallen to four birds, only two of which were a breeding pair. Today the population has recovered to between 800 and 1 000 birds, probably almost as many as the island can support. By the early 1970s, numbers of Mauritius Parakeets *Psittacula eques* had dropped to about 10 birds which, for a 15-year period, appeared to suffer almost total breeding failure in the wild, raising grave fears about an inevitable extinction. By 2007, the population had recovered to around 350 birds. Numbers of the iconic Pink Pigeon *Nesoenas mayeri* had crashed to only about 10 wild birds in 1990. Today, thanks to intensive conservation measures, numbers are approaching the 400 mark.

These super-rare island birds have interesting histories. The Madagascar Pochard was common at Lake Alaotra up until at least the 1930s, but was thought to have become extinct in the 1960s. The capture of a single male in 1991 gave hope for the species' survival, at least in the short term. This hope faded, however, when more than a decade passed without another record. Then, in 2006, at least 20 adults and nine young were discovered at a lake some 350 kilometres north of Lake Alaotra (the core of the species' historical range), raising the possibility that there may be other, undiscovered populations in remote regions of northern Madagascar.

The story of the co-occurring Alaotra Grebe is less encouraging. This species was last seen (on Lake Alaotra) in 1985. Even though the lake was declared a Ramsar site in 2003, a combination of gill-netting, introduced alien fish, rice farming, lakeside soil erosion and deteriorating water quality probably means that this measure came too late for the grebe.

But there is always some hope. Until recently, the São Tomé Fiscal was known from only two records – the Type specimen collected in 1888 and a record in 1928. In 1990, more than 60 years after the latter record, the species was rediscovered and, since 1994, there have been several sightings from diverse localities.

Finally, the São Tomé Grosbeak has an almost more bizarre story. After being described to science on the basis of a single specimen collected in the 1880s, this species was not seen again until 1991; even now it is only seen infrequently.

THE CHANGING FACE OF THREAT

In the early days of European colonisation of the tropics, many island birds such as the Dodo *Raphus cucullatus* and the Dutch Pigeon *Alectroenus nitidisima* had their fates sealed by direct persecution, coupled with the introduction of predators. As time passed, however, the nature of the threats changed.

Today, some Critically Endangered island birds, including the Dwarf Olive Ibis, Madagascar Fish-Eagle, Anjouan Scops-Owl and Réunion Cuckoo-Shrike, are still hunted. However, by far the most pervasive threats of the 21st century are habitat loss and degradation, and introductions of alien species (see table, page 59), in some cases exacerbated by climate change. Forest clearance (usually for subsistence agriculture) and invasion by alien predators, ranging from monkeys to cats and mice, typify the threats to most island taxa. ▷

Madagascar Fish-Eagle PETE OXFORD

CHRISTER SUNDSTRÖM

Seychelles Paradise-Flycatcher is Critically Endangered. Its world breeding population (less than 300 birds) is confined to La Digue, Seychelles, where it is increasing. Habitat loss and degradation (exacerbated by housing developments and tourism), as well as nest predation by introduced mammals, are the main threats faced by this species. Its prognosis for survival is good, and it is likely to be introduced to other islands in the near future.

The risks of forest loss are amply illustrated by the scops-owls of the Comoro Islands. Both the Moheli and Grand Comoro scops-owls have been driven by habitat loss into ever-decreasing ranges: the former is confined to a single mountain ridge and the latter to the slopes of a single, active volcano. Interestingly, the Anjouan Scops-Owl, thought to have become extinct at about the time of its discovery in the 1880s, was rediscovered more than 100 years later, in 1992. The forests of Anjouan are heavily degraded, yet this species, by far the rarest of the Comoran scops-owls, seems able to persist. Whether it is able to breed successfully in badly degraded forests remains unknown.

So ubiquitous are the threats of forest loss and alien species to African island birds that there are rather few exceptions. Tristan Albatrosses are threatened not only by introduced house mice *Mus musculus* (as are co-occurring Gough Buntings), but also by heavy mortalities at long-lining vessels, especially off the coast of southern Brazil. The Seychelles Paradise-Flycatcher, although historically affected by habitat loss and alien predators, now probably faces its greatest threats from housing development and tourism.

Among all the island taxa, one is threatened for a unique combination of reasons. The St Helena Plover (closely related to Kittlitz's Plover *Charadrius pecuarius*) preferentially forages on short-grazed grassland, itself, at least today, a product of livestock grazing. In recent years, however, livestock farming on the island has become increasingly unprofitable and stocking densities have been reduced. This has led to grasses growing taller, and at least one site becoming encroached with bushes. Just to add to the species' problems, eggs are preyed on by introduced Common Mynas *Acridotheres tristis*, adults are killed by feral domestic cats, and housing and the use of off-road vehicles threaten breeding sites. Taken cumulatively, it is perhaps not surprising that numbers of St Helena Plovers have plummeted by 50 per cent since the 1980s and continue to fall.

THE UNCERTAINTY FACTOR

Because many islands are small, it is reasonable to expect that their birds might be better known (that there would be fewer undiscovered species) than those of large, especially tropical, mainland regions. This seems to be borne out by history. In the 50 years between 1946 and 1995, 46 new birds were described from Africa, and not one of these was from an island (see *Africa – Birds & Birding* 2(1):39–44). The following year (1996), however, saw the description of Cryptic Warbler *Cryptosylvicola randrianasoloi* from Madagascar (a species that had been misidentified for years) and, in 1998, the Moheli Scops-Owl was described from the Comoro Islands.

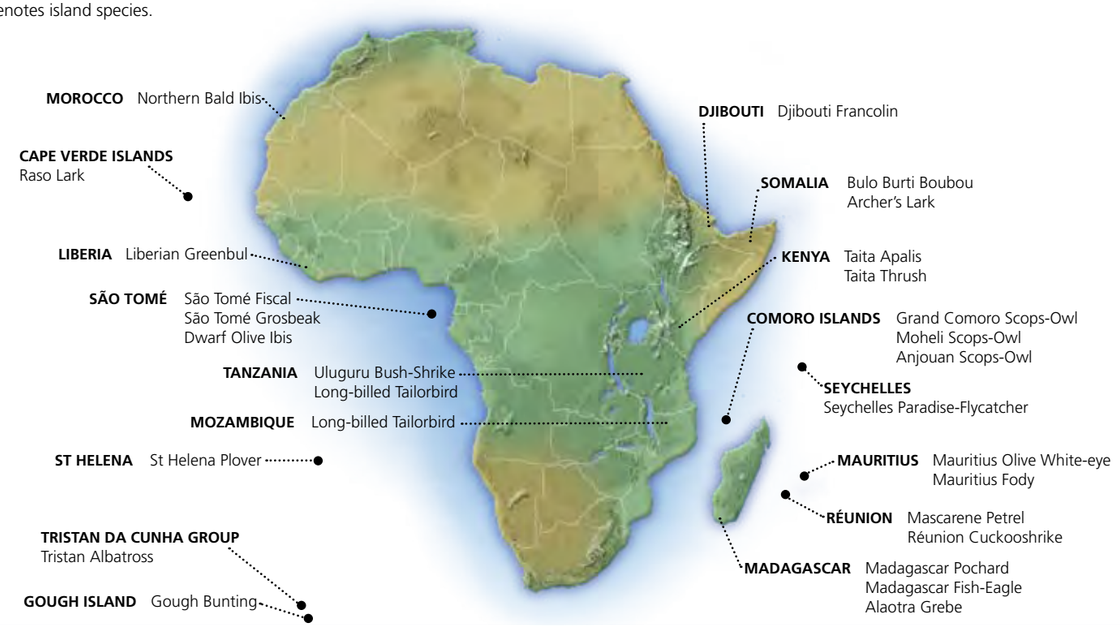
Moving from the islands to the mainland, the 'uncertainty factor' increases, especially when trying to ascribe conservation status to some of the forest-dwelling species. Certain species on Africa's Critically Endangered mainland list are very poorly known indeed. The Bulo Burti Boubou, which has become one of the 'classics' in the annals of African ornithology, was first spotted in the grounds of a hospital in Bulo Burti, Somalia, in August 1988. In January 1989, this bird was trapped and kept in captivity (as a protection measure) for the next 14 months, including some time spent in Europe, before being released close to the capture site. The species has never been seen since. Maybe it was just a freak, like the Namaqualand Clapper Lark *Alauda rufipilea*, named on the basis of a plate and description left by Le Vaillant, and never to be seen again.

Archer's Lark, also from Somalia and described in 1920, has a known world range of just two square kilometres, although 'known' is perhaps ▷

Names, estimated population sizes, habitats, threats and population trends: decreasing (↓), stable (→), fluctuating (↔) or unknown (?) of the 27 Critically Endangered African breeding birds.

SPECIES NAME	POPULATION	HABITAT	KEY THREATS	TREND
Djibouti Francolin *Francolinus ochropectus*	<1 000	Juniper forest	Habitat degradation, disturbance	↓
*Madagascar Pochard *Aythya innotata*	<50	Freshwater wetlands	Habitat loss, alien species	?
*Tristan Albatross *Diomedea dabbanena*	9 000–15 000	Heathland, ocean	Longlining, alien predators	↓
*Mascarene Petrel *Pseudobulweria aterrima*	90–800	Heathland cliffs, ocean	Alien predators, artificial lights	↓
*Alaotra Grebe *Tachybaptus rufolavatus*	<50	Freshwater wetlands	Gill netting, alien fish	?
Northern Bald Ibis *Geronticus eremita*	208	Semi-arid steppes	Disturbance, hunting, predation	↓
*Dwarf Olive Ibis *Bostrychia bocagei*	50–250	Primary forest	Hunting, forest clearance	↓
*Madagascar Fish-Eagle *Haliaeetus vociferoides*	222	Woodland wetlands	Deforestation, rice farming	↓
*St Helena Plover *Charadrius sanctaehelenae*	200–220	Pastures	Reduced grazing, shrub encroachment	↓
*Anjouan Scops-Owl *Otus capnodes*	50–250	Upland forest	Forest clearance, alien plants	↓
*Moheli Scops-Owl *O. moheliensis*	400	Upland forest	Forest clearance, alien plants	↓
*Grand Comoro Scops-Owl *O. pauliana*	2 000	Upland forest	Forest clearance, alien plants	↓
Uluguru Bush-Shrike *Malaconotus alius*	2 400	Forest	Forest clearance/degradation	↓
Bulo Burti Boubou *Laniarius liberatus*	<50	*Acacia* scrub	Agriculture	?
*Réunion Cuckooshrike *Coracina newtoni*	50	Forest	Alien predators	↓
*São Tomé Fiscal *Lanius newtoni*	<50	Forest	Forest clearance, alien predators	?
*Seychelles Paradise-Flycatcher *Terpsiphone corvina*	208–278	Mature woodland	Tourism, development	→
Archer's Lark *Heteromirafra archeri*	50–250	Grassland, sparse bush	Agriculture, human settlement	↓
Raso Lark *Alauda razae*	130	Arid plains	Drought, climate change	↔
Taita Apalis *Apalis fuscigularis*	600–930	Forest	Forest clearance	↓
Liberian Greenbul *Phyllastrephus leucolepis*	250–1 000	Forest	Forest clearance	↓
Long-billed Tailorbird *Artisornis moreaui*	50–250	Forest, forest edge	Forest clearance	↓
*Mauritius Olive White-eye *Zosterops chloronothus*	186–296	Upland forest	Alien plant invasions	↓
Taita Thrush *Turdus helleri*	1 350	Cloud forest	Forest clearance	?
*Mauritius Fody *Foudia rubra*	210–250	Forest	Alien predators	↓
*São Tomé Grosbeak *Neospiza concolor*	<50	Forest	Forest clearance	?
*Gough Bunting *Rowettia goughensis*	1 500	Tussock grass, heath	Alien house mice *Mus musculus*	↓

* Denotes island species.



misleading as the species has not been seen with certainty since 1955. Since the 1970s, there have been at least 15 attempts to relocate it, but none has been successful. The Liberian Greenbul, discovered in the 1980s and known only from two forest patches, has not been seen for many years, although attempts to locate it were hampered by the civil war in Liberia.

Although at first glance Africa's forests, in particular tropical ones, are extensive, their loss (especially of montane forests) contributes strongly to characterising Critically Endangered species. The Taita Hills in southern Kenya are home to several range-restricted species and, as a result, have been identified as an Important Bird Area by BirdLife International. The hills have also lost most of their natural forest to a combination of agriculture and planting of alien trees. As a result, at least two of the area's range-restricted species face an uncertain future. The range of the Taita Apalis is spread over some 250 square kilometres, but within this the bird occupies only 1.5 square kilometres of suitable habitat, comprising three tiny forest fragments.

The Taita Thrush is only slightly better off, occupying 3.5 square kilometres of montane forest. The thrush has an additional problem, however, in that the population sex ratio (at least where it has been sampled) is strongly biased towards males. In one forest patch at Chawia, 90 per cent of the birds are male. This male-biased sex-ratio problem (which greatly reduces the effective [that is, breeding] population size because many males do not have a mate) is shared by the Réunion Cuckooshrike. In the latter species, whose breeding population numbers only about 25 pairs, the problem has been getting progressively worse; in the breeding season of 2006–2007, 64 per cent of males failed to find a mate. Why these extremely rare birds should face this sex-imbalance problem is unresolved but, if it is a more widespread phenomenon, then the potential implications of using population size as a key variable for ascribing conservation status are considerable.

DRYLAND BIRDS & CLIMATE CHANGE

Away from the forests, three of Africa's Critically Endangered birds may be described as dry-country specialists: Raso Lark, Bulo Burti Boubou and Djibouti Francolin. The habitat of the (all but unknown) boubou is being rapidly degraded by human activities, including the cutting of acacia bushes. The two other species are facing what might be described as a 'clear and present danger': climate change.

The Raso Lark occupies a two-square-kilometre range on a dry, seven-square-kilometre island in the Cape Verde group. Although in the medium term its population has stayed stable at about 130 birds, numbers do fluctuate considerably, being smallest in dry years. If, as is expected, climate change results in an increased frequency of droughts in these islands, Raso Lark may well be one of the first casualties. On the other side of the continent, the Djibouti Francolin is known from only two localities, of which the 15-square-kilometre Forêt du Day in the Goda Massif houses the majority of the population. This is a juniper forest, but at the moment much of this habitat is either dead or dying. Although the precise reasons for this die-off are not known, climate change has been implicated as a contributing factor. It is difficult to assess what this might mean for the francolin because little is known of its biology, with only one nest, on a mountain ledge, ever having been found.

PHANTOMS RETURNED & PHANTOMS MISSING

Assessing the extinction risk of birds that are unquestionably rare yet biologically little known is difficult. There have been instances where species suspected of being extinct have been rediscovered. For example, the Sakalava Rail *Amaurornis olivieri* was not seen between 1963 and 1994, but is now known to occur in at least three different areas of western Madagascar. Although still classified as Endangered, it is possible that the population comprises as many as 1 000 birds. On mainland Africa, the Congo Bay-Owl *Phodilus prigoginei* remained unrecorded for 45 years after the Type specimen was collected at Muusi in the Itombwe Mountains of eastern Zaire in 1951. When the species was finally rediscovered (a female caught in a mistnet), it was 95 kilometres south of the Type locality and at 600 metres lower altitude.

Some African birds remain the phantoms of twitchers' dreams and all but impossible to allocate to a threat category. Among these are two nightjars. The Itombwe Nightjar *Caprimulgus prigoginei* is known to science from a single female collected in the Itombwe Mountains in 1955. More than 50 years on, no living ornithologist has seen this bird, although records of nightjars calling in suitable habitat from as far away as south-eastern Cameroon are suspected to be of this species. More recently (1990), on the Nechisar Plains of southern Ethiopia, another new nightjar was discovered – the Nechisar Nightjar *C. solala*. No ornithologist has ever seen this bird alive: it was described on the basis of a road-kill and has eluded all subsequent attempts to find it.

Even more attempts have been made to find Zambia's White-chested Tinkerbird *Pogoniulus makawai*, collected at Mayau in north-western Zambia in 1964. All to no avail – perhaps this was simply an out-of-range record of a species that may have wandered from eastern Angola. But, if that were the case, no one has seen it in Angola either. Twenty years later, in 1984, a cliff-swallow died after flying into a lighthouse at Sanganeb on the Sudanese coast. This was a new species to science, the Red Sea Cliff-Swallow *Hirundo perdita* ('*perdita*' means lost) but, like the tinkerbird, it has never been seen subsequently. There have been some sightings of unidentified cliff-swallows in the Ethiopian Rift Valley, but the descriptions do not tally with the Sudanese bird and are thought to refer to yet another undescribed species.

It is very hard, if not impossible, to implement conservation action plans for species about which our knowledge is so scant. In some cases, we have no idea of the limits to their ranges, in others we do not know whether they still exist. Spare a thought at this stage for the conservation efforts that target less well-known animal groups, such as bats or reptiles. Birds are perhaps the best-known animal group in the world, yet our efforts to conserve them are often played out with less-than-perfect information. But if we consider the most pervasive threats to African birds (see table), then a key push right now should be the conservation of both continental and island forests, especially tropical montane forests. This is where the greatest number of species have been driven to (and in some cases past) the portals of extinction. □

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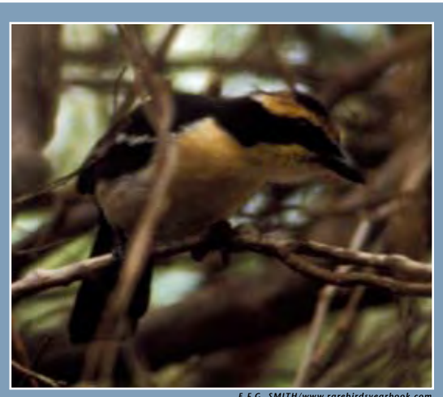

E.F.G. SMITH/www.rarebirdsyearbook.com

Bulo Burti Boubou

KEN NORRIS

Taita Apalis

PETER STEYN

St Helena Plover

EDWIN WINKEL

Raso Lark

Above *Our knowledge of Somalia's Bulo Burti Boubou rests entirely on this one bird – the only one ever seen. This bird was last seen in 1990, since when the Bulo Burti Boubou has seemingly vanished into thin air.*

Raising public awareness of rare birds around the world goes some way to helping to conserve the species and their habitats. The second edition of *Rare Birds Yearbook* (2009) (*www.rarebirdsyearbook.com*) makes compulsive reading for anyone interested in birds and their future. Both sobering and riveting, you will find yourself plotting a journey to try to see some of the 190 world's most threatened bird species before it is too late. By buying this book, you will make a difference, as £4 goes straight to conservation.