

STATUS OF BIRDS AND THEIR HABITATS IN THE MARINE AND COASTAL ENVIRONMENT OF THE COMOROS

Foreword

Data and information for this report was compiled by Engagement Communautaire pour Developpement Durable (ECDD); Bristol Conservation and Science Foundation's (BCSF) with support from BirdLife International project in the Comoros working in partnership with Durrell Wildlife Conservation Trust (Durrell). This project has been working in the Comoros since 2007 to develop the best approach to forest management for the Comoros, based mainly on participatory learning and action methodology. The ecological monitoring department of the project have been surveying terrestrial birds on the three islands of the Comoros since 2009; with a species specific project funded by BirdLife International's Preventing Extinctions Initiative which focused on the distribution and estimated population size of the Anjouan Scops Owl (*Otus capnodes*). Observations from these, other studies, and personal observations made by members of the National Task Force, were used in this report to assess the current status of the Comorian avifauna, the threats they face, and conservation actions which could be implemented.

Acknowledgements

We thank members of the National Task Force for assistance with the contents of this report: representatives of the National Centre for Scientific Documentation and Research (CNDRS), OCB - Community-based organizations project in Comoros, University of the Comoros, the Marine Park Mohéli, and Engagement Communautaire pour le Developpement Durable (ECDD). From BirdLife International, we would like to thank Christina Moseley and Ross Wanless for their organisation of the first meeting, and for assistance with the production of the report Christina Moseley and Ademola Ajagbe.

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1. Executive Summary

The archipelago of the Comoros lies between Madagascar and Mozambique. It is one of the richest biodiversity hotspots in the world due to high levels of species endemism. In this report we identify 39 species of birds of regional or national conservation concern. Of these species 3 are listed as Critically Endangered on the IUCN Red List, 2 Vulnerable, and 2 Near-Threatened. The major threats to these species are identified as consequences of the pressures associated with the regions high human population density, unsustainable agricultural practices and timber extraction.

2. Introduction

2.1 Overview

The Comoros, Madagascar, and the other Indian Ocean Islands make up one of the world's richest biodiversity hotspots. Although not particularly species rich, the Comoros islands boast remarkable levels of endemism.

Much of the native vegetation on the islands is now restricted to the highlands due to increasing agricultural pressures. These habitats include tropical montane moist forest where the Endangered Livingstone's Fruit Bat (*Pteropus livingstonii*) endemic to Anjouan and Mohéli is found. The active volcano Mount Karthala is situated on Grande Comore. Montane moist forests form a ring around this mountain and above this ring, in the high altitudes, vast areas of heath vegetation (*Philippia*) dominate; this is home to the endemic white-eye (*Zosterops mouroniensis*).

The coastal and marine zones are made up of coastal mangroves, sea grass beds, inshore reefs, uninhabited islets, and off-shore reefs. They have been identified as one of the priority marine eco-regions due to its biological distinctiveness (WWF Global 200). Within these zones are nesting green sea turtles (*Chelonia mydas*), hawksbill seas turtles (*Eretmochelys imbricata*), coelacanths (*Latimeria chalumnae*), and dugongs (*Dugong dugon*).

A total of 102 bird species have been recorded in the Comoros; of these species 31 (30%) are endemic species or sub-species. Species distributions vary across the islands with each island having its own endemic species (3 in Anjouan, 5 in Grande Comore, 2 in Mohéli, and 3 in Mayotte). This includes the 4 island endemic scops-owls; *Otus capnodes* (Anjouan), *O. moheliensis* (Mohéli), *O. pauliani* (Grande Comore), and *O. mayottensis* (Mayotte). All except *O. mayottensis* are all classed as Critically Endangered on the IUCN Red List (IUCN, 2011), due to continuing habitat destruction and degradation in its small range. In addition, across all the islands, two species are listed as Vulnerable and two as Near-Threatened (IUCN, 2011).

2.2 Threats to birds and their habitats

The major threats to the unique avifaunal diversity of the Comoros and their habitats are a consequence of the pressures associated with the regions high human population density; in 2010 the World Bank estimated 395 people/km². This dense population has a huge impact on the natural environment of the Comoros. Much of the lowland forests have been cleared for timber, crops, and grazing. Due to the limited availability of suitable agricultural land on Anjouan, little intact montane forest remains on this island. The rapid encroachment of agricultural practices on the natural forests is resulting in a drastic loss of habitat for many of the endemic bird species. In the Karthala forests of Grande Comore, agricultural practices, selective logging, and grazing are found at high altitudes (>1000m.a.s.l.); this forest

degradation threatens the survival of two endemics: Karthala scops-owl (*Otus pauliani*) and Mount Karthala white-eye (*Zosterops mouroniensis*).

Several invasive species introduced by humans threaten the bird species in the Comoros. Black rats (*Rattus rattus*), pied crow (*Corvus albus*), civet (*Viverricula indica*), and Indian mongoose (*Herpestes javanicus auropunctatus*) all threaten the breeding success of the birds through nest predation. The common myna (*Acridotheres tristis*) is abundant on all islands and is a possible competitor for cavity nesting sites for the endemic scops-owls. The presence of invasive plants could lead to habitat alteration and degradation, in particular with the encroachment of agriculture within the montane forest zones.

2.3 The WIO marine project

In 1985, the Governments of the Eastern African Region adopted the “Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region”. This protocol obliges the Contracting Parties to undertake appropriate measures to maintain essential ecological processes and life support systems, to preserve genetic diversity, and to ensure the sustainable utilization of harvestable natural resources under their jurisdiction. In particular, to protect and preserve rare and fragile ecosystems as well as rare, depleted, threatened or endangered species of wild fauna and flora and their habitats in the Eastern African Region.

Over the years, the Eastern African region has come under intense pressure resulting from increasing population pressures, overexploitation and conversion of coastal habitats for other uses such as agriculture, aquaculture, port/harbour expansion or urban development. Some of these developments have led to the degradation of vital coastal and marine habitats such as mangrove forests, among others.

In this regard, BirdLife International in partnership with Nairobi Convention Secretariat facilitated the establishment of National Task Force (NTF) to review the status of birds listed in the protocol and compile a national report for [insert name of country].

2.4 Objectives of the national report

The main objective of the national report is to document the status of birds and their habitats in the marine and coastal environment as indicators of marine and coastal ecosystem health. Specifically, the national report will:

- a. Provide an up to date list of the important and threatened bird species with description of the major threats and recommend conservation strategies.
- b. Present the status of birds and their habitats in spatial, tabular and/or graphic format.
- c. List candidate marine Important Bird Areas (IBAs) that could be specially protected as Marine Protected Areas (MPAs) for birds and other forms of biodiversity as well as key ecosystem services.

- d. Create linkages with national environmental legislations and Multilateral Environmental Agreements (MEAs).

2.5 Project Implementation

The NTF for the Comoros is composed of representatives from the major national environmental organisations; National Centre for Scientific Documentation and Research (CNDRS), OCB - Community-based organizations project in Comoros, University of the Comoros, the Marine Park Mohéli, and the Engagement Communautaire pour le Developpement Durable (ECDD).

Table 1 gives details of the members of the NTF who were present at the first meeting held on the 7th February 2012. During this meeting the NTF revised the bird list for the Comoros and updated the information on their status, habitats, and threats. Members not present were contacted via email; Francois Beudard and Ambre Malet of the Marine Park Mohéli.

Table 1: The members of the NTF

Name	Organisation	Title	E-mail	Tel
Bourhane Abderemane	National Centre for Scientific Documentation and Research (CNDRS) – Anjouan	Regional Director	bourhane_abolere mane@yahoo.com	3366302
Fatima Attoumani	Direction General de l'Environnement (DGEF)	Management Officer	fat_imah@yahoo.fr	3267597
Bronwen Daniel	ECDD	Ecological Research and Monitoring Officer	bronwen.daniel@durrell.org	3270319
Miguel Fernandez	ECDD	GIS Volunteer	miguel@astudille.com	
Katie Green	ECDD	Head of Ecological Research and Monitoring	kgreen@bcsf.org.uk	
Christian Rakotarivivo	ECDD	Technical Assistant	christian.rakotarivivo@gmail.com	3415447
Daniel Mohamed Salim	ECDD	Ecological Technician	danielmohamedsalim@gmail.com	3322110
Amélaid Houmadi	ECDD	Ecological Technician	amelaidh@yahoo.fr	3399326
Hugh Doulton	ECDD	National Coordinator	hughdoulton@bcsf.org.uk	3342559
El-yamine Ali Mohamed	ECDD	Ecological Technician	elyaminealimed@yahoo.fr	3382605

Name	Organisation	Title	E-mail	Tel
Ishaka Said	ECDD	Ecological Technician	said.ishaka@yahoo.fr	3380294
Dr Thaoubane said Ali	University of the Comoros - Faculty of Science	Dean	sathaoubane@yahoo.fr	3313069
Mohamed Ali Mlazahe	OCB - Community-based organizations project in Comoros	Coordinator	medaliml@yahoo.fr	3361236
Anllaouddine Abou	National Programme for Sustainable Human Development (PNDHD)	Head of the Environmental Department	anllaouddine@yahoo.fr	3322969
Andilyat Mohamed	University of the Comoros	Herbarium Curator	andilyat1@gmail.com	3353443
Youssef Eddine Abdou	University of the Comoros	Lecturer and Researcher	youseddine@hotmail.fr	3329328
Yahaya IBRAHIM	National Centre for Scientific Documentation and Research (CNDRS)	Head of the Biodiversity Department	yahayaim@yahoo.fr	

3. General information

3.1 Location and physical features

The Comoros are an archipelago consisting four islands: Grande Comore (Ngazidja), Mohéli (Mwali), Anjouan (Ndzwani), and Mayotte (Maoré). They are located in the Western Indian Ocean, approximately 300km from the East African coast and Madagascar (Figure 1). The islands are of volcanic origin and up to 15 million years old. Grande Comore is the youngest of the islands on which the active volcano Mount Karthala is situated; the last eruption was in 2006.

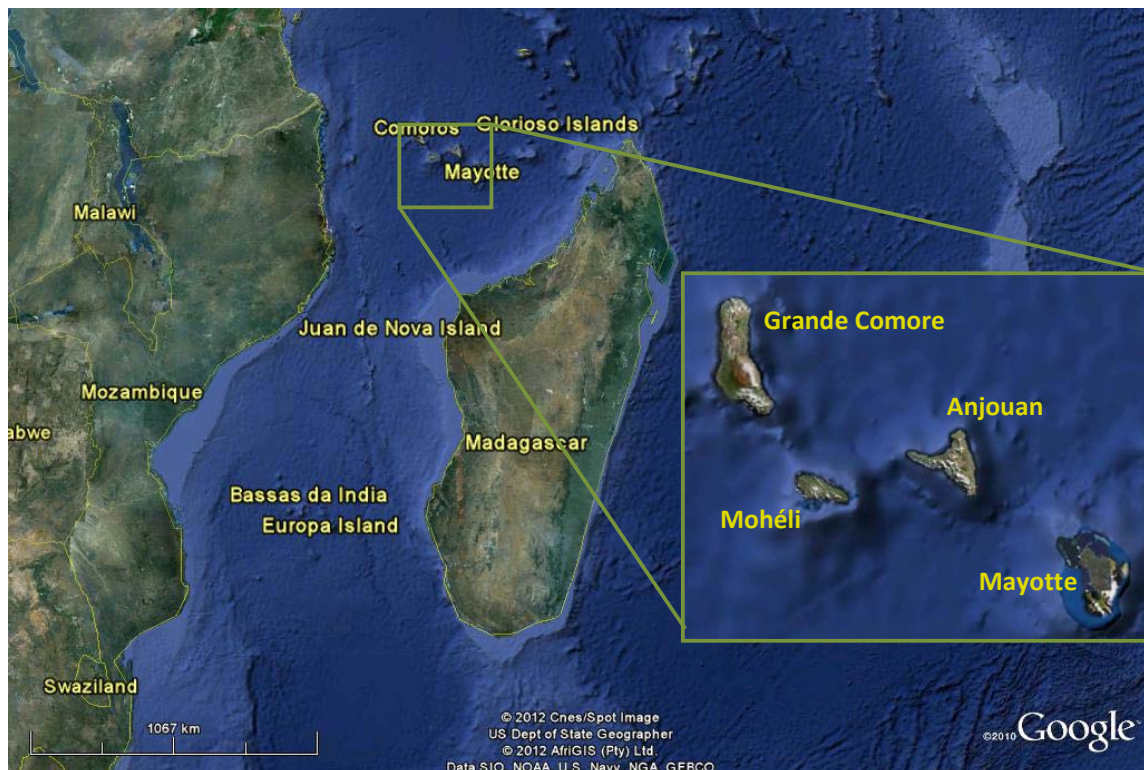


Figure 1. Location of the Comoros (GoogleEarth)

As a result of their volcanic origin the topography of the islands consists of steep sided mountains. The highest point is Mount Karthala at 2360 m. Anjouan is the steepest of all the islands with many of the valley sides in accessible (Figure 2).

The Comoros is classed as a low-income-level country by the World Bank, with a life expectancy of 60 years, and poverty headcount ratio of 45%.



Figure 2. The steep valleys of Anjouan (Kowe, Nkozini) (K.Green)

3.2 Climate and vegetation

The climate in the Comoros is tropical with two main seasons: November to April is the rainy season resulting from East-African monsoon blowing from the northwest, and from May to October the Southeast Trade Wind creates the dry season. Average monthly temperatures vary from 23-28 °C and average annual precipitation is 2000 mm.

The majority of the Comoros was assumed to be covered by lowland dry and moist forests and high-altitude, montane moist forests. Much of the lowland forests have now been cleared for agriculture and agroforestry practices, and this pattern continues to encroach upon the remaining montane moist forests. Within the coastal zones fragments of mangrove forests remain, particularly within the Marine Park in Mohéli. Other habitats include sea grass beds, inshore reefs, uninhabited islets, and off-shore reefs.

4. Ornithological importance

4.1 Categories and Criteria

The category and criteria definitions stated here are standard guidelines for assigning the appropriate threat status to bird species that are vulnerable to global extinction or whose populations are otherwise irreplaceable. They are based on BirdLife International criteria for identifying Important Bird Areas (IBAs), that is, sites that are important for conservation of vulnerable or irreplaceable bird species. These categories and criteria are internationally agreed, standardised, quantitative and scientifically defensible.

4.1.1 BirdLife's Guidelines

BirdLife International's guidelines for assigning Important Bird Areas are based on quantitative information on the presence of IUCN-listed threatened and or irreplaceable bird species at a particular site.

A1. Globally threatened: has species listed as Critically Endangered, Endangered or Vulnerable in IUCN Red List.

A2. Restricted-range species: global population restricted to an area <50,000 km².

A3. Biome-restricted species: if its distribution is > 50,000 km², but occurs mostly or wholly within all or part of particular biome.

A4. Congregations: This category is limited to congregatory waterbirds and seabirds. A site is listed if 1% of the global or biogeographic population occurs there, it regularly holds >20,000 waterbirds or 10,000 pairs of seabirds, or is a migration 'bottleneck'.

4.1.2 Species of Regional or National Conservation Concern

In addition to the bird species listed as Critically Endangered, Endangered, Near Threatened, or Vulnerable by the IUCN's Red List, the NTF also selected species and sub-species endemic to the Comoros and/or of ecological value. Species of ecological value include seed dispersers in the montane forest zones; black parrot (*Coracopsis nigra*) and vasa parrot (*Coracopsis vasa*). The grey-headed lovebird (*Agapornis canus*) is another seed disperser which was selected by the NTF is due to its ecological role and direct persecution; this species is no longer found on Anjouan.

4.1.3 Criteria for habitat selection

Existing IBAs were chosen using listings of terrestrial sites from “Important Bird Areas in Africa and Associated Islands; Priority Sites for Conservation” (Fishpool and Evans, 2001).

5. Important Birds in the Comoros

5.1 Birds status

No official national definition of the coastal zone for the Comoros was found. However, given the small sizes of the islands and that all watersheds lead to the ocean the total area of each island was classed as the coastal zone. Thus, all species recorded in the Comoros were selected for this evaluation.

5.1.1 Tabular presentation of birds status

Table 2: Species requiring protection under the Nairobi Convention. IUCN = International Union for the Conservation of Nature; CR = Critically Endangered, EN = Endangered; VU = Vulnerable; NT = Near Threatened; LC = Least Concern. Species categorised as 'Resident' under 'Habitat Use' are species that are non-migratory and therefore utilise the given habitat type for all requirements. In instances where the population trend within the country is unknown, the global trend was taken from the BirdLife International Data Zone.

Scientific name	Common name	IUCN status	Habitat	Habitat use	Major threats	Population trend
<i>Otus capnodes</i>	Anjouan Scops-owl	CR	Forest	Resident	Agriculture, timber extraction, introduced species	Declining
<i>Otus moheliensis</i>	Mohéli Scops-owl	CR	Forest, plantations	Resident	Timber extraction, hunting, introduced species	Declining
<i>Otus pauliani</i>	Grand Comoro Scops-owl	CR	Forest	Resident	Agriculture, timber extraction, introduced species	Declining
<i>Ardea humbloti</i>	Madagascar Heron	EN	Coastal	Resident	Extraction of sand and rocks, pollution, degradation of mangrove forests	Declining
<i>Ardeola idae</i>	Madagascar Pond-heron	EN	Coastal	Resident	Extraction of sand and rocks, pollution, degradation of mangrove forests	Declining
<i>Dicrurus fuscipennis</i>	Grand Comoro Drongo	EN	Forest, plantations	Resident	Agriculture, timber extraction, hunting, introduced species	Fluctuating
<i>Humblotia flavirostris</i>	Grand Comoro Flycatcher	EN	Forest	Resident	Agriculture, timber extraction, introduced species	Declining

Scientific name	Common name	IUCN status	Habitat	Habitat use	Major threats	Population trend
<i>Circus macroscelus</i>	Madagascar Harrier	VU	Grassland, plantations	Foraging	Agriculture, hunting, pesticide use	Declining
<i>Zosterops mouroiensis</i>	Mount Karthala White-eye	VU	Forest, shrubland	Resident	Agriculture, timber extraction, introduced species	Declining
<i>Columba pollenii</i>	Comoro Olive-pigeon	NT	Forest	Resident	Agriculture, timber extraction, hunting, introduced species	Declining
<i>Numenius arquata</i>	Eurasian Curlew	NT	Coastal	Resident	Extraction of sand and rocks, pollution, degradation of mangrove forests	Declining
<i>Accipiter francesiae</i>	Frances's Sparrowhawk	LC	Forest	Resident	Agriculture, timber extraction, hunting, pesticide use	Stable
<i>Agapornis canus</i>	Gray-Headed Lovebird	LC	Grassland, plantations	Breeding , foraging	Hunting	Declining
<i>Alectroenas sganzini</i>	Comoro Blue-pigeon	LC	Forest	Resident	Agriculture, timber extraction, hunting, introduced species	Declining
<i>Coracina cinerea</i>	Ashy Cuckooshrike	LC	Forest	Resident	Agriculture, timber extraction	Declining
<i>Coracopsis nigra</i>	Black Parrot	LC	Forest	Resident	Agriculture, timber extraction, hunting	Stable
<i>Coracopsis vasa</i>	Vasa Parrot	LC	Forest	Resident	Agriculture, timber extraction, hunting	Stable
<i>Cyanolanius madagascarinus</i>	Blue Vanga	LC	Forest	Resident	Agriculture, timber extraction	Unknown
<i>Dicrurus forficatus</i>	Crested Drongo	LC	Forest,	Resident		Unknown

Scientific name	Common name	IUCN status	Habitat	Habitat use	Major threats	Population trend
<i>Foudia eminentissima</i>	Red-headed Fody	LC	Forest, plantations, grasslands	Resident		Stable
<i>Hypsipetes madagascariensis</i>	Madagascar Black Bulbul	LC	Forest, plantations	Resident		Stable
<i>Hypsipetes parvirostris</i>	Comoro Bulbul	LC	Forest, plantations	Resident		Declining
<i>Leptosomus discolor</i>	Cuckoo-roller	LC	Forest, plantations	Resident	Agriculture, timber extraction	Declining
<i>Nectarinia comorensis</i>	Anjouan Sunbird	LC	Forest, plantations, grassland	Resident		Stable
<i>Nectarinia humbloti</i>	Humblot's Sunbird	LC	Forest, plantations, grassland	Resident		Stable
<i>Nectarinia notata</i>	Long-billed Green Sunbird	LC	Forest, plantations, grassland	Resident		Stable
<i>Nesillas brevicaudata</i>	Grand Comoro Brush-warbler	LC	Forest	Resident	Agriculture, timber extraction, introduced species	Stable
<i>Nesillas longicaudata</i>	Anjouan Brush-warbler	LC	Forest	Resident	Agriculture, timber extraction, introduced species	Stable
<i>Nesillas mariaae</i>	Mohéli Warbler	LC	Forest	Resident	Agriculture, timber extraction, introduced species	Stable
<i>Nesillas typica</i>	Madagascar	LC	Forest,	Resident	Agriculture, timber	Stable

Scientific name	Common name	IUCN status	Habitat	Habitat use	Major threats	Population trend
	Brush-warbler		plantations		extraction, introduced species	
<i>Otus mayottensis</i>	Mayotte Scops-owl	LC	Forest, plantations	Resident	Timber extraction, hunting, introduced species	Stable
<i>Puffinus lherminieri</i>	Audubon's Shearwater	LC	Forest, open sea	Breeding	Agriculture, timber extraction, introduced species	Stable
<i>Saxicola torquatus</i>	Common Stonechat	LC	Plantations, grassland	Resident		Stable
<i>Terpsiphone mutata</i>	Madagascar Paradise-flycatcher	LC	Forest, plantations	Resident	Agriculture, timber extraction, introduced species	Declining
<i>Treron australis</i>	Madagascar Green-pigeon	LC	Forest, plantations, grassland	Resident	Hunting	Declining
<i>Turdus bewsheri</i>	Comoro Thrush	LC	Forest, shrubland	Resident	Agriculture, timber extraction, introduced species	Declining
<i>Zoonavena grandidieri</i>	Malagasy Spinetail	LC	Forest	Resident		Stable
<i>Zosterops maderaspatanus</i>	Madagascar White-eye	LC	Forest, plantations	Resident	Agriculture	Declining
<i>Zosterops mayottensis</i>	Mayotte White-eye	LC	Forest	Resident		Declining

5.1.2 Graphical presentation of birds status

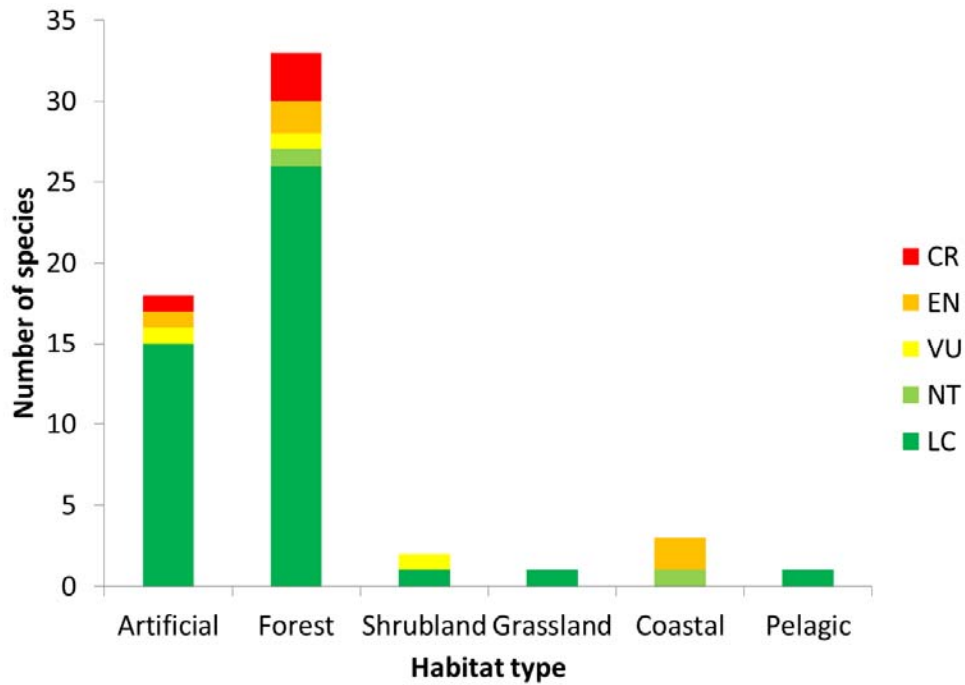


Figure 3: Numbers of species per IUCN category in each habitat type in Comoros's coastal and marine environment. Note: that species which use more than one habitat type will be counted more than once. CR=Critically Endangered, EN=Endangered, VU=Vulnerable and NT= Near Threatened

6. Conservation Issues

As a result of an estimated 80% of the Comorian workforce being based in agriculture, dense human populations, and limited arable land, the major threat to the survival of the bird species in the Comoros is land clearance for crops and grazing. Land suitable for agriculture in the mid-altitudes is limited and farmers are forced to move up into the montane moist forest zones to clear areas for crops such as banana, taro, and cassava. This reduction and fragmentation of natural forests will have drastic effects on the endemic bird species which are only found in these zones, such as the Critically Endangered Anjouan scops-owl (*Otus capnodes*), Karthala scops-owl (*Otus pauliani*), and the Endangered Grande Comore flycatcher (*Humblotia flavirostris*).

Logging and wood harvesting also poses a threat to these forest bird species. This activity is mainly for domestic use and construction (plank production), however wood is also required for the distillation of Ylang-ylang perfume essence. The rate of deforestation in the Comoros was estimated at 5.8% per year for the period 1990-1995; the fourth highest rate worldwide (Jolly & Fukuda-Parr, 2000).

As island endemics, the birds of the Comoros are under threat from invasive species. Black rats and the common myna are numerous and may predate nests and compete with the endemic species for nesting sites in tree holes. Other alien animals which may pose a threat to the endemic birds includes the civet (*Viverricula indica*), Indian mongoose (*Herpestes javanicus auro-punctatus*), and pied crow (*Corvus albus*). There are also several invasive plant species present in the Comoros, such as prickly lantana (*Lantana camara*) and strawberry guava (*Psidium cattleianum*). These species could result in habitat alteration and degradation if uncontrolled.

The hunting or trapping of birds in the Comoros is a rare practice. Some of the pigeon species may be hunted for domestic consumption, owls may be persecuted due to cultural beliefs, and the parrots may be targeted as they raid fruit crops. However, accounts of these events are rare and the most common practice seems to be capture by children for pets or toys.

For the coastal bird species, pollution resulting from the lack of waste management threatens their feeding grounds. Many coastal areas are used as dumping grounds for all kinds of waste, including commercial/industrial and domestic. Another source of pollution is the use of pesticides within the agricultural zones. Farmers use chemical pesticides such as DDT and villagers regularly use rat poison; major threats to the breeding success and survival of the birds of prey.

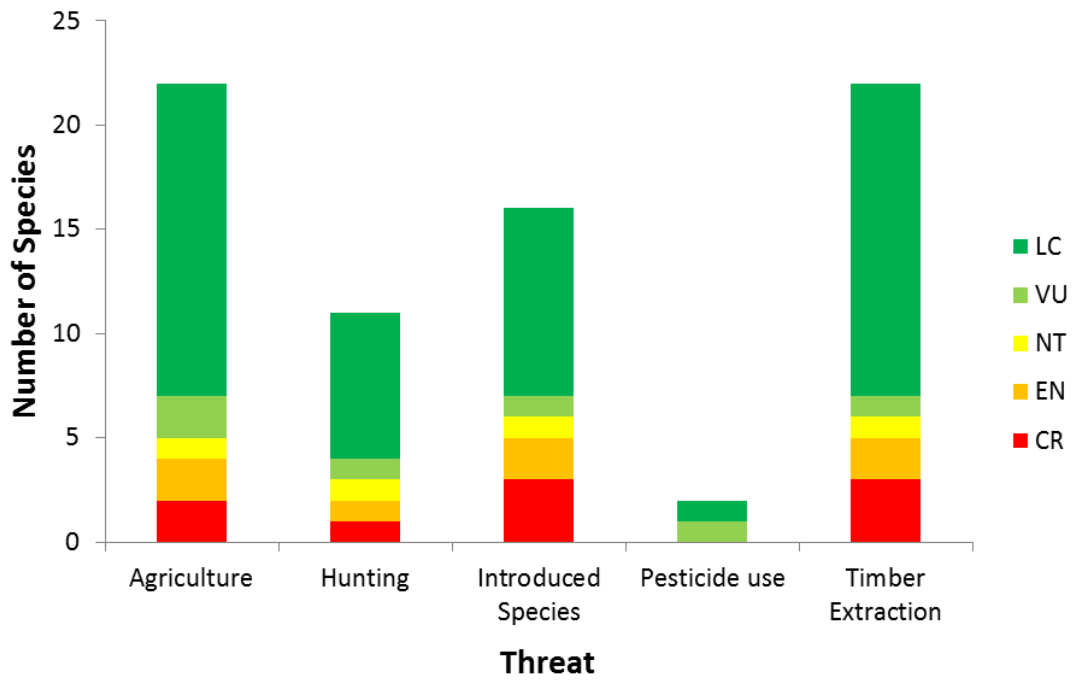


Figure 5: The numbers of species from Table 2 within each IUCN Red List threat category that are affected by the five most important threats.

7. Priorities for Action

7.1 The approach

The decisions on which threats to include in this assessment and the prioritisation of conservation actions, were dependent on the degree to which each of the threats endangers the survival of the bird species of the Comoros. The degree of the threats was assessed based on extent and intensity. Threats which are widespread across the islands and the intensity of which is threatening the survival of several important bird species were given high prioritisation; such as agricultural practices, livestock grazing, logging, and wood harvesting. Low prioritisation threats include invasive species and hunting, which pose threats locally where they occur, the intensity of them is relatively low, and the practicality of implementing the conservation action would be difficult.

7.2 Assessing threats

Table 3: Threats and potential conservation actions to benefit bird and biodiversity conservation in the Comoros. Under “Prioritization” 1 = lowest priority and 4 = highest priority.

Threat level 1	Threat level 2	Geographical area or habitat	Conservation Action	Prioritization
Agricultural expansion and intensification	Annual/perennial non-timber crop: Small-holder	Tropical lowland moist forest / tropical montane moist forest	Community led landscape management / more sustainable and intensive agricultural practices	4
	Livestock farm/ranch: Small-holder grazing,	Tropical lowland moist forest / tropical montane moist forest	Community led landscape management / more sustainable and intensive agricultural practices	4
Energy production and mining	Logging/wood harvesting: unintentional effects: subsistence/small scale (use of other spp)	Tropical lowland moist forest / tropical montane moist forest	Community led landscape management / reforestation	4
Invasive and other problematic species and genes	Black Rat (<i>Rattus rattus</i>)	All habitats – island wide		2
	Common Myna (<i>Acridotheres tristis</i>)	Tropical lowland moist forest, plantations, pastureland, grasslands, rural gardens, urban areas	Community led landscape management – prevent expansion into montane moist forest habitats	2
	Prickly Lantana (<i>Lantana camara</i>)	Tropical lowland moist forest, plantations, pastureland, grasslands, rural gardens, urban areas	Community led landscape management – prevent expansion into montane moist forest habitats	2
	Strawberry Guava (<i>Psidium cattleianum</i>)	Tropical lowland moist forest, plantations, pastureland, grasslands, rural gardens, urban areas	Community led landscape management – prevent expansion into montane moist forest habitats	2
Natural system modifications	Fire/suppression: trend unknown/unrecorded	Tropical high altitude shrubland		2
Over-exploitation, persecution and control of species	Hunt/trap terrestrial animals: intentional use	Island-wide	Awareness raising / environmental education / legislations	2
Pollution	Agricultural/forestry effluents: herbicides and pesticides	Island-wide	Legislations / bio-pesticides	2

	Agricultural/forestry effluents: soil erosion, sedimentation	Island-wide	Field terracing / reforestation	3
Transportation and service corridors	Roads/railroads	Mount Karthala	Awareness raising / legislations	2

7.3 Priority sites

Table 4: Marine Important Bird Areas within the Comoros that should be considered for protection as Marine Protected Areas.

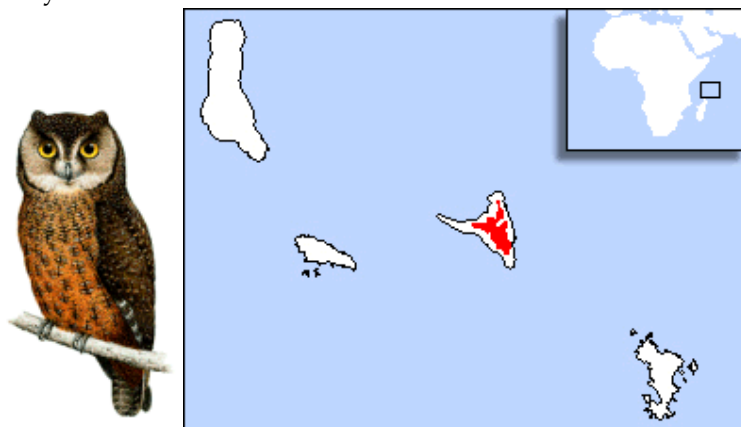
Site name	Area (km ²)	IBA criteria	Important species	Protected status? (i.e. is it officially protected already?)
Mount Karthala (KM001)	210	A1, A2	<i>Columba pollenii</i> , <i>Otus pauliani</i> , <i>Humblotia flavirostris</i> , <i>Zosterops mouroniensis</i> , <i>Dicrurus fuscipennis</i> , <i>Turdus bewsheri</i> , <i>Foudia eminentissima</i> , <i>Alectroenas sganzeni</i> , <i>Hypsipetes parvirostris</i> , <i>Nesillas brevicaudata</i> , <i>Nectarinia humbloti</i>	N/A
La Grille (KM 002)	26	A1, A2	<i>Columba pollenii</i> , <i>Turdus bewsheri</i> , <i>Foudia eminentissima</i> , <i>Alectroenas sganzeni</i> , <i>Hypsipetes parvirostris</i> , <i>Nectarinia humbloti</i>	N/A
Mwali highlands (KM 003)	40	A1, A2, A4ii	<i>Columba pollenii</i> , <i>Otus moheliensis</i> , <i>Nesillas mariae</i> , <i>Puffinus lherminieri</i> , <i>Alectroenas sganzeni</i> , <i>Foudia eminentissima</i> , <i>Hypsipetes parvirostris</i> , <i>Nectarinia humbloti</i> , <i>Turdus bewsheri</i>	N/A
Ndzuani highlands (KM 004)	68.5	A1, A2	<i>Columba pollenii</i> , <i>Otus capnodes</i> , <i>Alectroenas sganzeni</i> , <i>Foudia eminentissima</i> , <i>Nectarinia comorensis</i> , <i>Nesillas longicaudata</i> , <i>Turdus bewsheri</i>	N/A
Hachiroungou (YT 001)	1.6	A1, A2	<i>Columba pollenii</i> , <i>Alectroenas sganzeni</i> , <i>Zosterops mayottensis</i>	N/A
Mlima Combani and Mlima Mtsapéré (YT 002)	33.25	A1, A2	<i>Columba pollenii</i> , <i>Alectroenas sganzeni</i> , <i>Zosterops mayottensis</i>	Forest Reserve
Mlima Bénara (YT 003)	15.5	A1, A2	<i>Columba pollenii</i> , <i>Alectroenas sganzeni</i> , <i>Zosterops mayottensis</i>	Protection zone
Naie de Bouéni (YT 004)	3.25	A1, A2	<i>Ardeola idae</i> , <i>Zosterops mayottensis</i> , <i>Foudia eminentissima</i>	N/A
Mlima Choungiu and Sazilé (YT 005)	16	A1, A2	<i>Columba pollenii</i> , <i>Alectroenas sganzeni</i> , <i>Zosterops mayottensis</i>	Littoral Conservation Area

8. Description of important birds

Anjouan Scops-owl *Otus capnodes*

Key facts

Current IUCN Red List category	Critically Endangered
Family	Strigidae (Owls)
Species name author	(Gurney, 1889)
Population size	~4000 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	<100 km
Country endemic?	Yes



Justification: This species is classified as Critically Endangered because it has a small population which is likely to be declining owing to continuing habitat destruction and degradation in its small range. Its prospects are currently uncertain as forest degradation advances on Anjouan. However, recent evidence suggests that it can adapt to human-affected forest areas where large trees remain.

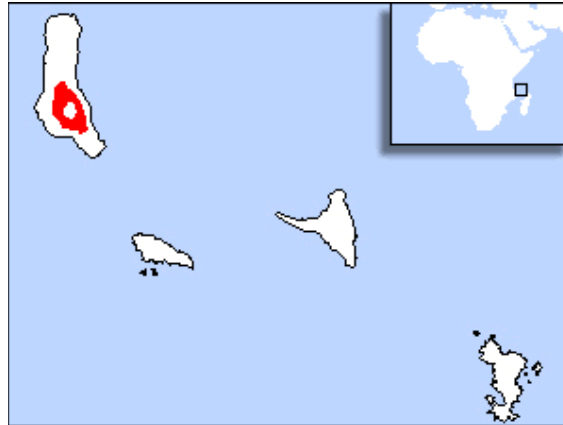
Distribution and population: This species was rediscovered on Anjouan in June 1992, after an absence of records dating back to 1886. Surveys in 2006 estimated the population at 50-100 pairs. Preliminary results from survey work begun in 2010 suggest that the species may frequent degraded forest, with habitat modelling giving a potential range of 93.4 km: the total population may be significantly higher than previously thought, however further work is needed to confirm this.

BirdLife International (2012) Species factsheet: *Otus capnodes*. Downloaded from <http://www.birdlife.org> on 20/02/2012.

Grand Comoro Scops-owl *Otus pauliani*

Key facts

Current IUCN Red List category	Critically Endangered
Family	Strigidae (Owls)
Species name author	(Benson, 1960)
Population size	2,000 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	99 km
Country endemic?	Yes



Justification: This species is classified as Critically Endangered since it has an extremely small range, occurring only on Mt Karthala, active volcano where clearance of forest for agriculture is causing a continuing decline in the area of suitable habitat, and thus its extent of occurrence, area of occupancy, and population.

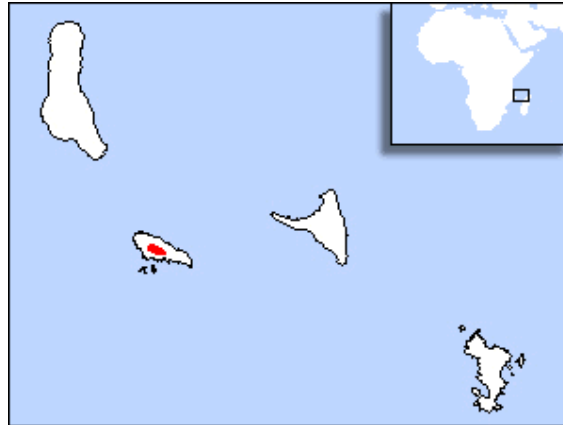
Distribution and population: In November 1989, studies revealed its presence on the northern, western and southern flanks of the volcano where about 100 km of suitable habitat exists, and the population may prove to be over 1,000 pairs. In September 2005, the species was found to be abundant on the south-eastern flanks of Mt Karthala which may increase the population estimate; however the extent of suitable habitat will have been reduced since 1989.

BirdLife International (2012) Species factsheet: *Otus pauliani*. Downloaded from <http://www.birdlife.org> on 20/02/2012.

Moheli Scops-owl *Otus moheliensis*

Key facts

Current IUCN Red List category	Critically Endangered
Family	Strigidae (Owls)
Species name author	Lafontaine & Moulaert, 1998
Population size	400 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	21 km
Country endemic?	Yes



Justification: This scops-owl is classified as Critically Endangered because it has an extremely small range, occurring on only one mountain ridge. There has been a continuing decline in the area and quality of habitat, from which it is suspected that there has been a continuing decline in its extent of occurrence, area of occupancy and the number of mature individuals.

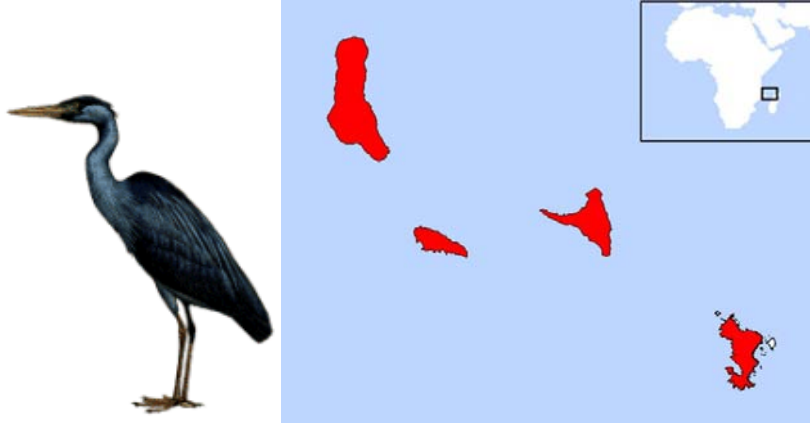
Distribution and population: This species is endemic to Mohéli. It is relatively abundant - its density has been estimated at one individual/5 ha of near-primary forest (c.10 km) and one individual per 10 ha of degraded forest, giving a total population in the order of 400 individuals. It is thought to be declining due to habitat destruction.

BirdLife International (2012) Species factsheet: *Otus moheliensis*. Downloaded from <http://www.birdlife.org> on 20/02/2012.

Madagascar Heron *Ardea humbloti*

Key facts

Current IUCN Red List category	Endangered
Family	Ardeidae (Hérons and egrets)
Species name author	Milne-Edwards & Grandidier, 1885
Population size	1,500 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	25,400 km
Country endemic?	Yes



Justification: This species is listed as Endangered because it has a very small population which is undergoing continuing declines owing to overexploitation and loss and degradation of its wetland habitats.

Distribution and population: *Ardea humbloti* breeds only in Madagascar but is also recorded as a vagrant from the Comoro Islands and Mayotte (to France). In 1973, it was reported to have declined alarmingly and to be facing extinction unless completely protected. More recently it was found to be fairly common (though patchily distributed) in parts of north and west Madagascar, and uncommon in the south.

BirdLife International (2012) Species factsheet: *Ardea humbloti*. Downloaded from <http://www.birdlife.org> on 15/02/2012.

Madagascar Pond-heron *Ardeola idae*

Key facts

Current IUCN Red List category	Endangered
Family	Ardeidae (Herons and egrets)
Species name author	(Hartlaub, 1860)
Population size	2,000 - 6,000 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	553,000 km
Country endemic?	No



Justification: This species is listed as Endangered because it has a very small population which is undergoing a continuing decline because many of its breeding colonies are heavily and increasingly exploited for eggs and young. This exploitation is exacerbated by pressures on its wetland habitats.

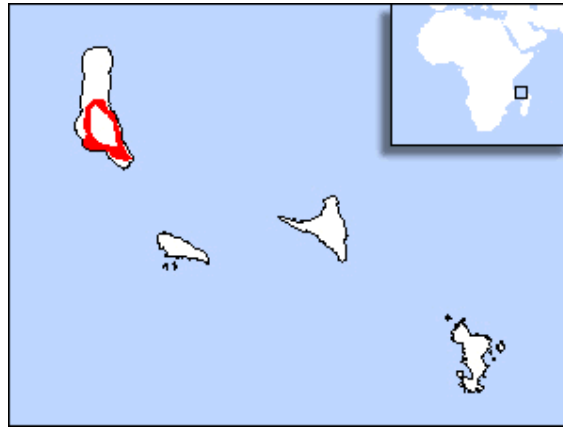
Distribution and population: *Ardeola idae* breeds on Madagascar (2,000-6,000 individuals), Aldabra (100 breeding pairs) in the Seychelles, and Europa (to Réunion, to France). It has a large non-breeding range in Central and East Africa including the Comoros Islands, Mozambique, Zimbabwe, Zambia, Malawi, Tanzania, Kenya, Uganda, Burundi, Rwanda and Democratic Republic of Congo.

BirdLife International (2012) Species factsheet: *Ardeola idae*. Downloaded from <http://www.birdlife.org> on 15/02/2012.

Grand Comoro Drongo *Dicrurus fuscipennis*

Key facts

Current IUCN Red List category	Endangered
Family	Dicruridae (Drongos)
Species name author	(Milne-Edwards & Oustalet, 1887)
Population size	100 mature individuals
Population trend	fluctuating
Distribution size (breeding/resident)	240 km
Country endemic?	Yes



Justification: This species is classified as Endangered because it has an extremely small population occupying a very small range at only one location around an active volcano. There has been a continuing decline in the area, extent and quality of native habitat at this location, but the species population appears to be fluctuating, and not in decline.

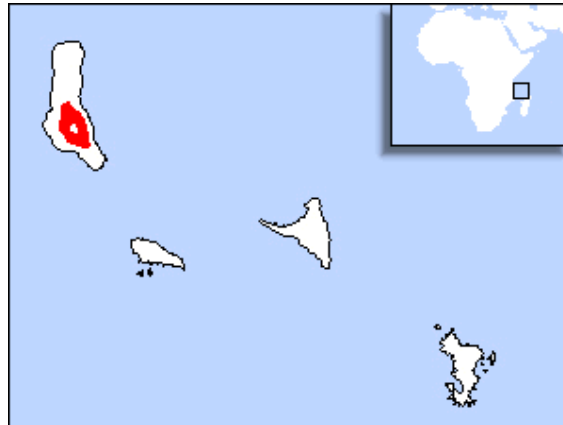
Distribution and population: *Dicrurus fuscipennis* has a highly localised distribution around Mt Karthala, Grand Comore, and is rare even there. In 1985, it was estimated that few more than 100 individuals existed. In 2005, only three pairs were recorded; two pairs in under-planted forest at 1,050 m and 1,120 m on the south-eastern and eastern slopes of Karthala respectively. Another pair was recorded at 400 m in coconut plantations below the western flanks of the forest.

BirdLife International (2012) Species factsheet: *Dicrurus fuscipennis*. Downloaded from <http://www.birdlife.org> on 20/02/2012.

Grand Comoro Flycatcher *Humblotia flavirostris*

Key facts

Current IUCN Red List category	Endangered
Family	Muscicapidae (Chats and Old World flycatchers)
Species name author	Milne-Edwards & Oustalet, 1885
Population size	10,000-19,999 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	200 km
Country endemic?	Yes



Justification: This species is classified as Endangered since it has a very small range, occurring at only one location, an active volcano, where there has been a continuing decline in the extent and quality of its forest habitat. It may be adapting to these changes, but the habitat remains threatened and insufficiently protected.

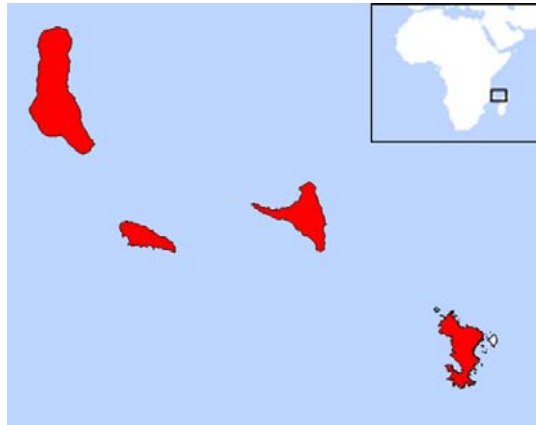
Distribution and population: *Humblotia flavirostris* occurs only on the slopes of Mt Karthala, an active volcano, on Grand Comoro.

BirdLife International (2012) Species factsheet: *Humblotia flavirostris*. Downloaded from <http://www.birdlife.org> on 20/02/2012.

Madagascar Harrier *Circus macrosceltes*

Key facts

Current IUCN Red List category	Vulnerable
Family	Accipitridae (Osprey, kites, hawks and eagles)
Species name author	Newton, 1863
Population size	250-999 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	594,000 km
Country endemic?	No



Justification: This species qualifies as Vulnerable based on its very small population which is likely to be declining owing to a variety of threats, principally habitat loss and degradation, and persecution by humans. Recent surveys suggest that the species is rarer than previously thought. If these lower population estimates are confirmed the species may be uplisted to a higher threat category.

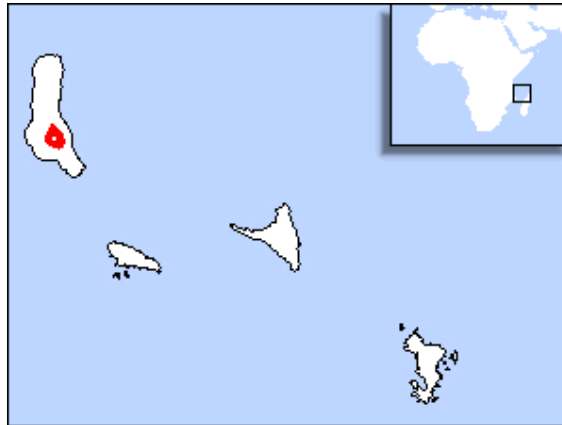
Distribution and population: *Circus macrosceltes* is confined to the Comoros Islands and Madagascar. The population on Comoros (Grande Comore, Moheli and Anjouan: three separate subpopulations), where its habitat is nearly totally destroyed, is estimated at no more than 50 mature individuals. However, owing to the uncertainty surrounding these estimates, the total population is assumed to be somewhere in the range 250-999 mature individuals.

BirdLife International (2012) Species factsheet: *Circus macrosceltes*. Downloaded from <http://www.birdlife.org> on 20/02/2012.

Mount Karthala White-eye *Zosterops mouroiensis*

Key facts

Current IUCN Red List category	Vulnerable
Family	Zosteropidae (White-eyes)
Species name author	Milne-Edwards & Oustalet, 1885
Population size	2,500-9,999 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	70 km
Country endemic?	Yes



Justification: This species is classified as Vulnerable since it has a very small range, confined to the top of an active volcano. The area of occupancy and probably the population have declined since the 1980s. The limited range and small population of this species render it extremely susceptible to future threats, most notably, a serious eruption. In such a case the species may warrant uplisting to Critically Endangered.

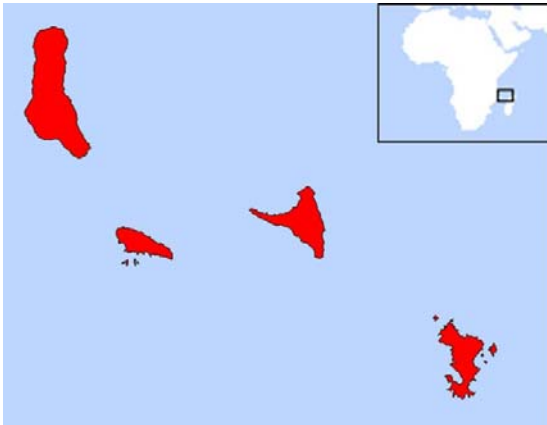
Distribution and population: *Zosterops mouroiensis* is restricted to, although common in, the upper reaches of the actively volcanic Mt Karthala, Grand Comoro. In 1988, the population was estimated to be "a few thousand birds at most". Surveys in 2005 indicated that densities had remained stable since 1985. However, the population is suspected to have declined since 1985 owing to a reduction in the extent of habitat as a result of volcanic activity. The extent of habitat is expected to recover through natural regeneration.

BirdLife International (2012) Species factsheet: *Zosterops mouroiensis*. Downloaded from <http://www.birdlife.org> on 20/02/2012.

Comoro Olive-pigeon *Columba pollenii*

Key facts

Current IUCN Red List category	Near Threatened
Family	Columbidae (Doves and pigeons)
Species name author	Schlegel, 1866
Population size	2,500-9,999 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	-
Country endemic?	No



Justification: This species is listed as Near Threatened owing to its small population. It faces threats from habitat clearance and degradation and hunting, and if the population was found to be in decline it may qualify for a higher threat category.

Distribution and population: *Columba pollenii* is endemic to the Comoro archipelago where it is found on all three islands of the Comoro Islands and on Mayotte (to France). On Grand Comoro, it is moderately common on Mt Karthala and La Grille above 500 m, increasing in abundance up to the tree-line at 1,750 m. On Moheli, it is limited to the island's main forested ridge. On Anjouan, it is uncommon and restricted to the few remaining areas of primary forest. On Mayotte, it remains in a number of widespread remnant pockets of suitable, wet, high-altitude forest and occurs in this habitat at a higher density than on the other islands. Numbers on each island are low, and the total population may be under 10,000 individuals. It has been suggested that migration between islands must take place for there to be a continually viable population.

BirdLife International (2012) Species factsheet: *Columba pollenii*. Downloaded from <http://www.birdlife.org> on 20/02/2012.

Eurasian Curlew *Numenius arquata*

Key facts

Current IUCN Red List category	Near Threatened
Family	Scolopacidae (Sandpipers and allies)
Species name author	(Linnaeus, 1758)
Population size	770,000 - 1,065,000 mature individuals
Population trend	decreasing
Distribution size (breeding/resident)	12,600,000 km
Country endemic?	No



Justification: This widespread species remains common in many parts of its range, and determining population trends is problematic. Nevertheless, declines have been recorded in several key populations and overall a moderately rapid global decline is estimated. As a result, the species has been uplisted to Near Threatened.

Distribution and population: *Numenius arquata* is widely distributed, breeding across Europe. It winters around the coasts of north-west Europe, the Mediterranean, Africa, the Middle East, the Indian Subcontinent, South-East Asia, Japan and the Sundas. It has a large global population estimated to number 765,000-1,065,000 individuals.

BirdLife International (2012) Species factsheet: *Numenius arquata*. Downloaded from <http://www.birdlife.org> on 15/02/2012.