

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

Foreword

I am pleased to report that Mozambique, with 2770 km long coast, bordering the Indian Ocean, has a rich biodiversity consisting of 5500 species of plants, two centres of endemism, 300 species in the red list, 120 threatened. For the animal, 4271 in the country are registered with the species most insects, birds representing followed by 72 and 17% respectively. The 735 recorded species of birds are mostly migratory. The country, with its long coastline, has several marine and coastal habitats where we highlight the most critical, such as coral reefs, mangroves and seagrass platforms totalling 13 species.

For biodiversity conservation set out various measures to protect sensitive habitats that resulted in increasing the percentage of protected areas from 11% in 1995 to 16% in 2008. This result is due to creation of new national parks and reserves including marine and coastal, border areas and implementation of various programs and initiatives for the rehabilitation of degraded habitats.

Joining the convention conference in Nairobi illustrates the efforts of the Government of Mozambique in the preservation of biodiversity within the region. The use of birds as key species will guide us further in the preservation of coastal ecosystems, and biological processes critical to its functionality. The presence of birds in ecosystems data is indicative of a rich, variable and healthy diversity of species.

This national report will contribute to the reflection, correction of the weaknesses of the challenges faced and transformation into concrete actions to improve the conditions for conservation of the natural wealth of national biodiversity, promote sustainable coastal development.

The Minister

Dr^a Alcinda António de Abreu

Prólogo

Apraz-me reportar que Moçambique, com 2.770 Km de extensão da costa, banhado pelo oceano Índico, possui uma rica biodiversidade constituída por 5.500 espécies de plantas, 2 centros de endemismo, 300 espécies na lista vermelha, sendo 120 ameaçadas. Relativamente à fauna, existem no País 4.271 espécies registadas sendo a maioria insectos, seguido de aves representando 72 e 17%, respectivamente. As 735 espécies de aves registadas são na maioria migratórias. O País, com a sua longa linha de costa, apresenta vários habitats marinhos e costeiros onde destacamos os mais críticos, tais como recifes de corais, os mangais e as plataformas de ervas marinhas que totalizam 13 espécies.

Para a conservação da biodiversidade foram estabelecidas várias medidas de protecção para habitats sensíveis que resultaram no aumento da percentagem das áreas protegidas de 11% em 1995 para 16% em 2008. Este resultado deve-se a criação de novos parques e reservas nacionais incluindo marinhos e costeiros, áreas transfronteiriças e implementação de diversos programas e iniciativas tendentes à reabilitação dos habitats degradados.

A adesão à Convenção de Nairobi ilustra os esforços do do Governo de Moçambique na preservação da Biodiversidade no âmbito regional. O uso das aves como espécies chaves irão guiar-nos ainda mais na preservação dos ecossistemas costeiros, e os processos biológicos vitais para a sua funcionalidade. A presença de aves em dados ecossistemas é indicativo de uma rica, variável e saudavel diversidade de espécies.

O presente Relatório Nacional irá contribuir para a reflexão, correcção das fraquezas enfrentadas e transformação dos desafios em acções concretas para o melhoramento das condições para conservação da riqueza natural nacional, a biodiversidade, em prol do desenvolvimento sustentável costeiro.

A Ministra

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1. Executive Summary

Mozambique has a long coastline, which encompasses three ecoregions rich in biodiversity, including birds. The coastal biodiversity richness and variability of habitat attract both residents and migratory birds, including marine and intertidal species. In the country 15 Important Bird Areas (IBAs) were identified of which eight are directly or indirectly linked to the coastal zone. However five potential IBAs have also been identified. The constant pressure on coastal habitats has threatened birds that live here. The main threats are linked to destruction and degradation of natural habitats, including aquaculture, salt production, unsustainable exploitation of species of mangrove, coastal mining activities, fishing using destructive methods, port expansion, poaching of birds and hydrological changes coastal systems dependent on large rivers. In preparing this report a "National Task Force (NTF)" was created composed of several government entities, International Union for the Conservation of Nature (IUCN), Worldwide Fund for Nature (WWF) and Universidade Eduardo Mondlane (UEM). The area covered by this study is 100 m inland along the coastline and 200 miles to sea. In places of high importance the coastal boundary extended to 25 kilometres inland. We proposed 41 bird species requiring protection under the Nairobi Convention. The major threats to birds in Mozambique have been identified and actions to mitigate against these threats have been prioritized. Finally we have the description of the threatened species that make up this list to Mozambique.

Sumário Executivo

Moçambique tem uma longa linha de costa, que abrange três ecos regiões e rica em termos de biodiversidade, incluindo as aves. A grande riqueza costeira em termos da biodiversidade e variabilidade de habitats é que atrai as aves tanto residentes e bem como as migratórias, incluindo as aves da zona intertidal e marinhas. No país foram identificadas 15 áreas importantes para as aves (Important Bird Areas – IBA's) dos quais oito (8) estão directa or indirectamente ligados zona costeira. Foram no entanto identificados cinco (5) potenciais IBA's. A permanente pressão sobre os habitats costeiros tem ameaçado as aves que aqui habitam. As principais ameaças estão ligadas a destruição e a degradação dos habitats naturais, nomeadamente a aquacultura, salinas, exploração não sustentável das espécies do mangal, actividade de mineração costeira, pesca usando métodos destrutivos, expansão portuária, caça furtiva das aves e as mudanças hidrologias em sistemas costeiros dependentes de grandes rios. Para a preparação deste relatório foi criado " National Task Force –NTF" composta por diversas entidades do governo, a IUCN, a WWF e a UEM. A área de abrangência deste estudo é de 100 m ao longo da orla marítima e 200 milha para o mar a dentro. Em locais com processos importantes a área foi estendida para 25 km para a terra a dentro. Foram proposta 41 espécies de aves que requerem protecção sob a Convenção de Nairobi. As espécies têm o seguinte estatuto segundo o IUCN: EN= Endangered (em perigo),

VU= Vulnerable (Vulnerável), NT= Near Threatened (Quase ameaçada) and LC= Least Concern (Baixa Preocupação). A seguir foram identificados as principais preocupações para a conservação destas espécies, as principais ameaças e bem como a sua priorização em termos de intervenção Finalmente temos a descrição das principais espécies ameaçadas e que fazem parte desta lista para Moçambique.

2. Introduction

2.1 Overview

Mozambique is a coastal country located between parallels 10 ° 20'S and 26 ° 50'S, and has a coastline of about 2700 km. The Mozambican coast is divided into four natural regions, namely (1) The coral coast, stretching from the mouth of the Rovuma close to Tanzania border to the Primeiras Islands - approximately 700 km of coastline, (2) The swamps located in the Central Coast of Mozambique - and the extension is 970 km from Angoche to the Bazaruto Archipelago, (3) the Coastal Dune which extends from the Bazaruto Archipelago to Ponta do Ouro - about 850 km in length, and (4) the Deltaic Swampy coast associated with the Zambezi and Save rivers.

It is a coastline rich in biodiversity with a variety of algae, seaweed, marine mammals, corals, turtles, fish and various marine invertebrates. The coastal vegetation is a mosaic composed of dune forest, woods, meadows, flood plains and deltaic mangrove forest. The mangrove area covers more than 400 hectares and is more developed in central and northern regions of Mozambique and least developed in the south. This diversity of habitats is what attracts many birds to the sites. More than 700 bird species have been recorded in Mozambique; however, knowledge in terms of their vulnerability is scarce (Parker, 2000). From an ornithological perspective, the region south of the Zambezi River is the limit of the Southern Africa Region and to the north of the Zambezi River is the Eastern African Region. For birds under the Nairobi Convention were considered marine aquatic habitats, whose group was the following: (a) pelagic (open sea), inshore, shoreline (intertidal) and estuarine. The typical birds are albatrosses, petrels, shearwaters and occasionally penguins. The most common inshore birds are gannets, cormorants, gulls and terns. The plovers, sandpipers, oystercatchers, egrets, sanderlings, turnstones, and knots are shoreline aquatic birds. River deltas have a combination of wading birds, but in large numbers due to greater productivity of these habitats. The entire coast of Mozambique is part of the migration route of Palearctic birds which are dependent on the African coastline. The most important route is that of birds coming from Europe and Asia.

In Mozambique 15 IBAs (Important Bird Areas) were identified, of which 5 are coastal, 3 are indirectly influenced by the coast and the rest are inland. The IBA are sites of biodiversity conservation selected based on pre-established criteria that are scientifically defensible. These sites are selected to preserve and maintain endangered birds species, birds species with a restricted distribution, biomes with special characteristics and if the site supports an exceptional cluster of birds. In Mozambique these IBAs cover 13,890 km², equivalent to 1.8% of Mozambique's land surface (Parker 2000). The Maputo Elephant Reserve is the only one which is fully protected. Another 5 are partially protected. In addition to these IBAs, the following are potential new IBAs: (1) Puga-Puga - Opposite the City of Angoche in the province of Nampula, (2) The East of Vamize Island in the province of Cabo Delgado, (3) The

floodplain associated with Buzi and Pungue Rivers, and (4) The floodplain associated with the Savane River.

2.2 Threats to birds and their habitats

One of the biggest threats to the avifauna is associated with extensive destruction of coastal habitats. Along the coast there is extensive conversion of mangrove into salt production pans or aquaculture facilities to produce prawns. Near large cities the effects of urbanization are affecting mangroves, where tens of hectares are felled to build luxury homes. A typical example can be seen in the neighborhood Triúfo in Maputo City. In some places such as the Savane River 30 km north of Beira mangroves are exploited for firewood and timber. In addition to serving as shelter for thousands of birds, mangroves promote high productivity, since most of invertebrates have part of their cycle of life associated with mangroves.

The mining of coastal heavy mineral sands also constitutes a great threat to birds and their habitats and is an emerging problem in Mozambique. A Moebase mine in the province of Zambezia is an example of this problem. The development of new ports and expansion of existing ports constitutes an imminent threat to coastal birds, because it involves the destruction of natural habitats, including the intertidal zone and mangroves mentioned above. The program of expansion of the Port of Maputo and the possible construction of a deep water port south of Maputo Reserve are some of many examples.

The use of destructive fishing methods (using prohibited fishing gear) and overexploitation of fish associated with illegal fishing could endanger the birds, although the extent of this threat has not yet been assessed. Moreover, the problem of agriculture along the coast increases the direct loss of natural habitat and the indirect loss by coastal erosion. Urban development along the coast, including tourism activities is increasing pressure to coastal ecosystems thus creating disturbances in the population of birds. In addition, poaching, unsustainable collection of eggs at nest sites is a problem for several species. Flamingos and some species of ducks are hunted illegally in several salts pans, including Matola in Maputo Province. Every year hundreds of Sooty Tern eggs are collected by people in Puga-Puga Island near the town of Angoche and are sold locally.

For waterfowl the biggest problem is that due to human pressure, alluvial riparian habitats have suffered. This pressure directly or indirectly affects the downstream habitats and consequently the coastal habitats, which in turn affect the birds.

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 Mozambique.

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 National Task Force (NTF) is composed of representatives from the Mozambique government and several non-governmental institutions: Ministério para a Coordenação da Acção Ambiental (MICOA) Direcção Nacional de Floresta e Fauna Bravia (DNFFB), Worldwide Fund for Nature (WWF), União Internacional para a Conservação da Natureza (UICN) and Universidade Eduardo Mondlane (UEM). The function of this group was to prepare the national report that shows the conservation status of birds along the coast in the area of jurisdiction of the Nairobi Convention. MICOA had the task of coordinating all activities and ensure that the report is compiled. The UEM had the task of compiling the report and receiving contributions and incorporating them in the report.

3. General information

3.1 Location and physical features

Mozambique is a coastal country whose northern border is shared with Tanzania, to the west by Malawi, Zambia, Zimbabwe, South Africa and Swaziland. The eastern border is the Indian Ocean. It occupies a total area of 784,755 km² and has a population estimated at over 21 million. Much of the Mozambican population lives along the coastal zone, specifically in two densely populated regions including the Maputo-Inhambane range and Zambezi Delta-Pemba range (Hughes and Hughes, 1992).

The section in the north of the country is characterized by mountain blocks, whose maximum elevation occurs on the border with The Rift Valley. The drainage in this section runs eastwards and south-eastward across many plateaus towards the Indian Ocean. The rivers are characteristically small, perennial streams (Hughes and Hughes, 1992).

The Central Section of Mozambique is dominated by the Zambezi Valley and its extensive floodplain. This valley receives water from numerous seasonal streams. The Shire River drains the waters of Lake Niassa to the Lower Zambezi.

In southern Mozambique the land is generally less than 500 meters below sea level, except along the border with South Africa and Zimbabwe. Over 85% of this area lies below 200 meters altitude. Many major Rivers drain its waters towards the coast including rivers Púngue, Revue, Buzi, Gorongosa, Save, Limpopo, Incomati, Maputo and Umbeluzi. Not all of these rivers are perennial; some are reduced to ponds along the canals.

3.2 Climate and vegetation

The weather is predominantly high pressure in most of the year, which prevails in the area of the plateau. However, the NE and SE winds from the Indian Ocean bring rain between the months of October and March (austral summer).

Precipitation is high along the coast and decreases towards inland. In some coastal areas the amount of rainfall exceeds 1200 mm / year. Areas of the inner Pafuri receive less than 300 mm / year. The entire coast of Mozambique receives on average 800-900 mm of rainfall annually. However, there are some pockets of higher rainfall particularly the east of the city of Xai-Xai, between the Tropic of Capricorn to Vilanculos, Beira until the south of the Zambezi Delta, from Quelimane to Pebane.

The coastal vegetation can be subdivided into two groups (1) Zanzibar-Inhambane mosaic (2) and Tongoland-Pondaland mosaic. The Zanzibar-Inhambane Mosaic is a coastal belt that extends north of the Limpopo River to the border with Tanzania. In this region there are 3000 species of plants, of which several hundred are endemic. Some endemic species include *Cephalosphaera*, *Englerodendron*, *Grandidiera* and *Stuhlmannia*. Much of this area was converted

into farmland and some plants have been replaced by exotic trees including cashew, coconut and mango.

The Tongoland-Pondaland Mosaic extends south of the Limpopo River to the border with South Africa in Ponta de Ouro. This region is home to approximately 3000 species of plants, of which 500 are trees. About 40 percent of these plant species are considered endemic to this region. About 12 of the 23 of aloe species and 8 out of 35 species of *Encephalartos* are endemic to the region. Most of these areas, especially near the city of Xai-Xai have been cleared for farmland.

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

The two species of pelicans found in Mozambique are considered as Least Concern by the IUCN Red List, however, these species are of conservation concern in Mozambique, because the largest breeding colonies on the East African coast, occur in the Zambezi Delta mangroves. One of the greatest threats to these birds suffer is that some sites are accessible to fishermen collect the eggs and chicks to eat. The two species of flamingos, despite being considered as LC according to IUCN red data list are also of conservation concern in Mozambique. The main threat is the increasing hunting pressure, suffered by these birds on their habitats along the coast (Parker, 1999).

4.1.3 Criteria for habitat selection

Marine IBAs were chosen in some cases using existing listings of terrestrial sites in (Parker 1999). Additional sites were selected based on seaward extensions from seabird breeding colonies, using foraging distance data to define the distance from the colony that should be protected. Sites with regular congregations of non-breeding seabirds were also selected.

5. Important Birds in Mozambique

5.1 Birds status

The coastal area for this report includes 200 nautical miles out to sea and 100 meters inland from the high water mark. The 100 meters definition was used according to Mozambican law, that 100 meters of the shoreline are protected areas. This protection extends to rivers and lakes. In estuaries, where ecological processes have great effects on the coastal zone, such as the Zambezi Delta, the study area extended to 25 kilometers inland. The species proposed for listing in Mozambique were selected using the following criteria:

- Ensure that the species global distribution falls within the coastal zone and EEZ of Mozambique. This also took into account the extent of the distribution of the bird;
- Endangered species were included in the list despite the extent of distribution. This is because if the species is threatened all areas of its distribution are important
- Some species that depend on coastal habitats such as mangroves were also considered. The emblematic species within the wetlands with endangered status were also considered.

5.1.1 Tabular presentation of birds status

Table 1: 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. If the regional conservation status differs from the global status, the regional status is given in parentheses. 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 type	Habitat use	Major threats	Population trend
<i>Acrocephalus griseldis</i>	Basra Reed Warbler	EN	Marshland	non-breeding, foraging, roosting	Habitat Loss	Decreasing
<i>Ardeola idae</i>	Malagasy Pond-Heron	EN	Freshwater floodplain	non-breeding, foraging, roosting	Habitat Loss	Decreasing
<i>Spheniscus demersus</i>	African Penguin	EN	Marine oceanic	breeding, non-breeding, foraging, roosting	Overfishing, Oil pollution	Decreasing
<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross	EN	Marine oceanic	Non-breeding, foraging	Longline fishing	Decreasing
<i>Thalassarche melanophrys</i>	Black-browed Albatross	EN	Marine oceanic	non-breeding, foraging	Longline fishing	Decreasing
<i>Diomedea exulans</i>	Wandering Albatross	VU	Marine oceanic	non-breeding, foraging	Longline fishing	Decreasing
<i>Egretta vinaceigula</i>	Slaty Egret	VU	Floodplain	non-breeding, foraging, roosting	Flood regulation, water abstraction, agriculture, reed-cutting, fire	Decreasing
<i>Glareola ocularis</i>	Madagascar	VU	Coastal: estuary,	breeding, non-	Habitat modification	Decreasing

Scientific name	Common name	IUCN status	Habitat type	Habitat use	Major threats	Population trend
	Pratincole		coastal plain	breeding, foraging, roosting		
<i>Grus carunculatus</i>	Wattled Crane	VU	Coastal Floodplain	breeding, non-breeding, foraging, roosting	Habitat degradation and loss due to dam construction, hunting, fire, human disturbance	Decreasing
<i>Procellaria aequinoctialis</i>	White-chinned Petrel	VU	Marine oceanic	non-breeding, foraging	Longline and trawl fishing	Decreasing
<i>Charadrius pallidus</i>	Chestnut-banded Plover	NT	intertidal mud-flats, Mangrove	non-breeding, foraging, roosting	Habitat degradation and modification	Decreasing
<i>Circaetus fasciolatus</i>	Southern Banded Snake Eagle	NT	Forest, Riverine Woodland	breeding, non-breeding, foraging, roosting	Coastal forest degradation	Decreasing?
<i>Numenius arquata</i>	Eurasian Curlew	NT	tidal mudflats and sandflats close to mangroves on bays and estuaries	non-breeding, foraging, roosting	Change in river regime, habitat modification and human disturbance	Decreasing
<i>Phoeniconaias minor</i>	Lesser Flamingo	NT	Intertidal, salt pans	non-breeding, foraging, roosting	Hunting, coastal degradation	Decreasing
<i>Procellaria cinerea</i>	Grey Petrel	NT	Marine oceanic	non-breeding, foraging, roosting	Longline fishing	Decreasing
<i>Pseudobulweria rostrata</i>	Tahiti Petrel	NT	Marine oceanic	non-breeding, foraging, roosting		Decreasing
<i>Puffinus griseus</i>	Sooty Shearwater	NT	Marine oceanic	non-breeding, foraging	Trawl fishing	Decreasing
<i>Sheppardia gunningi</i>	East Coast Akalat	NT	Coastal Forest,	breeding, non-breeding, foraging, roosting	Deforestation	Decreasing
<i>Thalassarche</i>	Shy Albatross	NT	Marine oceanic	non-breeding, foraging	Longline fishing	Unknown

Scientific name	Common name	IUCN status	Habitat type	Habitat use	Major threats	Population trend
<i>cauta</i>						
<i>Thalassarche steadi</i>	White-capped Albatross	NT	Marine oceanic	non-breeding, foraging	Longline and trawl fisheries	Decreasing
<i>Anastomus lamelligerus</i>	Openbilled Stork	LC	Floodplain, swamp, marshes	breeding, non-breeding, foraging, roosting	Habitat loss, fishing line entanglement,	Decreasing
<i>Charadrius mongolus</i>	Lesser Sand Plover	LC	mudflats of coastal bays and estuaries and sandy beaches	non-breeding, foraging, roosting	Coastal habitat modification, human disturbance and river hydrological regime changes	Decreasing
<i>Chlidonias hybrida</i>	Whiskered Tern	LC	Saltmarshes	non-breeding, foraging, roosting	Habitat destruction	Fluctuating
<i>Chlidonias leucopterus</i>	White-winged Tern	LC	Mangrove swamps	non-breeding, foraging, roosting	Avian influenza	Stable
<i>Dromas ardeola</i>	Crab Plover	LC	Sandy coastlines, islands, intertidal zone, estuaries, exposed coral reefs	non-breeding, foraging, roosting	Coastal habitat modification, human disturbance, coastal erosion, mangrove degradation	Stable
<i>Glareola pratincola</i>	Collared Pratincole	LC (NT)	Estuary	breeding, non-breeding, foraging, roosting	Change in hydrological regime	Decreasing
<i>Gypohierax angolensis</i>	Palmnut Vulture	LC (NT)	Coastal Forest, Mangrove,	breeding, non-breeding, foraging, roosting	Habitat modification	Stable?
<i>Halcyon senegaloides</i>	Mangrove Kingfisher	LC	Mangrove	breeding, non-breeding, foraging, roosting	Mangrove destruction and degradation	Decreasing
<i>Pelecanus onocrotalus</i>	White Pelican	LC	Coastal bay and Estuary	breeding, non-breeding, foraging,	Habitat modification, Power line collision, Hunting	Decreasing

Scientific name	Common name	IUCN status	Habitat type	Habitat use	Major threats	Population trend
<i>Pelecanus rufescens</i>	Pinkbacked Pelican	LC	Coastal bay and Estuary	roosting breeding, non-breeding, foraging,	habitat modification, Power line collision, hunting	Stable
<i>Phoenicoptero roseus</i>	Greater flamingo	LC	Intertidal, salt pans	roosting non-breeding, foraging,	Hunting, coastal degradation	Increasing?
<i>Pluvialis squatarola</i>	Grey Plover	LC	Intertidal mudflats, saltmarshes of bays and estuaries	roosting non-breeding, foraging,	Habitat degradation and modification	Decreasing
<i>Pterodroma mollis</i>	Soft-plumaged Petrel	LC (VU)	Marine oceanic	roosting non-breeding, foraging,		Unknown
<i>Puffinus carneipes</i>	Flesh-footed Shearwater	LC	Marine oceanic	roosting non-breeding, foraging,	Longline fishing	Decreasing
<i>Puffinus pacificus</i>	Wedge-tailed Shearwater	LC	Marine oceanic & offshore	non-breeding, foraging	Trawl fishing	Decreasing
<i>Sterna albifrons</i>	Little Tern	LC	Salt pans, coastal lagoons	breeding, non-breeding, foraging, roosting	Human disturbance at nesting colonies, habitat loss due to development	Decreasing
<i>Sterna anaethetus</i>	Bridled Tern	LC	Marine oceanic	roosting non-breeding, foraging,	Human Disturbance	Decreasing
<i>Sterna bengalensis</i>	Lesser Crested Tern	LC	sandy and coral coasts and estuaries and offshore islands	roosting breeding, non-breeding, foraging,		Decreasing
<i>Sterna fuscata</i>	Sooty Tern	LC	Islands of sand, Open Ocean	roosting breeding, non-breeding, foraging,	Large scale egg-collecting, declining of tuna population	Decreasing
<i>Sterna hirundo</i>	Common Tern	LC	Inshore islands, sandy beaches,	roosting breeding, non-breeding, foraging,	Human disturbance at nesting colonies, habitat loss due to	Decreasing

Scientific name	Common name	IUCN status	Habitat type	Habitat use	Major threats	Population trend
			estuaries, mangroves, salt marshes and dunes	roosting	development	

5.1.2 Graphical presentation of birds status

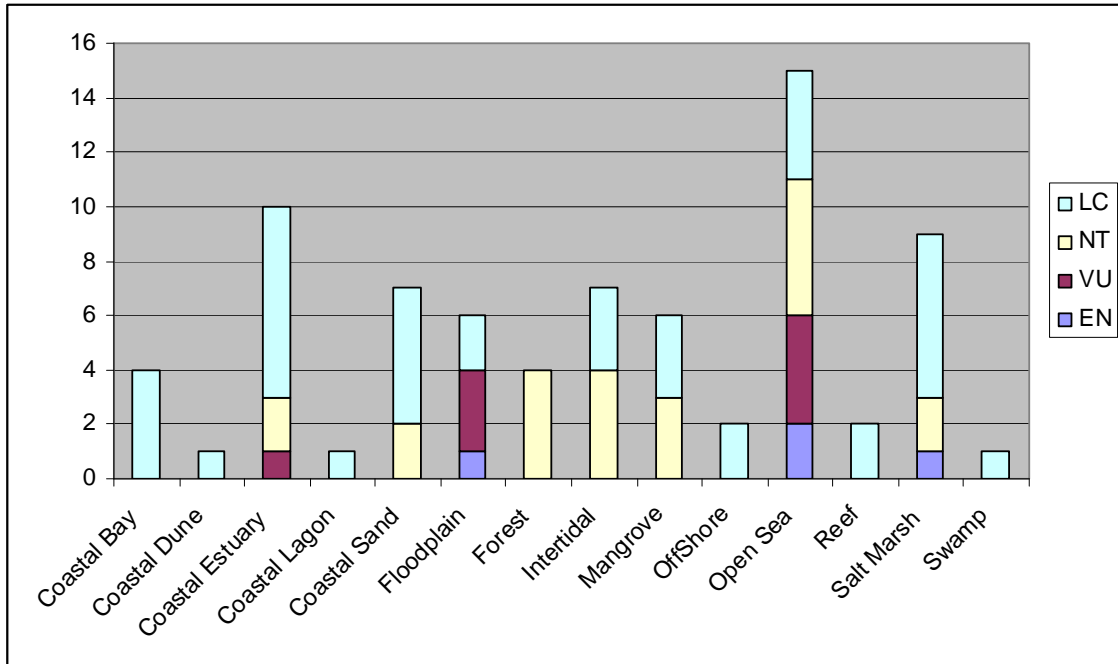


Figure 3: Numbers of species per IUCN category in each habitat type in Comoros's coastal and marine environment. Note: that species which use more than one habitat type will be counted more than once. CR=Critically Endangered, EN=Endangered, VU=Vulnerable and NT= Near Threatened

6. Conservation Issues

Nearly 46% of the Mozambican population live along the coast. With the exception of the city of Nampula (Northern Mozambique) and Tete, Chimoio (Central Mozambique) the other major cities are on the Indian Ocean coast. Thus, the pressure on coastal resources and the services provided by coastal ecosystems is enormous. Much of the coastal land to the south of the Save River and north of the Zambezi River has been converted to agriculture. Coastal forests are severely threatened due to intense deforestation due to clearing new farmland, the manufacture of charcoal and timber mill operation. Agricultural practices are based on cutting and burning, which is devastating on natural habitats. The agricultural area is occupied by prescribed maximum of three years. After this period the land is abandoned and new space is cleared. Both agriculture and the production of charcoal are sources of uncontrolled fires, which destroy large areas every year in Mozambique, including bird habitats. Other negative agricultural practices for the coastal forest and along the coastal lagoons, is due to cattle and other livestock grazing on the plains, which destroys wetlands and disturbs the natural habitats of birds. These animals roam these sites in search of fresh pastures and water.

Mangroves are also of great importance to birds and are facing human-induced threats in Mozambique. Some of the threats include cutting timber for building poles, firewood, and the manufacture of other goods such as boats. The production of the salt has seen large areas of mangrove cut down to give rise to salt water evaporation fields. The salt fields and aquaculture practices destroy several different channels carrying water to the ecosystem, or completely change the hydrology of the ecosystem. This change means that there is little circulation of fresh water, significantly increasing the salinity of soils in these areas. This may cause mass die-offs of the mangroves, if the salinity rises above their tolerance level. Near the large cities in recent years mangrove forests have been destroyed to build luxury apartments (cities of Maputo and Beira). In Maputo especially around the Bay of Maputo tens of hectares of mangrove areas are cleared, particularly for apartments and supermarkets. All the negative factors mentioned above contribute to the fragmentation and destruction of important habitats for birds. Along the coast of Maputo City there is an intense erosion of the coastline. This problem is due to the removal of large areas of mangroves, which served as a sponge, absorbing the flood of seawater. Much of the water was absorbed during the high tide and released gradually at low tide. This event occurs in low proportions, which makes the force of the sea attack the fragile sites along the shoreline, especially sandy beaches.

Illegal driving along sandy beaches also constitutes a major threat to birds and other types of invertebrates and reptiles. In addition to the compaction of sandy soil, it often directly kills and disturbs the animals. The compaction of the substrate creates an environment not favor for life and low productivity of these habitats. The birds most affected by this illegal activity are crab plovers (*Ardeola Dromas*), white-fronted plovers (*Charadrius marginatus*), Whimbrels (*Numenius phaeopus*) and several species of terns that rest on beaches. To circumvent the

illegal driving in Mozambique, there is a need to educate tourists and the coastal community in general. Better enforcement of the law and the application of stronger penalties is also needed. This problem is more acute in the south of the Save River to Ponta do Ouro. This zone is characterized by extensive presence of dunes and sandy beaches annually frequented by thousands of tourists. These losses decrease and leads to the disappearance of some coastal habitats important to birds life

The heavy sandy mining in Moebase causes the destruction of important coastal habitats for birds. In addition to removing vegetation, these activities interfere with birds that use habitat along the ocean coast. Many birds also suffer from noise disturbance, light and the movement of heavy machinery.

Exotic and invasive species are also a problem along the coast. This applies both to the plant and animal species. Much of the coastal forest is being replaced by exotic species of plants that produce fruit for example mango, coconut , citrus and cajonuts. This substitution alters the natural habitats and they can no longer effectively support the birds that use them. The most widespread invasive animal species is the House crow (*Corvus splendens*) which is expanding along the Mozambican coast. In the late 1960s this bird settled on the island of Inhaca. The most recent occupations have been in Maputo, Beira and Nacala. House crows are always associated with the major ports of the country. These birds constitute a great threat to conservation of coastal birds because they eat eggs and chicks of other birds and attack large birds along the coast.

The Mozambique coastline is characterized by the presence of highly productive sites, mainly associated with mangroves, estuaries or coral reefs. The great productivity of these sites attracts thousands of people for fishing and harvesting of marine organisms in the intertidal zone. Simultaneously these sites are sites of large concentrations of foraging and roosting birds. The interaction between birds and men in the intertidal zone results in negative impacts to the birds, because they are susceptible to disturbance and hunting. These factors contribute to the decline of bird populations.

The Sofala bank in central of Mozambique is the most productive coastal zone but this productivity has been affected by large dams along the Zambezi River, which constitutes a major source of nutrients for this region. The dams decrease the flow of the Zambezi River and the amount of sediment deposited in the estuarine zone. The area has been affected for the last 54 years. This reduction in nutrient deposition has implications for productivity in this great coastal zone, which also has direct and indirect implications on the coastal and marine birds.

Illegal fishing practices are common, especially fertilizer use for poisoning fish. Fish killed by this method can be eaten by birds, which are then poisoned. In some places with a high abundance of fish associated with coral reefs fishermen use of dynamite to fish. This method in addition to disrupting the normal activities of birds through noise pollution destroys the

breeding sites of invertebrates and fish. This fact has an effect on the abundance and richness of biodiversity of these sites from which birds depend on. The birds may also be disturbed by loud noise emitted by dynamite. On the open sea there are several illegal fishing practices introduced by poachers, particularly from the Asia. Some of the techniques used by these illegal longline fishing vessels have a big impact on seabirds. It is for this reason that all vagrants seabird, which visit the coast of Mozambique and are listed as threatened, were included in the list of birds that needed to have some action. These birds need to be protected throughout their range, especially in territories where an assessment of the impacts of illegal fishing on the birds has not been made.

The Mozambican coast is also an important transit area for the large tankers that transport crude oil from the Middle East to South Africa and South America. Many ships wash their empty tanks with seawater and this water is poured along our coast. The high numbers of ships also increases the likelihood of a catastrophic oil spill. Crude oil at sea affects sea birds and those that use the intertidal zone. Twice, tanker disasters were related to crude oil spill which affected several species of shorebirds. The effect of these spills on seabirds has not been evaluated in Mozambique.

The lack of planning and zoning in some of the coastline means there is unregulated construction of tourism developments. These buildings are built on primary dunes (still in consolidation phase), and often violate the law that no building can take place within 100 meters of the high water mark. Moreover, coastal tourism brings other problems that disrupt the birds such as driving on the beach and the use of jet skis. There is also an increasing number of motor boats in the tourist sites, which coincide with high value biodiversity conservation areas.

Currently there is much exploration of natural gas along the coast and large reserves were discovered in the Buzi and Rovuma Basin. This means that all impacts from this activity will soon affect our birds.

7. Priorities for Action

7.1 The approach

The list of threats was based on the experiences of the participants about what is happening along the Mozambican coast. The priorities were determined based on the severity of the threats posed. Most of the species listed as LC in the IUCN Red List, however, have been impacted by various pressures on the coast notably mining activities, new housing areas, tourism, illegal fishing, which may endanger the existence of these species in Mozambique. The effects of illegal fishing on marine birds in particular have not yet been evaluated. However, it can be disastrous because the techniques used by poachers (long line fishing) have been shown to cause bycatch of seabirds elsewhere. Therefore, prudent on our side we consider some of these birds until proven otherwise. Even birds that are considered vagrants were included if they are threatened because these birds need to be protected throughout their range, much as their presence in Mozambique is not significant. With increasing pressure on the birds in the world and the effects of climate change, who knows if these marginal habitats in the future become vital for these species. The two pelican species have been included as one of the largest breeding colonies occurs in the Zambezi Delta near the mangroves. These sites are under pressure from the collection of eggs. One species is part of the Red Data List for southern Africa despite being considered in the LC of the IUCN list. In the case of the flamingos on some hunting pressure along the coast. One of the species is on the list of endangered species in Mozambique.

7.2 Assessing threats

Table 2: Threats and potential conservation actions to benefit bird and biodiversity conservation in [country]. 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	Habitat Loss	Coastal Forest	Creation of more forest reserves in areas critical to the conservation of birds previously identified	4
	Habitat Modification	Coastal Forest	Zonation and planning of the coastal zone	4
Energy production and mining	Hydrological Changes	Zambezi Delta Floodplain	Habitat Rehabilitation	4
	Habitat destruction	Moebase (Mining)	Monitoring and give strong recommendation on mining activities	4
Tourism	Illegal beach driving	Southern Mozambique	Law enforcement and education	4
Human intrusions and disturbance	Construction	Maputo, Gaza, Inhambane and Beira Mangrove	Zonation and planning of the coastal zone and existing law application	3
	Invertebrate harvesting	All coastal Bays	Control and monitoring of these activities	3
Invasive and other problematic species and genes	Exotic fruit trees plantation	Coastal Forest	Zonation and planning of the coastal zone	3
	Invasive House Crow	Inhaca Island, Maputo Bay, Sofala Bay, Nacala Bay	Starting the control program of this invasive species	4
Natural system modifications	Big Dams Along Zambezi River	Sofala Bank	Ecosystem rehabilitation and planned water release from the dams.	3

	Aquaculture and Salt Production	Mangroves along the coast and estuaries	Zonation and planning of the coastal zone and clear regulations on this matter	3
Over-exploitation, persecution and control of species	Illegal Long line fishing	Coastal Reefs	More effective coastal patrolling of the coast involving the army	3
Pollution	Crude accidental spills at sea & washing tanks of ships carrying fuel along the African east coast	All over the Mozambique Coast	More effective coastal patrolling of the coast involving the army	2
	Future exploration of natural gas	Buzi and Rovuma estuaries	An effective environmental management plan	2
Residential and commercial development	Landfill areas of mangrove and other coastal wetlands for the creation of residential areas	Maputo and Beira	Zonation and planning of the coastal zone and clear municipal regulations on this matter	4
	Constructions along the primary coastal sand dune	All over Southern Mozambique	Zonation and planning of the coastal zone and clear regulations on this matter	4
Geological events	Earthquake (swells waves)	All over the Mozambique Coast (Coast of Nampula and Maputo)	Identifying sites vulnerable to earthquake, which can affect coastal birds, especially on estuaries	2
Transportation and service corridors	Extension of cargo terminals to increase handling capacity at major ports of Mozambique	Maputo, Beira and Nacala	Zonation and planning of the coastal zone and clear regulations on this matter, An effective environmental management plan (avaliação	3

			ambiental estratégica)	
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7.3 Priority sites

Table 3: Marine Important Bird Areas within Mozambique 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?)
Moebase Region		A1, A3		Not Protected
Zambezi Delta		A1, A3, A4i		Protected
Pomene		A1; A2; A3		Protected
Bazaruto				Protected
Archipelago		A4i; A4iii		
Maputo Special Reserve, including Inhaca Island and Futi Channel				Protected
		A1, A2, A3		

Table 4: Potential priority sites (The potential sites have been identified recently, but are not officially IBA's yet).

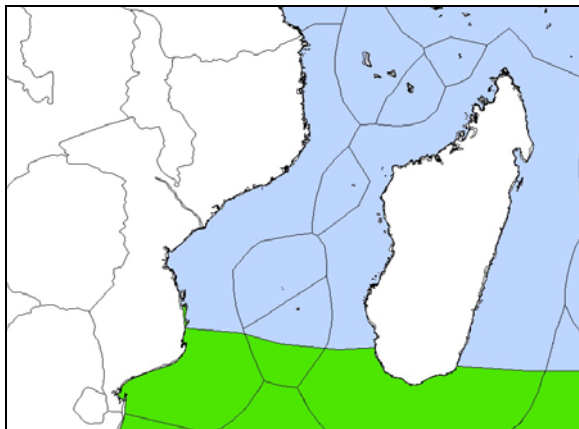
Site name	Area (km ²)	IBA criteria	Important species	Protected status? (i.e. is it officially protected already?)
Pungué/Buzi Estuary		A3, A4i		Not Protected
Savane River Floodplain		A1, A3, A4i		Not Protected
Vamizi Island		A4i		Partially Protected
Puga-Puga Island		A4i		Not Protected
Querimbas (algumas "areas)			Wattled Crane, Sooty Terns Sooty Terns	

8. Description of important birds

Indian Yellow-nosed Albatross *Thalassarche carteri*

Key facts

Current IUCN Red List category	Endangered
Family	Diomedeidae (Albatrosses)
Species name author	(Rothschild, 1903)
Population size	85,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	35,300,000 km
Country endemic?	No



Justification: This species is listed as Endangered on the basis of an estimated very rapid ongoing decline over three generations (71 years), based on data from the population stronghold on Amsterdam Island. This decline is the result of adult mortality and poor recruitment owing to interactions with fisheries and disease.

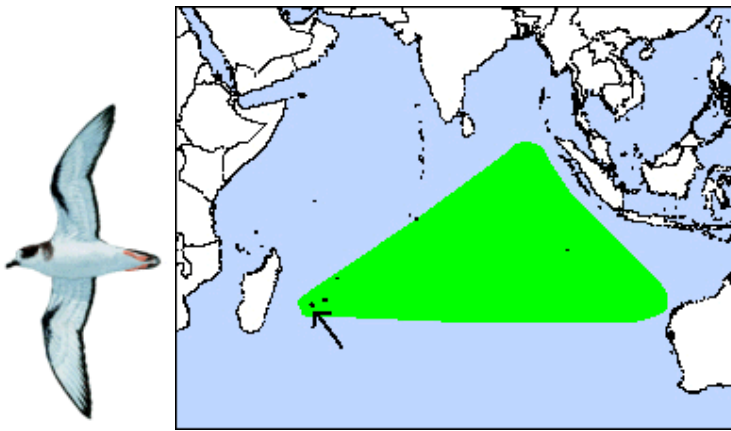
Distribution and population: *Thalassarche carteri* breeds on Amsterdam, Crozet Islands, Kerguelen Islands, and St Paul Islands (French Southern Territories) and on Prince Edward Island (South Africa). An estimated population of 41,580 pairs per year, equating to 83,160 mature individuals breed at these sites, and perhaps more than 160,000 individuals of all age classes. The decline over three generations is estimated at 55%, assuming a continuing decline at Amsterdam Island and populations elsewhere remain stable. Outside the breeding season, the species disperses throughout the southern Indian Ocean between 30-50 degrees South, and birds are frequently observed off southern Africa and south-western Australia, extending east to the Tasman Sea and north-eastern New Zealand.

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

Barau's Petrel *Pterodroma baraui*

Key facts

Current IUCN Red List category	Endangered
Family	Procellariidae (Petrels and shearwaters)
Species name author	(Jouanin, 1964)
Population size	6,000 - 8,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	11,800,000 km
Country endemic?	No



Justification: This species may have undergone a rapid population decline owing to illegal shooting in the 1990s, but has apparently recovered. However, it has a very small range when breeding (probably at fewer than five locations) and a small population, both of which are thought to be declining. It is therefore classified as Endangered.

Distribution and population: *Pterodroma baraui* nests on the Massif of Piton des Neiges, Réunion (to France). The number of breeders is estimated to be 4,000-5,000 pairs. In 1992, it was estimated that up to half the breeding population may have been killed by illegal shooting. Although this may have been an overestimate, the population appears to have recovered to former levels (because of large numbers of non-breeders) following the cessation of shooting. It has been observed at sea north of Réunion, from the Oman Sea as far as Sumatra and around the Cocos Keeling Islands, and south-east towards Australia.

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

Basra Reed-warbler *Acrocephalus griseldis*

Key facts

Current IUCN Red List category	Endangered
Family	Sylviidae (Old World warblers)
Species name author	(Hartlaub, 1891)
Population size	2,500-9,999 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	90,800 km
Country endemic?	No

Justification: This species is listed as Endangered because it has a small population which is estimated to be undergoing very rapid and continuing declines owing to extensive, and recently accelerating, drainage of its breeding habitat. Population declines are corroborated by an apparent decline in numbers trapped on migration at a ringing station.

Distribution and population: *Acrocephalus griseldis* breeds in the Mesopotamian marshes of south-east Iraq (between Baghdad and Basra) and probably in south-west Iran in the Hawr Al Hawizeh marsh complex of Khuzestan. It winters in Sudan, Ethiopia, south Somalia, south-east Kenya, east Tanzania, south Malawi (few records) and Mozambique. It is regular on passage in Saudi Arabia and Kuwait (where it may breed). The maximum area of suitable habitat that is estimated to remain within the main Mesopotamian marshlands is 759 km (c.7% of the original marshland area, as of the mid-1970s). At Ngulia ringing station (Kenya), the average decadal ringing total for this species has been declining over the last three decades relative to the average decadal total for all Palearctic passerine migrants (by c.20% per decade). This suggests that a decline of up to 70-80% may have taken place since the 1970s. However, following the regeneration of habitat in southern Iraq, surveys indicate that the species increased between 2006 and 2007.

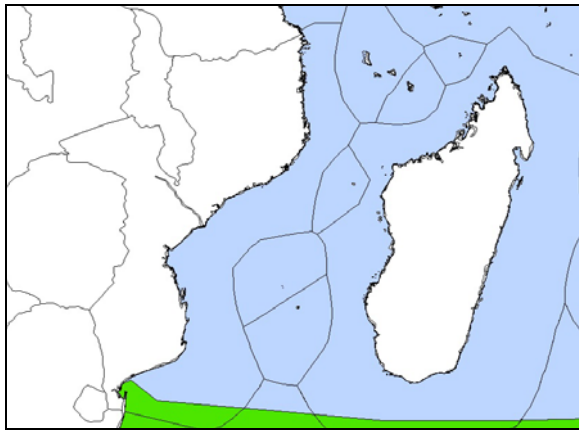
BirdLife International (2012) Species factsheet: *Acrocephalus griseldis*.

Downloaded from <http://www.birdlife.org> on 23/02/2012.

Black-browed Albatross *Thalassarche melanophrys*

Key facts

Current IUCN Red List category	Endangered
Family	Diomedidae (Albatrosses)
Species name author	(Temminck, 1828)
Population size	1,200,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	113,000,000 km
Country endemic?	No



Justification: This species is listed as Endangered because it is estimated to be declining at a very rapid rate over three generations (65 years) on the basis of current rates of decline at the large breeding colonies in the south-west Atlantic. These declines have been attributed to the impact of incidental mortality in longline and trawl fisheries.

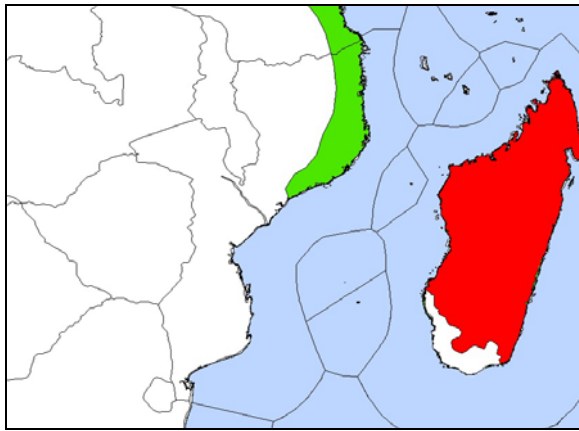
Distribution and population: *Thalassarche melanophrys* has a circumpolar distribution ranging from subtropical to polar waters, breeding in the Falkland Islands (Islas Malvinas), Islas Diego Ramirez, Ildefonso, Diego de Almagro and Isla Evangelistas (Chile), South Georgia (Georgias del Sur), Crozet and Kerguelen Islands (French Southern Territories), Heard and McDonald Islands and Macquarie Island (Australia), and Campbell and Antipodes Islands, New Zealand. Two breeding sites are also found in southern Chile on islets in Tierra del Fuego and in the Mallaganes region. The total breeding population was estimated at c.600,853 pairs, 67% in the Falkland Islands, 12% at South Georgia and 20% in Chile. The combination of trends across colonies and, in particular, the declines in the Falklands, South Georgia and Kerguelen, indicate an overall decline of 67% over 64 years (three generations).

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

Madagascar Pratincole *Glareola ocularis*

Key facts

Current IUCN Red List category	Vulnerable
Family	Glareolidae (Coursers and pratincoles)
Species name author	Verreaux, 1833
Population size	5,000 - 10,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	545,000 km
Country endemic?	No



Justification: This species is listed as Vulnerable because its population is small and undergoing a continuing decline, probably owing to pressures on its wetland habitats.

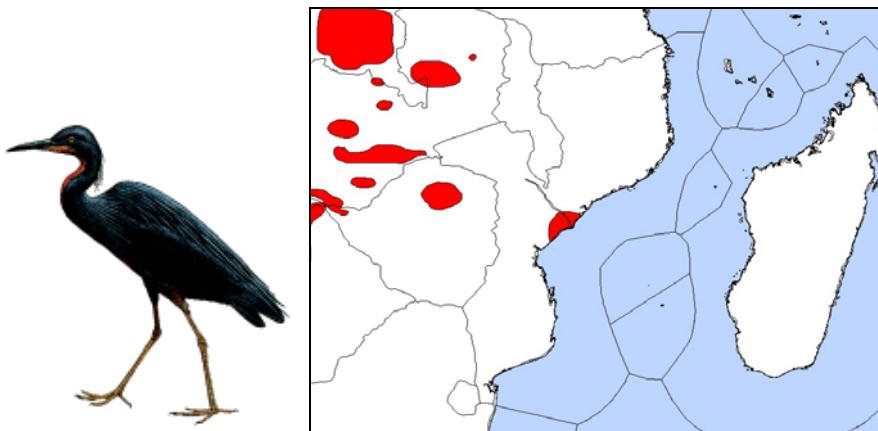
Distribution and population: Madagascar Pratincole is a migratory species breeding in Madagascar, where it is found in groups of 10-50 in a variety of habitats across most of the country except the extreme south-west. It migrates to East Africa during the austral winter (May-August) where it is mainly found near the coast between Somalia and Mozambique, although large numbers have sometimes been recorded from inland sites. Several wintering sites are very important, holding several thousand birds, whereas only two sites are known on Madagascar holding more than 100 individuals. Its population is small, recently estimated to number 5,000-10,000 individuals, and thought to be declining, or stable following a major decline.

BirdLife International (2012) Species factsheet: *Glareola ocularis*. Downloaded from <http://www.birdlife.org> on 06/03/2012.

Grey Slaty Egret *Egretta vinaceigula*

Key facts

Current IUCN Red List category	Vulnerable
Family	Ardeidae (Hérons and egrets)
Species name author	(Sharpe, 1895)
Population size	3,000 - 5,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	66,800 km
Country endemic?	No



Justification: This species is classified as Vulnerable because it has a small and declining population. Apparently suitable habitat is widely available throughout its range, yet it is never common, thus its rarity remains unexplained.

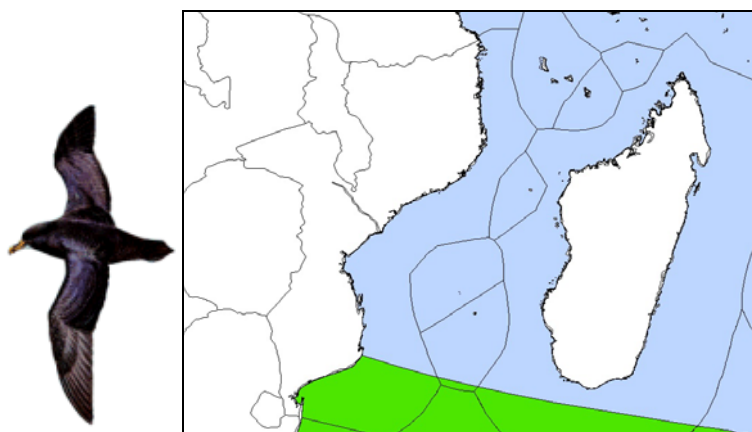
Distribution and population: *Egretta vinaceigula* occurs in Zambia (perhaps 500-1,000 birds), northern Botswana (probably over 2,000 birds), and northern Namibia (c.300 birds). It wanders more widely when not breeding, and occurs more sparsely in Democratic Republic of Congo, Zimbabwe, and occasionally South Africa. It is expected to occur in Mozambique (its presence on the Zambezi Delta is unconfirmed), Angola and possibly Malawi. The species is nearly always encountered in small numbers, e.g. rarely more than c.100 together in Zambia, suggesting that the world population is more in the order of 3,000-5,000 individuals than a 1985 estimate of 5,000-10,000.

BirdLife International (2012) Species factsheet: *Egretta vinaceigula*. Downloaded from <http://www.birdlife.org> on 06/03/2012.

White-chinned Petrel *Procellaria aequinoctialis*

Key facts

Current IUCN Red List category	Vulnerable
Family	Procellariidae (Petrels and shearwaters)
Species name author	Linnaeus, 1758
Population size	3,500,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	44,800,000 km
Country endemic?	No



Justification: This species is classified as Vulnerable because of suspected rapid declines, although almost no reliable estimates of historical populations exist. Very high rates of incidental mortality in longline fisheries are suspected in recent years; the probability that these circumstances will continue and its susceptibility to predation and loss of breeding habitat indicate a rapid and substantial population decrease is likely.

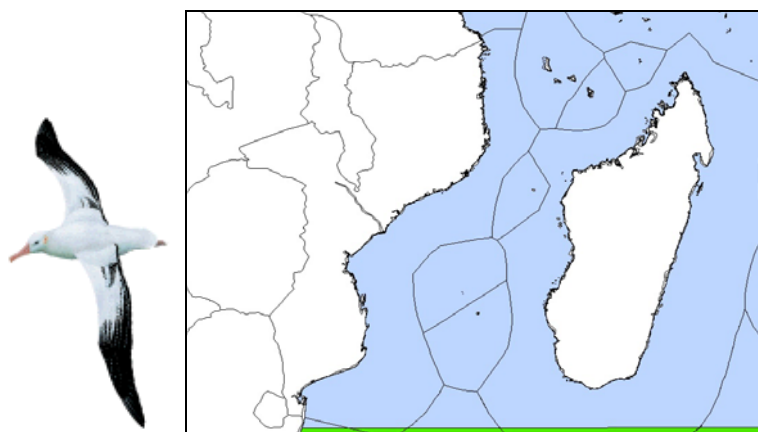
Distribution and population: *Procellaria aequinoctialis* breeds on South Georgia (Georgias del Sur), Prince Edward Islands (South Africa), Crozet Islands, Kerguelen Islands (French Southern Territories), Auckland, Campbell and Antipodes Islands (New Zealand), and in small numbers in the Falkland Islands (Islas Malvinas). Recently revised population estimates give a global population of c. 3.5 million individuals. White-chinned Petrels forage north to the subtropics and south to the pack-ice edge off Antarctica, and are distributed widely in all southern oceans.

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

Wandering Albatross *Diomedea exulans*

Key facts

Current IUCN Red List category	Vulnerable
Family	Diomedidae (Albatrosses)
Species name author	Linnaeus, 1758
Population size	26,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	64,700,000 km
Country endemic?	No



Justification: Overall past and predicted future declines amount to a rapid population reduction over a period of three generations, qualifying the species as Vulnerable. Longline fishing is believed to be a main cause of decline in this species, causing reductions in adult survival and juvenile recruitment, and this threat is ongoing.

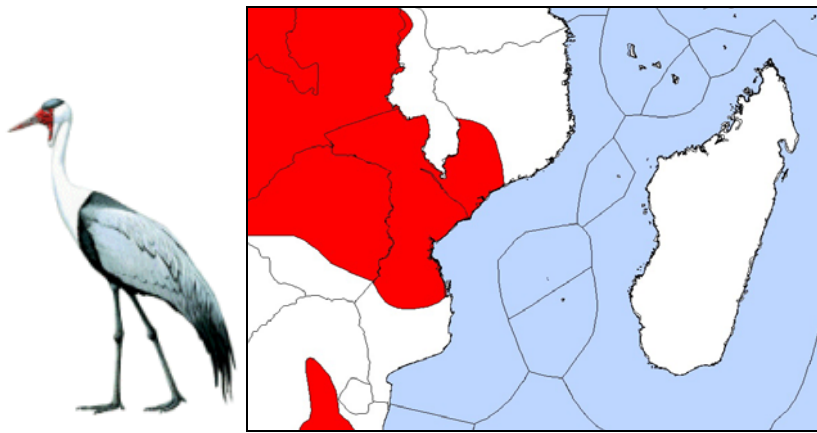
Distribution and population: *Diomedea exulans* breeds on South Georgia (c. 20% of the global breeding population), Prince Edward Islands (South Africa) (c. 40% of the global population), Crozet Islands and Kerguelen Islands (French Southern Territories) (approximately 40% of the global population), with a total global population of c. 8,000 pairs breeding in any given year. Overall declines are estimated to exceed 30% over 70 years. Recovery is believed to be impeded by a decline in recruitment rate. Non-breeding and juvenile birds remain north of 50°S between subantarctic and subtropical waters with a significant proportion crossing the Indian Ocean to wintering grounds around the southern and eastern coast of Australia.

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

Wattled Crane *Grus carunculatus*

Key facts

Current IUCN Red List category	Vulnerable
Family	Gruidae (Cranes)
Species name author	(Gmelin, 1789)
Population size	6,000 - 8,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	2,300,000 km
Country endemic?	No



Justification: Although it is known that there have been some population declines, there is limited and conflicting information on trends for this species, even in key areas. Until better data can be obtained, it is listed as Vulnerable since it has a small population which appears to have undergone a rapid decline which, with threats continuing or increasing, is projected to continue.

Distribution and population: *Grus carunculatus* is found in Ethiopia, (c.200), Tanzania (c.200), Democratic Republic of Congo (probably around 500), Zambia (c.4,500), Angola (c.500, perhaps declining), Malawi (c.15 pairs or 40 individuals), Mozambique (c.300, 120 pairs in the Zambezi Delta region), Zimbabwe (c.200), Botswana (c. 111 breeding pairs in a total of 1,300 individuals), Namibia (c.250 birds including probably less than 10 pairs), and South Africa (c.235, with a 35% decline in the last 20 years, but possibly stable now). The total population appeared stable from the mid-1980s to mid-1990s, however when estimates from the 1980s are compared with those from 2006, it is judged to have declined significantly, perhaps indicating declines in the last 10 years. The comparison of 2002 estimates with those from 1993 suggests marked declines in Mozambique, Zambia and possibly Botswana. Its present world population has been variously estimated at 7,990 individuals, 7,700 individuals or less, not more than 8,000 individuals and 6,000-8,000

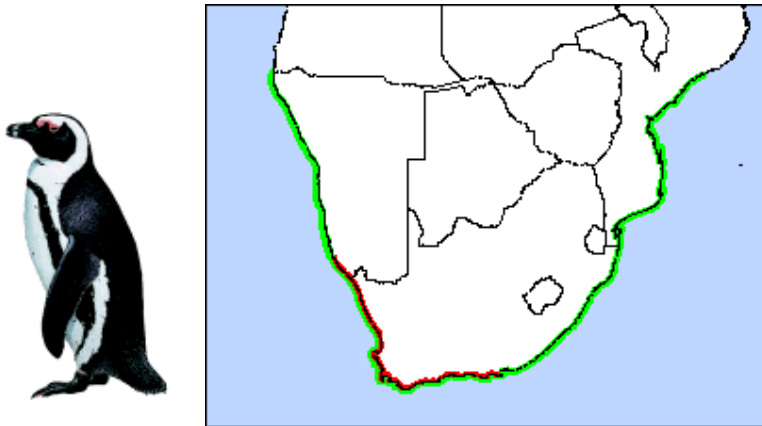
individuals. It exists in three disjunct populations, the large south-central population and small Ethiopian and South African populations, which may be relicts from its former range.

BirdLife International (2012) Species factsheet: *Grus carunculatus*. Downloaded from <http://www.birdlife.org> on 06/03/2012.

African Penguin *Spheniscus demersus*

Key facts

Current IUCN Red List category	Endangered
Family	Spheniscidae (Penguins)
Species name author	(Linnaeus, 1758)
Population size	52,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	130,000 km
Country endemic?	No



Justification: This species has been uplisted to Endangered because recent data has revealed that it is undergoing a very rapid population decline, probably as a result of commercial fisheries and shifts in prey populations. This trend currently shows no sign of reversing, and immediate conservation action is required to prevent further declines.

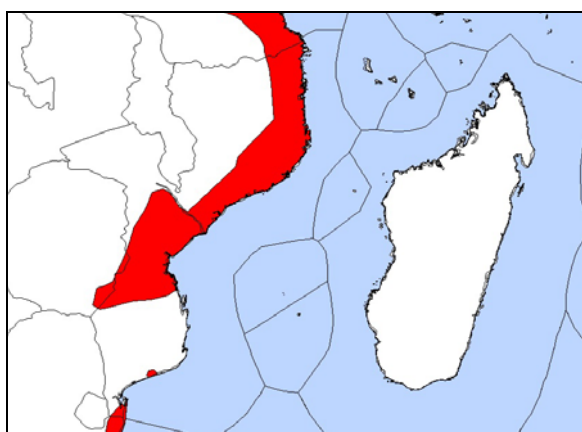
Distribution and population: *Spheniscus demersus* breeds at 25 islands and four mainland sites in Namibia and South Africa. It has been recorded as far north as Gabon and Mozambique. Just seven islands now support 80% of the global population. Its population at the beginning of the 21st century had fallen to about 10% of its numbers 100 years before. The total population was estimated at 141,000 pairs in 1956-1957, 69,000 pairs in 1979-1980, 57,000 pairs in 2004-2005 and 36,000 pairs in 2006-2007. Declines have continued, with the global population in 2009 estimated at just 25,262 pairs, equating to a decline of 60.5% over 28 years (three generations).

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

Southern Banded Snake-eagle *Circaetus fasciolatus*

Key facts

Current IUCN Red List category	Near Threatened
Family	Accipitridae (Osprey, kites, hawks and eagles)
Species name author	Kaup, 1850
Population size	1,000 - 3,000 mature individuals
Population trend	Unset
Distribution size (breeding/resident)	601,000 km
Country endemic?	No



Justification: This species is classified as Near Threatened, owing to its small range and population. There is no evidence that either its range or population is in decline. However, evidence of such declines may qualify the species for uplisting to a higher threat category.

Distribution and population: *Circaetus fasciolatus* occurs from southern Somalia, Kenya, Tanzania, and Mozambique to north-eastern South Africa, extending up the Save River (Mozambique) to south-eastern Zimbabwe. It is generally found within 20 km of the coast, except along major rivers, in the lower Tana River forests in Kenya, the Usambara Mountains in Tanzania, and in Zimbabwe. It is uncommon, occurring at low densities, over most of its range but may be locally common in the East Usambara Mountains. In South Africa, where it has suffered a range reduction

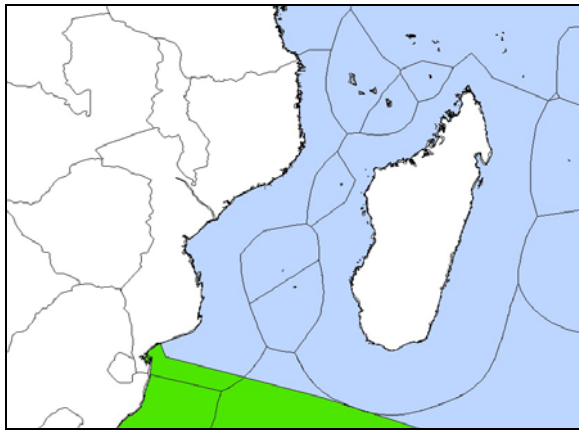
(no longer found in the southerly part of its former range), the total population is only 40-50 pairs. It has been recently recorded in only 16 out of 31 coastal forest blocks in Kenya and Tanzania, and a more recent survey recorded it in only 24 out of 41 forests.

BirdLife International (2012) Species factsheet: *Circaetus fasciolatus*. Downloaded from <http://www.birdlife.org> on 23/02/2012.

Sooty Shearwater *Puffinus griseus*

Key facts

Current IUCN Red List category	Near Threatened
Family	Procellariidae (Petrels and shearwaters)
Species name author	(Gmelin, 1789)
Population size	20,000,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	-
Country endemic?	No



Justification: This species is classified as Near Threatened because although it has a very large global population it is thought to have undergone a moderately rapid decline owing to the impact of fisheries, the harvesting of its young and possibly climate change.

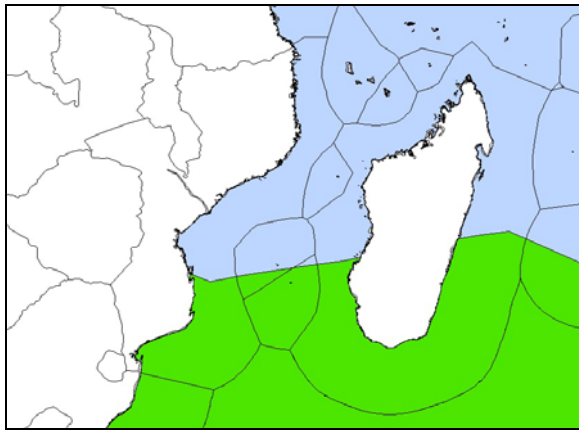
Distribution and population: *Puffinus griseus* is an abundant shearwater, breeding on islands off New Zealand, Australia and Chile, and the Falkland Islands (Malvinas). The total world population is thought to be over 20 million birds. Although this is an extremely numerous species, there are persistent signs of a current decline. In New Zealand, the number of burrows in the largest colony (on the Snares islands) declined by 37% between 1969-1971 and 1996-2000. Elsewhere the mainland New Zealand, colonies are in decline and certain offshore colonies have not responded to predator control. In the California Current, Sooty Shearwater numbers have fallen by 90% in the last 20 years. It remains uncertain whether this has resulted from population declines or distributional shifts.

BirdLife International (2012) Species factsheet: *Puffinus griseus*. Downloaded from <http://www.birdlife.org> on 06/03/2012.

Shy Albatross *Thalassarche cauta*

Key facts

Current IUCN Red List category	Near Threatened
Family	Diomedidae (Albatrosses)
Species name author	(Gould, 1841)
Population size	26,000 mature individuals
Population trend	Unknown
Distribution size (breeding/resident)	23,900,000 km
Country endemic?	No



Justification: This species breeds on just three islands. It may be susceptible to stochastic events and human activities, although one nesting site is moderately widely separated from the other two. For this reason it is treated as Near Threatened.

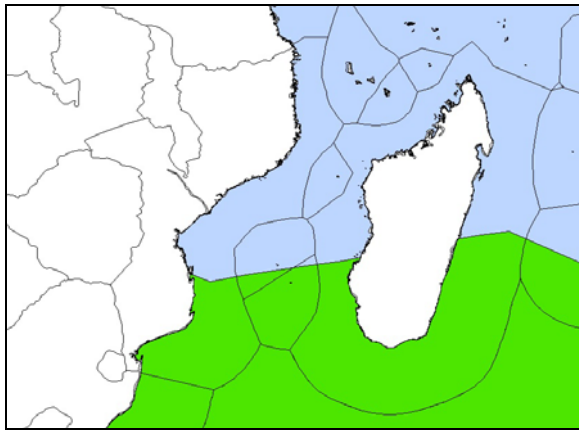
Distribution and population: *Thalassarche cauta* is an endemic breeder in Australia, with colonies on three islands off Tasmania. In 2005, the total breeding population was estimated to be 12,750 breeding pairs. Understanding the at-sea distribution of *T. cauta* is confounded by its similar appearance to other 'shy-type' albatrosses, particularly *T. steadi*. During the breeding season, adults are relatively sedentary and are concentrated around Tasmania and southern Australia. However, juvenile birds from Mewstone (Tasmania) are known to migrate to South Africa. One banded bird from Albatross Island has been recovered in northern New Zealand.

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

White-capped Albatross *Thalassarche steadi*

Key facts

Current IUCN Red List category	Near Threatened
Family	Diomedidae (Albatrosses)
Species name author	Falla, 1933
Population size	100,000-499,999 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	77,700,000 km
Country endemic?	No



Justification: The population trend of this species is poorly known. It is categorised as Near Threatened because, given its longevity and slow productivity, and a high rate of mortality recorded in longline and trawl fisheries, it may be declining at a moderately rapid rate.

Distribution and population: *Thalassarche steadi* is endemic to offshore islands of New Zealand, with an estimated breeding population of approximately 95,000 pairs. The total population is estimated to comprise approximately 350,000-375,000 birds and limited information available suggests that some populations may be increasing. 'Shy' type albatrosses have been recorded in the south-west Atlantic for many years. Most of the birds recorded are immature, which has hindered specific identification. However, genetic evidence from a bird on South Georgia confirmed the species was *T. steadi*. In addition, tracking studies, bird band recoveries and DNA-based identification of bycatch specimens have confirmed that this species forages in Tasmania and Southern Africa/Namibia, and immature birds are thought to occur regularly throughout the South Atlantic and south-west Indian Ocean. The first tracking studies have commenced on Auckland Island in 2006 and are ongoing. Although global counts of *T. steadi* have increased from 75,000 breeding pairs in 1993 to a current estimate of 97,089 pairs, the estimates are not based on comparable methodologies and therefore population trends cannot be calculated. The need for accurate

trend information is highlighted by the report of an estimated 8,000 albatrosses of this species killed annually as a result of longline and trawl fisheries.

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

Grey Petrel *Procellaria cinerea*

Key facts

Current IUCN Red List category	Near Threatened
Family	Procellariidae (Petrels and shearwaters)
Species name author	Gmelin, 1789
Population size	400,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	68,800,000 km
Country endemic?	No

Justification: Although there are no current trend data, this species is susceptible to introduced mammalian predators, having been extirpated from Macquarie Island by cats and rats, and today it is the most commonly caught bycatch species in longline fisheries in New Zealand waters. Evidence from Gough Island, formerly thought to contain the largest population of this species, suggest that the species is likely to be subjected to considerable predation from introduced mice that are a major predator on other winter-breeding seabirds. The population on the Kerguelen Islands may also be in decline due to fishery bycatch. Based on these data a moderately rapid decline is suspected and as such the species is listed as Near Threatened, but further data are urgently required in order to more accurately assess its population numbers and trends.

Distribution and population: This species has a circumpolar distribution between 32-58 degrees South, but somewhat to the north in the Humboldt Current and off the east coast of South America. It breeds on Gough and other islands in the Tristan da Cunha group (St Helena, to UK), Prince Edward and Marion islands (South Africa), Crozet, Kerguelen and Amsterdam islands (French Southern Territories), Campbell and the Antipodes islands (New Zealand), and Macquarie Island (Australia). Its total population size is poorly known. Its largest breeding populations were believed to be in the Tristan da Cunha group: in the early 1970s, hundreds of thousands were guessed to breed at Gough Island. However, the most recent estimate for Gough suggest a population of >10,000 pairs, with pairs only sparse in the uplands, and that the population on Gough may be far lower than on the Antipodes. The largest population is therefore likely to be on the Antipodes Islands, with 53,000 pairs estimated in 2001. In addition, several thousand pairs are estimated at Prince Edward, Crozet and Kerguelen islands, a few hundred on Campbell Island (up to 100 pairs on the main island, and possibly a few hundred on offshore stacks), and at least 59-80 pairs on Macquarie. One recent estimate on the Kerguelen Islands gave a figure of 1,900-5,600 breeding pairs, though some nesting sites were not sampled. Only c.10 pairs breed on Amsterdam Island, although the fossil record indicates that one of the world's largest colonies probably occurred there. There is no population trend data for most of the sites, but

based on a population model and data from fisheries, this population may be in decline due to bycatch.

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

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.

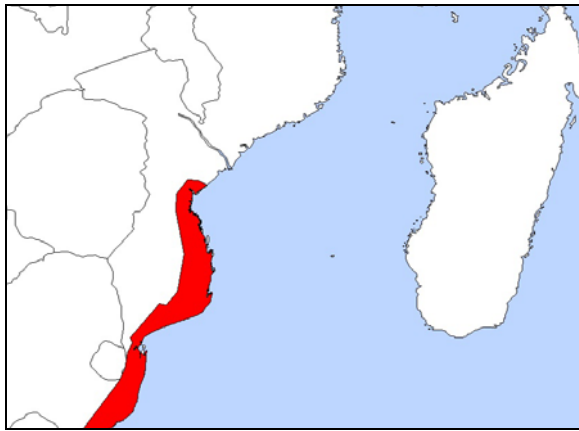
Distribution and population: *Numenius arquata* is widely distributed, breeding across Europe. It winters around the coasts of north-west Europe, the Mediterranean, Africa, the Middle East, the Indian Subcontinent, South-East Asia, Japan and the Sundas. It has a large global population estimated to number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

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

Chestnut-banded Plover *Charadrius pallidus*

Key facts

Current IUCN Red List category	Near Threatened
Family	Charadriidae (Plovers)
Species name author	Strickland, 1852
Population size	16,000 - 17,500 mature individuals
Population trend	Stable
Distribution size (breeding/resident)	301,000 km
Country endemic?	No



Justification: This species has a large range, however, given the specific nature of its habitat requirements, the actual area it occupies is believed to be small, occurring at fewer than ten locations in the non-breeding season; at these sites habitat quality is declining. For these reasons it is evaluated as Near Threatened.

Distribution and population: *Charadrius pallidus* has a disjunct distribution with two separate populations. The nominate subspecies occurs across southern Africa in Angola, Botswana, Mozambique, Namibia, South Africa and Zimbabwe, while subspecies *venustus* is restricted to the Rift Valley of East Africa in Kenya and Tanzania. The species has a large range. Its global population is estimated at 17,500 individuals. Simultaneous counts indicate that just three sites - Walvis Bay and Sandwich Harbour in Namibia, and Lake Natron in Tanzania - can hold 87% of the world population during non-breeding periods. Nine key sites have been identified, based upon counts between 1990 and 2001, which hold >1% of the global population and between them can hold the entire population during the non-breeding season. In Namibia, Walvis Bay has held approximately 7,700 individuals, Sandwich Harbour 5,000 individuals, Okondeka 300 individuals and Mile Four has had 174 individuals counted. Elsewhere in southern Africa the Berg River saltpans in South Africa held 181 individuals and the Nata delta in Botswana has had 277 individuals. The East African population, thought to number 5,000-6,000 birds, is concentrated in the northern Rift Valley

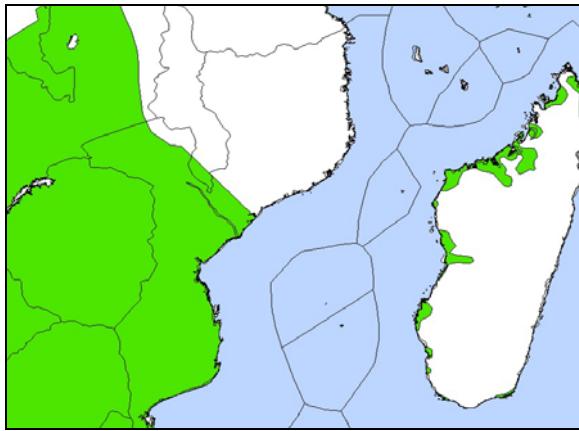
with counts from Tanzania of 2,340 individuals at Lake Natron and 520 individuals at Lake Manyara, and 590 individuals at Lake Magadi in Kenya.

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

Lesser Flamingo *Phoeniconaias minor*

Key facts

Current IUCN Red List category	Near Threatened
Family	Phoenicopteridae (Flamingos)
Species name author	(Geoffroy Saint-Hilaire, 1798)
Population size	2,200,000 – 3,240,000 mature individuals
Population trend	Decreasing
Distribution size (breeding/resident)	331,000 km
Country endemic?	No



Justification: This species is classified as Near Threatened because populations appear to be undergoing a moderately rapid reduction. Proposed large-scale soda ash extraction at Lake Natron, the most important breeding colony, although currently on hold, would be disastrous for this species and, were this to happen, the species may qualify for uplisting to a higher threat category.

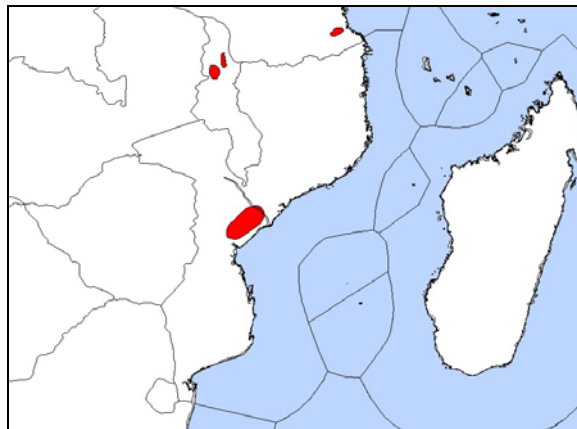
Distribution and population: *Phoeniconaias minor* breeds mainly in the Rift Valley lakes of East Africa in Ethiopia, Kenya and Tanzania. Three smaller breeding congregations occur in West Africa, in southern Africa, and in India and Pakistan in Asia. When not breeding, it occurs in virtually every sub-Saharan country and from the Arabian peninsula to Pakistan. The global population is c.2,220,000-3,240,000, including c.650,000 in Asia. Declines have been suggested for much of Africa, but are difficult to clarify due to wide scale movement within the continent. It is adapted to respond to local environmental changes in sites by moving elsewhere, and thus depends on a network of suitable areas.

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

East Coast Akalat *Sheppardia gunningi*

Key facts

Current IUCN Red List category	Near Threatened
Family	Muscicapidae (Chats and Old World flycatchers)
Species name author	Haagner, 1909
Population size	10,000-19,999 mature individuals
Population trend	Unset
Distribution size (breeding/resident)	65,400 km
Country endemic?	No



Justification: This species has a moderately small population which is thought to be declining in parts of its range, and is therefore classified as Near Threatened.

Distribution and population: *Sheppardia gunningi* occurs as four subspecies in scattered forests in south-east Kenya, eastern Tanzania, northern Malawi and Mozambique. The area of occupied suitable habitat may total less than 1,000 km, given that it totals c.470 km outside Mozambique. At least 7,500 pairs occur in Arabuko-Sokoke Forest (Kenya) alone. The population at Chinizuia in Mozambique may have been extirpated through deforestation. A new population has recently been discovered at Mt Mabu in Mozambique.

BirdLife International (2012) Species factsheet: *Sheppardia gunningi*. Downloaded from <http://www.birdlife.org> on 06/032012.

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