Wildlife of Madagascar

Ken Behrens & Keith Barnes
Ken: To my wife

Keith: For my Dad and Mom, who taught me to love nature. And to my wife Yi-fang and son Joshua, who allow me the time to enjoy it.
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A brief introduction to Madagascar

Madagascar is so different from the rest of the world that it is sometimes called ‘The Eighth Continent’. Not only does it have the high level of endemism (species not found elsewhere) that is typical of an island, but it also boasts remarkable diversity, which for some groups approaches that more typical of a whole continent.

Madagascar is the land of lemurs, a radiation of our own primate order that evolved into exhilarating diversity on this island. These endearing creatures are the ambassadors for Malagasy nature; many people who have no idea where this island is located immediately recognize the Ring-tailed Lemur. Madagascar is also a land of fabulous birds, ancient reptile lineages, and six of the world’s nine species of baobabs.

All naturalists find Madagascar fascinating as a treasure-trove of biodiversity and a ‘laboratory of evolution’, much like the Galápagos but on a grander scale. And for travelling naturalists, Madagascar is a ‘must-visit’ place. Although Madagascar has long been known for birds and mammals, its reptiles, amphibians, insects and plants are just as unique.

Madagascar is a land of distinctive and odd creatures, a whole different track of evolution from the rest of the world. A good example of this is the Mossy Leaf-tailed Gecko, a master of disguise whose mossy fringes and colour changing abilities allow it to blend into the tree trunks where it sleeps during the day.
About this book

This is the first field guide that has attempted to cover the whole range of diversity of this ‘mini-continent’ in one book. It obviously cannot be comprehensive, but rather aims to cover the species and groups that are most likely to be encountered in the most frequently visited sites. Madagascar’s most popular natural sites are listed on page 10, ranked by the approximate number of visitors each receives every year.

As an example of the way that species selection for this book was weighted towards the most frequently visited sites, an especially common or interesting species that is found only at the island’s most popular natural site of Andasibe might be included, whereas a species that is found only in Marojejy National Park is more likely to be excluded since that site is much less visited, albeit wonderful. A few exceptionally interesting species that can be found only in sites that are off the main tourist routes have been included in the hope of inspiring people to visit new sites. Also included are some especially interesting species that do occur within the most-visited sites, but which are hard to find. These are included to inspire visitors to seek them out with the help of skilled guides.

Focused birders will locate a few species not covered in this book; keen mammal enthusiasts might visit remote forests and find lemurs that, similarly, have not been included; and fanatical herpetologists who spend their nights stalking the forest and digging in the leaf-litter will find many reptiles and amphibians that are not featured. However, this book aims to cover the vast majority of the birds, mammals, reptiles and butterflies (plus a few other arthropods and plants) that a casual visitor or a general naturalist will see. Visitors with a strong interest in one particular group will want to bring a thorough reference that covers it, but will still find this guide valuable for its broad coverage of other wildlife. Finally, naturalists who might never travel to Madagascar should find this guide a fascinating exhibition of the island’s wild riches.

To some degree, this book reflects the mammal and bird bias of the average visitor, covering those groups more thoroughly than others. But at the same time, visitors are encouraged to broaden their horizons. It is hoped that the extensive coverage of Madagascar’s truly incredible reptiles, amphibians and insects (butterflies in particular) will make these seem more accessible.

One of the countless odd and unique facets of Madagascar is that you are required to hire a local guide to visit almost any natural site. While this might be frustrating for some ‘lone wolf’ naturalists, it also has great benefits. Most Malagasy local guides are passionate and knowledgeable, and their expertise will enhance your trip and increase the number of species that you see. The information in the ‘where to see’ section will be useful in planning your trip, especially if you have key targets. Once you arrive in Madagascar, you can refer to this book when directing the efforts of your local guides. Most local guides specialize in lemurs, but there are many fascinating birds, reptiles and frogs that they probably know, but would not focus on finding unless you mentioned your interest.
## Map of Madagascar showing biogeographic zones and most-visited natural sites

This map shows the distribution of Madagascar's remaining natural habitats. The major division is between the wet east, where rainforest is the natural habitat, and the dry west, with deciduous forest. The central High Plateau is virtually deforested. For more information on biogeographic zones, see pages 12–13.

### Madagascar’s most-visited natural sites

<table>
<thead>
<tr>
<th>Rank</th>
<th>GENERAL TOURISTS</th>
<th>SERIOUS NATURALISTS</th>
<th>BIRDERS</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Andasibe area</td>
<td>Andasibe area</td>
<td>Andasibe area</td>
</tr>
<tr>
<td></td>
<td>(Andasibe-Mantadia NP, etc.)</td>
<td>(Andasibe-Mantadia NP, etc.)</td>
<td>(Andasibe-Mantadia NP, etc.)</td>
</tr>
<tr>
<td>2</td>
<td>RN7 south: Toliara / Isalo NP</td>
<td>Ranomafana NP</td>
<td>RN7 south: Toliara / Ifaty / Isalo area / Zombitse-Vohibasia NP</td>
</tr>
<tr>
<td>3</td>
<td>Nosy Be</td>
<td>Isalo NP</td>
<td>Ranomafana NP</td>
</tr>
<tr>
<td>4</td>
<td>Far north: Ankarana and Amber Mountain NPs, etc.</td>
<td>Berenty / Fort Dauphin</td>
<td>Ankarafantsika NP / Betsiboka Delta (Mahajanga)</td>
</tr>
<tr>
<td>5</td>
<td>Tsingy de Bemaraha NP</td>
<td>Kirindy Forest</td>
<td>Masoala NP</td>
</tr>
<tr>
<td>6</td>
<td>St. Marie Island</td>
<td>Tsingy de Bemaraha NP</td>
<td>Berenty</td>
</tr>
<tr>
<td>7</td>
<td>Berenty / Fort Dauphin</td>
<td>Nosy Be</td>
<td>Anjozorobe area (Anjozorobe-Angavo forest)</td>
</tr>
<tr>
<td>8</td>
<td>Masoala NP</td>
<td>Far north: Ankarana and Amber Mountain NPs, etc.</td>
<td>Far north: Ankarana and Amber Mountain NPs, etc.</td>
</tr>
<tr>
<td>9</td>
<td>Kirindy Forest</td>
<td>Masoala NP</td>
<td>Marojejy NP</td>
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<td>10</td>
<td>Ankarafantsika NP</td>
<td>Ankarafantsika NP</td>
<td>Kirindy Forest</td>
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<td>11</td>
<td>Ranomafana NP</td>
<td>Marojejy NP</td>
<td>Tsingy de Bemaraha NP</td>
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<tr>
<td>12</td>
<td>Marojejy NP</td>
<td>Toliara / Anakao / Ifaty</td>
<td>Nosy Be</td>
</tr>
<tr>
<td>13</td>
<td>Anjozorobe area (Anjozorobe-Angavo forest)</td>
<td>Anjozorobe area (Anjozorobe-Angavo forest)</td>
<td>St. Marie Island</td>
</tr>
</tbody>
</table>

### Key to the sites

- 1 Amber Mountain NP
- 2 Anakao
- 3 Andasibe-Mantadia NP
- 4 Anjozorobe-Angavo forest
- 5 Ankarafantsika NP
- 6 Ankarana NP
- 7 Berenty Reserve
- 8 Betsiboka Delta (Mahajanga)
- 9 Fort Dauphin (Tôlanaro)
- 10 Ifaty
- 11 Isalo NP
- 12 Kirindy Forest
- 13 Marojejy NP
- 14 Masoala NP
- 15 Nosy Be
- 16 Ranomafana NP
- 17 Sainte Marie Island
- 18 Tsingy de Bemaraha NP
- 19 Toliara (Tulear)
- 20 Zombitse-Vohibasia NP
Biogeographic zones of Madagascar

The zones presented here are reflected in the range icons that accompany each species account.

East [E]
- Predominant natural habitat is humid forest (‘rainforest’), Madagascar’s most species-rich habitat.
- Rainforests stay lush and green year-round. They are watered by moisture off the Indian Ocean that is precipitated by the eastern escarpment. Trees very tall in lowlands, but shorter in higher-elevation forest.
- Species distribution within eastern rainforest is complex. Many lemurs and frogs, and some reptiles, have small and localized distributions, often within specific elevations.
- Vast deforestation; much of eastern zone now covered in scrubby secondary forest and artificial savannah. Lower-elevation forests have been most drastically impacted.
- The highest mountains support open heath and grassland above treeline. These habitats are species-poor.
- Eastern marsh is one of Madagascar’s most special and most threatened habitats. It supports several endemic birds and many frogs.

West [W]
- The western two thirds of Madagascar, comprising the central highlands and the western lowlands, are much drier than the east, lying in the rain shadow of the eastern mountains.
- Originally covered in dry deciduous forest, which has lower diversity than rainforest, but is still rich, with many endemics. Lemurs and reptiles are especially rich in the west, while frog diversity is low.
- Most of the west is now savannah in which mango and palms are prominent. Large areas have also been converted to rice cultivation.
- Most (although not all) of the trees in the western forest are deciduous: they lose their leaves during the dry season. The abundant leaf-litter and more open character of this habitat make it very different from eastern rainforest.
- The west holds extensive wetland habitat: marshes, lakes and wide rivers. Most have been degraded by humans.
North [N]
- The north is essentially a mix of the eastern and western zones. Here the island tapers to a point, while general climatic trends are also disrupted by Tsaratanana, Madagascar’s highest mountain massif. The Sambirano region around Nosy Be is the only area on the west coast that sees almost as much rainfall as parts of the eastern zone.
- Some parts of the north, such as Amber Mountain and Lokobe National Parks (NPs), hold rainforest. This forest lacks the diversity of eastern rainforest, but does support many localized endemics.
- Much of the north, such as Ankarana NP, holds dry forest like that of the western zone. Large stretches are also covered in human-created savannah habitat.

Centre [C]
- Mostly above 800 m (2,600’’) elevation.
- Before humans arrived, Madagascar’s central highlands probably supported a mix of savannah and forest. But this is the part of Madagascar that has been most heavily impacted by human activity and is now dominated by arid grasslands and eroded gullies.
- Another feature of the centre is vast areas of rice cultivation. Rice paddies do support some birds and frogs.
- Forest persists in a few places, mainly in valleys where it is shielded from burning. Such forest resembles eastern rainforest, although it is drier and supports fewer species.

Southwest [SW]
- The southwest is the driest part of Madagascar. Its aridity has given rise to the island’s most distinctive habitat, the spiny forest. There is also some gallery forest and wetland.
- Least diverse of Madagascar’s zones, but supports many endemic species. The plants are fascinating, with most endemic not just to Madagascar, but to this zone.

Coast [Co]
- Madagascar’s 10,000 kilometres (6,200 miles) of coastline encompass mangroves (mainly in the west and north), mudflats, rocky and sandy beaches, and salt marshes.
- Supports many species of birds, along with sea turtles and marine mammals. Coral reefs are beyond the scope of this book, but Madagascar’s reefs are world-class.
Human-modified grasslands, rice paddies and villages
South of Ambositra, Central Zone