

# Biodiversity of Angola

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Editors

# Biodiversity of Angola

Science & Conservation: A Modern Synthesis



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***To the new generation of Angolan students of biodiversity. May they stand on the shoulders of giants: the founders of Angola's biodiversity science***

*Friedrich Martin Josef Welwitsch (1806–1872)*

*José Vicente Barbosa du Bocage (1823–1907)*

*José Alberto de Oliveira Anchieta (1832–1897)*

*Johannes (John) Gossweiler (1873–1952)*

*Contributors to this volume record with sadness the passing of William Roy (Bill) Branch (1946–2018) - herpetologist, indefatigable field researcher and mentor of young Angolan scientists*

# Foreword



His Excellency the President of the Republic of Angola, João Manuel Gonçalves Lourenço

Angola occupies only four percent of the terrestrial area of the African continent, yet it possesses the highest number of biomes of any African country. It is second in terms of the number of ecoregions represented within its borders. It has ecosystems as diverse as the rainforests of Maiombe of Cabinda to the vegetation-less dunes of Namibe and the endless savannas and woodlands of the Cuando Cubango to the tiny remnant forests of the highest valleys of Mount Moco in Huambo. It is the only home to the most magnificent mammal in the world – the Giant Sable Antelope.

It was in Angola that one of the most extraordinary plant species *Welwitschia mirabilis* was discovered and described – the enigmatic ‘living fossil’ of the desert. It even puzzled Charles Darwin, who compared its evolutionary importance in the plant kingdom to that of the Duck-billed Platypus in the animal kingdom. Considering real fossils, Angola’s history goes back hundreds of millions of years, to the earliest known living organisms, the bacterial stromatolites of the limestones

of Bembe and Humpata. Angola's fossils range in size from microorganisms to the gigantic dinosaur – *Angolatitan adamastor* – recently discovered in the sediments of the Bengo coastline. Yet, despite this globally significant natural wealth, Angola remains one of the least well-documented countries in the world in terms of its biodiversity. This situation is about to change.

Angolan scientists have collaborated with over 40 colleagues from 7 countries to produce a new synthesis of knowledge of Angola's remarkable biodiversity. They have produced a magnificent volume that seeks to review all what is known about Angola's biodiversity, especially that which has been revealed through studies undertaken in the twenty-first century. For several decades, field studies were rendered nearly impossible because of the disruptions of war. But since peace was achieved in 2002, a new generation of research has been made possible, bringing many foreign specialists into partnerships with Angolan scientists and institutions and introducing new technologies that have helped stimulate an unprecedented wave of research activity.

Angola's indigenous knowledge acquired over millennia provided the foundations to the information documented and materials collected by visiting researchers from the eighteenth to twenty-first centuries. Many detailed accounts have been published over the past century and more, but often in scientific journals and official reports that have been lost with the passage of time. More important, the knowledge that does exist is fragmentary and largely inaccessible to Angolan students and researchers. Much is published in foreign languages, and thus the inexistence of a comprehensive synthesis of studies on Angola's fauna, flora and ecosystems is a challenge for young researchers. Angolan students, researchers and government officials have very limited access to data sources where they can find a reliable, science-based and up-to-date summary of that which has been recorded on the country's biodiversity.

It was the need for an integrated 'state-of-knowledge' summary, recognised during the past decade by many Angolan university and government colleagues, that was the catalyst that stimulated this important project. From humble beginnings by a few Angolan and foreign partners, the effort expanded into the present volume of over 500 pages of authoritative accounts on our landscapes, seascapes, vegetation, flora and fauna, its past and future. Most importantly, this work identifies the exciting opportunities for research and conservation that Angolan scientists, conservationists, government officials and the general public can embrace as the country moves forward to an ever greater and more prosperous and environmentally sustainable future.

It is a pleasure to endorse this valuable contribution to the new wave of Angolan scientific and conservation literature, a source of inspiration to our students and a reminder to all our leaders, young and old, of our responsibility to treasure and safeguard Angola's unsurpassed, but vulnerable, biodiversity and natural resources.



President of the Republic of Angola  
Luanda, Angola

João Manuel Gonçalves Lourenço

# Acknowledgements

This book was conceived as a collaborative and voluntary endeavour shared by students of Angola's biodiversity. Contributors were drawn from Angola, Britain, Germany, Namibia, Portugal, Swaziland, South Africa, the Netherlands and the United States. To all contributors to this synthesis, the Editors offer their thanks for the unstinting efforts of the synthesis team to meet the strict demands of quality and of timelines.

Over the past decades, biodiversity research in Angola has been encouraged by successive leaders within the government, from academics and from the general public of Angola. On behalf of all the contributors to this volume, the Editors wish to thank the Ministers, past and present, of Science and Technology, Dr Cândida Teixeira and Dr Maria do Rosário Bragança Sambo, and of Environment, Dr Fátima Jardim and Dr Paula Francisco, for the support given to students of Angola's biodiversity. Similarly, the encouragement and logistical support of Prof Liz Matos, Prof Serôdio d'Almeida (Universidade Agostinho Neto), Dr Charles Skinner (De Beers, Angola) and General João Tragedo (Lubango) are gratefully acknowledged. Without their strong support, the scientific results described in this synthesis would not have been possible.

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