

PELAGUS NATIONAL PARK

Biodiversity Above the Rapids





Life from Headwaters to the Coast

PELAGUS NATIONAL PARK

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Edited by

Andrew Alek Tuen, Indraneil Das
Karen Lee Suan Ping and Jayasilan Mohd-Azlan



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Pelagus National Park: Biodiversity Above the Rapids

Andrew Alek Tuen, Indraneil Das, Karen Lee Suan Ping and Jayasilan Mohd-Azlan

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Half-title page: The Rapids of Pelagus, as seen in August 2003. Photo: I. Das
Frontispiece: *Megophrys nasuta*, the Bornean Horned Frog. Photo: Pui Yong Min
Foreword page and across: Aerial view of Pelagus Kaki Wong. Photo: Tonny Ganyai.

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CONTENTS

Foreword	vii	Fishes	31
by Prof. Datuk Dr. Mohamad Kadim Suaidi		by Tonny Ganyai, Hafida Bolhen, Jongkar Grinang, Karen Lee Suan Ping, Toloy Keripin Munsang and Lee Nyanti	
Message	viii	Amphibians	43
by Datu Haji Sharbini Suhaili		by Pui Yong Min, Mohamad Paisal, Adi Shabrani and Indraneil Das	
Preface	xi	Reptiles	51
Introduction	1	by Indraneil Das, Pui Yong Min, Adi Shabrani, Benjamin R. Karin and Mohamad Paisal Wahab	
by Andrew Alek Tuen, Indraneil Das, Karen Lee Suan Ping and Jayasilan Mohd-Azlan		Birds	57
History	3	by Pang Sing Tyan, Attiqqah Fadziliah Sopian, Khatijah Ismail, Rahah Mohd. Yakup, Mohd. Hasri Al-Hafiz Haba, Isa Sait and Andrew Alek Tuen	
by Oswald Braken Tisen and Rambli Ahmad		Bats	69
The Pelagus Ghost	9	by Pang Sing Tyan, Khatijah Ismail, Attiqqah Fadziliah Sopian, Rahah Mohd. Yakup, Mohd. Hasri Al-Hafiz Haba, Isa Sait and Andrew Alek Tuen	
by Andrew Alek Tuen		Terrestrial Mammals	75
Geology and Vegetation	13	by Jayasilan Mohd-Azlan, Melynda Cheok Ka Yi, Thaqifah Syaza Jailan, Nurul Asna Hidayah Mior Abdul Rahman and Andrew Alek Tuen	
by Hans Hazebroek		List of Contributors	81
Macroinvertebrates	23		
by Jongkar Grinang, Brian Haessler Delim, Lee Nyanti, Teck- Yee Ling, Siong-Fong Sim, Tonny Ganyai and Karen Lee Suan Ping			



FOREWORD

Prof. Datuk Dr. Mohamad Kadim Suaidi
Vice Chancellor, Universiti Malaysia Sarawak

Since its humble beginnings in 1992, Sarawak's first public university, Universiti Malaysia Sarawak (UNIMAS), has put natural resource management and biodiversity conservation at the forefront of its research agenda. This includes the setting up of the Faculty of Resource Science and Technology and the Institute of Biodiversity and Environmental Conservation. The



location of UNIMAS on the island of Borneo has given us a unique opportunity to study its biodiversity, one of the most diverse in the world. Over the years, university researchers have discovered new species and uncovered new facets of the biology of numerous threatened species and landscapes, contributing to the conservation of species and habitats in Sarawak and beyond.

To be globally relevant and forward looking, UNIMAS has established linkages and collaborated with like-minded individuals and institutions within Malaysia and overseas. On 24 September 2013, we formalised a research collaboration with Sarawak Energy, to embark on the first in-depth study of the 2,041-hectare Pelagus National Park. As a result of this collaboration, significant new findings have come to light and have been featured in this book.

I would like to congratulate the authors, editors and publishers for their hard work and perseverance, to help unravel the wonders of biodiversity of Pelagus, and make this place of magic and mystery accessible to the world.

MESSAGE

Datu Haji Sharbini Suhaili

Group Chief Executive Officer, Sarawak Energy Berhad

Congratulations to all those who are part of this important publication. Your contribution will enhance knowledge and understanding of Sarawak's biodiversity areas in general and the Pelagus National Park in particular.

In mid-2020, it was announced by the Sarawak government that Sarawak will become a high-income economy by 2030 through the two core principles of a digital economy and environmental sustainability, and Sarawak Energy is fully aligned to this vision.

We are developing our energy resources sustainably to deliver greater access to affordable, reliable and sustainable energy for Sarawak and its people, in alignment with Goal #7 of the United Nations Sustainable Development Goals (SDG) 2030.

Just over a decade ago, Sarawak made a strategic decision to reduce our dependence on thermal resources of coal, gas and diesel through the Sarawak Corridor of Renewable Energy.

As a result, Sarawak Energy is now the largest renewable energy developer and provider in Malaysia through our investments in large renewable hydropower as well as solar and micro-hydro for remote areas.

As a member of the International Hydropower Association, we are a strong advocate of sustainable hydropower and are working to integrate a robust sustainability agenda into our business. It is estimated that less than 2% of our land area will be affected when we fully harness our hydropower potential to ensure a sustainable energy future for our state and beyond.

To conserve biodiversity in line with SDG #15, we are working with various state agencies, higher learning institutions, local communities and stakeholder groups on efforts to mitigate any negative impact and maximise the positive impact of our projects and operations.

Initiatives include the implementation of sustainable management of forest types which are important water catchments. We also contribute to



the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services. Our partnerships so far have yielded encouraging successes.

1. The Batang Ai National Park and catchment area, located within the area of the 35-year-old Batang Ai Hydroelectric Plant (HEP), serve as a buffer zone that supports the regeneration of the surrounding environment. The area is now home to a sustainable population of the Bornean orangutan in Sarawak and forms part of the transboundary conservation area with Indonesia's Betung Kerihun National Park.
2. For the Murum HEP project, the Wildlife Monitoring and Rescue (WiMoR) operation with the Sarawak Forestry Corporation rescued and relocated wildlife in significant numbers to safer areas before impoundment.

To ensure we understand the effectiveness of our efforts, research and development is an important part of our business. This creates greater understanding of the impact of our projects by enhancing the body of knowledge and enables us to make informed decisions in environmental management and conservation.

In 2013, we partnered with Universiti Malaysia Sarawak (UNIMAS) and rolled out the Hydropower Environmental Sustainability Programme with a focus on three objectives:

- i. To identify critical local environmental issues that warrant closer attention;
- ii. Collect necessary data in forming baseline knowledge particularly in the areas of aquatic and terrestrial ecology and biodiversity; and
- iii. Support the development of local research capability and capacity within Sarawak on related environmental topics.

The 2,041-hectare Pelagus National Park was identified as one of the study locations under this programme given its importance as a protected area. Significant findings have been established and are featured in this book.

We are pleased to support this book publication together with Universiti Malaysia Sarawak (UNIMAS) in line with SDG #17 which calls for multi-stakeholder partnerships that mobilise shared knowledge, expertise, technology and financial resources.

On behalf of Sarawak Energy, I would like to thank UNIMAS for this research collaboration and for sharing your expertise and resources.

MESSAGE

We are also fortunate to have collaborated with and gauged the support from like-minded organisations such as our higher learning institutions, Forest Department Sarawak and Sarawak Forestry Corporation in enabling Sarawak Energy to play a greater role in local environmental conservation efforts.

I would also like to congratulate Sarawak Energy's Research and Development team. I am confident that you have gained valuable experience and further exposure through this research as part of Sarawak Energy's hydropower development journey.



PREFACE

*Andrew Alek Tuen, Indraneil Das,
Karen Lee Suan Ping and Jayasilan Mohd-Azlan*

Sarawak's vast protected areas network, including its National Parks, are home to many of the State's natural wonders- floral, faunal, geological and at the level of landscapes. Central Sarawak, in particular, is an important area for biodiversity conservation, being home to uncountable Bornean endemics.

Its thriving National Parks vindicate the commitment of the State Government as a responsible caretaker of Sarawak's biodiversity. Halting biodiversity loss is one of the top State agendas, whereby Sarawak is determined to conserve and protect its wildlife and natural ecosystem. This project sits in line with the University's niche area of biodiversity and environmental conservation. This book, based on extensive field research by the staff of our two organisations, brings together new information on species, their habitats and other aspects of natural history.

Little has been written about Pelagus National Park. Scientific understanding of biodiversity intended for conservation is crucial for our advancement to preserve the State's natural heritage. Identifying the distribution, richness and habitat use of animals in tropical rainforest are essential for understanding their ecology, and in facilitating management of such biodiversity-rich areas. This book attempts to enumerate selected zoological groups, many of which had hitherto remained undetected in these dense tropical rainforests. The faunal studies reported here include inventories of mammals, birds, reptiles, amphibians, fishes and macroinvertebrates, a critical first step towards understanding the biodiversity of Pelagus National Park.

The work targets local stakeholders, management authorities, naturalists, researchers and the general public. Most enthusiasts continue to see protected areas as a parade of natural wonders, to be appreciated and protected for future generations. An understanding of our biodiversity may thus support complex needs of conservation. It is hoped that nature enthusiasts and those who are interested in tropical biodiversity will find this book beneficial. Acknowledgement is here made to the authors who have gathered these data, substantially increasing our knowledge and awareness of an important part of our national heritage.

PREFACE

Foremost, we thank Sarawak Energy Hydropower Environmental Sustainability Program for a research grant to conduct the activities mentioned in this work. We are grateful to the Resident of Kapit Division for welcoming us to the area under his jurisdiction, and to the longhouse folks from Rumah John at Nanga Benin (John anak Asun and family), Rumah Bujah at Nanga Pelagus (Bujah anak Ijau and family) and Rumah Laja at Nanga Peraran (Laja anak Sandak and family), for assisting with the research.

Prof. Dr. Wan Hashim bin Wan Ibrahim, the Deputy Vice Chancellor for Research and Innovation, Prof. Dr. Lo May Chiun and her staff at the Research Innovation and Enterprise Centre facilitated the research on the UNIMAS side. We also thank the staff of the Institute of Biodiversity and Environmental Conservation, and the Faculty of Resource Science and Technology, UNIMAS, for logistic and field assistance: Isa Sait, Rahah Mohd. Yakup, Mohd. Hasri Al-Hafiz Haba, Ketty Daun, Pasey Lissus, Mohsin bin Zainalabidin, Siti Maimunah binti Ibrahim and Felicia Reyap, besides our many research assistants and graduate research students.

The Sarawak Forest Department provided research permits for the individual projects reported here. Entry to Pelagus Resort area was provided by Pelita Holdings Sdn. Bhd, and we thank its manager, Netty Haji Narawi. We thank Mohd. Tajuddin Abdullah, Qammil Muzzammil Abdullah, Amirruddin Ahmed, Faisal Ali Anwar Ali, Aaron M. Bauer, Henry Bernard, Chan Kin Onn, Stuart James Davies, Ulmar Grafe, Suhaila binti Abdul Hamid, Kelvin Lim, Lo May Chiun, Suhaili Mokhtar, Mustafa Abdul Rahman, Abdullah Samat and Tan Heok Hui for reviews of the chapters, and Genevieve V. A. Gee for copy editing. We are thankful to Chien C. Lee for images of birds, Faisal Ali Anwar Ali for the images of bats and to the family of the late Brian Houldershaw for the images of the Rapids from the 1960s, made possible through the kindness of Albert Field.

We dedicate this book to the kind-hearted folks of the Rajang Basin, who offered us their homes and carried the burden and joy of discovery.

INTRODUCTION

*Andrew Alek Tuen, Indraneil Das,
Karen Lee Suan Ping and Jayasilan Mohd-Azlan*

The Pelagus area is located in the heart of Sarawak, along the mid-reach of the Rajang River. It is about 126 km long, and approximately five hours upstream from the city of Sibu. Pelagus National Park was gazetted in the year 2009, under Sarawak's National Park and Nature Reserve Ordinance, 1998, and covers an area of approximately 2,041 ha. Although unmanned, entry to the National Park requires permission from the Sarawak Forestry Corporation.

Areas under primary forest cover have rapidly dwindled in the State, with remnant patches widely dispersed and isolated, and rarely identified and protected, such as this. The Park consists of pristine and old secondary forests, the latter being remnants of patches that witnessed logging activities in the early 1960s. While biodiversity has declined in all modified tropical forests, those that were selectively logged have been able to sustain substantial biodiversity, especially in older regrowth forests. Due to its relatively unspoiled condition, a holiday resort was established near the Park. However, the Regency Pelagus Resort ceased operations in 2012 and what remains are the ruins now occupied by bugs and bats using the once grand structure, set within a rainforest.

The rare visitor to the Pelagus site will be greeted by the calls of gibbons and hornbills, advertising for mates, early in the morning, with fog and mist covering the rapids and forests. These are not unusual experiences in the tropical rainforest of Borneo, but at Pelagus, the flavour appears heightened. The abandoned Resort facing the Rapids holds many tragedies with numerous boats crashed by the jagged rocks protruding from the Rajang, and perhaps untold number of casualties. Legend holds that these rocks were formed by a mythological creature that was killed by an Iban warrior, and members of the local communities perform rituals and offerings to the Rapids to this day.

The Iban community around Pelagus predates the establishment of the National Park and have been dependent on its resources for hundreds of years. There are several longhouses near Pelagus National Park (including Rumah John, Rumah Bujah, Rumah George, and Rumah Laja). Collection of non-timber forest produce, such as Rattan and non-protected wildlife (i.e., Bearded Pig, *Sus barbatus*, Sambar Deer, *Rusa unicolor*, Muntjac, *Muntiacus* sp., Mouse-deer, *Tragulus* sp.) are relatively common here. These anthropogenic

INTRODUCTION

impacts may affect species richness, distribution and activity pattern of many mammals, especially those that are heavily hunted. The Bearded Pig is one of the most sought after in Kapit, and is often associated with variation of aggregation strategies, ranging from solitary to mass aggregation and wide range migration. They have been observed crossing the river near Pelagus as part of mass migration, when certain local communities are involved in the hunt.

Besides depending on forest produce and freshwater fish, the local communities are engaged in cultivation. Areas near these longhouses are mostly planted with crops such as rice, vegetable and fruit-bearing trees (i.e., *Durio* spp., *Canarium odontophyllum*, *Capsicum* spp., *Zea* spp., *Manihot esculenta* and *Sauropus androgynus*). Sufficient areas for agriculture and appropriate hunting regulation in Pelagus are important to reduce the pressure on wildlife dependency and for maintaining high levels of biodiversity in the surrounding areas. It is important to make an assessment of the remnant biodiversity and the current conservation needs, which, in turn, dictates conservation action.

The chapters in this book comprise findings from a project that brings together the expertise of specialists and is expected to provide vital information of the natural heritage of a biologically rich area in Sarawak to stakeholders, management authorities, naturalists, researchers and for the general public.

