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SAMUNSAM — Wilderness Rediscovered

SAMUNSAM Wilderness Rediscovered

Jayasilan Mohd-Azlan Abang Arabi Abang Aimran Indraneil Das

Life from

Edited by

Headwaters

to the Coast







SAMUNSAM WILDLIFE SANCTUARY

This work takes the reader through a threatened ecosystem in Borneo. Samunsam Wildlife Sanctuary, is rich with biodiversity and easily accessible throughout the year. Landscape protected include mixed dipterocarp forests, mangrove forests, beach forests, kerangas, as well as mudflats, each with its unique flora and fauna. The Sanctuary is also home to several endemic species, as well as species of conservation importance, with potential for ecotourism.

Samunsam's rich ecosystems are portrayed in the images and text in the volume, which is based on recent field research, and important for naturalists, tourists as well as researchers. This book aims to enlighten stakeholders and present information to nature enthusiasts.

The introductory chapter and one on its history set the scene for the book. The wildlife aspects of this book cover species from an array of taxa that includes invertebrates, herpetofauna, birds and mammals. The social elements include perception of biodiversity conservation and ecotourism potential of Samunsam, encompassing human use of natural resources.

Research in Samunsam Wildlife Sanctuary has been possible thanks to the generosity of Sarawak Forestry Corporation, Government of Sarawak, through a research grant to Universiti Malaysia Sarawak. The project is aimed at assessing the area's biotic diversity and to examine human use of natural resources, and develop an applicable environmental model on ecotourism.



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	Photo: Jayasilan Mohd-Azlan.
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FOREWORD

Alaysia's largest State, Sarawak, on the island of Borneo, is home to some of the world's richest biodiversity, including endemics, economically valuable species, as well as species of conservation importance. Some of the best examples of such plants and animals can be found in Sarawak's extensive network of protected areas. Many of us here in Universiti Malaysia Sarawak continue to explore Sarawak's biodiversity, with the hopes of generating critical knowledge at these sites. This book represents but a subset of work



done by our academics in the realm of biodiversity research. I would like to commend the efforts by Sarawak Forestry Corporation Sdn. Bhd. who supported us in this task, by providing a research grant. The work is expected to be important for local communities, to aid them better understand, appreciate and perhaps use their resources sustainably, such as an interpretation tool to guide ecotourists and naturalists in Samunsam.

As will be evident to the readership, a variety of approaches have been taken by the authors of this volume. J. Mohd-Azlan, Lisa Lok and Indraneil Das provide the backdrop to the project, including introductory information on Samunsam. Siali and Tisen from SFC provides a brief account of the development of the site as a Wildlife Sanctuary. Subsequent chapters deal with the zoological components of the Sanctuary's biodiversity, including crabs (Jongkar Grinang), termites (Wan Nurainie Wan Ismail and colleagues), dragonflies and damselflies (Rory Dow), fishes (Fazimah Aziz and colleagues), amphibians and reptiles (Indraneil Das and his team), a separate chapter on the Painted Terrapin (James Bali), investigations on the bird diversity (Mohamad Fizl Sidq Ramji and colleagues); small mammal community (Faisal Ali and colleagues); a separate chapter focussed on the Proboscis Monkey (Ahmad Fitri Aziz and colleagues) and the larger mammals (Mohd-Azlan Javasilan and his team). The book wraps up with chapters on related social elements, such as use of natural resources (Mohamad Suhaidi and his team), and finally, the ecotourism and entrepreneurial potential of Samunsam (Dayang Affizah).

It is my hope that this book will contribute in at least a small way of encouraging more people to work in the field, publish more articles of this

FOREWORD

kind and new sponsors would emerge to provide support. I anticipate that this volume will be useful to stakeholders to whom we remain connected through our common views on biodiversity conservation for future generations.

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



MESSAGE

The State of Sarawak boasts one of the most extensive networks of protected areas in Malaysia. The western tip of Sarawak is an important area for biodiversity conservation where iconic protected areas, such as Tanjung Datu National Park and Samunsam Wildlife Sanctuary are located.

Biodiversity is one of the top State agendas, whereby the State of Sarawak, with the establishment of Sarawak Forestry Corporation (Park and Wildlife) is determined to conserve and protect its wildlife and natural landscapes. This project sits in line with the University's niche area of biodiversity and environmental conservation and sustainable community transformation. This book, based on research collections by the staff of our two institutes. brings together information on species, their habitats and other aspects of natural history, and the perceptions of the human community on conservation and sustainable use.

Identifying the distribution, densities and

habitat use of animals in tropical rainforest are essential for understanding their ecology, and in facilitating management of our biodiversity-rich protected areas. This book attempts to enumerate these species, many of which remain undetected in the dense tropical rainforest. The faunal studies include inventories of crabs, termites, dragonflies and damselflies, fishes, frogs, reptiles, birds and mammals of the area, a critical first step towards understanding our natural heritage. The work also highlights how the local communities interact with biodiversity, and their deep dependence with such natural resources in Samunsam.

This book is written for local stakeholders, management authorities, naturalists, researchers and for the general public. An understanding of our biodiversity may influence the support of the complex needs of conservation in this ever-challenging environment. 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.

Prof. Dr. Wan Hashim Wan Ibrahim Deputy Vice Chancellor (Research & Innovation) Universiti Malaysia Sarawak

Mr. Oswald Braken Tisen Deputy CEO Sarawak Forestry Corporation (Park and Wildlife)

PREFACE

The Expedition to Samunsam Wildlife Sanctuary, located near the western tip of Sarawak State, approximately 100 km from Kuching city, was held over the years 2019–2020. It was undertaken by the staff and students of Universiti Malaysia Sarawak, in collaboration with the Sarawak Forestry Corporation, the latter agency providing funding and on-the-ground support, besides joining forces in some of the field data collection.

The diversity of forest types (necessitating different sampling protocols) and eventually, the arrival of the Covid-19 pandemic, were major challenges on the ground, leading to reduced resources available for sampling. Despite these shortcomings, the multidisciplinary team from our two agencies could satisfactorily conduct what is essentially a rapid biodiversity survey, and bring the results out for our stakeholders in time.

Promotion of protected areas as tourist attraction and for research activities has been high on the State's agenda, being seen as an important driver of socioeconomic growth. It can also help governmental agencies such as ours remain engaged with the public for conservation, network with researchers locally and globally and incorporate new knowledge into conservation management plans.

The project was funded by Sarawak Forestry Corporation (GL/F07/ SAMUNSAM/2019). We are especially thankful to Paschal Dagang and Taha Wahap for their assistance in the project. We also extend our gratitude to the staff of Samunsam Wildlife Sanctuary, namely, Mohamad Khalid B. Mohamad Zakeria, Mr. Japri and Mr. Shukor for their help. We would also like to thank Research, Innovation and Enterprise Centre, the Faculty of Social Sciences, the Faculty of Economics and Business, the Institute of Biodiversity and Environmental Conservation and the Faculty of Resource Science and Technology, UNIMAS for logistical and administrative support.

The following colleagues helped with reviews of manuscripts: Aaron M. Bauer, Henry Bernard, Kelvin Egay, Melvin Gumal, Jason Hon, David T. Jones, Kelvin K.P. Lim, Lo May Chiun, Suhaili bin Mokhtar, Peter K.L. Ng, Andrew Alek Tuen, Chan Kin Onn, Albert Orr, Pang Sing Tyan, Mustapha Abdul Rahman, Tan Heok Hui and Darren Yeo. We owe a special debt of gratitude to our friends and colleagues, Chien C. Lee, Research Associates of the Institute of Biodiversity and Environmental Conservation, UNIMAS, for providing images of species that we have used in this work.

Finally, we thank Chan Hin Ching for designing the page layout and Datuk Chan Chew Lun, Natural History Publications (Borneo) Sdn Bhd, and Sarawak Forestry Corporation and UNIMAS Publisher for arranging its publication.

If this guide contributes to the enhancement of knowledge and compel readers to think anew about conservation of this important protected area, and inspire local stakeholders to take pride in their biodiversity, we would consider the project a success.

> Jayasilan Mohd-Azlan Abang Arabi Abang Aimran Indraneil Das

SMALL MAMMALS

Faisal Ali Anwarali Khan, Julius William Dee, Muhd Amsyari Morni, Nurul Farah Diyana Ahmad Tahir, Sultana Parvin Habeebur Rahman, Qhairil Shyamri Rosli, Norfarhana Mazlan, Roberta Chaya Tawie Tingga, Mohd Ridwan Abd Rahman and Isham Azhar

Situated at the western tip of Sarawak, Samunsam Wildlife Sanctuary is a Totally Protected Area within the state's legally protected areas, that aims to preserve the habitat of the Proboscis Monkey (*Nasalis larvatus*). The four major forest types within the Samunsam WS boundary include mangroves, riverine forests, Kerangas, and mixed dipterocarp forest (Bennett and Sebastian, 1988; Hazebroek and Abang Kashim, 2000). The area is home to many other elements of biodiversity, although previous studies in Samunsam WS have focussed on primates (four species: Aken and Kavanagh, 1982; Bennett, 1988; Rajaratnam, 1992; Kamaruzzaman *et al.*, 2017; Mazlan *et al.*, 2019) and birds (36 species: Long and Collar, 2002; Wilson, 2006).

There has been few studies on small mammals in Samunsam WS, and the presence of various habitats within the park indicates its potential in harboring a diverse small mammal community. Small mammals are generally referred to as volant and non-volant mammalian species, with a body mass under a kilogramme (Burton and Pacheco, 2016; William-Dee *et al.*, 2019). These include rodents, mice, shrews, treeshrews, and bats. Borneo is home to at least 104 species of non-volant small mammals, comprising six families: Muridae, Soricidae, Erinacidae, Tupaiidae, Sciuridae, and Ptilocercidae (Phillipps and Phillipps, 2016; Hamdan *et al.*, 2017). Some are widely distributed, whereas others are unique to specific habitats on Borneo, such as montane forests, upper montane forests, primary lowland forests, secondary forests, and caves (e.g., Payne *et al.*, 1985; Phillipps and Phillipps, 2016). Such broad and specialized distribution of non-volant small mammals have made them one of the critical components in the ecosystem, particularly in forest maintenance through seed dispersal (William-Dee *et al.*, 2019).

Bats too are critical in many ecosystems, ensuring the survival of fruit trees and forest plants, through pollination, dispersal of seeds and regulation of potential insect pests (Fujita and Tuttle, 1991; Jones, 2002). At least 99 species of bats are known from Borneo (Phillipps and Phillipps, 2016). Similar to rodents, some species occur throughout Borneo, while others are confined to specific habitats. Most inhabit caves or forested areas (e.g.,