IBEC Research Bulletin | Volume 7 | Issue 1 | June 2026

Documenting Endemic, Rare, and Red-Listed Species: Informing Conservation



Editorial Members

Advisor
Mohd Azlan Jayasilan
Indraneil Das

Editor
Jongkar Grinang

Assistant Editor
Heira Vanessa Nelson

Institute of Biodiversity and Environmental Conservation
Universiti Malaysia Sarawak

e-ISSN: XXXX-XXXX

https://online.fliphtml5.com/xxjdk/psyc/

Table of Contents

1 **Editorial note**

2 **Message from the Deputy Vice Chancellor**
Research & Innovation

3 **Foreword form the Director**
Institute of Biodiversity and Environmental Conservation

4 **Article Submission Guidelines**
IBEC Bulletin

5 **Barking deer in the mist: analysing the distribution and habitat preferences of Muntjac species in Sarawak**
Mohamad Raziq Bin Mohadi & Jeffrine J. Rovie-Ryan

6 **lyth's Hawk-Eagle, *Nisaetus alboniger*: new insights into breeding and elevational distribution in Sarawak, Borneo**
Dency F. Gawin, Alison R. Styring & Johanna J. Donald

7 **Conservation status of miniature freshwater fish, *Paedocypris micromegethes* and its type locality in Sarawak, Malaysian Borneo**
Jongkar Grinang, Muhammad Danial Ramli, Michell Pearl Andrew, Zachary Stanley & Michael Lo

8 **Revisiting the conservation status of the giant freshwater crab, *Isolapotamon bauense* in Sarawak, Malaysian Borneo**
Jongkar Grinang & Lirong Yu Abit

9 **Some threatened endemic Bornean Odonata occurring in Sarawak**
Rory A. Row

10 **Endemic species of the land snail genus *Diplommatina* in Sarawak**
Camilia Yen Richard, Nurul Syafiqah Nasir & Mohd Zacaery Khalik

11 **IBEC Updates**
Heira Vanessa Nelson

Editorial note

Warm greetings all readers

It is our pleasure to present the current edition of the Institute of Biodiversity and Environmental Conservation Bulletin, continuing the legacy established in previous volumes. The bulletin remains committed to serving as a platform for documenting biodiversity research, field observations, and conservation initiatives associated with the Institute and its research collaborators.

This edition introduces a renewed thematic focus, “Documenting Endemic, Rare, and Red-Listed Species - Informing Conservation”, reflecting our commitment to systematically documenting the Institute long-standing research contributions since the university’s establishment in the 1990s, particularly on species of significance conservation concern. Greater emphasis will be placed on endemic taxa, species listed under the International Union for Conservation of Nature (IUCN), and those protected under the Wild Life Protection Ordinance 1998, and species facing emerging ecological pressures. Each issue will present accounts of species ecology, distribution, conservation status, and prevailing threats, thereby strengthening both academic reference and conservation awareness.

Beginning this year, the publication schedule has been revised from four issues annually to two issues per year, to be published in June and November. This adjustment is intended to strengthen editorial focus, improve content depth, and enhance overall publication quality while maintaining continuity with past volumes. The bulletin is now presented in an interactive pdf flipbook format, offering readers a more engaging and visually accessible reading experience.



We would like to express our appreciation to the previous editorial team for their dedication, consistency, and commitment in shaping the bulletin into a valuable institutional record. Their efforts have laid a strong foundation upon which we now build. We are also grateful to Chien Lee for his generosity in sharing his photographs of Blyth's Hawk-Eagle and dragonflies for inclusion in this volume, which greatly enrich its visual appeal and educational value. We hope this renewed focus will strengthen the bulletin’s role as a scientific archive, an educational resource, and a platform for advancing biodiversity knowledge in Sarawak and beyond.

Message from the Deputy Vice Chancellor



It is a pleasure to extend my warmest greetings on the publication of the first issue of the IBEC Research Bulletin for 2026, themed "***Documenting Endemic, Rare, and Red-Listed Species: Informing Conservation***".

The Institute of Biodiversity and Environmental Conservation continues to play a pivotal role in advancing research excellence in biodiversity, environmental sustainability, and conservation science. The Research Bulletin stands as an important platform for showcasing the Institute's scholarly achievements, research innovations, and meaningful contributions to society.



I would like to commend the editorial leadership for their dedication in ensuring the quality and continuity of this publication. My appreciation also goes to all researchers, staff, and students whose work and commitment form the foundation of IBEC's growing impact.

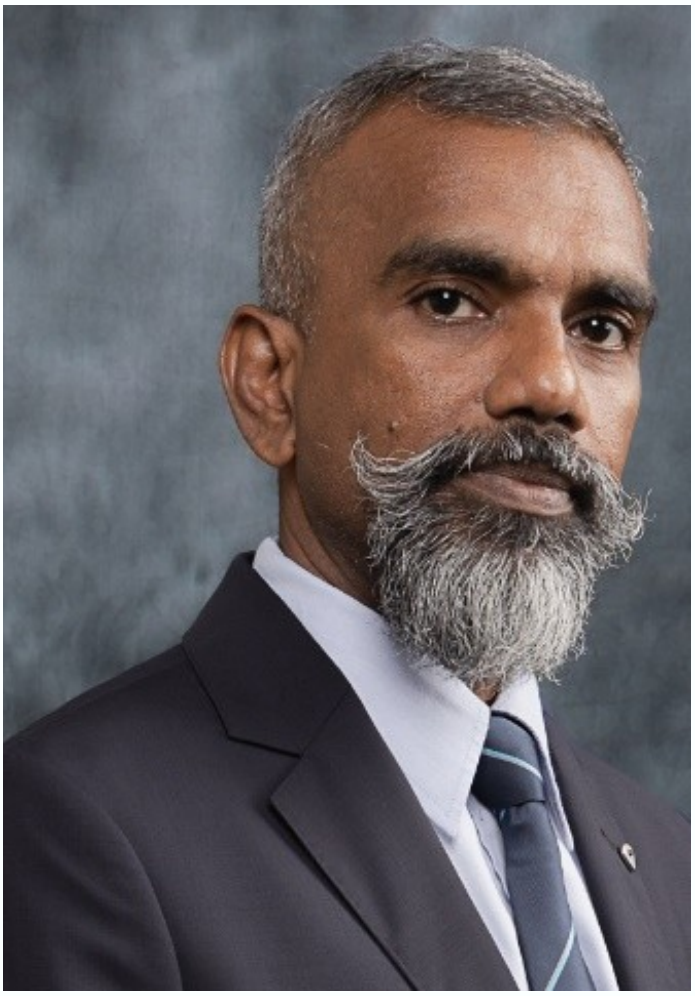
As UNIMAS advances under the Strategic Plan 2026–2030, the University remains committed to strengthening research visibility, enhancing interdisciplinary collaboration, and fostering impactful partnerships at national and international levels. IBEC's efforts strongly align with these aspirations, particularly in addressing global challenges related to biodiversity loss, environmental change, and sustainable development.

I am confident that IBEC will continue to expand its research footprint and contribute significantly to knowledge generation, policy development, and community engagement.

Congratulations on the publication of this issue, and I wish IBEC continued success in the years ahead.

Research & Innovation
Universiti Malaysia Sarawak

Foreword from the Director



It is my pleasure to introduce the first issue of the IBEC Research Bulletin for 2026, focusing on groups of species of high conservation value.

At the outset, I wish to record our sincere appreciation to Professor Dr. Wong Sin Yeng for her dedicated service as Editor of the IBEC Research Bulletin. Her commitment and stewardship have ensured the consistency and quality of this publication. Under her guidance, the Bulletin has continued to serve as an important platform for communicating IBEC's research achievements, academic engagements, and conservation initiatives. The Institute is deeply grateful for her valuable contributions.

I am equally pleased to welcome Dr. Jongkar Grinang and Ms Heira Vanessa as the new Editor and Assistant Editor. With their fresh perspectives and scholarly dedication, I am confident that the Bulletin will continue to grow in impact and relevance. I look forward to working closely with the editorial team to further enhance the visibility and reach of IBEC's work.



Temurang Cave, Padawan

As we move forward in 2026, our focus remains on strengthening research excellence, fostering interdisciplinary collaboration, increasing high-quality publications, and expanding partnerships at both national and international levels, in alignment with UNIMAS's Strategic Plan 2026–2030. This issue themed "Documenting Endemic, Rare, and Red-Listed Species: Informing Conservation" reflects these priorities. The Research Bulletin plays a vital role in documenting our collective progress and celebrating the accomplishments of our researchers, staff, and students.

I encourage all members to continue contributing actively to future issues so that the Bulletin reflects our passion, thirst for knowledge, and dedication that define our Institute

Institute of Biodiversity and environmental Conservation
Universiti Malaysia Sarawak

Article Submission Guidelines

Each contribution should focus on 1–5 species of conservation interest. Articles must be concise, scientifically accurate, and evidence based, and should be structured to fit within two pages of the bulletin layout (A4, 2.54 mm all margins).

1. Species Selection

Selected species should meet at least one of the following criteria:

- Listed under the International Union for Conservation of Nature (IUCN) Red List
- Endemic to Sarawak, or Borneo.
- Rare, range-restricted, or data-deficient.
- Protected under the Wild Life Protection Ordinance 1998.

Authors are encouraged to prioritise taxa facing identifiable ecological or anthropogenic threats.

2. Required Content for Each Species

For each species, authors must provide:

- Taxonomic information (i.e., scientific name with authority, common name or local name if applicable), conservation status (i.e., IUCN Red List category, endemicity status, legal protection status, brief explanation of conservation relevance).
- Habitat and ecology (i.e., habitat type, key ecological traits (e.g., trophic role, reproductive traits, habitat specificity)).
- Distribution (e.g., general geographic distribution).

3. Writing Style

- Articles should be concise and structured.
- Avoid excessive literature review, focus on key ecological and conservation-relevant information.
- Support conservation claims with appropriate references where necessary.
- Use clear scientific language accessible to a broad biodiversity audience.

4. Photographs, videos, and audios

Authors are required to provide high-quality images (1 -2 images per species) to support species documentation.

a) Submit high-resolution photographs of:

- *The species (clear diagnostic features visible)*
- *Its habitat (representative environment)*

b) Image specifications:

- *Minimum resolution: 300 dpi*
- *Recommended file size: ≥1 MB*
- *Preferred formats: JPEG or TIFF*

c) If the photographs were not taken by the author:

- *Written permission must be obtained from the copyright holder prior to submission.*
- *The photographer must be properly acknowledged in the caption.*
- *Any usage restrictions should be clearly stated.*

Whenever available, authors are encouraged to provide video or audio recordings of the species to be linked with the images in the bulletin. As the bulletin is published in a PDF flipbook format, incorporating multimedia elements will enhance the overall reading experience. The editorial team reserves the right to edit images, videos, and audio files to ensure they meet publication standards.



Great blue spotted mudskipper
Boleophthalmus pectinirostris (Linnaeus, 1758)
IUCN - Vulnerable



Apot Waterfall, Kg Assum, Padawan

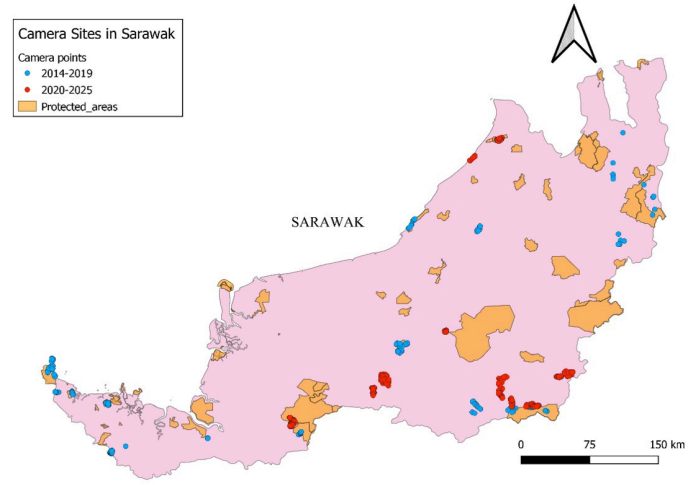
© Jongkar Grinang

Barking Deer in the Mist: Analysing the Distribution and Habitat Preferences of Muntjac Species in Sarawak

Mohamad Raziq Bin Mohadi & Jeffrine J. Rovie-Ryan

Institute of Biodiversity and Environmental Conservation, Universiti Malaysia Sarawak, Jalan Datuk Mohammad Musa, 94300 Kota Samarahan, Sarawak, Malaysia

Borneo, the world's third largest island, is home to a diverse biodiversity, and home to two elusive, sympatric deer species that are morphologically rather similar, but tell different ecological stories: the Southern Red Muntjac (*Muntiacus muntjak*) and the endemic Bornean Yellow Muntjac (*Muntiacus atherodes*). While these "barking deer", iconic in Borneo landscapes, play crucial roles in ecosystem as seed dispersers, and nutrient cyclers, much of their spatial ecology in Sarawak remains unexplored. How do these two species coexist? Are there any peaceful interactions or are there conflicts for territory driven by altitude and habitat quality?



Map of camera sites in Sarawak in this study.



Deployments of a camera trap in Lambir National Park.

Our ongoing research aims to answer these questions by determining the distribution and habitat preferences of two muntjac deer species across Sarawak, while testing for the Niche Partitioning Hypothesis in a rapidly changing landscape.

This study represents comprehensive compilation of camera trap data for ungulates in the region. Aggregating 10 years' worth of detection data from 19 distinct locations, spanning the years 2014 to 2025, with 17 out of the 19 survey sites derived from previous studies conducted by Mohd- Azlan Jayasilan (2014-2024). This results in a dataset of 995 independent camera trap stations (see map). The extensive dataset covers the full range of Sarawak's topography, from coastal lowlands to the rugged interior highlands. To understand what drives the presence of these deer, we initially extract five fundamental landscape covariates from every camera station that include elevation, slope, land use, Distance to Roads, and Distance to Totally Protection Area (TPAs).



Camera trap photos of female *Muntiacus atherodes* (left) and *M. muntjak* (right).

Preliminary modelling using these variables hint at vertical segregation between these two species, with *M. muntjak* showing a preference for higher elevations compared to *M. atherodes*. However, broad-scale topography alone will not be able to fully explain their distribution. Hence, expanding our analysis is a must to include finer-scale covariates, such as distance to settlements, distance to rivers, and specific forest types.

Camera trap photos of male *Muntiacus atherodes* (left) and *M. muntjak* (right).



Once habitat space is defined, we will implement two-species occupancy models to calculate the Species Interaction Factor (SIF) between these two deer. The analysis will allow us to statistically distinguish if the two species are separated due to habitat preferences, or by active competition, whereby one species dominates the other.

Conducting landscape-scale analysis of this size also has its own challenges. The cryptic nature of the species is one of the primary issues when trying to distinguish *M. muntjak* and *M. atherodes* without proper validation protocols, and the variability in sampling effort with environmental conditions create “imperfect detection” scenarios, where animals may be present but go undetected. Overcoming these issues requires extensive fieldwork, and complex statistical covariates to ensure our models reflect the actual biological data rather than represent sampling artifacts.

In summary, this study is about more than just mapping deer. It is about understanding the resilience of Sarawak’s biodiversity, standing between modern statistical ecology and practical conservation. By moving from single-species habitat models to complex two-species interaction analyses, we hope to provide answers to the questions we have for muntjacs in Borneo and ensuring they continue to exist in Sarawak’s forest for generations to come.

Bibliography (click here)



Thank You for Your Support

UNIMAS
UNIVERSITI MALAYSIA SARAWAK

INSTITUTE OF
BIODIVERSITY & ENVIRONMENTAL
CONSERVATION

Contact for the Bulletin

Email
nhvanessa@unimas.my

Phone
082 581 000

Address
Jalan Datuk Mohammad Musa,
94300 Kota Samarahan