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1 STOP BORNEO WILDLIFE

ARA

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1StopBorneo Wildlife

2win Enterprise, Jalan Loji Pembetungan,
Batu 1, Peti Surat 69,
91308 Semporna, Sabah,Malaysia
+60128248052
1stopborneo@gmail.com

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ARA: Volume 3

Editor:
Shavez Cheema

Assistant Editors:
1) Yulinda Wahyuni binti Eddyutowo
2) Chun Xing Wong Claveria
3) Chrislyn Mujan Donol

Design & Layout:
1) Elvinis Gunong
2) Chrislyn Mujan Donol

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For Wildlife Rescues on Borneo

SABAH
Wildlife Rescue Unit
+60176946018 and
+60143769226

1Stopborneo Wildlife
+60128248052

Sarawak Forestry Corporation
Kuching 019-8859996
Sibu 019-8883561
Bintulu 019-8332737
Miri 019-8290994

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RAINFOREST SOUNDS

SCAN HERE!

EDITOR'S NOTE

Welcome to Volume 3 of the ARA Magazine!

This is the most COMPREHENSIVE volume of the ARA so far! Its expanding profile shows how important ARA is becoming as a forum for Borneo's conservation scene as we highlight all the good work being carried out on the island. We have record submissions from Kalimantan, Brunei, Sabah and Sarawak for this volume. We hope you enjoy the ground-breaking and innovative projects and solutions from different conservation groups.Post Covid 19, projects and visions are back to normal and running full swing.

The Binturong, a Ficus/fig/ara-loving mammal, has been featured on the cover of this volume, eating a F.subcordata. A special congratulations to WWF Malaysia, Sabah Environmental Trust and 1StopBorneo Wildlife members on all your anniversaries. Please enjoy special volume of ARA and share it with all. Soon it will be available in more coffee shops around Borneo spreading the news on conservation.

EDITOR OF ARA MAGAZINE,
SHAVEZ CHEEMA

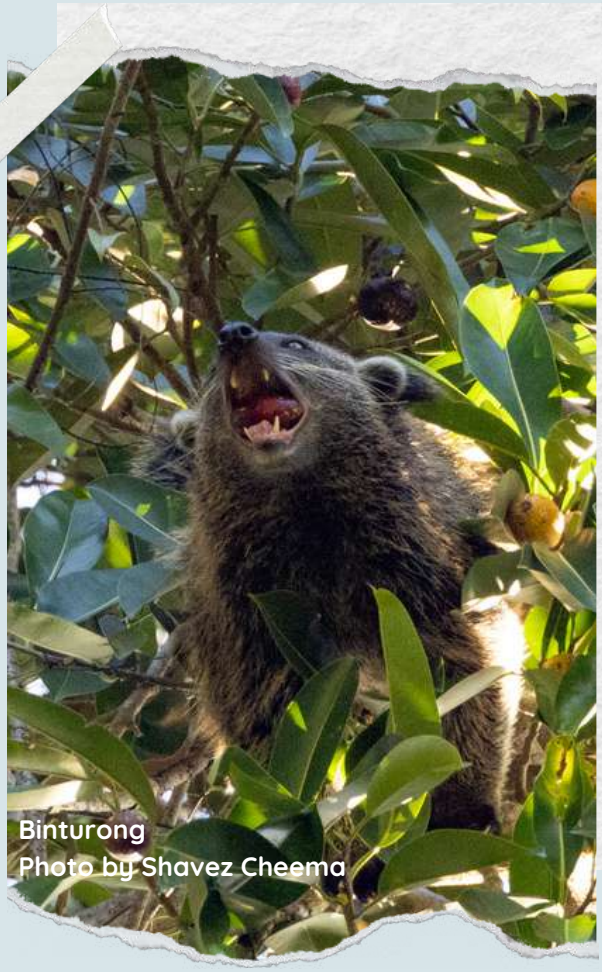
TABLE OF CONTENTS

BRUNEI

SARAWAK

KALIMANTAN

OTHERS



Binturong
Photo by Shavez Cheema

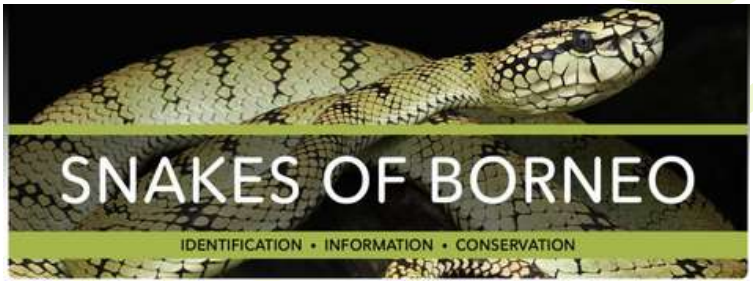
Hammerhead Shark
Nicolas Pilcher & Ho Kooi Chee

Monitor Lizard
Photo by Shavez Cheema

USEFUL FACEBOOK GROUPS

BORNEO BIRD CLUB

SNAKES OF BORNEO



BUTTERFLIES OF BORNEO

BORNEO MAMMALS CLUB

Galas WaterFall, Tawau Hills Park

Nature Comes First

By : Monica Chin

One Ocean Empire

One Ocean Empire, a non-profit Social Enterprise practice organization committed to the conservation and protection of forest & marine ecosystems. We are dedicated to preserving the health and biodiversity of our forest & oceans for future generations. One Ocean Empire own Ocean Quest Borneo Eco-Camp Conservation Centre, whose aim is to provide eco- education courses & training. The centre is located North of Usukan Island, Kota Belud, Borneo, Sabah. One Ocean Empire's community-based Nature Conservation Initiative is an extensive program aimed at safeguarding nature environments and ensuring sustainable practices in the traditional fishing industry.

Our primary objective is to foster a balance between human activities and the preservation of vital ecosystems, including coastal forests and wetlands that play a crucial role in maintaining marine biodiversity. Our Nature Conservation Initiative is a comprehensive program aimed at protecting and restoring the delicate balance of marine life and ecosystems in our oceans. Our primary focus is on sustainable fishing practices, the preservation of biodiversity, and the promotion of responsible fishing habits among local coastline communities. Protecting and rehabilitating coral reefs and nature environment to the benefit of local communities.

> "We recognize the urgent need for ecosystem restoration in areas impacted by human activities. Through strategic partnerships and collaborative efforts, we plan to undertake restoration projects that focus on improving coastal food sustainability, water quality, rehabilitating mangrove ecosystems, and enhancing biodiversity in land wildlife as well as marine protected areas."

Our initiatives focus on capacity-building, providing training and educational opportunities that equip community members with the skills and knowledge necessary for sustainable land management, conservation practices, and eco-tourism. By supporting local livelihoods, we promote a harmonious relationship between people and nature, where we always set our mind-set right **NATURE COMES FIRST!**

"Today, I want to take a moment to reflect on our shared commitment to environmental stewardship and, in particular, the urgent need to protect and conserve our oceans. As the founder of our organization, I am immensely proud of the strides we have made in advancing sustainability, but I believe we can do more and we must do more in fast phase."
- Monica Chin.

LIST OF OUR SERVICES

1. Coral Propagation, Conservation, Restoration & Rehabilitation courses and training
2. Coral reefs survey, mapping, relocation, restoration and monitoring service.
3. Coral Reef Specialist Training - Ocean Quest Global syllabus covering the full scope of coral reef rehabilitation
4. Scuba Diving, Freediving, Snorkeling guide Courses & training
5. An arborist, tree surgeon, or (less commonly) arboriculturist, is a professional in the practice of arboriculture, which is the cultivation, management, and study of individual trees, shrubs, vines, and other perennial woody plants in dendrology and horticulture.
6. Hiking trail for educational purpose setup and management training
7. Sea grass / marine plant conservation training
8. Mangrove conservation courses & training
9. Birding and wild life photography training
10. Short term and long term Corporate Social Responsibility program collaboration

Contact us on our social media!
One Ocean Empire oneoceanempire@gmail.com 016 902 8848 / 016 255 0010

Figs in disturbed and undisturbed areas

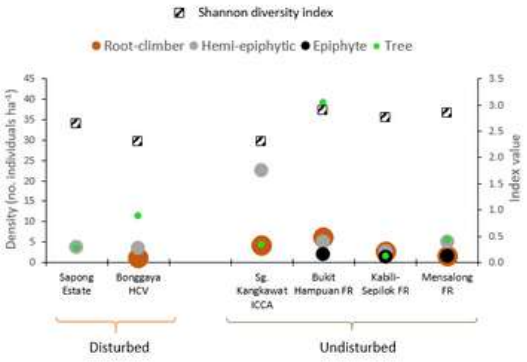
Figs (Ficus spp.) is known as “pokok ara” or “nunuk” in native Dusun dialects in Sabah. The figs belong to the Moraceae family which comprises approximately 850 species worldwide. Many people have the belief that figs are inextricably related to the ghost "hantu", and so people often cut down fig trees nearby their house or village. This is in contrast to the conservation perspective, where the figs need to be kept as it is important food sources for wildlife. Figs arec commonly referred to as the keystone species in the forest ecosystem due to asynchronous fruiting pattern that produces fruit all year round. The fig fruit becomes the main fruit resource for wildlife during non-mast fruiting sessions.

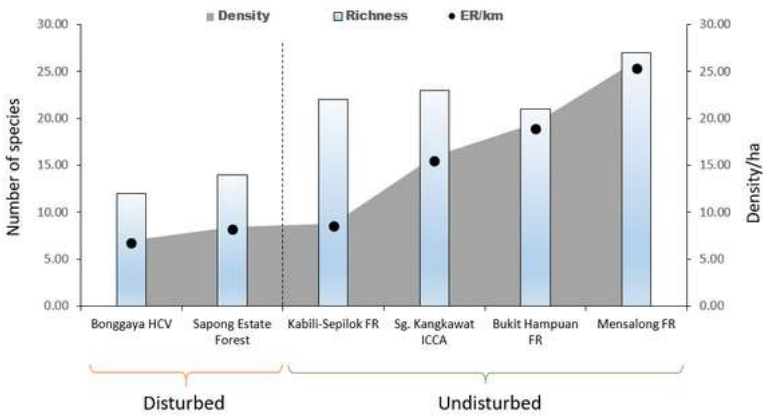
They have variety in their life form: small to large trees, hemi-epiphytes, epiphytes, shrubs and climber. Most fig species in tropical rainforest are hemi-epiphytic and epiphytic, and bears fleshy fruits. These figs rely mainly on their host plant for survival, however forest disturbance and landscape conversion into plantation areas has affected the figs community.

SUZIKA JUILING
WWF MALAYSIA
CONTRIBUTOR

Case study in Sabah

Several figs surveys within the protected areas of undisturbed or selectively logged in the past, and disturbed areas of remnant forest within oil palm plantations was conducted in Sabah. These surveys found that more figs species composition of hemi-epyphytic, epiphytic and climber form in undisturbed forest, while tree form figs commonly occur in disturbed areas. The figs diversity, densities, species richness and encounter rates (ER) were higher in undisturbed than disturbed forest. Removal of large tree decrease the suitable host plant for hemi-epiphytic, epiphytic and climber figs. While tree figs are more adaptable in the open or disturbed areas under high light intensity.





TECKGUAN PLANTATION SUPPORTS BORNEO CONSERVATION

Teckguan a renowned plantation originating from Sabah, has recently contributed to the Borneos wildlife by growing ficus trees which benefit wildlife. Avito Hong and Miss Laura, a nature lover at heart, assisted 1Stopborneo Wildlife by growing the BIG 4 from fruits provided by 1Stopborneo Wildlife. The big four are the Ficus stupenda, dubia, cucurbitina and subcordata.

These fruiting trees are a wildlife favorite for animals like the Binturong, Hornbills & gibbons , all found in Tawau at the Teckguan doorstep.

More plantations should take the lead on Borneo in getting involved in conservation and helping in whatever way they can.

Local Communities Engagement in Forest Rehabilitation for Orangutan Habitat in Lower Kawag, Ulu Segama–Malua Forest Reserve, Lahad Datu, Sabah.

BY DANIEL PAMIN

MALAYSIAN PALM OIL GREEN CONSERVATION FOUNDATION (MPOGCF)

MPGOCF Is a foundation initiated by the Malaysian Ministry of Plantation and Commodities (MPIC) that froms a strategic partnerhip with Sabah Forestry Department (SFD) and provides funding for this 10-year forest rehabilitation project for the Orangutan habitat in Lower Kawag, Ulu Segama-Malua Forest Reserve Lahad Datu. This project also focuses on strengthening community involvement by providing capacity building opportunities and supporting locally based seedling producer. Kampung Tampenau was chosen for this project and have since established their own nursery committee in year 2021.

Forest seedlings used in the reforestation area are grown, nurtured, and purchased directly from the community home nurseries. Since the project commenced, 64 individuals are actively involved in nurseries set up at their own homes and orchard.

The community were allowed to obtain saplings in the forms of seeds and wildings collected in the nearby forest reserve with permission from SFD. Species chosen were Octomeles sumatrana (binuang), Neolamarckia cadamba (laran), Terminalia subspathulata (talisai), and Terminalia catappa (ketapang). The nursery committee have successfully delivered 80,000 seedlings covering 200 ha forest area. The number of seedlings required for phase 3 of the project (2023-2025) is 300,000, covering 750 ha area. The 'Komuniti Nurseri Kampung Tampenau' has been entrusted to continue their role in this project. Engagement of local communities offers an opportunity for an economic self-sufficiency as well as empowers them to restore and preserve the forest landscape. MPOGCF and SFD believed that effective community participation is crucial to achieve sustainable impacts on this project.

10 TH YEAR ANNIVERSARY

1StopBorneo Wildlife
By Yulinda Wahyuni

1StopBorneo Wildlife 10th anniversary celebration was a grand success and filled with fun and joy. This event was held at D'Atas Explorers Tavern, Kota Kinabalu on the 4th December, 2022. The celebration was adorned with decorations to create a festive and memorable event for all attendees. A succesful event due to the teamwork commitment of 1StopBorneo Wildlife team.

The event started at 8:15 PM with opening remarks delivered by Shavez Cheema, the founder of 1StopBorneo Wildlife. His speech highlighted the work and contributions of the members of 1StopBorneo Wildlife. The event was continued by presenting the trailer of Borneo Wildlife Series which consists of 12 episodes that will showcase 12 different wildlife species of on Borneo. In addition, the new card game called "Wild Guess" and the ARA magazine volume 2 was launched during the event.

> "1StopBorneo Wildlife marked a significant milestone as they celebrated their 10th anniversary with great enthusiasm and pride. The occasion provided them with a moment to reflect on their journey, recognize the collective achievements of their team, and recommit themselves to the path ahead."

Live band performance by D'Atas band and Scratchman John makes the events more lively. Talk by Ledumin titled "From Hunter to Guardian" and Chun Xing Wong who highlighted the best wildlife photos taken by 1StopBorneo Wildlife teams.

The 10th anniversary celebration was a testament to a dedication, hard work, and unwavering commitment of everyone at 1StopBorneo Wildlife. They are facing an exciting future, with numerous opportunities that hopefully will bring more positive outcomes for their work in conservation.

1StopBorneo Wildlife extends their heartfelt thanks to the employees, customers, partners, and the entire 1StopBorneo Wildlife members for their support and trust over the years. Together, they will reach new heights and create a brighter future.


Photo by Shavez Cheema

Kinabalu Birdwing!

This giant butterfly is also known as the Borneo Birdwing, Troides andromache. It was internationally classified as rare and endangered in 1987. We are re-assessing its status.It is one of four species of Birdwings in Sabah and the only one confined to the highland forest between 1,000 -2,000m• Adults are rarely seen as they fly high up in the canopy of the forest, feeding on nectar from the flowers of trees and vines. The larvae feed only on the rare highland vine Aristolochia foveolata. Although a creature of primary cloud forest, the Kinabalu Birdwing has adapted to a mosaic of habitats on the Mesilau Plateau, with patches of forest mixed with vegetable plots and garden finding nectar in the garden flowers, as well as in the forest canopy. It will become extinct if too much forest is cut down.

SUZANNE GOH

CONTRIBUTOR

Another risk is climate change. Rising temperatures are pushing cool-adapted mountain animals and plants to higher ground. Satellite mapping of Borneo shows that only a tiny fraction of land is above 2000m - therefore eventually there will be ‘Nowhere to Go’. We are working with Homestay operators in Kg Kiau (Mt K) to grow foveolata vines for the Kinabalu Birdwing, so that paying visitors coming to photograph free-flying giant butterflies can provide a new, sustainable income stream.

We are promoting awareness of the Kinabalu Birdwing to the general public and schoolkids as an icon of Sabah’s insect biodiversity. We have submitted a proposal to the State Government and it has been accepted. So now this rare and imposing species is Sabah’s State Butterfly.

Nicolas Pilcher & Ho Kooi Chee

MITIGATING BYCATCH OF ENDANGERED AND THREATAENED SHARKS AND RAYS IN SABAH, MALAYSIA

Large charismatic marine megafauna – those species close to everyone's hearts such as endangered sharks and rays – are extremely important components of marine ecosystems in Sabah, but under increasing threats, the worst of which is 'bycatch'. Bycatch refers to the accidental or incidental take of a species in some other fishery. Imagine a fisherman that goes out to catch sardines but the net also accidentally snags and drowns an endangered shark... that's bycatch. In Sabah, sharks and rays are lost in alarming numbers as bycatch in artisanal and commercial fisheries, and this is a threat not just in Sabah and across Malaysia, but throughout the developing world, where the most people with the least means compete for extremely limited resources.

Unfortunately, many marine species – and the conservation challenges they face – remain a mystery to many people. People think of elephants, tigers, Orang Utan. But they hardly ever think dugong. Or shark. Or sea turtle. Yet these are wildlife too, and their numbers are rapidly dwindling. Sabah shark and ray populations are crashing catastrophically, and yet people continue to shop for these at the market. In our opinion, serving this type of seafood is the equivalent of serving up a plate of panda or rhinoceros

Managing the bycatch of endangered sharks and rays is far more complex than one would imagine. Most of these species are not yet protected in Malaysia, and there is no law against catching most sharks and rays. Unfortunately, this does not make them any less endangered. It just means that they can continue to be caught, and continue to decline, until some critical level is reached that forces a political solution. The problem is that no management option works for all species. Adding to this, designing management measures such as time-area closures (a kind of 'temporary' protected area based on the seasonality of use) or - temporal gear restrictions (certain fishing gears can't be used at certain times) is impossible without knowing where and when bycatch of individual species occurs. But this is exactly what MRF is working to achieve.

Elsewhere in the developed world, human observers go on fishing boats and report on catches, bycatch events and where and when things happen. This then directs how fisheries are managed. But across much of this developing world the costs of implementing fishery observer programmes are prohibitive, leaving fisheries without important management information. In Sabah this is no exception.

The problem is that vessels leave port and travel north, south, east and west, often venturing hundreds of km from home, and ranging widely across the ocean in any given outing. At the end of the week, they return and sharks and rays are emptied from the holds, but with no idea no understanding of where they may have been caught. A comprehensive market survey told us sharks and rays were being captured, but not where, or precisely when. Compounding this, vessels rarely (if ever) report on the bycatch and discards of endangered marine species such as sharks and rays (often out of fear or reprisals), thus limiting our ability to design effective and realistic management measures.

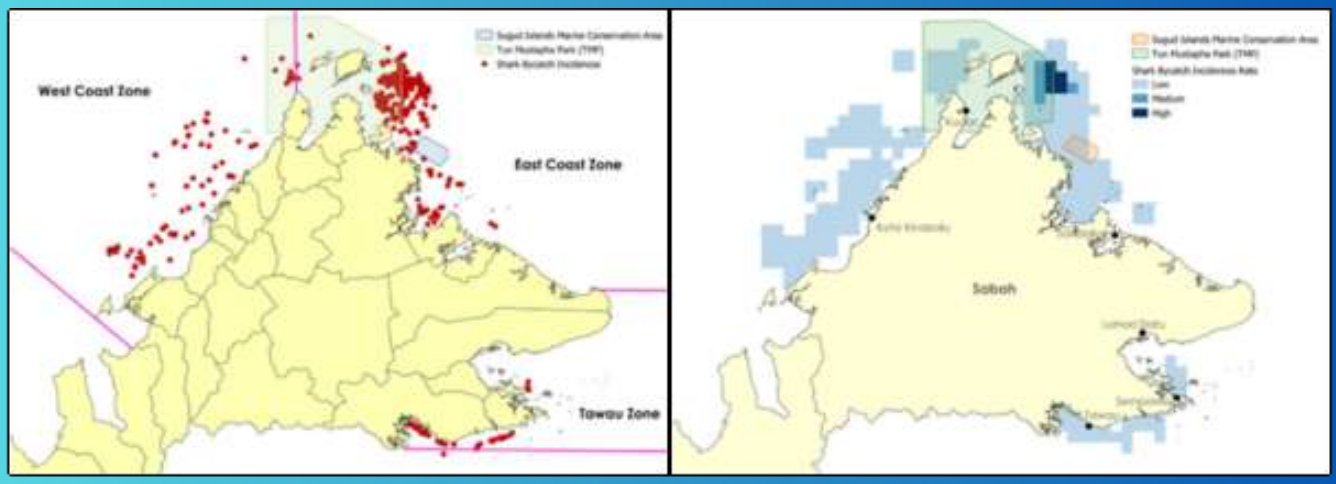
Without data on when and where bycatch occurs, our fisheries managers in Sabah are thus challenged to design and implement management measures to address bycatch and sustainability in fisheries, particularly when much of this bycatch is discarded at sea by fishers fearful of punishment and income loss.

To address the lack of knowledge on incidental captures of these key species, MRF designed and constructed electronic fisheries monitoring cameras to determine where and when bycatch occurs. We have successfully deployed 35 of them across Sabah, and through our longstanding good relationship with fishermen across the State, and by careful location of the cameras, we have captured images of the landings as they are brought on deck. Our findings have been amazing, even given the size of the State. We have found that the cameras work extremely well and typically can be deployed for up to two weeks at a time. The cameras provide data on all kinds of shark and ray bycatch, including protected and endangered sea turtles, and this data can be assimilated into hotspot maps. The cameras are GPS-linked and provide accurate location data for each capture. This means that we know exactly where each endangered animal was captured in space and time – providing an opportunity for the design of effective and efficient management measures.

The collection of data since 2020 has provided us with an adequate data from which to construct heat maps of where and when bycatch events occur. These heat maps were then turned into a fishery strategy describing potential fishery management measures

that promote more sustainable fishing and the conservation of large marine megafauna, which we are working with the Department of Fisheries Sabah and Sabah Parks to implement.

MRF's use of electronic monitoring cameras has now bridged the wide gap in costs and practicality of observer programmes and provided the data that was needed to design the exact fishery management measures we need. We have demonstrated where and when endangered species are being caught, and the State is already working on its first ever trial shark and ray time-area closure to put these efforts to use.



In the long run, our vision is one of an improved conservation status for sharks and rays in Malaysia, but not at the expense of fisher livelihoods. In the future, with greater access to photographic material and the expansion of the AI industry, the development of automated detection of bycatch events will also be a viable and natural succession to this process, and hope to venture down this path once the cameras are widely used. We believe that mitigating impacts of trawl fisheries, alongside policy reviews, will be a turning point for regulation and conservation of sharks and rays in Sabah's waters.

Grace Pounsin

Carol

BORNEO CANOPY CAMP OUT

It is an annual event which takes place in several countries around the world .The objective is to appreciate the canopy ecology and also it was started by a lady who wanted to protest illegal logging in her area and decided to camp out on the trees.

It has become a yearly tradition and this year in 2023 it was organised by Mr Jamaluddin Aka Unding Jami a world renowned tree climber in Maliau basin Field center, Sabah.

Masliadi aka Adiy Mas

Sabah Environmental Trust

Sabah Environmental Trust is a Trust Incorporation Organisation based in Kota Kinabalu, Sabah. SET work encompasses on programme related to protected area resources management, including activities on education awareness and capacity building, supporting studies related to environment education and scientific works, conservation work, and crucially to raise, receive and administer fund for conservation and environment related work in Sabah.

One of their most important involvement is the DaMaI program.

DaMaI Initiative" Patrolling (Monitoring & Enforcement) is a five year programme started since 2017 with project sites encompassing three main conservation areas in Sabah, Malaysia namely Danum Valley conservation Area Maliau Basin Conservation Area and Imbak Canyon Conservation Area and few Forest Reserves under class I (Protection), class II (Production) and class IV (Virgin Jungle Reserve), or collectively known as DaMaI Rainforest Complex. The DaMaI Rainforest Complex is a vast area totaling approximately one million hectares, sited within the Heart of Borneo (HoB) Initiative, The site also nominated as the second World Heritage site (Natural) for Sabah by the Sabah government.

The goal of the project is focusing on strengthening the protection of DaMaI area, with three main objectives under the project;

(1) To establish a dedicated DaMaI Patrol team;

(2) To pursue and formalize DaMaI as a single management unit;

(3) To enhance the capacity of the joint dedicated patrol team.

By Deirdre Kulip

GOING FURTHER
Youth Involvement, Action, and Impact.

From the inspiration and motivation I gathered during my fieldwork as a Licensed Tourist Guidein Sabah, Malaysia, I have transformed them into my dreams and passions. I firmly believe in the power of a single pair of hands and envision connecting them with others to work towards making Sabah a better place for both humans and wildlife.

The 17th Sustainable Development Goal (SDG), which focuses on "Partnership for Goals," underscores the fact that significant accomplishments cannot be achieved in isolation. Collaboration and partnerships are essential to achieving our goals. Effective cooperation with various departments and organizations will enable us to coordinate our efforts effectively towards the objectives we aim to accomplish.

As a student at the University College Sabah Foundation in Sabah, I am deeply impressed by the university's commitment to support and encourage students to engage in programs and activities that revolve around two core principles: nature and community.

Over the years, while emphasizing the coexistence of humans and wildlife, it has become increasingly crucial to acknowledge the presence of underprivileged communities in Sabah, particularly those residing in remote, undocumented areas closer to nature.

Providing education and exposure to the natural environment and wildlife in Sabah will equip these communities with invaluable knowledge and awareness, enabling them to play a significant role in protecting and preserving it. This education will empower them to become knowledgeable and responsible stewards of their environment. The involvement of prominent figures in Sabah plays a vital role in influencing public opinion regarding conservation efforts and promoting nature-based tourism attractions in the region through education and exposure.

KEMBARA RIMBA TALIWAS

The Kembara Rimba Taliwas is an exciting environmental education experience that was launched in 2021 by the South East Asia Rainforest Research Partnership (SEARRP) in collaboration with the Sabah Nature Club and the Swansea University School for Science Scheme. The programme, supported by the National Geographic Society, aims to mentor a new generation of environmental champions through a series of interactive and fun, science-based environmental education modules in one of Borneo's last remaining lowland rainforests – the Taliwas River Conservation Area in Lahad Datu.

SEARRP
South East Asia Rainforest Research Partnership

We are engaging with over 200 students from eight schools from the Kinabatangan, Tawau and Lahad Datu districts, where students have the opportunity to experience and discover the fascinating flora, fauna and aquatic macroinvertebrate species in the forest and river of Taliwas. The programme also incorporates the use of iNaturalist – an online network of people that shares biodiversity information – as a tool for citizen conservation science to document and assess biodiversity as well as to inspire engagement with the natural world.

For more information on our environmental education programme please visit www.searrp.org or contact Ms. Imelda Geoffrey at imelda@searrp.org

Pangolin

Conservation Efforts in Sabah

By Pangolin Aware

Sunda pangolin (Manis javanica) © Bob Hartley

The Sunda pangolin, known as the 'scaly anteater' or 'tenggiling' in Malay, is a captivating mammal native to Sabah. Despite its highest level of protection in Sabah, it remains critically endangered due to poaching, illegal trade, and habitat loss. However, its status as the world's most trafficked mammal is drawing increasing international attention, offering a glimmer of hope for its survival. Founded in Sabah in 2022, Pangolin Aware is committed to preventing the extinction of the Sunda pangolin. Our multifaceted approach includes raising public awareness, conducting ecological and social research, and empowering communities for active conservation. Additionally, we advocate for more robust legal protections and collaborate with like-minded partners to enhance conservation strategies. Our current initiatives cover several protective measures for pangolins We are delving into local trade dynamics, ethnozoological knowledge and practices, and consumer behaviours that adversely affect these species. In addition, we actively engage in advocacy, skills development, and educational outreach within Sabah to strengthen our conservation efforts.

Working group discussion © LEAP

Public awareness effort © Pangolin Aware

In collaboration with our partners, we are not only researching the pangolins' potential link to SARS-CoV2 and leveraging genetic studies to guide our conservation strategies but also jointly focusing on our 3R programme, which is designed,
To enhance the rescue, rehabilitation, and subsequent release of pangolins.

Pangolin Aware | Malaysia
www.pangolinaware.org

Orangutan Appeal UK

Registered Charity 1138538

At Orangutan Appeal UK, we are dedicated to the rehabilitation and preservation of the Bornean orangutan and their habitat. For the last 23 years we have worked alongside local NGOs and Sabah Wildlife Department to help protect remaining populations of wild orangutans by supporting causes that have a similar goal. The largest project we support is Sepilok Orangutan Rehabilitation Centre in Sabah, where the rescue, rehabilitation and reintroduction of orangutans to the wild is the main focus. Their rehabilitation programme has been successful for many years and ensures that vulnerable orangutans are taught the skills they will need to be independent again one day. We are a UK-based charity that raises funds from supporters around the world. This enables us to employ 11 members of staff at Sepilok, including a wildlife veterinarian and a veterinary nurse, as well as a team supervisor and eight care staff. We also aid the centre by funding specific projects such as enclosure repairs and refurbishments, and purchasing medical equipment for the clinic, health checks for the orangutans and other critical items which are needed immediately.

Other projects we support in Sabah include Regrow Borneo, an initiative that is on the frontline of rainforest regeneration. By replanting areas of degraded forest, they are increasing the habitat for orangutans and other wildlife which is essential for their survival. We have worked with and funded many projects for the Wildlife Rescue Unit over the years, including the purchase of three new all-terrain vehicles to better facilitate their animal rescue missions.

Our team are also actively engaged in raising awareness of orangutan conservation through education and community outreach programmes alongside other local wildlife conservation organisations. In addition, we recruit a Liaison Officer every three months who is based at Sepilok to represent us as a charity and to raise awareness of the orangutans' plight. They are also instrumental in promoting our adoption programme, which is run from our UK office and allows supporters to symbolically adopt one of the orangutans at the centre. This is one of our main streams of income and has been extremely successful since its introduction in 2002.

Read more about us

Follow us

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@orangutanappeal

Reef Check
MALAYSIA

Reef Check Malaysia (RCM) is a non-profit organization (NGO) committed to conserve the rich marine biodiversity of Sabah's ocean through reef check surveys, education, and community engagement. We have been actively involved in conservation since 2007 and have since made great contributions in monitoring the health of coral reefs, educating the public and raising awareness about the importance of reef ecosystems, and implementing various conservation and management initiatives.

In recent years, we have been encouraging many aspiring youths in our programs to empower their involvement in taking care of the marine ecosystem around them. We are working closely with the youths all over Sabah, especially youths from Semporna such as Mabul Youth and Larapan Youth. We believe that youth involvement in marine conservation is essential for fostering a deep sense of responsibility and stewardship towards our oceans, ensuring a sustainable future for these vital ecosystems.

In 2023, we have expanded our Waste Management and Recycling Program to Kg. Baru-Baru, Tuaran. Although still in its early stages, we have 100 participating households, with still more eager to join. Within 3 months, Kg. Baru Baru managed to prevent over 20,000 plastic bottles and just under 1 ton of plastic waste from being thrown into the ocean. Our waste management program aims to empower and help the local coastal communities to properly manage their waste by tackling plastic pollution from its source.

Scan me!
To know more about us.

Reef Check Malaysia with Mabul Youth for Eco-diver Training

These are some notable programs that the youth are involved with:

- Sabah Community Environment Leadership Camp (CELC)
- Reef Check Surveys
- Coral Bleaching Monitoring Program

A local from Kg. Baru-Baru carefully segregating plastics during a cleanup event

Team Reef Check Malaysia

FICUS RESCUE
IN LAHAD DATU TOWN

BY MELINDA

BRINGING BACK OUR RARE ANIMALS

The idea of Ficus rescue in Lahad Datu town was first initiated by Bringing Back Our Rare Animals (BORA). The objectives are relocating these keystone species to their natural habitat as wildlife food plants which simultaneously reduce the management cost for potential damages to district properties as well as to raise public awareness on figs. This idea was strongly supported by the Lahad Datu District Officer, Dr. Mohammad Ayub Yaacob, and further encouraged it to be an annual event. The first "Ficus Relocation Programme 2022" was successfully held in June 5th 2022 in conjunction with World Environment Day. With the help of 13 other government and non-government agencies, 1008 figs were collected from buildings, roofings, gutters and drainage systems. The figs were brought in to Sabah Ficus Germplasm Centre (SFGC) for recovery prior to the relocation. In September 29th 2022, the figs were sent to Sandau Estate, Sawit Kinabalu Sdn Bhd to be planted within their conservation area.

The subsequent "Ficus Relocation 2023" was held in June 5th 2023. This time around, two sky lift vehicles were also deployed to the sites where figs were lodged high up on buildings. A total of 268 figs were collected and brought in to SFGC for further processing and recovery. These figs will be taken up by Tabin Wildlife Resort to be planted on the forest fringe of Tabin Wildlife Reserve.

Project highlight: Borneo Gibbon Rehabilitation Project (Borneo GReP)

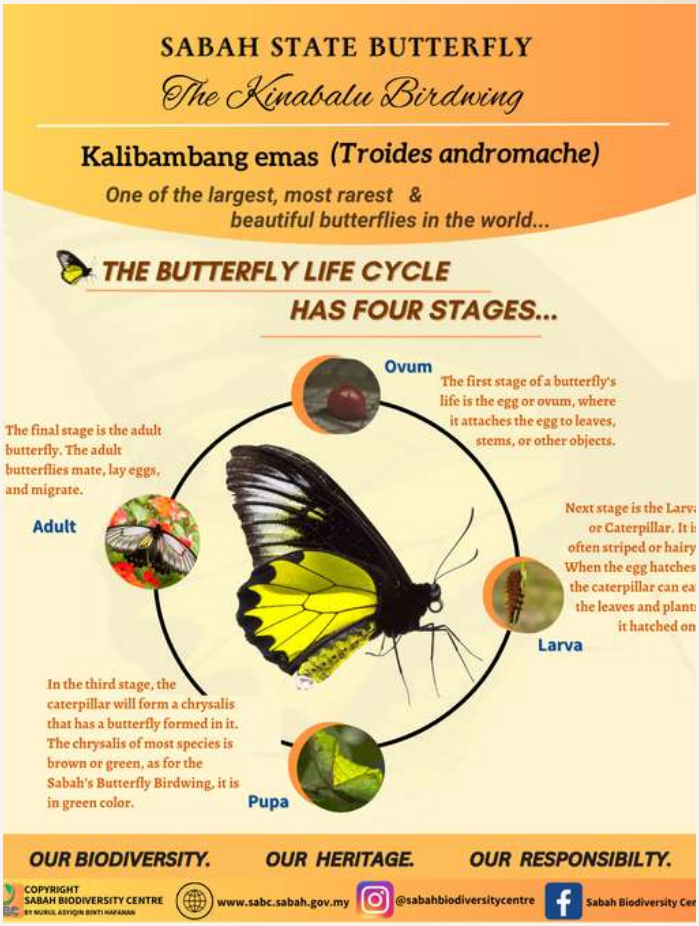
by Aeldry Lawrence

Gibbon Conservation Society or GCS is a Malaysian NGO that was founded in 2013. For the sake of our species, we think its critical to tackle conservation from every angle in order to find lasting solutions. We therefore strive for a thorough strategy that not only addresses wildlife trading and rehabilitation, but also strengthens people, works with group, advances science, raises awareness around the world and does so much more.

The Gibbon Rehabilitation Projects are Malaysia's first small ape rehabilitation centres, with Malaya GReP established in 2013 and Borneo GReP established in 2022.

The Malaya Gibbon Rehabilitation project (Malaya GReP) is located in Raub, Pahang, The Borneo Rehabilitation Project (Borneo GReP) is located in Kota Belud, Sabah. Both GRePs assist orphaned captive gibbons and other primates that are victims of the illegal pet trade, bushmeat and other unfortunate situations. Borneo GReP is the first gibbon rehabilitation project in Sabah. Borneo GReP focuses on rehabilitation two endangered species of gibbons which is the North Bornean Gibbon (Hylobates funereus) and the Abott's Gray Gibbon (Hylobates abotti).

Both species are categorised as endangered under the IUCN Red List and are native to Sabah and Sarawak.Currently, Borneo GReP houses 5 North Bornean Gibbon. Both GReP project goals are to continuously provide proper care, nutrition, rehabilitation and re-wilding guidance to as many primates as we can accommodate, so they can regain their natural survival skills and return to the wild where they can become functional part to the ecosystem. In order to return to the wild, gibbons must be both physically and mentally prepared, as well as achieved 7 criteria of release according to IUCN guidelines. Rehabilitation takes many years depending on each individual's experienced trauma and ability to relearn their natural behaviour. We hope to see these gibbons free in the forest one day, serenading us with their melody. Help us save this endangered species by donating, volunteering or collaborating with us.



The rare Kinabalu Birdwing (scientifically known as Troides andromache) now takes its place as one of the state's flora and fauna icons as it has been declared as the Sabah's State butterfly.

It joins the ranks of the Orangutan, Proboscis monkey, rafflesia, Slipper orchid, sea turtles and Borneo pygmy elephants among others, that had one time or another been used to promote the state's tourism.

The Kinabalu Birdwing is a unique and endemic butterfly species that resides within the montane regions of Mount Kinabalu and Crocker Range

Scan to download the Poster

Kalibambang EMAS

WONDERFUL BATS
TAWAU HILLS PARK

Dr.Charles Francis was the co-author of the Mammals of Borneo book in 1984 with John Payne. Dr Charles Francis is the leading expert on Bats of Borneo. He has described countless new species and contributed immensely to Borneo Bat work. He was in Tawau Hills Park in November 2022 and he delivered a bat training workshop and photography workshop to The Sabah Park education and research department.

Tawau Hills has over 25 species of bats so far and this list can be increased further with more bat research. There are two types of bats, fruit eating bats and insect eating bats. Bats are a very important pollinator and disperser in the ecosystem, as well as controlling the insect population.

Photos by Dr.Charles Francis from Tawau Hills Park

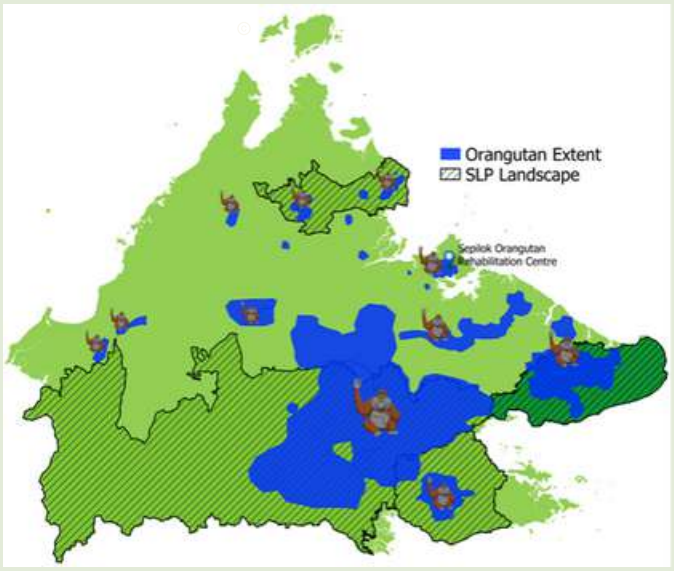
CONSERVING ORANGUTANS THROUGH THE LIVING LANDSCAPES APPROACH

CONTRIBUTORS
DONNA SIMON

LIVING LANDSCAPE APPROACH

What is the Living Landscapes Approach?

The Living Landscapes Approach (LLA) is a combination of conservation and sustainable development by integrating the Protection of forests, wildlife and rivers, with RSPO-certified Production of oil palm, and Restoration of ecological corridors and riparian reserves within a landscape. The Sabah Landscapes Programme (SLP) embraces LLA in its conservation strategy. SLP is a 5-year programme under the WWF-Malaysia, which started in 2020 until 2025. The programme has a total of 53 staff based in Kota Kinabalu, Sandakan, Lahad Datu and Tawau to implement its conservation strategies.



ORANGUTAN EXTENT BASED ON WWF SURVEY

Orangutan population status and current threats in Sabah

The Bornean orangutan is critically endangered following its declining population trend. In Sabah, the species is totally protected under the Sabah Wildlife Conservation Enactment, 1997, with legal consequences for anyone found killing or causing any harm to orangutans. The Bornean orangutan subspecies (Pongo pygmaeus morio) in Sabah is one of the three subspecies on the island. Its main threats are habitat fragmentation, habitat loss and habitat degradation. Over the past 15 years, the population has remained stable due to the shift towards sustainable forest management and the slowing down of oil palm expansion in Sabah. In present days, the effect of intense logging in the 80's is still evident, as it takes a very long time for the forest to regenerate. Habitat loss and fragmentation caused by infrastructure development and agricultural expansion are irreversible as they push the population into smaller subpopulations. Nevertheless, with continued sound forest management practices, fostering connectivity, sustainable development efforts, and heightened awareness on orangutan conservation, we aspire to ensure the Bornean orangutan population in Sabah will remain stable.

HOW THE PROTECT-PRODUCE-RESTORE PILLARS IN LLA REDUCE THREATS ON ORANGUTANS?

Protect The protection of Forests, Wildlife and Watershed	**Produce** The Production of Sustainable Palm Oil and Timber	**Restore** The Restoration of Degraded Habitats & Ecological corridor
Monitor the current orangutan populations to inform conservation management. Identify degraded habitat and important connectivity to be restored. Facilitate the Green List application process for protected area, enhancing the management. Support sustainable infrastructure development to prevent further fragmentation or orangutan habitat disturbance. Monitor forest loss and encroachment through satellite imageries.	Supporting oil palm growers towards achieving sustainable certification for Deforestation-free palm oil. Maintain areas of High Conservation Value and riparian reserve for orangutans to move between forest patches to feed and breed.	Establishing corridor and forest restoration, such as • Bagahak Ecological Corridor • Mt Wullersdorf Corridor Project • Trusan Sugut Restoration Project • Bukit Piton Forest Restoration Project.
Policy		
• Work with Sabah Wildlife Department to amend the Sabah Wildlife Conservation Enactment, 1997 which increases the penalty of Schedule 1 species (including orangutan). • Supporting sustainable infrastructure work by developing Green Infrastructure Training Module • Knowledge sharing with Judiciary in Sabah & Sarawak "1 hour for Nature" to improve their knowledge on wildlife conservation challenges and effort in Sabah. • Development of Sentencing Guidelines for Wildlife Crimes to provide judges with guidelines for appropriate sentencing of wildlife offenders.		

OUR SLP TEAM

MORE ABOUT LLA

FiG FACTS

By Martin Parry

- There are 850 fig species worldwide of which 150 are found in Borneo.
- Many people only know one species: the 'edible fig' *Ficus Carica* which is widely cultivated and eaten by people throughout the world.
- The words Ara, fig and *Ficus* can be used interchangeably.
- When mature, figs may be trees, shrubs, vines and even epiphytes (growing on another plant for support).
- Important Ara species in Borneo include: *F. racemosa*, *F. punctata*, and *F. dubia.*

Figure 1: Examples of Ara synconia
Suggest 2 or 3 from F. carica, racemosa, punctata and dubia

Some more fig facts

- A Ficus fruit is known as a synconium (plural syconia) so that 'fig fruit' and synconium refer to the same thing. See Figure 1 for examples
- Figs are flowering plants and so have 2 types of flowering parts: male (the stamen composed of a filament with an anther at its tip) and female (the pistil which has 3 parts: the style with a stigma at its tip and an ovary at the base of the style that contains ovules).
- Pollination in figs, as with other plants, occurs when pollen, containing male gametes produced in an anther, is transferred to the female stigma from where they fertilise the ovules (female gametes) in the ovary to produce seeds.
- The main function of fig fruit is to attract 'fruit-eating' (frugivorous) animals which then disperse seeds within the fruit after which they germinate to produce new fig plants.

Mucking Around Underwater

By Mala & Adi

Muck means exploring the underwater world in areas where there aren't many coral reefs. Instead, the underwater landscape may be one of sandy slopes, seagrass and silt. Forget the idyllic images of crystal-clear waters, vibrant coral reefs, and dancing reef fish, muck diving delves into a realm shrouded in mystery and intrigue. Beneath the surface, one may encounter discarded human debris, an unlikely recipe for the perfect dive.

So why embark on such an adventure?

The answer lies in the extraordinary and eccentric marine life that often evades discovery on traditional reefs. There are a great variety of macro and bottom dweller critters that inhabit these areas.

Remarkably, muck diving has become a valuable source of scientific discoveries. After a muck dive, it's not uncommon to find oneself unable to identify a recently observed underwater creature, as many reference materials may not yet encompass these recent findings. However, the enthusiasm for this unique form of exploration has led divers to share their discoveries through websites and connections with magazine publishers, enabling others to join in the excitement of potentially uncovering a new species.

Emperor Shrimp on
Nudibranch Ceratosoma Sp.

Common Seahorse
Hippocampus kuda

Ideal muck diving sites are often found in sheltered, shallow bays with tidal movements that bring a constant ebb and flow of food. But always remember to consult with local dive operators regarding tides, local conditions, and potential hazards. In mangrove areas, it's wise to inquire about the presence of crocodiles, ensuring a safe and exhilarating muck diving experience.

Juvenile Painted Frogfish
Antennarius pictus

Flamboyant Cuttlefish
Metasepia pfefferi

THE FIRST SABAH NATURE GATHERING

> **Over 70 people from various nature-related NGOs in Sabah and individual conservationists and grant providers convened at the Faculty of Business, Economics and Accountancy in Universiti Malaysia Sabah on 28 August.**

Over 70 people from various nature-related NGOs in Sabah and individual conservationists and grant providers convened at the Faculty of Business, Economics and Accountancy in Universiti Malaysia Sabah on 28 August. The event was jointly organised by Borneo Rhino Alliance (BORA), 1StopBorneo Wildlife and Borneo Tourism Research Center (BTRC) of UMS.

It was an event where the main objective was to convene nature lovers working to protect Sabah's natural terrestrial and marine treasures to get to know each others' work with a view to working together in the future. It was an opportunity to to meet new people and renew contact with the people who knew each other before. Potential new ideas and partnerships were discussed during the gathering. It was a platform for the smaller and newer NGOs to shine and highlight their work and get connected with others. Participants were given 5 to 10 minutes to present their work and contributions to Sabah.

John Payne of BORA provided opening remarks, highlighting the background of the event and the hope of the gathering. Dr.Balvinder, the Director of BTRC, hosted everyone and greeted everyone with a speech.

One of the main highlights of the event and draws was the talk given by Quentin Phillipps. Born in Sandkaan, he has authored the famous field guides to Birds & Mammals of Borneo and has help bring Sabah wildlife tourism to greater heights. His latest project is on the Figs of Borneo and he shared some insights into this and tried to inspire the people on the importance of figs in ecology, as well as for tourism and for reforestation.

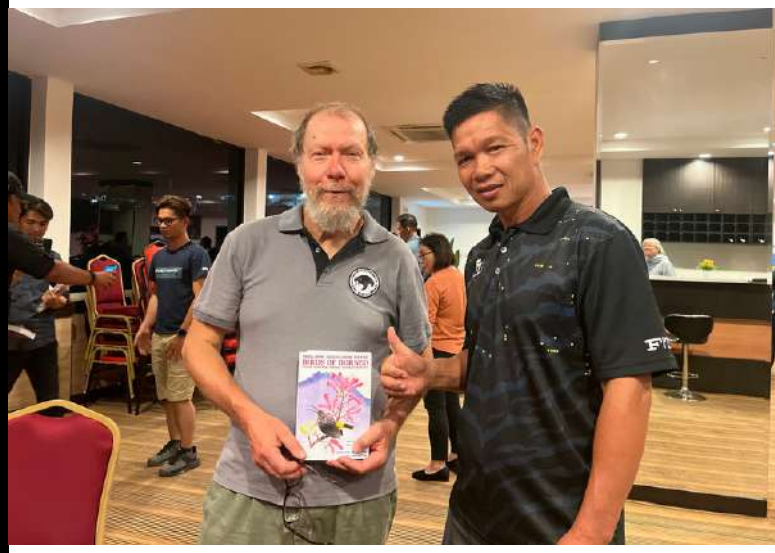
People from far and wide attended the event including supporters from Brunei Darussalam who travelled just to attend this event.

Dr Hjh Yatela Zainal Abidin, CEO of Yayasan Sime Darby, could not attend in person but personally sent in a video. She highlighted that many of the proejcts they support are in Sabah and they have already invested millions of ringgit in Sabah nature conservation and they hope to continue do so. Jessica Lee of Mandai Nature from Singapore supported the event and also sent in a video

Anyone interested to get connected with any of the groups can email 1stopborneo@gmail.com, wo will assist to connect.

Organisations who participated include :

- Borneo Rhino Alliance (Bringing Back Our Rare Animals)
- WWF Malaysia
- 1StopBorneo Wildlife
- Stop Fish Bombing Malaysia
- South East Asia Rainforest Research Partnership
- Sabah Birdwatchers Association
- Orangutan Appeal UK
- Earth Worm Foundation
- Mandai Nature
- Pangolin Aware
- Borneo Gibbon Rehabilitation Project
- Yayasan Sime Darby
- One Ocean Empire
- Kinabalu Birdwing
- Forever Sabah
- Journey with Dee Dee
- Panthera
- Tanjung Aru Marine Ecosystems
- Rhino and Forest Fund
- Malayasian Primatological Society



BRUNEI

Omar Ali Saifuddien Mosque, Brunei Darussalam

BMC TREE PLANTING

Biodiversity Park, Berakas Forest Reserve

GREEN BRUNEI

GREEN BRUNEI

Brunei Methanol Company and Green Brunei collaborated for a tree planting event at the Biodiversity Park, Berakas Forest Reserve on 21 September 2023. The activity was supported by the Forestry Department, Ministry of Primary Resources and Tourism.

The event's Guest of Honour was YM Dato Seri Paduka Haji Khairuddin bin Haji Abdul Hamid, the Deputy Minister of Finance and Economy / BMC's Deputy Chairman. His Excellency Maeda Toru, the Ambassador Extraordinary and Plenipotentiary of Japan to Brunei Darussalam; BMC's Board Member Ahmad Fathi bin Dato Paduka Haji Junaidi;

Acting Managing Director of Petroleum Authority Haji Kula bin Haji Metasan and other representatives from the @petroleum_authority.bn, @jastre.bn and @shena.gov.bn were also present in this meaningful event.

A total of 100 tree saplings were planted to contribute to Brunei's national target of planting 500,000 new trees by 2035 under Brunei Darussalam National Climate Policy.

BMC TREE PLANTING

Biodiversity Park, Berakas Forest Reserve

GREEN BRUNEI

GREEN BRUNEI

THE ART OF NATURE

THE HOLYGRAIL OF DISCOVERY

Herping is a term used to describe people who are passionate about finding reptiles and photographing them usually. On Borneo, the best places for Herping are Kubah Park, Sarawak, Kinabalu Range & Tawau Hills Park in Sabah.However Brunei Darussalam, came up on the Borneo map due to a marvelous discovery. Temburong National Park is renowned for its frog diversity but one rainy night in October 2022, a discovery of a lifetime took place.

Universiti Brunei Darussalam (UBD) field assistants recently made an unexpected "living fossil" discovery in Temburong, dubbed the "Green Jewel of Brunei".
The Borneo Earless Monitor (Lanthanotus borneensis) is a rare Bornean endemic lizard, the only known species in the family Lanthanoidae This is the first time the lizard has been discovered in the Sultanate.

The rare discovery was made by Justin Jeffrey and Jerry Wong, who braved a heavy thunderstorm in search of reptiles on October 4 evening. The pair chanced upon the earless monitor lizard in a primary forest in Ulu Temburong, clinging to a tree root near a torrential stream.
On hearing the news, Professor Dr Ulmar Grafe from FOS, who specialises in amphibians and reptiles, commented: “This is probably the biggest reptile find coming out of Brunei – ever.” First described in 1878 from specimens near Kuching, East Malaysia, they are estimated to have been around since the mid-Cretaceous or 100 million years.
The biggest threat to this species is the lucrative pet trade and private collections in Europe particularly in Germany, France,Netherlands and England.

To Pulau Bedukang by Kayak

By @rainforestkayaker

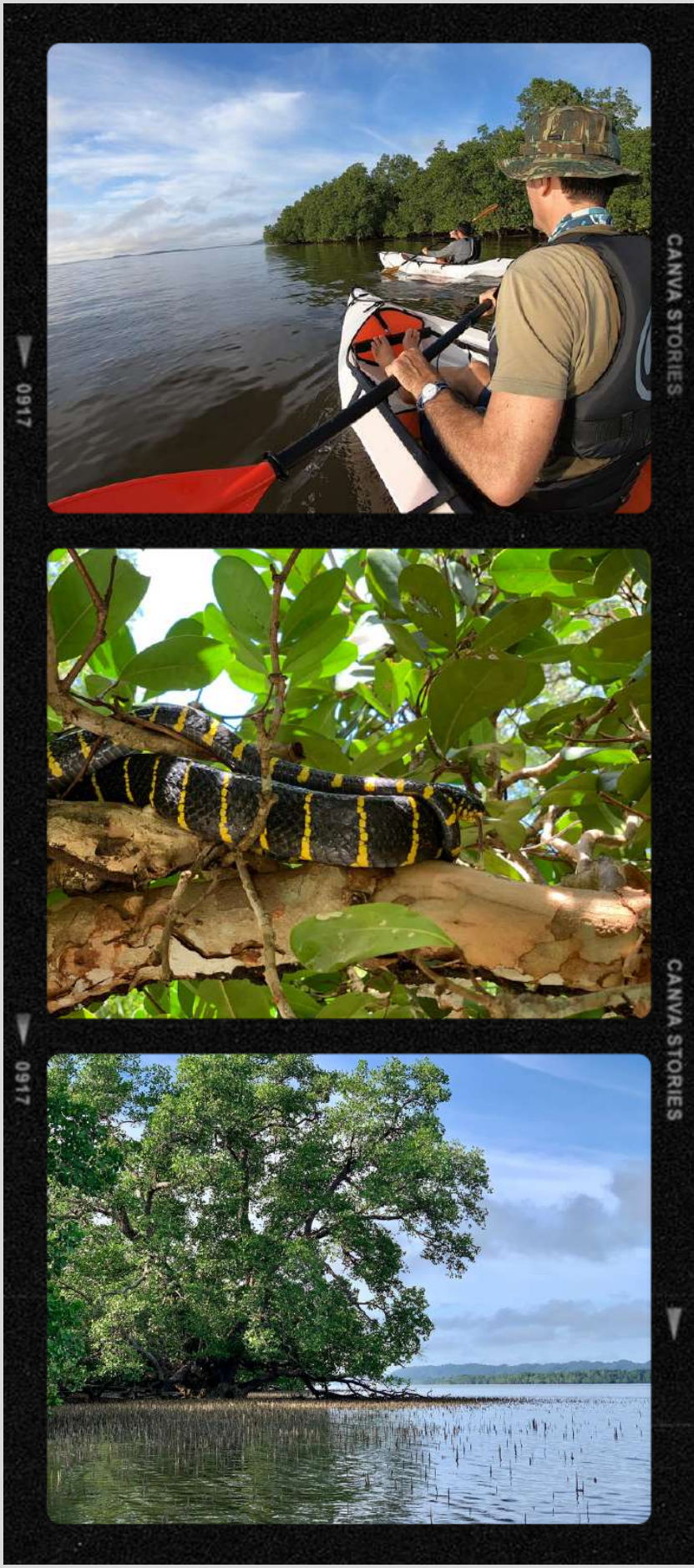
After purchasing a kayak from a departing friend in 2016, my journeys exploring Brunei's rivers and lakes began. So rich and varied were these experiences that I wrote an opinion piece about the enormous eco-tourism potential of kayaking in the Sultanate (Borneo Bulletin, Saturday 20 January 2018). Ever since, I have been trying to explore further and share my experiences on Instagram @rainforestkayaker in the hope that this eco-tourism idea will be embraced and supported by the Ministry of Tourism. After all, this is a valuable way to contribute to conservation and His Majesty the Sultan's WAWASAN 2035 vision for the nation.

For a small country, Brunei has a wealth of water to paddle, from its substantial rivers to its lakes, and the islands and mangroves of Brunei Bay. The latter has many wonderful outings that will richly reward the paddler who makes the effort to get out on the water. A regular favourite is a gentle excursion out to and around Pulau Bedukang, a pretty mangrove island that sits just under a kilometre offshore from the spit at Serasa.

Aspiring paddlers should consult tidal charts to make sure they reach the island on a favourable tide. This enables exploration into and around the stands of Sonneratia alba, which are festooned with a variety of ferns and the orchid, Cymbidium finlaysonianum. There is even a small channel on the island's western shore that enables exploration into the island beneath the fantastic architecture of the mangrove trees. The paddle out to and around the island is about 6kms, starting and finishing at Kompleks Sukan Air Serasa. If undertaken at a leisurely pace, it takes about 4 hours, depending on tidal and wind conditions.

It is best to start before first light in inky darkness. I use an Orukayak Inlet, a clever folding kayak solution that is light and easily assembled. Once this is done, dawn is soon winning its battle against the night, leaving only a solitary dark cloud skulking on the horizon. This sinister black smudge hangs like an accusation above the industrial scar on Muara Besar. Yet, with its purifying silence, distance and dawn's ethereal glow give this twinkling monstrosity a momentary magic. Slowly, gentle winds carry me and companions within earshot of the incessant hum emanating from the island, dispelling the illusion. How do 11,000 souls live with this throbbing noise day in, day out?

We retreat, seeking silence across the waves. Soon the sun bursts above distant mountains and we paddle into the turning tide, chased by blinding light towards a now distant Bedukang. This eventually welcomes us with a different music; the cicadas are in deafening form. Mangrove shoots stand in endless battalions in the sharp shallows. Shoals of fish leap before the boats, tracing silver arcs of light against the sea. A peregrine falcon stoops from high above to a shady branch and the resident stork-billed kingfisher leads us round the island from one perch to another in bursts of blue flight.You can watch a short clip of kayaking highlights in the Brunei Bay area that gives a good idea of the experience here:



@rainforestkayaker

Scan the QR code to watch the video on Instagram now!

BUKIT PATOI,TEMBURONG

One of the most beautiful and accessible primary rainforests and parks in Borneo. Some of the biggest hardwood Borneo trees which you envision in your head before coming to the tropics are here.

Nice cool walk.

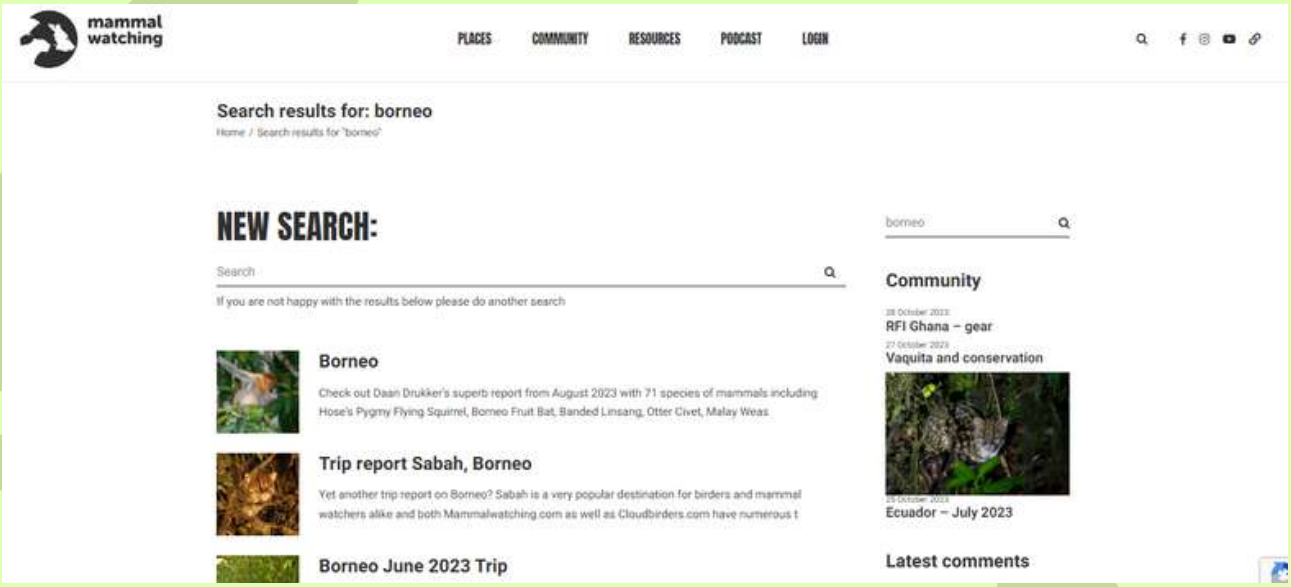
A botanist haven.

Free entrance

To get here you must rent a vehicle or hitch hike your way here.There is no accomodation here.
Highlights - Nice long trails and loop which vary from 1.5-4.5 Km long. The stacks of limestone rocks you see are very special and lovely geological creations unique to this park and which are accessible. A natureslovers escape
No canteen yet but under construction so bring your own water and snacks.

Mammal Watching on Borneo

Mammal watching is an activity where an individual goes to the rainforest to search for mammals. The best way to see mammals on Borneo are by doing drives, finding fruit trees and going to the specialised landscapes to see specific species. See past trip reports by other mammal watchers below




Borneo Gibbon by Shavez Cheema

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Persatuan Pencinta Alam Negara Brunei Darussalam
Brunei Nature Society

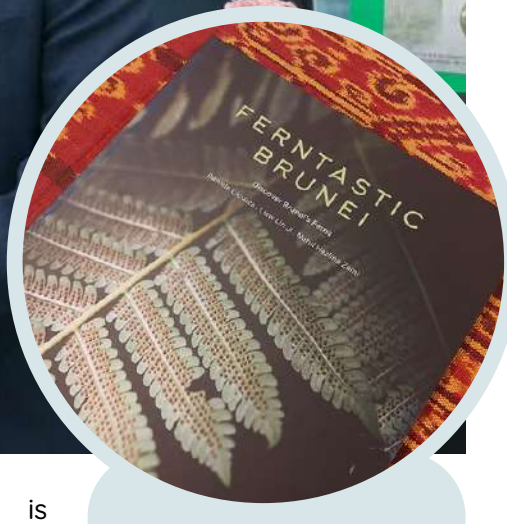
Panaga Natural History Society

COME EXPLORE SABAH'S WILDLIFE AT TAWAU HILLS PARK

Get 25% off if you are a member of Brunei Nature Society and Panaga Natural History Society!

REDEEM CODE

Tawau Hills BNS2024 / Tawau Hills PNHS2024



FERNTASTIC

Universiti Brunei Darussalam (UBD) launched the “Ferntastic Brunei” book and “Ferns of Brunei Darussalam” poster on 26th September 2023 at the Simpur Cafe, UBD.

The book and poster on unique ferns of Brunei Darussalam, which is a collaborative project between UBD and local Non-Government Organization (NGO) Biodiversity and Natural History Society (BruWILD) was launched by UBD Vice Chancellor Dr Hazri Haji Kifle. In attendance at the book launch was the Director of Forestry Department at the Ministry of Primary Resources and Tourism (MPRT) Puan Hjh Noralinda Haji Ibrahim, members from BruWild and other senior officials from UBD.

The “Ferntastic Brunei” book is intended to foster greater appreciation and understanding of local ferns and their importance in people's livelihoods. It is hoped that such initiatives will contribute towards the conservation of these unique plants in line with the targets of Sustainable Development Goals (SDG’s).

The launch of “Ferntastic Brunei” is complimented with a series of activities jointly organised by the Institute for Biodiversity and Environmental Research (IBER), UBD and the Biodiversity and Natural History Society (BruWILD), which includes a seminar on ferns and fern-inspired activities at the UBD Botanical Research Centre (BRC) garden. Source UBD Buzz

The **“Ferntastic Brunei”** book is intended to foster greater appreciation and understanding of local ferns and their importance in people's livelihoods. It is hoped that such initiatives will contribute towards the conservation of these unique plants in line with the targets of Sustainable Development Goals (SDG’s).

MELILAS NIGHT DRIVE

On July 17th, 5 Brunei nature Society members and guests from Panaga Natural History Society members embarked on a very adventurous night drive experience to Melilas.
Melilas is one of the remotest villages in Brunei and very few people have reached here.

Nick Hoggmascall, Kane Gorman, Joremy Tony and Chun Xing Wong left for Melilalas at 330pm and arrived at the longhouse by 6pm. We rested and mingled with Azhar, a boatman who can take people to Sg Ingei on leisure visits as promoted himself . At 745pm we left the longhouse to do a night drive till Teraja. It was way longer than we had anticipated. We had encountered multiple species of mammals, owls, frogmouths,and even a snake. The Yellow throated marten coming out of its nest was a very unique experience. Leopard cats were sitting in hunting and waiting modes.The peak of the wildlife spotting was the first half of the trip and the final. We all finished around 1230am past midnight. The night drive was of a Sabah standard in terms of the

The highlights were :

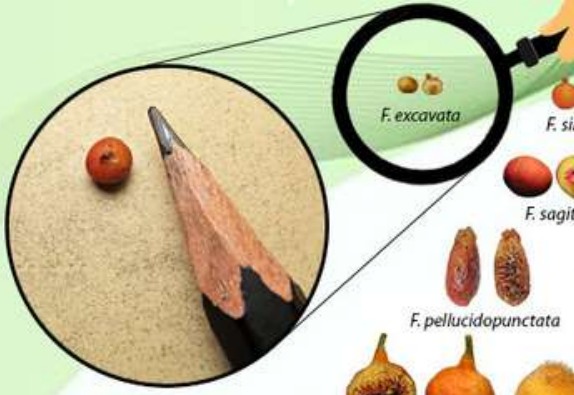
1) Two leopard cats
2)Yellow throated Marten
3) Large frogmouth Owl
4)Buffy Fish Owl
5) 3 Brown wood owls
6) 8++ (Lost count) Palm civets (2 species)
7) A Slow Loris
8)Long tailed porcupine
9) Bronzebacks
10) Large Flying fox

Persatuan Pencinta Alam Negara Brunei Darussalam
Brunei Nature Society

First record of royal tree snake in Brunei.

Kuala Belalong Fsc Iber

First record of royal tree snake in Brunei.
The chances of you dying from the kick of a donkey is higher than from dying from the bite of this snake. Despite the formidable appearance, it is not venomous. That is why this snake is highly sought after by pet traders.
This magnificent creature which is considered as one of the most beautiful of all snakes is known as the Royal Tree Snake and also the Rainbow Tree Snake. The scientific name is Gonyophis margaritatus. This is the first time it has been sighted in Brunei. It is a rare snake and has been seen only from few sites in Peninsular Malaysia and Borneo. Brunei may be the last refuge of this beautiful snake as the forests are still intact. It is highly sought after for its striking coloration and pattern by well established pet traders from the Malay Peninsula. Therefore, it is important that potential future threats to it should be monitored. It should be put under the category of protected species.
This snake is mainly arboreal (living on trees) in the lowlands but have been seen as high as 700m.
#conservation #SDG15



The world's smallest Figs

F. sinuata F. subsidens F. caulocarpa F. setiflora F. delosyce F. midotis F. pisocarpa F. cumingii F. benjamina

F. sagittata F. tinctoria F. microcarpa F. villosa F. spathulifolia F. minahassae F. subulata F. recurva

F. pellucidopunctata F. hemsleyana F. callophylla F. religiosa F. sundaica F. sumatrana F. glandifera F. oleifolia

F. albipila F. aurata F. kochummeniana F. treubii F. nervosa F. satterhwaitei F. septica

F. nota F. benccarri F. macilenta F. melinocarpa F. stricta F. maclelandii F. eumorpha F. fulva

F. lepicarpa F. ruginervia F. malayana F. rosulata F. crassiramea F. forstenii

F. auriculata F. xylophylla F. kerkhovenii F. bukitrayaensis F. leptogramma F. depressa F. variegata

F. fistulosa F. durpacea F. annulata F. endospermifolia F. dubia F. subcordata

F. tengrensis F. allutacea F. racemosa

F. cucurbitina F. stupenda

F. cereicarpa

F. megaleia F. glandiflora

The world's biggest Figs

F. punctata

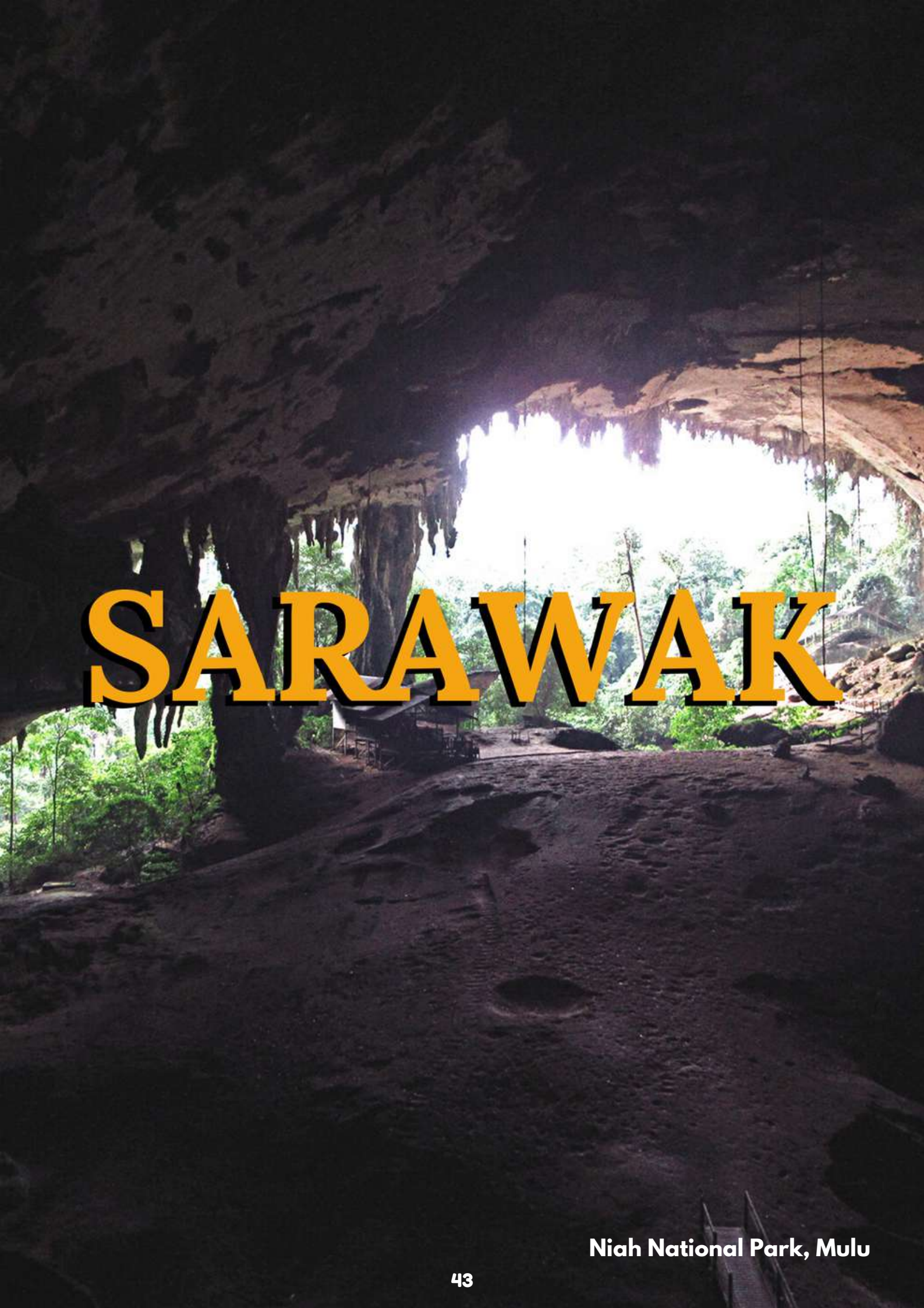
FIGS OF BORNEO

Photos & Information: Chun Xing Wong
Yulinda Wahyuni
Quentin Phillipps
Dr. Zainal Zainuddin Zahari

Editor: Elvinis Gunong

There are 69 species of figs displayed in this poster out of the 160+ species in Borneo. Under the Borneo Fig Project, our team has recorded more than 105 species.

1 STOP BORNEO



Niah National Park, Mulu

HERPING
In Sarawak

"Herping in Sarawak is not new but there are just not many Herping Guides and anyone interested to go herping must make prior arrangements."

Life as a registered tourist guide with the Ministry of Tourism, Arts and Culture Malaysia and holder of the Regional Specific Tourist Guide badge for Sarawak has enabled me to practice and implement what I have learnt from experts in many specific fields whenever I am assigned for any tours.

My favourite would always be the adventure itinerary and specifically catering to those who are interested in herpetology. There are a few Herping sites in Sarawak and most of them are managed by Sarawak Forestry Corporation.

Cyrtodactylus pubisulcus **is a species of Gekko endemic to western Sarawak and they are common in many areas.**

Sites outside National Parks are mostly part of a village reserve land or old secondary forests. There are some sites which are known only to a few Herping Guides.

Amphibians are easier to spot and are found in all areas. Harder to spot amphibians are those that live in the canopy and rarely come down to the forest floor. Subterranean amphibians are even harder as they live their entire life underground.

As far as snakes are concerned, on a good night we might see 5 species though it is also possible that sometimes we might find none. The Tropidolaemus subannulatus is a species of Viper that can be spotted in many areas.

As for Agamidae there are a few species recorded in Sarawak and the most commonly spotted is the Gonocephalus liogaster.

The Beauty of Spiders in BORNEO

Araneidae. Actinacantha globulata

An Orb-weaver species that developed distinctive "balled-spiny" on the abdomen, covered with yellow and metallic dark blue on it. The suspect reason why they've been involved like this is, to make their predator feel no appetite seeing their prey like this.
(Bulbous Spiny Orb-weaver)

Araneidae. Cyrtarachne conica

These Arachnids are uncommon to be found in the field. They have snail-like shaped abdomen. It usually will stay at the same area for 1 to 3 days and then move to another area. Approximately 5mm diameters. Male are still unknown. Web pattern are same like "Paraplectana sp".
(Snail-Like Cyrtarachne)

Thomisidae. Phrynarachne decipiens

A bird drop-like spider was on the leaf in the Dipterocarp forest at a very low elevation, and that's how they camouflage and in the passive hunting mode at the same time. 2 visible pairs of red nodules on the end of its abdomen help to identify them. Their main diets are Forest Roaches & Forest Criket that get attracted by the bird-dung.
(Deception Bird-Dropping Crab Spider)

Thomisidae. Platythomisus octomaculatus

It is the largest and the most colourful thomisids that can be found in Borneo. They are aboreal and very uncommon to be spotted at low elevation. This one was approximately 50mm length from Carapace to Abdomen. Founded in a lowland secondary forest at Borneo Happy Farm.
(Eight-spotted Crab Spider)

Salticidae. Portia labiata

Portia is a Spider Specialist. In the genus "Portia" are the most intelligent spiders known all over the world. Their main diet is only spiders, and their prey is always much bigger than themselves. The Portia Jumper (Right) was planning a strategy on the Malabar Hermit Spider (Left) and it was very well blended into the environment.
(Hairy Moutasched Portia)

I'M BRUCE TEO, FROM SARAWAK, AND BASED IN KUCHING.

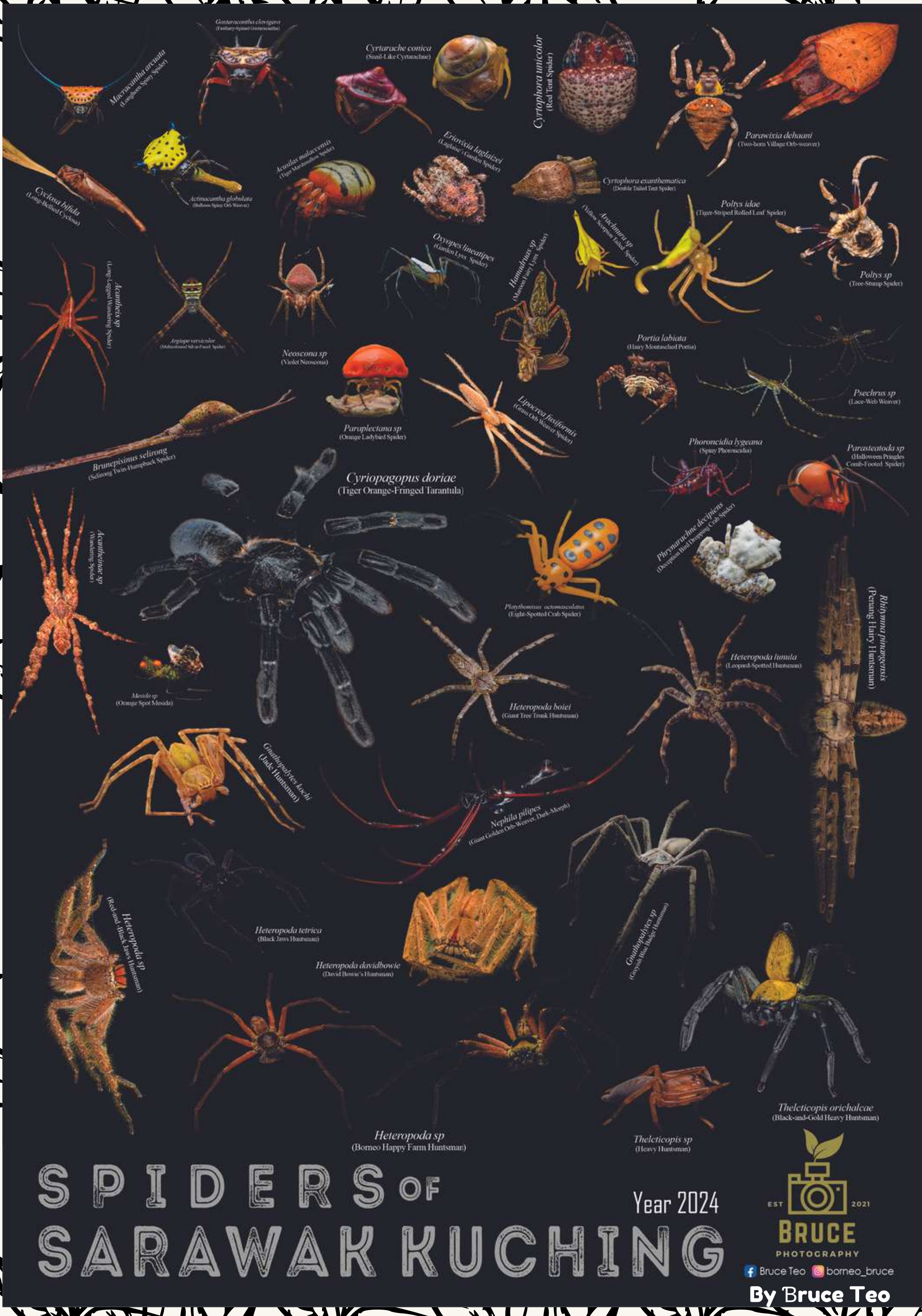
–

I'M A NATURALIST, SPIDER EXPERT, WILDLIFE PHOTOGRAPHER & LICENSED GUIDE.

–

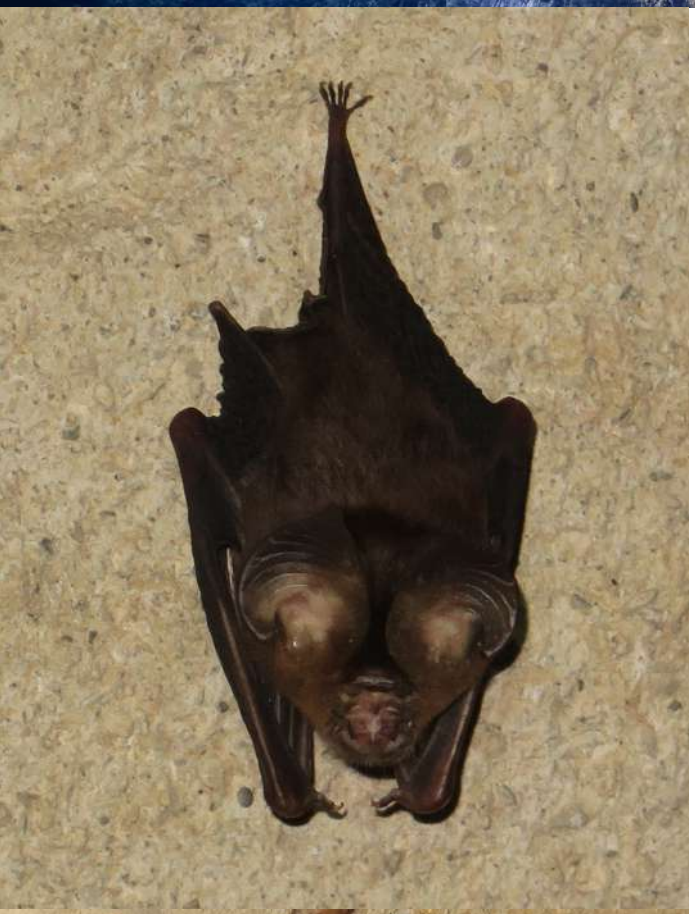
A NIKON USER

EST 2021
BRUCE
PHOTOGRAPHY


Gasteracantha clavigera
Macracantha arcuata
(Longhorn Spiny Spider)
Cyrtarache conica
(Snail-Like Cyrtarachne)
Cyrtophora unicolor
(Red Tent Spider)
Parawixia dehaani
(Two-horn Village Orb-weaver)
Cyclosa bifida
(Long-Bellied Cyclosa)
Actinacantha globulata
(Bulbous Spiny Orb Weaver)
Acusilas malaccensis
Eriovixia laglaizei
(Laglaise's Garden Spider)
Cyrtophora exanthematica
(Double Tailed Tent Spider)
Poltys idae
(Tiger-Striped Rolled Leaf Spider)
Arachnura sp
(Yellow Scorpion Tailed Spider)
Poltys sp
(Tree-Stump Spider)
Acantheis sp
(Long-Legged Wandering Spider)
Argiope versicolor
Oxyopes lineatipes
(Garden Lynx Spider)
Hamadruas sp
(Maroon Fairy Lynx Spider)
Neoscona sp
(Violet Neoscona)
Portia labiata
(Hairy Moustached Portia)
Psechrus sp
(Lace-Web Weaver)
Paraplectana sp
(Orange Ladybird Spider)
Lipocrea fusiformis
(Grass Orb Weaver Spider)
Brunepisinus selirong
(Selirong Twin-Humpback Spider)
Phoroncidia lygeana
(Spiny Phoroncidia)
Parasteatoda sp
(Halloween Pringles Comb-Footed Spider)
Cyriopagopus doriae
(Tiger Orange-Fringed Tarantula)
Phrynarachne decipiens
(Deception Bird Dropping Crab Spider)
Acantheinae sp
(Wandering Spider)
Platythomisus octomaculatus
(Eight-Spotted Crab Spider)
Rhitymna pinangensis
(Penang Hairy Huntsman)
Heteropoda lunula
(Leopard-Spotted Huntsman)
Mesida sp
(Orange Spot Mesida)
Heteropoda boiei
(Giant Tree Trunk Huntsman)
Gnathopalystes kochi
(Jade Huntsman)
Nephila pilipes
(Giant Golden Orb-Weaver, Dark-Morph)
Heteropoda sp
(Red-and-Black Jaws Huntsman)
Heteropoda tetrica
(Black Jaws Huntsman)
Gnathopalystes sp
Heteropoda davidbowie
(David Bowie's Huntsman)
Thelcticopis orichalcae
(Black-and-Gold Heavy Huntsman)
Heteropoda sp
(Borneo Happy Farm Huntsman)
Thelcticopis sp
(Heavy Huntsman)
SPIDERS OF
SARAWAK KUCHING
Year 2024
EST 2021
BRUCE
PHOTOGRAPHY
Bruce Teo
borneo_bruce
By Bruce Teo

Acoustic monitoring of bats at Gunung Mulu National Park

Ellen McArthur



Gunung Mulu National Park is home to at least 55 bat species, half of which use caves as roosts. These cave-dependent species include the estimated 1.8 million colony of Wrinkle-lipped bats (Mops plicatus) in Deer Cave and small populations of the rare and endangered Cox's Roundleaf bat (Hipposideros coxi). Currently, I and research partners Dr. Joe Chun-Chia Huang (National Taiwan Normal University) and Dr. Faisal Ali Anwarali Khan (Universiti Malaysia Sarawak) are monitoring the seasonal emergence of insectivorous cave roosting bats from several cave entrances and activity patterns at known foraging sites within the park and surrounding landscape outside. Our aim is to determine which environmental and biological factors, such as weather conditions, forest cover, reproductive season and presence of predators, might impact the timing of emergence from roosts and commuting or foraging activity.

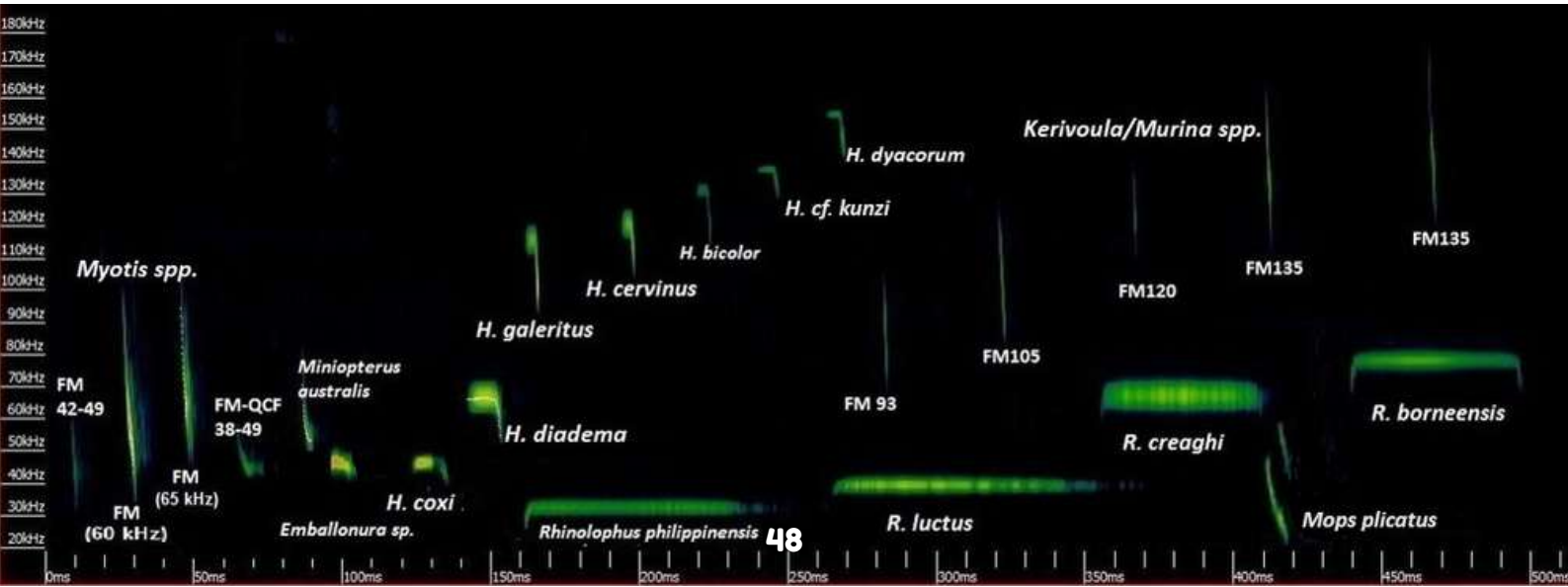
During the past several years, we have built up a reference collection of echolocation calls for bats in Mulu and other localities in Sarawak (McArthur & Khan 2021). All reference calls are available to the public on the ChiroVox website (https://www.chirovox.org/).

The availability of relatively cheap autonomous recorders allows us to record echolocating bats at multiples sites simultaneously. By counting the number of echolocation sequences (termed a bat pass) in recordings, over specific time periods, we can estimate the amount of activity of a particular bat species at a site over time. Furthermore, we can estimate foraging activity by the number of feeding buzz signals produced as a bat approaches and attempts to catch potential prey. This allows us to determine which habitats are used by bats and indicates how important a site might be for bats foraging or commuting between roost sites and foraging areas.

A number of species that forage and commute in forests are restricted by flight capabilities and type of echolocation signals to those habitats and therefore can potentially be impacted by forest clearance and land use change. Therefore, we can compare the habitat use and activity patterns of particular species between pristine forest within the park and potentially threatened habitats outside the boundary.

Reference

Mc Arthur, E. and Khan, FAA. 2021. Towards a regional call library: Classifying calls of a species-rich bat assemblage in a Bornean karst rainforest. Journal of Bat Research and Conservation, DOI: https://doi.org/10.14709/BarbJ.14.1.2021.11.



VOLUNTEER-BASED CONSERVATION THROUGH THE LOOKING GLASS

The last seven years (from 2017) have been an amazing experience as we worked on nature conservation activities. These activities ranged from beach cleanups to education and awareness programmes, and art in conservation. Ever since the beginning, we have always strived to make conservation accessible and inclusive for all.

Although the project was concluded smoothly, it did unravel the reality that there are currently insufficient avenues, a lack of continuous engagement, and insufficient employment opportunities in the green sector. The lack of jobs in conservation essentially cornered young environmentalists with the challenge of pursuing jobs in other sectors or only being able to contribute on a volunteer level.

To mitigate this problem, we decided to shift our efforts and start-up Plants for Plastic. A garden centre and events space that provides sustainable alternatives in the garden industry and supports community and environmental conservation efforts. With long-term sustainability in mind, Plants for Plastic centre will be launched in Kuching in 2023.

When COVID-19 struck in 2019, we were at a turning point and wanted to increase our efforts, especially with youth engagement. We developed our first proposal that aimed to develop the youth of Sarawak to become champions of nature conservation. The proposal was funded by the Global Environment Facility and United Nations Development Programme. The project empowered youth by creating first-time experiential opportunities in nature (workshops, beach cleanups, and tree planting programmes), connecting youth with conservation professionals, and highlighting youth voices for nmature.

“When COVID-19 struck in 2019, we were at a turning point and wanted to increase our efforts, especially with youth engagement. We developed our first proposal that aimed to develop the youth of Sarawak to become champions of nature conservation”

> Best way to save the Tiger and other big mammals

A personal opinion by Datuk Dr. John Payne

I SPENT over 40 years observing the so-called Sumatran rhinoceros and saw the death of the last one in Malaysia in 2019. I started off as a leader of one of the teams in the Endau-Rompin Expedition in May 1977.

The extinction of the Sumatran rhino in Malaysia is a long and complex story, but it delivered several lessons.

First, people in general prefer to be optimistic even when the signs show the reverse. In the context of the Sumatran rhino, there was a tendency to believe that footprints of the tapir were those of the former (they are similar) even though that was not the case.

Second, there is often just one basic thing that needs to be done to save the situation, but it isn't done because it is perceived to be difficult or controversial.

The birth rate of the Sumatran rhinos in Malaysia had been too low for many decades and there was no hope for their survival if they were left scattered in the forests.

A single captive management programme was needed to maximise the potential of every remaining rhino to breed. But due to many factors, not least problems associated with international collaboration, that basic need was never fulfilled.

Third, the decision-makers are normally risk averse and put off making difficult decisions until it is too late to do anything useful.

Fourth, especially in this era of stakeholder consultation, everyone was invited to give their opinion. People love to give their opinions, however ill-informed they might be. And all those opinions combined into an ineffective compromise.

As of now, the risk of the Malayan tiger going extinct in the wild remains high simply because the numbers are very low and the remaining individuals are very scattered.

But there are three positive points that Malaysia has in its favour to save the species, namely:

> The issue is entirely within Malaysia, so we need not fear undermining by external parties;

> There is already significant government and NGO interest, support and funding; and

> The establishment of the Al-Sultan Abdullah Royal Tiger Reserve, which is a truly remarkable boost.

With this background and the sorry extinction of the Sumatran rhino in context, I wish to offer some comments on saving the Malayan tiger.

First, poaching and habitat loss have both played massive roles in the demise of Malayan tigers. But we should not think that just by recognising these facts, the species will recover without human intervention.

Second, the main reason why the population of Malayan tigers will not recover is that there is simply not enough food in the forests to sustain their recovery. One adult tiger can live on small animals for short periods, but a healthy wild tiger population needs a constant supply of large mammals, namely deer and wild pig.

Every adult Malayan tiger needs to kill at least one deer or pig per week to remain healthy and be able reproduce. If we want to see a local population of, say, 30 adult tigers and there are no pigs, that translates to 1,500 deer needed per year. This means there must be at least 1,500 female deer alive, each producing one fawn annually.

Unless and until we think in these terms, the Malayan tiger is doomed. Yet, wild deer populations in Malaysia are extremely and chronically depressed due to more than a century of intensive hunting, and wild pigs have been wiped out over vast forest areas due to African swine fever, which entered the wild pig populations in 2021.

Boosting and sustaining the productivity of wild deer and pigs is the number one priority to prevent the extinction of the Malayan tiger. All other interventions – whether anti-poaching patrols, monitoring with camera traps, or artificial insemination – will be a waste of time and effort if this is not done.

THE RAREST LANGUR ON BORNEO PHOTOGRAPHED

A post by @Chienleephotography

Bittersweet victory for Borneo: last month during the International Primatological Society Congress held here in Kuching, the Sarawak Langur (Presbytis chrysomelas) was finally voted to join the ranks of the World's 25 Most Endangered Primates. Threatened by hunting and severe habitat loss with 95% of its original range lost, this species now exists in only a few isolated populations numbering not more than several hundred individuals in total. Its new listing among the top 25 will hopefully serve to bring more public attention to its plight, and ultimately perhaps towards the development of a much needed conservation plan.

10TH WORLD CONGRESS OF HERPETOLOGY

WCH10

5-9 AUGUST 2024, KUCHING, SARAWAK, BORNEO

WCH10 will be the 10th time the WCH is taking place and this time, it will be on Borneo, in Kuching August 2024. Of all the places to do this, Borneo & Kuching are the ideal places to do so. The director of the event is Professor Indraneil Das who is the herp king of Borneo and a renowned hepatologist and leads a dynamic group in UNIMAS. They have done discoveries and research on various species from the Sarawak Rainbow toad, False Gharial, Annual frog races and doing all sorts of herping education & discoveries all over Sarawak and rest of Borneo.

Professor Dr. Indraneil Das

Current research interest includes systematic zoology, community ecology, conservation biology, biogeography, history of natural history, palaeontology

Organised by

World Congress of Herpetology (WCH)

World Congress of Herpetology (WCH) is a scientific organisation to connect individuals interested in the discovery, study, and management of amphibians and reptiles.

Institute of Biodiversity and Environmental Conservation, Universiti Malaysia Sarawak

The Institute of Biodiversity and Environmental Conservation is one of the earliest institutes within Universiti Malaysia Sarawak, established in the late 1990s, when the term 'biodiversity' was newly coined, and is strategically placed in the heart of south-east Asia.

1StopBorneo Wildlife

A conservation group leading programmes from reforestation to wildlife tourism and research, and working closely with local communities

The Global Ranavirus Consortium (GRC)

A global community for those interested in ranaviruses. It is partnering with GARD24 and encourages abstract submissions on ranaviruses at the 10WCH.

SCAN ME

Calamaria of Borneo

- A free phone app for identification
- Ca 200 photographs
- A clever key
- Species accounts
- Miscellaneous info

Available in app stores
for Android and iOS
(see links above)

App creators: Björn Lardner, Dennis Hägg, and Anders Larsso

CONGRATULATIONS!

A special congratulations to WWF Malaysia for their monumental milestone, 50 years of conservation in Malaysia. They celebrated this event by having a large celebration at the STAR resorts Tg Aru, Kota Kinabaou, Sabah. NGOS, Plantations., Business leader, state ministers, former senior management and the lsit goes on graced the occasion. no introduction is needed to WWF. They work on a wide range of important issues in Sabah & Sarawak. These important contributions range from policy work, research, raising funds for various programs, reforestation and enforcement by tackling poaching issues from the core.

> We turned 50 on 13 January 2022, and we have planned many exciting activities throughout the year! We invite everyone to join us in celebrating this milestone by taking action for nature:

ECO-FRIENDLY MERCHANDISE

RM60

WWF FOLDABLE CANVAS TOTE BAG

RM40

MASTINI'S TURTLE STAINLESS STEEL BOTTLE

RM30

KIND TO EARTH- OFF-WHITE T-SHIRT

LETS BUY AND DONATE !

BA'KELALAN

Bakelalan Owl homestay visit

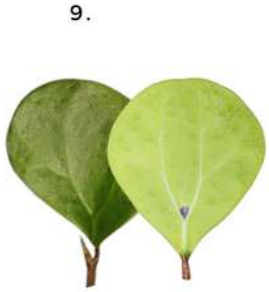
Early this year we visited Bakelalan to observe its rich flora & fauna. It is a village which you can fly to from Miri/Lawas and we arrived from Miri.

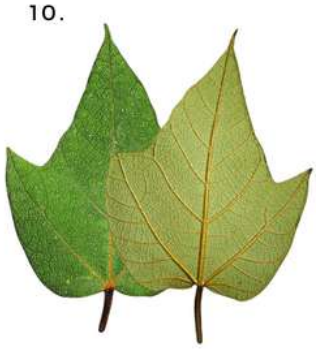
We pent 4 days 3 nights and we did some walks to see wildlife such as their iconic hyper endemic, Dulits frogmouth. We also had a glimpse at the rail babbler and a tufted ground squirrel on our way back driving to Lawas.

Maureen and her family

We stayed with Maureen and her family. The village has several types of rice which are cultivated such as the blackrice and brown rice and they have very good health properties as well.

Bakelalan is surely one of the most under appreciated parks and destinations on Borneo and a must visit.





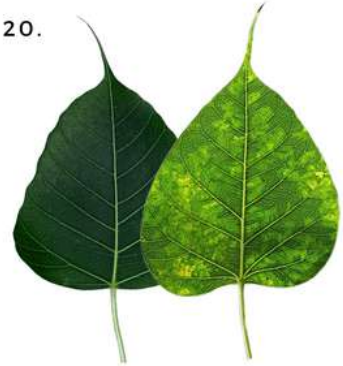


Fig Leaves Of Borneo

Editor : Sharifah Nur Shahirah

Photo Credits : Chun Xing Wong
Yulinda Wahyuni
Shavez Cheema

Acknowledgement : Quentin Phillipps

1. *F. albipila*
2. *F. allutacea*
3. *F. annulata*
4. *F. aurata*
5. *F. beccarii*
6. *F. brunneoaurata*
7. *F. callosa*
8. *F. caulocarpa*
9. *F. deltoidea*
10. *F. eumorpha*
11. *F. excavata*
12. *F. forstenii*
13. *F. geocharis*
14. *F. kochummeniana*
15. *F. malayana*
16. *F. microcarpa*
17. *F. oleifolia*
18. *F. parietalis*
19. *F. punctata*
20. *F. religiosa*
21. *F. sagittata*
22. *F. subsidens*
23. *F. trichocarpa*
24. *F. tinctoria*
25. *F. villosa*

KALIMANTAN

Tugu Khatulistiwa Pontianak, Kalimantan

KALTIMBER

Reclaimed wood is wood that has been salvaged from old buildings or other structures. It is a sustainable and environmentally friendly alternative to new wood, as it reduces the need to harvest new trees.

There are many benefits to using reclaimed wood, including:

- Reduced environmental impact: Reclaimed wood helps to reduce deforestation and conserve forests. It also reduces greenhouse gas emissions, as it does not require the same level of processing as new wood.
- Unique character: Reclaimed wood has a unique character and patina that cannot be replicated in new wood. This makes it a popular choice for furniture, flooring, and other interior design elements.
- Durability: Reclaimed wood is often more durable than new wood, as it has already had a chance to age and season. This makes it a good choice for high-traffic areas and applications where durability is important.

Reclaimed wood can be used in a variety of ways, including:

- **Furniture**: Reclaimed wood furniture is a popular choice for homes and businesses alike. It can be used to create a variety of furniture pieces, including tables, chairs, sofas, and beds.

- **Flooring:** Reclaimed wood flooring is a beautiful and durable option for any home. It is available in a variety of colors and finishes, and can be used to create a variety of looks, from rustic to modern.
- **Interior design:** Reclaimed wood can also be used to create a variety of interior design elements, such as accent walls, beams, and mantels. It can add warmth and character to any space.

If you are looking for a sustainable and stylish way to add wood to your home or business, reclaimed wood is a great option. It is a durable and versatile material that can be used to create a variety of looks.In addition to the benefits listed above, reclaimed wood also supports the -circular economy by diverting waste from landfills and giving new life to old materials. This helps to reduce our overall environmental impact and create a more sustainable future.

Enjoying A New Life with Forest-friendly Livelihood After Quitting Logging

Sunardi lives in Mentubang, a small hamlet in the North Kayong regency of West Borneo. He quit logging and became the 272nd partner of the MSME program Chainsaw Buyback on August 21, 2023, after spending 38 years of his life cutting down forest trees.

"I moved to Mentubang in 1985 and met my wife here. Her family were loggers in Matan village. That's why I became one," he recalled.

Back when he was an active logger, he could chop down up to 20 trees in a month. Paket, nyatoh, and ubah are the kind of trees he cut down most. The money he made was big enough to turn his head away from the catastrophe he caused. "I can feel it now. The weather is getting hotter everyday, and clean water is scarce in the dry season,"
he sighed.

In 2004, Sunardi was imprisoned for 6 months after he got caught illegally logging. Now he's worried that his son might follow his path. "It's enough. It has to stop. I can't let my son get into the forest and chop down trees just like I did. If the mountains get barren, then we're doomed," he said.

With financial support from ASRI, Sunardi left that life behind and enjoys his new one as a planter. He purchased seeds, fertilizer, and other supporting equipment. A total of 1000 meter hoed plot will soon be filled with various vegetable plants. now enjoys seeing one rise.

"It's enough. It has to stop. I can't let my son get into the forest and chop down trees just like I did. If the mountains get barren, then we're doomed," he said.

The seeds of chili, eggplant, corn, sweet potato, and other vegetables are ready in his nursery. “I really love coming to my garden, even though there is nothing to do. Just watching the plants grow filled my heart with joy,” he said. A man who used to watch trees falling in the past

Through the MSME program Chainsaw Buyback, ASRI helps former loggers like Sunardi switch to sustainable livelihoods that are harmless to the forests.

Former loggers handed over their chainsaws to ASRI in exchange for business funds in the hope of making people prosper after they quit logging.

> I really love coming to my garden, even though there is nothing to do.
>
> Watching the plants grow filled my heart with joy

PLANET INDONESIA

Among beautiful clear blue water Natuna Sea, sits the Karimata Islands Marine Nature Reserve - a small protected group of islands about an 8-hour boat ride from the main island of Borneo. This spectacular island lies just to the southwest of the West Kalimantan coast. Known for its abundant natural resources and its rich biodiversity, here you can find many turtle species, kingfishers, fish eagles, crab-eating macaques, spinner dolphins, and even the critically endangered Christmas frigatebird.

For the last two years, Planet Indonesia has been supporting the communities living within the Karimata Marine Reserve through various ways to help solidify their place in the management of this protected area. Research shows that reserves such as this are better off in the hands of local and Indigenous communities.
One way Planet Indonesia does this is by assisting in training community fishers to collect, monitor and evaluate fisheries data, helping communities to manage their fisheries adaptively, reducing pressures on species, and over time improving fishing yields.

We also help facilitate Conservation Community Business Services, which include a community-led savings and loan program and access to free healthcare and education services. We are also co-developing a sea turtle monitoring and protection program, saving these animals from the Illegal Wildlife Trade so they can help support the healthy reef ecosystems that locals rely on for food security.

However, often the most pressing challenge that communities face is from outside influences. In the initial phases of our partnerships, villagers expressed the need to protect their community's natural resources from exploitation. This is one of the most important steps in securing economic stability, allowing communities to reach their conservation and socio-economic goals. Therefore over the past two years, we have been helping adapt and establish one of our flagship programs that work so well in the terrestrial areas we work in; locally-led patrols using Spatial Monitoring and Reporting Tools (SMART).

These patrols, formed of community members, one YPI staff member and a government representative, are focused on protecting and securing the immediate coastal and marine area and assisting the community in implementing locally-designed rules of access and fishing zones, aimed to protect their land and seascapes.

This activity, conducted in collaboration with the West Kalimantan Natural Resources Conservation Agency (BKSDA), is led by the Head of Karimata Islands Marine Conservation Area Resort and involves the participation of the local residents surrounding the Karimata Islands.

The primary objective is to monitor and record observations within the area, including all human activities, such as local and external fishermen entering the conservation zone, as well as the various species inhabiting the area. These findings are processed into reports for research, education, and scientific purposes, giving the community a real-time map of the challenges and solutions of this marine area.

As a result of the SMART patrols implementing their training, they are directly addressing global issues, such as overfishing, the illegal wildlife trade, and habitat loss.

This work is done with the partnerships and financial support of the Blue Action Fund and Blue Ventures.

Please visit our Website here!

3R STRATEGY for Peatland Restoration

Verawati & Desi Natalia

Peatlands are formed by accumulating various organic materials that partially decomposed thousands of years ago. It makes the peat can keep a significant amount of carbon.

Indonesia has 13.43 million hectares (ha) of peatland areas (KLHK, 2017). As the second-largest peatland area in the world, Indonesia has become a significant terrestrial carbon sink that contributes to global climate change mitigation. However, it faces various threats which make the peatland ecosystem extremely vulnerable to climate change.

One of the serious threats is man-made canals dug years ago for agriculture and plantations. It causes damage to the natural ecosystem and releases high amounts of carbon, contributing to greenhouse gas (GHG) emissions.

Borneo Nature Foundation (BNF) is a non-profit organization that works to support the protection of tropical rainforests, biodiversity, and cultural heritage through community-led conservation, scientific studies, and environmental education.

We support the Indonesian government's conservation efforts to restore the degraded peatland by implementing the 3R strategy: Rewetting, Revegetation, and Revitalization.

BNF works collaboratively with Sebangau National Park Authority to restore the peat-swamp forest in southern Borneo by blocking man-made canals that drain this forest. We also committed to planting 1 million trees by 2025 in this important peatland area. It will help reduce the carbon emission release and improve the peat function as carbon storage.

This conservation effort can also give green beneficiaries to the communities near the national park. The establishment of community nurseries which support revegetation activities, alternative livelihoods training, and eco-tourism development can create sustainable green job opportunities.

Building a dam to block the man-made canal (Rewetting)
Photo by Joan Prahara | BNF

AMAZING INSECTS OF KALIMANTAN: MACROPHOTOGRAPHY PHOTO COLLAGE FROM YAN KEBAK

Rahim Idris


6 mm
1 mm
3 mm
5 mm
1.5 cm
2.5 cm
Ficus leptogramma Corner
"A very common species in the east side of Meratus Mountains"

PRO NATURA WILDLIFE NATURE CONSERVATION

NO END TO THREATS!

Forest fires once again threaten the Sungai Wain Protection Forest in East Kalimantan. This remnant lowland forest reserve is now the last example of what a primary forest looked like in the Balikpapan-Samarinda area. It is still home to Borneo's rare endemic lowland species, including the peacock pheasant, bristleheads, and even large mammals like clouded leopards, sun bears and a small population of orangutans that were reintroduced here in the 1990s.

Sungai Wain Protection Forest is probably one of the most important watershed areas, economically speaking, in Indonesia because its freshwater has been essential for the oil refinery based in Balikpapan for 75 years i.e. since 1948. Without the freshwater from Sungai Wain the refinery cannot be cooled and cannot run, and every day not operating leads to an economic loss of several million dollars.

> **Amazingly, there is still no routine support from the oil industry to protect the forest that is so important to its operation, and the water from the forest is used as if it is "free".**

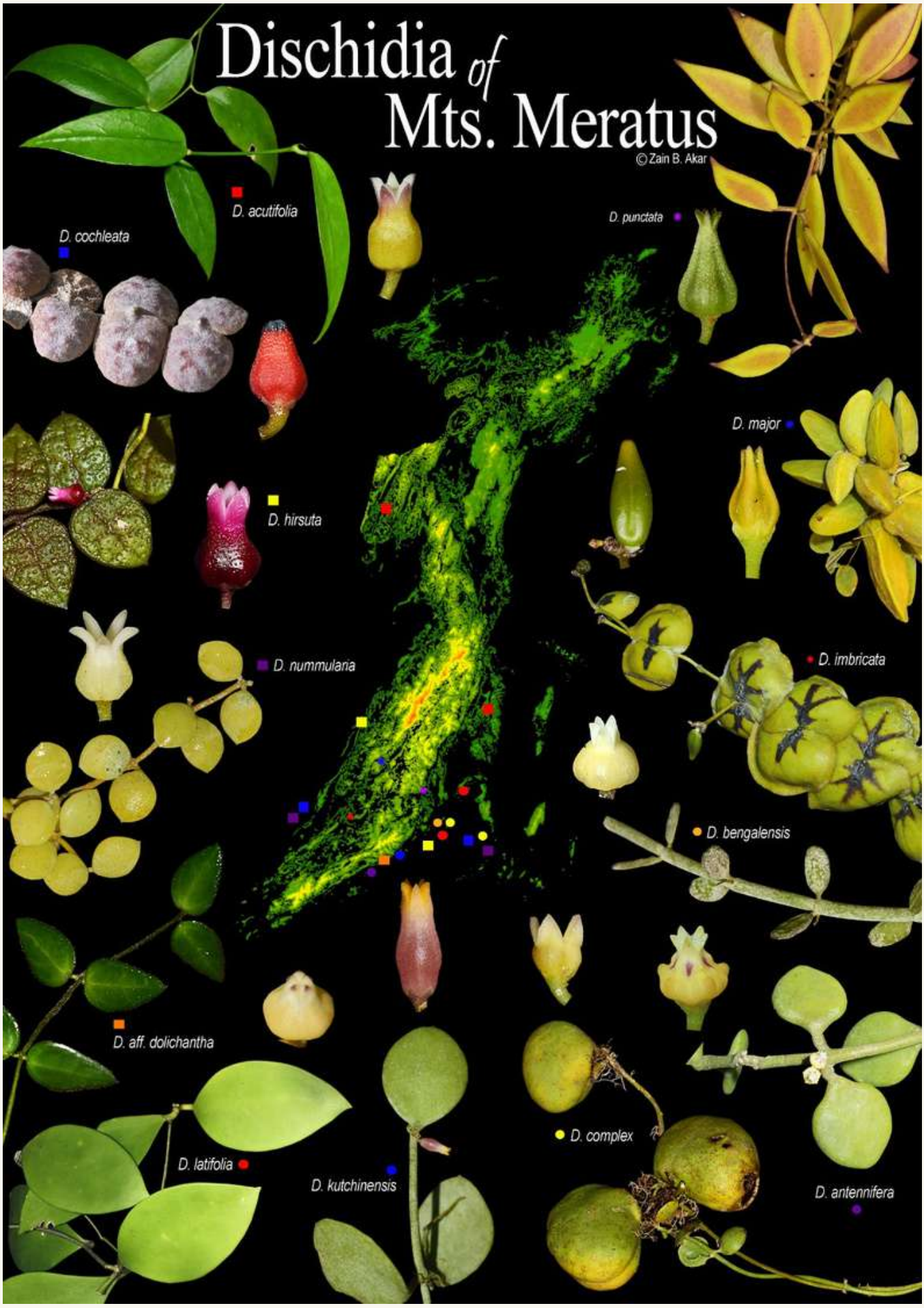
Pro Natura Foundation
East Kalimantan, Indonesia
www.pronaturafoundation.org
www.beruangmadu.org

There was a period after decentralization [2000 onwards] where a new management system was established for this forest where local government funded management, but that ended under new regulations at the end of 2015. So, since 2016, the forest has been effectively protected by a ragtag committed team of community rangers that are funded by a small local NGO that relies on donors to provide funding from year to year.

The community rangers that now carry the huge 'burden' of protection of this forest, are making fire breaks around the whole border of the forest, try to remove snares set to catch its rare wildlife, and try to stop the last songbirds being poached. These rangers are not seen as hero's by their own communities, but to the planet they are!

> "These rangers are not seen as hero's by their own communities, but to the planet they are!

Zain Basriansyah Akar



CATS & DOGS!

Keep pet cats indoors, say researchers who found they kill 230m native Australian animals each year.

The study found each feral cat kills an average 576 native birds, mammals and reptiles per year, while pet cats kill an average of 110 native animals every year – 40 reptiles, 38 birds and 32 mammals.

In total, this meant pet cats were killing 66.9m native mammals, 79.7m native birds and 82.9m native reptiles every year. The study was not able to estimate the numbers of frogs and insects eaten by pet cats.

Because pet cats live in higher densities, they were responsible for killing up to 50 times more animals per square kilometre in residential areas than feral cats killed in out-of-town areas.

If you spot a stray cat or dog in a national park or reserve in Sabah & Sarawak, please immediately report it to the local park manager. Stray cats and dogs do not belong in a forest reserve or national park as they are destructive to the local fauna.

Source: The Guardian. (May 15, 2020) https://www.theguardian.com/environment/2020/may/15/keep-pet-cats-indoors-say-researchers-who-found-they-kill-230m-native-australian-animals-each-year

Animal of the Month

Photo by Yulinda Wahyuni

White Morph red leaf Monkey

Photo by Chun XIng Wong

Roughneck Monitor Lizard

Deilagaon annulatae
(F. annulata)

Eupristina koningsbergeri
(F. benjamina)

Dolichoris sp.
(F. callosa)

Eupristina sp
(F. cucurbitina)

Kradibia sp.
(F. cumingii)

Eupristina belgaumensis
(F. drupacea)

Ceratosolon vechti
(F. lepicarpa)

Liporrhopalum giacominiii
(F. obscura)

Blastophaga sp.
(F. oleifolia)

Liporrhopalum sp.
(F. parietalis)

Ceratosolen fusciceps
(F. racemosa)

Wiebesia sp.
(F. recurva)

Platyscapa quadraticeps
(F. religiosa)

Ceratosolon sp.
(F. satterthwaitei)

Blastophaga bomeana
(F. setiflora)

Eupristina philippinensis
(F. subcordata)

Waterstoniella sp
(F. subgelderi)

Waterstoniella sundaica
(F. sundaica)

Liporrhopalum parvifoliae
(F. uniglandulosa)

Cerotosolon appendiculatus
(F. variegata)

The pollination and reproduction of fig trees (Ficus species) are greatly dependent upon the tiny wasps known as fig wasps. They have a reciprocal interaction with these trees in which they facilitate the movement of pollen between the figs' male and female flowers. In addition to laying their eggs inside the fig fruit, female fig wasps also use this opportunity to pollinate the female flowers there. Both the wasps' reproduction and the fig tree's pollination depend on this connection, which ensures the survival of both species. For their specific ecological job, fig wasps are extremely specialized.

FIG WASPS OF BORNEO

Designed by Annzly Atty David
Photos and information by
Chun Xing Wong & Yulinda Wahyuni

MY DREAM VISION OF BORNEO

When people come to Borneo, they sometimes assume seeing wildlife will be as easy as in Africa. However this is false yet true. It is true if you include the insects and herpetofauna of Borneo which are very diverse and found everywhere. the bigger animals are more difficult and this is mainly due to several reasons, different ecological behaviour, hunting pressure as well as loss of habitats.

However, in some parks of Borneo, you will see the wild animals living in coexistence with humans and in some cases have become habituated. Below are just three examples of not many where the bigger mammals have become habituated.

Locals enjoying red leaf monkeys in Tawau Hills, Elephants in a plantation and sambar deers roaming freely and good numbers in Maliau Basin and Danum Valley.

I believe more places in Borneo can experience this but to do this the following actions need to take place.

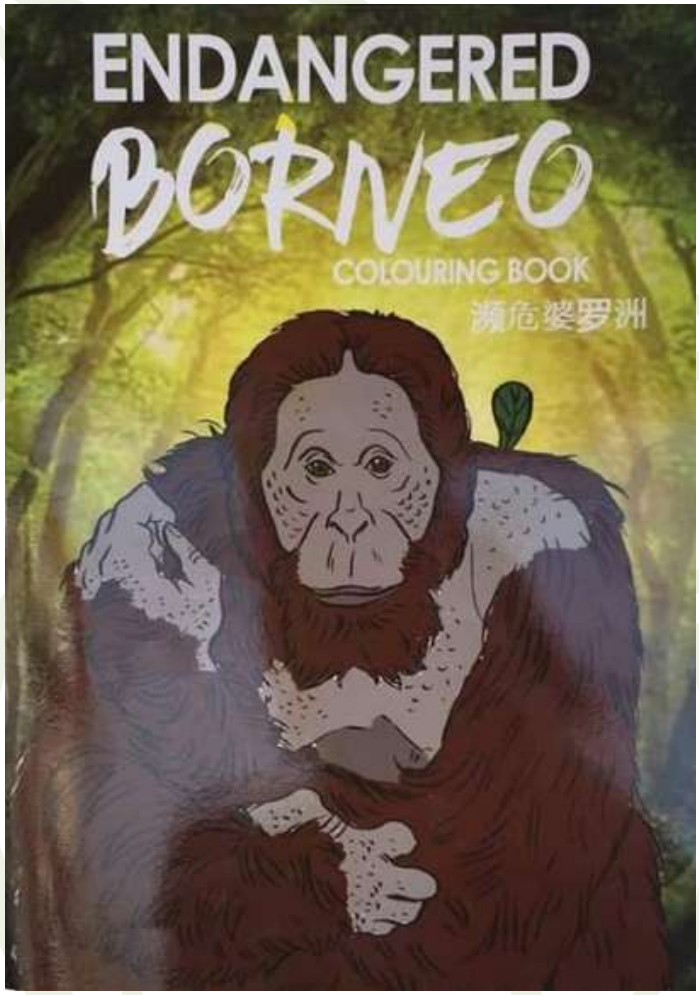
1)Total hunting must stop
2) More tourism but from a safe distance so animals can get used to humans and feel like they are not a threat
3) Plant more wildlife favorite food around lodges and accommodations on Borneo and in particular ficus trees, butterfly favorite food and other animal favorite food(for this you have to have some knowledge on the ecology of that species)

With the above three, it will be possible to have more places on Borneo becoming like the above photos but it will take time in some places from 5-20 years. Why not start now?

FREE COLORING BOOK!

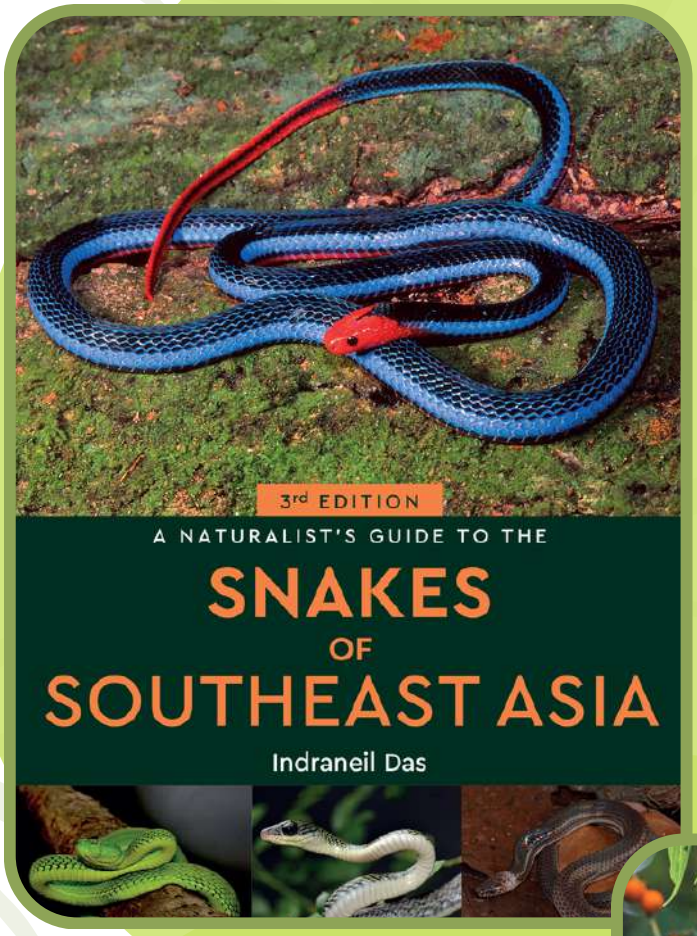
Parents and teachers alike, we have made our best-seller, the ENDANGERED Borneo Colouring book **free** to be downloaded and used by your children! Enjoy! It can be downloaded at:

https://www.1stopborneo.org/field-guides
OR
simply scan on the QR code below!



SCAN HERE!

BOOKS OF THE MONTH



1STOPBORNEO WILDLIFE PRESENTS

Sime Darby Plantation

"BORNEO WILDLIFE SERIES"

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1StopBorneo Wildlife

Sime Darby Plantation

Photo by Shavez Cheema

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