2023 YEARLY ACTIVITY REPORT

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

WILDLIFE DEPARTMENT
SABAH

Report prepared by Professor Benoît Goossens and John Robertson
June 2024, Cardiff
www.danaugirang.com.my

INTRODUCTION

The Danau Girang Field Centre (DGFC) was established in 2008 through a formal partnership between the Sabah Wildlife Department (SWD) and Cardiff University (UK). The Centre continuously contributes to and supports long-term conservation strategies in Sabah. It undertakes scientific research to develop a better understanding of how wildlife survives in a degraded, fragmented landscape that is also impacted by human pressures such as hunting, agriculture, and climate change.

Ground-based, targeted data are used to inform and shape Sabah's conservation strategies, including the State's five species action plans. Our work also supports the reforestation of the surrounding area, establishing new forest reserves and wildlife corridors.

We provide higher education opportunities to Malaysian and international students, up to PhD level. We also host university field courses and support an in-house Education Team that actively promotes the conservation of our wildlife and their habitats to our schools, communities, learned societies, and at public events throughout the State of Sabah.

VISITORS TO DGFC 2023

Research Assistants, Professional Training Year Students 2023-2024

Six students, five from Cardiff University and one from Aberystwyth University joined DGFC for a year's study as part of their degree course. Harry Cholerton (Biological Sciences), Will Evans (Biology), Sabah Redman (Zoology), Alyssa Whittle (Biological Sciences), Tom Wilkinson (Environmental Geography) from Cardiff University and James Brown (Zoology) from Aberystwyth University will spend their time at the centre supporting everyday activities and undertake an individual research project, carried out under the supervision of DGFC's Director, Professor Benoit Goossens (Cardiff University).

From L-R: Alyssa, Sabah, Tom, James, Will and Harry

British High Commissioner, HE Charles Hay Visits DGFC

His Excellency Charles Hay MVO, British High Commissioner to Malaysia, visited the DGFC with his aide, Mr. Muru Loganathan, Energy and Climate Change Advisor for the High Commission, and Mrs. Sylvia Alsisto, Sabah Wildlife Department Wildlife Officer for the Kinabatangan.

There have traditionally been strong ties between Malaysia and the UK, particularly regarding education, with five UK university campuses established in Malaysia. After hearing about DGFC, which was established in 2008 through a formal partnership between the Sabah Wildlife Department and Cardiff University, the High Commissioner was keen to visit.

L-R: High Commissioner Charles Hay and Professor Benoit Goossens

During his stay, the High Commissioner was immersed in the conservation work being carried out at the field centre. He took part in pangolin tracking, primate and night boat surveys, a night walk, and a series of talks from the students and researchers.

Commenting on his stay, he said, "It's so nice to be somewhere where people are so enthusiastic about their research, working on a wide range of different projects in this area of protected forest. I really enjoyed the presentations from the students and researchers, and I learnt a lot about different aspects of wildlife and biodiversity here in the Kinabatangan".

Kenneth Keuk

In February, DGFC welcomed back PhD student Kenneth Keuk. Kenneth first visited DGFC as a volunteer in 2014 and returned as a research assistant for the P²ARASITE project in 2017.

His PhD has involved studying infectious disease transmission in the Japanese macaques of Kōshima (Kōshima Macaque Project), invasive raccoon dogs of Yakushima (YakuTan Project) and the various primate species of Sabah (P²ARASITE project). At DGFC, his fieldwork has involved conducting boat surveys to study primates along the Kinabatangan River, estimating primate species distribution and studying their gastrointestinal parasites. By studying the distribution of primates and

their proximity to humans the potential risk of infectious disease transmission can be assessed.

Miriam Gehre

As a 5th year veterinary degree student studying at the University of Hanover, Miriam was keen to integrate her training with wildlife conservation and DGFC provided an ideal location for one of her required internships.

Barney Rudd

Barney spent one month volunteering and assisted many of the ongoing projects at DGFC, using his research experience gained from volunteering with the Committee Against Bird Slaughter, in Cyprus, and The Macaw Society, in the Peruvian Amazon.

Mark and Samantha Butterworth

Cardiff University communications technology PhD student, Mark Butterworth, and his wife, Samantha, stayed at Danau Girang Field Centre (DGFC) for two weeks during April to conduct fieldwork for Mark's PhD.
Communications in the jungle are notoriously difficult and Mark came to DGFC to test his hypothesis that the ionosphere can be reliably used to send relatively low power signals. The idea is that this could be applied to reduce the frequency of having to check animal trap and instead, visit the trap only when it is triggered and sends a signal to the researcher. Mark's wife, Sam, was studying for a master's in Security and Intelligence which, combined with her twenty-year career in the British Armed Forces, made her the perfect research assistant for Mark.

Liliana Snedden

Liliana was a Second year Cardiff University Zoology undergraduate and after completing her Cardiff University marine ecology field course on Gaya Island, near Kota Kinabalu, she decided to join the field centre as a volunteer for three weeks.

Simon Rohner and Moritz Jochum

Wildlife veterinarians Simon and Moritz spent three weeks volunteering. Simon is interested in the anthropogenic effects on wildlife and population health, having

studied the Eurasian otter for his PhD. Moritz is currently studying for his PhD focusing on emerging infectious diseases in Sub-Saharan Africa, working with Western chimpanzees and Western Lowland gorillas.

Eurydice Pefferkorn

Eurydice was a third-year French veterinary student studying at the National Veterinary School of Toulouse. Eurydice spent two months volunteering at DGFC to gain experience in the field of wildlife conservation.

Viktor Mertens

Viktor, a second-year master's student studying Biodiversity, Conservation and Restoration at the University of Antwerp in Belgium, joined DGFC as a long-term volunteer, actively assisting many of the field projects.

Kim van de Wiel

Kim is a veterinarian pursuing a PhD in disease ecology, with a focus on parasite transmission between domestic and wild African ungulates. She supported many projects at the field centre including the field centre's banteng research project due to her expertise with hooved mammals.

Kawthar Chemaima

Kawthar is studying anthropology at UCLouvain, Belgium, and joined DGFC as a long-term volunteer. She studied DGFC as an environment where people interact with people and people interact with nature. During her stay, Kawthar also supported many of the ongoing research projects.

A Delegation from Poland

During November, the Director of Danau Girang Field Centre hosted a delegation from the Wielkopolska Region in Poland.

The attendees were:

Associate Prof. Dr. Jędrzej Wierzbicki: Department of Engineering Geology and Geotechnics, Institute of Geology of AMU (Adam Mickiewicz University):

Associate Prof. Dr. Andrzej Węgiel: Poznań University of Life Sciences, Faculty of Forestry and Wood Technology

Dr Piotr Kosiński: PhD: Researcher: Poznań University of Life Sciences, Department of Botany

Associate Prof. Dr Wojciech Giernacki: Poznan University of Technology, Institute of Robotics and Machine Intelligence

Rafał Śniegocki: Director of Complex of Landscape Parks of the Wielkopolska Region

As well as taking an active part in all the usual activities at the centre, DGFC and the delegation were keen to explore the possibility of using the centre's facilities for research, master's programmes and possibly future field courses too, embracing subjects such as Biology, Geography/Geology, Chemistry and Mathematics.
This visitation further endorses the global appeal and opportunities the field centre holds for international study and learning.

From L-R: Piotr Kosiński, Wojciech Giernacki, Rafał Śniegocki, Benoit Goossens (DGFC), Jędrzej Wierzbicki, Andrzej Węgiel, John Robertson (DGFC)

FIELD COURSES

Leiden University (Netherlands)

Leiden University returned to Danau Girang Field Centre (DGFC) for the fifth time for their two-week Tropical Biodiversity Field Course. In addition, two Malaysian students representing Universiti Malaysia Sabah and University Malaysia Sarawak also attended the course, and were sponsored by the Leiden students themselves.

For the first few days the students signed up for different workshops such as monitor lizard trapping, butterfly catching and insect collection, ecology walks, plant identification, camera trapping, night walks and surveys of primates and birds. The students then devised their own projects.

Some of the highlights of the field course included tree planting with Regrow Borneo and the finding of *Barringtonia macrostachya* (Family: *Lecythidaceae*) a woody plant with flowers that only bloom for a single night before abscission (shedding). This was discovered by Leiden University senior lecturers and botanists Dr James Byng and Dr Roderick Bouman.

Newquay University Centre/Cornwall College

The group from Newquay conduct the same set of surveys annually, accumulating data going back to their first field course in 2010.These surveys include daily bird and primate boats, frog walks, crustacean trapping, bat monitoring, camera trapping and other activities such as moth identification. The primate surveys use GPS data to map the locations of animals along the river and examine species diversity allowing the students to investigate how the animals are using the river in comparison to previous years' data.

One aspect that many of the students took away was the reality of the palm oil industry and its significance to local community life as well as the importance of sustainable palm oil. Highlights included tree planting with the Regrow Borneo project, an orangutan appearance and even sightings of red langurs on the river!

Project Dragonfly: Miami University, Ohio

Miami University is situated in Oxford, Ohio, and is the 10th oldest public university in the United States. The Project Dragonfly team came to stay with us in June and

the students helped with ongoing research projects as well as conducting their own projects. They also took part in primate boat trips, invertebrate sampling and leopard cat tracking.

Cardiff University

Cardiff University returned for their annual field course from June 24 to July 8. There were eight biological science undergraduates and four global conservation and ecology master's students ready to spend two weeks intensively immersing themselves in tropical biodiversity research techniques.

The first week of the field course involved undertaking Jungle Survival training,

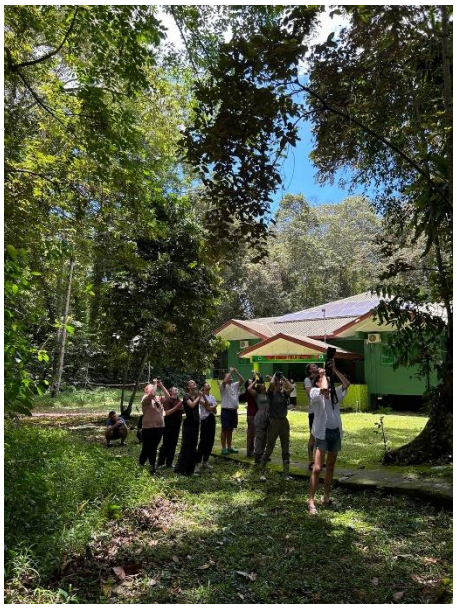
Dr Pablo Orozco-ter Wengel with students

gaining experience shadowing ongoing projects and undertaking seminars about taxonomy and research techniques. This included: pangolin and leopard cat tracking, primate and night boat surveys, forest walks, small mammal trapping, tree measuring with botanical plots and seminars on entomology and bird mist netting.

The second week saw students designing and collecting data for their own projects, engaging in jungle research and seeing the spectacular wildlife on offer such as orangutans, other primates and several large saltwater crocodiles.

Royal Holloway, University of London

In late August, Royal Holloway, University of London returned to DGFC for their annual tropical biodiversity field course.



Students watching a male orangutan in the treetops near the Main Building

The group took part in the normal suite of available fieldwork such as camera trapping, boat surveys, and mist netting, and they were able to take part in tree planting at Sungai Pin as well as a visit to the Supu caves. The field course is part of an animal behaviour module with various individual student projects focusing on behavioural aspects of different wildlife such as millipedes and fire ants.

St. Joseph's Institute International, Singapore

In November, 14 students and instructors from St. Joseph's Institute International, Singapore, visited Danau Girang Field Centre for their annual field course. Supported by Ability Expeditions (Kota Kinabalu), the students observed many research activities including fishing, bird mist netting, tree planting and animal tracking.

One of the student groups tree planting at Danau Girang Field Centre

EVENTS, CONFERENCES AND WORSHOPS

Ecotoxicology Group Meeting

DGFC hosted an ecotoxicology group from the UK. Made up of researchers from Cardiff University and the UK Centre for Ecology and Hydrology (UKCEH) they included: Professor Peter Kille, Dr Pablo Orozco-ter Wengel and Mr Tyler Cuddy from Cardiff University and Dr Claus Svendsen, Dr Julia Brewer, Dr Elma Lahore, Mr Lee Walker and Mr Nick Porter from UKCEH.

Ecotoxicology is a multidisciplinary field combining several areas of science (namely ecology and toxicology) which studies the effects of toxic chemicals (such as pesticides) on both aquatic and terrestrial environments; examining these effects from the individual level through to whole ecosystems. The group from Cardiff University and UKCEH is hoping to expand the current study of chemical use in oil palm plantations and their environmental impacts in the Lower Kinabatangan Wildlife Sanctuary (LWKS).

There are many plantations in the Kinabatangan region and chemicals such as pesticides are often used; but the accumulation and effect of these chemicals in the environment is poorly understood. Amongst the group were PhD students Tyler Cuddy and Nick Porter who will be studying the ecotoxicological effects in the Kinabatangan from the accumulation of these chemicals. This project builds on the work of former Cardiff University PhD student Meaghan Evans who studied heavy metal accumulation in civets at DGFC.

Following a one-day workshop with Sabah Wildlife Department, at their headquarters in Kota Kinabalu, the group headed to DGFC for a one week stay. The week involved several visits to the surrounding oil palm plantations, meeting with the plantation owners to discuss current chemical use and management strategies. The group also took part in a three-day workshop with Sabah's NGO Wild Asia who collaborate with small holders to encourage alternative strategies to using chemicals. Finally, the group headed to Tabin Wildlife Reserve to meet with ecotourism company Sticky Rice, who are also planning to work with nearby plantations.

The Ecotoxicology group in Batu Puteh awaiting the boat to the field centre

Borneo Bird Festival.

This year, Danau Girang Field Centre was invited again to take part in the 2023 Borneo Bird Festival at the Sepilok Rainforest Discovery Centre to engage with and help teach both children and adults on the bird species of Borneo.

Annual General Meeting

In February, our Annual General Meeting was held for the first time in three years due to the COVID-19 pandemic.

DGFC's staff are based either in the offices in Kota Kinabalu or at the field centre in the Lower Kinabatangan Wildlife Sanctuary. As a result of the last AGM being held several years ago due to the pandemic, the weekend provided the opportunity for everyone to meet, catch up, and enjoy the occasion together with great food and team building activities.

Cardiff University's Professional Training Year Student Projects

As part of the Professional Training Year (PTY) placement, Cardiff University students undertake their own research project at the Danau Girang Field Centre.

Following their year-long placement, the students presented their projects to their peers and academic staff for assessment back at Cardiff University.

Pictured are the 2022-2023 cohort of PTY's, Bryce, Hannah, Rhys and Zara presenting their projects at Cardiff University.

DGFC EDUCATION TEAM ACTIVITIES

The Education Team conducts annual environmental awareness programmes in schools and communities across Sabah. In 2023, the team provided training to 11 schools and organized collaborative events with the Sabah Wildlife Department, Sabah State Library, and Land Empowerment Animals People (LEAP).

These programs reached out to over 230 young people aged 10-17 in the towns of Beaufort, Kinabatangan, Telupid, and Tongod.

You can also access online environmental awareness videos on their YouTube channel: https://www.youtube.com/channel/UCkfmuw6B4PLSSJdAerHcv2w

Environmental awareness programme with schools in the Kinabatangan: SK Bilit, SK Batu Puteh, SK Paris, SK Ladang Bode and SK Sentosa Jaya

Environmental awareness programme with schools from Telupid: Comprising SMK Entilibon, SMK Tongod and SMK Telupid

GEOGRAPHIC INFORMATION SYSTEM (GIS)

DGFC's Geographic Information Systems Facility supports many features of the work undertaken by the Centre, including the creation and development of habitat maps, forest loss, tracking elephant movements, and plotting home ranges of focal species

using drone images and Light Detection and Ranging (LiDAR) technologies. This work also plays a vital role in supporting the multi-agency antipoaching Initiative, led by DGFC and Sabah Wildlife Department, funded by the US Department of State.

Mapping Forest and Oil Palm Extent

This activity uses a combination of existing satellite imagery to accurately map forest and agriculture areas. This comprehensive approach ensures precise identification and monitoring of land cover changes over time, aiding in conservation efforts and land management.

Danau Girang Field Centre's Rapid Response Team (RRT) Support

Ms. Liew, the GIS Officer at DGFC, providing GIS training to the RRT

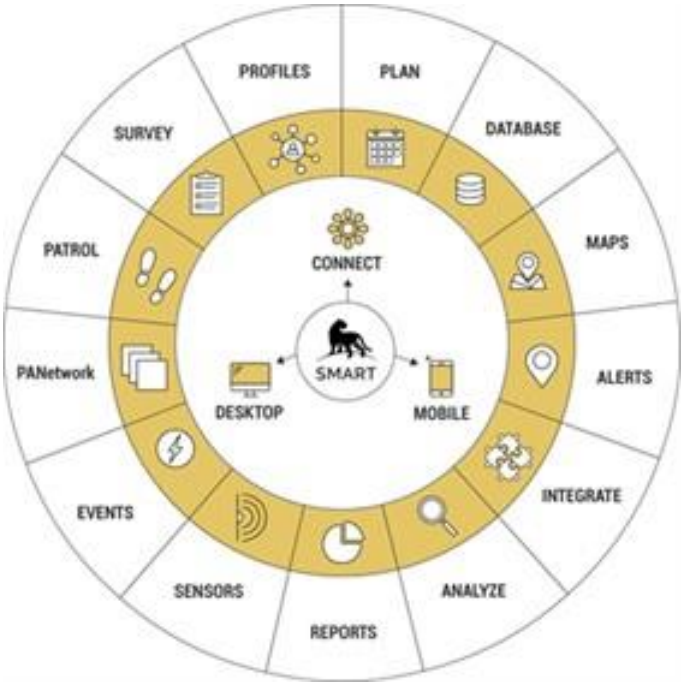
The GIS facility provides crucial support to the RRT mapping wildlife reserves, proposed monitoring device locations, and updating monitoring device data. These efforts enhance the effectiveness and efficiency of patrolling further contributing to wildlife protection and conservation.

Bornean Elephant Movement Tracking

Undertaken weekly, the mapping of Bornean elephant movements, using GPS data, amasses data to predict their activity patterns. This supports the wildlife management and conservation efforts, particularly in identifying potential areas of human-elephant conflict and ensuring the safety of both wildlife and communities.

Spatial Monitoring and Reporting Tools (SMART) Training

We conducted training sessions on SMART platform tools for wildlife rangers and analysts, streamlining data collection, analysis, and reporting processes. Additionally, we assisted in setting up SMART tools, addressing technical issues, and ensuring smooth operation for effective conservation management.



The SMART platform consists of a set of software and analysis to assist RRT standardising and streamlining data collection, analysis, and reporting, making it easier for key information to get from the field to decision-makers

RESEARCH PROJECTS

- ***Regrow Borneo***

This year marked another productive period for the RGB project, with substantial progress made in biodiversity monitoring, forest restoration, and community engagement.

Despite facing the challenges of a prolonged rainy season and logistical constraints, significant progress was made in conducting field surveys, collecting data, and engaging stakeholders.

Camera Trapping: Throughout the year, camera traps were deployed and monitored across multiple sites within the RGB project area. A total of 32 camera traps were used, covering active sites, restored areas, and natural forest sites.

Field Surveys: Various field surveys were conducted to assess biodiversity and habitat conditions across different sites. Activities included establishing transects for biodiversity monitoring, deploying audiomoths for acoustic monitoring, conducting frog surveys, mist netting for bird sampling, and small mammal trapping. These surveys provide valuable data for understanding species diversity and ecosystem dynamics in the study sites.

Transporting saplings to Laab Swamp RGB site

Community Engagement and Outreach: Engagement with the local community continues through our collaborative partnership with KOPEL Bhd, a local community cooperative, who grow the saplings, clear the study areas, and plant the native trees, ensuring each site is maintained for a minimum of 3 years to ensure the invasive grasses and vines do not return allowing the saplings to establish. For further information regarding planting and carbon sequestration please visit the Regrow Borneo Charity (UK) website

- ***Small carnivores***

The aim of the Cat Project is to understand how wild cats use the oil palm habitat and how human activities within the plantation affect the cat's movements and sleeping sites.

Cardiff University PhD student Amanda Wilson aims to investigate how cats, particularly leopard cats and flat-headed cats, find refuge and whether they can tolerate human influences within their home ranges.

The first leopard cat was collared in March, at a nearby plantation. DGFC's wildlife veterinarian, Dr. Reza, determined that the cat had just given birth to kittens prior to being collared, allowing the potential investigation of how her movements change from her nursing period until she separates from her kittens.

- ***The Pangolin Project***

The pangolin project is a collaboration between DGFC and Hong Kong University, investigating the role of Sunda pangolins (*Manis javanica*) in the emergence of SARS-CoV-2 and other viruses in humans.

This project involves a lot of pangolin captures and even more tracking, to better understand their home ranges, behaviour as well as the other forest animals which share their sleeping sites and potentially share their viruses.

A pangolin was rescued from a school in a nearby village in November 2022 and, after being radio tagged and translocated to the forests it made its way downstream and successfully settled down, establishing a firm home range.

A female pangolin was found with a pangolin pup and tagged. This was an interesting opportunity for the researchers as little is known about the ecology and life history of pangolins due to their elusive nature, and so it is unclear how individuals interact with each other in the same region. This will also have implications for viral networks, as pangolins may be able to spread pathogens to each other.

- ***Conservation Projects***

Through the generous support of the U.S. government's International Narcotics and Law Enforcement Affairs (INL) and Yayasan Sime Darby, Malaysia, DGFC's collaborative efforts with the Sabah Wildlife Department (SWD) continues to make a significant impact in combating wildlife crimes.

Our team of trained personnel enhance the capacity and effectiveness of local wildlife enforcement, focussing on rapidly responding to incidents of poaching and trafficking, particularly in critical areas like the Lower Kinabatangan Wildlife Sanctuary and Tabin Wildlife Reserve.

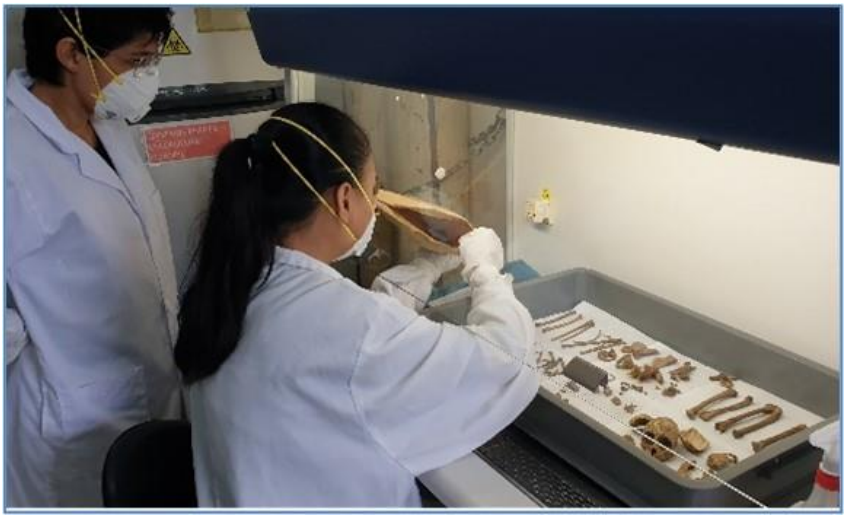
Enhancing the capacity and effectiveness of local wildlife enforcement, the Rapid Response Team (RRT) consists of 16 specially trained rangers, selected through a rigorous process to ensure they are well-prepared for various challenges, including self-defence and counter-poaching operations.

The INL project, aims to improve not only the rates of arrests and convictions for wildlife crimes but also the overall investigative capabilities of the SWD. As a result of these initiatives, there have been over 300 investigation reports and multiple arrests made, leading to successful prosecutions of individuals involved in wildlife crimes.

In addition, these projects not only focus on enforcement but also on intelligence sharing and inter-agency cooperation, vital in the fight against wildlife crimes in Sabah.

SABAH WILDLIFE HEALTH, GENETIC AND FORENSIC LABORATORY

The Sabah Wildlife Health, Genetic, and Forensic Laboratory is a multidimensional facility specialising in forensic analysis. It undertakes analysis for our ongoing research projects and collaborates with external agencies to combat wildlife crime in support of DGFC's wildlife protection and conservation efforts.



The laboratory is equipped to handle such cases by utilising advanced techniques such as DNA extraction, PCR analysis, and gel electrophoresis. It also generates reports for criminal cases and compiles forensic evidence for submission to relevant authorities.

In 2023, our team was actively involved in providing training, and workshops to teach forensic analysis techniques to our external partners. These partners include government agencies, research institutions, and international organisations.

SCHOLARLY ACHIEVEMENTS

Masters

BARNES M, 2023. Fruit, fermentation, and frugivores: dietary ethanol ingestion by Bornean orangutans (*Pongo pygmaeus morio*). Master of Science thesis, University of Exeter, UK, 40 pages.

ACHIEVEMENT AWARDS

Merdeka Award 2023

Ms. Amaziasizamoria receiving her award from His Royal Highness Sultan Nazrin Muizzuddin Shah

Ms. Amaziasizamoria Jumail was awarded the prestigious National Merdeka Award for her research work on Tropical Forest Restoration Ecology. Ms. Jumail is the first Sabahan to receive this great honour.

Ms. Jumail is a Cardiff University PhD student studying at the DGFC following her successful completion of her MSc (Universiti Malaysia Sabah) in 2020. The award allowed her to visit restoration projects in Mexico in collaboration with Dr. Cristina Martinez-Garza at the Universidad Autónoma del Estado de Morelos.

PUBLICATIONS

1. **KURZ D**, CONNOR T, BRODIE JF, BAKING EL, SZETO SH, HEARN AJ, **GARDNER PC**, WEARN OR, DEITH MCM, DEERE NJ, AMPENG A, BERNARD H, **GOON J**, GRANADOS A, HELMY O, **LIM HY**, LUSKIN MS, MACDONALD DW, ROSS J, SIMPSON BK, STRUEBIG MJ, MOHD-AZLAN J, POTTS MD, **GOOSSENS B**, BRASHARES JS, 2023. Socio-ecological factors shape the distribution of a cultural keystone species in Malaysian Borneo. *npj Biodiversity* doi: 10.1038/s44185-022-00008-w.

2. JOHNSON E, CAMPOS-CERQUEIRA M, **JUMAIL A**, **YUSNI ASA**, **SALGADO-LYNN M**, FORNACE K, 2023. Applications and advances in acoustic monitoring for infectious disease epidemiology. *Trends in Parasitology* doi: 10.1016/j.pt.2023.01.008.

3. DAVIDAR P, SHARMA R, DE SILVA S, CAMPOS-ARCEIZ A, **GOOSSENS B**, PUYRAVAUD J-P, HABIB B, DE R, WONG EP, NEUPANE D, **OTHMAN NB**, GOYAL SP, 2023. Connect elephant habitats in Asia. *Science* 379, 6634: 765.

4. SUZUKI-HASHIDO N, TSUCHIDA S, AZUMANO A, **GOOSSENS B, SALDIVAR DAR, STARK DJ**, TUUGA A, USHIDA K, MATSUDA I, 2023. Isolation of bacteria from freeze-dried samples and the functional characterization of species-specific lactic acid bacteria with a comparison of wild and captive proboscis monkeys. *Microorganisms* 11: 1458.

5. **GUERRERO-SANCHEZ S**, **FRIAS L**, SAIMIN S, OROZCO-TERWENGEL P, **GOOSSENS B**, 2023. The *fast-food effect*: costs of being a generalist in a human-dominated landscape. *Conservation Physiology* 11: 1. doi: 10.1093/conphys/coad055.

6. SITAM FT, **SALGADO LYNN M**, DENEL A, **PANJANG E**, MCEWING R, LIGHTSON A, OGDEN R, **MARUJI NA**, **YAHYA NK**, NGAU C, KULAIMI NAM, ITHNIN H, ROVIE-RYAN J, BAKAR MSA, EWART KM, 2023. Phylogeography of the Sunda pangolin, *Manis javanica*: implications for taxonomy, conservation management and wildlife forensics. *Ecology and Evolution* 13(8): e10373.

7. HAMED N, RANA O, **GOOSSENS B**, OROZCO-TERWENGEL P, PERERA C, 2023. FOO: An upper-level ontology for the Forest Observatory. In: Pesquita C et al. The Semantic Web: ESWC 2023 Satellite events. ESWC 2023. Lecture Notes in Computer Science, vol 13998. Springer, Cham. Doi: 10.1007/978-3-031-43458-7_29.

IN THE PRESS 2023

01/03 Borneo Post, Chew Daily Microphones can help track disease in the wild.

15/03 Asia Times, Asia Times China, Overseas Chinese Daily News, Sin Chew Daily, Borneo Post More boots on the ground against wildlife poaching and trafficking.

15/07 The Star Culling crocs is not the answer.

26/08 Borneo Post Sabah research officer wins Merdeka Award Grant.

GRANTS AWARDED

1. Orangutan Appeal UK for the project “HONOR our Nature Outreach Programme”, 1 year (February 2023 to January 2024), MYR 47,050
2. Rewild, Primate Action Fund for the project “Development of a conservation management plan for Sunda macaques in Sabah, Malaysian Borneo), 1 year (March 2023 to February 2024), MYR 22,000
3. National Geographic for the project “Whole genome re-sequencing of Sunda pangolins (*Manis javanica*), 1 year (May 2023 to April 2024), MYR 57,800.
4. Orangutan Appeal UK for Regrow Borneo project, 1 year (July 2023 to June 2024), MYR 58,813.

Total MYR 185,663 (USD 40,000)

ACKNOWLEDGEMENTS

We would like to express our sincere thanks to Cardiff University, Sabah Wildlife Department and all our sponsors who continue to support us.

If you would like to learn more about how you can help support DGFC, please email us at enquiry@danaugirang.com.my.