



2021 YEARLY ACTIVITY REPORT

CARDIFF
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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 continually contributes to and supports long-term conservation strategies in Sabah, undertaking 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.

Our ground-based targeted data informs and shapes Sabah's conservation strategies, such as the State's five species action plans, and our work continues to support the establishment of new forest reserves and wildlife corridors.



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

In 2021, our regular activity programmes of field courses and visitors had to be postponed again due to COVID-19 travel restrictions. Despite this, however, we were still able to continue to support our ongoing conservation projects and this report presents just a few of the accomplishments achieved by DGFC from January to December 2021.

VISITORS TO DANAU GIRANG FIELD CENTRE 2021

For a second year, 2021 saw the cancellation of our traditional programme of field courses and international visitors. Despite this, DGFC continued to remain open to Sabah officials, agencies, Malaysian students and researchers as and when COVID-19 State Orders allowed.

Distinguished Guests

On the 23rd of October, DGFC had the pleasure of welcoming the Ministry of Tourism, Culture and Environment's Permanent Secretary, Datuk Seri Haji Mohd Yusrie Abdullah, his deputies Encik Mohd Sofian Alfian Nair and Puan Mary Malangking. Accompanied by the Director of Sabah Wildlife Department, Tuan Augustine Tuuga and Deputy Director Puan Jum Rafiah Abd Sukor, other distinguished guests included Dr Maklarin Lakim (Director of Sabah Parks), Tuan Vitalis Justin Moduying (Director of the Environmental Protection Department), Tuan Arif Abd. Hamid (Director of Jabatan Museum Negeri Sabah), and Puan Noredah Othman (CEO of Sabah Tourism Board).

Following a presentation about the Centre's work and future plans, given by Dr. Milena Salgado Lynn, everyone enjoyed lunch and senior members then took part in a tree planting ceremony at DGFC's newly constructed jetty.



Permanent Secretary, Datuk Seri Haji Mohd Yusrie Abdullah

VISITORS

Aria Lee (Lee Dai Xuan)

Aria, from Geese Family Solution, launched her first online fiction picture story called JoJo, about a Penan girl who lives in the rainforests of Borneo. The book was written for children aged 3 and over and a percentage of the royalties is generously donated towards DGFC's Regrow Borneo project. In December, Aria took the opportunity to spend a few days at DGFC helping to plant some trees at one of the reforestation plots in the Lower Kinabatangan Floodplain.



New Masters Student

Ashraft Syazwan Ahmady B Yusni



Ashraft graduated in 2019 and came to Borneo to work as a Field Assistant with the Danau Girang Field Centre. After a year of assisting researchers, he decided to pursue a postgraduate degree in Ecological Processes with Universiti Malaysia Sabah. Under the supervision of Prof. Benoit Goossens, Dr. Liew Thor Seng, and Dr. Ravinder Kaur, and advisors Dr. Marc Ancrenaz and Prof. Caroline Dingle, his research will focus on the application of passive acoustic monitoring for hornbill research in the wildlife sanctuary.

INTERNSHIPS

Hafizah Suhud

Hafizah Suhud, a BSc student studying Conservation Biology at Universiti Malaysia Sabah, arrived at DGFC in March to spend three and a half months for her internship. She undertook training and actively supported a variety of exciting projects such as wild cat, snake, and pangolin tracking, collected data from the extensive range of camera traps and helped record and gather data from botanical plots associated with DGFC's Regrow Borneo project.

"Coming to DGFC was one of the best decisions I have ever made. Here, I received on-the-ground experience giving me exposure to how research in the field is done and it was fascinating to see how the researchers use technology to help conserve the animals".



Hafizah (pictured left) with Ms Panjang (DGFC, PhD student)

".....I was also lucky enough to work with so many inspiring people who are so passionate about conservation work. These people amazed me as I can truly see their passion, love and determination towards conserving nature which inspires me to do more in this sector myself".

Nur Syazana Fatimah Binti Mohamad Juhari

Nur Syazana Fatimah Binti Mohamad Juhari was a final year undergraduate student studying Conservation Biology at Universiti Malaysia Sabah, who chose Danau Girang Field Centre to undertake her industrial training.



She took part in many of the ongoing field projects including setting animal traps, collecting data from field camera and video recorders and radio-tracking.

Working with the Regrow Borneo team, Syazana also assisted with tree tagging,

species assessment and measurement of the planted saplings and existing trees found in the reforestation sites.

Syazana went on to successfully complete her studies and we are delighted to be able to work with her again, this time in her new position as Forest Conservation Assistant Manager at Batu Puteh Community Tourism Co-operative or Koperasi Pelancongan Bhd (KOPEL), located in a village near DGFC.

VOLUNTEERS

Hui Yi Wong

Hui Yi Wong was one of three Malaysian volunteers who visited the Centre, all of whom received the coveted Roots and Shoots Malaysia Award. Taking an active part in many research projects, including radio tracking, she wrote: “It turned out that this is the place where I spent my best time of the year, a beautiful place surrounded by nature..... this 26-day volunteering journey has been awesome.”



EVENTS, CONFERENCES AND WORKSHOPS

First Aid and Forest Rescue Training Programme

In late September, under the expert tutelage of Joe Wan from FieldSkills, over 30 participants from Sabah Wildlife Department, KOPEL, the Sabah Wildlife Health, Genetic and Forensic Laboratory, and DGFC personnel participated in a three-day



Hin Cheung Timothy Chang: Research Officer, DGFC

First Aid and Forest Rescue course at the Centre.

At the end of this programme, some participants remained to take part in a tree climbing course delivered by the Borneo Tree Climbing Academy, under the tutelage of Jamiluddin Jami.

World Pangolin Day

In February, DGFC proudly joined with local and international conservation partners to celebrate World Pangolin Day. Ms. Elisa Panjang (DGFC's Pangolin Conservation Officer) and our education team co-organized several virtual activities including a pangolin chit-chat with local celebrities, presentations and video contests that highlighted the pangolin's plight on DGFC's social media. In addition, Elisa also worked with local television and radio stations, as well as journalists to produce short videos, podcasts, and articles to educate people about pangolins. You can read, listen, and learn about these activities by visiting any of our social media platforms.



DGFC EDUCATION TEAM ACTIVITIES

The Education Team continued to deliver its online environmental awareness programmes, and further developed its Youtube channel content (<https://www.youtube.com/channel/UCkfmuw6B4PLSSJdAerHcv2w>).

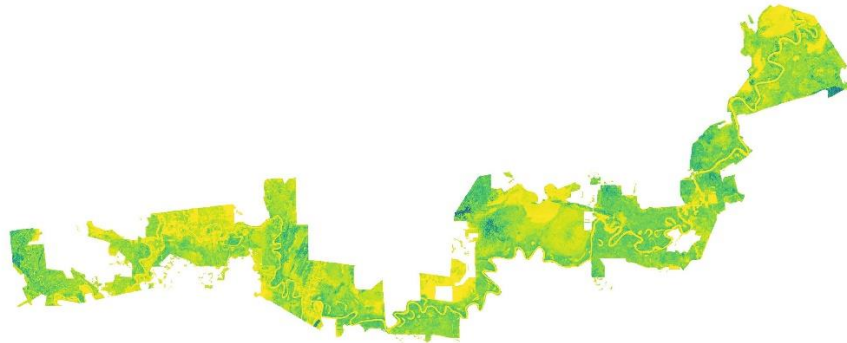


Students attending one of the sessions: Taken by one of the teachers

The Team also actively promoted global environmental awareness days and participated in education webinars. Pictured below is a 'Virtual talk' about the Sunda clouded leopard, given to Year 2 students at Kota Kinabalu International School.

GEOGRAPHIC INFORMATION SYSTEMS

The DGFC Geographic Information Systems Facility supports many aspects of the work undertaken by the Centre, creating and developing habitat maps, tracking elephant movements, and plotting home ranges of focal species using drone images and Light Detection and Ranging (LiDAR) technologies. Its important work also plays a crucial role in supporting the multi-agency antipoaching initiative, led by DGFC and Sabah Wildlife Department, funded by the US Department of State.



LiDAR images of the Lower Kinabatangan Wildlife Sanctuary

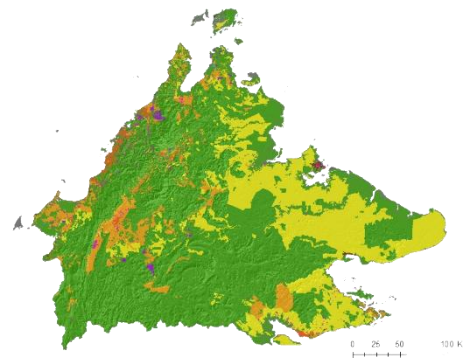
The facility also assists in the training of the staff and students at the Sabah Wildlife Department, to improve their general mapping skills and other matters related to spatial data & Geographic Information System (GIS) analysis. This includes refining GIS layers for Sabah districts using georeferencing satellite images which are used as the main reference to update and refine the existing maps regarding the extent of Sabah's forests, oil palm plantation areas and other land uses. It also identifies the spatial and temporal patterns of potential hot spots for human and elephant conflict.



Ms. Lucy Liew: DGFC's Conservation GIS Officer, conducting GIS training for Professional Training Year students at the Field Centre.

Land use is categorized into 10 different classes as follows:

- Agriculture: Cropland and pasture, orchards, groves, vineyards, nurseries, and ornamental horticultural areas
- Water: River, stream, lakes, reservoirs, bay, estuaries
- Barren Land: Bare exposed rock, beaches, sandy areas other than beaches
- Urban and built-up: City, comprising residential land, industrial land, quarries, pits and mines, commercial land, land used by public services, land of mixed use, and land used for transport and communications, technical infrastructure, recreational areas, and other open land.
- Forest land: Mixed forest land
- Open area: Mixed rangeland (grass, shrubs)
- Road: Highway, gravel road, trail
- Settlement: Small town, villages
- Oil palm
- Unknown: Unknown type of land use



RESEARCH PROJECTS

Reticulated Python



Reticulated python

The field work for the python project drew to a close in 2021 as Mr. Rich Burger, a PhD student at Cardiff University, finished his python data collection. During his time in the field, Rich managed to sample data from over 160 individuals including spatial tracking data from 16 pythons.

Small Carnivores



The flat-headed cat's impressive set of teeth

Ms Amanda Wilson (Masters Student, Universiti Malaysia Sabah) completed her field work and began further data analysis before writing her dissertation in preparation for her viva in 2022.

Shortly before leaving the Field Centre, a flat headed cat was captured and as very little is known about this rare and endangered species, biological samples were taken, and a UHF collar was deployed. As far as we know, this was the first-ever captured, collared, and safely released flat headed cat in Sabah, Borneo.

Sunda Pangolin

The Sunda pangolin is a critically endangered species and one of the most highly illegally trafficked animals in the world. Ms. Elisa Panjang (a Malaysian PhD student registered at Cardiff University) leads the Sunda pangolin research project here at DGFC.

In March, a wild male Sunda pangolin later named 'Galak', which means fierce, was successfully captured and fitted with a VHF transmitter. Before safely releasing the pangolin, biological samples were collected for genetic and virology studies. At the time of going to print, Galak continues to be tracked, providing important data, including its sleeping sites.

To date, Elisa and her team have successfully VHF and GPS tagged 12 pangolins (a mix of wild and translocated individuals).

Regrow Borneo

Regrow Borneo brings together scientific expertise and a wealth of local knowledge. Restoring a healthy hectare means planting local trees from a community nursery and maintaining them for three years.

Ms. Jumail, DGFC's Research Officer, coordinates the Regrow Borneo project and undertakes the scientific monitoring of each forest plot using modern, drone-based, and traditional survey techniques, in collaboration with this project's partner KOPEL,

who have been working for over 20 years to conserve and restore their surrounding rainforest habitats and ecosystems.

Effective forest restoration relies on a combination of scientific understanding, knowledge, and experience. In the case of Regrow Borneo, the knowledge of our local partners allows us to select the most tolerant, fast-growing trees including some hardy species that will provide food for animals (such as orang-utans) when mature. During 2021, over 11,000 saplings were planted across four sites.



An area of highly degraded forest before clearing



.....and after the area has been cleared for planting

Ocean Park Final Report

Funded by Ocean Park, Hong Kong, our three-year Landscape Conservation project has drawn to a close.

By evaluating species' spatial use requirements, including characteristics of avoidance, the DGFC team, through its close collaboration with government and academic partners, not only provided crucial natural history baselines for many Bornean species but also applied these findings to design timely conservation management actions through our close partnership with the Sabah Wildlife Department.

This all-encompassing study focused on the following core elements.

- 1) To determine the impacts of landscape structure, habitat quality, and extensive anthropogenic habitat fragmentation on the ranging patterns of tropical wildlife, with the ultimate goal of producing informed and effective management plans for the conservation of the Lower Kinabatangan's biodiversity.
- 2) To produce a multi-species model identifying landscape features, such as forest corridors or agricultural buffer zones, crucial to the conservation of viable wildlife populations.
- 3) To produce governmentally endorsed State Action Plans for focal species.
- 4) To spearhead and support active land management and protection schemes in Sabah's lowlands.
- 5) To provide capacity building, outreach, and training for international and Malaysian citizens on effective biodiversity conservation and management.
- 6) To continue to expand the depth of analysis in terms of focal species.

Enforcement and Forensics

In 2021, a further grant extension was awarded to DGFC by the United States Department of State, Bureau of International Narcotics and Law Enforcement, designed to strengthen the enforcement and forensic capabilities of Sabah Wildlife Department (SWD) in combating wildlife crimes.

DGFC actively works alongside SWD to establish new units within the Department's enforcement division, providing training in skills and knowledge to equip enforcement agencies to effectively tackle wildlife crimes.

SABAH WILDLIFE HEALTH, GENETICS AND FORENSIC LABORATORY

Established in 2013 by the Sabah Wildlife Department (SWD), EcoHealth Alliance and DGFC, researchers use the laboratory facilities to provide valuable genetic information collected from a variety of DGFC projects as well as supporting the work of government departments and forensic agencies.

Since October 2019, this facility has also played a key role in supporting DGFC's inter-related and multi-agency projects, including significant forensic work relating to the US Department of State's funding to support SWD's anti-poaching and trafficking activities.

ACHIEVEMENT AWARDS

The Distinguished Mexican Award



Dr. Milena Salgado Lynn

Dr. Milena Salgado Lynn, our Scientific Advisor, Health and Safety Officer, and DGFC's head of the Genetic Research and Forensic Unit at the Wildlife Health Genetic and Forensic Laboratory was officially recognised as a "Distinguished Mexican" by the Embassy of Mexico in Malaysia and the Instituto de los Mexicanos en el Exterior SRE.

This recognition is granted to those Mexicans who "have lived at least 5 consecutive years abroad and have demonstrated to have an outstanding career in any field of human endeavour". The Mexican ambassador to Malaysia, Edmundo Font said that "It is an honour and a privilege to grant this recognition and medal to a Mexican woman who has developed her passion in science and who demonstrates that the talent from our country transcends borders".

The Mexican Federation of Biology Colleges Award

This year also saw Dr. Milena Salgado receive the Mexican Federation of Biology Colleges (Federacion Mexicana de Colegios de Biologos) award. The "Juan Luis Cifuentes" Medal is awarded every two years to mark the work of a Mexican biologist whose achievements have been recognised as outstanding in the different areas of the Biological Sciences.

Sabah Forestry Department Conservation Partner Award

In November, the Director of DGFC, Professor Benoit Goossens, received the Forestry Department Conservation Partner Award, 2021. The event was attended by Yang Amat Berhormat Datuk Seri Panglima Haji Hajiji Bin Haji Noor (Chief Minister of Sabah) who presented the awards together with Datuk Frederick Kugan (Chief Conservator of Forests).



DGFC Director, Professor Benoit Goossens receiving the award from the Chief Minister of Sabah, Datuk Seri Panglima Haji Hajiji bin Noor

SCHOLARLY ACHIEVEMENTS

KURZ DJ, 2021. Conservation of a socio-ecological system: Indigenous hunting communities and bearded pigs in Malaysian Borneo. PhD thesis, University of California, Berkeley, USA, 59 pages.

BRANDE-LAVRIDSEN N, 2021. Oil palm plantation-forest boundary utilization by pig-tailed and long-tailed macaques. Master of Science thesis. Cardiff University, UK, 89 pages.

PUBLICATIONS

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2. DE LA TORRE A, WONG EP, LECHNER AM, ZULAIKHA N, ZAWAWI A, PATAH PA, SAABAN S, **GOOSSENS B**, CAMPOS-ARCEIZ A, 2021. There will be conflict – agricultural landscapes are prime, rather than marginal, habitats for Asian elephants. *Animal Conservation* 24: 720-732.
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4. **EVANS MN**, MULLER CT, KILLE P, ASNER GP, **GUERRERO-SANCHEZ S**, ABU BAKAR MS, **GOOSSENS B**, 2021. Space use patterns of Malay civets (*Viverra zibetha*) persisting within a landscape fragmented by oil palm plantations. *Landscape Ecology* doi: 10.1007/s10980-020-01187-2.
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9. **GILHOOPLY LJ**, **BURGER R**, SIPANGKUI S, COLQUHOUN IC, 2021. Tourist behavior predicts reactions of macaques (*Macaca fascicularis* and *M. nemestrina*) at Sepilok Orang-utan Rehabilitation Centre, Sabah, Malaysia. *International Journal of Primatology* doi: 10.1007/s10764-021-00205-7.

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IN THE PRESS

- **30 January 2021**

The Borneo Post – 68 held as foresters turn up heat on poachers

Also reported in: *Asia Times, Daily Express, See Hua Daily News, OCDN, Sin Chew Daily, Harian Ekspres*



- **11 February 2021**

Daily Express- Costs of living next door to oil plantations on small carnivores

- **12 March 2021**

Daily Express – Biosafety training timely amid African Swine Flu outbreak

Also reported in: *The Borneo Post*

- **13 March 2021**

The Borneo Post- New study shows human-elephant conflict areas are of very high habitat suitability.

- **03 August 2021**

The Borneo Post – Bornean Banteng threatened by poaching

Also reported in: *See Hua Daily News, Asia Times, Sin Chew Daily*

- **30 August 2021**

Daily Express – African Swine Flu hurts bearded pigs and indigenous communities

Also reported in: *Sin Chew Daily, See Hua Daily News, The Borneo Post, Asia Times*

- **11 October 2021**

The Borneo Post – Even dragons need protecting
Also reported in: Asia Times, Sin Chew Daily, See Hua Daily News

- 16 October 2021
 The New Strait Times – Award honours Mexican biologist's passion for primates
- 06 December 2021
 The Borneo Post – Kinabatangan Wildlife exposed to Heavy Metals
Also reported in: Asia Times



GRANTS AWARDED

Awarding Organisation

MYR

Oriental Bird Club (Hornbill project):	6,960.00
Houston Zoo (Sunda Pangolin, PhD Project):	40,617.00
World Wildlife Fund Inc (Regrow Borneo):	63,180.00
The Rufford Foundation (Hornbill project):	33,484.00
Orangutan Appeal UK (Regrow Borneo):	13,951.00
Cleveland Zoological Society (1-year project):	41,141.00
The University of Hong Kong (Pangolin and Covid project):	21,600.00
National Conservation Trust Fund (Regrow Borneo, 2-year project):	150,000.00
WWF-Malaysia (Regrow Borneo):	30,000.00
Columbus Zoo (banteng project, 3-year):	133,462.00
US Department of State (2-year project extension):	4,207,350.00

Total MYR: 4,741,745.00

(Total MYR ≡ US\$: 1,126,045.00)

ACKNOWLEDGEMENTS

Danau Girang Field Centre is a non-profit organisation and we are, therefore, sincerely grateful for all the support we receive. Due to the ongoing global pandemic, this year has been another extremely testing time for us financially and as such, wish to record our special thanks for the support we received from Cardiff University's COVID19 Special Support Initiative in particular.

If you would like to learn more about the ways you can help support DGFC, please contact us via email at: enquiry@danaugirang.com.my