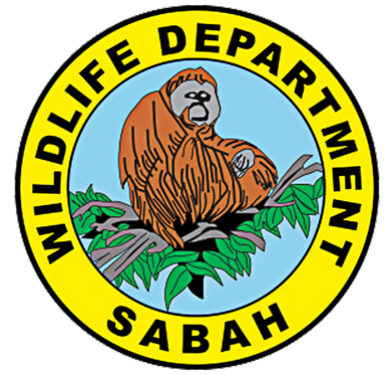


2018

YEARLY ACTIVITY REPORT



**Report prepared by Prof. Benoît Goossens
August 2018, Cardiff**

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OBITUARY

Dr Diana Angeles Ramirez Saldivar

It was with great sadness that, in this year, DGFC learnt of the passing of our dear friend, Dr Diana Angeles Ramirez Saldivar.

Diana arrived in Sabah in August 2010 to work with the Wildlife Rescue Unit and during her eight years she gave everything to her job, working tirelessly to support many of DGFC's projects including: collaring elephants, clouded leopards, proboscis monkeys and crocodiles.



While working full time to rescue and protect Sabah's wildlife, she also undertook a Masters degree at Universiti Malaysia Sabah. We do not know of a more passionate and dedicated wildlife conservationist than Diana, winning many battles for the well-being of the wildlife and captive animals in Sabah. She was truly an inspiration, and we shall all miss her dearly.

INTRODUCTION

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



This ground-based, targeted data inform conservation strategies such as species action plans and the establishment of new forest reserves, while continuing to engage with communities and other conservation and government organisations. DGFC also provides higher education opportunities (up to PhD level), and regularly hosts scientists (from Malaysia) and from around the world which has to date generated more than 100 peer-reviewed publications.

This report presents the different activities that were carried out at DGFC from January to December 2018.

VISITORS TO DGFC 2018

11 Field Courses

This year, DGFC welcomed many visitors from Malaysia and from around the world hosting international field courses, professional student training programmes, volunteers, and scientists, as well as attracting international media interest as the Centre's global reputation for its science-led conservation activities draws further international acclaim.



DGFC welcomed Freiburg University to its inaugural field course.

DGFC welcomed 11 field courses from 5 different countries.

March: Leiden University (Netherlands), Freiburg University (Germany)

April: Cornwall College (UK)

May: Anglia Ruskin University (UK)

June: University of Kent (UK), Oregon State University (USA), Miami University (1) (USA)

July: Miami University (group 2) (USA), Cardiff University (UK)

September: Aberystwyth University (UK)

October: United World College South East Asia (SNG)

DGFC Primate Behaviour and Ecology Field Course

This year saw the second Primate Behaviour and Ecology field course which visited DGFC in August for two weeks. The field course was led by Danica Stark, DGFC's primatologist. The group spent time observing primates from the Centre's river boats and tracking slow loris and tarsier sleeping sites. They also took part in a river clean where 15 bags of rubbish were collected! Four students from Malaysia attended the field course, fully sponsored by Houston Zoo (picture below).



Pravind Segaran, Nicholas Wei Cheng Tan (from the Bornean Sun Bear Conservation Centre), Amanda Shia (from the NGO HUTAN) and Lee Zan Hui.

Distinguished Visitors



Dr. Hjh. Yatela Zainal Abidin (Chief Executive Officer, Yayasan Sime Darby, Malaysia) and Dato Jeffri Salim Davidson (Governing Council, Yayasan Sime Darby, Malaysia) on the Kinabatangan River.

10 Professional Training Year Students from Cardiff University:

2017-2018:

Luke Davies, Aaron Sambrook, Alexander Rose, Max Lawson and Jasmine Walker at the field centre.

2018-2019:

Ben Pridmore, Elizabeth Witcombe, Jamie Owen and Jessica Shuttleworth at the field centre; Charlotte Taylor and Megan Hooker at Gaya Island Resort.

25 Volunteers

Cardiff University (UK), Durham University (UK), Imperial College London (UK), Oregon Zoo (USA), Freiburg University (Germany), Chester University (UK), Oregon State University (USA), Ocean Park Hong Kong (HK, China), Cornwall College (UK), Bornean Sun Bear Conservation Centre (Malaysia), Methodist College Kuala Lumpur (Malaysia).

4 Visiting Masters Students:

Leiden University (Netherlands); Universiti Malaysia Sabah (Malaysia); Freiburg University (Germany), Leeds University (UK).

9 Visiting Research Academics:

Leibniz University (Germany), Ljubljana University (Slovenia), Oregon Zoo (USA), Leeds University (UK), Columbus Zoo (USA), Cardiff University (UK), Kyoto University (Japan), Universiti Malaysia Sabah (Malaysia).

6 Media:

BBC (UK), ScubaZoo (Malaysia), Oregon Zoo (USA), Atlantic Productions (UK), Hong Kong Academy of Performing Arts (HK, China), Freelance photographer (South America).

EVENTS, CONFERENCES AND WORKSHOPS

DGFC 10-year Anniversary Celebration

On the 18th and 19th of September, DGFC officially marked a significant milestone in its history by hosting a two-day seminar to celebrate all the amazing work undertaken by the Centre by formally marking its 10-year anniversary.



DGFC students, Kota Kinabalu office staff and Field Centre personnel during the 10th anniversary celebration.

Many people who had worked with DGFC over the years attended the seminar, held at Le Meridien Kota Kinabalu, and enjoyed talks from current PhD students, post-doctoral researchers, and distinguished guest speakers.



Distinguished guest speaker, Professor Andy Weightman, Head of Division (Organisms & Environment), School of Biosciences, Cardiff University, Wales, UK

State Action Plans Launch

On 20 September 2018, three state action plans (2019–2028) were launched by YB Datuk Christina Liew, Minister of Tourism, Culture and Environment Sabah. The action plans set out the strategies to conserve three endangered species in Sabah, the Sunda clouded leopard, the proboscis monkey and the Bornean banteng. All three species are threatened by habitat loss, poaching and road development.



(From left to right) Dr. Hjh. Yatela Zainal Abidin (CEO, Yayasan Sime Darby), Datuk Christina Liew (Minister of Tourism, Culture and Environment, Sabah), Dr. Benoit Goossens (Director, DGFC), Madam Caroline Russell (Governing Council Member, Yayasan Sime Darby) and Mr Augustine Tuuga (Director, Sabah Wildlife Department) during the launch of Sabah State action plans.

Danau Girang Field Centre: Away Day

In February, DGFC held an away day when staff from the DGFC (located in the Lower Kinabatangan Wildlife Sanctuary), its staff based in the Kota Kinabalu Office and Sabah Wildlife Health, Genetic and Forensic laboratory came together to discuss the upcoming year activities and discuss ways to further improve efficiency.



Staff attending the DGFC Away-Day

Discussions were also held regarding the necessary preparations that were required for new upcoming planned research projects. The event was a special time for the DGFC team and was also the perfect opportunity for all staff to meet and catch up.

Unveiling of the Pangolin Sculpture Sandakan Airport

On 13th February 2018, the launch of the pangolin sculpture at Sandakan airport coincided with the Sunda pangolin being granted total protection in Sabah, preventing the hunting and trade of pangolins. The sculpture was unveiled by Future Alam Borneo, Bornean Sun Bear Conservation Centre and DGFC, and graced by Datuk Kamarlin Ombi, Assistant Minister of Tourism, Culture and Environment.



Elisa Panjang, Dr. Benoit Goossens and Audrey Adella Umbol.

It was created by artist Japson Wong using recycled plastics. Earlier this month Elisa, Houston Zoo's Wildlife Warrior, had travelled to the US to attend the Zoos and Aquariums Committed to Conservation (ZACC) conference to present her work on the Sunda pangolin. Elisa then visited Houston Zoo, which sponsors her work to learn more about the conservation work they do at the zoo and around the world. We are all proud of the work achieved by Elisa and everyone involved in protecting the world's most trafficked mammal - the pangolin.

Research Retreat Meeting



Twenty-two attendees including students, laboratory staff and support workers from DGFC met for three days (25 -28 May) at Beringgis Beach Resort for a scientific retreat meeting. The meeting provided the whole DGFC team the chance to brainstorm ideas, strengthen procedures and plan for future research demands.

Meeting with the Minister of Tourism, Culture and Environment

In October, our resident pangolin researcher, Elisa Panjang, met with the Minister of Tourism, Culture and Environment; SWD and Sabah Forestry Department regarding an exciting new opportunity for the future of pangolins in Sabah. The meeting was held to discuss a proposal to



establish a Pangolin Sanctuary and research institute. The institute will focus primarily on the goal of educating about this elusive species, with secondary goals to house rescued individuals and conduct research on wild and captive individuals.

Later the same month, Elisa led a team to Sepilok to collect a rescued pangolin. The adult male pangolin, named Tuah, was brought back to DGFC for a health check before releasing him into the forest sanctuary. Seemingly adjusting to his new home, he will be tracked as part of Elisa's PhD research project.

Borneo Jungle Diaries S2 filming: Scubazoo starring Alexandra Alexander

Season Two is presented by Sabahan actress Alexandra Alexander (pictured left) and the Scubazoo team spent a month filming around DGFC where they focused on a variety of animals and their significance to Malaysian culture. The species covered include proboscis monkey, pangolin, clouded leopard, tarsier, hornbill, elephant and sun bear.



*L-R: Alexandra Alexander
(Presenter) and Chris Tan
(Scubazoo).*

All 7 episodes of Borneo Jungle Diaries S2 can be viewed on our YouTube Channel.

Presentations and events

- Yayasan Sime Darby event, World Environment Day in Kuala Lumpur.
- LEAP Meeting on Humans Habitats Highways Coalition - Science.
- 'Safety Around Elephants' Workshop with the local community in Kampong Litang and Ulu Muanad.
- Wallacea UK-Indonesia Collaboration Researchers Networking Workshop, Makassar, Indonesia.
- LEAP Meeting on Humans Habitats Highways Coalition - Advocacy
- State Crocodile Survey presentation to Sabah Wildlife Department
- State Crocodile Survey presentation to Ministry of Natural Resources and Environment.
- Workshop with Forever Sabah to fund CERT members in Telupid.
- The Young Southeast Asian Leadership Initiative project "Video campaign on enhancing the illegal wildlife trade monitoring by urban communities through digital platforms" sponsored by US Embassy, Bangkok, Thailand.
- Pangolin talk hosted by The Sabah Society, Sandakan.
- IUCN Global Species Programme, Pangolin Specialist Group, Cambridge, UK.
- Pangolin presentation, UCSF, Kota Kinabalu.



Elisa Panjang presenting at the IUCN Global Species Programme, Cambridge, UK.

DGFC EDUCATION TEAM ACTIVITIES

Based at the DGFC office in Kota Kinabalu, the Education Team had another busy and productive year promoting awareness of the threats that affect the survival of Sabah's endangered species through the delivery of educational activities to schools and at public events. Some of the activities included:

February

- Organised a colouring activity with school children at Rasa Ria Resort, Tuaran in conjunction with "World Pangolin Day".



DGFC Team at the Shangri La Rasa Ria Resort during World Pangolin Day.

March

- Opened an exhibition at Kota Kinabalu High School in conjunction with "World Pangolin Day" and opened an exhibition at Petrosains, Kota Kinabalu in celebration of "World Environment Day".

April

- Delivered a Wildlife Awareness Talk and Exhibition to school students of Sekolah Menengah Kebangsaan (SMK) Kinarut Papar, SMK Limbanak Papar, SMK Datuk Peter Mojuntin Penampang, SMK Tansau Putatan, SK Tansau Putatan organised by Sabah Wildlife Department and HUTAN-Kinabatangan Orangutan Conservation Programme (KOCP).

May

- Delivered a Wildlife Awareness Talk and Exhibition with school students of Maktab Sabah and SM Stella Maris organised by Sabah Wildlife Department and HUTAN- KOCP.
- Assisting in Seratu Aatai Project on Umbrelephant Campaign.



Closing ceremony of awareness program at SM Stella Maris, Kota Kinabalu

August

- Attended Sabah Environmental Education Network (SEEN) Annual Meeting, and visited Tinapikon Tagal, Babagon.
- Delivered the following Programme Kesedaran Jelajah Entilibon at SMK Entilibon and Sekolah Kebangsaan, SK Entilibon together with SWD, Sandakan and other conservation partners such as Wildlife Rescue Unit, HUTAN and Bornean Sun Bear Conservation Centre (BSBCC).



Group photo with the school children in Sandakan

- Supported DGFC PhD student, Elisa Panjang, with her Pangolin Education Programme at SK Batu Puteh Kinabatangan and SK Paris 1 Kinabatangan.
- Attended Development of Environmental Education Module and Boardgames on Marine Environment for Communities in Sabah organised by SEEN and World Wildlife Fund (WWF) at Klagan Hotel Kota Kinabalu.
- Coattended Umbrella Campaign organised by Seratu Aatai and SWD at Pan Pacific Hotel, Kota Kinabalu.

September

- Set up an exhibition booth for Rhythms of Rimba Environmental (ROR) Conservation Gathering at Nexus Karambunai, Kota Kinabalu.

October

- Exhibited at Universiti Malaysia Sabah (UMS) during World Animal Day.
- Attended BSBCC Environmental Education Programme in Sandakan, where there were 3 schools attending (SK Rancangan Lubuh, SK Sibugal Besar and SK Muhibah).
- Attended Minggu Karnival Sains at SK Darau. Presented a talk about Sunda clouded leopards and other wildcats in Sabah.

November

- Exhibited together with SWD for the Tanjung Aru Beach Festival.
- Attended Sabah Scientific Forum at Hyatt Regency Kinabalu.

December

- Briefing on DGFC activities to the Minister of Communication and Multimedia, YB Gobind Singh Deo, during Rhythms of Rimba 2019 at Nexus Resort.
- Visit to Tinapikon Tagal with SEEN Members.
- Exhibition during World Animal Day at UMS.

GEOGRAPHIC INFORMATION SYSTEM (GIS)

In addition to supporting the day-to-day needs of DGFC students and researchers regarding species and landscape mapping using spatial data, Lucy Liew, our conservation planning officer, continues to support the SWD to map elephant movements in Sabah and recording GPS data to predict possible trends in movement patterns and identify live current locations. In 2018, she assisted the SWD in mapping the human-elephant conflict cases in the Sandakan area and the forests in Central Sabah.

From 12-16 November, Lucy attended a professional development course, Toolkit for Ecosystem Services Site Assessment (TESSA). The course provided the understanding of the concepts of measuring and evaluating ecosystem services using TESSA which will, in the long-term, enable the participant to generate evidence-based data to further support the future development of ecosystem service schemes.



Land use mapping, for the Kinabatangan District (pictured above), involved improvising and updating the river layers using data from the tree loss cover layer (2000-2016). SPOT (a commercial high-resolution optical Earth imaging satellite system operating from space) along with GE Images were used for this project.

MAIN RESEARCH PROJECTS

Bearded pig: David J. Kurz, PhD student, University of California, Berkeley, USA

Project title: "Tracking movement patterns and determining habitat conservation priorities for the threatened bearded pig, *Sus barbatus*, in Sabah, Borneo."

Following a number of failed attempts, a 65–70kg female adult bearded pig was successfully captured and fitted with an adapted GPS collar. Regular GPS fixes and activity data confirmed that the modified collar was a successful fit. Data was gathered for 40 days before the collar was discarded, proving a proof-of-concept for bearded pig collaring.

Otters: Leona Wai, Masters student, UMS

In January, Leona visited Oregon State University (USA) sponsored by the US Embassy and carried out DNA sequencing, eDNA, PCR and QPCR analysis of water samples from the Kinabatangan River to identify the presence of otter species.

End of March, early April, Leona attended an otter ecology course at Wild Otter field base in Chorao Island, Goa, India.

Contributing to the Global Otter Conservation Strategy Plan for Asian small-clawed otters, Leona also worked with TRAFFIC Malaysia regarding the otter trade in Malaysia.

Sunda pangolin: Elisa Panjang, PhD student, Cardiff University, UK

Project Title: "How the Sunda pangolin is adapting to the fragmented and degraded landscape of the Lower Kinabatangan Wildlife Sanctuary."

Fieldwork including camera trapping, satellite tagging, sign and nocturnal surveys continued and 2018 saw three pangolins trapped and tagged, providing further vital information regarding the species' behaviour and its preferred habitats and range.

As well as presenting her work widely and supporting the DGFC Education Team, Elisa was also interviewed by KK12FM regarding her pangolin research.



Elisa with Gee of KK12FM.

Reticulated python: Richard Burger, PhD student, Cardiff University, UK.

Project title: "Pythons in the Kinabatangan adapting to a changing landscape."

The primary aim of this project is to investigate the landscape, dietary and parasite ecology of the reticulated python inhabiting the Lower Kinabatangan Wildlife Sanctuary, particularly in relation to their ability to adapt to a fragmented habitat and palm oil plantations.

This year, a total of 32 pythons were captured (of which 8 were recaptured) and of the 24 new individuals four were tagged.

Although still modifying and improving tagging methods, positive capture and sampling numbers indicate that sufficient data can be collected to understand better the movements and habitat use of the pythons in the Lower Kinabatangan Wildlife Sanctuary.

Small carnivores: Meaghan Evans, PhD student, Cardiff University, UK.

Project title: "Small carnivore ecology within the anthropogenically-degraded Kinabatangan landuse."

This project continues to collect data through the capture, collaring and tracking of Malay civets and common palm civets to record their preferred habitats and range. This year began with the capture of a female Malay civet and a complete sampling was undertaken. Although one civet, Guntur, dropped its collar, tracking of Raya, a common palm civet, continues.

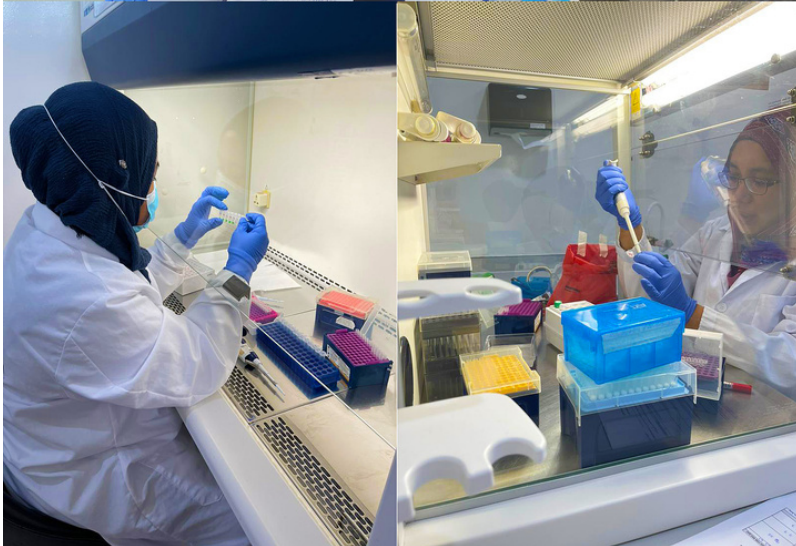
A preliminary study was also launched this year to assess the level of heavy metals ingested by native civets, undertaken in partnership with researchers from the School of Chemistry, Cardiff University.

SABAH WILDLIFE HEALTH, GENETIC AND FORENSIC LABORATORY

Established in 2013 by SWD, DGFC and EcoHealth Alliance, DGFC researchers and technical team use the laboratory facilities to provide valuable genetic information collected for various projects as well as to support the work of other government departments and forensic agencies. The main species undergoing genetic investigation this year included: proboscis monkey; green turtle; clouded leopard; bearded pig; porcupine and reticulated python.



Nurhartini and Alwanie working in the laboratory.



SCHOLARLY ACHIEVEMENTS

Graduations & Awards

1. Graduation of Danica Stark: STARK DJ, 2018. Habitat use and movement of proboscis monkeys (*Nasalis larvatus*) in a degraded and human-modified forest landscape. PhD thesis. Cardiff University, UK, 206 pages.
2. Graduation of Andrew Hearn: HEARN AJ, 2018. Assessing the influence of anthropogenic disturbance on sympatric felids on Borneo with special reference to the Sunda clouded leopard. PhD thesis, University of Oxford, UK, 255 pages.
3. Graduation of Rebecca Brown: BROWN RE, 2018. Ecology and behaviour of vectors of *Plasmodium knowlesi* malaria in Sabah, Malaysian Borneo. PhD thesis. University of Glasgow, UK, 183 pages.

PUBLICATIONS

(DGFC PERSONNEL APPEAR IN BOLD)

1. ASNER GP, BRODRICK PG, PHILIPSON C, VAUGHN NR, MARTIN RE, KNAPP DE, HECKLER J, **EVANS L**, JUCKER T, **GOOSSENS B**, **STARK DJ**, REYNOLDS G, ONG R, RENNEBOOG N, KUGAN F, COOMES DA, 2018. Mapping imprints of forest use on carbon stocks to advance ecosystem protection and recovery in Malaysian Borneo. *Biological Conservation* 217: 289-310.
2. **EVANS LJ**, ASNER GP, **GOOSSENS B**, 2018. Protected area management priorities are crucial for the future of Bornean elephants. *Biological Conservation* 221: 365-373.
3. FRIAS L, **STARK DJ**, **SALGADO LYNN M**, NATHAN SKSS, **GOOSSENS B**, OKAMOTO M, MACINTOSH AJJ, 2018. Lurking in the dark: *Cryptic Strongyloides* in a Bornean slow loris. *International Journal for Parasitology: Parasites and Wildlife* 7: 141-146.
4. **GARDNER PC**, **GOOSSENS B**, WERN JGE, KRETZSCHMAR P, BOHM T, VAUGHAN IP, 2018. Spatial and temporal behavioural responses of wild cattle to tropical forest degradation. *PLoS ONE* 13: e0195444.
5. **GUHARAJAN RJ**, ARNOLD T, **BOLONGON G**, **DIBDEN GHJ**, ABRAM N, **MAGGUNA MA**, **TEOH SW**, **GOOSSENS B**, WONG ST, NATHAN SKSS, GARSHELIS DL, 2018. Survival strategies of a frugivore, the sun bear, in a forest-oil palm landscape. *Biodiversity and Conservation* 27: 3657-3677.
6. HAYAKAWA T, NATHAN SKSS, **STARK DJ**, **SALDIVAR DAR**, SIPANGKUI R, **GOOSSENS B**, TUUGA A, CLAUSS M, SAWADA A, FUKUDA S, IMAI H, MATSUDA IJ, 2018. Diverse forests are a reservoir for abundant forestomach microbiome in a free-ranging primate, the proboscis monkeys. *Environmental Microbiology Reports* 10(6): 655-662.
7. HEARN AJ, CUSHMAN SA, **GOOSSENS B**, MACDONALD E, ROSS J, HUNTER L, ABRAM NK, MACDONALD DW, 2018. Optimizing landscape connectivity and evaluating scenarios of landscape change for Sunda clouded leopards in a human-dominated landscape. *Biological Conservation* 222: 232-240.

8. HEARN AL CUSHMAN SA, ROSS J, **GOOSSENS B**, HUNTER LTB, MACDONALD DW, 2018, Spatio-temporal ecology of sympatric felids on Borneo. Evidence for resource partitioning *PLoS ONE* 13(7): e0200828
9. HORTON AJ, LAZARUS ED, HALES TC, CONSTANTINE JA, BRUFORD MW, **GOOSSENS B**, 2018. Can riparian forest buffers increase yields from oil palm plantations? *Earth's Future* 6: 1082-1096.
10. **JOURNEAUX KL, GARDNER PC, LIM HY, WERN JGE, GOOSSENS B**, 2018. Herd demography, sexual segregation and the effects of forest management on Bornean banteng *Bos javanicus lowi* in Sabah, Malaysian Borneo. *Endangered Species Research* 35: 141-157.
11. KLAUS A, STRUBE C, ROPER KM, RADESPIEL U, SCHAARSCHMIDT F, NATHAN S, **GOOSSENS B**, ZIMMERMANN E, 2018. Fecal parasite risk in the endangered proboscis monkey is higher in an anthropogenically managed forest environment compared to a riparian rain forest in Sabah, Borneo. *PLoS ONE* 13: e0195584.
12. KODA H, MURAI T, TUUGA A, **GOOSSENS B**, NATHAN SKSS, **STARK DJ**, RAMIREZ DAR, SHA JCM, OSMAN I, SIPANGKUI R, SEINO S, MATSUDA I, 2018. Nasalization by *Nasalis larvatus*: Larger noses audiovisually advertise conspecifics in proboscis monkeys. *Science Advances* 4: eaaq0250.
13. **LOVE K, KURZ DJ**, VAUGHAN IP, KE A, **EVANS LJ, GOOSSENS B**, 2018. Bearded pig (*Sus barbatus*) utilisation of a fragmented forest-oil palm landscape in Sabah, Malaysian Borneo. *Wildlife Research* 44(8): 603-612.
14. MATSUDA I, ABRAM NK, **STARK DJ**, SHA JCM, ANCRENAZ M, **GOOSSENS B**, LACKMAN I, TUUGA A, KUBO T, 2018. Population dynamics of proboscis monkeys (*Nasalis larvatus*) over space and time, in the Lower Kinabatangan, Sabah, Borneo, Malaysia. *Oryx* doi: 10.1017/S0030605318000467.
15. MILLER JA, FREUND C, RAMBONNET L, KOETS L, BARTH N, VEN DER LINDEN C, GEML J, SCHILTHUIZEN M, **BURGER R, GOOSSENS B**, 2018. Dispatch from the field II: the mystery of the red and blue *Opadometa* male (*Araneae, Tetragnathidae, Opadometa sarawakensis*). *Biodiversity Data Journal* 6: e24777.

16. **SALGADO LYNN M**, WILLIAM T, TANGANUCH TCHARNCHAI A, JINTAWORN S. THAIPADUNGPANIT J, LEE MH, **JALIUS C**, DASZAK P, **GOOSSENS B**, HUGHES T, BLACKSELL SD, 2018. Spotted fever rickettsiosis in a wildlife researcher in Sabah, Malaysia: a case study. *Tropical Medicine and Infectious Disease* 3: 29.
17. VOIGT M, WICH SA, ANCRENAZ M, MEIJAARD E, ABRAM N, BANES GL, CAMPBELL-SMITH G, D'ARCY LJ, DELGADO RA, ERMAN A, GAVEAU D, **GOOSSENS B**, HEINICKE S, HOUGHTON M, HUSSON SJ, LEIMAN A, LLANO SANCHEZ K, MAKINUDDIN N, MARSHALL A], MEIDIDIT A, MIETTINEN J, MUNDRY R, MUSNANDA, NARDIYONO, NURCAHYO A, ODOM K, PANDA A, PRASETYO D, PRIADJATI A, PURNOMO, RAFIASTANTO RUSSON AE, SANTIKA T, SIHITE J, SPEHAR S, STRUEBIG M, SULBARANROMERO E, TIJU WELLS J, WILSON KA, KUHL HS, 2018. Global demand for natural resources eliminated more than 100,000 Bornean orangutans. *Current Biology* 28: 1-9.
18. **SCRIVEN SA**, GILLESPIE GR, **LAIMIN S**, **GOOSSENS B**, 2018. Edge effects of oil palm plantations on tropical anuran communities in Borneo. *Biological Conservation* 220: 37-49.
19. SHARMA R, **GOOSSENS B**, HELLER R, RASTEIRO R, **OTHMAN N**, BRUFORD MW, CHIKHI L, 2018. Genetic analyses favour an ancient and natural origin of elephants on Borneo. *Scientific Reports* 8: 880.
20. SVENSSON MS, NEKARIS K, BEARDER SK, BETTRIDGE C, BUTYNSKI TM, CHEYNE SM, DAS N, DE JONG YA, LUHRS AM, LUNCZ L, MADDOCK ST, PERKIN A, PIMLEY E, POINDEXTER SA, REINHARDT KD, SPAAN D, **STARK DJ**, STARR CR, NIJMAN V, 2018. Sleep patterns, daytime predation, and the evolution of diurnal sleep site selection in lorisiforms. *American Journal of Physical Anthropology* 166(3): 563-577.
21. **THIRY V**, CLAUSS M, **STARK DJ**, BEUDELS-JAMAR RC, VERCAUTEREN DRUBBEL R, NATHAN SKSS, **GOOSSENS B**, VERCAUTEREN R, 2018. Faecal particle size in free-ranging proboscis monkeys, *Nasalis larvatus*: variation among seasons. *Folia Primatologica* 89: 327-334.

IN THE NEWS

1. New theory on Bornean elephants, 4 newspapers, 18/1/2018.
2. Pangolin sculpture launch at Sandakan airport, 5 newspapers, 14/2/2018.
3. Sabah got it right for orang-utans, 9 newspapers, 20/2/2018.
4. Big nosed proboscis monkeys get the girls, 3 newspapers, 22/2/2018.
5. Bearded pigs adapting in oil palm plantations, 4 newspapers, 28/2/2018.
6. Amphibians in oil palm plantation, 5 newspapers, 12/3/2018.
7. Large forest areas for banteng survival, 5 newspapers, 19/3/2018.
8. Degraded forests are ideal for elephants, 6 newspapers, 21/3/2018.
9. Elusive spider species given a description, 3 newspapers, 05/04/2018.
10. Over logged land affects banteng, 3 newspapers, 16/04/2018.
11. Forest cover crucial for Sunda clouded leopard, 3 newspapers, 23/04/2018.



DGFC team sampling and collaring a Sunda clouded leopard.

12. Environmental NGOs form Coalition, 2 newspapers, 05/05/2018.
13. First GPS collaring brings hope for Borneo's migratory 'jungle hipster', the bearded pig, 3 newspapers, 04/06/2018.
14. Riparian forest buffers means increased plantation yields, 5 newspapers, 20/08/2018.
15. State Action Plan Launch, 7 newspapers, 20-21/09/2018.
16. Landowners answerable to any elephant deaths, 5 newspapers, 04/12/2018.
17. Protecting riparian for proboscis monkey, 3 newspapers, 17/12/2018.

GRANT AWARDS

Ocean Park Conservation Foundation (Hong Kong): 4 years:	1,701,821.00
Columbus Zoo (USA): 1-year grant:	42,270.00
Houston Zoo: 2-year grant:	57,702.00
Houston Zoo: Short project grant:	83,571.00
Houston Zoo: PhD funding:	35,528.00
	Total 1,920,892.00
	(Total = US\$454,433.00)

ACKNOWLEDGEMENT

The Danau Girang Field Centre is a self-funding organisation that without the support of its major stakeholders and contributors, both academically and financially, would not be able to continue to provide local and international students and researchers with the breadth of opportunities to learn and study in Sabah's unique landscape.

DGFC, therefore, wishes to record its sincere thanks to everyone who continues to support the teaching, learning and research undertaken at the Centre and should you wish to learn more about the ways you can help support us, please contact jrobertson@dgfc.life or visit www.dgfc.life to learn more about the facility and how it continues to make such a valuable contribution to the future conservation of our wildlife and their habitat in Sabah, Malaysia.