



The Jungle Times

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Au revoir PTYs!

The time has come again to say goodbye to our fellow PTYs. **Aimee Holborow**, **Katie Journeaux** and **Molly Ellis** left Sabah for the UK in the first half of this month. Aimee arrived in June 2014 with the Cardiff University Borneo field course. For 12 months she has worked under the supervision of Sergio Guerrero Sanchez to complete a project on the monitor lizards. Her main aim was to study intestinal parasites. She wanted to find out if there was a difference between the parasites, in terms of abundance and diversity, of plantation and forest.

Every morning she would bait Sergio's traps with chicken guts, monitor lizards eat carrion so love the foul smell. This is left until the afternoon after the lizards have been enticed into the traps. During the afternoon shift she collected faecal samples. In the evenings she would process the samples in the lab at DG, checking for the total number of parasites and the number of parasite species.



We will miss you
Aimee, mother
of dragons!

Banteng PTYs

Katie Journeaux and **Molly Ellis** were not based at DG but in Lahad Datu where they were part of the Bornean Banteng Programme. Katie arrived with the Cardiff University Bornean marine field course, Molly arrived with the same field course as Aimee. Since then they have had a gruelling year of expeditions to place camera traps in different forest reserves. The camera traps were used to gain ecological information about the elusive species of wild cattle here in Sabah. But their journey in Borneo ended at the beginning of this month and now they have made their way back to the UK. They will now be writing up a report on the project they were doing here in the style of a scientific paper. And Molly, we are glad that the first banteng you saw was in the form of a great cake!



Goodbyes

Rudi Delvaux, our frog and photography expert left us after staying at DG for six months collecting data for his PhD. His PhD was focused towards frog diversity, originally just epiphytic frogs, but the logistics of this seemed difficult, as a result he switched to a comparison of tree frogs in plantation and forest. He used a series of methods including camera traps placed at specific intermediates in the tree, ground surveys and line transects.

He discovered some interesting things and even with looking through thousands of camera trap pictures, he had the time to patiently wait for opportune moments to use his gigantic camera. This was a preliminary year and a year for Rudi to discover which methods work the best and how he can best use his time to discover the frog species diversity in different environments.



Goodbyes

Cynthia Maar (left) and **Tanja Elsebacher** (right) were veterinary students from Austria and Germany respectively. They were here for two months as volunteers and helped with all the DG projects. But, their first love was probably the monitor lizard project. They were a huge help for Sergio and Aimee and both were very good at the monitor lizard methodology.



Sarah Bunel is a French student and she was here for six months studying for her masters degree. Her study species was the orangutans and she was here alongside Lisa Fijn who left last month. Together they were the ape pair and were doing focal follows of orangutans. Sarah was looking at the home ranges of the resident individuals around DG.



Kent Field Course

From the 1st – 14th June, Kent University visited Danau Girang Field Centre for their first field course, consisting of 16 students, two lecturers and two PhD students. The students are keen ecology and conservation students, making this fragmented landscape perfect for their studies, allowing them to experience conservation first hand.

The group participated in a wide range of activities during their time here, making great use of the environment around them and the expertise of their leaders. To gain an insight into bat and bird diversity around the centre, harp nets (bats) and mist nets (birds) were used to capture the animals briefly for the group to study them. This helped them understand more about herbivory and seed dispersal by such organisms. As well as surveying bats and birds in the area, students also surveyed butterflies and mammals, the latter of which were studied using camera traps.



Kent Field Course

As part of a study of decomposition, the students used faecal matter and pitfall traps in the hope of catching termites and dung beetles. Additionally, they investigated carbon plots in both forest and plantation in order to calculate the standing carbon in the forest around DG, determining how much forest is worth standing as opposed to when converted to oil palm crop.



The group also spent one morning investigating a limestone ridge, allowing them to experience a different forest type, and compare it to that which they see around DG. Furthermore, the group also took part in climbing DG's canopy platform, taking to the river for primate surveys and experiencing night walks around the centre.

As part of their undergraduate degree and in response to their time at Danau Girang, the students will produce a management report and presentation when they are back in Kent.



Miami Field Course

Miami field course is a regular at DG and is an interesting field course. It is split into two groups, with each group doing the same schedule but arriving at different times. The first group arrived on the 18th June and left on the 23rd, the second arrived on the 26th June and left on the 1st July. Each group had different instructors and students. The trip is part of a masters programme offered by Miami University under Project Dragonfly.

Project Dragonfly aims to let educators such as teachers and zoo staff experience real science at field centres around the world. They also hold discussions relevant to modern world science and address how they can better educate pupils about conservation.

Whilst here they took part in all the projects carried out by PhDs, Masters and PTYs. They tagged along with monitor lizard trapping and tracking, finding the daily sleeping site selection of nocturnal primates, primate surveying and crocodile surveying. At the same time they were also collecting data for group projects and discussions. They also did canopy platform and night walks.

DG would like to thank everyone for being so enthusiastic about our work and appreciating what it is that we do here. We look forward to next year.

Miami 1 Photos



- Nocturnal primate tracking



- Species information sheets



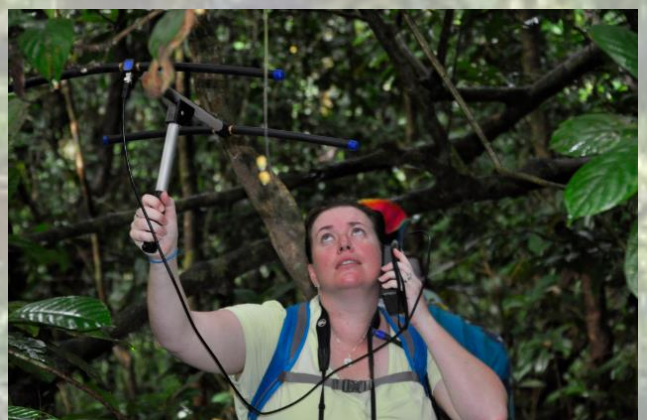
- Searching for orangutans



- Watching orangutans



- Frog survey



- Nocturnal primate tracking

Miami 1 Photos



- Project presentation



- Project presentation



Miami 2 Photos



- Project data collection



- Project data collection



- Crocodile survey



- Orangutan watching



- Visit to Sepilok



- Canopy platform

Miami 2 Photos



- Project presentation



- Project presentation poster



Drones

This month our paper titled **“Use of drone technology as a tool for behavioural research: a case study of crocodilian nesting”** was out in Herpetological Conservation and Biology! We had a little chat with lead author, Luke Evans, about the paper...



1. So Luke, before using drones to find nests, did you consider other methods of finding them?

Historically helicopters have been used in Australia and airboats in Florida, however these are often too expensive for traditional research means. Walked surveys have also been used, both in isolation and conjunction with other methods but it is too time consuming. The study I conducted, however, was designed to utilise burgeoning drone technology, which is fast becoming a staple of the field ecologists “toolbox”.

2. How big is the drone you fly here?

The wingspan is 1.8m, length is 1.2m and it has an operating weight of roughly 3kg.

3. What are the future applications of droning technology?

Behavioural observations, habitat monitoring and real time habitat monitoring are all likely to use droning in the near future.

Drones continued

4. Do you know of other case studies where droning has been successful?

Drones are already being used as an anti-poaching method, rhino monitoring in Africa, monitoring of forest cover/treefall and orang-utan nest counts amongst other things.

5. How many nests did you find with the drone?

A total potential of 24 were found of which 4 were confirmed. Sixteen of the sites flooded before a check could be completed. This is not uncommon with crocs nest in this sort of habitat and sufficient hatchlings seem to have survived this season in spite of this.

6. Are there any limitations to droning?

There are limitations with regards to flight time, with ~1 hour being the maximum flight time. However this is likely to increase with improvements in technology.

A lot of training is required to use a drone of this type with some 20-50 hours needed to become proficient for field use.

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USE OF DRONE TECHNOLOGY AS A TOOL FOR BEHAVIORAL RESEARCH: A CASE STUDY OF CROCODILIAN NESTING

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Tarsier Sampling

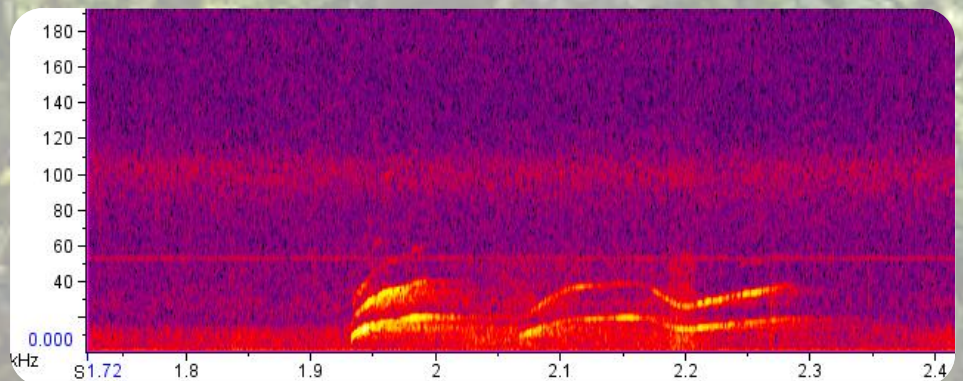
During the Kent field course, Kirsty and Roxy were completing a nocturnal primate census and on one of the trails they captured a tarsier to bring back to the lab to process and potentially attach a collar. It was a 100g male and the morphometric measurements were



really small, this led to the conclusion that it was probably too small and young to collar. Males in the past have been a lot bigger.

It wasn't a futile effort though because as Kent were studying bats during their time here, they had an ultrasonic sound recorder. We used this on the tarsier in the lab and we picked up some really interesting things. The microphone works by switching on and starting to record as soon as it detects anything ultrasonic, so over 20mhz. Luckily this tarsier happened to be a vocal fellow and we had a lot to work with.

This is a sonogram of what we recorded and as you can see the call goes to around 50khz, this is actually a value close to some bats found in the UK who use echolocation. The shape is also interesting and this has major applications for future research on this understudied species.



P.A.W.S.E

DGFC is proud to be part of the Protective Action for Wildlife in Sabah through Education (PAWSE) campaign! The PAWSE campaign is designed to build a network that facilitates connectivity between wildlife protection enforcement agencies, native communities, local schools and Sabah-based wildlife conservation organizations. PAWSE is dedicated to providing innovative education for communities in Sabah that currently participate in illegal wildlife practices, while providing resources for developing sustainable wildlife practices and alternative income opportunities.

The PAWSE campaign and bus tour is a five-year project that will influence the whole of Sabah through on-site environmental education, network building and prevalent multi-media use.

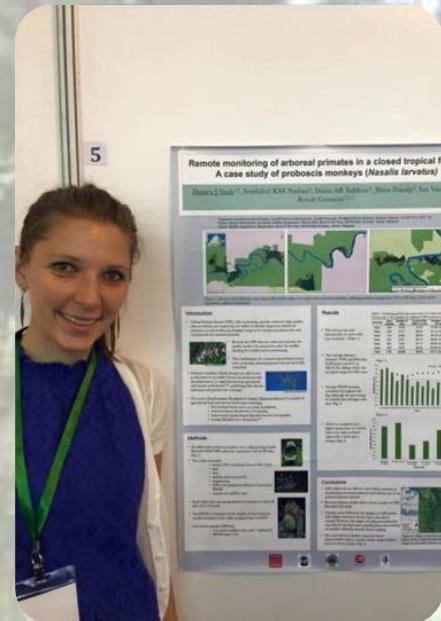


Other News!

Rainforest Conference

Benoit Goossens, Danica Stark, Milena Salgado Lynn and Elisa Panjang from DGFC attended a 3-day conference on Rainforest Ecology, Diversity and Conservation in Borneo.

Benoit gave a presentation to those that attended and Elisa and Danica gave poster presentations about their respective work. Danica's poster was on 'Remote monitoring of arboreal primates in a closed tropical forest: A case study of proboscis monkeys' and Elisa's was on 'Activity and habitat use of Sunda Pangolin'. An old DGFC student, Sarah Scriven also attended to spread the word of the work that we carry out at DGFC.



Other News contd.

Thank you Chester Zoo!

DGFC would like to thank Chester Zoo for allocating a grant of GBP11,000 for our project “Multi-species home range mapping, an aerial approach; fine scale habitat assessment through the use of drone technology”.



First Aid Training

Staff from Sabah Wildlife Health, Genetic and Forensic Laboratory, the Wildlife Health Unit and the MonkeyBar primatology component team were all trained this month in giving First Aid. This course was led by Simon Amos and Joe Wan from Fieldskills at Lok Kawi Wildlife Park.



Conservation Corner:

Common name:

Marbled Cat

Scientific name:*Pardofelis marmorata***IUCN status:**

Endangered

**Description and Ecology:**

The marbled cat possesses an unusual mixture of small and big cat characteristics. Although just 3kg and about the size of a domestic cat, this species superficially resembles the much larger clouded leopard in its broad feet, enlarged canines and strikingly similar, blotched coat pattern. Its coat is more broken and marbled compared to leopards, hence the name. Very little is known about the biology, behaviour and diet of this cat, except what has been observed in captivity. The species is believed to be primarily nocturnal and more arboreal than most other cats. It is found from northern India and Nepal, through south-eastern Asia to Borneo and Sumatra. The marbled cat's specific habitat requirements are poorly known as it has been recorded in a wide range of habitats from sea level up to 3000 metres.

Threats:

- Its major threat is believed to be the widespread destruction of its forest habitat, affecting both the species and its prey base.
- Hunting and sold in the illegal wildlife trade because of its coat.

**Conservation:**

- Hunting of this species is prohibited in most countries.
- On Appendix I of CITES.
- Bred poorly in captivity so need further investigation to improve this.

Match the Raptor!

1



2



3



Grey headed fish eagle

Crested serpent eagle

Brahminy kite

Jungle Fact of the Month!

Crocodilian mothers will sometimes carry their young from the nest to the water in their mouth

Answers: 1-Crested serpent eagle, 2-Grey headed fish eagle, 3- Brahminy kite

Photos of the Month!



Danau Girang Field Centre

*Danau Girang Field Centre was opened in July 2008.
It is located in the Lower Kinabatangan Wildlife Sanctuary,
Sabah, Malaysia.*

*Danau Girang is owned by the Sabah Wildlife Department
and supported by Cardiff University. Its purpose is to further
scientific research with the aim of contributing to long-term
conservation projects in the area, and develop a better
understanding of our environment and the living things we
share it with.*

Danau Girang Field Centre

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