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WET WET WET...

Now we know why they call it the RAINforest. After raining on and off throughout the beginning of January, two days of non-stop downpours between the 15th and 17th caused a lot of deep puddles all across the flat lying grounds around the Danau Girang Field Centre. The gardens outside the main centre were ankle-deep in water, the ox-bow lake had come up so high at points on the red trail that it was un-walkable, the blue trail was

completely un-walkable and the only yellow trail was possible to walk before encountering thigh-high water at around 900m.

Naively, when the water outside the centre had gone down the next day, we thought the worst had passed: little did we know that it was only the beginning. All the surface ground water that was gone had run-off into the Kinabatangan and its surrounding flood plain

from not only Danau Girang but miles of land upriver after the soil reached saturation point. As the surging mass of water in the Kinabatangan slowly began to rise and the banks slowly began to disappear, the Zurich field course of 21 people timed their arrival. The boats dropped them off on the grassy banks next to the jetty, as the usual drop off point was unreachable, and from their arrival on the 18th onwards: the floods only got worse.





Above: Outside the studio, totally submerged, with a current strong enough to float along! Below: Along the main path, Budin's rope rail in an area of particularly strong current!





The main building was completely surrounded by the muddy Kinabatangan water...



The old wooden jetty that was still standing after the recent renovations was soon swept away in the formidable current; water began to spread across to higher ground meaning that the only accessible forest trail, (the yellow trail) was cut off completely. By the 22nd, the land surrounding the field centre looked more like a lake with a few trees growing out of it than a forest with a few puddles. Water became waist high

in places along the path, flowing so quickly that it was necessary to install a hand rail to prevent walkers being swept away. Talks of crocodiles, water snakes, horror movies, cabin fever and food rations began to come into conversation as the field course and staff at DGFC jokingly prepared for becoming stranded on the island that was now the field centre. The animals were also suffering from the water load, as many

were seen clinging to the last dry branches protruding from the water, or trying to make a break for it by swimming through the floods to higher ground. It looked at the time like DGFC would have to be the Noah's Ark of the Kinabatangan to prevent all but the strongest of animals (and humans) from being swept away in what has turned out to be the greatest flood DGFC has ever experienced.



Clockwise from top left: Coming off the oxbow lake by boat; using the rope rail at night; Benoit and Lounes by the burst river; a boat parked outside the main building!; and flooding outside the studio

The Swiss drop in for a Swim



The first field course of 2010 picked a very interesting time to visit DGFC: right in the middle of the worst floods in sixteen years. The primatologists from Zurich, Switzerland, spent five nights in the jungle, which unfortunately was cut short, as the floods meant that it was no longer safe for them to hang around. The group consisted of people of different ages and primate-based backgrounds, from undergraduate students with a general interest to specialists in the field of primatology. The

field course, spearheaded by top orang-utan primatologist Carel Van Schaik, enjoyed making the most of their stay despite the majority of the area surrounding DGFC being underwater. They got more than truly stuck in on forest walks, boat cruises and night walks along the increasingly flooded path, with more wildlife sightings in the five days they spent here than most people would see in a month! The primatologists were delighted at the number of primates around, from orang-utans and proboscis

monkeys to macaques and silver-leaf langurs! As the river was too dangerous to take them on their planned trip to Sukau to visit the field centre there and orang-utan specialist Marc Ancrenaz, DGCF brought him to them, and the group enjoyed a presentation given by Marc on his KOCP (Kinabatangan Orang-utan Conservation Project), and what the future may hold for orang-utan conservation in the Kinabatangan. All in all the group were more than happy with their visit.

"A wonderful camp in a wonderful forest!" – Caroline Scloppli, Uni. Of Zurich.

"Definitely worth a longer stay if you are into orang-utans, proboscis, leopard cats, crested firebacks, tangalungs etc – and who isn't?" - Carel Van Schaik.

"A haven for all biologists!" – Maja Greminger, Uni. Of Zurich.

Monkey See Monkey Do –

An Interview with Carel van Schaik

The *Jungle Times* was lucky enough to grab an interview with Dutch primatologist Carel Van Schaik this month, Carel is the professor and director of the Anthropological Institute and Museum at the University of Zurich, and the man who wrote the book on orang-utan behavioural studies (quite a few books as it happens). These include the first documentation of tool use by orang-utans in *Among Orang-utans: Red Apes and the Rise of Human Culture*. so when it came to interviewing him we both felt a tad nervous, but luckily Carel is one of the more gregarious primates.



So I have to be honest, I didn't actually know who you were when Benoit told us you were coming, but once I Googled you I realised that you have written pretty much all the literature on orang-utan behaviour, what was the inspiration to start work with orang-utans?

I didn't want to do that at all, it just happened! We wanted to study Macaques. Maria (Carel's wife) had done a project on Macaque behaviour, and then somebody was working on Orang-utans in Sumatra and said "Hey, we have the same species that you are working on in the lab at our field site, nobody's looking at them, don't you want to do some comparisons?" and we thought that was a very good idea.

After a while we decided to look at mother-infant behaviour in Orang-utans and found a very interesting system. At a research station in Ketambe we had a mother and an infant, plus an older orphaned animal which was "adopted" by this female. In the wild this wouldn't normally happen, but apparently here it did – and so we saw a very interesting weaning conflict with that older male instead

of with her own little infant.

I always wanted to know more about Orang-utans, but I felt that the area in Ketambe was too small to really figure out what their social system was like. I was hoping for a site in the middle of a big population and after two years travelling, we ended up at Suaq, the coastal swamp which we sort of found by accident – who goes to a swamp and says "Oh yes this is where I'd like to work! Yes! I've got fungus all over me I love it!" so that was pure accident. But then we realised it had incredibly high densities and it was big, so, this was the place. I naively thought "high densities – good, there are probably small ranges so I can figure out what their whole social system's like". It turns out that was dramatically wrong, the highest density was also associated with the biggest home ranges. So we still didn't quite solve all those problems that we wanted to solve, but we found some other things that were exciting like the tool use, so we decided to go in that direction, and now we are still working on the social organisation issues.



What project is it that you are working on right now?

Right now we have a bunch of projects going, but one is comparing the social organisation between Sumatrans and Borneans, (orang-utans). We are interested in the technology-culture connection, but there's not too much we can do on that in Borneo because individuals are not networked enough to see many interesting behaviours. The big project that I'm setting up is comparing Sumatrans and Borneans in terms of skill sets: their repertoire of learnt skills on one hand; and the opportunity to socialise on the other hand. We think that a lot of what these animals do as adults they learned as youngsters socially rather than independently, which we think causes big differences in skill sets between Sumatrans and Borneans, because the Sumatrans have many more opportunities to learn from others. The Sumatrans are much more gregarious, they are also really tolerant – but – we assume that might have consequences, for example – are Sumatrans more innovative themselves? Does that somehow make them more inquisitive than Borneans? Our first field data suggests that, so we want to look at that in more detail. The other question is - does that make them more intelligent? So we want to do some intelligence tests in the field.

How would you go about doing intelligence tests in the field?

We have platforms where they would have to

find food, first it's just something that they can pick up - initially it is a test of response to novelty, how do they respond to novel things in their area? Then it gradually turns into little puzzles for them mainly based on food, like so many of these things, because what else do you do to keep their attention? So then the null hypothesis is that the guys in Suaq are smarter than the guys in Tuanan, which is the Bornean site. That's a big question. However, you might ask "why are you interested in this?" and it is because we would like to show that the cultural intelligence hypothesis can be generalised by asking whether it's animals which have bigger brains that are more intelligent or animals that had more opportunities for social learning and so were more socially networked? In the end the cultural species are going to be the intelligent species.

So, the more isolated a population is from a similar kind the less they will learn?

Or individuals, it works on both levels, individuals that are isolated are not going to develop too many intelligent skills simply because most of what you can learn efficiently you can learn from others. It is the same as humans, but nobody thought it would work outside humans. The same thing is also true for populations: if you have a nicely networked, but small population, closed to the outside world: it's going to get stuck at a particular level. If you had that same population networked with other such populations, you can get diffusion of ideas coming in, so you get much larger repertoires. We are also going to do the parallel studies in captivity where the expectation is that if you have the opportunities for social learning then in the end the Sumatrans and Borneans should be the same in captivity as we try to offer the same kind of environment in captivity for both. If we do the same kinds of test there then we shouldn't see any difference, and if we do them in the wild we should see the difference.

Has your work ever taken you into a really dangerous situation?

See that's what people always think, that we field people are some kind of Indiana Jones, but we're not, we're very conservative people, so the most dangerous situation is when you go on the bus or on the boat with people you don't know. We don't take any risks, we're not crazy people. You have to be careful: the craziest things we do is cross rivers over slippery trees – I don't wrestle with crocodiles.

I suppose you'd know how to deal with facing an angry flanged male orang-utan? What are you supposed to do?

What are you supposed to do in theory? or in practise? In theory you look the other way and just ignore him, pretend that you're not even slightly anxious about the fact that he might hit you: in practise, one tends to walk away. But not everybody does that, I know some people – my wife for instance, who would not walk away, she just stays there and looks the other way and then they stop - they don't even start. I've never been chased either, because I keep my distance and look the other way.

It's great that you guys have been able to see so many here whilst you've been visiting Danau Girang,

Yeah the flanged male is a darling, he's not very aggressive at all. Although we never really know what would happen if we made contact, would they bite? Would they hit? I have no idea.

But then you don't really want to find out...

Exactly.

This is your first visit to DG, what do you think?

It's a wonderful place, it's lovely, very different to other places in Borneo, it looks very productive to me, it has a high density of all kinds of mammals, there's a good orang-utan density.

Even higher at the moment after everything has been pushed into the middle because of the floods?

Sure, but at least all these species are there, you can tell, and also if I look at the forest – and maybe this is the deep fruiting season, I don't know – but it's really good in terms of fruits available so if I were an orang-utan here I would be pretty happy.

So after what you've seen while you've been walking around do you think there's any possibility of a long term collaboration between students of yours coming here to work at Danau Girang?

Of course, it's a great place, but as always there are a few constraints: money and warm bodies, do we have enough students who want to come here? We have two other sites that we're operating – but then the good thing here is that I don't have to worry about operating a site, which is really *really* nice! If one can set up a decent trail system that covers 500 ha or so, (because we assume that orang-utan ranges are at least a few hundred ha) then I think that this is a really good place. The fact that you can't work here for two months a year because the site is flooded – well every site has its problems, this is something that we will very strongly consider because this is a wonderful place to work. I can't really say this, but our stations are ten times more primitive than this, so if it gets known that we also work at this place, and that it's an option for our students, then I'll suspect they will all want to come here, so you can't tell anyone! Keep it a secret. Just for the Cardiff students.

Carel disappearing off into the forest at DGFC...



Messing About on the River...

Because of the unusually high floods this month Benoit was able to take students and professors alike on boat cruises winding through the trees of the forest surrounding the Kinabatangan River to the ox-bow lake. This was a treat for all with amazing sunsets, wildlife sightings and the spectacular view of the inside of the oxbow lake – something we don't often get to see!



If You Go Down to the Woods Today *You're Sure of a Big Surprise...*



Obviously the Zurich field course were raring to go and find some primates when they arrived at DGFC, and set off with the help of the PTY students (not that most of them needed it with their rainforest experience) on some forest wanderings. But the trails were all met with a watery dead-end, each time the groups explored a little further, going a little deeper and getting a little more soaked. It was only when the shortest of the groups were up to their chins in jungle water that they decided to turn back! Luckily no one suffered any serious bites or parasites other than the odd leech or two, and thanks to the floods driving all the animals inwards the group were lucky enough to see 5 orang-utans in one day as well as many other creatures, especially on their night time wanderings. PTY student Jenny had her first leopard cat sighting, just sitting in a tree looking very unimpressed at being stuck there due to flooding. 4 types of civet, several different snakes, mouse deer and Malay badgers were also sighted – every cloud has a silver lining!

Top: The other side of the oxbow lake! Middle: Waist deep in the chilly flood water. Bottom: Guests using Budin's handrail.

PHOTO ALBUM: Never Mind Noah's Ark.... This is Benoit's Ark!!!

You might think the extreme flooding would mean a lack of animals..
But when the centre holds the only dry land, they flock in two by two
for some shelter!



Species of Interest: Salt Water Crocodile *Crocodylus porosus*



Appearance: The largest of this monster crocodile was found to be 7.3m long - we have seen a 5m one on the banks of the Kinabatangan and it was big enough! They have a long, heavy snout with a pair of ridges running from the head to the centre of the snout and oval shaped scales on the back. Juveniles are brighter than adults with black spots on a pale yellow/grey background.

Distribution: East India, Bangladesh, Sri Lanka, Myanmar, Thailand, Malay Peninsula, South Pacific Islands, Borneo and Australia.

Behaviour: Being reptiles, the Salt Water Crocodile is not dependent on a watery environment, because the eggs have evolved to have a hard protective outer shell, and the embryos develop within a protective membrane. The fact they can survive on land makes them all the more formidable as they are more than capable of eating humans. The natives of Borneo fear them more than any other animal. Their main hunting and breeding grounds are estuaries but they also live in lakes such as the Danau Girang and rivers such as the Kinabatangan. Budin has seen *eleven* in one trip from Danau Girang to Batu Puteh before now! They are highly territorial and aggressively defend areas of river. Females lay around 60-80 eggs in decaying vegetation, the sex of the hatchlings is decided by temperature dependent sex determination.

Local Legends: The Terrunggari (White Crocodile) is a legend from the orang-sungei about an enormous crocodile in the Kinabatangan named Terrunggari who took one of the village children to the mouth of the Kinabatangan to watch a duel between Terrunggari and another massive croc named Berlintang. If Terrunggari won the duel, then red blood would flow in the river, and crocodiles would live in peace with man. If Berlintang won the fight then white blood would flow in the river and all the crocodiles from the sea would attack the village. Terrunggari won, and the river people were safe. Unfortunately this legend didn't turn out to be true as there have been many crocodile related deaths in and around the Kinabatangan.

The Sabah Wildlife Department, the IUCN-SSC crocodile specialist group, and University Malaysia Sabah will organise an international workshop on human-crocodile conflict from 9th-11th June in Kota Kinabalu.

It's all in the Genes: Lounès Chikhi

Lounès is a researcher at the French National Centre for Scientific Research (CNRS) in Toulouse, France. He is also attached to the Instituto Gulbenkian de Ciencia in Lisbon, Portugal.

So how are you enjoying your stay at Danau Girang so far? How does it compare to your visit last year?

It's really nice, it's just a shame I don't have as much time as I would like to go around (because of work)!

You've known Benoit for quite some time now, how did it come about that you started work with him?

I've known Benoit since 1998, we were both working with Mike Bruford (professor at Cardiff Uni) who was the head of the genetics group at the Institute of Zoology at the time, and Benoit was also in London. I was offered the opportunity to work on the conservation genetics of cattle breeds, with mostly sheep. There was a project around that time on orang-utans in Sumatra with, so I applied but Benoit was selected: they were right, he was the best person for the job. It was in Sumatra, so at the time he contacted Marc Ancrenaz and his wife Isabelle who were already running the KOCP. I came here a couple of times to collaborate with Benoit on data analysis of the orang-utan genetics which was all from faecal material that Benoit had collected. At the moment myself and Benoit are working on an orang-utan and elephant project funded by the Portuguese Foundation for Science and Technology. It was a good occasion (for the annual meeting) to visit DGFC now because there was Carel (Van Schaik) and Michael Krutzen from Switzerland who work on orang-utan genomics and population genetics.

We then gave Lounès a series of 'would-you-rather' questions which turned up some interesting answers...

Would you rather have ants in your pants, or a snake up your trousers?

Well ants in your pants rhymes, it's like cockney rhyming slang, so can I have a snake up my... s.... Shirt? I think I'd rather have a snake, I like snakes. I'd like to have a snake in my trousers... without any double meaning... **(said with a cheeky grin)**

Would you rather eat a bowl full of worms, or a plate full of cockroaches?

(Lounes squirms and makes a face like he's eaten a sour lemon)

Oh... I don't know... cockroaches? **(long pause)** No, I think worms.

(makes more squirming faces as he imagines eating worms)

I think I've seen people eat worms... never seen cockroaches... I think I'd go for... yack! Worms!

Would you rather wake up in the morning to a bed of leeches or a bed of spiders?

(squirms considerably and screws up his face in disgust)

I don't know... I guess a bed full of leeches? Eaurgh... leeches... But thank you for the choice!

We told Lounes he was welcome, and that we would see what he would wake up to the next morning...



HOW TO: Survive a Flood...

Over the last week, we have become adept at navigating extreme flooding conditions in DGFC! To begin with, the floods were only on the trails, so the simple solution was to avoid the trails.. However then a field course arrived, and were after an adventure. So they were expertly guided around the jungle, and here are a few of the best tips to survive..

1. When walking through floods, carry your bag on your head to prevent it getting wet...
2. Wellies are the footwear of choice. Bare feet are a close second, but that leaves you liable to standing on scorpions –as Jenny found out.
3. In areas of strong current, have Budin fix up one of his rope hand rails – he’s a DIY machine! (You could also consider a life jacket as daily attire, beautifully modelled by Budin in this picture)
4. Consider using a boat to get around to avoid the risk of hungry crocodiles..
5. If water rises for days on end leaving no ground to be seen...

EVACUATE!



Taxi to the Studio please..



One evening we called a taxi, Budin, to transport us to the studio via boat... But it was too shallow and before long we were towing the boat. However, the next day the water had risen so high the boat became a taxi to ferry the guests from the studio! The same luxury was not offered to the intrepid explorers that are Jenny and Alice..... We had to get wet and walk.

PROJECT EVACUATION!



Come the 23rd of January the flood water was dangerously high. Benoit decided that it wasn't safe for the field course to stay any longer, once sightings of crocodiles and king cobras were noted around the field centre - a king cobra has the power to take down an elephant with just one bite, so us mere humans were better off evacuating to save becoming lunch for the

resident crocodiles— see species of interest to find out just how dangerous wading with crocodiles can be! Boats were driven in from the jetty to the main centre with the help of MESCOT (the first time in the history of DGFC that this has been possible/necessary!) to save the stranded field course and take them to Batu Puteh in search of higher, drier ground. The PTY students and

Ridzwan left the following morning after sleeping in the main building to avoid the increasingly dangerous water. Luckily the floods didn't manage to invade the inside of any of the buildings so no damage was done! DGFC sends best wishes to those less fortunate in these floods, which have caused devastating damage to other lower areas.



Conservation Corner:

The Orang-utan *Pongo pygmaeus*

The orang-utan is one of our closest relatives, after the chimpanzee, which is reflected in their strikingly similar appearance to us humans. This has led to many myths and legends surrounding this 'man of the forest' including beliefs that they were originally men who went to live in the forest and pretended not to be able to speak because they were too lazy to work! Nowadays the orang-utan is a shy elusive creature with wise eyes and a knowing face; a treasure to find in the wild jungles of Southeast Asia; or even a fascinating exhibit at the zoo! It has certainly captured the interest of many an intrepid explorer.

The orang-utan was once widespread throughout East and Southeast Asia, but has seen a dramatic reduction in distribution, it is now only found in areas in Northern Sumatra and Borneo. The population number is believed to have fallen by

50% in the last decade, with less than 50,000 now remaining. These fascinating red apes are well suited to life in the forest, with their strong limbs (a male is 7x as strong as a human!), intelligence, and solitary arboreal lifestyle, but an ever changing environment is threatening their existence.

The orang-utan is currently listed as 'endangered' by the IUCN which means it is **'considered to be facing a very high risk of extinction in the wild'**.

The main threats to the orang-utans existence are

through human activity, such as logging, the conversion of rainforest to palm oil plantation, forest degradation and poaching. Illegal pet trade and hunting for meat are also threats. Some parts of Borneo, mostly lowlands, are covered in palm oil plantations, an environment unsuitable to orang-utans. However, males are sometimes seen wandering through the plantations, possibly in search of new populations – and new females. The fate of these individuals is currently unknown.



Young orang-utan seen stripping the bark in DGFC



Fully-flanged male orang-utan often seen at DGFC!

Habitat fragmentation is also a large problem for orang-utans: isolated populations separated by habitat fragmentation result in lower genetic diversity. Genetic diversity is the total number of genetic characteristics in the makeup of a species. Low genetic diversity is a problem for populations as it causes difficulty in healthy reproduction and an increase of inbreeding. It limits progress in evolution

and natural selection because there is less chance of finding a beneficial gene for i.e. disease resistance. Habitat fragmentation can be caused by a range of factors both human and natural. In areas like the Kinabatangan orang-utan populations can be separated by natural barriers like the mighty Kinabatangan river, preventing dispersal between the forest fragments on either side.

Orangs are not proficient swimmers, so in areas such as the lower Kinabatangan even the smaller tributaries can also act as a barrier, resulting in lots of small isolated populations. Project HUTAN in Sukau has tried to establish orang-utan rope bridges across these rivers – so far plenty of macaques and proboscis monkeys have used them, but no orang-utans as of yet unfortunately!

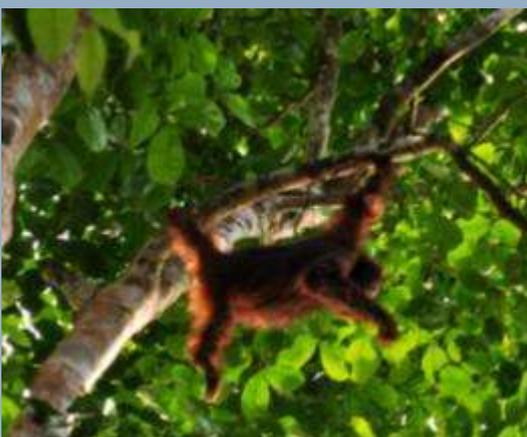
Palm oil development up to the river edge also causes fragmentation, but HUTAN is working with the government to establish a wildlife corridor along the whole of the Kinabatangan by reclaiming 50-100m of rainforest between the riverbank and the plantations to allow populations to roam freely and so increase their genetic diversity. Illegal poaching is a problem due to the slow reproductive rate of an orang-utan. The time between a female giving birth after one baby until the next is usually 7-8 years, although this has been seen as short as 4 years. The offspring will stay with the mother until 5/6 years old. So, due to this slow reproduction rate, if an orang-utan is killed, it takes a long time for it to be

replaced. In Sabah, luckily hunting and eating orang-utans is not a major problem, however if you overlap a map of orang-utan distribution throughout Borneo with a map of where orang-utan hunting is, or once was common, there is a very definite relationship.

However, there is hope for this magnificent ape. It is not too late to save our red man-of-the-forest!

In forests that are sustainably logged, orang-utan populations have been shown to remain relatively constant, which shows that logging and healthy orang-utan populations can go hand in hand, as long as the logging is correctly managed. Eco-tourism is a

positive step in orang-utan conservation with eager tourists flocking to areas like the Kinabatangan to catch a glimpse of the elusive primate. Centres such as the Sepilok orang-utan sanctuary act as both a successful rehabilitation centre and a tourist attraction to help raise awareness (and tourism revenue). Local people are beginning to realise the importance of protecting their red ape because of the amount of tourism, and therefore money, it brings. For the first time ever in Sabah, last year tourism revenue was higher than logging revenue, and with the orang-utan drawing so many naturalists to the area, this is sure to be a positive step towards a greater conservation effort.



In Other News:

New Staff - The New Year brought in some new staff to DGFC, who are all settling in just fine. We hope the cooks stay forever because the food is delicious! They have also brought their cute kids Angun and Ridzwan, who seem intent on stopping the PTY students working, by making them draw endless AYAM (chickens)!

Every cloud has a silver lining: the evacuation of everyone from DGFC allowed the PTY students to get their scuba on in Semporna! Alice completed her open water course, so is now unleashed on the underwater world. And Jenny, already qualified, dived at the famous Sipadan island with sharks and turtles galore! They also spent some quality time relaxing on the beach.. What a shame we had to evacuate hey....?!



Did they Really Say That..!?!?

'I wish my nose would go away...' – Jenny

'Wales is a separate country to England right?' – Alice, who studies at cardiff uni...

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.*

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