



# Tropical Ecology Assessment & Monitoring Network Newsletter

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## Up Where We Belong

by Christine Fletcher



Christine Fletcher, the author, TEAM site Manager for Pasoh, Malaysia—high up in the climate tower.

I've done many things to get over my fear of heights —

from parasailing, hand-gliding, rock climbing, to even crazily jumping off a 20 m cliff into the open sea out of a dare — but it did not prepare me for this.

One of the main requirements of the TEAM climate protocol for the station site is that it is situated in a guarded clearing so as to avoid bias in readings collected by the sensors. The first thought that came to my mind was that there is no such thing as a 'natural' clearing in a tropical

rainforest site like Pasoh. Even gaps caused by fallen trees are quickly overgrown by pioneer species within months. And because it is a forest reserve, we are not allowed to make any clearings. There was only one option left—one which I was trying to avoid due to my fear of heights—to set up the sensors on an existing climate tower 52 m high. Wait...what? Did you say 52 m high? Oh boy...

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## Elephants vs. camera traps in Korup by Boekee Kelly and Saingee Moses

The first camera trapping deployment in Korup National Park, Cameroon, started off last December. This month the photos of the first 30 camera trap locations were retrieved. All cameras were found at their initial location but one of the cameras was discovered in a poor condition. The field crew found several elephant signs around the site and initially thought that an elephant had

broken the camera while rubbing against a tree. Fortunately the memory card was safely recovered from what was left of the camera. The photos clearly show what had actually happened to the camera. An entire herd of African elephants was passing by during a period of about 50 minutes. After some time the photos of the site became skewed which is probably caused by an elephant which

pushed the camera. At this time the camera was still functioning until the point where the photos show an elephant leg kicking against the camera. The last photo shows the bottom of an elephant foot before the camera turned off. The field crew was glad to see so many elephants on the photos, they were observed on photos of 3 additional camera traps.

*View from the climate station in Pasoh.*

Built in 1992, a 30m three-tower made of aluminum alloy, connected by a triangular walkway was erected by the National Institute for Environmental Studies (Japan) to facilitate canopy ecological studies (i.e. flowering, insects). The tower was erected over just 10 days roughly 500m from the Pasoh research station.



An additional 22m tower was added onto one of the towers to measure carbon exchanges in the atmosphere and canopy top. At this height, you are well beyond the highest emergent tree, surrounded by an ocean of green canopy below, and the sky above. It fits the bill for the TEAM climate station – but my next worry was how to transport and install the equipment up on the tower.

On a clear Friday morning, five of us marched to the tower carrying a car battery, the huge datalogger casing, solar panel, rain gauge bucket, the UFO-looking temperature and humidity sensor casing and fan, other sensors and a tool bag. We first tried carrying these up the tower using the narrow tower stairs. When it seemed too much of a hassle, we decided to make a pulley, up to the canopy walkway level at 30m. Trust me to choose to do this during the Ramadhan (Muslim fasting) month! After a couple of hours, buckets of sweat and dry throats, we finally got everything up.

Being up on the tower at 50m above ground, you can feel the gushes of wind passing by, at times you feel the tower sway. The motion sickness is made worse when the canopy below you also starts to sway in the wind. Your knees start to shiver, cold sweat rolling down your back, knuckles have gone white to the bone as you reluctantly release your grip on the tower bars to free your hands and start installing the sensors.

It is way past noon, none of us has had anything to eat since before sunrise (5am), we're so tired and hungry that the

height seemed the least of our worries. In the distance we could see rain clouds heading our way as the wind became stronger. Three hours of tinkering with nuts and bolts, the sensors finally installed; the datalogger and battery at platform 8 (roughly at 42m above ground), the solar panel at platform 9, solar radiation on platform 10, and rain gauge and temperature/humidity at the top of the tower on platform 11 (52m above ground level).

Now it's time to connect the wires to the datalogger, connect to the battery and test it. We had tested it a day earlier at the station so it should all run smoothly – right? Wrong. I felt like I was in the movies – a good Samaritan cluelessly trying to diffuse a bomb remotely with her laptop as I hurriedly tested the datalogger and memory card with the rain clouds just inches away. My colleagues giving me a worried look. Downloading data into my laptop and....."Data not found". WHAT!?! The swaying of the tower being pushed around by the strong winds just made it all the more dramatic. A quick check and we found that the datalogger was not properly powered. My colleague secured the connection, we waited another 5 mins of data collection and I tried it again. A slight drizzle had started to fall, splattering tiny drops on my laptop screen. Please let it work this time – I said a little prayer. And *voila* – we've got data! That was a sure sign for us to pack and leave as the dark clouds slowly descended above us.

Back at the station, my knees hadn't stopped shaking yet – and I could already feel an ache in my thigh from running down those tower steps. Mission accomplished – we gave each other a pat on the back, quickly shelving the thought that we'll have to make that journey up that tower every two weeks from now on. But for now, we only have one thing on our minds – to get home in time to break fast with our families.

# Cocha Cashu is for Lovers



*Tapirus terrestris* falling in love in Manu National Park, Peru (left)

*Leopardis pardalis* friends from Manu National Park, Peru (right)

Photos from Patricia Alvarez, site manager of Cocha Cashu in Manu National Park, Peru. Courtesy of Duke University.

Looks like Manu is quite romantic!

## Vandalism in Udzungwa

When in 2009 we set-up TEAM climate station in Udzungwa, one of our concerns was accessibility through the steep mountains and safety of the tower against big mammals (elephants and buffalos). Given that the station was built about 5 km from the Park HQs in an area supposedly well protected against poaching, we hardly thought of things like poaching or theft. But... we were wrong!! And at the end of July 2011, while up there for our monthly data collection, we found out that both solar

panels and the battery had been stolen.

We soon started to think about developing a lock-up mechanism that would prevent vandalism in the future. After consultations with technicians, concerted efforts from fellow employees and quite some time and hard work, we came up with a simple and yet best way of protecting our battery and solar panels.



### The Solar Panel Lock-Up

## The Battery Lock-Up Box







**TROPICAL ECOLOGY**  
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**TEAM delivers multi-scale, real-time understanding of how key elements of Earth's operating system—climate, carbon stocks, biodiversity—are changing, and what this means for people.**

**TEAM is a partnership among Conservation International, the Smithsonian Institution, the Missouri Botanical Garden and the Wildlife Conservation Society.**

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## **Other News**



The Pasoh Vertebrate Team (left to right): Shahfiz (leader), Rauf and Khairul, assisted by aborigines (wearing blue shirts) in the background)

### **Udzungwa registers climate station with the Tanzania Meteorological Agency**

Udzungwa is the first TEAM site to register their climate station with a national meteorological agency. Congrats to the Udzungwa team! Who will be next?

### **News from the Coordinating Unit:**

TEAM Director, Sandy Andelman is pleased to announce a generous new grant from the Bill & Melinda Gates Foundation to create an Africa Monitoring System (AMS). Based on work done during a pilot project in Tanzania, the AMS will expand data collec-

tion on agriculture and ecosystem services to Ghana and Ethiopia, as well as continue the work in Tanzania.

The coordinating unit was sad to see Jan Dempewolf leave, but we wish him the best of luck in his new role at the University of Maryland.

We also launched ECO Classroom—an exciting professional development opportunity for science teachers in the U.S. to travel to the TEAM site in Costa Rica to learn about TEAM protocols and tropical ecology—lessons they can bring back to their students at home.

**Many thanks to Badru Mugerwa (aka 'the Impenetrable Forest Guy') for collecting all the stories and photos in this issue!**