

CHASING RHINOS WITH A VISOR

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Stories by TAN KIT HOONG

To go where few Tech reporters have gone. That's how I ended up walking in the rain, climbing up slippery mud banks and picking off leeches from various parts of my body. This is a story of how I took probably the most taxing assignment of my life, so far.

The assignment: follow a bunch of researchers and volunteers into the Tabin Wildlife Reserve in Sabah, to see how they are making use of hand-helds to document and track the critically endangered Sumatran Rhinoceros.

Okay, I thought, it's pretty safe to assume that there's a bit of camping and hiking involved – no problem. I'm a pretty out-doorsy guy, right? Furthermore, I've been building up my stamina by jogging for some six months now just to get ready for this trip.

Boy, was I wrong. I should have been worried when my brother (who was also going for the trip) called up and asked, "Remember to bring a bottle of talcum powder – it's really useful when you haven't had a chance to take a bath for a few days. At least the powder will make you feel less sticky."

Oooo-Kay. No baths for extended periods. Check.

I got really worried when he called again the next day and asked me, "Do you have medical insurance and evacuation?"

"Evacuation? What's that?" I asked, with a feeling that I wasn't going to like the answer.

"An evacuation option in medical insurance is so that we can pay the helicopter to fly you out of the jungle if you get trampled by elephants or bitten by a snake."

Ooooo-kay. Trampled by disgruntled elephants and/or bitten by snakes. Check.

The point of the exercise – to do a so-called "linear transect", i.e. walk in as straight a line as possible and as far as possible, following one of the points of the compass, noting down everything we see along this path, using specially customized Handspring Visors with GPS units.

Sounds like a walk in the park? Not really – to keep this straight line course means that the team and I would have to trek/climb and otherwise brave any and all obstacles in our way, be it thick brush, rivers or mountains.

The daily routine: walk, walk, walk. Set up camp. Cook, eat and then collapse into bed by 8 or 9 p.m. We brought a lot of rice and a typical dinner would be rice, fern shoots and either fresh-caught fish or fried "ikan bilis".



With rain almost every day (after all, it IS a "rainforest") and humidity at nearly 100%, we walked in wet clothes most of the time and as you can imagine, everyone started to smell a little off by the third day. Baths are a luxury and drinking water was obtained from streams that we passed by. And if you need to go to toilet... well, you've got a little spade and a roll of toilet paper.

Although we had minor encounters with elephants, the biggest irritation were the leeches – I would typically find five or more of these bloodsucking worms all over my



body at any one time, usually on my stomach area and arms. Ugggh.

Would I do it again? It was tough, but heck, sure, I really would do it again if given the chance!

GOING HIGH TECH IN THE FOREST

When you're hanging on for dear life to a nearly vertical slope slippery with mud and a backpack that weighs in excess of 15kg, you tend to think of rather strange things. For me, my mind wandered to the Indian curry meal I was going to have when I got home ... IF I got home, that is.

So how did I end up here, braving

leeches, sand flies, horseflies, skin infections, blisters and trekking more than 22km on this day (and more than 60 km in total) in the jungles of Sabah?

Believe it or not I was on assignment for Tech Plus, chasing the elusive Sumatran Rhino, a critically endangered animal of which only 300 are believed to be left in the world.

In fact, this rather low-tech pursuit on foot has been the test bed for some rather high-tech equipment. You see, conservationists and rangers here have been using the Handspring Visors together with Magellan GPS (Global Positioning System) Springboard units to aid in the conservation of these Rhinos.

The place is Tabin, a 1,200 sq km wildlife reserve (twice the size of Singapore) nestled rather strangely, smack in the middle of an oil palm plantation – how's that for striking a balance?

So here it is folks, and don't say we don't go to the ends of the earth for you!

CALL FOR CONSERVATION

The Sumatran Rhinoceros (*Dicerorhinus sumatrensis*) is smaller than the more well-known African Rhino, but unlike its cousins, the Sumatran Rhino lives in thick, near impenetrable rainforest, and is rarely seen.

Thick forest also makes it extremely

difficult for researchers to get a reliable estimate on the actual numbers of these animals in the wild, though 300 in the world is a fair guess.

The sub-species found in Tabin, *Dicerorhinus sumatrensis harrissoni*, is unique to Sabah – the main difference is that it is smaller than the regular Sumatran Rhino. Only 30 of these sub-species are believed to be left in the wild.

At the current rate that the Sumatran Rhino is disappearing, it is estimated that unless something is done, these creatures will be extinct in 10 years.

Zoos with specimens of these animals have been trying captive breeding programmes since the late 1800s and so far only one Sumatran Rhino has ever been successfully born, in the Cincinnati zoo in September 2001.

"The main problems with breeding Sumatran Rhinos in captivity is that so little is known about the breeding cycle in their natural habitat – for example, eating certain leaves could help maintain the female's pregnancy and ability to carry to full term. On top of that, their reproductive window – the time that the female is in heat – is very small", says Tan Kit Sun, conservation curator for the Singapore Zoo.

With captive breeding being difficult, most conservationists believe that the best course of action to ensure the survival of the Sumatran Rhino is to preserve the natural habitat that the animal lives in.

(From my diary: I found out today that elephants are called "Datuk")

and "Nenek" — Malay for grandpa and grandma – by the rangers, who believe that the animals can understand the word "gajah" – Malay for elephant – and know if you're talking about them.)

HURDLES TO CROSS

To initiate any serious effort at conservation, the number of animals and its habits in the wild need to be correctly catalogued and statistical information obtained. This information is important to find out if there is a viable population of animals and if so what measures can be taken to ensure that they flourish.

Traditionally, this is done by sheer legwork – trekking into the forest, trying to catch sightings of the animals themselves or, more likely, combing the ground for traces of footprints and dung. Information obtained will then be recorded into little logbooks, noting down the time and place and other relevant data. These days, GPS units are also used to help researchers accurately record the location of tracks, giving them a clearer idea of the movements and habits of the animals in the wild. This information is then brought back to headquarters and then manually entered into the PC to collate and analyse the data.

Enter Dr. Annelisa Kilbourn, one of the main people involved in the Sumatran Rhino conservation project in the Tabin Wildlife Reserve. Since June 2000, Kilbourn, who holds a doctorate in veterinary medicine, has been a resident in a small corner of Tabin, working to obtain more data on the rhinos in their natural habitat to aid in their conservation.

Kilbourn, a tall woman whose

serious-looking face hides a wicked sense of humour and a penchant for dancing, was instrumental in introducing the use of the Handspring Visors and the CyberTracker software in Tabin.

"The challenges of the habitat in Tabin is that you've got a lot of people working with you who have different skill levels and the vegetation is so dense that you're doing a lot of track identification versus actual animal identification", explains Dr. Kilbourn.

The main problem she faced was that most of the local rangers, the ones most familiar with the terrain and the animals, had different levels of IT knowledge, thus ruling out more complicated methods of data collection.

(From my diary: Had a close call with elephants today ... uhh, I mean some Datuks and Neneks. As we trekked, we heard loud trumpeting noises signaling some very upset animals. According to our ranger, Nimrod, it's a herd with babies – not a good group to meet as they are very protective of their young. Luckily, we passed by without incident, but not without some trepidation.)

THE CYBERTRACKER

Though usually called just "The CyberTracker" by the rangers, the system used in Tabin is actually a combination of a number of products, namely the basic Handspring Visor Deluxe handheld computer, a GPS Springboard module from well-known GPS maker, Magellan, and the CyberTracker software (www.CyberTracker.org).

Originally created for tracking

packages, the people who created the CyberTracker software realized that the application could easily be customized for a number of uses, like stock-taking, farming and of course, tracking wildlife.

The software is freely downloadable from the CyberTracker web site or from www.palmgear.com and is free to use for non-profit organizations. Kilbourn came across the software while she was working on a project in Central Africa, where the rangers there were given the PDAs loaded with the software to use in a conservation project.

Dr. Kilbourn and the rangers doing research in Tabin have been using CyberTracker with the Handspring Visors since sometime after April 2001, with the Visors being donated by the Handspring Foundation, who provided the project with 25 units of the hand-helds.

The idea behind the software is very simple – you have an icon-based interface that takes you through a few simple steps. The icons have text labels on them, but even if you can't read, it's pretty easy to figure out how it all works.

For example, if you find Rhino footprints, all you have to do is tap on a little rhino icon and CyberTracker will then present you with another set of icons, letting you choose icons for either actual sighting of the animal, or footprints, or dung and so on.

Having entered that information, you will then be prompted for footprint measurements, if any, and lastly the software will activate the Magellan GPS, taking a GPS reading for the information you just

entered.

The software is versatile enough to allow people who have a higher knowledge of the habitat or vegetation to select a different sequence of icons in CyberTracker and put more written information in at certain points, for example whether it is a primary rainforest or species or plants and all this information is linked to time, day and GPS location.

The CyberTracker software is also simple enough to be customized by the researcher, and in fact, Dr. Kilbourn does most of the customizing herself for the Tabin version even down to drawing the little icons required for the software.

With the information gathered, the Visors are then brought back to base camp and HotSync-ed with a PC. From there, the GPS information and the notes contained in the Handspring Visors will be transferred to the desktop PC component of the CyberTracker system, which will then overlay all the information gathered on a very accurate GPS enabled map of Tabin.

With this information, conservationists can get a graphical representation of the areas covered by their surveys, along with information on where the animals frequent and what their habits are, etc.

(From my diary: Definition of luxury in the jungle – a metre-deep hole with tarpaulin stretched around it for a toilet. Definition of hardship – having to dig your own hole with a little spade!)

NOT OK AT HIGH NOON

"The main problem we've had with

using the CyberTracker in Tabin is that at around 11am to 12 noon, there are not GPS satellites above us and so the Magellan GPS can't get a fix on the location," says Dr. Kilbourn. In that situation, the rangers have to resort to working out the location using a backup GPS unit and then marking it on a map.

The other issue is more of user comfort with the tools and knowing how to problem-solve if there is a problem. "There are times when the rangers come up against a problem which they don't know how to solve and then there is sort of a blank zone when they came to a block and then didn't know what to do, so they figured it was easier not to use it. But I think that they are getting much more comfortable with it, and can even teach each other how to use it", adds Kilbourn. The CyberTrackers are still new, all the researchers at Tabin carry a little notebook around as backup to the information collected with the handhelds.

"We're just at that stage where everybody is more comfortable with the tool and at some point we're going to say, 'from this date on, the data obtained by the CyberTracker will be used for data analysis'. The initial few months of use we were just in the testing phase. But what we have we can already easily query it for indices of animals seen by season, by rainfall, by species or even by the person that collected the data," says Kilbourn.

(From my diary: There are two varieties of pacat – that's Malay for leech – in Tabin – one is the regular small black ones we find in the Peninsular and the other is a green-striped variety which is a least double the size and more persistent. Today, we walked through a place

we would later call "leech alley" for obvious reasons – I came out of there with two squirming on my chest and another three sucking from almost the same spot on my foot, not to mention the three or four I picked off my stomach during the trek.)

THE LINEAR TRANSECT

Of course, using the CyberTracker is how I ended up on that vertical slope, with a team member's foot planted on my right arm as she tried to regain her footing. While the data acquisition has been much simplified, to gather the data still requires good old-fashioned legwork – which still means trekking into the jungle and looking for sightings or signs of the Sumatran Rhino. I said that already, right?

Anyway, there are a few ways to do a systematic survey – one way is to travel in one direction, taking the so-called "path of least resistance". The other way, which is the way that was chosen for this particular survey, is a linear transect (Remember, this involves traveling in as straight a line as possible in one direction, following one of the points of a compass, either North, South, East or West.). The linear transect is certainly not the easiest way (you have to cross any obstacles in your path, with no option to go around them) but it is the most repeatable method, i.e. people can follow and go over your path again in the future and note down any changes over time.

This is where I come in – together with a group of volunteers and rangers and split into four teams, I trekked in the jungle for 11 days, looking for signs of the elusive Sumatran Rhino, using the

CyberTracker all the way.

In the end, the teams managed to gather a lot of information on Sumatran Rhinos in Tabin, along with other wildlife, uncovering tracks and collecting dung samples for later DNA analysis, though no team caught sight of the elusive animals, which was not surprising, because there are estimated to only be 5-10 animals in an area twice the size of Singapore.

In case you're wondering, the team member who had accidentally stepped on my arm, survived. A ranger came over, unhooked her backpack and pulled her up. Strangely, she fell off a log bridge later (and survived yet again), but that is another story for another time.....

(From my diary: Humans are like mobile lunches for the various blood-sucking animals and insects in the forest. I've lost count of the number of horseflies, sand flies and leeches which have bitten me.)

SOS RHINO NEEDS YOUR HELP

SURROUNDED by oil palm plantations, the 1,200-plus sq km Tabin Wildlife Reserve is the home of SOS Rhino Borneo, a non-profit rhino conservation project in Sabah.

The SOS Rhino project grew out of the Rhinoceros Reproduction Programme at the Milwaukee County Zoo by Dr. Nan Schaffer, which was originally started to facilitate the propagation of the rhinoceros in captivity through research.

SOS Rhino Borneo, which is based in the Tabin Wildlife Reserve, is additionally supported by the

Singapore Zoological Gardens, Jabatan Hidupan Liar Sabah (Sabah Wildlife Department) and the World Wildlife Fund Malaysia.

The team currently consists of programme officer Dr. Edwin Bosi, field veterinarian Dr. Annelisa Kilbourn, 12 field assistants as well as various researchers and volunteers.

Among the project's main goals are to protect and expand the population of Sumatran Rhinos in the wild by providing the latest survey technologies and techniques to survey teams.

The project also supports ex-situ breeding and health evaluation of rhinos, specifically in the Sepilok area in Sabah.

If you're interested in supporting SOS Rhino either with manpower or donation of equipment, check out their web site at www.sosrhino.org for details.

KITTING OUT FOR THE JUNGLE

HERE'S a selection of the more low-tech stuff that you need if you're planning an extended trip into the jungle:

Parang

YES the parang or machete is an absolutely essential item in the jungle. We're not talking about one of those tiny daggers or Swiss Army knives but a full 24in blade capable of chopping wood and cutting down small trees.

"Kampung Adidas"

THEY'RE called "Kampung Adidas" because they're cheap copies of Adidas football shoes. These shoes are cheap (typically only about RM5 a pair) but they are excellent because the all rubber construction and studs allow you to walk through mud and on slippery surfaces with little problem. In fact, the Kampung Adidas probably saved my life once or twice

Backpack

A LARGE backpack is a must to carry your camping equipment and food. Since your kit is likely to be something in the region of 15-20 kg, a good backpack with sufficient support is important – the pack must evenly distribute the weight on your shoulders AND on your back, making the load more bearable after a day or two of trekking.

Big garbage bags

ALWAYS useful to waterproof your stuff in nice, thick, high quality garbage bags. Cheap too.





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**Looking
for me?**