

PNG FEATURE – Guy Jowett, WWF-UK.

A repeated sharp knocking sound interrupts the busy chirrups, trills and cackles of a million insects and birds, deep in the steamy, dense rainforest. The disturbance comes not from an exotic, newly-discovered woodpecker, but a machete bearing down on its target.

Mesmerised, I recall some safety advice I was given on arrival in Papua New Guinea: “Forget the aggressive snakes, crocodiles and mosquitoes, just keep away from the women, or you’ll wake up with a bush knife in the back of your head.” This, I like to think, was meant to be funny, but seeing the effect of a dozen expertly delivered strikes reminds me it’s a message not to forget!

In a land once famed for its fearsome head-hunters, it’s a relief to report that nowadays the machete-wielding hunters have found a rather different commodity to prize. Tony, a local from the village of Pukapuki, delivers the final blow, then grins at me and holds aloft his trophy – a rather unimpressive looking chunk of wood.

It’s been splintered from an equally unimposing tree – certainly unremarkable when compared to the towering forest that surrounds us. But there’s nothing insignificant about the potential of the resource in Tony’s hands. Known locally as gaharu – or variously as eaglewood, agarwood and aloeswood – its recent discovery in Papua New Guinea (PNG) was greeted with great excitement.

But with the likes of gold, copper, oil and gas already discovered in PNG, not to mention the vast timber resources, why is this particular commodity considered so important? And what exactly *is* it?

I ask WWF’s sustainable resource use trainer Leo Sunari to explain. He surprises me by wafting the lump of eaglewood under my nose. I soon catch a sweet, woody aroma that emanates from a darker patch in the wood. “It’s that smell which makes it so valuable,” says Leo. “When these trees are injured or infected – maybe by certain insects, maybe by other means, we’re not too sure yet – they produce this dark resin in response.”

The resin’s long-lasting fragrance has made it popular for thousands of years throughout Asia and the Middle East, where it’s used for cultural, religious and medicinal purposes, and as a perfume. Worldwide sources are now dwindling, so its discovery in PNG in 1997 spurred intense harvesting. “They were going crazy,” Leo recalls. “The trees were being chopped down and the roots dug up, because that’s where they thought the infection was most likely to be.”

So far, so destructive. But here’s the sustainable bit: “In PNG, about 97 per cent of the land is owned by locals, so WWF approached them, offering workshops to help them map their land, to predict where the eaglewood trees are and develop ways of managing their resources sustainably,” says Leo. “As part of that work, we’re teaching them how to extract the eaglewood resin without killing the trees. And we’re making sure they know its real value, so they’re not ripped off by traders.”

The UK Government's Darwin Initiative is supporting WWF-UK and WWF Papua New Guinea to establish an Integrated River Basin Management framework for the Sepik River. As well as bringing together local communities, government and other stakeholders to plan how best to manage the River and its catchment, the Darwin Sepik project is helping to establish new Wildlife Management Areas (the main form of Protected Area in PNG) and to set up Eaglewood Management Reserves. This will help to protect them from being handed over as concessions to loggers and mining companies.

All in all, eaglewood could provide a long-term sustainable livelihood for some of the poorest people in the country – which is great news for them, and will also boost the survival prospects of this, the world's third largest remaining rainforest, and all the wonders it contains.

And it certainly is a land of wonders. Alfred Russel Wallace – the Victorian anthropologist and biologist who, along with Charles Darwin, hit upon the theory of natural selection – travelled to the equatorial island of New Guinea in 1858, and described it as “a country which contained more strange and new and beautiful natural objects than any other part of the globe”.

So far, I'd been focusing – all too unsuccessfully – on *avoiding* much of this “strange and beautiful” fauna and flora, as we'd battled for three hours in the heat of the day towards our treasure. Razor-sharp fronds and spiny creepers reached from on high to snare me, and a maze of buttressed tree roots were hell-bent on tripping me up. Sloshing through countless streams resulted in a coating of leeches – but at least I hadn't stirred up any of those aggressive snakes.

Now permitted a short breather, I take in some of the natural wealth for myself. New Guinea has more than its fair share of the stuff, much of it unique to the islands.

A huge butterfly flutters by me, like a massive leaf tumbling gently down, and it strikes me that this is truly a land of giants: the Queen Alexandra birdwing butterfly is the world's largest, with a whopping 30cm wingspan. If lizards are your thing, the longest you'll find anywhere is here – Salvadori's monitor lizard, measuring in at 2.5m. And pigeon fanciers are in for a treat – not only are these the biggest, but they also sport superb crowns of feathers.

Or if you're after weird and wonderful, there's a mammal that lays eggs: the long-beaked echidna (or giant spiny anteater) which, despite its alias, rather prefers juicy earthworms to ants. And PNG's marsupials range from many types of kangaroo that have decided it's better to live up in the trees, to the bronze quoll (or marsupial “cat”), which is the largest marsupial predator here.

Not that the quoll is very big. And it's precisely this lack of large predators that's behind the incredible diversity of birds in New Guinea – 762 species were identified in a recent census. Most famous are its 38 of the world's 42 species of birds of paradise. These extraordinary birds, with their fantastic courtship displays and resplendent plumage, were once considered too magical to be from this planet – it was thought instead that they hovered between heaven and earth.

The heavy swooshing wings of a hornbill above me, invisible through the forest's thick canopy, bring me back to where I am. Precisely where that is, I can't be sure – I now appreciate why so

many places were marked “position approximate” on a weathered old map of PNG I’d seen a few days earlier. But I’m somewhere in the East Sepik province, in the north-west of the country.

After a long day’s hiking, it’s time for a little more of the same before we spend the night in a small shack, open on all sides to the elements. Tony wields his machete once more to construct a quick makeshift bed from a few vast palm leaves. His ease in using what the forest has to offer is a sign of how closely connected these people are with their environment.

It’s a theme I take up with a Pukapuki elder, introduced to me simply as “The Magistrate”, when we return to the village the following day. He’s among a number of locals who have gamely transformed themselves by donning traditional dress for us. The feathers, flowers and shells they wear highlight their close relationship with nature, and their “sing-sing” celebratory dances are often inspired by the movements of birds and bats.

“The forests *are* our lives,” the magistrate tells me. “We rely on them not just for building materials, but also medicines, food and fuel.” Transportation too – Pukapuki, like most villages, is right next to a river. Here it’s the April River, a tributary of the mighty Sepik, one of PNG’s two most important waterways, which snakes 1,100km through the north of the country, and is considered the soul of the country. There are no roads in this region – to get around, they rely on long, thin canoes carved from tall trees.

But the magistrate has noticed the effects of resources being over-harvested during his lifetime: “Now we have to go much further to find good trees for making canoes, or to hunt for wild pigs, when before there were many nearby.” Much of this pressure is down to an escalating population, predicted to double in the next 30 years, upwards of 80 per cent of whom live largely rural, subsistence lifestyles.

The country’s abundant freshwater resources are equally finite, and are beginning to suffer, particularly through over-fishing. After repeated references to the crocodiles in the April River, I’m pretty wary of just how *much* life is hidden below its mud brown surface. However, to cool down after the heat of the day I take a dip in the river. Fallen branches bobbing their way downstream towards me bear an uncanny resemblance to a congregation of crocodiles.

But it’s the crocs that should be worried – PNG is one of very few places where limited crocodile hunting is allowed as another subsistence income generator. WWF is helping to ensure their sustainable management. As part of the process, conservationists become a stunt team: “They have these helicopter surveys,” explains Paul Chatterton, WWF’s conservation manager in PNG. “A researcher will jump into a crocodile’s nest armed with a broom handle to fend them off; then they count the eggs...” It sounds amazing – where do I sign up?

Later on, I sit by a small fire, trying to tuck into some food before the ants get wind of it. Darkness has fallen almost in an instant, giving the insects their cue to beef up the noise to a deafening level. Above it all, I manage a few words with Bernard Sepani, a local who is helping WWF to map the forest resources.

Aged 25, he's a young man with a rather serious demeanour. He's keen to share his thoughts on the aspirations of people in his village. "Our needs are limited – just some money for education and healthcare." We're interrupted by a huge insect buzzing around a lantern; it prompts Bernard to add lanterns and kerosene to the list. He'd also like another water butt to safeguard the village freshwater supply. And, when pressed, dreams of an outboard motor for the dug-out, which would improve transportation to neighbouring village markets.

It's a far cry from the satellite TV and brick-built houses promised by some mining and logging companies in return for rights to their land. "That's a real challenge, trying to convince communities that the sustainable approach is best in the long-term," notes Ted Mamu, WWF's conservation science coordinator in PNG. "People go with the wind – they like the WWF notion, but then loggers come with hard cash, and why wouldn't they go for that instead?"

True enough, so it'll take a fantastic level of patience and understanding from communities if they're going to achieve the sustainable alternative.

But, put another way, WWF is simply trying to formalise a process that's been going on for centuries – people here have always been living in harmony with nature. We're working to ensure there are plans in place that will enable them to continue to do so, despite the huge expected population increase, and pressures of development.

That night, the magistrate's wife gives birth to their third child – a boy. It helps to put things into perspective: when he's Bernard's age, today's new nurseries of eaglewood trees may be mature enough to produce a steady supply of valuable incense, and along with it a strong income that will sustain his people.

In the meantime, there are great hopes for other sources of income – from cash crops to ecotourism, as well as for certified forest management. And, while it's early days yet, the good news is that WWF is already hard at work here, in one of the very few places on Earth where there's still an opportunity to save large areas of wilderness.

Gazing out into the darkness, I soak up the unforgettable sounds of PNG's "strange and new and beautiful" nature, and find myself rooting for this land of wonders and its fabulous potential.

## EXTRAS

### A land of wonders

Papua New Guinea's range of habitats is remarkable – from fabulous coral reefs, mangrove swamps, savannahs, and Asia's largest remaining rainforests, on up to sub-alpine grasslands and topped off with equatorial glaciers on the tallest mountains east of the Himalayas.

PNG forms the eastern half of New Guinea, a big island – roughly seven times the size of the UK – that sits just above the northernmost tip of Australia. Its geographical location is important – being at something of a tectonic crossroads where Australasia, Asia, and the Pacific ocean floor all meet. The geologically recent jostling between these three has created steep mountains and valleys that form great barriers across the country, leaving neighbouring areas cut off from one another, and unique wildlife developing in splendid isolation.

The remarkable array of species, many found only here, put New Guinea among the world's top 10 places for biodiversity.

The impenetrable landscape has had its effect on people, too. The country's multitude of tribes have developed independently and speak nearly 900 different languages.

In the picture

Award-winning Getty Images photographer, Brent Stirton, jumped at the chance to document WWF's work in the forests of New Guinea.

Having just resurfaced from an underwater assignment being circled by great white sharks, and two months in war-torn Iraq, he was more than prepared for conditions in Papua New Guinea. Experiencing the wonders of this landscape, and sharing the passion of WWF's staff to protect it intensified Brent's focus.

“My work means that I witness some extraordinarily challenging things – but the more I see, the more I realise how urgently we need to convey to the world the environmental threats to this fragile planet.”

Boots caption:

The tough conditions proved too much for these hiking boots, but PNG's forests held the ingenious solution. The soles and uppers were lashed back together with flexible plant stems.