

Papua New Guinea's forests are not as pristine as previously thought and if current rates of destruction continue, by 2020 their area will be reduced by half, according to a recent analysis of 30 years' aerial and satellite imagery of the region. Disturbingly, much of the damage appears due to unsustainable practices by local communities, sometimes inside nominally protected areas. **Niall Byrne** reports.

Papua New Guinea (PNG) is one of the world's most forested countries. In 2002, 33 million hectares – 71 per cent – of the country was covered in forests, ranging from rainforest to swamp forest, evergreen forest and mangroves.

Over the last 10 000 years, PNG's people have developed a system of agriculture based on clearing patches of forest for gardens then moving on after a few years, allowing the forest to reclaim the area. Communities have also come to rely on the forest for building materials, food and shelter when crops fail or natural disasters strike.

Environmentally, the forests have provided watershed protection, water filtration and coast and reef protection, and also helped stabilise the climate.

But the value of PNG's forests does not stop there.

'New Guinea has one of the richest assemblages of biodiversity on the planet, some six to eight per cent of the world's total,' says Dr Allen Allison, Vice President for Science at Honolulu's Bishop Museum. 'New Guinea probably has more species than Australia and rivals the biodiversity of the Amazon Basin.'

It's this biological diversity that has sustained PNG's human population for the last 40 000 years according to Dr Phil Shearman, an Australian researcher who heads the University of Papua New Guinea's Remote Sensing Centre.

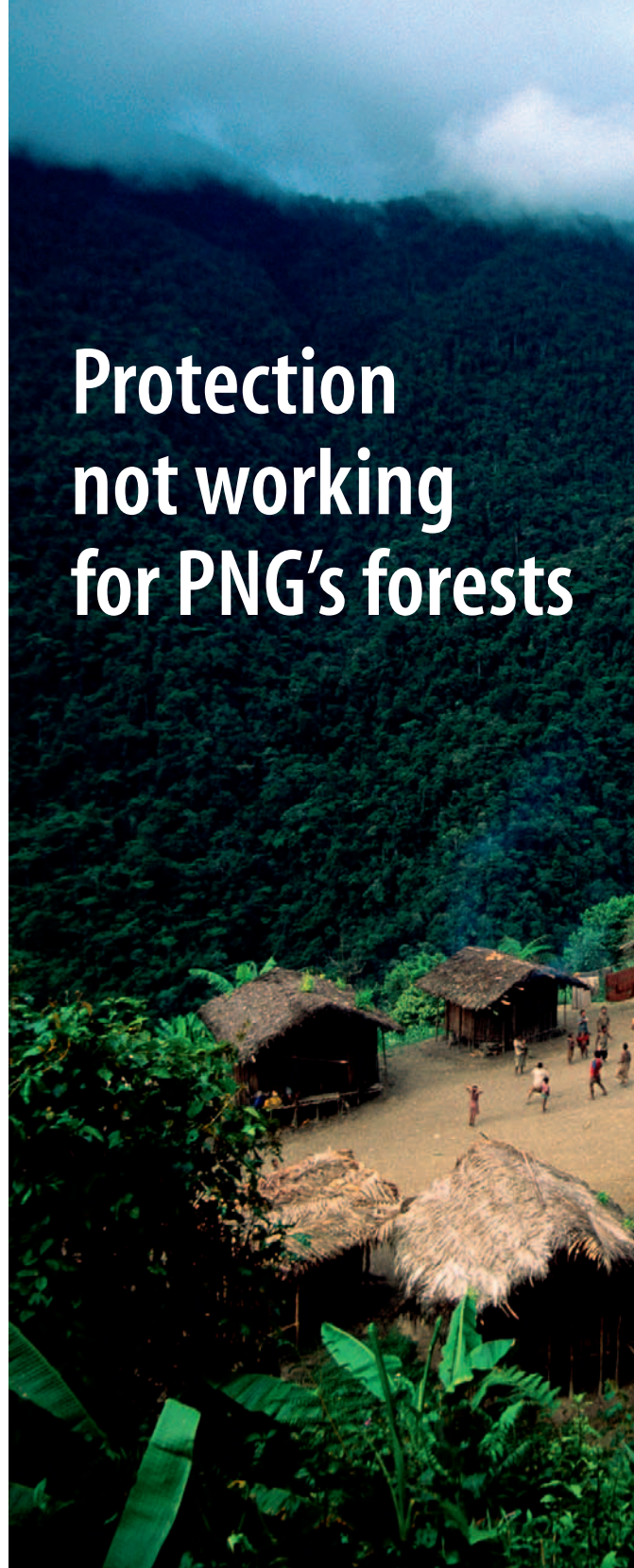
Dr Shearman is also a senior author of the report 'The state of the forests of Papua New Guinea', a collaboration between scientists from the Remote Sensing Centre and the Australian National University. The report compared detailed Australian Army aerial photography and mapping imagery from the 1970s with high-resolution satellite imagery taken between 2000 and 2007.

'The forests provide subsistence food – plants, animals and fungi – and building materials for a large proportion of the nation's six million people,' Dr Shearman says.

PNG's once dense and impenetrable forests are being whittled away by commercial logging and local community activity.

Phil Shearman, University of Papua New Guinea

Protection not working for PNG's forests



The last 30 years, however, have seen logging become the main industrial activity across many parts of the country. Today, declared forest product exports are worth about AU\$350 million to the PNG economy and the industry employs about 7500 people.

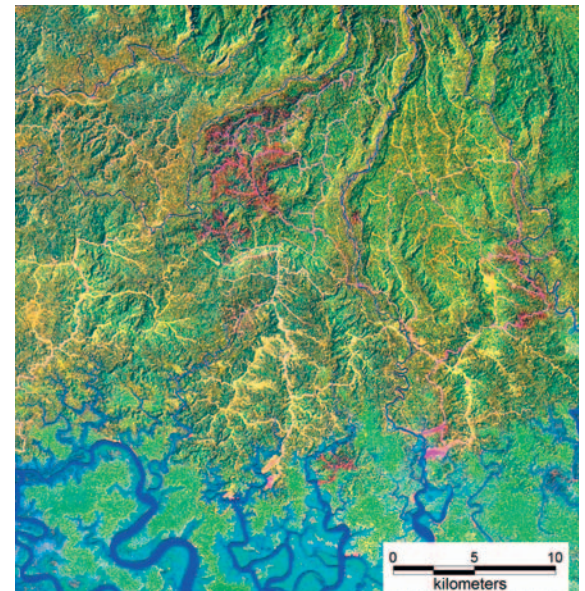
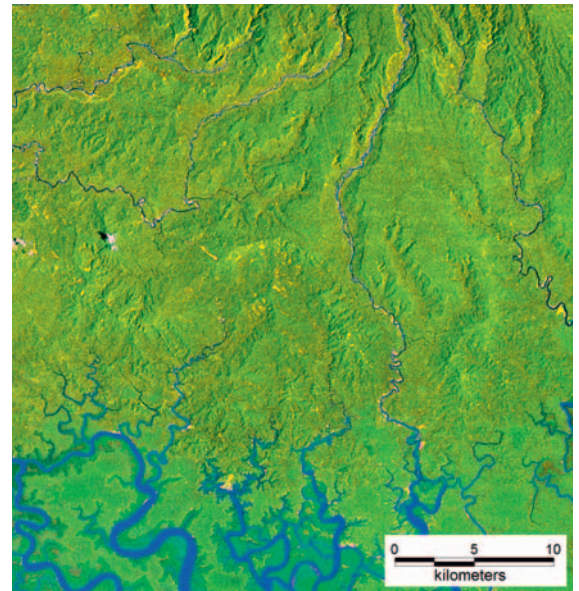
According to the report, 3.8 million hectares of PNG's forests were degraded or cleared by logging between 1972 and 2002, earning a mere AU\$1340 per hectare (adjusted for CPI).

'Until the new study, there was a persistent belief amongst biologists, based on dated, anecdotal evidence, that the biodiversity of New Guinea is in far better shape and facing fewer threats than biodiversity in



East Kikori logging operation in Gulf Province, PNG. The 1988 image (top) shows intact primary rainforest across most of the region. By 2002 the effects of the logging operation that began around 1995 are significant. Roads and tracks are clearly visible, as are areas of deforestation associated with log ponds and high intensity cutting.

University of Papua New Guinea



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other parts of the wet tropics,’ comments Dr Allison. ‘This has tended to divert the world’s attention to other tropical areas.

‘The careful, painstaking land cover analysis performed by Shearman and his team convincingly demonstrates that the globally significant forests of Papua New Guinea are being degraded at an alarming and unsustainable rate, exceeding that in many parts of the Amazon, and that current conservation practices are inadequate.

‘This is a clarion call for action to improve the management and protection of PNG’s precious forest resources.’

Biodiversity in PNG’s forests

- At least 191 species of mammal
- 750 species of bird
- 300 species of reptile
- 197 species of amphibian
- 3000 species of fish
- Up to 400 000 species of insect – most yet to be classified
- 1000 species of plant used for food, medicine, construction, art and culture

A grim picture

The study found that by 2000–2007, 15 per cent of PNG's rainforest present in the 1970s had been cleared and nearly nine per cent had been degraded to secondary forest. Overall, nearly a quarter of the forest had been lost in less than 40 years.

Logging wasn't the only culprit. In the last 20 years PNG's population has doubled. The growing population largely depends on subsistence agriculture, which has led to the clearance of 11 per cent of PNG's forests since the 1970s.

Overall, 48.2 per cent of the total forest change was due to logging, 45.6 per cent to agricultural clearing, 4.4 per cent to forest fires, 1.2 per cent to plantations and 0.6 per cent to mining activities.

According to the report, forest loss is accelerating. The scientists predict that if current trends continue, 83 per cent of the forest available for harvest in 1972 will have been lost by 2021. They also found that current conservation measures are having little impact on forest loss. Formally protected areas such as national parks are disappearing at almost the same rate as unprotected forest.

One of the report's co-authors, the ANU's Dr Julian Ash, is concerned about the implications of the findings for the planet's future carbon balance.

Intact tropical forests are one of Earth's greatest reservoirs of carbon and, after fossil fuel burning, activities related to land-use change are the second largest source of CO₂ emissions. The Stern Report revealed that deforestation accounts for 18 per cent of annual global greenhouse emissions.

'Commercial logging operations are extracting over 2.6 per cent of the accessible resource yearly and causing the release of about 22 million tons of carbon,' says Dr Ash.

'These percentages may seem small, but they are not if you project their cumulative impact over future decades. It takes centuries, not decades, for rainforests to recover from such changes.'



A logging road in Western Province.
University of Papua New Guinea

Not too late for change

PNG politics can be difficult to unravel, with the timber industry being known to have strong connections in Port Moresby.

But, in a promising sign, the report was launched by PNG's Forestry Minister, Belden Namah, who said, 'I have no doubt that this report will be controversial. Its findings and recommendations will make many people uncomfortable. Over the past decades we have imagined that our forests are limitless.'

'The good news is that PNG is still an extensively forested country. We need to imagine a future in which forest loss is not inevitable – a future in which it should be possible for us to have more forest than we do now. We will need them long after the minerals have gone.'

Dr Shearman agrees that it's not too late to act. 'Papua New Guinea is still one of the most heavily forested countries in the world.'

'For the first time, we have evidence of what's happening in the PNG forests. The government could make a significant contribution to global efforts to combat climate change. It is in its own interest to do so, as this nation is particularly susceptible to negative effects due to loss of the forest cover.'

'However, the current state of forest management means that PNG is a distance from being able to meaningfully participate in the carbon economy.'

More information:
Remote Sensing Centre,
University of Papua New Guinea,
www.rsc.upng.ac.pg

PNG Supreme Court protects forest

In October 2008, PNG's Supreme Court quashed a decision granting logging rights to a large timber company, Rimbunan Hijau, and ordered the company to pay costs.

'This is a major victory for good governance,' said Kenn Mondiai, Chairperson of the PNG Ecoforestry Forum.

'This decision demonstrates to the whole world what has been going on for far too long, and legally reaffirms the Forum's claim of widespread illegal logging in PNG facilitated by the government and the logging industry.'

'This is only a tip of an iceberg and there is more to be uncovered of unlawful acquisition of resources and unequal benefit distribution.'



Easy profits drive PNG's destructive illegal logging. Stockphoto/Tammy Peluso