

SNAPSHOT

Peak timber

We are used to thinking of forests as a renewable resource, but they're only renewable if managed sustainably. Researchers are warning that tropical timber production in many Asia-Pacific countries has been following a similar trajectory to oil production — it ramped up quickly to a peak value, and then declined as the resource started to run out. "It's a boom-and-bust scenario," says William Laurance of James Cook University in Cairns, Australia, who co-authored the study on timber cutting and regeneration rates in the tropics (*Biol. Cons.* <http://doi.org/hpw>; 2012). He says we should start thinking of 'peak timber' in the same way as 'peak oil': as a warning sign that things need to change.

At least 20% of the world's humid tropical forests are designated for selective logging, and more is logged illegally. According to the International Tropical Timber Organization, more than 90% of tropical forestry is unsustainable at present.

This poor management is likely to impact climate. Tropical forests hold about 25% of the Earth's land-bound carbon, and are thought to be either carbon sinks or carbon neutral (G. B. Bonan, *Science* **320**, 1444-1449; 2008). The Union of Concerned Scientists has estimated that tropical deforestation causes about 15% of the world's greenhouse-gas pollution (<http://go.nature.com/OnFaue>).

Laurance, and his colleagues Philip Shearman of the University of Papua New Guinea and Jane Bryan of the Australian National University in Canberra, charted timber production in six tropical nations. A dramatic peak and crash of wood production was most pronounced in the Philippines, Thailand and Laos. In the Solomon Islands, the peak is apparently being hit now. In Malaysia and Indonesia, declines since the 1990s have been more subtle. "I'd argue that [timber production rates] in Indonesia and Malaysia are going to decline as well," says Laurance. Logging in the Amazon and the Congo, not addressed explicitly in this paper, is also set to rise, he says.

There are several causes for logging 'busts', the authors report. It takes



© NICK PATTINSON

between 45 and 500 years for primary tropical forests to recover after logging, but the average logging cycle in these countries is officially 30-35 years, and in practice even less than that. Logging operations also tend to cause a lot of 'collateral damage' to the vegetation near the logging zone. Locals often use the logging roads and cleared areas to create farmland, forcing loggers to move elsewhere. "I've been everywhere from Borneo to the Amazon, and just a few kilometres beyond the loggers are the slash-and-burn farmers," says Laurance. Compounding the problem is that much of the timber is now being cut by multinational corporations rather than local companies, which, the authors say, have little stake in a forest's long-term sustainability.

Previous researchers have been overly optimistic about tropical logging, the authors say. "We're trying to have a debate grounded in reality," says Laurance. "There are a lot of papers out there

talking about sustainable management. But there's a huge gulf between the theory and the on-the-ground reality of what's happening."

The authors note that 'reduced impact logging' can help to reduce roadworks, bulldozing, soil erosion and collateral plant damage. But that's only being implemented in about 2% of logged tropical forests, Laurance estimates, as it requires subsidies from carbon trading or other sources. The United Nations Reducing Emissions from Deforestation and Degradation (REDD) programme aims to avoid deforestation; but the authors are sceptical about the newer round of REDD+, which focuses more on management of forests and logging. "It makes it more palatable to developing nations because they can have their cake and eat it too," says Laurance. "We're dubious about the real benefits."

NICOLA JONES