

Half of all Amazonian tree species may be globally threatened

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A logging operation in Imataca Forest Reserve Venezuela. Today, this area is still operating as an area designated to forest management area (Cat. VI IUCN), but now under an official government-owned company "Empresa Nacional Forestal". The most logged species is *Erismia uncinatum*, and to a lesser extent *Carapa guianensis*. Credit: Emilio Vilanova

More than half of all tree species in the world's most diverse forest—the Amazon—may be globally threatened, according to a new study.

But the study also suggests that Amazonian parks, reserves, and indigenous territories, if properly managed, will protect most of the threatened species.

The findings were announced by a research team comprising 158 researchers from 21 countries, led by Hans ter Steege of Naturalis Biodiversity Center in the Netherlands and Nigel Pitman of The Field Museum in Chicago, USA.

The Field Museum was heavily involved with this study—the paper was co-authored by The Field Museum's Corine Vriesendorp and relied on data contributed by the Field's Robin Foster. Furthermore, some of the tree plot data was collected through the Museum's rapid inventory program, in which ecologists, biologists, and anthropologists travel to the Amazon and take stock of the plants, animals, and people who live there.

Forest cover in the Amazon has been declining since the 1950s, but scientists still have a poor understanding of how this has affected populations of individual species.

The new study, published this week in the journal *Science Advances*, compared data from forest surveys across the Amazon with maps of current and projected deforestation to estimate how many [tree species](#) have been lost, and where.

The authors concluded that 36 to 57 percent of the Amazon's estimated 15,000 tree species likely qualify as globally threatened under IUCN Red List of Threatened Species criteria.



Forest along the Jau river, in Jau NP, one of the largest (2,272,000 hectares) protected areas in the Amazon, Amazonas, Brazil. Credit: Hans ter Steege

"We aren't saying that the situation in the Amazon has suddenly gotten worse for tree species," said Pitman. "We're just offering a new estimate of how tree species have been affected by historical deforestation, and how they'll be affected by forest loss in the future."

Because the same trends observed in Amazonia apply throughout the tropics, the researchers argue that most of the world's more than 40,000 tropical tree species likely qualify as globally threatened.

Fortunately, the authors report, protected areas and indigenous territories now cover over half of the Amazon Basin, and contain sizable

populations of most threatened tree species.



Acaricuara (*Minquartia guianensis*) tree in the forest. Credit: William Laurance

"This is good news from the Amazon that you don't hear enough of," said ter Steege. "In recent decades Amazon countries have made major strides in expanding parks and strengthening indigenous land rights," he said. "And our study shows this has big benefits for biodiversity."

However, parks and reserves will only prevent extinction of threatened species, the paper emphasizes, if they suffer no further degradation. The authors caution that Amazonian forests and reserves still face a barrage of threats, from dam construction and mining to wildfires and droughts intensified by global warming, and direct invasions of indigenous lands.

"It's a battle we're going to see play out in our lifetimes," said co-author William Laurance of James Cook University in Australia. "Either we stand up and protect these critical parks and indigenous reserves, or deforestation will erode them until we see large-scale extinctions."

More information: Estimating the global conservation status of more than 15,000 Amazonian tree species, *Science Advances*, [dx.doi.org/10.1126/sciadv.1500936](https://doi.org/10.1126/sciadv.1500936)

Provided by Field Museum

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