

Revised Brazilian forest code may lead to increased legal deforestation in Amazon

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Researchers show that up to 15 million hectares of forest risk losing protection owing to a new clause in the law under which state governments can let private landowners protect only 50% of their property, down from 80% previously, if over 65% of the state is protected by conservation units or indigenous reservations . Credit: Bing Maps

Up to 15 million hectares of tropical rainforest in the Brazilian Amazon could lose protection and be clear-cut because of an article in the country's new Forest Code. The warning comes from Brazilian researchers at the University of São Paulo's Luiz de Queiroz College of Agriculture (ESALQ-USP) and Swedish researchers at KTH Royal

Institute of Technology in Stockholm and Chalmers University of Technology in Gothenburg. They recently published a paper on the subject in *Nature Sustainability*.

"The 15 million hectares that could become deprotected as a result of this rule in the new Forest Code are roughly equivalent to the entire legal reserve deficit that needs to be offset or restored in Brazil, and they consist mainly of tropical rainforest," said [Gerd Sparovek](#), a professor at ESALQ-USP and a coauthor of the paper.

"Loss of these areas to agriculture could nullify the effort to regularize legal reserves in Brazil and result in huge losses of biodiversity, impair ecosystem services of great value to society, such as water supply, and increase greenhouse gas emissions."

Sparovek explained that until 2012, the Forest Code required private landowners in the Amazon region to set aside 80 percent of their property with intact native vegetation in what the law terms a "legal reserve."

Now, however, under Article 12 (5), added at Amapá State's request when the Forest Code was amended and updated in 2012, any state in the Amazon region is allowed to reduce the legal reserve requirement from 80 percent to 50 percent if conservation units and indigenous reservations account for more than 65 percent of its territory.

If the article is implemented, between 7 million and 15 million hectares of [forest](#) will be deprotected and could be legally cut down, according to the researchers. This computation accounts for the fact that states such as Amazonas, Roraima, Acre, and Amapá consist mostly of primary forest and have some 80 million hectares of undesignated public land.

If conservation units and indigenous reservations are created on this

public land, the law will allow [private landowners](#) in these states to reduce their legal reserves, opening up large areas for legal logging and agricultural expansion.

"The removal of legal protection doesn't automatically mean these forest areas will be clear-cut, but it's important to pay attention to this in the current political context, which suggests a weakening of deforestation prevention mechanisms," said [Flávio Luiz Mazzaro de Freitas](#), a Ph.D. researcher at KTH Royal Institute of Technology and first author of the paper.

Scenario modeling

To assess the possible impact of a reduction in the legal reserve requirement to protect forest areas equivalent to 50 percent instead of 80 percent of public and private lands in the Amazon, the researchers used a georeferenced database for the entire country with land tenure datasets including official statistics for national and state conservation units, indigenous reservations and military land, as well as rural property and settlement databases maintained by the National Land Reform Institute (INCRA) and the Rural Environmental Register (CAR).

Using this georeferenced database, the researchers modeled the implementation of Article 12 (5) of the new Forest Code under two different scenarios for the use of undesignated land in the Amazon. They termed the first land use scenario conservative in the sense that it assumed a high priority for nature conservation. The second scenario assumed full implementation of the new legal provision and was termed a worst-case scenario from the standpoint of protecting nature.

The researchers quantified the potential reduction in forest protection under these two scenarios. They also assessed the risk of legal conversion of deprotected forest areas into agricultural land using

measures of land suitability and market access, as well as the potential impact of such land conversion on carbon emissions and biodiversity.

The results of their analysis suggest that Amapá, Roraima and Amazonas States would qualify for a reduction in private property legal reserves as per Article 12 (5) under both scenarios.

Under the conservative scenario, conservation units or indigenous reservations would be created on 97 percent of the undesignated land in Amazonas and Amapá. Under this scenario, the new article of the Forest Code would remove protection from 6.5 million hectares (ha) of preserved forest—4.6 million ha in Amazonas, 1.4 million ha in Roraima and 0.5 million ha in Amapá.

The authors note that the more land is allocated to conservation units and indigenous reservations, the greater the aggregate protected area, but when the 65 percent threshold is reached and article 12 (5) is triggered, the aggregate deprotected area more than doubles.

The researchers also estimated that under the conservative scenario, approximately half the area deprived of forest protection, or 3.14 million ha, would be in registered private properties, while approximately 1.9 million ha would be in land reform settlements and 0.6 million ha in untitled properties that would probably qualify for the ongoing land regularization program.

Under the worst-case [scenario](#), most of the reduction would take place in currently undesignated areas, where newly titled properties would be allowed to reduce legal reserves by more than 8 million ha.

"The creation of conservation units and/or indigenous reservations in these states may have the side effect of increasing the likelihood of more deforestation," Sparovek said. The researchers suggested that legal

measures taken by state governments in the context of the Environmental Regularization Program (PRA) could mitigate the risk of extensive deforestation.

Economic incentives may also help, given the strong global tendency to urge consumers not to buy products that originate in deforestation zones. Brazil's agricultural exports could be severely affected if deforestation increases in the Amazon region, they stressed.

"By drawing attention to the possibility of an increase in legal deforestation in the Amazon, we hope our research findings will contribute to the development of public and private actions and strategies designed to mitigate potential environmental and social damage from this process," Freitas said.

More information: Flavio L. M. Freitas et al, Potential increase of legal deforestation in Brazilian Amazon after Forest Act revision, *Nature Sustainability* (2018). [DOI: 10.1038/s41893-018-0171-4](https://doi.org/10.1038/s41893-018-0171-4)

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