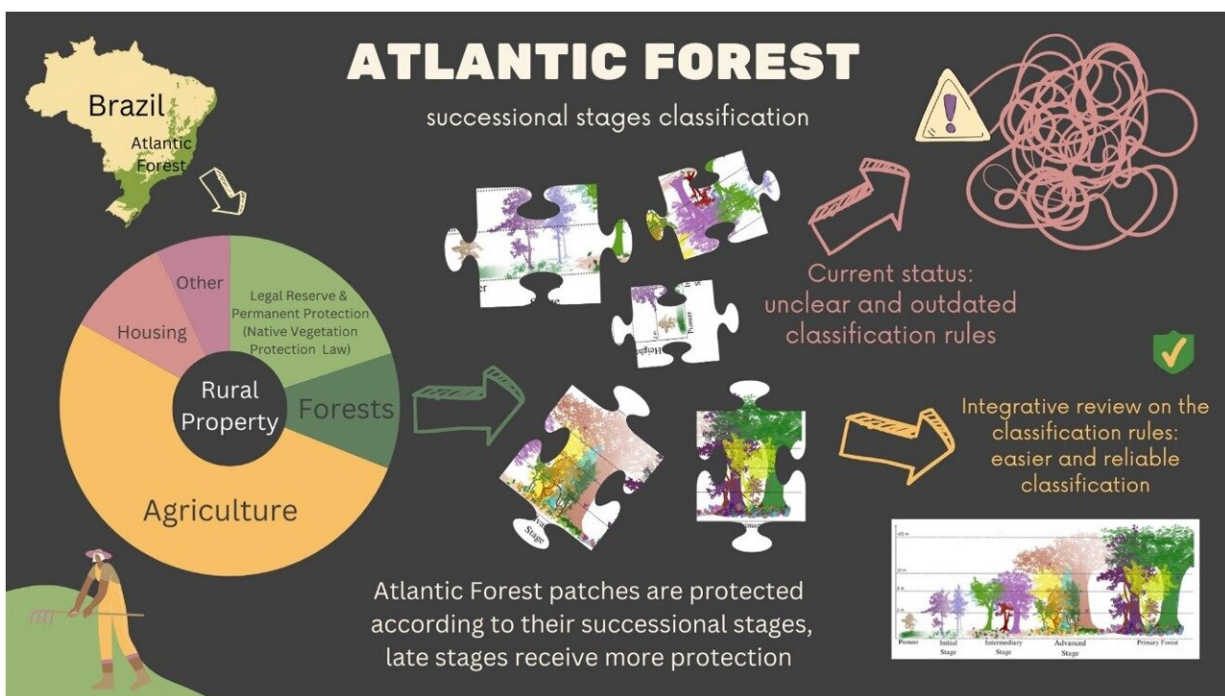


# Study proposes changes to simplify legislation on Atlantic Rainforest biome and enhance conservation

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Credit: *Perspectives in Ecology and Conservation* (2024). DOI: 10.1016/j.pecon.2024.04.002

A group of researchers has found that the key criteria according to which areas of the Atlantic Rainforest can be legally cleared by their owners are defined in too "subjective and imprecise" a manner in

Brazil's environmental legislation, allowing for the destruction of valuable forest that provides important ecosystem services.

The group proposes changes to simplify the licensing process for landowners while at the same time making conservation policy more effective. The study is [published](#) in the journal *Perspectives in Ecology and Conservation*.

"Generally speaking, the legislation states that early-stage forest may even be completely cleared, depending on the case, except for areas which must be conserved [Legal Reserves and Permanent Protection Areas, two of the categories that regulate legal action relating to [environmental protection](#)]," said Angélica Resende, first author of the article.

"São Paulo state has taken steps to improve the situation but without defining a method for classifying forest into stages such that the most important attributes of these areas are really measured, and distortions easily happen as a result."

This criterion requires a survey to determine the forest succession stage. Permits to clear areas of the Atlantic Rainforest also require an inventory of the plant species growing in the area, with identification of tree diversity and any species threatened with extinction.

This task calls for a very high degree of specialization, the authors warn, since the biome has a huge number of species, and assemblages vary considerably within and between regions. As a result, they argue, it is virtually impossible to comply with the requirement unless well-trained (and expensive) specialists are involved.

They therefore propose moving this requirement from the first step of the permit application process to the second, which would be necessary

only for initially approved projects. Inventories could then be conducted by certified technicians or specialized government contractors.

The study was part of the Thematic Project "Understanding restored forests for benefiting people and nature—NewFor."

"More conservation and restoration are needed because of Brazil's and São Paulo state's commitments to targets for greenhouse gas emissions, not to mention the provision of other services by forests, such as crop pollination and protection of water sources," Brancalion said.

The legislation is easily circumvented, and advanced-stage forests can be destroyed as a result, he warned, adding that the complexity of the legislation makes it hard to understand for landowners and even technical personnel.

## **How the law works**

The basic rule that applies to landowners who want to clear an area of Atlantic Rainforest on their property, to build housing or plant crops or pasture, is that 20% of the property must contain forest. This is the Legal Reserve required by the 2012 Native Vegetation Protection Law, better known as the Forest Code (Código Florestal).

The 2006 Atlantic Rainforest Law defines stages of forest succession and the uses to which areas of the biome may be put. State governments issue forest clearing permits to landowners who comply with this federal law.

In São Paulo state, applications for these permits must comply with Resolution 01/1994 issued by the National Environmental Council (CONAMA). This is a federal agency but the rules were agreed with São Paulo and have been emulated by other Brazilian states.

Landowners who have complied with the 20% rule regarding Legal Reserves and conserved hilltop vegetation, springs and riparian forest areas as Permanent Protection Areas (Áreas de Proteção Permanente, APPs) can apply to the state government's environmental authority for a permit to clear all or part of the "surplus" forest.

The application must be accompanied by an expert opinion from an engineer who has analyzed the project and certifies that the area to be cleared is early-stage forest. The law states that this means the trees are not taller than 8 m with a diameter of 10 cm at most, and that the ecosystem services it provides are relatively insignificant compared with the primary forest.

Primary forest is at an advanced stage of growth and is home to large numbers of species. It makes the climate more temperate, produces water, stores carbon and serves as a habitat for pollinators, among other ecosystem services. As a result, primary forest areas are considered a priority for conservation.

## **Problems**

The legislation does not spell out detailed criteria for classifying forest succession stages, and an appearance of compliance is fairly easy to achieve. While stating that average tree diameter is a key parameter, it does not specify the size of the area concerned or the minimum diameter at breast height (DBH), which is the criterion preferred by scientists, forestry companies, and even laws passed by other states.

"This lets the person in charge of inventorying the forest in question choose the tree with the smallest diameter, even if it's surrounded by trees that are hundreds of years old, lowering the average to a level that ensures permission for the area to be legally cleared," Resende said.

The authors of the article cite an example in which [another group of researchers](#) studying conserved remnants and late secondary forests in Serra do Mar, one of the largest areas of continuous Atlantic Rainforest in Brazil, found an average DBH of 12.7 cm and an average height of 9.1 m considering all individuals above 4.8 cm in diameter.

"This old-growth forest with its abundant biomass could be classified as early- or intermediate-stage under the current CONAMA parameters," Resende said.

## Proposals

To remedy such deficiencies in the legislation, the researchers propose amendments to the CONAMA resolution followed in São Paulo state. One of them would entail distinguishing between types of forest ("phytophysiognomies" in the technical jargon). Wetter forests tend to be taller than drier forests, but the resolution makes no such distinction, for example, failing to take into account the variation in height and diameter in response to variables such as soil, altitude and regional climate, the authors argue.

Another proposal would entail defining a minimum sampling area for the purposes of succession stage classification, such as all forest fragments of less than half a hectare (ha), or 1% of those above 5 ha, for example. Areas of this size may currently be assessed by sampling only 10 square meters per hectare.

A revised framework for classifying succession could be based on the two-tier assessment method proposed in the last part of the article. The first tier would consist of the landowner's application, which would not necessarily involve an expert's report, but would be analyzed by the state's environmental authority to verify the history of land use and land cover in the area in the last 40 years via tools available free of charge,

such as MapBiomas and Google Earth, as well as photographs provided by the applicant.

The environmental agency would then either deny a permit outright or approve the application in the first instance. The second tier would involve a floristic assessment by technicians appointed by the state government to verify the degree of biodiversity and the presence of endangered species. Landowners would not have to pay for a service that few people are qualified to perform with excellence.

Lastly, [social aspects](#) and landscape value would be evaluated, using one or more environmental services as indicators and focusing not on society in general but on the local population, which would be most affected by destruction of the [forest](#), with the loss of such ecosystem services as water supply, well-being and climate regulation.

The 2006 Atlantic Rainforest Law was a major victory for Brazilian society, but a new technical framework is needed to strengthen it after almost two decades, and more than three decades after the state resolution. Knowledge of the biome has increased dramatically in recent years and can be used to formulate more effective science-based rules, the article concludes.

**More information:** Angélica F. Resende et al, How to enhance Atlantic Forest protection? Dealing with the shortcomings of successional stages classification, *Perspectives in Ecology and Conservation* (2024). [DOI: 10.1016/j.pecon.2024.04.002](https://doi.org/10.1016/j.pecon.2024.04.002)

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