Electoral cycles influence destruction of Atlantic rainforest areas in southern and southeastern Brazil

September 22 2021

A study analyzed data for the period 1991-2014 and revealed that deforestation increased in election years. Credit: Simone Vieira/BIOTA-FAPESP Program

A study conducted at the University of São Paulo (USP) in Brazil, and reported in an article published in the journal *Conservation Letters*, shows that destruction of the Atlantic Rainforest increases in election years.

The researchers correlated data from the Electoral High Court (TSE) and MapBiomas, the Brazilian Annual Land Use and Land Cover Mapping Project, for 2,253 municipalities in the southern and southeastern regions covering the period 1991-2014. They found that an additional 3,652 hectares of Atlantic Rainforest per year were cleared on average in federal and state election years than in non-election years. The average increase for municipal election years was 4,409 hectares.

They also detected a downtrend in cyclical deforestation surges due to political initiatives that leveraged natural capital in exchange for votes. "The phenomenon was more intense in the past and has trended down over time, possibly because as democracies mature, media coverage of the problem improves, and as voters understand it better they tend not to reward politicians who behave opportunistically," Patricia Ruggiero, first author of the article, explained.

The study was part of Ruggiero's Ph.D. research for the university's Department of Ecology, which awarded her a prize for the best thesis on the topic, and was conducted under the aegis of the FAPESP Research Program on Biodiversity Characterization, Conservation, Restoration and Sustainable Use (BIOTA-FAPESP). It was funded by FAPESP via four projects (13/23457-6, 15/16587-6, 17/20245-9 and 14/11676-8). It was also supported by the National Council for Scientific and Technological Development (CNPq) and the Ministry of Education's Coordination for the Improvement of Higher Education Personnel (CAPES) in Brazil, and the US National Science Foundation (NSF).

"Deforestation is usually seen as being driven by economic and social factors. Our study innovates by showing that political motives and

alliances also affect deforestation, even in regions with strict environmental regulation. In other words, natural resources are subject to cyclical manipulation. The study highlights a phenomenon that's well-known in political economy but that researchers in the conservation field have hitherto failed to notice," Ruggiero said.

Based on their analysis of the data, the authors of the article highlight the need to limit the effects of election cycles in terms of "opportunistic behaviors that affect natural resources and the environment with implications for biodiversity, carbon storage, and other ecosystem services."

"Deforestation is frequently associated with large hydropower developments and expansion of agriculture, but it's also linked to political bargaining. In this case, deforestation favors certain groups of voters and has a negative impact on society as a whole. In Brazil, there's also the fact that elections are held every two years, so deforestation tends to increase every other year," said Jean Paul Metzger, a professor at the University of São Paulo's Institute of Biosciences (IB-USP) and a member of BIOTA-FAPESP's steering committee.

The increase in election years may seem small, but its long-term effect is troubling, according to Metzger. "It represents 3% of the annual destruction of the Atlantic Rainforest in the south and southeast, which amounts to some 136,00 hectares, but restoration of 4,000 hectares of Atlantic Rainforest requires a great deal of effort," he said.

For Ruggiero, the increase in pressure for deforestation every other year can cancel out the effects of major advances. "Programs like payment for environmental services, for example, require technical capabilities, funding, and political networking. Societal initiatives and efforts are deployed to achieve environmental gains, and these can be wiped out for political reasons in one or two election years," Ruggiero noted.

Strengthening of democracy reduces deforestation

According to Ruggiero, research conducted in other countries points to a correlation between democratic maturity and a reduction in the deforestation surges seen in election years. "It's too soon to confirm this was the cause here. That's something we plan to investigate," she said. "But we know that during the period we analyzed there was an improvement in environmental governance and societal awareness of environmental issues regarding the Atlantic Rainforest, and that a certain threshold was reached, in the sense of less area remaining to deforest. Generally speaking, protection has been enhanced. A law protecting the Atlantic Rainforest has been in effect since 2006, and society is demanding conservation of these areas more vigorously."

The year 2014 saw an initial increase in deforestation in all biomes, followed by larger increases in subsequent years, with a peak in 2020. "What's happening now goes beyond this cyclical phenomenon linked to elections. If I were to raise a hypothesis, it would be that the trigger is a positive signal to those responsible for deforestation in terms of both political discourse and changes made to legislation and institutions," Ruggiero.

Natural capital as bargaining chip

The study showed that electoral alliances also influenced these cycles. When candidates were aligned in federal and state elections, deforestation increased much more in municipalities that were already under strong pressure to deforest. Municipalities with less pressure to deforest were influenced more by local elections.

"Elections create a climate in which such behavior is encouraged," Ruggiero said. "Candidates need to win votes and tend not to propose or

implement unpopular measures as the election approaches. Another aspect is campaign fundraising. Campaigns have always been big spenders in Brazil."

In future research, the authors will test three potential explanations for the rise in deforestation in election years. The first is a deliberate reduction in enforcement of environmental protection laws so that prospective voters can expand their economic activities. "Research by political scientists has evidenced the tendency for unpopular measures to be taken earlier rather than later during a political leader's term of office, and vice-versa as far as popular measures are concerned, especially when they're seeking re-election," Metzger said.

Another driver could be an increase in environmental licensing for entities that undertake deforestation. "More licenses may be granted for specific sectors to clear forest areas, such as large construction companies. Subsidized farm loans could be another factor," he suggested.

Changing perceptions on the part of those who destroy the forest could also be an explanation. "We shouldn't rule out the possibility that landowners and others who use the land believe politicians and government bodies are preoccupied with their campaigns to win votes in an election year and see an opportunity to clear the forest," Metzger said.

In addition to testing these hypotheses, the group plan to conduct similar studies of all Brazilian biomes and investigate the link between elections and deforestation in the Atlantic Rainforest areas located in the northeastern region.