

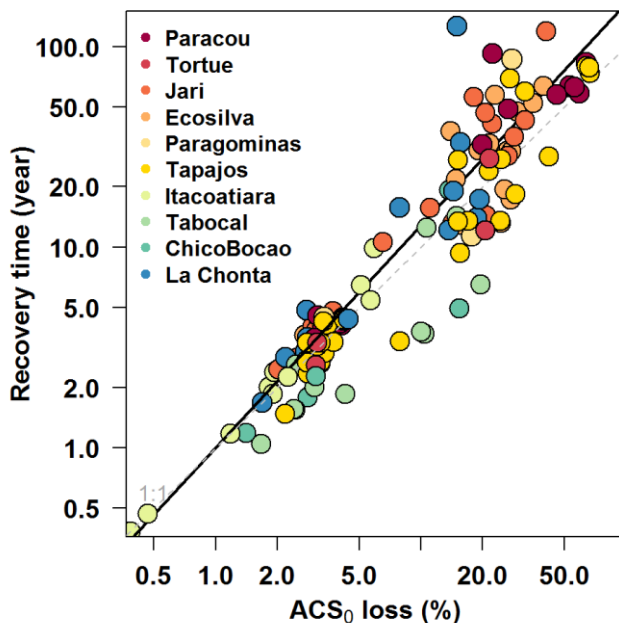
Rapid tree carbon stock recovery in managed Amazonian forests

Research Findings

The study found that the proportion of initial above-ground carbon stocks lost (i.e., trees harvested and destroyed by logging) best predicted the time to recover initial carbon stocks. This result implies that losses of 10, 25 or 50% of pre-logging aboveground carbon would require 12, 43 or 75 years, respectively, to recover regardless of location in the Amazon region. Based on the current forest management regulations with minimum cutting cycles of 30–60 years and harvest intensities of 10–30 m³ ha⁻¹, 7 and 21 years, would be required to recover their initial aboveground carbon. While this is good news for carbon stocks, regrowth of commercial timber might be slower.

A new study* shows that selectively logged tropical forests can recover their carbon stocks within a single cutting cycle of 20 to 30 years. The study is the first comprehensive assessment of post-logging recovery of above-ground carbon stored in trees across the whole Amazon Basin. These findings have direct implications for managing carbon stocks in Guyanese forest concessions.

This research was made possible through the Tropical managed Forests Observatory (TmFO, <http://www.tmfo.org>) that assembled 23 institutions with more than 40 forest scientists including researchers from the Iwokrama International Centre. The researchers focused on 79 permanent sample plots representing 376 hectares at 10 sites across the Amazon Basin to assess the time required for forests to recover the carbon lost to logging.



Carbon recovery time is directly related to logging practices. Relationship between time of recovery and percentage of initial above ground carbon stocks lost (ACS₀ loss) due to selective timber harvests and damage-induced mortality at 10 sites across the Amazon Basin. The solid black line shows the relationship if it was a perfect fit, which is very close to the one found (dashed grey line). Sites are listed from northeast to southwest Amazonia and indicated by different colours.

* Rutishauser et al. 2015. Rapid tree carbon stock recovery in managed Amazonian forests. *Current Biology*. 25-18 pg. 787-788; contact Anand Roopsind at aroopsind@ufl.edu for additional information.

Guyanese Connection

Approximately 12 million hectares of primary forests in Guyana are classified as timber production forests. Recovery time is of direct relevance to policies governing management (i.e., allowable volume cut and cutting cycle lengths). Biomass recovery is especially relevant to forest-based climate change mitigation programs like Guyana's forest-carbon agreement with Norway.

Guyana has a strong foundation for the implementation of reduced-impact logging (RIL) practices as described in the national code of practice for timber harvesting. With continued support for RIL training for forestry personnel at the Forestry Training Centre (FTCI) along with strong enforcement and monitoring, Guyana's forest will continue to contribute to both national development and climate change mitigation.



Guyana Forestry Training Centre (FTCI) conducting RIL training in the Iwokrama Forest. © R. Thomas