

Selective logging in Amazon does not affect rapid tree carbon stock recovery

It is generally assumed that logging in natural forests severely affects the carbon sequestration potential of trees. However, recent research in Amazonian forests has revealed that selective logging can recover their carbon stocks within a cutting cycle of 20 to 30 years. The findings show that sustainably logged tropical forests continue to play a key role in global carbon sequestration, with important implications for global climate.

Information about the response of tropical forests to logging pressure on a regional scale is highly scarce. A research team headed by Ervan Rutishauser from CarboForExpert in Switzerland conducted a comprehensive assessment of post-logging recovery of above-ground carbon stock in trees across the entire Amazon Basin, a first of its kind. The work was made possible with the development of Tropical Managed Forests Observatory (TmFO), a pan-tropical network aimed at comprehending the long-term effects of logging in the tropics. The researchers utilized a total of 79 permanent sample plots accounting for 376 ha of forest land located at ten different sites across the Basin. The major objective of the study was to determine the rate at which the recovering forest can sequester carbon released through logging and also to know the factors influencing the time to recovery of post-logging tree carbon.



Recovery of a logging road and forest near-by after 5 years of logging in Amapà, Brazil

(Photo courtesy: Rutishauser)

The results indicated that under current logging intensities of 10-30 m³ha⁻¹, it needs a recovery time of 7 to 21 years to capture the lost carbon. And the time to recover initial carbon stocks after selective logging depends almost exclusively on logging intensity, that is, on the amount of tree biomass removed during timber harvesting. Rutishauser said, "Our results imply that the time to recover carbon stocks does not significantly differ across the entire Amazon Basin, despite a well-known Northeast-Southwest environmental gradient". He also added that outcome of the research

findings can now serve as a useful tool for the decision-making by forest managers and policy makers.

The researchers note, however, that poor logging practices continue to degrade many forests, while others continue to be cleared and converted into more profitable pasture and plantations. The next plan of the research team is to explore the time to recovery of forests under heavier commercial logging intensities across TmFO.

Although carbon-oriented forestry might trigger a shift toward sustainable forest management, it is well understood that wood supply shall remain the principal objective of forest management. "Our aim is to provide scientific evidence and practical guidance to define sustainable harvest intensities that ensure both long-term timber harvest and maintenance of carbon stocks", Rutishauser concluded.

Source: <http://www.sciencedaily.com/releases/2015/09/150921133422.htm>