Tropical forests recover carbon faster than plant biodiversity

A new study of tropical forests has concluded that plant biodiversity takes longer to recover than carbon storage in regrowing forests following major disturbances such as farmland clearance.

The findings, published in the scientific journal Proceedings of the Royal Society B, have important implications for policies that target simultaneous recovery of both carbon and biodiversity, such as the Convention on Biological Diversity and REDD+.

Tropical forests contain between half and two thirds of terrestrial global biodiversity and around one third of the global terrestrial carbon pool. Regrowing forests can help to soak up some of the emissions produced by human activities and potentially help to reduce extinctions.

The new research is the first large scale analysis of both plant biodiversity and carbon pool recovery in tropical secondary forests - areas which have re-grown after a major disturbance such as farmland clearance.

The research team which included scientists from the Centre for Ecology & Hydrology and Bournemouth University conducted a meta-analysis using data collated from a systematic review of 607 secondary forest sites from 74 studies describing carbon pools and plant. Each site had comparable data for a nearby site that was relatively free of human disturbance.

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Co-author Professor James Bullock from the Centre for Ecology & Hydrology said, “Our results clearly indicate that preservation of old-growth forests is vital for the conservation of some specialist species. However if a forest is recovering after clearance policymakers should not assume that biodiversity and carbon recovery are closely coupled.”

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