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The high value of logged tropical forests: lessons from northern Borneo

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Nicholas J. Berry, Oliver L. Phillips, Simon L. Lewis, Jane K. Hill ...+9 more authors

Institutions: University of Leeds, University of York, National University of Malaysia, Universiti Tun Hussein Onn Malaysia ...+1 more institutions

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The high value of logged tropical forests: Lessons from northern Borneo

Abstract

The carbon storage and conservation value of old-growth tropical forests is clear, but the value of logged forest is less certain. Here we analyse >100,000 observations of individuals from 11 taxonomic groups and >2,500 species, covering up to 19 years of post-logging regeneration, and quantify the impacts of logging on carbon storage and biodiversity within lowland dipterocarp forests of Sabah, Borneo. We estimate that forests lost ca. 53% of above-ground biomass as a result of logging but despite this high level of degradation, logged forest retained considerable conservation value: floral species richness was higher in logged forest than in primary forest and whilst faunal species richness was typically lower in logged forest, in most cases the difference between habitats was no greater than ca. 10%. Moreover, in most studies >90% of species recorded in primary forest were also present in logged forest, including species of conservation concern. During recovery, logged forest accumulated carbon at five times the rate of natural forest (1.4 and 0.28 Mg C ha⁻¹ year⁻¹, respectively). We conclude that allowing the continued regeneration of extensive areas of Borneo's forest that have already been logged, and are at risk of conversion to other land uses, would provide a significant carbon store that is likely to increase over time. Protecting intact forest is critical for biodiversity conservation and climate change mitigation, but the contribution of logged forest to these twin goals should not be overlooked. © Springer Science+Business Media B.V. 2010.