

Biofuel plantations on tropical forestlands are bad for the climate and biodiversity

December 1 2008

(PhysOrg.com) -- Keeping tropical rain forests intact is a better way to combat climate change than replacing them with biofuel plantations, according to a new in-depth study by an international team of scientists, including Matt Struebig from Queen Mary, University of London.

Published in the journal *Conservation Biology*, the study reveals that it would take at least 75 years for the carbon emissions saved through the use of biofuels to compensate for the carbon lost through forest conversion. And if the original habitat was carbon-rich peatland, the carbon balance would take more than 600 years. On the other hand, planting biofuels on degraded Imperata grasslands instead of tropical rain forests would lead to a net removal of carbon in 10 years, the authors found.

The study is the most comprehensive analysis of the impact of oil palm plantations in tropical forests on climate and biodiversity. It was undertaken by an international research team of botanists, ecologists and engineers from seven nations. Matt Struebig, from Queen Mary's School of Biological and Chemical Sciences, explained: "For fauna, only one in six forest species can survive in plantations. Plantations are frequently dominated by a few abundant species that are widespread and of low conservation concern."

"Climate change and biodiversity loss are the two key environmental issues of our time," added Emily Fitzherbert from the University of East Anglia. "Sourcing biofuel feedstock from crops such as palm oil simply

doesn't make environmental sense. If these crops replace tropical forests, we are removing one of the world's most efficient carbon storage tools. And while many species can survive in even degraded forests, few can tolerate an oil palm monoculture.”

Biofuels have been touted as an environmentally friendly alternative to fossil fuels, one of the major contributors to global warming. One such biofuel, palm oil, covers millions of acres in Southeast Asia, where it has directly or indirectly replaced tropical rain forests, resulting in loss of habitats for species such as rhinos and orangutans and the loss of carbon stored in trees and peatlands.

The authors call for the development of common global standards for sustainable production of biofuels.

Provided by Queen Mary, University of London

Citation: Biofuel plantations on tropical forestlands are bad for the climate and biodiversity (2008, December 1) retrieved 30 April 2024 from https://phys.org/news/2008-12-biofuel-plantations-tropical-forestlands-bad_1.html

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