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Carbon Emission Reduction Strategies May Undermine Tropical Biodiversity Conservation, Conservationists Warn

Conservationists have warned that carbon emission reduction strategies such as REDD may undermine, not enhance, long-term prospects for biodiversity conservation in the tropics.

Their warning comes only days ahead of the Cancun COP 16 climate change talks (Nov. 29 to Dec. 10, 2010).

REDD is a United Nations designed mechanism for carbon emission trading that provides financial compensation to developing countries for improved management and protection of their forest resources. If it works, REDD could strengthen the global fight against climate change, and create an opportunity for carbon-rich tropical countries to protect threatened biodiversity as a co-benefit of maintaining forests and the carbon they store. Writing in the journal *Carbon Balance and Management*, a network of conservation scientists, including University of Kent's Dr Matthew Struebig, use data for Indonesia, a species-rich tropical country and the world's third largest source of carbon emissions, to highlight ways in which emission reduction strategies could turn sour for wildlife.

Lead author Dr Gary Paoli of Daemeter Consulting in Indonesia explained: 'Biodiversity and forest carbon are correlated at a global scale but we show that this is not the case at sub-national levels in Indonesia. This creates a trade-off between the emission reduction potential and biodiversity value of different ecosystems. In short, the highest carbon savings are not necessarily located in places with the highest levels of species diversity; The authors, from Southeast Asia, Europe and the USA, compiled studies of wildlife, plants, land-cover and carbon emissions to show that carbon-dense peat swamp forests, focal ecosystems for REDD in Indonesia, do not coincide with areas supporting the highest concentrations of threatened biodiversity.

Dr Struebig, who works between Kent's Durrell Institute of Conservation and Ecology (DICE) and Queen Mary, University of London, said: 'Peat swamp forests attract the bulk of REDD funds -- they hold around 8 times more carbon than other lowland forests, and provide habitat for high profile species such as orang-utan, tigers and Asian elephants. However, when we look at overall numbers of plants, mammals and birds, especially species of greatest conservation concern, we find that peat forests typically

support lower densities and fewer species than other lowland forest types; The paper points out that preferential targeting of peatland under REDD could intensify pressures to establish oil palm and paper/pulp plantations in forests that are more important for biodiversity conservation. This problem is not unique to Indonesia, but is a concern throughout the tropics. The authors argue that a regulatory framework is urgently needed to guide implementation of REDD, and recommend three ways to ensure that effective carbon emissions reduction strategies also deliver substantial long-term biodiversity co-benefits in tropical countries -- home to 51 % of the world's 48,170 threatened species.

The authors urge developing countries to prepare their own explicit national targets for ecosystem and species protection across all native ecosystem types. Using these targets, priority ecosystems and threatened species under-represented in the protected area network should be identified. Co-financing from REDD can then be mobilized to redefine acceptable land-use practices within priority areas needed to fill biodiversity conservation gaps. In this way, REDD will offset opportunity costs of foregone development, and ensure that carbon emission reductions deliver biodiversity gains where they are most needed. Gary Paoli added: 'If such a national planning process was made a pre-requisite for REDD funding, and payments linked to delivery of biodiversity co-benefits, then net positive impacts on biodiversity would be ensured.'

Co-author Dr Erik Meijaard of People and Nature Consulting International commented: 'A target-based approach also respects the sovereignty of countries to prepare their own targets, and fulfils objectives of the Convention on Biological Diversity, both for recipient (tropical) countries and donor (developed) nations who are signatories to the convention.' The authors note that much of the groundwork for their recommendations has already been set, but support from national governments and the United Nations will prove critical to the success of REDD and its biodiversity outcomes.