

Forest and soil carbon is important but does not offset fossil fuel emissions

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Leading world climate change experts have thrown cold water on the idea that planting trees can offset carbon dioxide emissions from fossil fuels.

Professor Brendan Mackey of Griffith University Climate Change Response Program is the lead author of an international study involving researchers from Australia and the U.K. Their findings are reported in "Untangling the confusion around land carbon science and [climate change mitigation](#) policy", published in the scientific journal *Nature Climate Change*.

"While protecting and restoring natural forests is part of the solution, the reality is that for all practical purposes fossil fuel CO₂ emissions are irreversible," Professor Mackey said.

The findings highlight the urgent need for policy-makers worldwide to re-think the issue as many decision-makers, national and internationally, assume that [fossil fuel emissions](#) can be offset through sequestering carbon by [planting trees](#) and other land management practices.

"There is a danger in believing that land carbon sinks can solve the problem of atmospheric [carbon emissions](#) because this legitimises the ongoing use of fossil fuels", Professor Mackey said.

The study found that protecting natural forests avoids emissions that would otherwise result from logging and land clearing while also

conserving biodiversity. Restoring degraded ecosystems or planting new forests helps store some of the carbon dioxide that was emitted from past land use activities.

"These land management actions should be rewarded as they are an important part of the solution," Professor Mackay said.

"However, no amount of reforestation or growing of new trees will ultimately off-set continuing CO₂ emissions due to environmental constraints on plant growth and the large amounts of remaining fossil fuel reserves.

"Unfortunately there is no option but to cut fossil fuel emissions deeply as about a third of the CO₂ stays in the atmosphere for 2 to 20 millennia."

More information: "Untangling the confusion around land carbon science and climate change mitigation policy" by Brendan Mackey et al. *Nature Climate Change* [doi:10.1038/nclimate1804](https://doi.org/10.1038/nclimate1804)

Provided by Griffith University

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