

# Genetically altered trees, plants could help counter global warming

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Forests of genetically altered trees and other plants could sequester several billion tons of carbon from the atmosphere each year and so help ameliorate global warming, according to estimates published in the October issue of *BioScience*.

The study, by researchers at Lawrence Berkeley National Laboratory and Oak Ridge National Laboratory, outlines a variety of strategies for augmenting the processes that [plants](#) use to sequester carbon dioxide from the air and convert it into long-lived forms of carbon, first in vegetation and ultimately in soil.

Besides increasing the efficiency of plants' absorption of light, researchers might be able to genetically alter plants so they send more carbon into their roots--where some may be converted into [soil carbon](#) and remain out of circulation for centuries. Other possibilities include altering plants so that they can better withstand the stresses of growing on marginal land, and so that they yield improved bioenergy and [food crops](#). Such innovations might, in combination, boost substantially the amount of carbon that vegetation naturally extracts from air, according to the authors' estimates.

The researchers stress that the use of genetically engineered plants for [carbon sequestration](#) is only one of many policy initiatives and technical tools that might boost the carbon sequestration already occurring in natural vegetation and crops.

The article, by Christer Jansson, Stan D. Wullschleger, Udaya C. Kalluri, and Gerald A. Tuskan, is the first in a Special Section in the October *BioScience* that includes several perspectives on the prospects for enhancing biological carbon sequestration. Other articles in the section analyze the substantial ecological and economic constraints that limit such efforts. One article discusses the prospects for sequestering carbon by culturing algae to produce biofuel feedstocks; one proposes a modification of the current regulatory climate for producing genetically engineered trees in the United States; and one discusses societal perceptions of the issues surrounding the use of genetically altered organisms to ameliorate warming attributed to the buildup of greenhouse gases.

Provided by American Institute of Biological Sciences

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