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**AP** Associated Press

## Deforestation effects depend on location

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The effect of deforestation on climate depends on three things — location, location and location.

Environmentalists concerned about global warming have long encouraged preservation of forests because they absorb carbon dioxide, the most abundant greenhouse gas in the atmosphere.

But the issue, like most things, may be more complicated than it first appears.

New research in this week's online edition of Proceedings of the National Academy of Sciences, confirms the effectiveness of tropical forests at reducing warming by absorbing carbon. But it suggests that in snowy latitudes, forests may actually increase local warming by absorbing solar energy that would otherwise be reflected back out into space.

That doesn't mean forests in cold areas should be chopped down, stressed Ken Caldeira of the Carnegie Institution department of global ecology, located at Stanford University in Palo Alto, Calif.

"I am a little concerned about this being misapplied as an excuse to chop down the forests in the name of saving the environment," said Caldeira, a co-author of the report.

"A primary reason we are trying to slow global warming is to protect nature. It just makes no sense to destroy natural ecosystems in the name of saving natural ecosystems," he said.

But, he added, efforts to increase the forested areas in northern regions may be ineffective in combating warming and can be a distraction from the real answer, which is the need to reform our system of energy production.

The result does suggest "it's more important to preserve and restore tropical forests than had been previously recognized," he added.

Tropical forests help cool the planet in two ways, Caldeira pointed out — by absorbing carbon dioxide and by drawing up soil moisture which is released into the air forming clouds.

Those clouds reflect solar energy back into space, he said, while reducing the amount reaching the ground.

Steven W. Running, a professor of ecology at the University of Montana, praised the researchers, but questioned their conclusion.

"I don't think the conclusions they draw are ready for prime-time policy, and particularly their conclusion that reforestation in high latitudes might be counterproductive," Running said in a telephone interview.

"What they are doing is sparking a lively scientific discussion that is very necessary and I applaud them for that," he said. But until the scientific community can "chew this over" it shouldn't be used in setting policy, he said.

"This is challenging work" said Running, who was not part of the research team. "This is a real top group of scientists and they are doing some really intriguing earth systems model analysis that is exceedingly difficult to do," he added. It shows how complex Earth system feedback is.

Govindasamy Bala of Lawrence Livermore National Laboratory, a co-author of the paper, added: "Apart from their role in altering the planet's climate, forests are valuable in many other aspects. Forests provide natural habitat to plants and animals, preserve the biodiversity, produce economically valuable timber and firewood, protect watersheds and indirectly prevent ocean acidification."

The research was funded by the Energy Department.

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