

When residents take charge of their rainforests, fewer trees die

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Research from The Ohio State University shows that community involvement in preserving forested land can be successful Credit: Brent Sohngen, Ohio State

When the government gives citizens a personal stake in forested land, trees don't disappear as quickly and environmental harm slows down.

A new study from The Ohio State University has found that policies called "community forest concessions" have proven effective in preserving Guatemalan rainforests.

While giving forest property and management rights to residents doesn't eliminate [deforestation](#), it appears to lower it as much as almost 8 percent compared to areas without community oversight and ownership.

"Globally, there's a huge debate about how to conserve these rainforests and this work shows that these policies slow down aggressive deforestation that harms the environment," said study co-author Brent Sohngen, a professor of agricultural, environmental and developmental economics at Ohio State.

"Most government-protected zones are protected in name only, so it's important to find new ways of slowing deforestation."

This study, which appeared in the journal *Land Economics*, looked at community concessions in the Maya Biosphere Reserve, a protected area in northern Guatemala. In some cases, the government allocated property rights to longtime residents of the area. In other cases, the property was put in the hands of recent settlers or given to those who live a distance away, in a larger metropolitan area.

The research team used satellite land-use data to estimate the impact of community management on avoiding deforestation. And they compared tree loss in those areas to deforestation in similar, unmanaged areas.

The researchers also assessed "leakage," or the shifting of deforestation from managed areas to nearby unmanaged areas - a problem that could

render the community management policies worthless.

In all cases, the programs slowed the cutting down of trees in the rainforest, a resource that is vital in lowering carbon levels in the atmosphere.

The impact of community management was greatest in recently settled areas. The researchers found an almost 8 percent reduction compared to similar non-managed areas. There was evidence of leakage in those areas as well, though not enough to eclipse the benefits of deforestation.

The smallest impact - a 4.3 percent reduction - was seen in areas where nonresidents managed the land.

"This study's worldwide implications are tremendous," said Douglas Southgate, study co-author and emeritus professor of agricultural, environmental and development economics at Ohio State.

"There are millions upon millions of hectares of tropical forests - far more than will ever be set aside as parks and reserves and nearly all of that land is inhabited. This study suggests that empowering local communities is the best way to conserve resources in many places," he said.

In the arrangements in Guatemala, significant responsibility is handed over to the residents involved, Sohngen said.



Community Involvement Saves Trees, Researchers Find Ohio State researchers Brent Sohngen, Douglas Southgate and Lea Fortmann, in the field in Guatemala. Credit: Brent Sohngen

"What happens is you allocate property rights to groups of people - from 30 residents to hundreds of people - and they organize themselves and manage the land," he said.

Though the timber industry doesn't disappear in these rainforests, fast and indiscriminate removal of trees subsides while sustainable forestry increases. These arrangements in Guatemala also have led to a rise in non-timber business, including ecotourism and harvesting, and sales of

plants including palm fronds used in floral arrangements, Sohngen said.

"Deforestation is still going on - it's not like it's gone to zero - but this arrangement preserves biodiversity, history and culture. And it reduces carbon at the same time," he said.

"If we can preserve some of these spaces through concessions, we've saved them for another day," Sohngen said.

Lea Fortmann, now an assistant professor of economics at the University of Puget Sound, worked on this study as an Ohio State graduate student.

More information: Study paper: [aede.osu.edu/sites/aede/files/...rtmann_et_al_2017.pdf](https://aede.osu.edu/sites/aede/files/rtmann_et_al_2017.pdf)

Provided by The Ohio State University

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