'Narco-deforestation' study links loss of Central American tropical forests to cocaine

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Deforested land in Central America. Credit: Oregon State University

Central American tropical forests are beginning to disappear at an

alarming rate, threatening the livelihood of indigenous peoples there and endangering some of the most biologically diverse ecosystems in North America.

The culprit? Cocaine.

The problem is not the cultivation of the coca plant - which is processed into cocaine - that is causing this "narco-deforestation." It results from people throughout the spectrum of the drug trade purchasing enormous amounts of land to launder their illegal profits, researchers say.

Results of the study, which was funded by the Open Society Foundations and supported by the National Socio-Environmental Synthesis Center, have just been published in the journal *Environmental Research Letters*.

"Starting in the early 2000s, the United States-led drug enforcement in the Caribbean and Mexico pushed drug traffickers into places that were harder to patrol, like the large, forested areas of central America," said David Wrathall, an Oregon State University geographer and co-author on the study. "A flood of illegal drug money entered these places and these drug traffickers needed a way that they could spend it.

"It turns out that one of the best ways to launder illegal drug money is to fence off huge parcels of forest, cut down the trees, and build yourself a cattle ranch. It is a major, unrecognized driver of tropical deforestation in Central America."

Using data from the Global Forest Change program estimating deforestation, the research team identified irregular or abnormal deforestation from 2001-2014 that did not fit previously identified spatial or temporal patterns caused by more typical forms of land settlement or frontier colonization. The team then estimated the degree to which narcotics trafficking contributes to forest loss, using a set of 15

metrics developed from the data to determine the rate, timing and extent of deforestation.

Strongly outlying or anomalous patches and deforestation rates were then compared to data from the Office of National Drug Control Policy - considered the best source for estimating cocaine flow through the Central American corridor, Wrathall pointed out.

"The comparisons helped confirm relationships between deforestation and activities including cattle ranching, illegal logging, and land speculation, which traffickers use to launder drug trafficking profits in remote forest areas of Central America," Wrathall said.

They estimate that cocaine trafficking may account for up to 30 percent of the total forest loss in Honduras, Guatemala and Nicaragua over the past decade. A total of 30 to 60 percent of the forest losses occurred within nationally and internationally designated protected areas, threatening conservation efforts to maintain forest carbon sinks, ecological services, and rural and indigenous livelihoods.

"Imagine the cloud of carbon dioxide from all of that burning forest," Wrathall said. "The most explosive change in land use happened in areas where land ownership isn't clear - in forested, remote areas of Honduras, Guatemala and Nicaragua, where the question of who owns the land is murky."

"In Panama, the financial system is built to launder cocaine money so they don't need to cut down trees to build ranches for money laundering. In Honduras, land is the bank."

Farming and cattle ranching aren't the only money laundering methods threatening tropical forests, the researchers say. Mining, tourism ventures and industrial agriculture are other ways drug money is

funneled into legitimate businesses.

Wrathall said the impact affects both people and ecosystems.

"The indigenous people who have lived sustainably in these environments are being displaced as the stewards of the land," he said. "These are very important ecological areas with tremendous biodiversity that may be lost."

The authors says the solutions include de-escalating and demilitarizing the war on drugs; strengthening the position of indigenous peoples and traditional forest communities to be stewards of the remaining forest lands; and developing regional awareness of the issue.

"We are cruising through the last of our wild spaces in Central America," Wrathall said. "Obviously, ending the illegal drug trade would be the best solution, but that isn't going to happen. In fact, when drug enforcement efforts are successful, they often push the activity into remote areas that haven't had issues before, such as remote biodiversity hotspots."

Wrathall is an assistant professor in Oregon State University's College of Earth, Ocean, and Atmospheric Sciences. He specializes in the impact of climate change on the distribution of the human population and other factors that affect human migration.

"The surge of violence in Central America that has accompanied drug trafficking is recognized as a major driver of migration in the region."

More information: Steven E Sesnie et al, A spatio-temporal analysis of forest loss related to cocaine trafficking in Central America, *Environmental Research Letters* (2017). DOI: 10.1088/1748-9326/aa6fff