

# Human-induced deforestation is causing an increase in malaria cases

May 22 2017

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Nearly 130 million hectares of forest—an area almost equivalent in size to South Africa—have been lost since 1990, according to a recent report by the Food and Agriculture Organization of the United Nations.

A new study of 67 less-developed, malaria-endemic nations titled, "Anthropogenic forest loss and malaria prevalence: a comparative examination of the causes and disease consequences of deforestation in developing nations," published in *AIMS Environmental Science*, led by Lehigh University sociologist Dr. Kelly Austin, finds a link between deforestation and increasing malaria rates across developing nations.

Malaria represents an infectious disease tied to environmental conditions, as mosquitoes represent the disease vector. Deforestation, Austin notes, is not a natural phenomenon, but rather results predominantly from human activities, or anthropogenically.

The study builds upon evidence that patterns in climate change, deforestation, and other human-induced changes to the natural environment are amplifying [malaria transmission](#).

"Human-induced changes to the natural environment can have a powerful impact on malaria rates," she says.

The analytic research strategy used also allowed the authors to look at the causes of [deforestation](#), in order to have a broader focus on the upstream or human-induced causes of land-use change that impact

malaria vulnerabilities.

Results of the study suggest that rural population growth and specialization in agriculture are two key influences on forest loss in developing nations.

Deforestation from agriculture comes in part from food that is exported to more-developed countries, Austin notes. "In this way, consumption habits in countries like the U.S. can be linked to malaria rates in developing nations."

Deforestation can impact malaria prevalence by several mechanisms, including increasing the amount of sunlight and [standing water](#) in some areas. According to the study, in general, increasing standing water and sunlight is favorable for most species of Anopheles mosquitoes which are the key vector of malaria transmission.

Austin hopes her research could help facilitate changes in agricultural practices. Austin says leaving some trees and practicing more shade and mixed cultivation, rather than plantation agriculture which involves clear-cutting forests, could help to mitigate some of the harmful impacts.

Although there have been major improvements in [malaria prevention](#), diagnosis, and treatment in many nations over the last several decades, Austin and her colleagues say that [malaria](#) remains a leading cause of death and threat to health in many regions and countries across the Global South.

**More information:** Kelly F. Austin et al, Anthropogenic forest loss and malaria prevalence: a comparative examination of the causes and disease consequences of deforestation in developing nations, *AIMS Environmental Science* (2017). [DOI: 10.3934/environsci.2017.2.217](https://doi.org/10.3934/environsci.2017.2.217)

Provided by Lehigh University

Citation: Human-induced deforestation is causing an increase in malaria cases (2017, May 22)  
retrieved 19 April 2024 from

<https://phys.org/news/2017-05-human-induced-deforestation-malaria-cases.html>

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