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## Deforestation: Facts, Causes & Effects

By [Sarah Derouin](#) - Live Science Contributor November 06, 2019

Reference Article: Facts about deforestation.



Experts estimate that a chunk of forest the size of a soccer field is lost every second to deforestation.  
(Image: © Shutterstock)

Deforestation is the permanent removal of trees to make room for something besides forest. This can include clearing the land for agriculture or grazing, or using the timber for fuel, construction or manufacturing.

Forests cover more than 30% of the Earth's land surface, according to the [World Wildlife Fund](#). These forested areas can provide food, medicine and fuel for more than a billion people.



Forests are a resource, but they are also large, undeveloped swaths of land that can be converted for purposes such as agriculture and grazing. In North America, about half the forests in the eastern part of the continent were cut down for timber and farming between the 1600s and late 1800s, according to [National Geographic](#).

Today, most deforestation is happening in the tropics. Areas that were inaccessible in the past are now within reach as new roads are constructed through the dense forests. A [2017 report](#) by scientists at the University of Maryland showed that the tropics lost about 61,000 square miles (158,000 square kilometers) of forest in 2017 — an area the size of Bangladesh.

## Deforestation: Facts, Causes & Effects

Deforestation is the permanent destruction of forests in order to make the land available for...

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## Reasons forests are destroyed

[The World Bank](#) estimates that about 3.9 million square miles (10 million square km) of forest have been lost since the beginning of the 20th century. In the past 25 years, forests shrank by 502,000 square miles (1.3 million square km) — an area bigger than the size of South Africa. In 2018, [The Guardian reported](#) that every second, a chunk of forest equivalent to the size of a soccer field is lost.

Often, deforestation occurs when forested area is cut and cleared to make way for agriculture or grazing. The [Union of Concerned Scientists \(UCS\)](#) reports that just four commodities are responsible for tropical deforestation: beef, soy, palm oil and wood products. UCS estimates that an area the size of Switzerland (14,800 square miles, or 38,300 square km) is lost to deforestation every year.

vegetation is burned to make way for crops like soy or cattle grazing. In 2019, the number of human-lit fires in Brazil skyrocketed. As of August 2019, more than 80,000 fires burned in the Amazon, an increase of almost 80% from 2018, [National Geographic reported](#).

Many forests are cleared to make way for palm oil plantations. Palm oil is the most commonly produced vegetable oil and is [found in half of all supermarket products](#). It's cheap, versatile and can be added to both food and personal products like lipsticks and shampoo. Its popularity has spurred people to clear tropical forests to grow more palm trees. Growing the trees that produce the oil requires the leveling of native forest and the destruction of local peatlands — which [doubles the harmful effect](#) on the ecosystem. According to a [report published by Zion Market Research](#), the global palm oil market was valued at \$65.73 billion in 2015 and is expected to reach \$92.84 billion in 2021.



A palm tree farm planted where there was once a rainforest. (Image credit: Shutterstock)

## Effects of deforestation

Forests can be found from the tropics to high-latitude areas. They are home to 80% of terrestrial biodiversity, containing a wide array of trees, plants, animals and microbes, according to [the World Bank](#), an international financial institution. Some places are especially diverse — the tropical forests of New Guinea, for example, contain more than 6% of the world's species of plants and animals.



for firewood, timber and charcoal. Over the past 25 years, Uganda has lost 65% of its forest cover, [Reuters reported](#). Families send children — [primarily girls](#) — to collect firewood, and kids have to trek farther and farther to get to the trees. Collecting enough wood often takes all day, so the children miss school.

According to a 2018 [FAO report](#), three-quarters of the Earth's freshwater comes from forested watersheds, and the loss of trees can affect water quality. The UN's [2018 State of the World's Forests report](#) found that over half the global population relies on forested watersheds for their drinking water as well as water used for agriculture and industry.

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Deforestation in tropical regions can also affect the way water vapor is produced over the canopy, which causes [reduced rainfall](#). A 2019 study published in the journal [Ecohydrology](#) showed that parts of the Amazon [rainforest](#) that were converted to agricultural land had higher soil and air temperatures, which can exacerbate drought conditions. In comparison, forested land had rates of evapotranspiration that were about three times higher, adding more water vapor to the air.

Trees also absorb carbon dioxide, mitigating [greenhouse gas](#) emissions produced by human activity. As climate change continues, trees play an important role in carbon sequestration, or the capture and storage of excess carbon dioxide. Tropical trees alone are estimated to provide about 23% of the climate mitigation that's needed to offset climate change, according to the [World Resources Institute](#), a nonprofit global research institute.

Deforestation not only removes vegetation that is important for removing carbon dioxide from the air, but the act of clearing the forests also produces greenhouse gas emissions. The Food and Agriculture Organization of the United Nations says that deforestation is the [second-leading cause of climate change](#). (The first is the burning of fossil fuels.) In fact, deforestation accounts for nearly 20% of greenhouse gas emissions.





Not only does deforestation remove trees that sequester greenhouse gases, but it also produces a significant amount of greenhouse gases in the process. (Image credit: Shutterstock)

## Deforestation solutions

Developing alternatives to deforestation can help decrease the need for tree clearing. For example, the desire to expand the amount of land used for agriculture is an attractive reason to deforest an area. But if people adopted sustainable farming practices or employed new farming technologies and crops, the need for more land might be diminished, according to the [UN's Sustainable Forest Management Toolbox](#).

Forests can also be restored, through replanting trees in cleared areas or simply allowing the forest ecosystem to regenerate over time. The goal of restoration is to return the forest to its original state, before it was cleared, according to the [U.S. Forest Service](#). The sooner a cleared area is reforested, the quicker the ecosystem can start to repair itself. Afterward, wildlife will return, water systems will reestablish, carbon will be sequestered and soils will be replenished.

Everyone can do their part to curb deforestation. We can buy [certified wood products](#), go paperless whenever possible, limit our consumption of products that use palm oil and plant a tree when possible.

Landsat 5 and 7 satellites.

- Learn more about [forest conservation efforts](#) from the Yale School of Forestry & Environmental Studies.
- Read more about the [problems caused by deforestation](#) according to the International Union for the Conservation of Nature.

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