

Understanding tropical deforestation

By NASA, adapted by Newsela staff on 03.13.17

Word Count **894**

Level **790L**



Two logging trucks on the Kalabakan-Sapulot-Road take heavy tropical timber logs to the log pond in Kalabakan, Indonesia. NASA

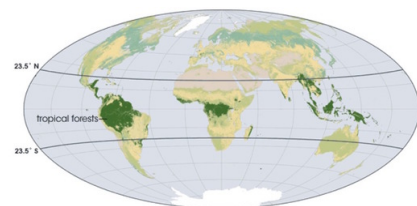
Tropical forests stretch out from the equator around the Earth. They are full of amazing diversity and productivity. They have plants and animals found nowhere else in the world.

Tropical forests are disappearing rapidly. Humans clear the land to make room for farms and pastures. They also harvest the wood and use the land to build roads and houses. Deforestation meets some human needs. It also causes big problems, though. These include climate change and extinction of plants and animals. These challenges are global.

Causes Of Deforestation

People have been deforesting the Earth for thousands of years. Today, forests are cleared to harvest the wood and to use the land for farms, roads and buildings.

The biggest direct cause of tropical deforestation is turning the land into cropland and pasture. Countries also build roads to improve transportation



Tropical forests span both sides of the Equator, thriving in the warm, usually wet, climate, under the Sun's most direct rays. They are dark green on this map, while other biomes are lighter. Image by: Robert Simmon/NASA.

of goods. Building the roads causes some deforestation. The new roads also make it easier to reach forested lands. As a result, more people will enter to harvest timber. In some cases, it is the reason why the roads were built. When loggers have harvested all the wood in an area, they move on. The roads and the logged areas attract settlers. The settlers destroy the remaining forest for farms.

Poverty often drives people to migrate to the edge of the forest. There, they clear forests to farm. Tropical deforestation has many causes, though. There is more to it than poverty.

Governments cause deforestation with building projects. Things like increased demand for rainforest timber can also lead to deforestation.

New technologies make it easier to clear forests quickly. Meanwhile, old logging technology increases damage in surrounding forests.

Effects Of Deforestation

Tropical forests probably contain about half of all kinds of plants and animals on Earth. Many can only be found in small areas. This makes them more likely to die out. In addition, the forest that remains is more dangerous for the plants and animals still there.

Rain forest products are popular around the world. These include fruit, nuts, timber, spices, natural oils and medicines. Without intact forest ecosystems, we would lose many of these products for good.

Biodiversity, a large variety of living things in a certain place, isn't just important for the forest. It is important for people too. Plants and animals in the rainforest may hold the cures for diseases and ways to improve the food we produce. Many of these plants and animals may not have even been discovered yet.

Effects On Soil

With all the life in tropical forests, it may be surprising to learn that tropical soils do not have too many minerals. Heat and rain wash away the minerals over time.

When an area is completely deforested for farming, the farmer typically burns what is left. Minerals are lost. In just a few years, soils often become unable to support crops. Sometimes, the area is then turned into cattle pasture. This makes it nearly impossible for the area to be reforested.

Tropical forests are home to millions of native, or indigenous, peoples. Many of them rely on the forests. Their cultures and livelihoods often depend on having access to forests and forest resources. Deforestation in indigenous territories sometimes leads to conflicts. Governments in these countries face the challenge of balancing the needs of different people.

Rainfall And Temperature

Much of the rain that falls in tropical forests is water that the rainforest has recycled into the atmosphere. Water evaporates, condenses into clouds and falls again as rain. This maintains



Tropical forests are home to an incredible variety of plants and animals like the squirrel monkey (left) and the red-eyed tree frog (right). Images from: Wikimedia.

tropical rainfall. Also, the evaporation cools the Earth's surface. Deforestation is likely to make the area drier and hotter. Tropical deforestation may also change rainfall pattern far outside the area.

Deforestation in tropical areas can increase the greenhouse effect and global warming. The trees and plants in the forests take in a lot of carbon. They do this during photosynthesis. They release carbon dioxide too, though. This happens in a process called cellular respiration. Also, carbon dioxide escapes when leaves and other matter break down naturally. When people clear the forests, carbon returns to the atmosphere much more rapidly.

Rates Of Tropical Deforestation

The Food and Agriculture Organization (FAO) produces a global forest report. The FAO report is the most widely used measure of global forest health.

The report provides a grim picture. 500,000 square miles of forest disappeared between 1990 and 2015. That's nearly twice the size of Texas. The rate at which forest is lost has slowed down a bit in the last few years, though.

Sustaining Tropical Forests

Forest communities are moving toward farming that is less harmful to the forest. Also, protected areas like parks and preserves can draw tourists and provide jobs and education for people there.

Parks and protected areas may have drawbacks, though. Scientists in the Amazon compared territories managed by indigenous people to parks and other protected areas. Territories managed by indigenous people saw far less deforestation. These territories may work better than parks alone.

Finally, sustainable products are increasing in value. This may give landowners reasons to adopt more forest-friendly practices. Governments also have a reason to work harder to protect the forest.

More countries are beginning to seriously address environmental issues like global warming and maintaining biodiversity. This could be good news for tropical rain forests.



LEFT: Açaí fruit is a renewable resource that can provide a livelihood for harvesters without damaging the Amazon Rainforest. Photo: Ricardo via Getty Images. RIGHT: An Indigenous community met with the Brazilian government in June 2013. They were protesting the construction of a dam that environmentalists and indigenous groups said would devastate the environment and the livelihoods of people who live in the area. Photo: AP Photo/Eraldo Peres