

Introduction

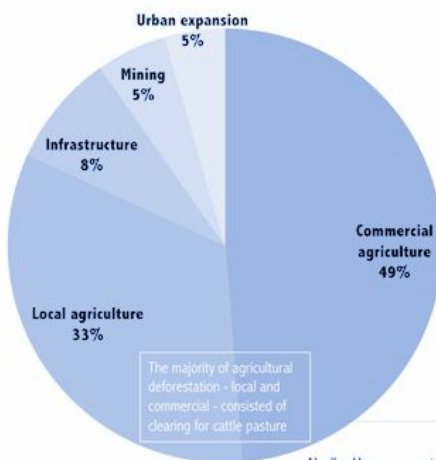
Deforestation⁵ is the removal or thinning of a forest which is then converted for human use. This process is also known by the terms clearance, clearcutting or clearing, and plays a major role in speeding up the effects of climate change.

- Deforestation may occur for several reasons, including agricultural expansion, cattle breeding, timber extraction, infrastructure development, and more⁶.
- Although deforestation largely occurs as a result of human activity, some natural causes include hurricanes, fires, parasites and floods.
- Deforestation often remains unregulated in large parts of the world, and removes our greatest ally in preventing excess carbon from entering the atmosphere⁵.
- The loss of tropical forests due to deforestation has contributed to around 4.8 billion tonnes of CO₂ annually, amounting to almost 10% of anthropogenic carbon emissions in a given year⁶.
- Forests are known as “carbon sinks” as a result of their ability to take inorganic carbon from the atmosphere, and use it for biological properties that produce oxygen as a waste product⁷.



Clearing of tropical rainforest south of Lake Kutubu, Papua New Guinea⁶.

Drivers of tropical deforestation, 2000-2010



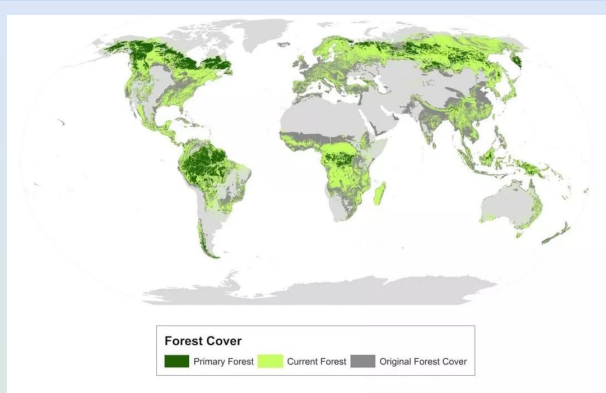
Noriko Hosonuma et al (2012)

How Current Global Change is Making This Worse

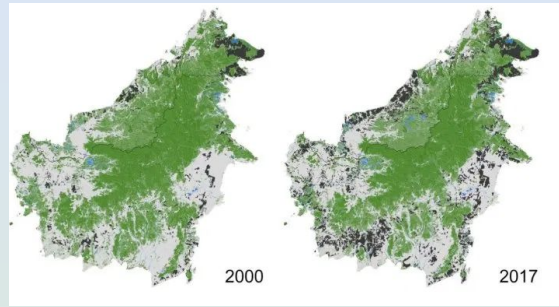
- Earth’s landmass is 30% forests, 6% rainforests
 - Global temperature increase harms plants
 - Global drying harms rainforests drastically
- Deforestation causes cyclical degradation of land and soil
 - Slash-and-burn creates less viable land
 - It increases local temperature, and drops local moisture levels
- High demand for energy and land prevents slowing of deforestation
- Losing Carbon Sink in trees

From Mongabay : A chart of the major drivers of Tropical Deforestation
<https://rainforests.mongabay.com/0803.htm>





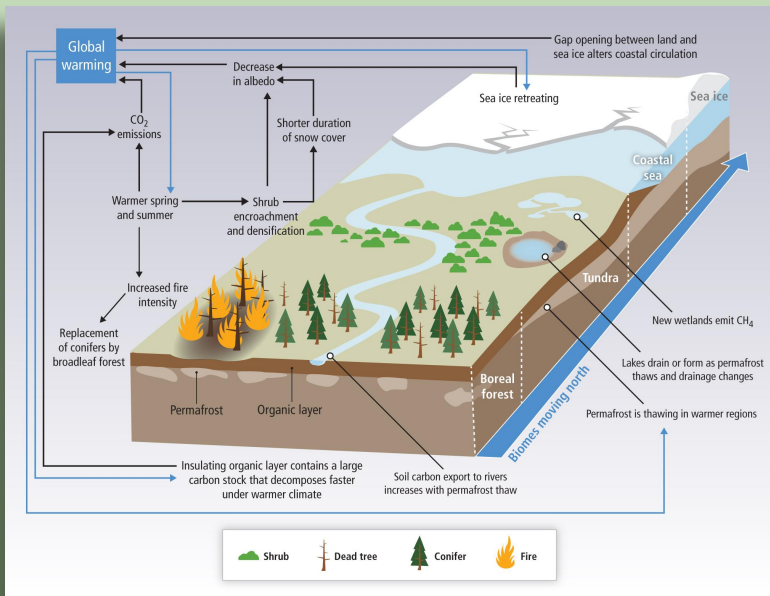
From INTACT (<https://primaryforest.org/maps/forest-cover-2017/>) a map of global forest cover as of 2017. Dark gray represents the original forest cover, Yellow represents the current forest cover and Green represents the primary forests (forests that are untouched).



From Forest News (<https://forestsnews.cifor.org/59378/has-borneos-deforestation-slowed-down?fnl=en>) a map of deforestation effects in Borneo (SouthEast Asia) from 2000 to 2017. Black represents the expansion of industrial plantations. Green represents the land covered with forests.

How will this change impact humans &/or wildlife in the near future

Deforestation impacts human and wildlife in three ways. First, it leads to a loss of biodiversity as species lose habits and food sources. Second, it disrupts the water cycles, which can lead to unpredicted water cycles and weather conditions. Last, the quality life for humans worsen because the land become less arable due to soil erosion, less carbon dioxide is absorbed from the atmosphere which allows global change to worsen and there is less oxygen for us to breathe in¹.



The Bigger Picture

²Anthropogenic deforestation multiplies carbon dioxide emission by spurring parts of the cycle (Figure 4) which aid the global greenhouse effect:

- ➔ Less carbon dioxide sequestration
- ➔ Decrease in albedo (light reflection)
- ➔ Increased wildfire risks
- ➔ Shift in biomes and ecosystems

²Isometric graphic exemplifying the effects of increased CO₂ emissions in a Taiga biome region.

References

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2. Intergovernmental Panel on Climate Change. (2014) Fifth Assessment Report. Retrieved from <https://www.ipcc.ch/report/ar5/wg2/>
3. Climate Institute <http://climate.org/deforestation-and-climate-change/>
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5. Pimm, S. L. (2020, March 24). Deforestation. In Encyclopædia Britannica. Retrieved from <https://www.britannica.com/science/deforestation>
6. "Plants and Forests", 23 April 2018, Carbon Brief <https://www.carbonbrief.org/deforestation-has-driven-up-hottest-day-temperatures>.
7. "Tropical Forests Emit More Carbon", 28 September 2017, Carbon Brief <https://www.carbonbrief.org/tropical-forests-no-longer-carbon-sinks-because-human-activity>
8. Dean A. "Deforestation and Climate Change". 21 July 2019. Climate Council <https://www.climatecouncil.org.au/deforestation/>.