

BRAZIL AND THE DEFORESTATION OF THE AMAZON RAINFOREST

The Amazon Rainforest is found in the Amazon Basin of South America. A tropical broadleaf forest, it covers 2,100,000 square miles, most of which is found in Brazil. The remaining 40% branches into Peru, Colombia, Venezuela, Ecuador, Bolivia, Guyana, Suriname, and French Guiana. It's the world's largest and most biodiverse tropical rainforest with an estimated 390 billion trees. One in ten known species lives in the Amazon rainforest, comprising the world's chief gathering of plants and animals. For the sake of clarity, this article will focus on Brazil and the deforestation taking place within its borders.

Deforestation takes place when forested areas are cut down on a major scale, and the land is used for purposes that bring a profit, such as colonization and development. Until the 1960s, the interior of the Amazon was protected and remained unexploited, with slash and burn crop cultivation mainly on its periphery.

Due to its burgeoning but poor population, the Brazilian

government promoted the development of untapped resources of the Amazon. Through economic development programs, population relocation programs that pulled citizens from the slums, and the construction of dams and highways, the government created a helter-skelter immigration to the Amazon. In order for farmers or ranchers to claim land it had to be cleared, and that is where the problems began.

Rather than being absorbed by the ground, rain within the Amazon is mostly caught in the canopy, known as convectional rainfall. As the rainforest heats up, the water evaporates, forming clouds that provide the next day's rain. The hot, damp forest floor aids in the rapid decomposition of dead plants, which in turn provides nutrients easily absorbed by shallow plant and tree roots. As neither the roots nor the nutrients are deep, removing the vegetation for farmland results in

soils that quickly become infertile and dry, making the soils erode easily. Removing the trees disrupts the water cycle, leading to dryer conditions for farming. When rain does come, flooding and heavy erosion lead to too much silt in waterways. Rainforests cleared for agriculture make poor farmland.

Without trees to absorb carbon emissions, carbon and greenhouse gasses enter the atmosphere. Even worse, trees *become* carbon sources when they are cut or burned. According to the WWF, "Tropical forests hold more than 210 gigatons of carbon, and deforestation represents around 15 percent of greenhouse gas emissions."

Because Amazonian soils are only productive for a short time after they are cleared, farmers constantly clear additional land. Since the 1970s, 91% of the land cleared has become pasture for cattle, an area approximately the size of France. Today, Brazil is today's largest producer of beef with an estimated 90 million head of cattle supplying Latin America, the European Union, Russia, the Middle East, and China. Great demand and profitability push ranchers to own more cattle.

Deforestation skyrocketed with the construction of the Trans-Amazonian highway. Started back in the 1970s, the construction of the highway suffered several hiccups due to not conducting environmental impact studies before extending across the previously inaccessible interior. One east-west highway extends for 3,400-miles from Recife on the Atlantic coast to Cruzeiro do Sul on the Peruvian border. Two other major highways run north-south and a web of smaller roads connect throughout. Once a government-sponsored highway is built, both legal and illegal loggers add to this road system and clear-cut trees. Landless peasants, farmers,

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miners, and cattle ranchers often fight each other for a foothold, trampling the rights of aboriginal Indian populations, indifferent to the fragile ecology.

Slavery and violence are the trademark of the inexhaustible greed associated with global supply chains. In 2005, American nun and environmentalist Dorothy Stang was gunned down in Para, a northern state infamous for violence, contract killings, slave-like labor conditions and environmental devastation.

According to the Catholic Land Pastoral, a watchdog group that tracks rural violence in Brazil, more than 1,200 activists, small farmers, judges, priests, and others have been killed over attempts to preserve the rainforest in the last twenty years. As was the case with Stang, gunmen are hired by loggers, ranchers, and farmers to silence protesters interfering in illegal logging and land rights. Al-

though killings over land are seldom punished, Stang's murderers are now serving their sentences.

Roughly 224,000 square miles of Brazil's Amazon rainforest have been destroyed since 1980. Between 1991 and 2000, the total area of forest lost to deforestation rose from 160,000 to 227,000 square miles. The deforestation is so extensive that cleared swaths are visible to the naked eye from outer space. Images provided by NASA show the western state of Rondônia, where some of the worst deforestation took place between 2000 and 2012, as seen [here](#).

Scientists fear that the loss of an additional 20% of the rainforest will interrupt too much of the rainforest's water cycle, causing the remaining forest to dry out and die. In a slash and burn farming culture, the potential for devastating wildfires would be very high.

During the last fifteen years, the Brazilian government, partly due to

international pressure, has created protected areas and indigenous reserves while being more aggressive on curbing encroachment. Brazil's environmental protection agency, *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis* (IBAMA), while underfunded and undermanned, has helped enforce environmental laws. IBAMA officials are often left to pay for their own gas and carry a small pistol to face off with heavily armed loggers, but creating an electronic logging certificate system and using satellite imagery is helping hone in and cut down on illegal logging. An awareness of the Amazon's value is emerging. Since 2004, the rate of deforestation in the Brazilian Amazon has fallen nearly 80 percent. The question remains whether it will be too little too late to save the Amazon.

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QUESTIONS

1. How do standing forests affect carbon emissions?
2. How do felled forests affect carbon emissions?
3. Why are Amazonian forests poor lands for farming?
4. How are environmental issues political and cultural as well?

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