

Academic Essay Source Texts

Title Many of the world's rainforests are being destroyed. Discuss the causes of this destruction; focusing on logging, mining and agriculture, and discuss the effects on the environment and humans.

[Text 1] Tropical Rainforests

Tropical Rainforests are found in tropical areas of heavy rainfall. They are rich in many species of wildlife and vegetation. Rainforests cover less than two percent of the Earth's surface. They are home to some 50 to 70 percent of all life forms on our planet. Rainforests are the most productive and most complex ecosystems on Earth. The high rainfall and year-round high temperatures are ideal conditions for vegetation growth. The wide range of plants encourages a huge variety of insects, birds and animals.

Deforestation is a major problem caused by humans in the tropical rainforest. Researchers have identified a number of significant factors of deforestation. One is land-clearing. There are nearly 3 million landless people in Brazil alone. The government has cleared large areas of the Amazon Rainforest and encouraged people to move there and farm the land for the growing of crops (e.g. coffee and sugar cane). The scheme has not been successful. Farmers stay on the same land and attempt to farm it year after year. Nutrients in the soil are quickly destroyed; the soil becomes infertile and nothing will grow. In addition to land-clearing for crops, there is the added problem of land-clearing for cattle ranching. This is another major cause of deforestation, particularly in Central and South America. In Central America, two-thirds of lowland tropical forests have been turned into pasture or grassland for cows since 1950.

The mining of iron ore, bauxite, gold, oil and other minerals has benefited many large international corporations and generated huge profits. However, it has also destroyed large areas of rainforest, e.g. The Amazon. Mining and industrial development lead to direct forest loss due to the clearing of land to establish buildings and machinery. Indigenous people are displaced. New roads are constructed by these mining companies through previously untouched land, opening up the rainforest to even more heavy industry and also to more landless farmers.



Continued mining and land-clearing for agriculture have resulted in a number of serious consequences. The first consequence is the removal of soil or earth from the rainforest. When vegetation is removed, the soil or earth is left exposed or uncovered to the heavy equatorial rainfall. When it rains, it washes the rich, fertile soil away. The land becomes badly eroded losing its richness and the forest cannot grow again. The

removal of top soil means little vegetation will grow. Also, soil erosion leads to flooding as soil is deposited on river beds.

Destruction of the world's rainforests also has serious effects on global climate. Rainforests absorb carbon dioxide, a necessary gas in the atmosphere. When rainforests are burned and cleared, more carbon dioxide is released into the earth's atmosphere. This causes a rise in the earth's temperature which scientists have argued increases the greenhouse effect and further contributes to global warming. Furthermore, if greater numbers of trees are cut down in the future, there will be fewer trees to absorb carbon dioxide, thus further worsening the situation.

Source: Internet Geography (2007). What is the impact of humans on the tropical rainforest? Retrieved from <http://www.internetgeography.net/mobile/what-is-the-impact-of-humans-on-the-tropical-rainforest/>

[Text 2] **Rainforest Destruction**

Tropical rainforests are located around the equator where temperatures stay nearly 27°C year round. Rainforests receive 160 to 400 inches (400-1000 cm) of rain each year. The largest rainforests are in Brazil (South America), Zaire (Africa) and Indonesia (South East Asia). Other tropical rainforests are in Hawaii and the islands of the Pacific & Caribbean. Recently, however, these areas have come under serious threats.

Commercial logging is the major cause of rainforest destruction in South East Asia and Africa. Commercial logging companies cut down mature trees for their timber or wood. Worldwide, this is responsible for the destruction of 5 million hectares of rainforest per year. Most of this timber from the rainforest is then exported to rich countries. The timber is used in the construction of doors, window frames, crates, coffins, furniture, plywood sheets, chopsticks, household utensils and other items.

Unfortunately, logging companies destroy large areas of rainforest in order to remove only a small amount of timber or wood. The heavy machinery used to enter the forests to cut these trees causes extensive damage. The cutting down of one 'selected' tree also destroys much of the land and many of the plants beside that tree. In addition, removing a felled tree from the forest causes even further destruction. It is believed that in many South East Asian countries between 45 and 74% of trees remaining after logging have been substantially damaged (WWF, 2002). For this reason, commercial logging is considered by many to be the single biggest factor of tropical rainforest destruction.

Logging companies are also indirectly responsible for another cause of rainforest destruction. The new roads into the rainforest that are built by logging companies are then used by landless people to enter deep into the forest. These landless farmers then clear the land and begin farming there. In Africa, 75% of land now being farmed by farmers was originally rainforest land which logging companies built roads into.

A tragic effect of the loss of the rainforest is the extinction of plants and animals that could provide us with food, medicine or valuable products. Thousands of species of plants and animals disappear each year as more and more rainforests are destroyed. This leads to a poorer world with less biodiversity. This could mean the loss of a future cure for diseases that might be found in an undiscovered plant from the rainforest.

Source: Save the Rainforest (2005). Retrieved from http://www.savetherainforest.org/savetherainforest_006.htm

[Text 3] **Rainforests of the World**

Rainforests are home to 50-90% of the species on Earth. Moreover, worldwide there are approximately 50 million indigenous people who live in tropical forests. They rely almost exclusively on the forests for their survival needs. Also, many of the world's important food crops and domestic animals have been developed from rainforest species. Rainforests are essential to human beings in numerous ways.

Because of tropical deforestation, it has been estimated that at least 40 species are dying every day. Tropical forests cover only 12 per cent of the land area of the Earth, yet they are home to between 50 and 90 per cent of the world's species. Because one species in a tropical forest may be found in a small area and nowhere else, the destruction of relatively small areas of forest can cause extinctions. No one knows just how the rest of the global ecosystem depends on rainforests, but we may find out in the next 30 to 50 years. That is how long it is estimated that it will take for tropical forests to disappear altogether if current trends continue.

Medicines

Rainforests are a vital source of medicines. Today, less than 1% of the world's tropical forest plants have been tested for pharmaceutical properties, yet at least 25% of all modern drugs came originally from rainforests. The potential and fragility of the rainforests as an invaluable source of medicine is clearly illustrated by Dr. Lee from the University of Malaysia who reported that researchers in 1991 isolated a compound from a Malaysian gum tree that blocked the spread of the AIDS virus in human cells.

Climate – Water and Temperature

Rainforests have been described as the global heat and water pumps because of their influence on climate. Rainforests are dark, and like a dark car parked in the hot sun they absorb heat. Above a rainforest the air is cooler so it is more likely to rain. Inside the rainforest, beneath the dense canopy, humidity stays high and steady compared with the outside world. The forests stay wet and evaporate vast quantities of water through their foliage and into the air above, forming clouds. Some falls again as rain in the tropics but often clouds are carried great distances to fall as rain, often as far away as Europe and Australia. As rainforests disappear this will dramatically affect the water circulation of the atmosphere and is likely to affect weather patterns thousands of miles away.

The Greenhouse Effect

All forests hold vast amounts of carbon in their biomass. When forests are destroyed, vast amounts of carbon are released into the atmosphere as CO₂. Because CO₂ is the major greenhouse gas, this adds to global warming. Up until now the increase of CO₂ in the atmosphere has been largely due to the burning of fossil fuels such as gas, oil and coal, but this could change as more forests are destroyed. In one year, fires from the Amazon alone produced 500 million tons of CO₂, estimated to be 10% of the world's total annual atmospheric emissions. Atmospheric CO₂ traps the sun's heat in much the same way as the glass of a greenhouse, and by warming the atmosphere it could change global weather patterns.

Decay and Renewal in the Rainforest

In a "forest system" nothing is wasted. Plants are constantly losing leaves which then mix with animal waste to form a rich layer of dirt on the forest floor. Micro-organisms and insects break down this dirt and convert it into nutrients for the soil. Through the soil, with the help of water, these nutrients are taken up, absorbed through the roots of the trees and plants, nourishing them, which in turn, provides food and shelter for birds and animals. So the process of decay, recycling and renewal goes on.

Source: Collins, P. (1991). *The Australian rainforests memorandum*. Lismore, Australia: Sage Press.

[Text 4] Causes of Rainforest Destruction

Logging: Commercial logging companies cut down mature trees that have been selected for their timber. Large areas of rainforest are destroyed in order to remove only a few logs. The International Tropical Timber Organization (ITTO), the body established to regulate the international trade in tropical timber, found in 1988 that commercial logging is considered by many to be the biggest single agent of tropical deforestation. Apart from its direct impact, logging plays a major role in deforestation through the building of roads which are subsequently used by landless farmers to gain access to rainforest areas. These displaced people then clear the forest by slashing and burning to grow enough food to keep them and their families alive, a practice which is called subsistence farming.

Agriculture - Cash Crops and Cattle Ranching: Logged rainforest areas are being totally cleared to provide land for food crops or for grazing cattle. Much of this produce is exported to rich industrialized countries, and in many cases, crops are grown for export while the local population goes hungry. Due to the delicate nature of rainforest soil and the destructive nature of present day agricultural practices, the productivity of cash crops grown on rainforest soils declines rapidly after a few years. They are referred to as cash crops because the main reason for their planting is to make money quickly, with little concern about the environmental damage that they are causing when land is farmed over-intensively. In addition, cattle damage the land to such an extent that it is of no use to cattle ranchers any more, and they move on, destroying more rainforest. In the end, not only have the forests been destroyed but the land is left unable to sustain life.

Source: Lange, Y. (2011). *The rainforests and environmental disaster*. Oxford, England: Oxford University Press.

Citations

Source references, formatted to APA citations

Text 01	
Text 02	
Text 03	
Text 04	