Tropical Rainforest

Description and locations

Tropical Rainforests, by definition, are a regional group of distinguishing plants and mammals and communities that have a large percent of yearly rainfall. The rainforest is split in to four (4) parts: emergent, upper canopy, lower canopy and forest floor. The emergent layer consists of the tallest trees. The upper canopy is the primary level of the rainforest, forming a roof over the rest of the forest. In the lower canopy, there is very little sunlight and most trees never grow past 12 feet tall. The forest floor is dark and almost no sun reaches it at any time during the day. The Rainforest receives between 67 and 100 inches of rain fall a year. Tropical Rainforests are, primarily, located in the tropics between the Tropic of Cancer and the Tropic of Capricorn. They are located in Central America, South America, Africa, Southeast Asia, and Australia. The Tropical Rainforest in Brazil has, arguably, the largest river in the world - the Amazon.

History

The rainforest began to form almost 140 million years ago. Tribal groups have always lived in the rainforest, using its resources to provide food, wood, medicine and homes. In the 5th Century, ten million people lived in the rainforest. In the last 100 years, though, the population of people living in the rainforest was reduced by 90%. However, there are still tribal groups that live deep within the jungle and have no contact at all with other humans. The rainforests in New Guinea, Indonesia, and Malaysia, for example, are home to hundreds of tribal groups.

Most scientists go into the rainforest looking for new medicines. There are over 1400 plants in the rainforest that have the ability to cure cancer. In the 1800’s and 1900’s, people came into the rainforest to mine for gold and other minerals. They also cut down trees and sold the land for farming. Although the rainforest soil has little nutrients, deforestation has become a big problem: Countries like Brazil are losing 50,000 sq. km of forest a year and Indonesia is losing 12,000 sq. km a year. In 1986, two dozen species went extinct every day.

Water amounts

The rainforest receives about 12 hours of sunlight every day and it rains almost every day during the wet season. Rainforests have only two seasons: A dry season and a wet season. It has high humidity - levels at 77% to 88%. The rainforest contains 1/5 of the world’s fresh water. Half of the rain that falls on the rainforest comes from the Atlantic Ocean the other half comes from the rainforest itself.

Human Issues

The Rainforest is quickly disappearing at an astonishing rate of 87000 square miles per year. Humans constantly destroy rainforests for their riches and supplies not taking care in the manner they do so. Rainforests are destroyed by fires set to clear land, chemical wastes dumped in the water, and bulldozers. Deforestation is caused by many reasons including: cattle ranching, farming, logging, and mining.

Cattle ranching is a major cause of deforestation where lands are cleared and cows are raised to live in. The problem with ranching is that the vegetation of an area soon runs out so farmers must keep moving for new grass and plants. This is “compensated” because so much quick profit is made of ranching.

Farming, mainly soy farming, is reason deforestation is spreading so rapidly. The rainforest’s soils are very poor, so farmers must keep moving in deeper towards the forest every year or two for healthy rich soil. Shifted cultivation is a form of agriculture, especially used in tropical Africa, in which an area of ground is cleared of vegetation and cultivated for a few years and then abandoned for a new area until its fertility has been naturally restored which could possibly be never. Shifted cultivation destroys the rainforest and abuses the nutrients so the area is no longer fertile and therefore plants cannot grow back. The farmers then move on and repeat the process.

Logging also attacks the rainforests for valuable trees. Brazil made selling Mahogany illegal in 2001 after finding most mahogany cut down were illegal but illegal logging still continues. The collection of wood for firewood is another cause of clearance, especially in Africa.

Mining causes damage to countries that inhabit rainforests. Illegal mining pollutes water ways with mercury used in the mining process which also kills fish. Miners remove solid and vegetation for rainforests which cause soil erosion. Oil has been a big problem for the Amazon in the past; from 1967 to 1992 Texaco drilled for oil in Ecuador and dumped billions of gallons of toxic chemicals into waste pits which have seeped into rives. The Amazon has many riches and even though mining is not a huge threat, along with it comes roads which attract settlers.

Humans not only cause damage to the habitat, but to the inhabitants of those habitats too. Scientist estimate that 50,000 species of the world’s rainforest become extinct every year – that is 137 a day! Many animals die from poaching as those animals are wanted either as pets or from their unique traits. Middlemen or traffickers make huge profits by selling these animals worldwide.

Government attitudes/Laws

The Brazilian government is trying to stop deforestation and has passed a few plans to do so, but it is not enough. As for the other countries, Ethiopia is trying to prevent deforestation but is no doing much. Both Brazil and Ethiopia have realized that the condition of their country will worsen if deforestation continues and are setting a good example for some other countries.

Brazil has joined the WWF (World Wildlife Fund) in 2002 and ARPA (Amazon Region Protected Area) program to help keep the rainforest alive. The ARPA is a program to set up 80 reserve camps that will total up to the size of California. In 2007 Brazil launched the Arc of Fire program which cracks down on illegal logging camps and has proven very useful in stopping loggers.

The government has begun to teach people of the uses of the forests and encourage people to keep them in better condition in Ethiopia. The government cannot prohibit people to cut trees because it would make survival for the people in the rural country much harder so those people will be provided electricity and machinery as an alternative source to wood. If a tree is cut down, the cutter must replant another one.

In summary governments are trying to prevent places from being logged and are working to stop deforestation more than ever, but work must be continued so that nothing deforestation can ultimately be put at a minimal.

Usefulness

The rainforests across the world provide many useful things to everyone. They are a huge supply of oxygen giving the earth 20% of all it has. The rainforest is the earth’s lungs keeping its inhabitants happily breathing and alive. The rainforest also supplies wood and minerals to countries it is in. Rainforests are also widely used for medicine and 25% of Western pharmaceuticals are derived from ingredients found in tropical rainforests. Rainforests are much more than homes to animals and wood; they help keep the world as we know it functioning.

Global warming effects

The earth receives 20% of its oxygen from the rainforests. This oxygen is what keeps life going as we know it. The trees do not only produce oxygen, but remove carbon dioxide from the atmosphere too. Carbon dioxide is a greenhouse gas that traps in heat. Tropical forest trees, like all green plants, take in carbon dioxide and release oxygen during photosynthesis. Plants also carry out the opposite process, known as respiration, in which they emit carbon dioxide, generally in smaller amounts than taken in during photosynthesis. The remaining carbon is stored in the plant, allowing it to grow bigger. That stored carbon would be released into the air as carbon dioxide if deforestation or forest degradation occurs and trees are cut down and allowed to rot or are burned.   There trees must not be cut down if people wish to prevent global warming.

Living organisms – Special Species/Plants/Animals

The Amazon Rain Forest is home to almost half of the world’s animals! There is a variety of animals, some that have lived there for a long, long time or are new in this world. Some of the amazing animals are the weevil, the Panther chameleon, the Nymphalid butterfly and many more. But one of the most interesting animals in the rain forest is the Giant Anteater. The Giant Anteater hunts down ants in the dirt one by one with its long trunk for a nose. Finally when it sniffs out an ant nest, it tears it apart and eats it savagely. To us ants are animals that no one really pays attention to, but to them, it is like going to a parade and having a feast.

Animals aren’t the only amazing thing in the rain forest. More than half of the world’s plant types live in the rain forest. The epiphyte is a kind of plant that lives in the canopy. Epiphytes grow high in the rainforest's upper stories. The plant gets water and nutrients, or food, from the air, not from the soil. Many types of orchids and ferns are epiphytes and are found in **rain forests.**

Problems

Rain Forests are now becoming smaller and smaller for a variety of reasons. Demolition workers are clearing up space for farmers to live and have their field, but in the process of taking down all these trees and plants, what the demolition workers don’t see is that they are making the soil unfertile, making farmers move away because of the bad soil quality, therefore wasting land for animals in the dirt and for the farmers. When they ruin the soil they are mainly ruining it for decomposers. Decomposers are animals such as earthworms, beetles, fungi, microbes, and others live in the soil. Also the construction of roads, buildings, houses and much more are being made every day because of the population increase. But to do this they have to cut down massive parts of the Amazon.

Future

The cutting down of the Amazon is a problem because Amazonia shelters 2/3 of the worlds remaining rainforest and is also home to 20 percent of the world’s fresh river water. If this process continues, in a hundred years or two, almost 50% of the world’s animals may never have the satisfaction of having a home or an environment that fits their needs ever again.