

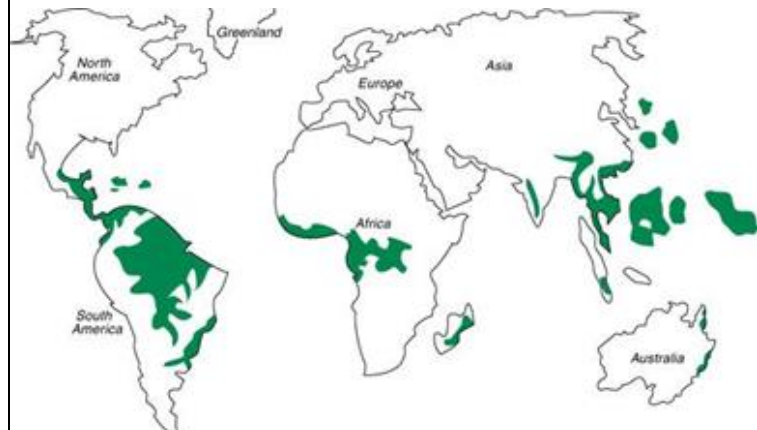


OUR CHANGING PLANET



HOW IS HUMAN ACTIVITY IMPACTING ON OUR WORLD?

Where are the Rainforests of the world?



Tropical Rainforest biomes can be found in South America, Africa and Asia.

Before humans started destroying the rainforests, they covered 15% of the Earth's land area, today, they cover only 6%.

Why are Rainforests important to Earth?

Biodiversity: Rainforests contain about half of the existing plant and animal species in the world. They contain a third of the world's bird species and 90% of its invertebrates. Thousands of different trees and plants grow close together and millions of different species of animals including jaguars, parrots, tarantulas, monkeys, gorilla, snakes, frogs and insects live in this biome.

Medicines: Hundreds of rainforest plants are used in modern medicines. It is estimated that 25% of all our medicines come from plants growing in the rainforest. Only about 1% of the plant species have been studied, so potentially there could be many more cures to illnesses waiting to be discovered. In Madagascar, 80% of the plant species are endemic - that means they are not found anywhere else on earth. Yet 2/3 of their forest has already been destroyed.

Oxygen: Rainforests have been known as the "lungs of the world": they provide about 20% of the world's oxygen. The forests and soil also lock away carbon. In fact they absorb about 20% of the world's man-made carbon dioxide emissions in a process called photosynthesis.

Foods: An estimated 80% of the world's diet originated from rainforest plants. Many food sources are still being discovered in rainforests. The 'peach palm' of Brazil produces up to 300 peach-like fruits a season. The fruit has twice the food value of banana and more protein and carbohydrate than maize.

Water cycle: Rainforests also help to maintain the world's water; during heavy downpours, the vegetation in the rainforest catches and holds much of the rain, then 'disposes' of it through evaporation and transpiration which creates clouds. In areas around the world where forests have been felled, rainfall patterns have changed.

What are the threats to the rainforest?

The disappearance of the forest is called **deforestation**. Current rates of deforestation amount to about 6 million hectares a year. That is about 8.5 million football pitches. Forests are destroyed for a number of reasons:-

- 1) The growth of populations in countries with rainforest.
- 2) An increase in worldwide demand for tropical hardwoods.
- 3) Cattle Grazing in South America.
- 4) Palm oil plantations in Indonesia.
- 5) Mining.
- 6) Hydroelectric dams in South America.

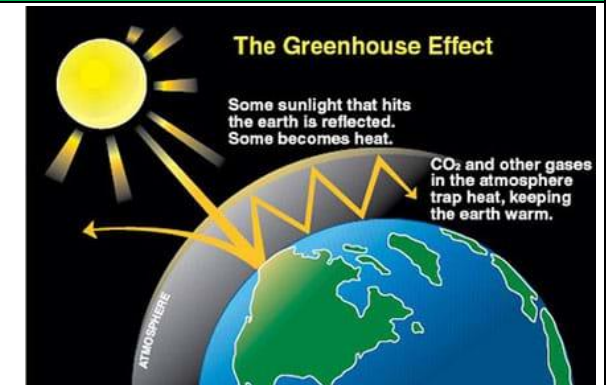


What is global warming?

The atmosphere is like a protective bubble around the world. It's made of a mix of gases. Some of these gases are called **greenhouse gases** because they help keep the Earth warm.

Human actions are causing changes in the atmosphere. Power stations that burn oil and coal to make electricity produce a lot of greenhouse gases. So do cars, planes and agriculture (farming).

Scientists think that these extra greenhouse gases (including carbon dioxide) are making the world warm up too much because they are trapping too much heat in the atmosphere.



What is the impact of deforestation on the climate?



• Tropical rainforests absorb about 20% of the world's man-made carbon dioxide emissions but burning the rainforest is like creating a huge bonfire, throwing massive amounts of carbon dioxide into the atmosphere. Tropical deforestation contributes 17% of the world's annual greenhouse gas emissions.

- By burning the rainforest to clear land, we are not only adding huge amounts of CO2 to the atmosphere, but we are also reducing nature's ability to absorb CO2 and to produce oxygen.
- Deforestation is responsibly for more global carbon emissions than all the planes, trains, buses and cars in the world put together!

What are the effects of Climate Change?

Climate change means a long-term change in the weather and temperature of the planet.

If no action is taken the greenhouse effect could lead to a rise in average global temperatures of between 0.3-0.7 degrees Celcius as early as the year 2035.

Storms - Storms, tornadoes and hurricanes will become more frequent and stronger as oceans heat up causing more water to evaporate.

Droughts - As temperatures rise, some areas will become dryer and water sources will evaporate or be used up sooner than they are replenished.

Sea levels are already rising at a rate of 1 to 2mm each year due to expansion of the top layer of the oceans as they warm and the melting of the polar ice caps. Continued increasing rises in sea levels will cause increased flooding in coastal areas and river estuaries.

The Effect on Wildlife: Many, many species of plants and animals are losing their habitats because of climate change. For example: **Polar Bears** need ice to live on. **Seals** need ice flows too - to rest and give birth to their pups. **Plankton and Krill** - microscopic plankton and the tiny krill provide food for a huge number of animals in the sea, from barnacles, to fish and even sharks and whales. Plankton and krill are very easily affected by changes in sea temperatures and will move away or die if the temperature changes, even slightly.

