

Deforestation and Land Use

- ▶ **Deforestation** is the cutting down of trees, typically on a large scale. This is carried out all around the world for many different reasons.
- ▶ **For example:**
 1. Clearing land for farming – This provides space to grow food for cattle, raise the cattle and produce other food crops.
 2. Growing crops that we can use to make plant-based fuels, which are called biofuels.
 3. Logging (the process of extracting wood) – The wood is used for various purposes, such as construction and as fuel.



Effects of Deforestation

1. **Increase in wildfires:**
 - ▶ Forests play an important role in regulating the environment. They provide moisture and shade the ground, which helps to prevent wildfires from occurring.

- ▶ When forests are removed, the moisture and shade they provide are lost. This leads to an increase in the amount of dry, combustible material on the ground. These conditions make it more likely for fires to start and spread. As a result, there will be more frequent and intense wildfires.

2. Loss of biodiversity

- ▶ When forests are cleared, the plants and animals that lived in those forests are often unable to survive in the new, altered environment.
- ▶ Many species are adapted to living in specific types of forests. When those forests are destroyed, the species that depend on them may be unable to adapt and may go extinct.

3. Release of carbon dioxide (CO₂) into the atmosphere

- ▶ The trees that are cut down can no longer photosynthesise. Plants use carbon dioxide (CO₂) for photosynthesis, so the more trees we cut down, the less carbon dioxide will be absorbed. This results in more carbon dioxide in the atmosphere, which can contribute to global warming.

4. Increase in flooding

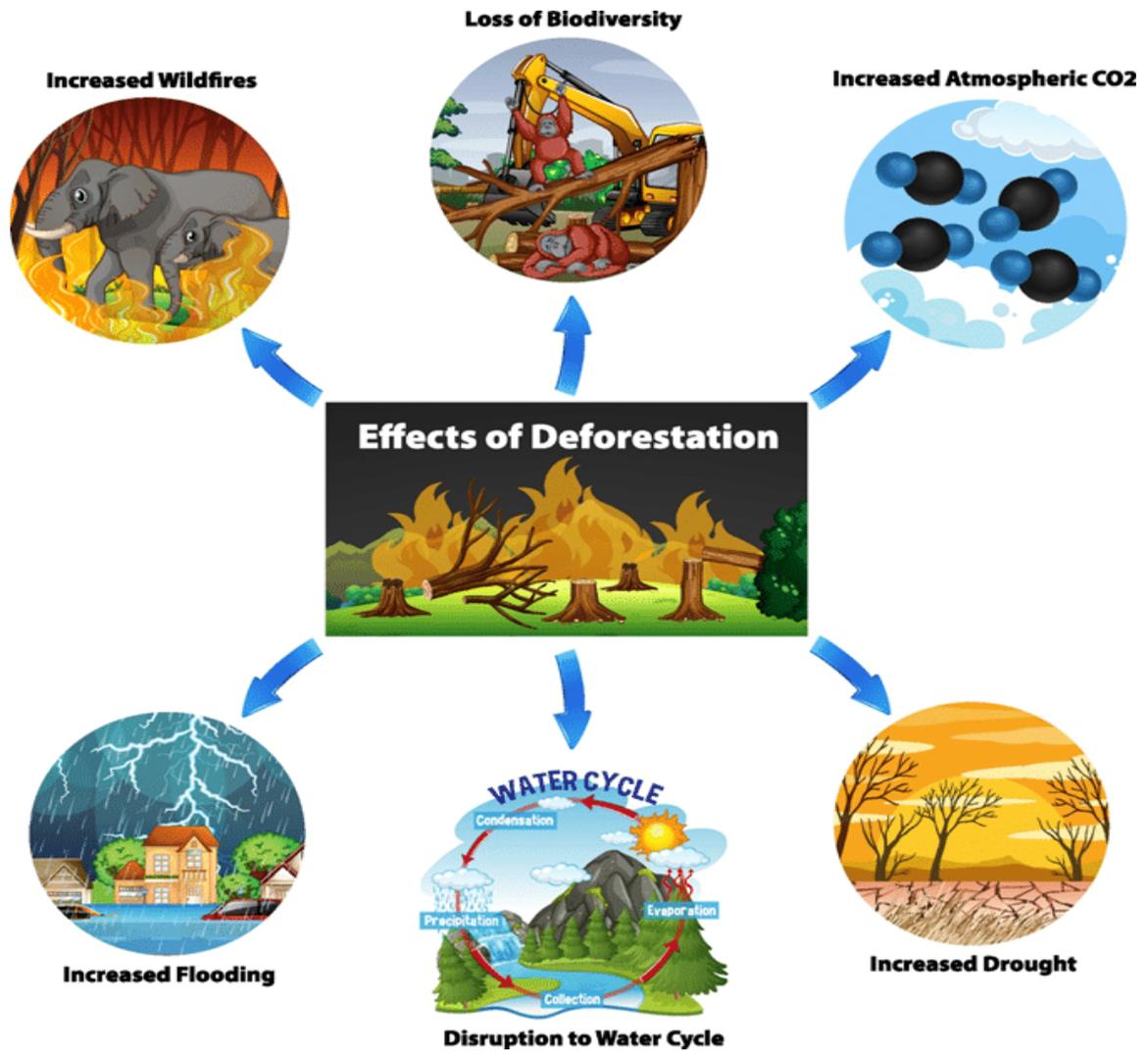
- ▶ Trees help prevent sediment runoff, and forests are typically able to hold and use more water than farms or grasslands.
- ▶ When forests are cleared, it can lead to soil erosion, which is the loss of the top layer of soil. This means that the soil retains less water, leading to more frequent and severe flooding.

5. Disruption of the water cycle

- ▶ Trees and forests play a vital role in the water cycle by absorbing water from the soil and releasing it back into the atmosphere through a process called transpiration. This helps to regulate the amount of water in the environment and prevent flooding.
- ▶ When forests are cleared, the trees that were once present are no longer able to absorb and release water, leading to changes in the local water cycle.

6. Increase in drought

- ▶ Cutting a large number of trees down disrupts the water cycle, leading to less rainfall. As a result, the level of groundwater decreases, which causes water shortages and droughts.



Land Use

Land use by Human for different purpose

- ▶ The larger the human population gets, the more land we require. More houses must be built, more resources found, more food must be grown and more waste is produced. This often means less space and fewer resources for other animals and plants.
- ▶ Often biodiversity is significantly reduced when land is cleared for human uses, such as building, quarrying, farming and waste disposal. Think about the reduction in biodiversity, which occurs when an area of rainforest is cut down to grow crops.



Peat bog destruction

- Bogs are very wet areas of land without trees in which many types of moss grow.
- They are acidic and often have very low levels of nutrients.
- Here decomposition is very slow and peat is formed from partially decayed plants.
- Here, carbon remains in the plants instead of being released into the atmosphere.
- The destruction of peat bogs has become more common, resulting in the burning or decay of peat.
- This releases the stored carbon into the atmosphere in the form of the greenhouse gas, carbon dioxide.
- Another negative impact of peat bog destruction is the loss of biodiversity within the habitat.

Reasons for peat bog destruction

- Peat bogs are being destroyed for the following reasons:
 1. To free up land for farming, which requires the bogs to be drained. This draining process stimulates peat decay.
 2. To burn the peat for fuel.
 3. To sell the peat to gardeners as garden compost.