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DEFORESTATION IN BC: A GROWING ENVIRONMENTAL CONCERN

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Piles of dead wood and refuse reflect the growing impact of BC's lumber industry on local forests.

COQUITLAM - BC is a province renowned for its dense forests. This made it a prime destination for the logging industry, which has provided jobs and economic growth for centuries. But in recent years, concerns have been raised on the issue of deforestation: large swathes of land remain barren after the forests were cut down.

The destruction of local forests is a threat to biodiversity, as many species depend on the forests as their natural habitat.

The problem affects multiple spheres of the Earth. Many parts of the biosphere, which encompasses all living things, are affected by deforestation. Firstly, the forests themselves are affected, as the rate that trees are being cut down exceeds the rate at which new ones are being planted, and, while it is possible for them to grow back, this takes many years. Second, all manner of species native to the regional forests are robbed of their natural habitats.

Another sphere affected by deforestation is the atmosphere, which comprises all the gases surrounding Earth. Forests act as carbon sinks, meaning they take carbon from the air and store it within themselves as well as the soil. Trees are very important for this reason, as they help slow climate change considerably.

It is a common misconception that trees release CO2 into the atmosphere when cut down, but this is in fact not true. If wood is used for products such as furniture or buildings, it does not release carbon unless it experiences a chemical reaction capable of separating the chemical bonds of molecules that store carbon. However, when trees are burned to make room for agriculture, it releases CO2 through

chemical reactions. Similarly, when wood is left to rot, it too releases carbon, but *only* through chemical reactions.

Trees are crucial to the water cycle, which provides a vital resource: freshwater! 97 percent of the world's water is salt water, meaning that it is unusable without extensive filtration. That other 3 percent is the water that we and most other species on earth use to survive. In the water cycle, water vapour in the air condenses into clouds and falls as rain. The water then either soaks into the ground or joins lakes, rivers, and oceans. The Sun's energy evaporates some of the water, which returns to the air as vapour, but some remains in the ground. Trees absorb groundwater through their roots, then release it into the atmosphere to continue the cycle.

Trees aid the cycle in many ways, such as helping maintain soil structure (without trees, soil will become compacted and less able to absorb water, leading to increased surface runoff and eventual flooding.) Another important function that trees perform is preventing soil erosion by binding the soil with their roots. Without trees, the soil is prone to increased erosion from surface runoff. This significantly reduces soil quality and impacts water sources as well as natural habitats.

The carbon cycle is also negatively affected. Trees, as mentioned before, are vital absorbers of carbon, and for thousands of years the carbon cycle has been regulated (the death and subsequent decomposition of old trees, which releases carbon, was more or less equal to the growth of new trees, which absorb carbon. Parts of the Amazon Rainforest, which acts as a giant carbon sink and contributes to the regulation of the carbon cycle, have been deforested so thoroughly that they are now producers of carbon (they produce more carbon than they absorb.)

Deforestation has a profound impact on the food chain. As trees are removed, animals lose sources of food and shelter. This may lead to population declines or even extinction. While some animals may not be directly affected, the loss of forests means that animals relying on it will die, and then the animals that consume that animal will die, and so on. Additionally, trees help keep the soil healthy through nutrient cycling, and unhealthy soil impacts plants, which impacts the animals that feed on those plants. Finally, trees play a crucial role in the water cycle, and if the water cycle is disrupted and drought occurs, plants (and, eventually, animals) will die off.

Indigenous communities in BC are almost always opposed to deforestation, and rightly so. While the government has recently been cooperating with Indigenous peoples to limit deforestation, it remains an issue that is not easily solved. The

territory of the Blueberry River First Nations in northeastern BC stretches 38,000 square kilometres, but industrial development (including deforestation) has infringed on their lands.

I chose this issue because it is local to BC and is significant in today's world. It connects to me and other people through impacts on the food chain (the effects on the food chain eventually affect us) and through the water cycle, where extensive deforestation can cause dry spells.

Some potential solutions are implementing strict laws that prohibit the logging of some forests, going paperless, using alternatives such as bamboo (which grows very quickly), and limiting food waste (therefore limiting the need for more agricultural land, which means less forests need to be cleared.)

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