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ONTARIO
Newsletter

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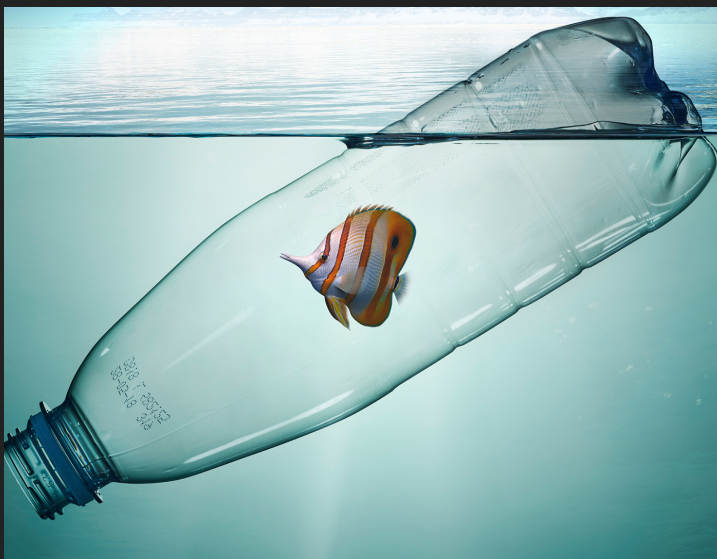
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An incredible old-growth redcedar tree within an active logging cutblock. ©2020 TJ Watt



A fish inside of a plastic bottle. © iStock/the-lightwriter

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Ocean Microplastic Pollution

INTRODUCTION

One of the most ubiquitous developing environmental challenges confronted today is microplastic contamination. Plastic pieces, particles, and fibers are becoming more polluted in the world's seas, freshwaters, soils, and air, generating worries about the environmental and human health consequences. Around 14 million tonnes of microplastics have been estimated to have accumulated on the ocean floor. (Barett et al., 2020)

CAUSES & INFLUENCES

So what are microplastics and where do they come from? Microplastics are plastics smaller than five millimeters in length. They often appear in the environment as pieces, fibers, pellets, or beads of various sizes and physicochemical compositions. Microplastics are regularly consumed by aquatic organisms, ranging from plankton to huge marine mammals. Humans are also exposed to microplastics through the eating of contaminated seafood and, other

foods and beverages, as well as through inhaling microplastics in the air.

Microplastic pollution has caught scientific and public awareness not until recently, but the sources that have been constantly contributing to the pollution have existed continually. Some of those sources are land flow, coastal tourism, fishing, and ship transportation. The common aspect between all 4 of these sources is the excessive use of plastic in many various forms such as - plastic bags, water bottles, foam, and fibers.



A volunteer of the non-governmental organization Canarias Libre de Plásticos carries out a collection of microplastics and mesoplastic debris to clean the Almaciga Beach, on the north coast of the Canary Island of Tenerife, on July 14th, 2018. (Photo: Desiree Martin/AFP/Getty Images)

EFFECTS OF MPP



Microplastics can harm fish and other aquatic life by lowering food intake, slowing growth, causing oxidative damage, and inducing aberrant behaviour, among other things. Nano-scale microplastics will also permeate the biological barrier and accumulate in tissues, causing the production of reactive oxygen species (ROS), disrupting lipid metabolism, and perhaps harming life at the molecular level.

Because of their small particle sizes, microplastics are widely distributed in the marine environment; they are easily consumed by marine life and cause a variety of toxic effects, such as growth and development inhibition, impact on feeding and behavioral ability, reproductive toxicity, immunity toxicity, genetic damage, and so on.

Furthermore, the damaging effect of microplastics on corals is caused by the retention of plastic pieces in mesenterial tissue, which reduces feeding capability and lowers energy stores. (Lusher et al., 2015)



INITIATIVES TAKEN TO CONTROL THE PROBLEM

The OECD nations play a critical role in reducing microplastic contamination. While most plastic waste mishandling happens in emerging nations, OECD countries have a substantial role in microplastics emissions. North America, Western Europe, and Japan are responsible for over a third of all microplastics released into the environment.



At this time, marine microplastic pollution is becoming increasingly serious, and it has become a worldwide pollution problem, yet there are no viable remediation solutions available. Concerns about the environmental and human health consequences of exposure to these contaminants are growing. Because the buildup of plastics and microplastics in the environment poses long-term and irreversible threats to ecosystems and human health, mitigating actions must be done.

However, certain initiatives have been taken to reduce the problem such as on December 28th, 2015, President Obama signed the Microbead-Free Waters Act of 2015, banning plastic microbeads in cosmetics and personal care products (NOAA, 2021).

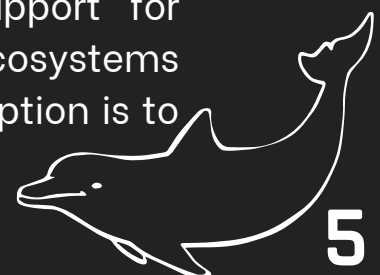
Moreover, we, as layman people, can contribute to reducing this pollution by following the 3 R's - Reduce, Reuse and Recycle. The root problem of microplastic pollution arises from the pollution of plastics, so in order for us to even start thinking and acting upon microplastic pollution; the foundation needs to begin from reducing, reusing and recycling plastics.

Plastic Pollution Coalitions, Plastics for Change, Plastic Oceans, Surfers Against Sewage, Greenpeace, By the Ocean We Unite, One More Generation, One Green Planet, Surf Rider Foundation, Earth Guardians, and other socially active platforms are all working on the issue of microplastic pollution and making significant contributions.



CONCLUSION

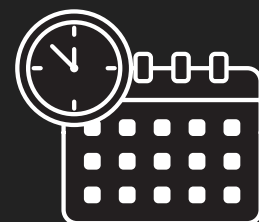
For its negative impacts on marine biota, the problem of plastic pollution in the marine ecosystem has become a source of worry in recent years. Microplastics have a significant bioaccumulation potential due to their small size and this problem has been ignored for a really long time. New research approaches for conservation management and support for various educational programmes are needed to safeguard ecosystems from these toxic polymers. To minimise future danger, the best option is to cease making it and look for plastic-based alternatives.



Community Clean Up



Date: April 24th, 2022



TIME: 9:30 AM - 1:30 PM EST

Location: High Park (1873 Bloor St W, Toronto, ON M6R 2Z3)

WHY SHOULD YOU ATTEND?

By removing pieces of trash laying around in this park, we can improve the conditions of the park and prevent damage to the animals who live there as well as to people who visit the park regularly. Together we can create a greener, and healthier environment!

Reminder: Wearing **Green** is Recommended



Prizes: Check out our instagram page for further details!!



Logging of Old-Growth in Vancouver Island

Introduction

In the region around Fairy Creek in the South of Vancouver Island, B.C., there has been a struggle of control towards the logging of historic old-growth. The parties involved in this local environmental crisis consist of the logging companies harvesting old-growth, protesters who seek an end to this logging and the Indigenous peoples who inhabit the affected area. This situation led the Indigenous people to take steps to maintain control of their area without foreign interference aside from the government.

What's Special About the Vancouver Island Temperate Rainforest?

Temperate rainforests, by definition, are forests with high precipitation rates. Combined with the warm temperatures of southern B.C, Vancouver Island is an ideal place for temperate rainforests, which is why they have existed on the island for thousands of years (“Re/Max,” n.d).



Lush rainforest in the Cathedral Grove on Vancouver Island, Canada. | ©2021 Sarah Winter

Vancouver Island’s temperate rainforest is unique because it is the only temperate rainforest in the world where the density of coniferous trees is greater than deciduous trees (Maycock et al., 2010). Much of the temperate rainforest in Vancouver Island is classified as the Great Bear Rainforest (“Re/Max,” n.d). The old-growth, specifically red and yellow cedar, are estimated to be between 800-2000 years old (Morin, 2021). These old growth are an important source for carbon storage, clean air, habitat for endangered species, as well as keeping a firm grasp of the topsoil (“Old growth” 2022) ; Old growth successfully eliminates erosion and can even grow in elevations over 1000m (“Before & after old-growth maps,” n.d).

The Current Situation.

Commercial logging in B.C. has been a major industry since the 1820s (Green et al., 2014). However, The Narwhal states that the B.C. government's claim that 23% of the forest is old-growth is false; new statistics by ecologists suggest that only 2.7 percent can be considered old-growth (Wood, 2020). Old growth in B.C. is a targeted resource because the wood is sturdier and more durable when compared with other trees ("Old growth vs. new growth lumber – which is better?," 2018). Furthermore, other reasons why old-growth is considered valuable by the B.C. logging industry is because it is more resistant to decay, damage, and termite infestation when compared with regular trees. (Mel, 2015) There is much demand for Canadian old growth. They are primarily exported to either China or Japan as construction materials; it is estimated that around \$655 million in hardwood lumber exports was sent to Japan in 2018 (BC Forest companies promote products in Japan, China 2019). According to the Sierra Club B.C, old-growth is being cut down across B.C province at a rate of 500 soccer fields per day. (Wood, 2020) Additionally, since old growth takes an incredibly long time to grow, this type of wood cannot be considered renewable if it is cut at the



current quick pace. The last large temperate rainforest in Canada is found on Vancouver Island, and loggers are cutting the many old growth in the forest on Indigenous lands (Morin, 2021).

THE INDUSTRY'S STANCE



The Teal-Jones Group's logging company licenses the area around Fairy Creek (Wilson, 2022). The company has been in a decades-long engagement with the area's First Nations, which includes arguments and stances of the management and preservation of the forest (Wattson, 2021). The company's expansion to the Fairy Creek watershed has been met with much resistance (Williams & Lewis, 2021). However, the company still managed to log old-growth in and around Fairy Creek. The logging of old-growth had come to a halt in June as large protests by various environmental groups began to rise in May 2020 (Austen, 2021).



THE PROTESTORS' STANCE



Thousands of protestors gather and protest for one cause; to protect the Fairy Creek watershed and its old-growth from logging (Williams & Lewis, 2021). When Premier John Horgan was elected, he said that he would do his best to protect the old-growth; however, many activists disagree as he has given licenses to logging companies many times during his time in office (Williams & Lewis, 2021). There have been over 1,100 arrests as of September 24, 2021 (Hensley, 2021), with some protestors hanging from tripods, and some chaining themselves together to block roads. Despite court injunctions, severe weather, and constant arrests, protestors have moved their protesting away from the roads and into the forest. To be specific, these protestors are aligning their camps near the watersheds (Marlow, 2021). However, as of late 2021, fewer protestors have been continuing the protests since some of them left due to confusions of court injunctions, harsh weather, and some protestors having to return to university or college to study (Marlow, 2021).



Members of the Fairy Creek Blockade occupy a logging road | ©2021 Ken Dawson

THE INDIGENOUS' STANCE



Most First Nations do not support the protestors, however, they do acknowledge the deforestation of old-growth and the impact it will have on their lives (Marlow, 2021). A representative of the Ditidaht First Nations stated that the reason they wanted to get rid of the protestors was to keep balance between preserving the forest and benefiting from the harvest of the resources for the stability of their nation (Plummer, 2021). Chief Councilor Robert Dennis Sr. states that since third parties like the government and people have taken control of the land decades ago, their management has led to the



depletion of old-growth and the stability of the ecosystem surrounding them (“Huu-ay-aht, Pacheedaht, Ditidaht First Nations take back decision-making responsibilities over ḥahahuuḥi,” 2021). Logging in the region has also led to the destruction of salt grass marshes that nurture and aid the growth of juvenile salmon, which is causing a depletion of one of the Pacheedaht’s primary food sources (Cox, 2021). Due to this environmental crisis and its consequences, the Ditidaht, Huu-ay-aht, and Pacheedaht signed the Hisuk Ma Cawak Declaration, which outlines the area of land and water that the three nations administrate, as well as their control of the forestry, fishing, and other resource management in the area (The Hisuk Ma C’awak Declaration, n.d). The Hisuk Ma Cawak Declaration also states that third parties; whether it be companies like the Teal-Jones Group, organizations, other governments, and individuals, have no right to speak on behalf of these three nations, its land, water, and resources (The Hisuk Ma C’awak Declaration, n.d).



Leaders of the Huy-ay-aht, Pacheedaht and Ditidaht First Nations sign an declaration to take back power over the resources on their traditional territories | ©2021 Kevin Rothbauer

Conclusion

Old-growth plays a crucial role in the ecosystem that sustains them, where they store carbon, provide habitat for fauna and hold the topsoil to prevent erosion. However, with only 2.7% of old-growth left, the situation gets complicated as the forestry industry, protestors, and Indigenous try to make the best out of what’s left. The struggle still lingers to this day; even if it wasn’t as tense as it used to be in late 2021, the government must take some major action to preserve the unique old-growth of Vancouver Island.

Executive of the Month



CINDY ZHU

Hi there! I'm Cindy Zhu and I am currently one of the Event Directors with HNP Ontario. I am committed to bringing innovative environmental solutions to our communities and world. I am passionate about volunteering, coding technological ideas, learning new things, and giving back to my community. I enjoy connecting with like-minded peers and I hope to connect with you at our future events!



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