Effect of Pollution and Climate Change on Marine Life and Beaches

Abstract

Did you know each year billions of pounds of trash and other dangerous pollutants enter the ocean? Where does this pollution come from and where does it go when we're done with it? How marine life is being affected by climate change? Most of the debris that is littered by humans ends up on our beaches, washed in with the waves and tides, and may end up in the stomachs of harmless sea creatures just searching for food to survive. A large amount of all ocean pollution that impacts the health of the ocean life and the earth comes from sources such as oil spills and plastic. Also, the rising temperatures added with the excess heat from greenhouse gas emissions is causing our oceans to get warmer which makes our earth warmer as well. This past winter we've had temperatures that were reported warmer than the past 100 years! I believe this is due to all the ocean pollution and littering going on around the world caused by humans. Marine life is being affected by pollution and is causing our climate to change. We're drowning our marine ecosystems in trash, noise, oil, and carbon emissions, killing harmless sea creatures and will cause even more drastic temperatures we aren't used to if continued.

How is Marine Life Affected by Climate Change and Pollution?

Since I can remember I have always enjoyed going to the beach. I was born at the end of August in 1999 and when I was just 1 week old I was already enjoying the beach. As a summer baby, every year when my birthday comes around I spend it on the beach in my physical environment (Chapter 5, pg. 169) where my family, friends and I spend the day from sunrise to sunset enjoying each others company. Recently, as the years have gone by, the beaches I've been going to all my life seem to be getting worse with pollution and unsanitary conditions due to humans poor judgment..The atmosphere affects the oceans, and the oceans influence the atmosphere so as the temperature around us rises, oceans absorb some of this heat and also become warmer. Overall, the world's oceans are warmer now that at any point in the last 50 years (A Student's Guide to Global Change, 2019). The change is most obvious in the top layer of the ocean, which has grown much warmer since the late 1800s. Pollution is a major contributor to why our earth's climate is changing as rapidly as it is. The more polluted the ocean waters get, the more the landfills get piled up causing climate change. When we interpret (Chapter 2, pg. 51) the causes of climate change I almost always relate the reasoning back to ocean pollution and plastic building up. The Earth is a watery place, but just how much water exists on, in, and above our planet? About 71% of the Earth's surface is water-covered and the oceans hold about 96.5% of all Earth's water (USGS, 2019). Needless to say, the majority of our planet is water and polluting the waters is definitely not beneficial in any possible way to marine life and human lives.

Why Does It Matter?

Many people think that one tiny gum wrapper or a straw can't possibly contribute to the polluted

waters and affect marine life. Showing no emotion (Chapter 7, pg. 217) whatsoever some people won't think twice before throwing something out of their car window not knowing that everything leads to the ocean! You may think that one small piece of plastic won't do anything to this earth and in reality that's not true. So why is climate change important some may ask? The ocean is home to so many different species, some still to this day not even discovered. There are 228, 450 known species in the ocean and as many as two million more that remain a total mystery, Jan Mees, co-chair of the World Register of Marine Species (WoRMs), had told Business Insider. Many species were likely to have gone extinct due to the pollution, climate change and acidification before they were even found. Climate changes matter because warmer oceans affect weather patterns, cause more powerful tropical storms, and can impact many kinds of sea life. Also, warmer oceans are one of the main causes of rising sea level. Oceans are expected to continue getting warmer- both in the top later and in the deeper waters. Also, warming waters alter the latitude and depth at which certain species are able to survive, so many species are moving to deeper waters and more farther north in the Atlantic to find cold water. Even if people stop adding extra greenhouse gases to the atmosphere now, oceans will still continue to get warmer for many years as they slowly absorb extra heat from the atmosphere. Marine life is greatly impacted by climate change and will continue to be impacted it begins to get worse throughout the years.

How is Marine Life Affected by Plastic?

In 2010 a gray whale was found dead after being stranded near Seattle. When this whale was dissected for research purposes, found inside was more than 20 plastic bags, a golf ball, and other plastic material in its stomach! According to the United Nations, at least 800 species worldwide are affected by ocean debris, and as much as 80 percent of that litter is plastic. It is estimated that up to 13 million metric tons of plastic ends up in the ocean each year -- the equivalent to a garbage truck load's worth every minute (PEW, 2018). We don't necessarily think before we throw away our trash and how harmful it is to marine life when it enters the oceans. Plastic particles can take up to 100 years to completely decompose, but some of them break down into tiny pieces what potentially ends up looking like food to these vulnerable sea animals. Current estimates suggest that at least 267 species worldwide have been affected, including 84% of sea turtle species (in which they are already endangered), 44% of all seabird species and 43% of all marine mammal species, but there are probably many more (AZO Cleantech, 2019). Deaths of these marine animals are caused by ingestion of ocean debris, starvation, suffocation, infection, drowning, and entanglement. Sharing this public information (Chapter 8, pg. 257) is important because I believe that this major problem going on is only going to get worse here on out if nothing changes around us.

What if?

Once an amazing invention it is now filling up our oceans and killing thousands of marine animals including whales, birds and turtles and leading to horrible climate changes. Just imagine how many marine animal species would be saved if plastic didn't exist. It would have never ended up in our ocean and no animals would mistakenly ate it thinking it was food or get caught and strangled in it. In the Los Angeles area, 10 metric tons of plastic are carried into the Pacific Ocean on a daily basis (Poll, 2018). If we just eliminated most plastics from our lives, we'd save hundreds of marine species from entanglement and plastic ingestion and potentially stop the earth from it's temperatures rising rapidly. To get the point across we all need a shared

meaning (Chapter 1, pg. 10) about how harmful these effects can be and hopefully will encourage others to realize how dangerous ocean pollution is to marine life and how it affects the climate change of our plant.

Conclusion

In conclusion, I believe that marine life is greatly affected by pollution and climate change around the world. Marine animals are dying on a daily basis due to all the pollution and debris from human and ships entering in the ocean. The ocean plays a central role in regulating the Earth's climate. The Fifth Assessment Report published by the intergovernmental Panel on Climate Change (IPCC) in 2013 revealed that it that far absorbed 93% of the extra energy from the enhanced greenhouse effect, with warming now being observed at depths of 1,000 meter. As a consequence of this action, it has led to increased ocean stratification (prevention of water mixing due to different properties of water masses), changes in ocean current regimes, and expansion of depleted oxygen zones (IUCN, 2020). Climate changes are only going to get worse and marine life will continue to go extinct if this matter isn't taken seriously enough. Just think of your own habitat being bombarded by piles of garbage and plastic on a daily taking up the space you live in and having no control over it. Not being able to discriminate between what is food and what isn't. If the thought of that doesn't make you jump up and down with joy imagine how much it impacts the lives of our marine animals!

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