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Plastic has been around for centuries. As the earth's population continues to rise, the use of plastic increases too. Along with the increase of plastic usage comes the problem of disposing of the plastic. Now this leads to the questions: why are microplastics such a threat to the environment, what are the causes for plastic biodegrading, and what actions can we take to prevent plastic pollution in the oceans? When plastic is dumped in the ocean, it breaks down into microplastics; these microplastics are then ingested by marine life and then eventually, those fish are ingested by humans. Also, plastic pollution can cause marine organisms to become entangled and if not able to break free, the organism can die. In the Gulf of Mexico, marine life like sea turtles, are faced with microplastics on a daily basis. These microplastics can make it difficult for the turtles to nest on the beaches. While marine microplastics may not be a problem that is visually apparent in everyday life, it is indeed a major issue that needs to be taken into serious consideration, especially for coastal areas like Florida. It not only harms the marine life, but it also harms humans.

Precaution's need to be taken into consideration to reduce the amount of plastic in the ocean. In able to do this, plastic should be considered a hazardous waste, an alternative to plastic needs to be implemented, and a new solution to decomposing plastic already in the oceans needs to be implemented as well.

Plastic is used universally throughout the world. The problem with preventing plastic pollution and disposing of it continues to get worse, rather than improving. With any problem comes a solution. The amount of plastic in the ocean is at an all time high, in which will only continue to increase. Plastics can cause marine life to suffer due to the ingestion of microplastics and being entangled in them. Plastic degradation is due to a number of things such as, the abundance of nitrogen apparent in the oceans and the waves naturally breaking down the plastic. The problem stems from underdeveloped and developed costal nations dumping their trash into the oceans, ultimately contaminating it with plastics. While some may argue that the ocean makes up of 71 percent of the earth and that plastic pollution in the oceans is not a priority compared to other issues in the world, such as the food crisis in Africa, the ocean holds a major importance for many reasons such as sustainability of marine life, food sources, and overall health. Some solutions that can make a huge difference would be making plastics to be considered a hazardous waste world -wide, helping underdeveloped nations in despising of their waste, and cutting back and finding an alternative to plastic.

Works cited

Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, et al. (2014) Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces \Weighing over 250,000 Tons Afloat at Sea. PLoS ONE 9(12): e111913. doi:10.1371/ journal.pone.0111913

This article explores the amount of plastic currently in the oceans across the world. The authors provide detailed information about how their information was conducted and the results that were found.

I found this article credible because they conducted their own experiment. The experiment aimed to find how many microplastics are in the ocean. The results found that "at least 5.25 trillion plastic particles weighing 268,940 tons are currently floating at sea". This gives the audience insight on how much microplastic is an abundance in the oceans.

Kruege, Martin et al. "Prospects for microbiological solutions to environmental pollution with plastics" *Appl Microbiol Biotechnol* DOI 10.1007/s00253-015-6879-4 2015 pp. 8857-8874
<http://web.b.ebscohost.com.ezproxy.fau.edu/ehost/pdfviewer/pdfviewer?vid=5&sid=68c3a663-0c6c-4388-b378-657622ad4b87%40sessionmgr120>

This article describes how synthetic polymers (plastics) are threatening wildlife and the food system and how the knowledge of plastic pollution is limited. It details how plastics are the biggest factor in bioremediation. By microbial degradation, these plastics are broken down into micro plastics, causing it to enter the fish, and eventually the food system through ingestion. The article also describes the several most common plastic types, which is the most common reason for plastic pollution.

This source is credible because it gives detailed information and extensive research on plastic pollution. It offers many experiments done proving the effects of pollution, as well as a diagram that visually shows what plastic is before and how it is after it is broken down. The author gives reasons for the poor biodegradability of plastics and alternatives to it, such as nitrogen from pesticides or run off that cause the plastics to break down. An alternative that they offer is a cometabolic biotransformation .

Parker, Lauren. "WE MADE PLASTIC. WE DEPEND ON IT. NOW WE'RE DROWNING IN IT" Web. *National Geographic* June 2018.
<https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-waste-pollution-trash-crisis/?user.testname=none>. Accessed 23 August 2018.

This article begins with describing how if the plastic was invented when pilgrims were around, the ocean would be obsolete at this point in life. This puts plastic pollution into perspective; by describing this, it shows how if plastic pollution is not solved, then eventually the oceans will be engulfed in plastic and predicting the outcomes of it. Parker gives many useful facts of how much plastic is in the ocean currently, and why it is important to protect the oceans from plastic.

I believe this source is credible because it comes from the national geographic website, which focuses on making the environment a better, cleaner, place. The national geographic does extensive research in this area, which is extremely useful. Sloan describes how "between 5.3 million and 14 million tons each year just from coastal regions" and "Meanwhile, ocean plastic is estimated to kill millions of marine animals every year. Nearly 700 species, including endangered ones, are known to have been affected by it". These facts show that plastic is a world-wide problem that everyone needs to pay attention to.

Roy, Scott. "Managing Marine Plastic Pollution Policy Initiatives to Address Wayward Waste" *News Spheres of Influence* vol. 123, no. 4, April 2015 pp. 90-93
<http://web.b.ebscohost.com.ezproxy.fau.edu/ehost/pdfviewer/pdfviewer?vid=5&sid=20b2025f-f122-423b-8763-46a1c0799ffd%40sessionmgr120>

This article outlines all of the factors in plastic pollution. It talks about the sources of plastic pollution, the impact of costal countries, producer responsibility, and the economics of plastic waste. The article also provides a rank on the countries producing the most plastic marine debris.

This article is credible because it is a chapter in a textbook used to educate people around the world in this field of study of the hazards and factors of marine plastic pollution. The article states that plastic pollution comes from many sources. Plastic from land primarily comes from littering, or waste on a landfill being blown away, Plastic that is fallen from cargo ships, and discarded fishery utensils. Also the visual of the table given shows china, which is one of the world's largest producers of goods, is the country that produces the highest number of plastic pollution a year.

Sloan, Hayden. "Microplastics - A Macro Problem" *Student conservation association*
https://www.thesca.org/connect/blog/microplastics-macro-problem?gclid=Cj0KCQjwjbveBRDVARIsAKxH7vmj6jx8655dp-mRQLL-O8nX26OihO6zAPtmN63PZuCCZNastL0rPo0aAkCVEALw_wcB. Accessed 23 Aug. 2018

This article begins with describing how plastic influences our everyday life. Sloan explains how plastic affects not only marine animals, but also humans. The author describes how simply avoiding sea food won't protect humans from ingesting microplastics because the food chain goes further than just fish to humans. Finally, the author offers many solutions for stopping g microplastic pollution.

I believe the source is credible due to the website being a conservation association; the website focuses on making the environment more sustainable. Since the author lists multiple ways to solve the problem of microplastic pollution, I believe this will be helpful for my essay. Some of the solutions Sloan gives is to stop using single-use plastic bags, strategically do your laundry, and to join protests.