The Dirty Truth About Pollution

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ENGL 1121: College Writing and Critical Reading

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April 13, 2025

Pollution is everywhere, quietly shaping our world in ways we can no longer ignore. There are over a thousand bodies of lakes in America and “approximately 40% of the lakes... are too polluted for fishing, aquatic life, or swimming” (U.S. Environmental Protection Agency, 2015). Many people think that pollution is always visible to them, that only certain things they do cause drastic changes, that only certain parts of the world are affected, etc. In reality, pollution is all around us, and most things we do day to day are harming our future. Plastics are an extreme part of pollution that people often neglect to recognize. Pollution can spread easily, especially throughout bodies of water, such as our rivers and oceans. We must take more extreme measures than we are currently if we want to improve the life we are living and ensure a safe world for future generations.

In an article about pollution, National Geographic (2025) states that it is “the introduction of harmful materials into the environment. These harmful materials are called pollutants.” Examples of harmful materials are carbon monoxide, lead, mercury, and more. These materials not only harm the earth, but they harm humans and every other species that live on it. We see more effects today rather than years prior due to so many years of buildup. An article on the World Economic Forum states that “the Quelccaya core first records evidence of pollution from Inca metallurgy around 1480 in the form of trace amounts of bismuth” (Gabrielli, 2015). Quelccaya core is glacial ice extracted from the Ice Caps in the Peruvian Andes. Using the samples scientists can study past climate conditions. This shows we have been polluting the earth for years. We will most likely continue to until the end of time. Although it isn’t possible to completely eliminate pollution, we can make major changes that will greatly decrease the quantity of pollution. The World Bank Group (2024) explains how “pollution stunts economic growth, exacerbates poverty and inequality in both urban and rural areas, and significantly contributes to climate change.” Putting less pollution into the world is essential for life on our

planet because we are slowly killing our earth and our humanity progression. Each year there are billions of dollars spent on health costs combating air pollution. This significant amount of money reduces GDP (Gross Domestic Product) by several percentages. Not only do we need to improve pollution for our basic survival, but we need to fix it so we can thrive economically. Understanding the facts about pollution, what can be a pollutant, and how we can pollute less will exactly what we should be focused on right now.

The biggest misconception about pollution is that you can see it. Whether it's the trash you see in the ocean or the exhaust you see from cars. Although this is true, most pollution is invisible. Arkansas Department of Environmental Quality (2016) explains how “particulate matter includes microscopic pieces of liquids or solids found in smoke, soot, dust and industrial emissions. The smallest particulate matter cannot be seen.” Although we see smoke from exhausts it’s not the actual smoke that is the pollution, but the microscopic pieces of liquid and solids within it. Proving that even simply driving on an unpaved road and kicking up the dirt can move cause the microscopic solids to go into the environment and pollute it. When people believe they must see pollution for it to be there, they expose themself to dangerous situations unknowingly. Health Effects Institue (2024) states that “air pollution accounted for 8.1 million deaths globally in 2021, becoming the second leading risk factor for death, including for children under five years. Of the total deaths, noncommunicable diseases including heart disease, stroke, diabetes, lung cancer, and chronic obstructive pulmonary disease (COPD) account for nearly 90% of the disease burden from air pollution.” . Not only are adults but even children under five are being affected. At this age these kids are still developing their lungs, causing them to breathe more. When breathing more they inhale more pollutants than adults, therefore putting them at even more risk. Breathing pollution can lead to lung cancer. In just 2025 226,650 new cases of lung cancer were recorded. And just in 2025 there have been 124,730 deaths due to lung cancer.

Adding on, “Invisible particles penetrate cells and organs in our bodies – our lungs, heart, blood and brain.” (Health Effects Institute, 2024). These effects from pollution show just how badly we need to make our air cleaner. Being more exposed to the reality of pollution is what will help push our economy to really do something about it. Just because we can’t see the cause does not mean we can’t see the effects.

Another popular myth I came across in my research was that cars are the biggest contributor to pollution. When in fact there are a large variety of other pollutants that can cause just as big of problems. Although cars can be a big part, research from LG Hooper and JD Kaufman (2018) states that “while cars are often considered an important source of air pollution, other emission sources that can contribute significantly to air pollution include heat and power generation, industrial facilities, agricultural waste or biomass burning, shipping and aviation, and residential cooking with polluting fuels.” Generating heat and electricity for our houses and cities is an insane part of air pollution. The process to get natural gas for these common uses releases large amount of carbon dioxide, nitrogen oxides, etc. into the air. Although cars pollute directly into the air, generating heat and electricity pollutes more because the process is in more demand. Another big contributor to pollution is plastics. United Nations says, “scientists estimate that only around 9 percent of all the plastic waste generated globally is recycled” (United Nations Development Program, 2023). When not recycled the plastic goes to sit in dumps and only leads to spreading and harming the earth and the species that live on it. Habitats can be harmed to the point where species lose their homes. Therefore, losing their shelter and food. On top of that, air pollution can harm the lungs of animals and can cause breathing difficulties. Not only does unrecycled plastic cause pollution, but so do microplastics. From a podcast by National Science foundation, Lauren Pincus explains how “plastics already micronized as they enter into the environment - the famous example of this would be exfoliating scrubs that you can use like facial

scrubs" (Pincus, 2023). Facial scrubs are commonly used and usually washed off the face, so they go down the drain. With these plastics being so tiny they aren't often filtered out and they end up in rivers, lakes, oceans, and sewage. Plastic do not break down naturally, so the amount of them just keeps growing and collecting. This can be extremely harmful to not only the marine ecosystem, but also farmland ecosystems.

When thinking about ocean pollution, a common misconception believed is that garbage patches are simply piles of trash floating on the ocean surface or sitting on the shore. Although these areas are where a lot of pollutants accumulate, they aren't necessarily piles of trash. An article by National Oceanic and Atmospheric Administration (2024) explains that garbage patches are "the currents in certain areas of the ocean [that] form a sort of whirlpool, pulling in microplastics as well as larger debris like derelict fishing nets." Proving garbage patches aren't literally piles of garbage you see on the street floating in the ocean, but a current flowing through parts of the ocean pulling these different pollutants together. National Geographic (2025) explains it by comparing how "the zone acts like a highway that moves debris from one patch to another." It's not like all pollution comes from one place and ends up in another. All different kind of pollutants spread to all different kind of place. And garbage patches are one way that happens. The pollutants spread across the ocean through these currents and into other currents. "The currents are constantly shifting and moving debris around. This makes cleaning up garbage patches a very difficult task." (National Oceanic and Atmospheric Administration, 2024). Not only is it bad for the species to have these pollutants affect their ecosystem in the first place, but it's worse because of these 'whirlpools.' The large amount of pollution that does end up in the ocean means that it's a large and expensive job to clean up. Cleaning out the ocean completely is near impossible merely because of the vastness of the ocean. Pollution spreading across the surface and into the depths is so daunting the government doesn't want to put their time and

money into fixing the problem. By the time we try to clean up these patches, there is so much movement that it makes it extremely difficult and most of it stays in the ecosystem. The solution to pollution is not just magically going to appear. It's already here, we simply need to put more effort into it.

In not realizing that pollution moves throughout the ocean, a lot of people often believe that pollution created in one area stays in that area. As observed with garbage patches it's obvious that's not true. However, there is more depth to the spread of pollution than just that. In the book Pollution by Robert Green (2008), I read that "rivers can carry pollution between one country and another, and air pollutants can affect people far from the actual source of the pollution." Pollution does not care whatsoever about national borders. Green explains that pollution will follow wherever. If the river is going to Mexico than so is all the pollution. Unfortunately, this means that isolating pollution is really damn hard. The simple act of agriculture run-off can travel through a river and into a neighboring city or countries drinking water. Making it extremely unsafe for struggling countries that cannot filter their water. A Green says, air pollution can travel miles as well. An example of wind carrying pollution is from NAFAS Indonesia (2020) saying, "westerly winds blew pollutants like ozone, Sulphur dioxide, nitrogen oxide, carbon monoxide, and PM from China's industrial areas all the way to US cities like Los Angeles." No matter where pollution originates, it is almost guaranteed that it will spread further. This puts cities like Los Angeles at risk for worse air pollution simply because they are east wind from industries in China. All form of pollution are global problems not just because is spreading across everyone's borders, but also because it harms all global ecosystems.

Ultimately there are many truths of pollution that have been twisted to ease some people's minds. We want to live in a world where everything is fine, so we live oblivious. However, exposing ourselves to the truth isn't going to hurt us more than pollution already is.

Throughout researching this essay, I learned had believed the myths about pollution too. A big realization for me was that what ends up in the waters of our earth continue to travel throughout the whole world. No matter where the pollution first began, it could end up anywhere. Although pollution is a serious challenge, there is still hope. By understanding the real truths about pollution today we can stop blaming the wrong sources. We can recognize this long-term damage and learn how we can truly start to turn it around. Change won't happen overnight, but overnight we can change our thoughts and learn how to progress in the morning.

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