

Science: Water, Land, and Air Pollution

Billee Lassiter

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E.W. Grove School

Henry County, Tennessee

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_____ If you don't kill it, it will kill you. Pollution is a major problem in today's society. People don't understand the importance of reduce, reuse, recycle. Although many people believe pollution won't cause a significant problem, they are completely wrong. Without the prevention of pollution our world will become a trashcan. We will be surrounded by trash everywhere. There is already a major pollution problem in our oceans, ponds, lakes, playgrounds, parks, and even in our air. You may also be thinking that there could not be this many different types of pollution, but there are. The following are just a few examples: water, land, and air pollution.

There are many different types of pollution, but one of the three most well-known is water pollution. From ponds, to lakes, to oceans, water pollution is becoming a massive issue in our environment. Along with water pollution comes many different types, one of the types is fresh water pollution. According to pollutionissues.com fresh water pollution is the,"contamination of inland water (not saline) with substances that make it unfit for its natural or intended use."(Pielou, E.C. 2016). Freshwater pollution can come from multiple sources. A very well-known source is pesticides. When farmers spray their crops with pesticides for protection against bugs; the pesticides soak into the soil. After the pesticides soak through the soil they transfer throughout the soil into water streams, and then into ponds, and lakes. The result of these pesticides includes the death of many plants and animals. The pollution of freshwater also causes the concentration of dissolved oxygen to decrease. In return, it then causes freshwater species, such as fish and plants, to struggle to survive. Another type of water pollution is marine water pollution. Marine water pollution is the pollution of the oceans. Sewage dumping, refuse and toxic waste dumping, and oil spills are three of the most common types of marine pollution. As cities continue to grow, and their populations get higher, it's harder to make

sure everyone's sewage is treated. According to all-recycling-facts.com, "about 80% of urban sewage released into the Mediterranean Sea is untreated. This is because there are still many cities around the world that have ineffective, little or no sewage treatment." (All Recycling Facts, 2014). The release of the sewage into the ocean has a destructive effect on the marine environment. Refuse and toxic waste dumping also has a destructive effect on the marine environment. Rubbish dumping, not known by many people, is illegal. The Great Pacific Ocean Garbage Patch is today's largest rubbish dump in the ocean. The patch is known to consist of a great amount of plastic debris. Referring back to all-recycling-facts.com, "Unfortunately, the plastic debris do not biodegrade, but simply disintegrates into smaller pieces. Marine animals that mistake the plastics as food ingest them, but end up suffocating on these particles or die because their digestive systems were blocked by the inert materials." (All Recycling Facts, 2014). This is the main reason refuse and toxic waste dumping is becoming a major problem. The last of the three most common types of marine water pollution is oil spills. Oil spills don't happen very often, but when they do, it makes a gigantic impact on the environment. The oil that is spilt rises to the surface of the water and is spread out by the water currents and oceanic winds. Oil spills can also spread for large distances. The website all-recycling-facts.com says, "Incidents of marine animals drowning when they unknowingly enter the oil pool are a common sight. The thick oil layer sticks to the bodies of the marine creatures, hindering their ability to move effectively and escape from the oily "death pool"." (All Recycling Facts, 2014).

There are many ways that we could solve the problem of water polluting the environment. STEM could be used is by making everything biodegradable. Therefore, if the garbage does reach the water it will dissolve faster. Which in turn will lower the deaths of animals that live within the water. Another way we could solve this problem is by an engineering

device called an ocean vacuum. The vacuum will travel around the ocean and scan for debris. After it scans for debris and locates some it will act as a vacuum and suck up the debris, while watching for lively sea animals.

Another common type of pollution is land pollution. Land pollution is all around us. In our backyards, parks, and playgrounds. According to conserve-energy-future.com land pollution is the, “degradation or destruction of earth’s surface and soil, directly or indirectly as a result of human activities.” (Conserve Energy Future, 2016). Most people don’t think anything about land pollution because it’s not as noticeable as the others, but this is an issue that can no longer go unnoticed. One example of land pollution is the removal of forest to build homes. As the world’s countries are becoming more populated we are having to make more room in our environment for the constant increase. To make more room for the people moving into certain areas we are having to clean out. The clean out of these areas doesn’t only hurt the soil and kill the trees, but it also disrupts the peace of the animals living there. Along with the population increase comes the increasing need for food. Referring back to conserve-energy-future.com farmers cause a lot of land pollution,” Farmers often use highly toxic fertilizers and pesticides to get rid of insects, fungi, and bacteria from their crops. However with the overuse of these chemicals, they result in contamination and poisoning of soil.” (Conserve Energy Future, 2016). If the soil gets contaminated then it is not safe to grow crops in those areas. The results of the soil being contaminated is that the production of the crops will lower because they aren’t safe to eat. Another type of land pollution comes from overcrowded landfills. Although many different objects like aluminum, paper, and plastic can be recycled many others cannot. Once they make their way into the landfill; they will just sit there forever. Since these objects sit there and don’t get recycled the landfill workers have to make room for the other garbage coming in. When they

make room they are destroying the land.

As you can conclude from the information presented about land pollution; it is just as bad of a problem as water pollution. There aren't many ways we could solve the problem because there isn't anywhere to put the garbage. STEM can help come up with solutions to at least reduce the amount of land pollution there is in our world. We could use science to teach people about the destruction they are causing to our lands. Technology could be used to spread the word. For example, social media would allow for the spread of prevention against land pollution. Engineering would come in handy when we need to design different devices to help remove the trash already in the soil and landfills, and mathematics comes into play when we need to calculate the percentage of land we have already helped by doing the previously mentioned items.

The last major type of pollution is air pollution. Air pollution could cause a massive annihilation of our world as we know it. Air pollution, described by nationalgeographic.com, is, "any substance that people introduce into the atmosphere that has damaging effects on living things and the environment." (National Geographic, 2016). Considering what their definition of air pollution is you can tell that it could be a huge issue if we don't get it under control. The main pollutant is carbon dioxide. Carbon dioxide comes from cars, planes, and other human activities where we burn fossil fuels. Carbon dioxide is needed to breathe, but it also can cause the planet to rise in temperature. Which in turn could cause what is known as Global Warming. Two other types of air pollutants are methane and chlorofluorocarbons. Both of these gases cause harmful effects to the environment, in fact, according to nationalgeographic.com chlorofluorocarbons, "were used in refrigerants and aerosol propellants until they were banned because of their deteriorating effect on Earth's ozone layer." (National Geographic, 2016).

There are many different ways we could reduce the amount of pollution in the air. One of the many ways is to reduce the amount of time we spend driving in cars and flying in planes. That will then reduce the amount of carbon dioxide emitted in the air. Instead of those activities we could ride bikes, and walk to the places we need to go.

In conclusion, pollution is a major issue in our environment daily, Not only is it getting worse, but we aren't trying to reduce its speed, or stop it either. STEM could be useful in that situation. The more people who are willing to think "science, technology, engineering, mathematics," the more likely something will be done.

Works Cited

History.com Staff. "Water and Air Pollution." *History.com*. A&E Television Networks, 2009.

Web. 22 Apr. 2016.

"National Geographic Freshwater 101: Pollution." *National Geographic*. Web. 22 Apr. 2016.

"3 Types Of Pollution In The Sea." *All-Recycling-Facts.com*. Web. 22 Apr. 2016.

"Causes, Effects and Solutions of Land Pollution - Conserve Energy Future."

ConserveEnergyFuture. 2013. Web. 22 Apr. 2016.

"Air Pollution Facts, Air Pollution Effects, Air Pollution Solutions, Air Pollution Causes –

National Geographic." *National Geographic*. Web. 22 Apr. 2016.

"Pollution Issues." *Water Pollution: Freshwater*. Web. 22 Apr. 2016.