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Essay on pollution

What is pollution ?

According to Wikipedia, Pollution is the introduction of [contaminants](https://en.wikipedia.org/wiki/Contaminant%22%20%5Co%20%22Contaminant) into the natural environment that cause adverse change. Pollution can take the form of [chemical substances](https://en.wikipedia.org/wiki/Chemical_substance%22%20%5Co%20%22Chemical%20substance) or [energy](https://en.wikipedia.org/wiki/Energy%22%20%5Co%20%22Energy), such as noise, heat or light.

Also, by merriam webster dictionary, pollution is the action of [polluting](https://www.merriam-webster.com/dictionary/polluting) especially by environmental contamination with man-made waste.

TYPES AND CAUSES OF POLLUTION

The three major types of pollution are air pollution, water pollution, and land pollution.

 **Air Pollution**

Sometimes, air pollution is visible. A person can see dark smoke pour from the exhaust pipes of large trucks or factories, for example. More often, however, air pollution is invisible.

1. Sometimes, air pollution kills quickly. In 1984, an accident at a pesticide plant in Bhopal, India, released a deadly gas into the air. At least 8,000 people died within days. Hundreds of thousands more were permanently injured.

2. Cars and factories produce other common pollutants, including nitrogen oxide, sulfur dioxide, and hydrocarbons. These chemicals react with sunlight to produce smog, a thick fog or haze of air pollution. The smog is so thick in Linfen, China, that people can seldom see the sun. Smog can be brown or grayish blue, depending on which pollutants are in it.

3. Smog makes breathing difficult, especially for children and older adults. Some cities that suffer from extreme smog issue air pollution warnings. The government of Hong Kong, for example, will warn people not to go outside or engage in strenuous physical activity (such as running or swimming) when smog is very thick.

4. Greenhouse gases are another source of air pollution. Greenhouse gases such as carbon dioxide and methane occur naturally in the atmosphere. In fact, they are necessary for life on Earth. They absorb sunlight reflected from Earth, preventing it from escaping into space. By trapping heat in the atmosphere, they keep Earth warm enough for people to live. This is called the greenhouse effect.
But human activities such as burning fossil fuels and destroying forests have increased the amount of greenhouse gases in the atmosphere. This has increased the greenhouse effect, and average temperatures across the globe are rising.
5. Global warming is causing ice sheets and glaciers to melt. The melting ice is causing sea levels to rise at a rate of 2 millimeters (0.09 inches) per year. The rising seas will eventually flood low-lying coastal regions. Entire nations, such as the islands of Maldives, are threatened by this climate change.
Global warming also contributes to the phenomenon of ocean acidification. Ocean acidification is the process of ocean waters absorbing more carbon dioxide from the atmosphere. Fewer organisms can survive in warmer, less salty waters. The ocean food web is threatened as plants and animals such as coral fail to adapt to more acidic oceans.

**Water Pollution**

Some polluted water looks muddy, smells bad, and has garbage floating in it. Some polluted water looks clean, but is filled with harmful chemicals you can’t see or smell.

Polluted water is unsafe for drinking and swimming. Some people who drink polluted water are exposed to hazardous chemicals that may make them sick years later. Others consume bacteria and other tiny aquatic organisms that cause disease. The United Nations estimates that 4,000 children die every day from drinking dirty water.

Sometimes, polluted water harms people indirectly. They get sick because the fish that live in polluted water are unsafe to eat. They have too many pollutants in their flesh.

There are some natural sources of water pollution. Oil and natural gas, for example, can leak into oceans and lakes from natural underground sources. These sites are called petroleum seeps. The world’s largest petroleum seep is the Coal Oil Point Seep, off the coast of the U.S. state of California. The Coal Oil Point Seep releases so much oil that tar balls wash up on nearby beaches. Tar balls are small, sticky pieces of pollution that eventually decompose in the ocean.

Human activity also contributes to water pollution. Chemicals and oils from factories are sometimes dumped or seep into waterways. These chemicals are called runoff. Chemicals in runoff can create a toxic environment for aquatic life. Runoff can also help create a fertile environment for cyanobacteria, also called blue-green algae. Cyanobacteria reproduce rapidly, creating a harmful algal bloom (HAB). Harmful algal blooms prevent organisms such as plants and fish from living in the ocean. They are associated with “dead zones” in the world’s lakes and rivers, places where little life exists below surface water.

Mining and drilling can also contribute to water pollution. Acid mine drainage (AMD) is a major contributor to pollution of rivers and streams near coal mines. Acid helps miners remove coal from the surrounding rocks. The acid is washed into streams and rivers, where it reacts with rocks and sand. It releases chemical sulfur from the rocks and sand, creating a river rich in sulfuric acid. Sulfuric acid is toxic to plants, fish, and other aquatic organisms. Sulfuric acid is also toxic to people, making rivers polluted by AMD dangerous sources of water for drinking and hygiene.

Buried chemical waste can also pollute water supplies. For many years, people disposed of chemical wastes carelessly, not realizing its dangers. In the 1970s, people living in the Love Canal area in Niagara Falls, New York, suffered from extremely high rates of cancer and birth defects. It was discovered that a chemical waste dump had poisoned the area’s water. In 1978, 800 families living in Love Canal had to abandon their homes.
If not disposed of properly, radioactive waste from nuclear power plants can escape into the environment. Radioactive waste can harm living things and pollute the water.

Sewage that has not been properly treated is a common source of water pollution. Many cities around the world have poor sewage systems and sewage treatment plants. Delhi, the capital of India, is home to more than 21 million people. More than half the sewage and other waste produced in the city are dumped into the Yamuna River. This pollution makes the river dangerous to use as a source of water for drinking or hygiene. It also reduces the river’s fishery, resulting in less food for the local community.

A major source of water pollution is fertilizer used in agriculture. Fertilizer is material added to soil to make plants grow larger and faster. Fertilizers usually contain large amounts of the elements nitrogen and phosphorus, which help plants grow. Rainwater washes fertilizer into streams and lakes. There, the nitrogen and phosphorus cause cyanobacteria to form harmful algal blooms.

Rain washes other pollutants into streams and lakes. It picks up animal waste from cattle ranches. Cars drip oil onto the street, and rain carries it into storm drains, which lead to waterways such as rivers and seas. Rain sometimes washes chemical pesticides off of plants and into streams. Pesticides can also seep into groundwater, the water beneath the surface of the Earth.

Heat can pollute water. Power plants, for example, produce a huge amount of heat. Power plants are often located on rivers so they can use the water as a coolant. Cool water circulates through the plant, absorbing heat. The heated water is then returned to the river. Aquatic creatures are sensitive to changes in temperature. Some fish, for example, can only live in cold water. Warmer river temperatures prevent fish eggs from hatching. Warmer river water also contributes to harmful algal blooms.

**Land Pollution**

Many of the same pollutants that foul the water also harm the land. Mining sometimes leaves the soil contaminated with dangerous chemicals.

Pesticides and fertilizers from agricultural fields are blown by the wind. They can harm plants, animals, and sometimes people. Some fruits and vegetables absorb the pesticides that help them grow. When people consume the fruits and vegetables, the pesticides enter their bodies. Some pesticides can cause cancer and other diseases.

Trash is another form of land pollution. Around the world, paper, cans, glass jars, plastic products, and junked cars and appliances mar the landscape. Litter makes it difficult for plants and other producers in the food web to create nutrients. Animals can die if they mistakenly eat plastic.

Inefficient garbage collection systems contribute to land pollution. Often, the garbage is picked up and brought to a dump, or landfill. Garbage is buried in landfills. Sometimes, communities produce so much garbage that their landfills are filling up. They are running out of places to dump their trash.

A massive landfill near Quezon City, Philippines, was the site of a land pollution tragedy in 2000. Hundreds of people lived on the slopes of the Quezon City landfill. These people made their living from recycling and selling items found in the landfill. However, the landfill was not secure. Heavy rains caused a trash landslide, killing 218 people.

Pollutants leaked from landfills also leak into local groundwater supplies. There, the aquatic food web (from microscopic algae to fish to predators such as sharks or eagles) can suffer from bioaccumulation of toxic chemicals.

Some communities do not have adequate garbage collection systems, and trash lines the side of roads. In other places, garbage washes up on beaches. Kamilo Beach, in the U.S. state of Hawaii, is littered with plastic bags and bottles carried in by the tide. The trash is dangerous to ocean life and reduces economic activity in the area. Tourism is Hawaii’s largest industry. Polluted beaches discourage tourists from investing in the area’s hotels, restaurants, and recreational activities.

Some cities incinerate, or burn, their garbage. Incinerating trash gets rid of it, but it can release dangerous heavy metals and chemicals into the air. So while trash incinerators can help with the problem of land pollution, they sometimes add to the problem of air pollution.

**Reducing Pollution**

Around the world, people and governments are making efforts to combat pollution. Recycling, for instance, is becoming more common. In recycling, trash is processed so its useful materials can be used again. Glass, aluminum cans, and many types of plastic can be melted and reused. Paper can be broken down and turned into new paper.

Recycling reduces the amount of garbage that ends up in landfills, incinerators, and waterways. Austria and Switzerland have the highest recycling rates. These nations recycle between 50 and 60 percent of their garbage. The United States recycles about 30 percent of its garbage.

Governments can combat pollution by passing laws that limit the amount and types of chemicals factories and agribusinesses are allowed to use. The smoke from coal-burning power plants can be filtered. People and businesses that illegally dump pollutants into the land, water, and air can be fined for millions of dollars. Some government programs, such as the Superfund program in the United States, can force polluters to clean up the sites they polluted.