

# The Global Reaction to Water and Air Pollution

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White plume smoke containing many pollutants is emitted from a quenching tower at a coke plant owned by U.S. Steel Corporation in 1973. The plant previously had been cited for violations of the Clean Air Act which was passed by Congress and is administered by the U.S. Environmental Protection Agency. Photo from U.S. National Archives and Records Administration

The Industrial Revolution of the mid-1800s introduced incredible technological advances. However, factories also created new sources of air and water pollution. By the middle of the 1900s, countries around the world were beginning to feel the effects. In the 1960s, an environmental movement began that sought to stop the pollution. Out of this movement came events like Earth Day, and legislative victories like the 1970 Clean Air Act and the 1972 Clean Water Act.

People have been fighting pollution for centuries. In the 1200s, in an effort to reduce air pollution, England's King Edward I threatened people in London with harsh penalties if they didn't stop burning coal to heat their homes. However, the penalties had little effect.

By the late 1700s and first part of the 1800s, factories began using large amounts of coal to power machinery. The smog and soot caused by these factories had a serious impact on the health of people living nearby. In 1952, pollution from factories and home fireplaces killed at

least 4,000 people in London. A few years earlier, in 1948, severe industrial air pollution created a deadly smog that killed 20 people in Donora, Pennsylvania, and made another 7,000 sick.

Acid rain, first discovered in the 1850s, was another problem that came from coal-powered plants. The rain was caused by factories that released sulfur and nitrogen into the atmosphere. These chemicals created an acidic rain that hurt plants, fish, soil, forests and some building materials.

## **Cars are the biggest culprit**

Today, the leading cause of air pollution in the U.S. is motor vehicles. Auto emissions also increase the amount of greenhouse gases in the atmosphere. By preventing light from moving to space after reflecting off the Earth's surface, these gases trap heat in the planet's atmosphere and contribute to global warming.

In 1963, in an effort to reduce air pollution, the U.S. Congress passed the Clean Air Act. However, in 2007 about 46 percent of all Americans still lived in counties with unhealthy levels of either ozone or particle pollution, according to the American Lung Association (ALA). The organization specializes in lung-related diseases, and informs the public about the serious dangers of pollution. The ALA describes ozone, or smog, as an irritating, invisible gas. This gas is mainly formed when sunlight reacts with the fumes emitted by cars and trucks, factories and power plants. Ozone irritates the respiratory tract and can lead to a number of health problems, including asthma, chest pain and even death.

The ALA defines particle pollution as “the most dangerous, and deadly, of the widespread outdoor air pollutants.” Particle pollution comes from a complex mix that can include ash, soot, diesel exhaust, chemicals, metals and aerosols. “Breathing particle pollution year-round can shorten life by 1 to 3 years,” says the ALA. Even when particles appear in low quantity, they can cause early childbirths, serious respiratory disorders, heart attacks and strokes.

## **No access to safe water**

Just like air, water is also dangerously affected by pollution. For centuries, humans contaminated sources of drinking water with raw sewage, which led to diseases such as cholera and typhoid. According to a CNN report, 1 gram of human excrement contains approximately “10 million viruses, 1 million bacteria, 1,000 parasite cysts and 100 parasite eggs.” Today, over 1 billion people worldwide lack access to safe water. Every 15 seconds somewhere on the planet, a child dies from a water-related disease, according to WaterPartners International.

Water pollution was made worse by the Industrial Revolution. Factories began releasing pollutants directly into rivers and streams. In 1969, chemical waste released into Ohio's Cuyahoga River caused it to burst into flames. The sight of the river on fire became a symbol of how industrial pollution was destroying America's natural resources.

In 2007, CNN reported that up to 500 million tons of pollutants slip into the global water supply every year. According to UNESCO, as much as 70 percent of industrial waste is dumped into the rivers and lakes in the developing world. In China, around 70 percent of lakes and rivers are now polluted from industrial waste. About 300 million people are forced to rely on polluted water supplies, Greenpeace says. Water sources are also contaminated by oil slicks on the road, construction waste, mining and dump sites, as well as livestock wastes, pesticides and fertilizer from farms. Over half the American population relies on groundwater for drinking water, according to The Groundwater Foundation.

## Too much pollution in waterways

In 1972, Congress passed the Clean Water Act to reduce water pollution. Today the U.S. has relatively clean, safe drinking water. However, water pollution is still a problem. In 2006, the Environmental News Service (ENS) reported that more than 62 percent of industrial and municipal facilities across the country dumped too much pollution into U.S. waterways. The ENS also noted that over 40 percent of American ponds, rivers and lakes were unsafe for swimming and fishing.



Water resources face another threat from man-made environmental disasters. During the 1989 Exxon Valdez oil spill, about 11 million gallons of crude oil were accidentally dumped into the sea off Alaska. The disaster instantly killed hundreds of thousands of birds, fish and other wildlife. The area was devastated for years afterward.



**Quiz**

- 1 Read the section "Cars are the biggest culprit."  
Which paragraph gives evidence that past efforts to reduce pollution have NOT been effective?
- 2 Which of the following sentences from the article BEST supports the claim that water pollution increased because of the Industrial Revolution?
- (A) Acid rain, first discovered in the 1850s, was another problem that came from coal-powered plants.
  - (B) In 1969, chemical waste released into Ohio's Cuyahoga River caused it to burst into flames.
  - (C) According to UNESCO, as much as 70 percent of industrial waste is dumped into the rivers and lakes in the developing world.
  - (D) During the 1989 Exxon Valdez oil spill, about 11 million gallons of crude oil were accidentally dumped into the sea off Alaska.
- 3 HOW does the article develop the idea that water and air pollution are harmful to human health?
- (A) by describing the ways factories have dealt with waste
  - (B) by showing the effects that laws have in curbing pollution
  - (C) by describing several examples of man-made environmental disasters
  - (D) by citing several events that include deaths caused by industrial pollution
- 4 Which of the following statements would someone involved in the environmental movement of the 1960s MOST LIKELY agree with?
- (A) Human-caused pollution is no longer a concern.
  - (B) New laws are not effective for reducing pollution.
  - (C) People need to take action in order to reduce pollution.
  - (D) Economic benefits outweigh pollution problems.