

Now imagine you're wearing "pollution goggles" that allow you to see even the tiniest pollutants. What pollutants do you think you might see now? You might see little drops of oil. You might see tiny specks of chemicals. Or you could even see harmful bacteria.

Unfortunately, pollution goggles haven't been invented yet. If we had them, it would be easy to identify pollutants. Since we don't, scientists must work really hard to determine when water is polluted.

Causes of Water Pollution

A number of human activities cause water pollution. For example, we pollute water when we throw our cans, bottles, plastic bags, paper wrappers, and other waste directly into surface water. We can also pollute water when we litter on land. During rainfall, litter on land may wash away into nearby bodies of surface water.

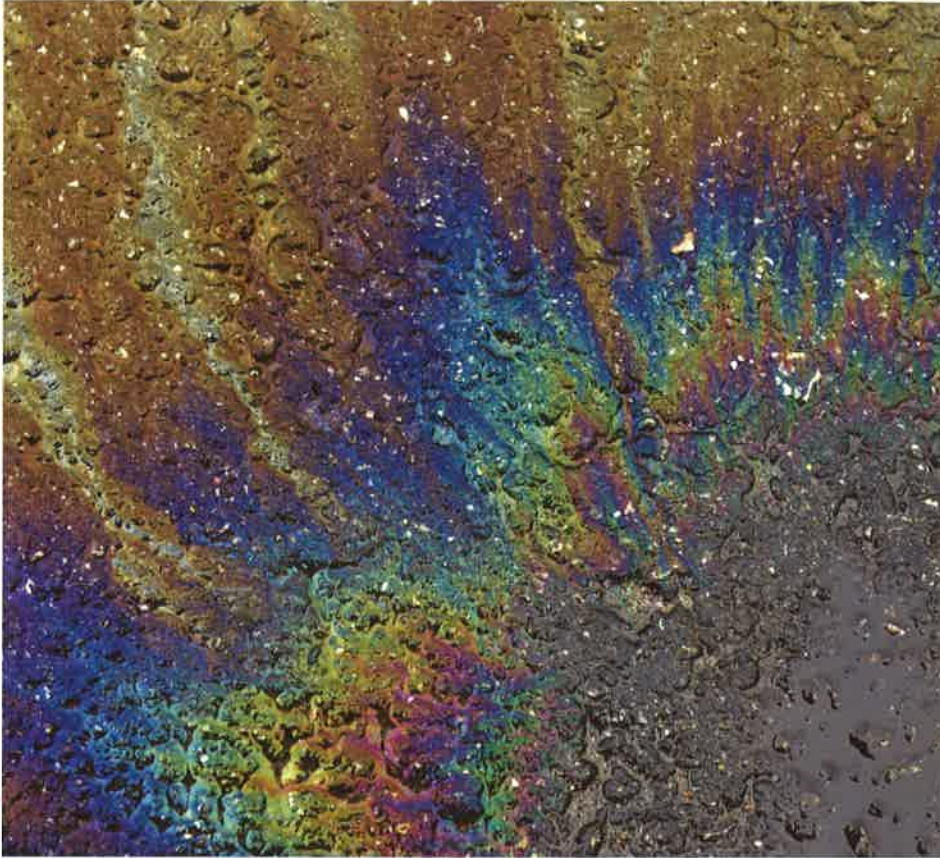


Many places charge fines for littering.

Our automobiles also cause water pollution. For example, automobile engines leak gas and oil onto roads and parking lots. Rain can wash these pollutants into local bodies of water or onto land where they can contaminate groundwater.

Watery Earth Fact

One liter (about one pint) of oil can contaminate up to 2 million liters of water.



Oil has leaked onto this pavement.

Products that we use at home can also contribute to water pollution. People often use chemical pesticides and herbicides in their yards. They also may use chemicals to clean and fix up their homes. These chemicals can wash into bodies of surface water, or contaminate groundwater supplies.

Electronic products, such as computers, batteries, and cell phones can add pollution to the water cycle. Electronic equipment sometimes contains materials, such as heavy metals, that can be very harmful to organisms that live in or around the water. When the electronic gadgets break open, these harmful materials are released into surface water or groundwater.



This computer equipment can break apart and contaminate the water supply.

A number of these pollutants can enter the water cycle via storm drains. In many cities, water drains directly into bodies of water with little or no treatment. During periods of heavy rain, storm drains can overflow. The overflowing water can flow down the street, picking up pollutants, and enter either the groundwater or local bodies of water. In areas where there are no storm drains, such as rural areas, rainwater can pick up pollutants and flow directly into local bodies of water.



Any polluted water that flows through this drain goes directly to a stream.



What do you think would happen to these fish if they lived in polluted water?

Since groundwater can become polluted in a number of different ways, people who use it for drinking must have their water tested from time to time to make sure it is clean and healthy. Also, if polluted groundwater travels through an aquifer, it can then pollute a river or stream, a lake, or even the ocean. Animals and humans can come in contact with dangerous waste that may have entered the water cycle many miles away.

Industries Cause Water Pollution

Industries can release toxic chemicals into surface water, onto the land, or into the air. Chemicals released into surface water can damage the habitats of the animals that live there. Chemicals dumped onto land can seep into the ground and contaminate groundwater. Toxins released into the air can enter the water cycle by combining with the water that is in the air. When these chemicals fall to Earth as precipitation they can enter and contaminate bodies of surface water or ground water.



The air pollution from this oil refinery can eventually lead to water pollution.



Many factories are located near bodies of surface water.



Farms Cause Water Pollution

Our farms can cause water pollution by releasing toxic pest- and weed-control chemicals into the environment. These chemicals sometimes end up in nearby surface water. They can also soak into the ground and contaminate groundwater. If the chemicals build up too much in one spot, they can cause harm to organisms that depend on the water.



"Crop-dusters" spray pest and weed control chemicals on many farms.

Farms also accumulate bodily waste from cattle, pigs, and other livestock. The waste can end up in nearby surface water. When it builds up too much in one spot, it can release dangerous chemicals and bacteria into the water. These chemicals can harm organisms that depend on the water.

How Harmful Is Water Pollution?

It is not easy to figure out how harmful a pollutant is to the water supply. Not every pollutant harms water in the same way. Some pollutants, such as glass, do very little damage to water. Other pollutants, such as heavy metals, can do much more damage. Here are the ways that some of the major types of pollution are harmful:

- Paper, plastic, most metal, glass: These pollutants are not normally too harmful to water. They are easy to see and remove. They are also not likely to pollute the water enough to be harmful to most organisms.
- Automobile leaks: This pollution is easy to see but hard to clean up. The more pollutants that build up, the more harmful it is to the water supply. Exhaust from cars can also cause rain water to pollute the water supply.
- Chemicals: Fertilizers and chemical pest and weed killers are difficult to see and remove from water. If a large amount of one chemical builds up in the water supply, it can be harmful to an organism or its environment.
- Electronic waste: Batteries, old computers, cell phones, and other electronic equipment contain certain types of metals that can be harmful to living organisms if concentrations are high enough. The materials need to break open in order for their dangerous contents to be released. Once this happens, the hazardous materials are very difficult to observe and remove. In high concentrations, they can pose great risk to an organism or its environment.

How Can We Prevent Water Pollution?

One simple thing you and your families can do to reduce water pollution is to dispose of waste in its proper place. The following are suggestions for disposing of a few common types of waste.

- Paper, plastic, most metal, or glass—Recycle if possible, otherwise put it in with regular garbage



Many paper products, such as these flattened cardboard boxes, can be recycled.

- Chemicals—Always dispose of them at a special hazardous waste site and never dump down storm drains
- Electronic waste—Recycle if possible. If not, dispose of it at a special hazardous waste site and never dump in or near the water.
- Pet waste—Pick it up from outdoor areas so its bacteria doesn't enter a body of water.

Another important way to reduce pollution is to develop good water habits. For example, you and your families should try to reduce the use of herbicide and pesticides, or search for less toxic natural alternatives. You might also replace your household cleaning products with less toxic varieties.