

## Stop Killing our Rivers and Streams

Our rivers and streams are the lifeblood of our country. Without them we have no water to drink, no water for our factories and power plants, no water to grow our food, and no water for our environment.

Yet we are slowly killing our rivers by polluting them. What is water pollution? Water pollution is any substance introduced into a river, stream, lake or ocean that harms the natural resources found in those environments (such as plants and animals).

Lakes and rivers can naturally clean up a certain amount of pollution by dispersing it harmlessly. For example, if you were to pour a cup of black ink into a river, the ink would quickly disappear into the river's much larger volume of clean water. The ink would still be there in the river, but in such a low concentration that you would not be able to see it.

At such low levels, the chemicals in the ink does probably not present any real problem.

However, if you poured many litres of ink into a river every few seconds through a pipe, the river would quickly turn black. The chemicals in the ink could very quickly have an effect on the quality of the water. This, in turn, could affect the health of all the plants, animals and humans whose lives depend on the river.

This means that water pollution is all about quantities: how much of a polluting substance is released and how big



*Abandoned and closed mines produce a large quantity of polluting chemicals. Many dangerous metals, including iron, aluminium, lead, mercury, chromium and cadmium come out of old mine workings and pollute water resources.*

a volume of water it is released into. A small quantity of a toxic chemical may have little impact if it is spilled into the ocean from a ship. But the same amount of the same chemical can have a much bigger impact pumped into a lake or river, where there is less clean water to disperse it.

There are two different ways in which pollution can occur. If pollution comes from a single location, such as a

discharge pipe attached to a factory, it is known as **point-source pollution**.

Unfortunately, a great deal of water pollution happens not from one single source but from many different scattered sources. This is called **non-point-source pollution**.

When point-source pollution enters the environment, the place most affected is usually the area immediately around the source. This is less likely to happen with nonpoint-source pollution which, by definition, enters the environment from many different places at once.

### WHERE DOES POLLUTION COME FROM?

It must be remembered that water is part of a deeply interconnected system. This means what we pour on the ground ends up in our water, and what we spew into the sky ends up in our water.

By depleting and polluting rivers, lakes and wetlands, we are destroying ecosystems

that play an essential role in filtering and assuring freshwater resources.

Water pollution has many different causes and this is one of the reasons why it is such a difficult problem to solve. Disposing of sewage is a major problem. Human waste landing up in river systems due to communities lacking toilet facilities, leaking faulty sewerage pipelines and overflowing sewerage treatment works can lead to

## DID YOU KNOW?

- ◆ According to Guinness World Records, the worst **river pollution** in the world occurred in November 1986 when fire-fighters tackling a blaze at the Sandoz chemical works in Basel, Switzerland, flushed 30 tons of agricultural chemicals into the Rhine River, western Europe's most important waterway, killing about 500 000 fish.
- ◆ Every year, **200 to 500 million tons** of heavy metals, solvents, toxic sludge and other wastes accumulate in water resources from industry.
- ◆ More than 80% of the world's **hazardous waste** is produced in the US and other industrial countries.
- ◆ About two million tons of waste is dumped every day into rivers, lakes and streams. One litre of wastewater pollutes **eight litres** of freshwater.

water-related illnesses such as cholera and diarrhoea.

Wastewater for industries and mines is another source of pollution. Factories and mines are point sources of water pollution, but quite a lot of water is polluted by ordinary people from nonpoint sources. Virtually everyone pours chemicals of one sort or another down their drains and toilets. Even detergents used in washing machines and dishwashers eventually end up in our rivers. So do the pesticides we use in our gardens.



*Harmful substances spilled into rivers can build up in the environment and aquatic life, for example, fish.*

A lot of toxic pollution also enters wastewater from highway runoff and city sidewalks. Highways and typically covered with a cocktail of toxic chemicals – everything from spilled fuel and brake fluids to bits of worn tyres and exhaust emissions. When it rains, these chemicals wash into drains and rivers.

## WHY DOES POLLUTION MATTER?

Some people believe pollution is an inescapable result of human activity: they argue that if we want to have cities, mines, factories and cars some degree of pollution is almost certain to result. Fortunately, not everyone agrees with this view. One reason people have woken up to the problem of pollution is that it brings costs of its own that undermine any economic benefits that come about by polluting. It affects our health, destroys our environments, and makes the water so much more expensive to treat for drinking purposes.

We need to make a choice: either we live with smelly rivers, and poisoned fish that we cannot eat, or we do our part to keep the environment clean so the plants, animals and people who depend on it remain healthy.



*South Africa is a water-scarce country, thus it is extremely important that we safeguard all the water resources we have against pollution.*



Kathy Estes

*Solid and human wastes polluting our river systems can cause serious health hazards and outbreaks of diseases such as cholera and diarrhoea.*



*When it rains, chemicals and other polluting substances from city roads and sidewalks wash into drains and rivers.*

## STOP RIVER POLLUTION – HOW YOU CAN HELP

- ◆ Do not litter.
- ◆ Reduce your use of pesticides and fertilisers and look for safer alternatives to control weeds and bugs.
- ◆ Take part in local river clean-up campaigns.
- ◆ Always throw unwanted fishing line in a trash can, not in the water.
- ◆ Do not use toilets and stormwater drains to dispose of trash of any kind.
- ◆ Notify your parents or the authorities if you see someone dumping trash in a river or stream.