

# River pollution factsheet

There are lots of amazing animals living in and around our rivers, but some animals can't survive when our rivers are polluted. 😞

## What is Pollution?

**What is Pollution?** Pollution is the introduction of harmful substances into the environment.

Can you think of some things that might pollute our rivers?

Plastics and microplastics, litter, chemicals, medicines, soil and many more ➡

Choose 3 of the things from this list and find out about how they can damage rivers.

Sewage, Litter, Plastics and microplastics, Pesticides, Soil and sediments, Chemicals and fertilizers, Medicines, Cleaning products  
Transport, oil and fuels

We can tell us how clean a river is, by seeing which animals are living in our rivers. They are called Indicator Species.

## How do river invertebrates indicate how clean a river is?

Different animals are more, or less tolerant of pollutants in rivers. Animals which can't tolerate pollutants or low levels of oxygen in the water include stonefly nymphs and mayfly nymphs.

Freshwater shrimps are a bit more tolerant of pollutants, and animals like the rat tailed maggots and bloodworms can live in more polluted water.

Choose an animal which lives in rivers and research about how it can tell us if the river water is clean.



My river animal

Facts about my animal and where it lives

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## What can we do to help prevent pollution?

There are lots of ways that everyone can help prevent pollution. Can you think of any?

- Only flush the 3 p's: pee, poo and paper
- Never drop litter
- Use less plastic
- Only rain down the drain
- Be careful what chemicals we use in our house and garden

What I am going to do to help rivers

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# Pollutants

## How they can damage rivers

### Sewage

We all produce waste water every day, from toilets, sinks, showers and general household appliances like washing machines and dishwashers. This waste should go to water treatment works, but sometimes appliances have misconnections and the waste water goes straight into our rivers. During periods of heavy rainfall, water treatment works frequently release untreated sewage into our rivers, and the increasing population and intense periods of heavy rainfall are making these events more frequent.

### Litter

Rubbish that hasn't been disposed of correctly can do damage to the environment. Litter can be dangerous to animals who might mistake it for something to eat, looks unsightly and can carry germs and disease. Plastics form a large part of litter. Since the 1950s, 8.3 billion tons of plastic have been produced worldwide and only 9% of it has been recycled. 73% of beach litter around the world is plastic.

### Plastics and microplastics

Plastics are a group of synthetic (man-made) or semi-synthetic materials which may be shaped when soft and then hardened and made into solid objects. Many of them persist in the environment for hundreds or thousands of years, but break down into microplastics which are any type of plastic smaller than 5mm, and these pollute our air, land, rivers and oceans

### Pesticides

Substances that are used to kill or control animals or plants which are considered to be pests. These include herbicides (which kill plants), insecticides (insects), fungicides (fungi), disinfectants to control bacteria and specific poisons to kill rodents such as mice and rats.

### Soil and sediments

Sediments entering rivers occurs from livestock trampling river banks, from runoff from bare arable fields and from runoff from fields where livestock and machinery have compacted the soil and reduced infiltration. Sediments can suffocate animals living in the river, including fish fry and eggs, and also reduce the capacity of the rivers to hold water.

### Chemicals and Fertilizers

Nutrients such as phosphate and nitrate from manure and fertilizers, run off agricultural land and into rivers, causing reduced oxygen levels and encouraging algal blooms to form.

### Medicines

Pharmaceuticals, drugs, hormones and antibiotics pass through our bodies and are excreted in our urine. About half of these cannot be removed at treatment works, so find their ways into river water. Sometimes when people dispose of medicines incorrectly these also find their way into our rivers.

### Cleaning products

Many of the chemicals found in common household cleaning products are harmful to the environment and to people, through absorption or breathing in polluted air from sprays. There are alternative, natural, sustainable products available which are more eco-friendly.

### Transport, oil and fuels

Oil and petrochemicals from vehicles or worn tyres on the roads, or chemicals from the cars and detergents which comes from washing cars on drives, can enter our rivers when rainwater washes them into our storm drains which lead directly to our rivers.