

Evidence of Pollution

Pollution is a key issue on our rivers. It may come from a specific point or be more 'diffuse' in nature, arising from across the surrounding land and washing into the rivers. In general, pollution will be most evident during and after rainfall - try to survey after different conditions if you can.

Visible Pollution Sources

These tend to be a 'point' source of pollution - clearly coming from a single location, often a pipe. The pipes can be quite variable in appearance, but this does not necessarily reveal the type of pollution source. To identify the type of source requires some investigation and consideration of the local context and surroundings.



The following are some common types of point source pollution:

- ▶ Industrial - does the pipe come from an industrial area or factory?
- ▶ Residential - does the pipe start from an area of housing? Are there signs of household runoff, such as foamy water from car washing? You could keep an eye out for 'Yellow Fish' drains in some towns, which show the drains which link directly to the river. If you see pollutants running into these drains, you could send a CSI report in about the drain, or see if you can spot where it discharges into the river.
- ▶ Road drains - these are most easily spotted near bridges, or can be inferred if there is a discharge with roads but no buildings nearby.
- ▶ Combined Sewer Overflow - these discharge waste associated with Sewage Treatment Works. They should only discharge during and just after big storms. If you see one discharging during dry weather you should call the Environment Agency **0800 80 70 60**.



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Sources of Diffuse Pollution

Diffuse pollution tends to arise from a large area, or over a long time period. The pollution may still be visible entering the river at a specific location, but the source is more diffuse.



Soil erosion

Soil is a major source of water pollution. Too much fine sediment causes siltation of spawning gravels, which deprives fish of vital oxygen. It can also clog fish gills and inhibit feeding behaviour. Also, soil can transport nutrients and chemicals to the river.

Poorly managed soils are vulnerable to erosion, and mud on roads will also soon reach nearby streams.

When stock have direct access to the river, soil and sediment is mobilised as they trample on the river banks, and their waste can introduce microbial pollution. Hoof marks down to the river are a good indicator of stock access.



Cattle/stock access to river



Farm run off

Pollution may enter rivers from a number of farm sources (e.g. slurry stores, yards), which often contain nutrients and chemicals. Chemicals may be toxic to wildlife, while nutrients can result in excessive algal growth. As this algae decomposes, the oxygen levels in the water are reduced, which is very harmful to fish and other wildlife.

As well as from the land surface, sediment may be eroded from the river banks themselves. River bank erosion is natural, but this process can be accelerated by certain land uses and vegetation.



River bank erosion

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Grey water/Misconnection

When pollution enters the river from urban sources the water may take on a grey colour. It may also smell like washing powder or detergent, which is a key sign of 'misconnected' household pipes.

Road surfaces are generally impermeable, allowing rainfall to flow rapidly across them. As water crosses roads, it may pick up fuels, heavy metals and other pollutants and deliver them to the river.



Road run off

Evidence of Recent Pollution

There are some types of pollution which are clearly visible, or their effects are clearly visible, but their source cannot easily be identified.



Sewage related litter

There are certain products linked to sewage. For example sanitary products, cotton buds and baby wipes may make their way into sewage and into our rivers, often through unscreened Combined Sewer Overflows.

Litter is a serious threat to our rivers. Plastic bags and containers can trap fauna and are toxic if digested. There may also be additional substances within the waste that will impact water quality and the ecology of the river.



Litter/fly-tipping

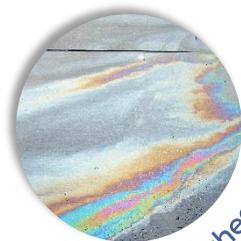
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Unpleasant odour

Unpleasant odours in our rivers come in many forms. Rotten egg smells often relate to raw sewage, decomposition of organic matter or low oxygen levels. Sharp smells may indicate (agro-) chemicals and gas smells suggest industrial sources, waste water or pollution from waste.

Although there are natural sources of oil, often a rainbow-coloured, oily sheen on a river surface is a sign that petroleum or other oils have entered the river.



Oily sheen



Sewage fungus

Sewage fungus is found where there is a build up of a mass of filamentous bacteria. This is likely where there are misconnections in the sewage system. It is a sign of serious pollution.

Foam forms when surfactants are present (molecules that alter the water tension). Some surfactants are naturally forming but if the foam is a pure white colour with a fragrant smell, this is a sign of pollution.



Foam

Don't forget, if you see anything you're not sure about, take a photo and ask us about it by emailing csi@wrt.org.uk.

If you see any of the following, call the Environment Agency 24 hour incident hotline **0800 80 70 60**: Pollution to water or land, damage or danger to the natural environment, dead fish or fish gasping for air, collapsed or badly damaged river banks.