

Pollution from rural areas

What is the issue?

Farming is a major land use throughout Cumbria but management of land for agriculture can result in several types of water pollution. Because this occurs as lots of small inputs over a large area it is called 'diffuse pollution'.

- **Sediment** can naturally enter watercourses but agricultural activities can dramatically increase the amount. This can damage river life and smother fish eggs and spawning grounds as well as causing problems for drinking water and being a vector for other pollutants which bind to the soil particles. The main sources of sediment to streams and rivers are livestock trampling the banks (called poaching), runoff of soils in arable fields and runoff from fields where livestock and machinery have compacted the soil and reduced infiltration.
- **Nitrate and Phosphate** are naturally occurring nutrients that are essential for the growth of animals and plants but human activities can cause very high concentrations. This results in poor water quality and excessive plant growth, which then reduces the oxygen in the water available for river animals and stops us using the water.



Manure and fertilisers are a major source of nutrient and phosphates. Livestock accessing streams and rivers can input manure directly. Fertiliser and slurry can wash off the land into the watercourse, particularly if they are applied in wet weather.

Septic tanks can also be sources of phosphate. Septic tanks are found rural areas that are not connected to mains sewerage systems. If they are well maintained they can adequately clean household waste before it is discharged into watercourses, but poorly maintained septic tanks could be polluting water courses with sewage, high in phosphates and disease-causing bacteria. To find out more visit the [Call of Nature](#) website.

- **Chemicals such as pesticides and sheep dip**, and **faecal bacteria** from livestock, can also enter the watercourses in agricultural areas and are very harmful to aquatic life and to humans.

What locations are affected?

Although the number of pollution incidents from agriculture has declined markedly over the last ten years, pollution from rural areas remains a challenge. Agricultural pollutants are the reasons for 37% of our rivers being classified as 'not in good condition'. This is a particularly widespread issue in the Waver and Wampool and Irt catchment areas. Problems with non-mains sewerage systems account for 9 % of the reasons for river not being in good condition with issues in the rural areas of the Ehen, Ellen, Derwent and Cocker catchments.

Why should this concern me?

► Cost of having to treat drinking water

- Water companies have to treat high nitrate levels in drinking water to make it safe for people to use. Water treatment cannot remove all pesticides such as metaldehyde, the chemical in slug pellets, to a sufficient degree and it can lead to water treatment works being shut down. This is expensive and costs may be passed on to people and businesses.

► Harms ecosystems, sensitive plants and animals, increases toxic algae incidences

- Increased number of toxic algal blooms which are a hazard to people, domestic animals and wildlife and can lead to loss of sensitive plants, animals and their habitat.
- Oxygen levels reduce in water bodies affected by eutrophication, which means fewer aquatic insects and fish.

► The quality of our water environments for leisure activities

- Algal growth and poor water quality in our rivers, lakes and estuaries, which affects people's opportunity to use them for leisure activities.
- These losses can mean that the value of tourism and properties decreases.



Algae in Loweswater

What are the future challenges and concerns?

▶ Uptake of agri-environment schemes.

- Farmers can be compensated for managing land in an environmentally sensitive way but changes in these schemes mean future uptake is uncertain.

▶ Increased farming intensity

- There is a possibility that the use of fertilisers and densities of grazing livestock may increase to meet growing demand for food from a larger population.

▶ Climate change could increase runoff from agricultural land.

- Changing rainfall patterns with more storm events could increase the amount of sediment and fertiliser that is washed off the land and into watercourses.

What can be done about this issue?

▶ Improving nutrient management, manure and water storage on farms.

- Simple measures to separate clean and dirty water such as harvesting rainwater and putting covers on slurry tanks can reduce the amount of slurry that needs to be spread. Spreading fertilisers and slurry in dry weather will reduce runoff into watercourses.
- Ensuring soil is kept in good condition and minimising compaction.
- Having buffer strips of trees or long grass between cultivation and watercourses.
- Fencing off the watercourses to stop livestock trampling the banks.
- These measures can be cost effective and can benefit the farming business.
- Farmers are already doing much to help solve these problems. Many have agri-environment scheme and are paid a contribution for working their land in a way that benefits the environment. There are grants and advice available under Catchment Sensitive Farming (CSF). CSF encourages farmers to take measures to reduce runoff from their land.



Bankside fencing on the River Ellen Restoration project.