

Farming & Ireland's Rivers



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What's Putting Pressure on Ireland's Rivers?

1. **Agriculture:** This is the main source of pollution in Ireland's rivers, lakes, estuaries and coastal waters. Excess nitrogen and phosphorus from chemical and organic fertilisers such as slurry (liquid manure), as well as pesticides and sediment from farms, can enter waterways.
2. **Urban wastewater:** Poorly treated (sometimes untreated) wastewater releases nutrients like phosphorus, organic pollution and harmful microorganisms into rivers and other waterways.
3. **Forestry:** Forestry operations can release sediment, nutrients and pesticides. Sediment is fine soil and other particles that can smother river habitats and fish spawning grounds.
4. **Physical changes:** Drainage, straightening, dredging, embankments and weirs alter river flow, damage habitats and prevent fish movement.
5. **Industry & other pressures:** Industry, urban run-off and other activities can pollute water, while climate change adds pressure through changing rainfall, floods, drought and warmer water.



Agriculture: Primary Source of Pollution in Ireland's Rivers

Agriculture has a rich cultural heritage, is vital to rural communities and is central to Ireland's economy. However, it is also the main source of pollution affecting Ireland's rivers, lakes, estuaries and coastal waters.

Nearly three-quarters of Ireland's land is used for agriculture, most of it used for livestock farming – mainly cattle for beef and dairy farming. In June 2025, Ireland had over 6.9 million cattle ([Examiner, 2026](#)). Producing grass to feed these cattle relies on nutrients from chemical fertilisers (imported) and organic fertilisers (such as slurry and manure).

When more nitrogen and phosphorus are applied than crops and soils can retain, nutrients can end up in waterways. Too much can fuel excessive plant and algae growth, reduce oxygen levels, damage aquatic ecosystems and, in severe cases, kill fish and other aquatic life. ([EPA 1](#), [EPA 2](#)).



Cattle Farming and the Nitrogen Factor

EU rules generally limit livestock manure application to 170kg of nitrogen per hectare per year. Ireland is now an outlier, as the only EU country still having a special Nitrates Derogation, which allows eligible grassland farms to exceed this standard limit. ([Department of Agriculture, Food & the Marine](#)).

Under Ireland's Nitrates Derogation, eligible farms can exceed the standard EU limit of 170kg of livestock manure nitrogen per hectare, up to 220kg or 250kg per hectare, depending on the area, and subject to stricter environmental rules. Approximately 7,000 farmers currently avail of the derogation. ([gov.ie](#)).

Nitrates in Drinking Water and Human Health

Research from Denmark has raised concerns about the potential health effects of nitrates in drinking water. A large nationwide Danish study found an association between higher nitrate concentrations in drinking water and increased colorectal cancer risk ([National Library of Medicine](#)). Agricultural activities, including the use of nitrogen fertilisers and manure, are important potential sources of nitrate contamination of groundwater.



Why Nutrients Matter

Nutrient Pollution

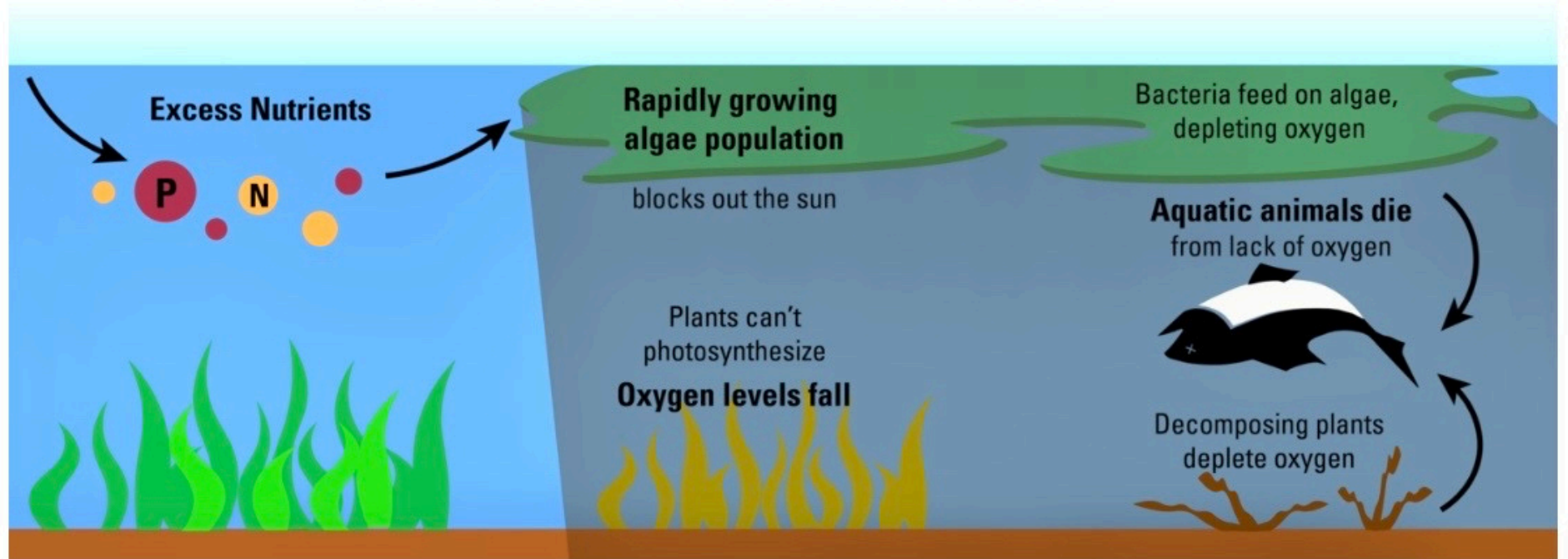


Diagram from the USGS

Too much nitrogen and phosphorus disrupt the natural balance of rivers, reducing oxygen levels and making it harder for wildlife to survive.

As algae die and decompose, bacteria use up oxygen in the water, leaving too little for fish and many aquatic insects.

Source: [USGS.gov](https://www.usgs.gov)

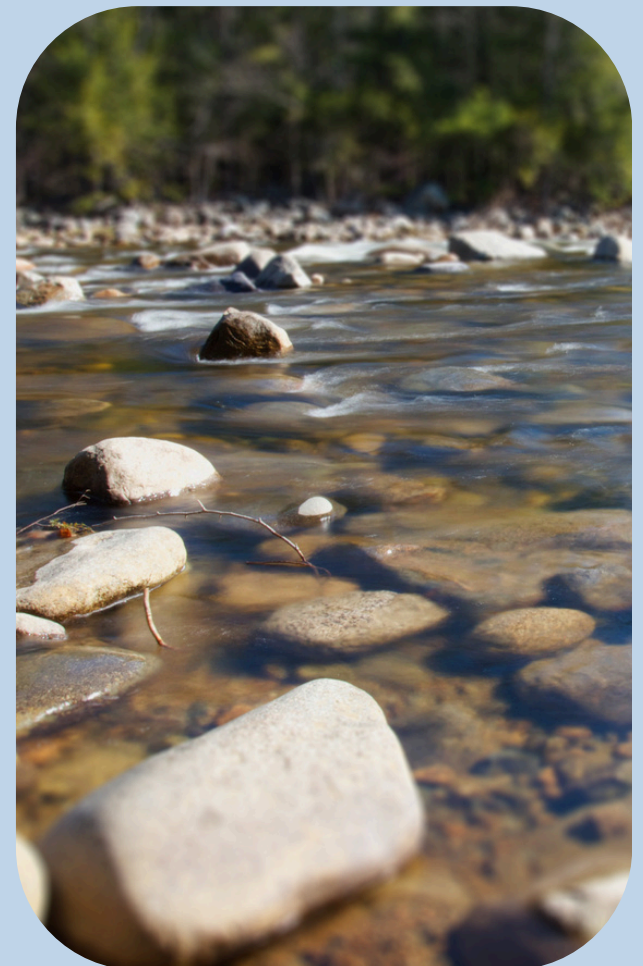
Government Action: Protecting Water Quality

The latest EPA report shows that 46% of Ireland's rivers are failing to meet their environmental standards, while many of our highest-quality rivers continue to be lost. Reducing excess nitrogen entering waterways is an important part of reversing that trend ([EPA](#)).

Ireland is now the only EU country with a Nitrates Derogation, allowing eligible farms to apply more livestock-manure nitrogen than the standard EU limit. Improving water quality will require a combination of effective regulation and practical support for farmers to reduce nutrient losses and move towards more sustainable farming systems ([gov.ie](#)).

What can government do?

- Support farmers in reducing the overall amount of fertilisers used
- Provide funding for farmers planning to reduce herd sizes, especially with the increased likelihood of droughts due to climate change, which place extra pressure on farmers.
- Target measures towards areas where water quality is under greatest pressure
- Provide funding and advice for lower-impact and nature-friendly farming
- Maintain strong monitoring, regulation and increased fines for infringements.



Supporting Farmers to Diversify

Supporting a wider mix of farming systems could restore our river water quality while strengthening Ireland's domestic food production.

Farmers who want to diversify need practical support, viable markets and financial incentives. Opportunities could include:

- **Tillage** – crops such as wheat, oats and barley
- **Horticulture** – expanding Irish-grown fruit and vegetables
- **Organic farming** – reducing reliance on synthetic fertilisers and pesticides
- **Mixed and nature-friendly farming** – combining food production with healthier soils, habitats and waterways.

Did You Know?

Ireland's commercial vegetable-growing sector has contracted significantly: industry experts estimate that the number of significant growers has fallen from around 300 to just 60. At the same time, Ireland remains heavily dependent on imported fruit and vegetables, creating an opportunity to support more locally grown food alongside more diverse farming systems. ([Irish Times](#)).



Good Farming = Healthy Rivers

Farmers manage most of Ireland's land, making them central to improving water quality and restoring healthy rivers. Across the country, some farmers are adopting practices that reduce pollution while supporting wildlife.

What works?

- Riparian planting: Planting native trees and vegetation along rivers helps filter nutrients, reduce soil erosion, stabilise riverbanks and provide shade that keeps water cooler for fish.
- Fencing to keep livestock out of rivers which reduces bank erosion and prevents nutrients and bacteria entering the water directly.
- Nutrient management and precision methods: Using soil testing and applying fertiliser only where and when needed. Choosing low-emission slurry spreading methods can help reduce nutrient loss and protect water quality while improving farm profitability
- Including clover in grass seed mixtures can reduce the need for artificial fertilisers.
- Constructed wetlands: Wetlands can help capture sediment and nutrients before they reach rivers, improving water quality and creating habitat for wildlife.
- Nature-friendly farming: Programmes such as Farming for Nature and Refarm support farmers in restoring habitats and supporting biodiversity while maintaining productive farms.



Source: Teagasc, ASSAP, River Basin and Farming for Nature

What Needs to Happen Next?

- Protect our remaining High Status rivers, particularly from nutrient pollution in vulnerable areas.
- Reduce nitrogen usage, including more targeted use of chemical fertilisers and organic fertilisers (slurry and manure).
- Create and protect riparian buffer zones, using native vegetation to help prevent nutrients and sediment reaching rivers.
- Restore farm wetlands and other natural features that slow, filter and hold water within the landscape.
- Support more nature-friendly and diversified farming, including horticulture, tillage, organic and mixed farming.
- Provide farmers with practical advice, financial incentives and transition support to improve water quality while maintaining productive, resilient farms.
- Strong monitoring, regulation and enforcement are needed alongside farmer supports to ensure water-quality measures deliver results.

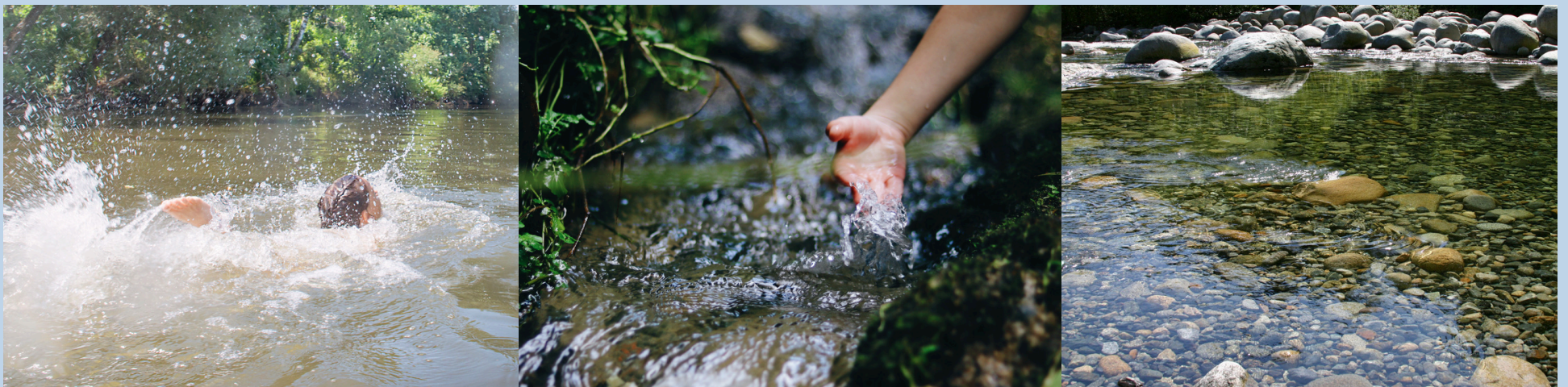


Sources: EPA • Catchments.ie • River Basin • Teagasc • ASSAP • Farming for Nature
• The Irish Times (Ella McSweeney)

Healthy Clean Rivers: Characteristics

A healthy river is much more than clear water. It is a living ecosystem:

- **Full of life:** Healthy rivers support a rich variety of species, from mayflies, caddisflies and other aquatic insects to Atlantic salmon, eels, freshwater pearl mussels, white-clawed crayfish and otters.
- **Clean, oxygen-rich water:** The water contains enough dissolved oxygen for fish, insects and other aquatic life to thrive, with low levels of harmful pollutants and excess nutrients.
- **A clean riverbed:** Too much fine sediment – tiny particles of soil and silt washed into rivers – can smother gravel beds, clog habitats and make it harder for fish eggs and aquatic insects to survive. The EPA specifically identifies siltation as one of the threats facing Irish rivers.
- **A healthy habitat:** Natural riverbanks, vegetation, gravel beds, pools and flowing water provide different habitats for wildlife.
- **Provides clean water for drinking and swimming.**



Green Fridays Takeaway

Farmers are central to restoring Ireland's rivers. Reducing nutrient losses, protecting riverbanks and wetlands, and supporting more nature-friendly farming can improve water quality while maintaining productive farms.

Government policy, practical support and investment will be essential to help make that transition possible.

Learn more, explore the sources and discover practical ways to help at GreenFridays.org/learn.

Next in the Healthy Waters series:

Cleaner Water: Tackling Pollution in Ireland's Rivers



THE GREEN ROUTE