



# Water Quality in 2025

## An Indicators Report

# Environmental Protection Agency

The EPA is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

- **Regulation:** Implementing regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.
- **Knowledge:** Providing high-quality, targeted and timely environmental data, information and assessment to inform decision making.
- **Advocacy:** Working with others to advocate for a clean, productive and well-protected environment and for sustainable environmental practices.

## Our responsibilities include:

### LICENSING

- Large-scale industrial waste and petrol storage activities;
- Urban wastewater discharges;
- The contained use and controlled release of genetically modified organisms;
- Sources of ionising radiation;
- Greenhouse gas emissions from industry and aviation through the EU Emissions Trading Scheme.

### NATIONAL ENVIRONMENTAL ENFORCEMENT

- Audit and inspection of EPA-licensed facilities;
- Drive the implementation of best practice in regulated activities and facilities;
- Oversee local authority responsibilities for environmental protection;
- Regulate the quality of public drinking water and enforce urban wastewater discharge authorisations;
- Assess and report on public and private drinking water quality;
- Coordinate a network of public service organisations to support action against environmental crime;
- Prosecute those who flout environmental law and damage the environment.

### WASTE MANAGEMENT AND CHEMICALS IN THE ENVIRONMENT

- Implement and enforce waste regulations including national enforcement issues;
- Prepare and publish national waste statistics and the National Hazardous Waste Management Plan;
- Develop and implement the National Waste Prevention Programme;
- Implement and report on legislation on the control of chemicals in the environment.

### WATER MANAGEMENT

- Engage with national and regional governance and operational structures to implement the Water Framework Directive;
- Monitor, assess and report on the quality of rivers, lakes, transitional and coastal waters, bathing waters and groundwaters, and measurement of water levels and river flows.

### CLIMATE SCIENCE AND CLIMATE CHANGE

- Publish Ireland's greenhouse gas emission inventories and projections;
- Provide the Secretariat to the Climate Change Advisory Council and support to the National Dialogue on Climate Action;
- Support National, EU and UN climate science and policy development activities.

### ENVIRONMENTAL MONITORING & ASSESSMENT

- Design and implement national environmental monitoring systems: technology, data management, analysis and forecasting;
- Produce the State of Ireland's Environment and Indicator Reports;
- Monitor air quality and implement the EU Clean Air for Europe Directive, the Convention on Long Range Transboundary Air Pollution and the National Emissions Ceiling Directive;
- Oversee the implementation of the Environmental Noise Directive;
- Assess the impact of proposed plans and programmes on the Irish environment.

### ENVIRONMENTAL RESEARCH AND DEVELOPMENT

- Coordinate and fund national environmental research activity to identify pressures, inform policy and provide solutions;
- Collaborate with national and EU environmental research activity.

### RADIOLOGICAL PROTECTION

- Monitoring radiation levels and assess public exposure to ionising radiation and electromagnetic fields;
- Assist in developing national plans for emergencies arising from nuclear accidents;
- Monitor developments abroad relating to nuclear installations and radiological safety;
- Provide, or oversee the provision of, specialist radiation protection services.

### GUIDANCE, AWARENESS RAISING, AND ACCESSIBLE INFORMATION

- Provide independent evidence-based reporting, advice and guidance to government, industry and the public on environmental and radiological protection topics;
- Promote the link between health and wellbeing, the economy and a clean environment;
- Promote environmental awareness including supporting behaviours for resource efficiency and climate transition;
- Promote radon testing in homes and workplaces and encourage remediation where necessary.

### PARTNERSHIP AND NETWORKING

- Work with international and national agencies, regional and local authorities, non-governmental organisations, representative bodies and government departments to deliver environmental and radiological protection, research coordination and science-based decision making.

### MANAGEMENT AND STRUCTURE OF THE EPA

The EPA is managed by a full-time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by advisory committees who meet regularly to discuss issues of concern and provide advice to the Board.



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## Executive Summary

This report looks at how Ireland's water quality has changed in 2025, using the latest monitoring data for rivers, lakes, groundwater, estuaries and coastal waters.

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*Water quality will not improve unless nutrient pollution is reduced. Right now, there is no clear sign of long-term reductions in nutrient levels, making it unlikely that we will see meaningful improvements in water quality anytime soon.*

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Overall, there has been no real improvement in water quality. The main reason for this lack of progress is ongoing pollution from nutrients, particularly nitrogen and phosphorus. These substances mainly come from human activities such as farming, wastewater discharges and runoff from land. Too much of these nutrients get into rivers, lakes and coastal waters, where they cause excessive growth of algae and plants. This can reduce oxygen levels, damage habitats and harm fish and other aquatic life.

Across the country, nutrient levels remain too high in many places. A large proportion (43%) of river sites have elevated nitrogen levels, many of which are in the east and south of the country, and a significant proportion, almost one third of lakes and rivers have too much phosphorus. Similarly, one in five groundwaters and estuaries have nitrogen levels that are too high, again in parts of the east and south of the country. Despite some short-term variation in concentrations from year to year, there is no clear evidence that nutrient levels are falling over the longer term.

The biological health of our rivers and lakes has consequently seen little change. In some places the quality has improved, but these gains are being cancelled out by declines elsewhere. About half of rivers and lakes are in good condition, and this has stayed largely the same in recent years. At the same time, the very best rivers—those that are expected to have the highest number of pollution sensitive [aquatic invertebrates](#), known as [Blue Dot](#) rivers—continue to deteriorate, and their condition has dropped significantly over the past decade.

The overall message is clear. Without a sustained reduction in nutrient pollution, meaningful improvements in water quality are unlikely. Protecting and restoring Ireland's waters will require continued effort to reduce pollution from land and other human activities, particularly in areas where pressures are highest.

### Recommendations

A range of pressures arising from human activities affect water quality in Ireland, and all sectors have a role to play in addressing these impacts. Agriculture is the main source of nitrogen entering our waterways, while phosphorus inputs originate mainly from agriculture and waste water. These sectors must continue to increase the amount and pace of actions to reduce nutrient losses to water nationwide.

Significant efforts are underway nationwide to address the key pressures affecting water quality. It is essential that actions under the [Water Action Plan 2024](#) are implemented and tracked in a coordinated way. Targeted action and measures tailored to the specific challenges affecting each water body must be accelerated to shift the overall trend towards improving water quality.

## Introduction

This report updates the key indicators of water quality using monitoring data collected in 2025 to provide an update on trends in the biological quality and nutrient levels of our rivers, lakes, estuaries, coastal waters, and groundwaters. The EPA undertakes a full assessment of the overall quality and ecological status of Ireland's waters every three years. The last full cycle, up to and including 2024, was published in 2025<sup>1</sup>.

### Biological Quality Indicators

A range of biological quality elements are updated annually to track on-going water quality and habitat condition at water body<sup>2</sup> level nationwide. In rivers, aquatic invertebrates (e.g. insects, crustaceans and molluscs) are assessed to calculate the Q-value. Q-values are the main biological indicator in rivers, with changes generally reflecting shifts in overall river ecological status conducted on a three-year cycle. For lakes, the indicator is based on multiple biological elements including fish, invertebrates, aquatic plants, phytobenthos, and phytoplankton. These are a subset of the full lake ecological status assessment conducted on a three-year cycle.

### Nutrient Indicators

The primary issue affecting water quality and biological health in Irish surface waters is elevated nutrient concentrations, particularly phosphorus and nitrogen. Human activities, such as agriculture, waste water discharges (from domestic and urban sources) and forestry, can result in nutrient losses entering our waters.

Excessive nutrient inputs can lead to the overgrowth of plants and algae, which may clog watercourses, deplete dissolved oxygen, and harm aquatic organisms such as invertebrates and fish. This process, known as eutrophication, degrades ecological conditions. Elevated phosphorus levels are a key concern for the ecological health of rivers and lakes, while elevated nitrogen concentrations pose a greater risk to transitional (i.e. estuaries) and coastal waters.

Phosphorus inputs are particularly associated with poorly treated waste water, industrial discharges and agricultural runoff in poorly draining soils, while nitrate sources are predominantly from agriculture.

### About this Report

This report presents river and lake biological indicators as a national picture and includes 2025 data. The remainder of the report presents nitrogen and phosphorus indicators for rivers, lakes, transitional (estuaries) and coastal waters, and groundwaters, using both annual and three-year average concentrations at national and regional scales. Nutrients are sampled at least four times per year, with higher sampling frequencies at certain sites depending on their designation under the National Monitoring Programme<sup>3</sup>. Data from 2025 are included in the analysis. The five regions assessed are the Border, Midlands and East; South East; South West; and Western regions<sup>4</sup>.

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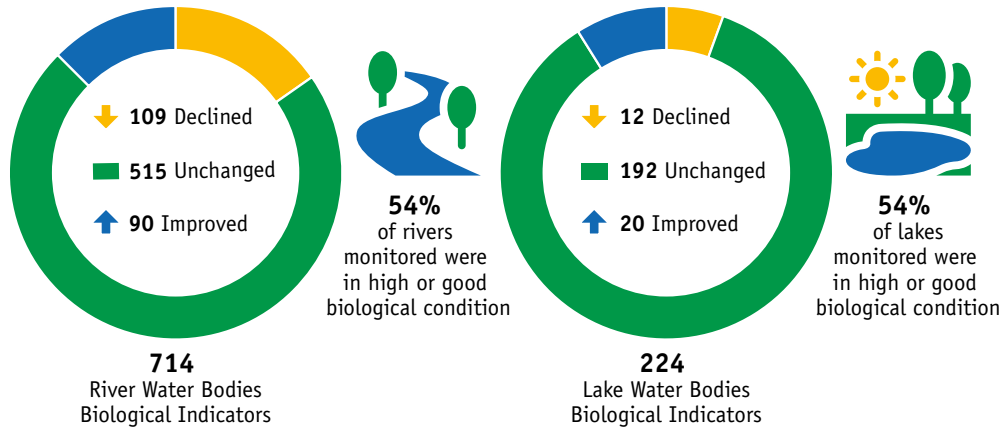
<sup>1</sup> <https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/water-quality-in-ireland-2019-2024.php>

<sup>2</sup> A 'water body' is the basic assessment unit used to check water quality. Water bodies can have single or multiple monitoring points called 'sites'.

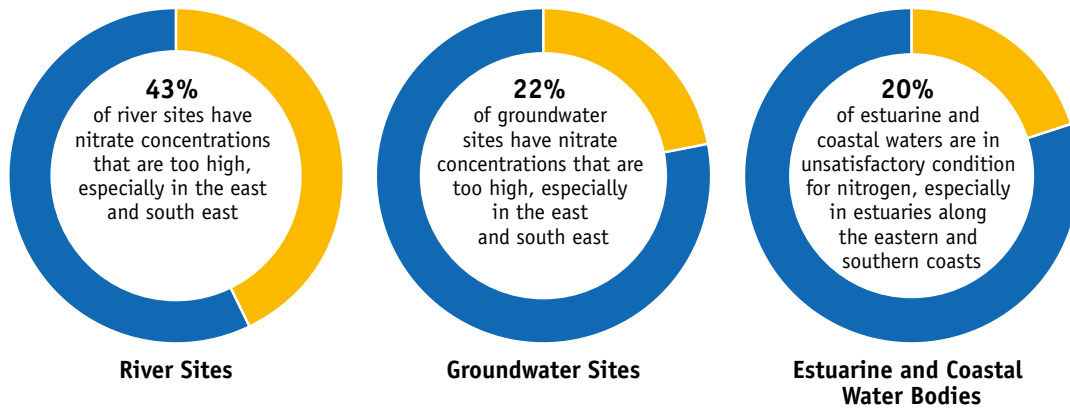
<sup>3</sup> [Ireland's National Water Quality Monitoring Programme 2022-2027 | Environmental Protection Agency](#)

<sup>4</sup> The five regions correspond with the water management structures in place under governance arrangements for the River Basin Management Plan ([visit the LAWPRO website here for a map of regions](#))

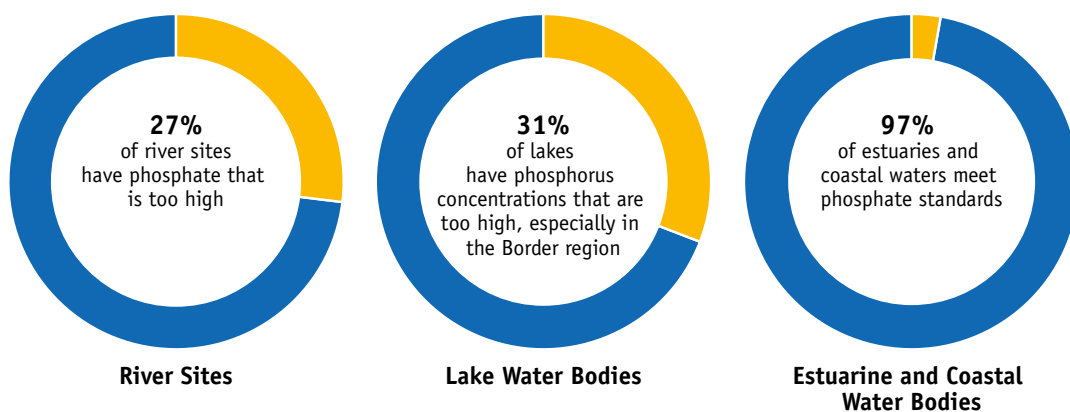
## Biological Indicators Key Findings



## Nitrogen Indicators Key Findings



## Phosphorus Indicators Key Findings



A more detail list of key findings can be found in Appendix 1.

# Indicators

## Rivers Biological Quality

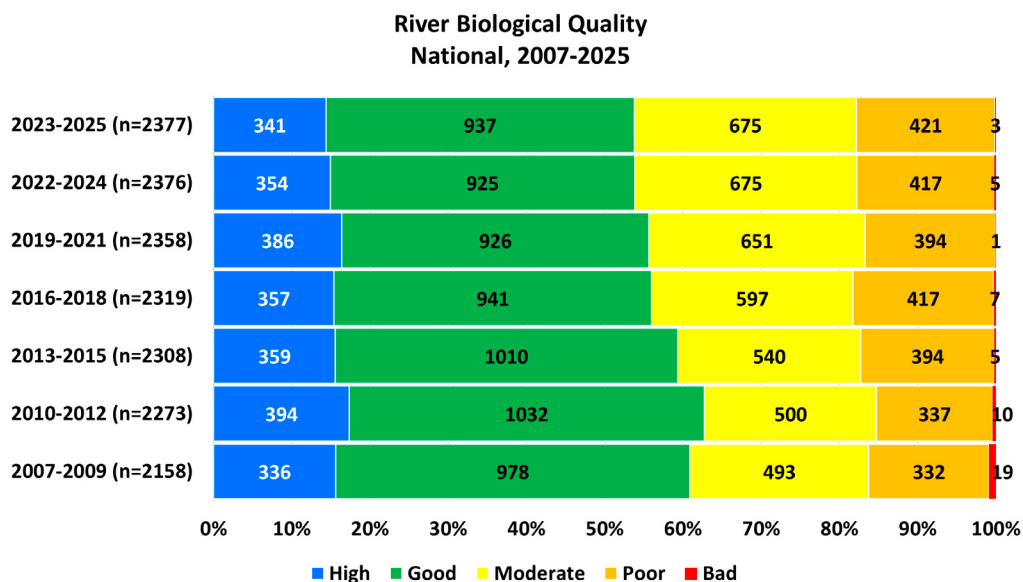
This indicator is based on updates to monitored rivers in 2025, assessed using the Q-value. The Q-value<sup>5</sup> is categorised into five classes: high, good, moderate, poor, and bad. Rivers in high and good quality are in a satisfactory condition and rivers in moderate or worse quality are in an unsatisfactory condition.

*Aquatic invertebrates are used to calculate the Q-value, and this is the main biological element used to determine our river water quality. Therefore, changes in Q-value are generally indicative of changes in overall ecological status.*

### Findings

Over half (54%) of river water bodies are in high or good biological quality, with the remaining 46% in moderate, poor or bad quality. Only 3 water bodies are in bad condition. These include stretches of the Folies Stream within the River Laune catchment in Kerry, the Ahavarraga Stream in Limerick, and the Claren (Nenagh), a tributary of the Nenagh River in Tipperary<sup>6</sup>.

In 2025, 717 (out of 2377) river water bodies were assessed. 515 remained stable with no change in their quality class<sup>7</sup>. There was a net decline in quality of 19 river water bodies, with 90 improving in quality and 109 declining. Three river water bodies assessed in 2025 were not assessed in 2022-2024<sup>8</sup>. As in recent years, any localised improvements in biological quality have been offset by declines elsewhere.

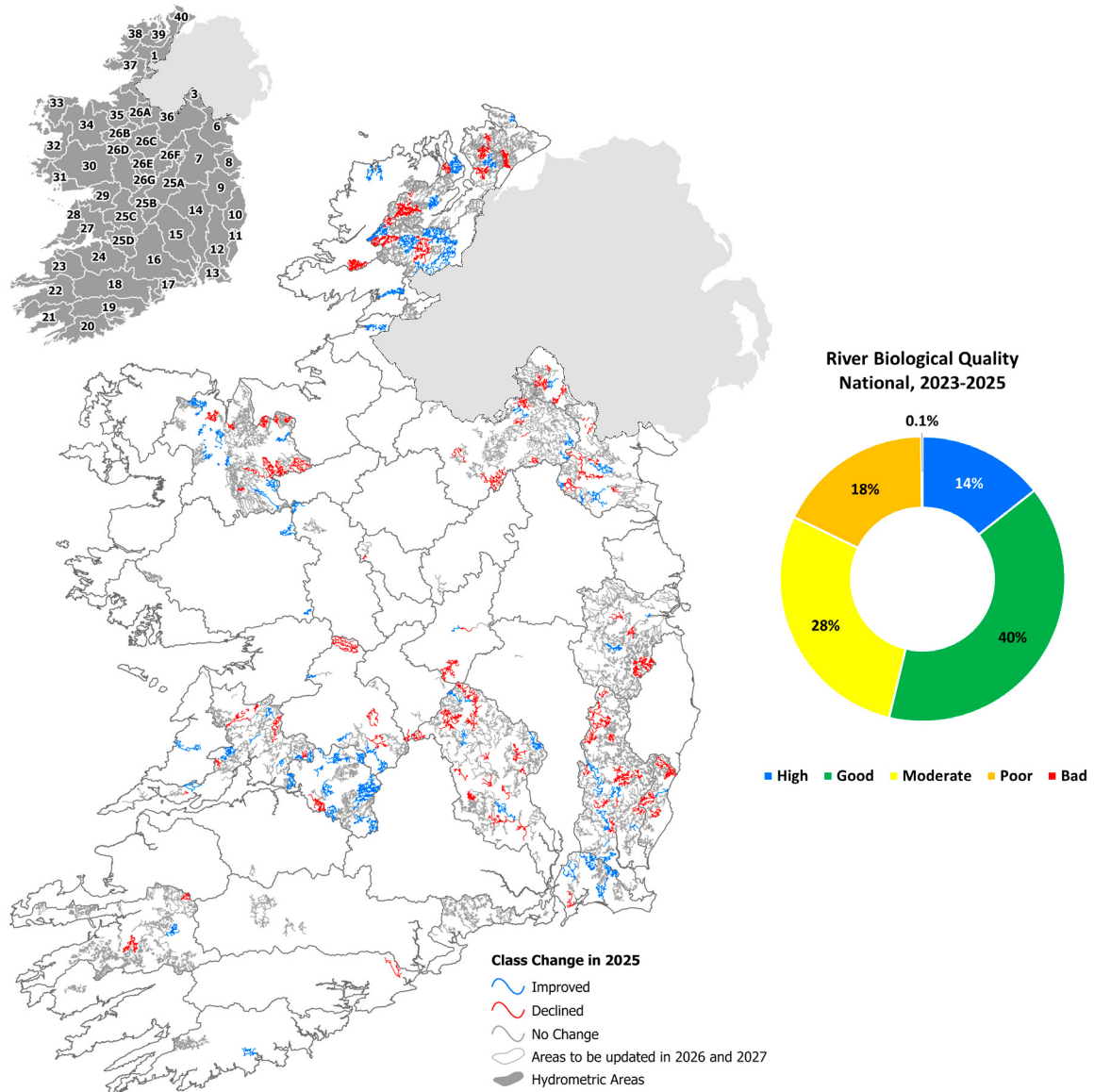


<sup>5</sup> [Q-value system](#): Q5 and Q4-5=High; Q4=Good; Q3-4=Moderate; Q3 and Q2-3=Poor; Q2, Q1-2 and Q1=Bad.

<sup>6</sup> Bad quality river water bodies in 2003-2025 are Laune\_010 in Kerry, Ahavarraga Stream\_010 in Limerick, and Nenagh\_060 in Tipperary. These water bodies have had long-term challenges relating to impacts from various pressures such as agriculture, urban waste water and other human activities.

<sup>7</sup> When compared to their last assessment.

<sup>8</sup> The pie chart includes data which has not been updated in 2025. These data were carried forward into the latest assessment.



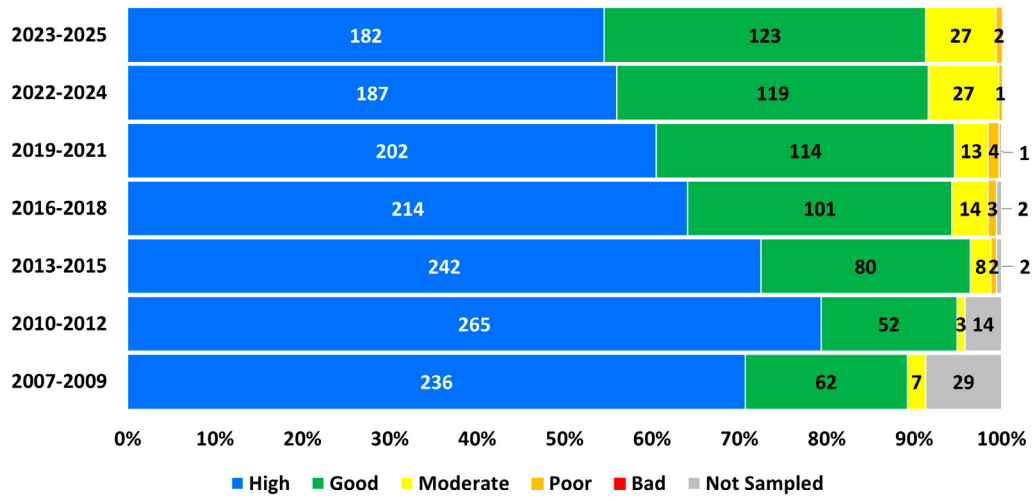
## High quality river water bodies

Protecting and restoring high status objective (blue dot<sup>9</sup>) water bodies is a requirement under the Water Framework Directive. Of the 334 high-status objective river water bodies, 182 (39%) achieved high aquatic invertebrate quality (Q-value) in 2023–2025. The remaining 152 were below high quality, mostly at good quality (123), while 29 were less than good.

Of the 86 high status objective river water bodies monitored in 2025, aquatic invertebrate quality remained unchanged in 77, declined in 8, and improved in only one. Of the declines, this represents a net loss of 5 high quality water bodies, or a 1.5% decline in aquatic invertebrate quality in high status objective rivers over the period. More worryingly, the declines in high quality in 2023-2025 reflect a net 25% decline relative to the 2010–2012 period.

<sup>9</sup> <https://lawaters.ie/what-is-a-bluedot/>

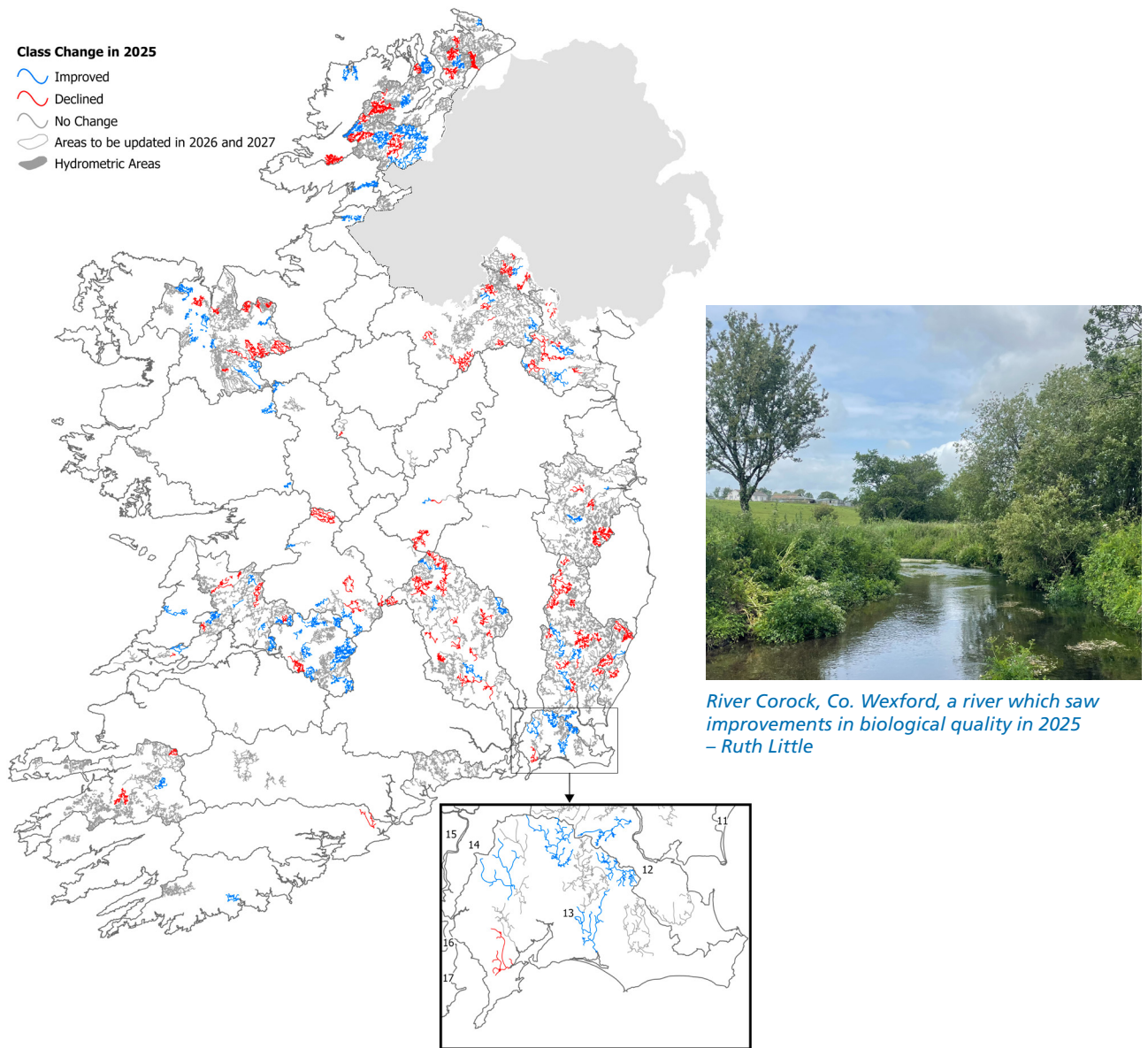
### High Status Objective River Water Bodies National, 2007-2025



Cronaniv Burn, Co. Donegal – Hugh Feeley

## Improvements in biological quality in 2025

Despite the general pattern of unsatisfactory conditions not improving nationally, some areas have shown notable improvements. The Ballyteigue-Bannow catchment in Wexford (window in map below) is a relatively small catchment with eighteen rivers, sixteen of which surveyed in 2025. Of these six saw improvements in biological quality with increasing numbers of pollution-sensitive aquatic invertebrates evident. Water quality in the catchment was previously assessed as only six rivers being of satisfactory ecological status in the last assessment, these results indicate there may be some improvements in this area. Further analysis will be needed when ecological status is updated at the end of the cycle (2028) to assess what led to improvements. It is a welcome sign that positive changes are happening in some areas.



Licence number CYAL50512815. © Tailte Éireann

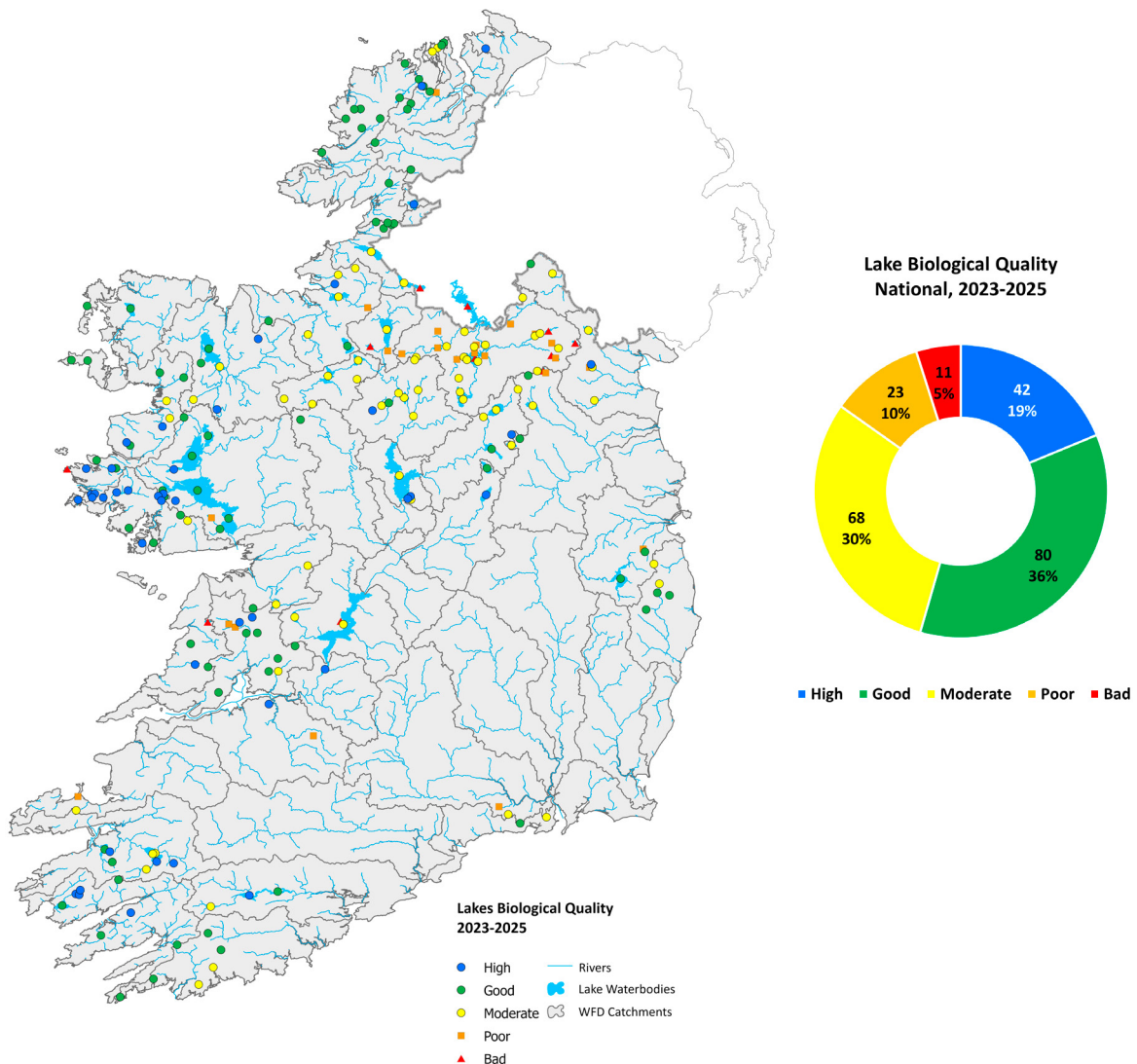
## Lakes Biological Quality

This indicator is based on the assessment of the biology of 224 monitored lakes for the period 2023-2025. Lake biology is categorised into five classes: high, good, moderate, poor, and bad. Lakes in high and good quality are in a satisfactory condition and lakes in moderate or worse quality are in an unsatisfactory condition.

*The biological elements that are assessed for this indicator are aquatic plants, phytoplankton, invertebrates, phytobenthos, and fish.*

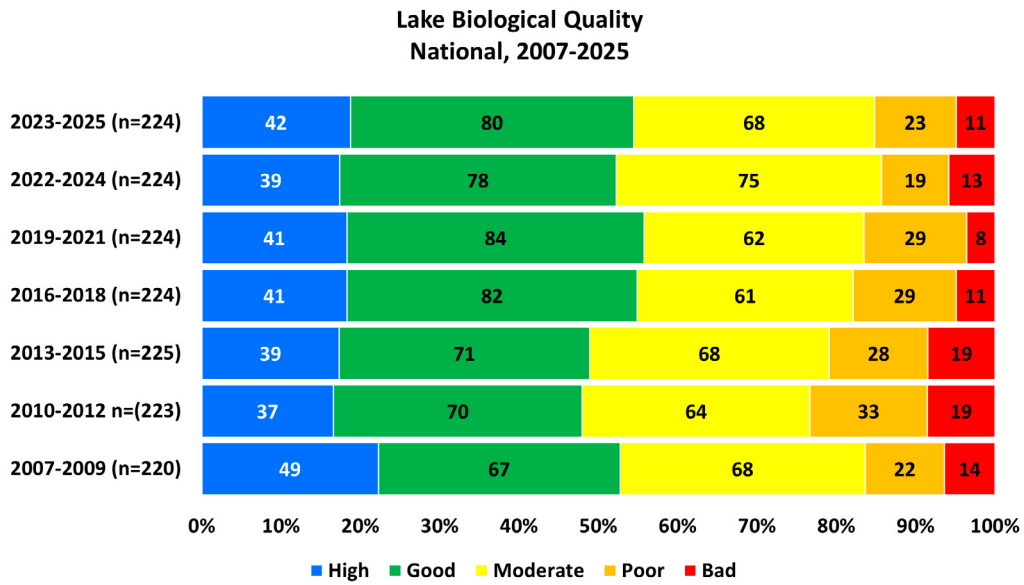
### Findings

Over half (54%) of monitored lakes are in high or good biological quality with the remaining 46% in moderate or worse quality. Eleven lakes (5%) are in bad biological quality, the worst class. The majority of lakes that are failing to achieve good biological quality are in the Erne and Shannon catchments, which are areas with elevated lake phosphorus levels. The lakes with high quality are predominantly located in the west and south west.



## Long-term changes in lake biological quality

Since 2007 lake biological quality has remain relatively unchanged. In the most recent assessment in 2023-2025, lakes in high and good quality increased slightly, reflecting a 2% increase in lakes with satisfactory biological quality.



*Lough Leane, Co. Kerry – Caroline Plant*

## Nitrate in Rivers

This indicator is based on an assessment of average nitrate<sup>10</sup> concentrations (as mg/l NO<sub>3</sub>) over three years (2023-2025) at 1,239 river sites. The three-year assessment provides a longer term, more stable overview of nitrate conditions overall. This is in contrast to the Early Insights on Nitrogen Indicator report series<sup>11</sup> that considers each 6 months of new data as it becomes available. A regional analysis of average annual river nitrate concentrations from 2010 was also undertaken.

*Nitrate enters our waterways from the land through freely draining soils, into our groundwaters, from where it can then discharge to rivers and marine waters. The main sources are chemical and organic fertilisers used in farming. River nitrate (NO<sub>3</sub>) is an indicator of nutrient enrichment and high levels in drinking water can pose human health risks.*

### Findings

The three-year average concentrations for nitrate in rivers show that 43% of river sites nationally have unsatisfactory nitrate concentrations (above 8 mg/l NO<sub>3</sub>)<sup>12</sup>. Despite the slight increase in nitrate concentrations reported in 2025 in the Early Insights Indicator report<sup>13</sup>, which followed a year of improvement in 2024, the three-year assessment shows that nitrate levels over the longer term remain largely unchanged. The majority of rivers affected are concentrated in the east, south east and south of the country.



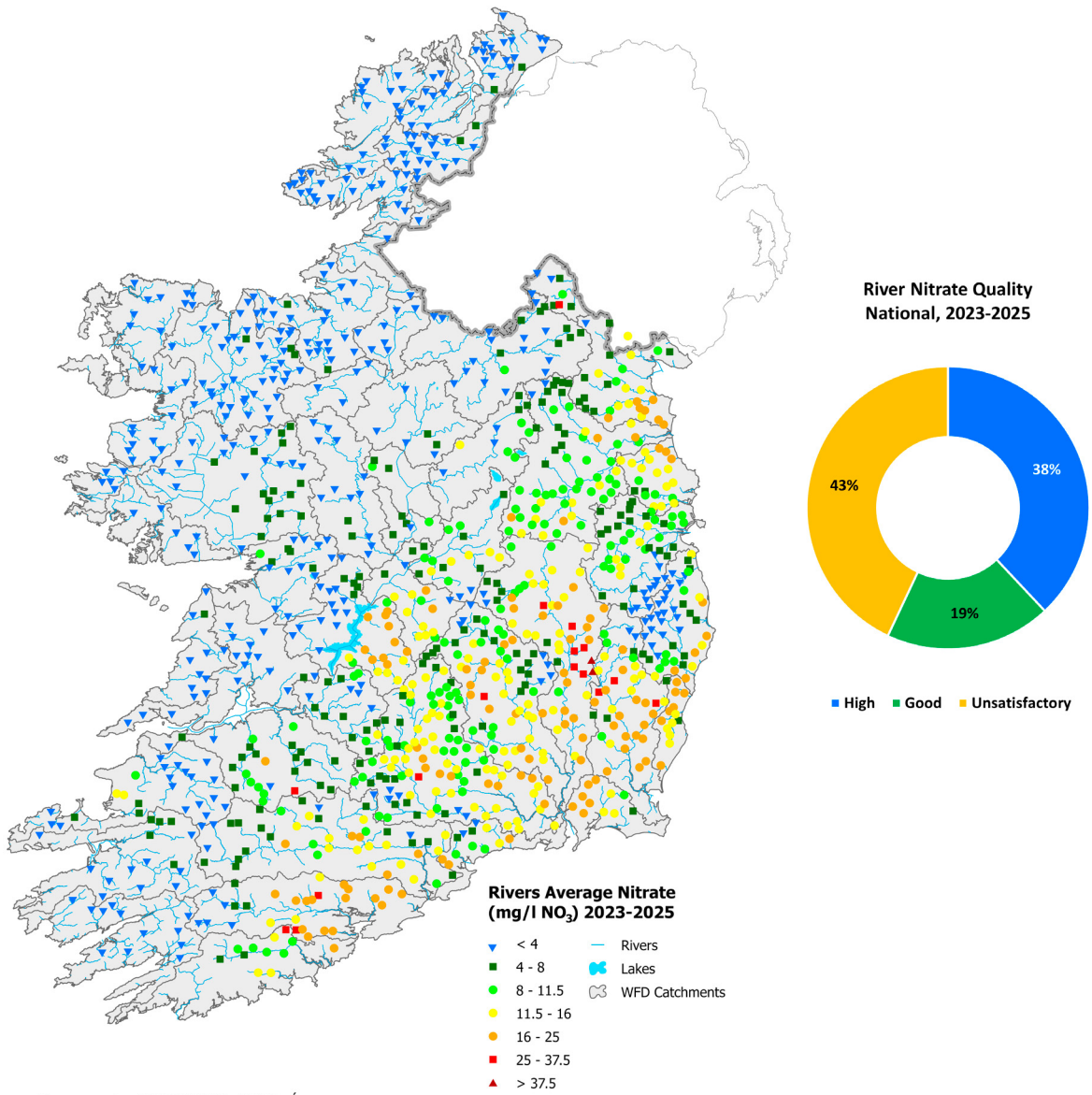
Owenbrin River, Co. Mayo – Gabriel Gaffney

<sup>10</sup> Measured as Total Oxidised Nitrogen (TON). Nitrite (NO<sub>2</sub>) levels are typically negligible in these samples.

<sup>11</sup> <https://www.catchments.ie/early-insights-indicator-report-nitrogen-concentrations-in-selected-major-rivers-january-december-2025/>

<sup>12</sup> There are currently no environmental quality standards for nitrate in rivers, however, average nitrate concentration values less than 4 mg/l NO<sub>3</sub> (0.9 mg/l N) and less than 8 mg/l NO<sub>3</sub> (1.8 mg/l N) are needed to maintain high and good quality surface waters respectively. Nitrate concentrations are converted to nitrogen by multiplying the concentration by a factor of 0.2259.

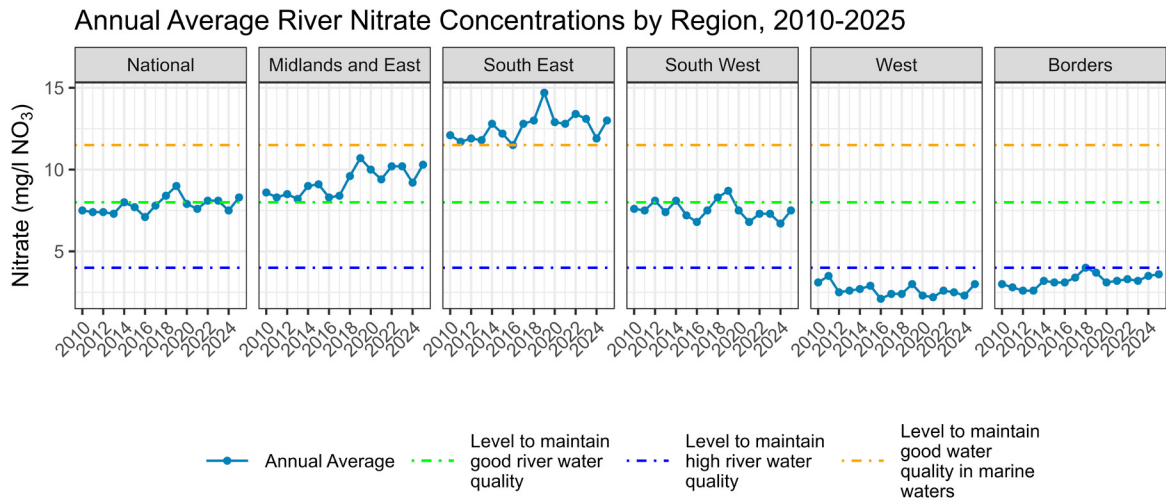
<sup>13</sup> [Early insights indicator report: Nitrogen concentrations in selected major rivers, January-December 2025.](#)



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## Regional River Nitrate

The graphs below show the national and regional profile of average annual nitrate concentrations between 2010 and 2025. Nationally, average concentrations increased in 2025 following reductions in 2024. Regionally, concentrations in the South East, and Midlands and East regions have increased since 2012 and levels remain too high in these regions to support good biological quality, especially in our estuaries and coastal waters.



Algal mats in Clonakilty Harbour, Co. Cork, indicating elevated nitrogen levels in associated river catchments – Robert Wilkes

## Nitrate in Groundwater

This indicator is based on the three-year average nitrate concentration (as mg/l NO<sub>3</sub>) at 179 groundwater monitoring sites for the 2023-2025 monitoring period. A regional analysis of annual groundwater nitrate concentrations since 2010 was also undertaken.

*Groundwater flows through subsoil or bedrock into streams, rivers, lakes, and estuaries. During dry periods, almost all the water flowing in streams and rivers originates from groundwater. Nitrate enters groundwater from the land through freely draining soils. Groundwater is therefore an important contributor of nitrate into surface water bodies.*

### Findings

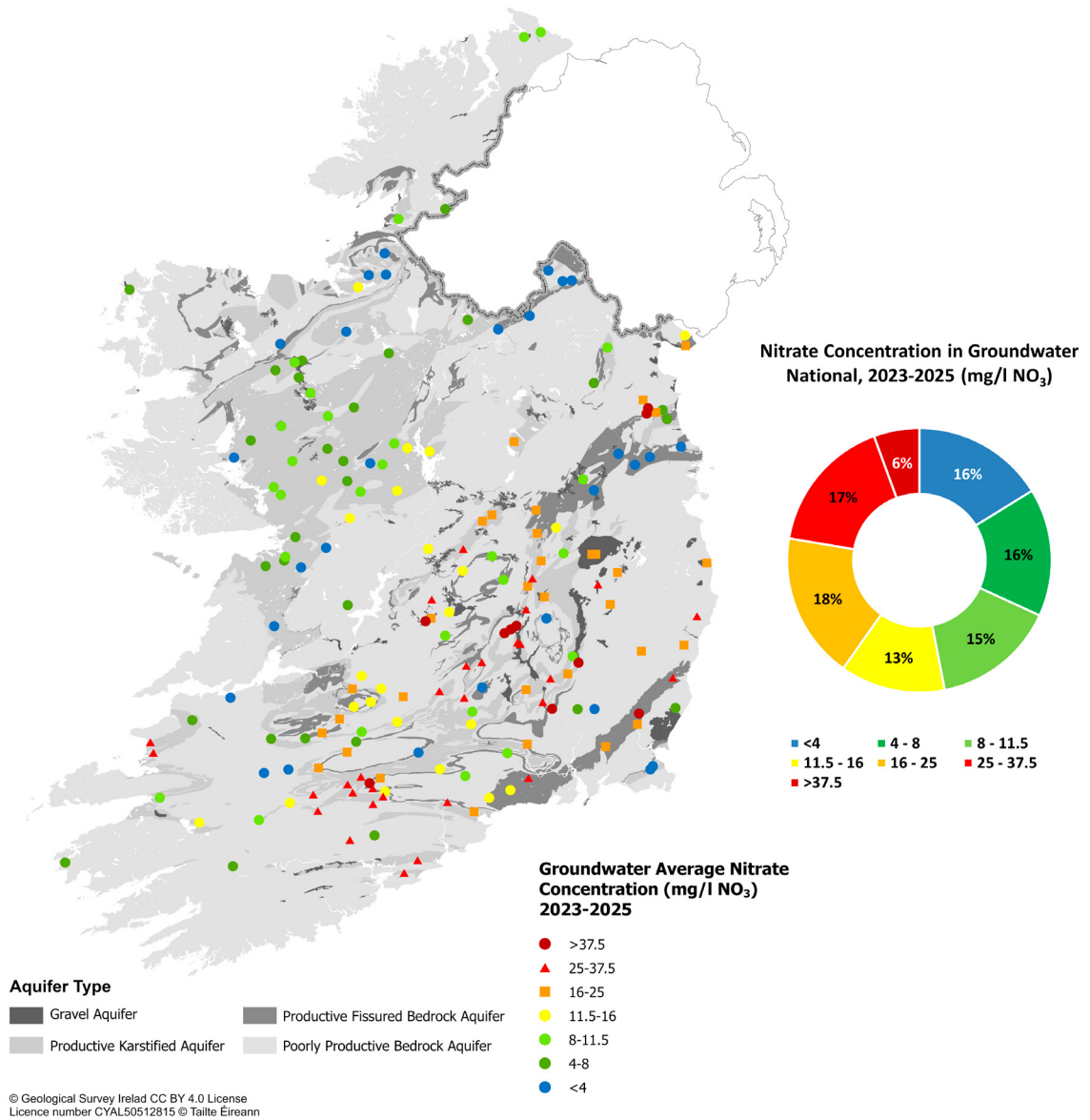
The three-year average nitrate concentrations for the 2023-2025 period saw no significant change on the 2022-2024 period. Ten (6%) monitoring sites exceeded the threshold value of 37.5 mg/l NO<sub>3</sub> and two of these (Sheepgrange, Co. Louth and Dunkerrin Guilfoyles Well, Co. Offaly) exceeded the drinking water standard of 50 mg/l NO<sub>3</sub><sup>14</sup>. Just under a quarter (23%) of monitoring sites had nitrate concentrations greater than 25 mg/l NO<sub>3</sub><sup>15</sup>, which is 1.3% higher than the 2022-2024 period.



Groundwater monitoring, Dripsey, Co. Cork – Laura O'Donovan

<sup>14</sup> Nitrate concentrations in groundwater that are higher than 11.5 mg/l NO<sub>3</sub> are usually indicative of inputs relating to human activities, anything above 25 mg/l NO<sub>3</sub> is considered an elevated nitrate concentration. The Irish groundwater Water Framework Directive threshold value is 37.5 mg/l NO<sub>3</sub>. Groundwater is widely abstracted for drinking water in Ireland and the drinking water standard of 50 mg/l NO<sub>3</sub> relates to the potential for harm to human health.

<sup>15</sup> Percentages in pie chart may not sum to 100% due to rounding.

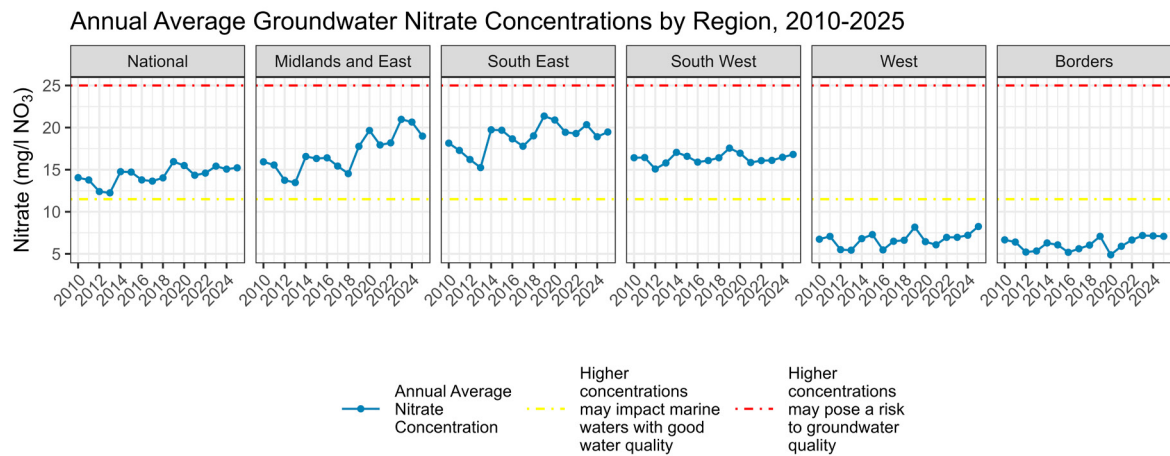


## Regional Groundwater Nitrate

The graphs below show the national and regional profile of average annual nitrate concentrations in groundwater between 2010 and 2025.

Nationally, average concentrations of nitrate in groundwater did not change between 2024 and 2025. However, increased concentrations were recorded in the South East, Western and South West regions. There was a decrease in nitrate in the Midlands and East region in 2025.

Since 2010, nitrate concentrations in groundwater in the South East, Midlands and East, and South West regions have been consistently above levels that are needed to protect surface water ecology, particularly in our estuarine and coastal waters. Nitrate concentrations in the Western and Border regions have remained low, although concentrations have been increasing in the Western region since 2021.



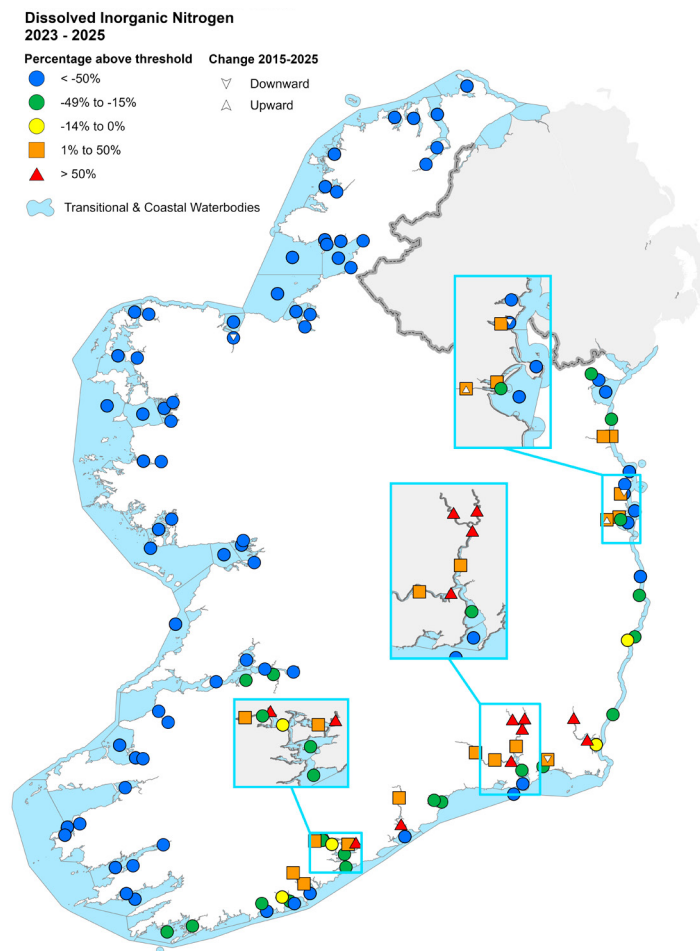
## Nitrogen in Estuaries and Coastal Waters

This indicator is based on winter levels of dissolved inorganic nitrogen<sup>16</sup> (DIN). The concentration of DIN is expected to be at its highest in winter because of the absence of any significant plant or algal growth at that time of year, therefore less nitrogen is used up and remains in the water.

*Elevated nitrogen levels in transitional and coastal waters reflect human activities upstream. Increased nitrogen promotes algal growth, which can reduce oxygen levels, block sunlight for aquatic plants, and harm ecosystem health.*

### Findings

Twenty four of the 119 (20%) transitional and coastal water bodies assessed were in unsatisfactory condition for DIN. This a slight increase of 1% on the period 2022-2024. All exceedances in this period were in transitional waters and were located primarily along the eastern, south eastern and southern coastlines.



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<sup>16</sup> Dissolved Inorganic Nitrogen is the sum of nitrite, nitrate and ammonia. DIN is expressed as nitrogen (N).

## Nitrogen Inputs to the Marine Environment

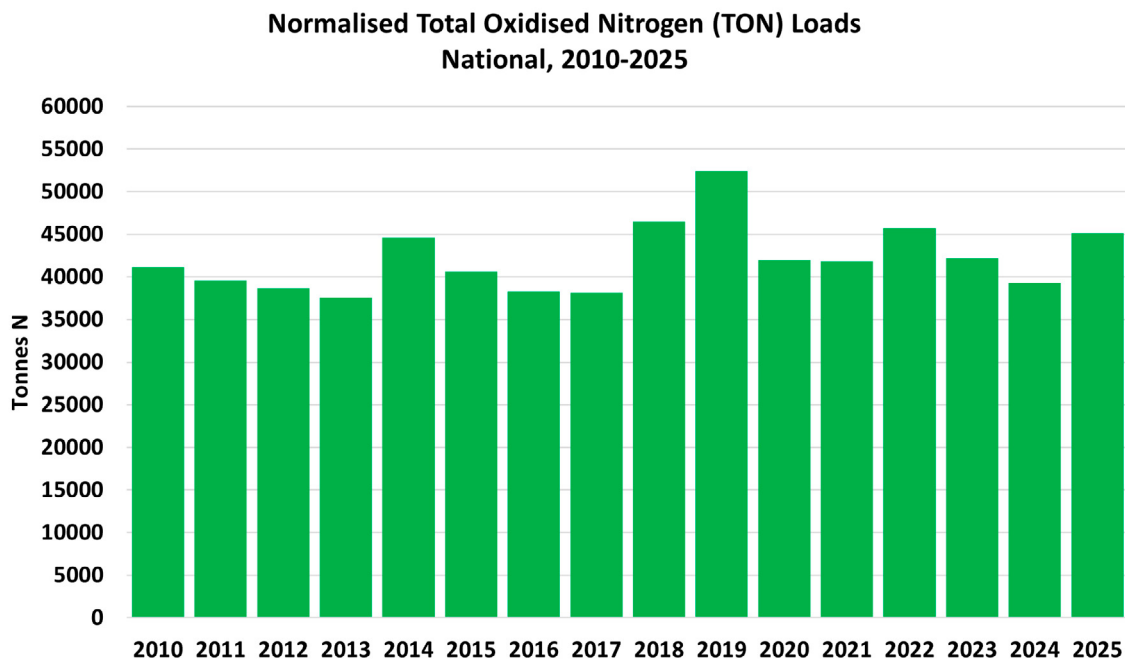
This indicator is based on the inputs of nitrogen<sup>17</sup>, expressed as loadings of Total Oxidised Nitrogen (TON), from 19 major rivers into the marine environment<sup>18</sup>.

*High loads of nitrogen from land-based sources can negatively impact our marine ecosystems.*

### Findings

Loads of nitrogen can fluctuate between years depending on the weather, particularly rainfall. To remove the influence of inter-annual changes in river flow, the inputs are normalised by a factor which represents the long-term average flow rate for each river.

In 2025, TON increased when compared with 2023 and 2024 and was also higher than four of the last 5 years, being similar to 2022. As in previous reports, the largest contributions of nitrogen to the marine environment came from catchments that drain from the south east of the country.



<sup>17</sup> Previous reports have used Total Nitrogen (TN). Total Oxidised Nitrogen (TON) has been used here to better align with data used in other indicators. The values for these parameters are lower than for the TN previously shown, as TON only represent a portion of the total.

<sup>18</sup> The inputs are calculated based on nutrient concentrations, which are measured 12 times a year, and river flow, which is measured continuously.

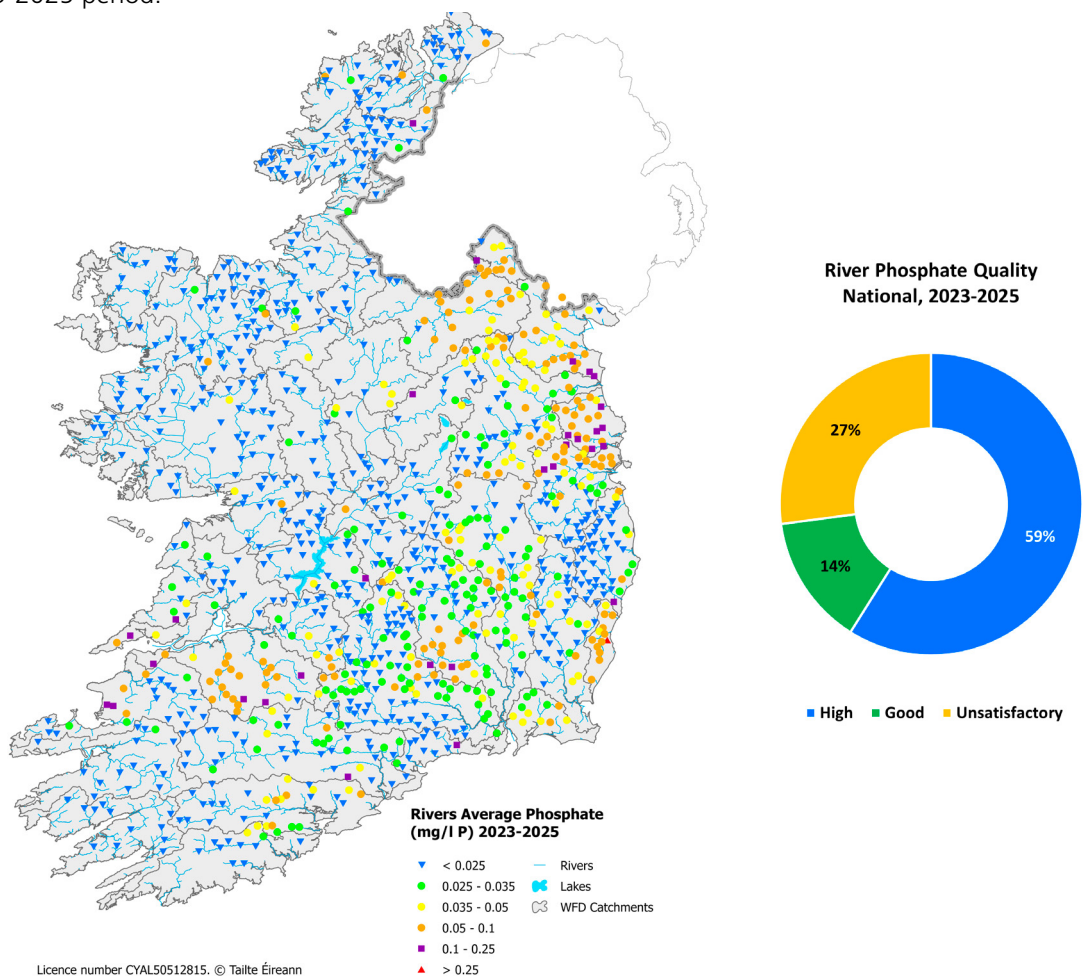
## Phosphate in Rivers

This indicator is based on an assessment of average phosphate<sup>19</sup> concentrations over the period 2023-2025 at 1,239 river sites. A regional analysis of average annual river phosphate concentrations from 2010-2025 was also undertaken.

*Elevated phosphate concentrations in rivers indicate nutrient pollution from human activities. Primary sources include waste water, industrial discharges and from run off of organic and inorganic fertilisers from agricultural land.*

### Findings

The three-year average concentrations of phosphate in our rivers saw little change for the 2023-2025 period compared to the previous assessment (2022-2024). Unsatisfactory phosphate concentrations were recorded at 27% of sites (no change) while the remaining sites are at levels which support high (59%) or good (14%) water quality<sup>20</sup>. Sites with high water quality increased by 3% in the 2023-2025 period.



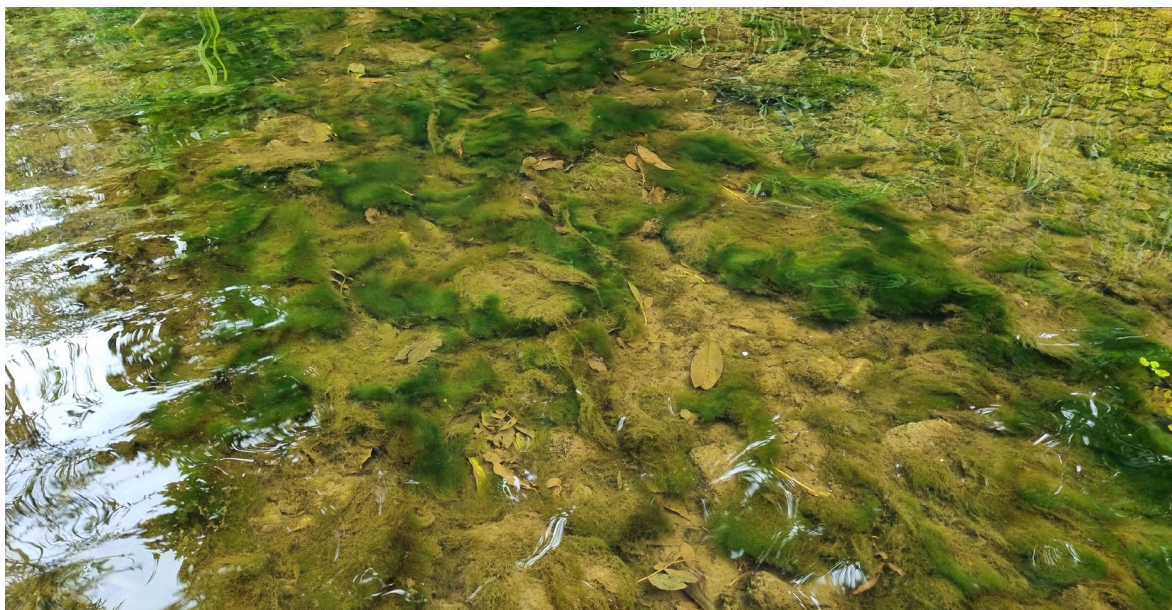
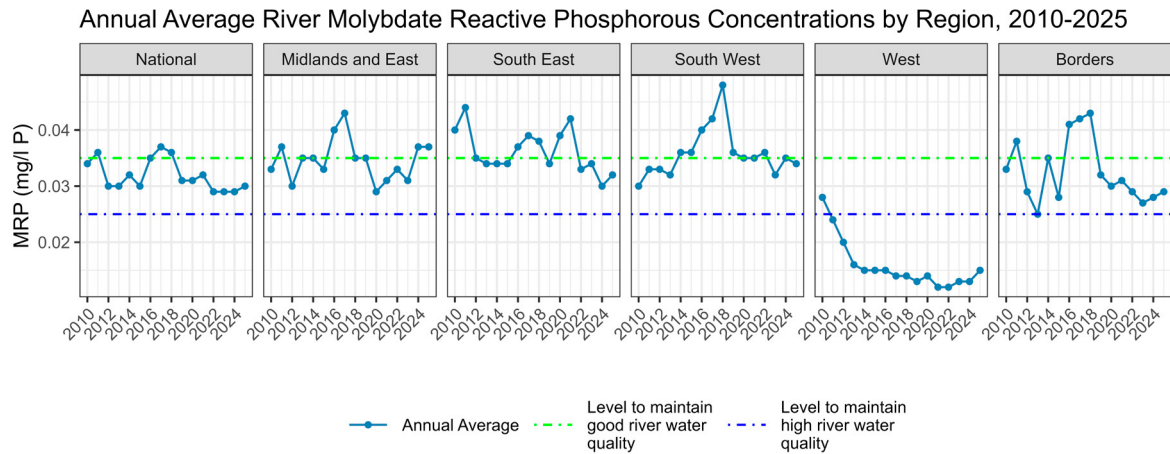
<sup>19</sup> Measured as molybdate reactive phosphate (MRP).

<sup>20</sup> Average phosphate concentrations of less than 0.025 mg/l P and less than 0.035 mg/l P have been established in Ireland as legally binding national standards to support the achievement of high and good ecological status respectively.

## Regional River Phosphate

The graphs below show the national and regional profile of the average annual phosphate concentrations between 2010 and 2025.

Nationally the average concentration in 2025 increased slightly compared to 2022, 2023 and 2024. All regions, except the South West saw increases when compared to 2024, with the Midlands and East maintaining the increases seen in 2024. As reported previously, the South East, Midlands and East, and South West regions exhibit the highest average river phosphate concentrations in the country.



Algal mats in the Ward River, Co. Dublin, indicative of phosphorus-driven eutrophication – Hugh Feeley.

## Total Phosphorus in Lakes

This indicator is based on an assessment of the average three-year total phosphorus concentration in 223 monitored lakes during 2023-2025.

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*Elevated concentrations of total phosphorus in lakes indicate nutrient enrichment from human activities. Excess phosphorus can reduce water quality by causing excessive growth of algae and plants. These blooms lower oxygen levels, limit sunlight penetration, and harm aquatic organisms such as fish and invertebrates. Affected lakes often appear green and “pea-soup” coloured due to intense algal growth.*

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### Findings

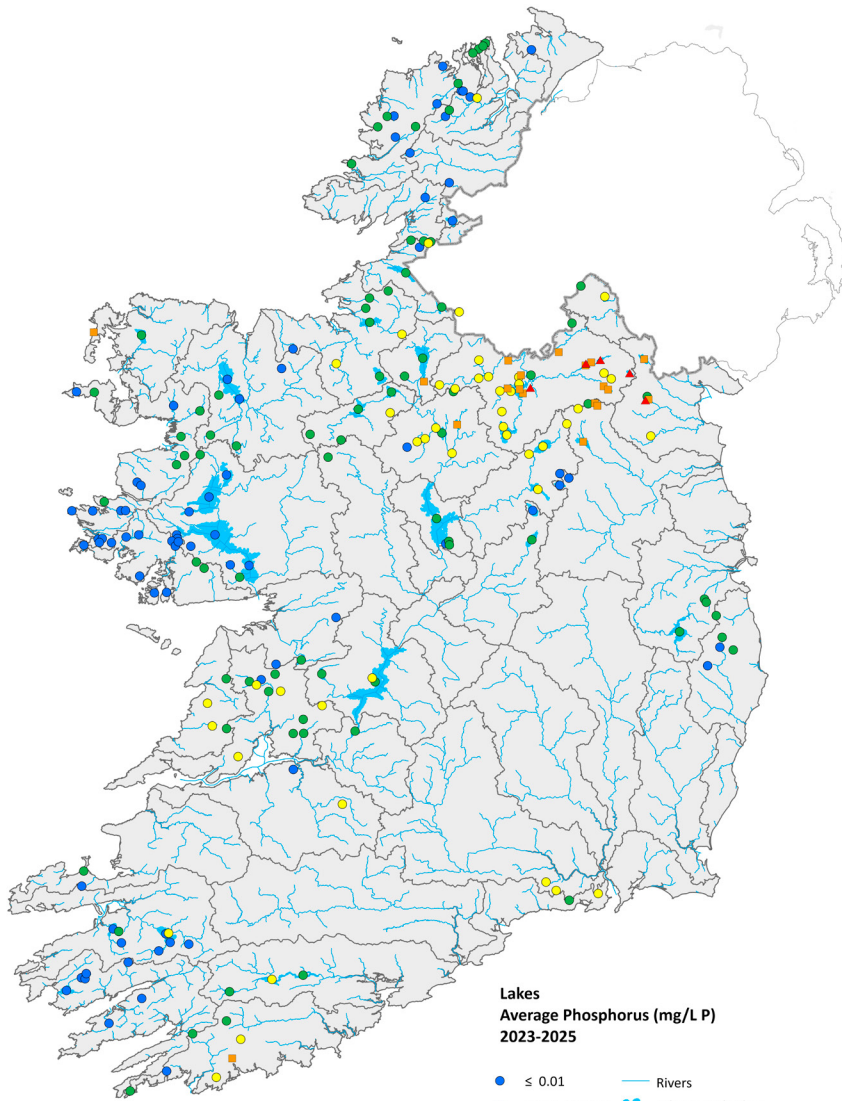
In 2023-2025, just under one third (31%) of lakes had unsatisfactory total phosphorus concentrations<sup>21</sup>. This reflects no change on the 2022-2024 period. Seventy lakes, mostly located in the border region, have average total phosphorus concentrations that are consistently too high. The ecological recovery of these lakes may take a long time due to legacy stores of phosphorus in their sediments but reducing the input of phosphorus to these lakes is a key first step. Lakes in the west tend to have lower total phosphorus concentrations, reflecting the difference in the level of human activity, hydrogeology, and soil conditions in these areas.



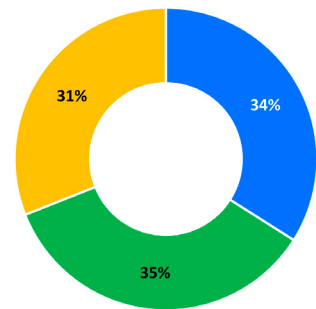
Lough Enask, Co. Galway – Gabriel Gaffney

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<sup>21</sup> Average total phosphorus concentrations in lakes of less than 0.01 mg/l P and less than 0.025 mg/l P have been established in Ireland as legally binding national standards to support the achievement of high and good ecological status respectively.



Lake Total Phosphorus Quality National, 2023-2025



■ High ■ Good ■ Un satisfactory

Lakes Average Phosphorus (mg/L P) 2023-2025

- ≤ 0.01
- > 0.01 ≤ 0.025
- > 0.025 ≤ 0.05
- > 0.05 ≤ 0.1
- ▲ > 0.1
- Rivers
- ⊕ Lake Waterbodies
- ⊞ WFD Catchments

Licence number CYAL50512815. © Tailte Éireann

## Phosphate in Estuaries and Coastal Waters

This indicator is based on three-year average winter phosphate<sup>22</sup> levels in estuaries and coastal waters. In winter the concentration of phosphate is expected to be at its highest due to the absence of any significant plant or algal growth.

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*Elevated phosphate concentrations in estuaries can be problematic. If present in sufficient concentrations it can cause eutrophication, in turn negatively affecting the flora and fauna and the healthy functioning of the ecosystem.*

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### Findings

Nearly all (97%) estuaries and coastal waters assessed were in satisfactory condition for phosphate. Only three (3%) of the 119 water bodies assessed, the Maigne estuary and the Deel estuary in Co. Limerick and the Cashen Estuary, Co. Kerry, were in unsatisfactory condition for phosphate in 2023-2025 having exceeded the relevant threshold<sup>23</sup>. This mirrors the results in the 2022-2024 period indicating no change.



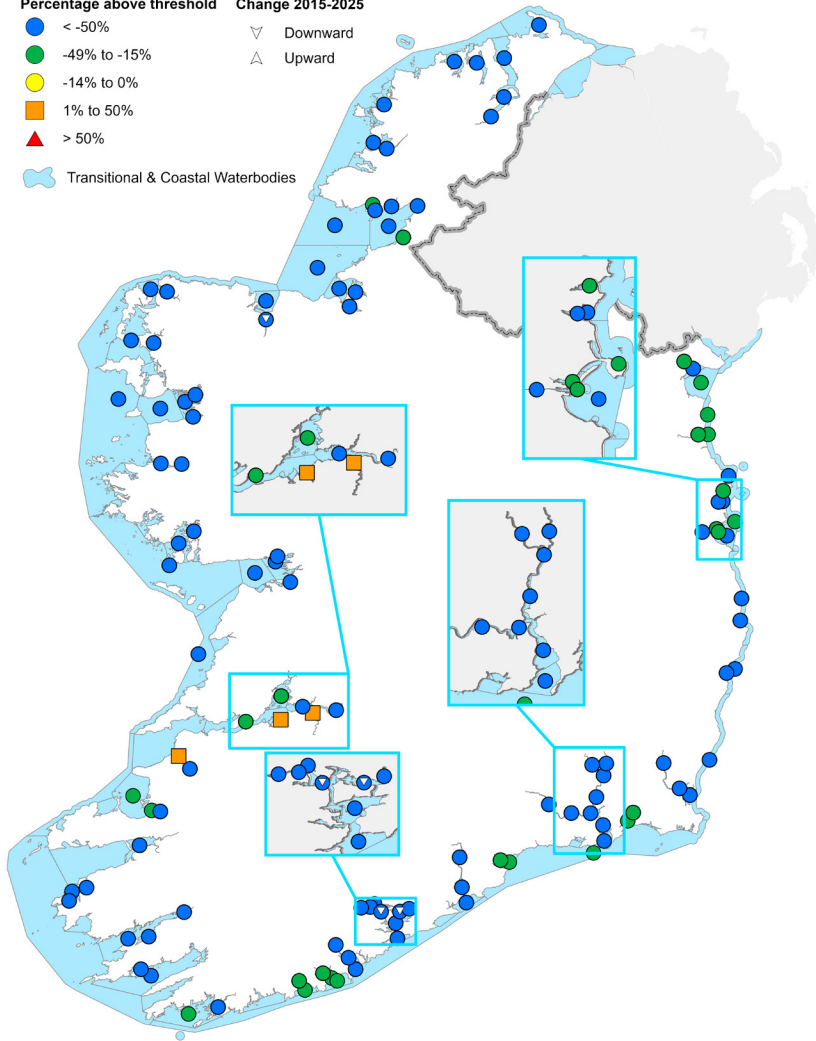
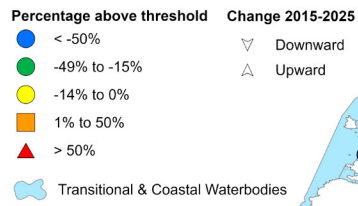
*Aughrushbeg coastline, Co. Galway – Caroline Plant*

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<sup>22</sup> Measured as molybdate reactive phosphate (MRP).

<sup>23</sup> Salinity related thresholds have been defined for phosphate in estuaries and coastal waters. The thresholds range from 0.060 mg/l P for fresh and intermediate salinity waters to 0.040 mg/l P for fully saline waters. Phosphate concentrations above these thresholds can indicate pollution.

**Transitional and Coastal Water  
Winter Molybdate Reactive Phosphorus  
2023 - 2025**



Licence number CYAL50512815. © Tailte Éireann

## Phosphorus Inputs to the Marine Environment

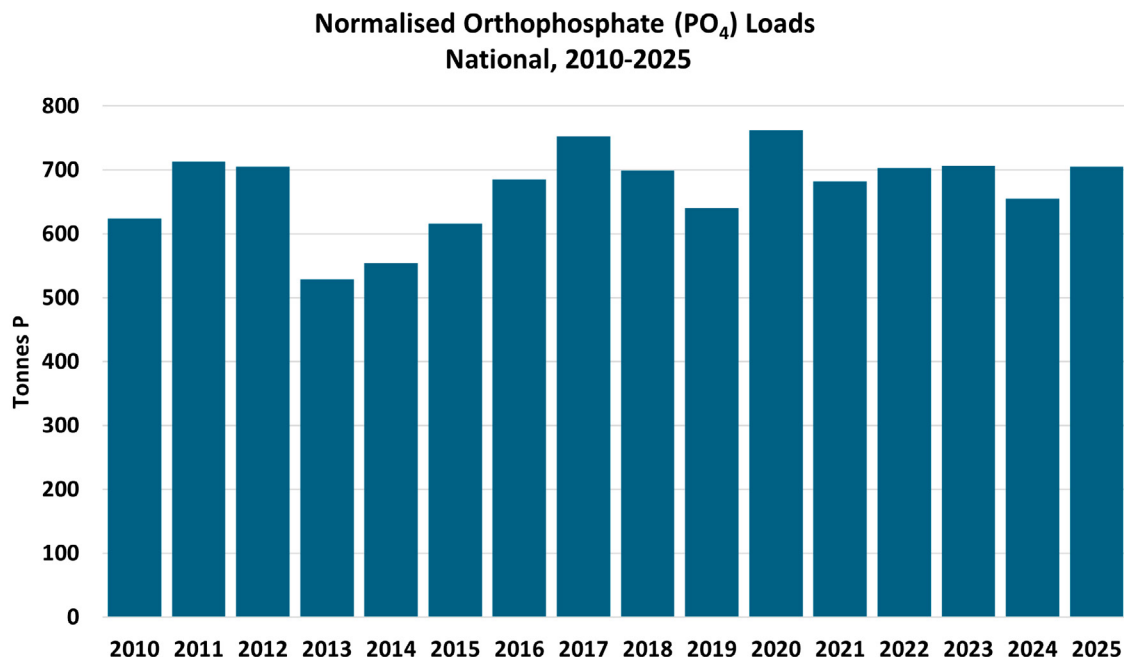
This indicator shows the inputs of phosphorus<sup>24</sup>, expressed as loadings of orthophosphate (PO<sub>4</sub>), from 19 major rivers into the marine environment<sup>25</sup>.

*High loadings of phosphorus from land-based sources can negatively impact our marine ecosystems.*

### Findings

Loads of phosphate can fluctuate between years depending on the climate, particularly rainfall. To remove the influence of inter-annual changes in river flow, the inputs are normalised by a factor which represents the long-term average flow rate for each river.

In 2025, phosphate loadings were higher than 2024 but have been broadly the same over recent years.



<sup>24</sup> Previous reports have used Total Phosphorus (TP). Orthophosphate (PO<sub>4</sub>) have been used here to better align with data used in other indicators. The values for these parameters are lower than for TP previously shown as PO<sub>4</sub> only represent a portion of the total.

<sup>25</sup> The inputs are calculated based on nutrient concentrations, which are measured 12 times a year, and river flow, which is measured continuously.

## Further Information

Detailed information and data on water quality in Ireland can be found at [www.catchments.ie](http://www.catchments.ie).

Biological data (e.g. river invertebrates (Q-value), lake phytoplankton, lake macrophytes) supporting results presented in this report are available for download from the EPA Geoportal at <https://gis.epa.ie/GetData/Download> via the Water Quality and Monitoring tab. All figures and maps presented in this report will also be available for download.

A series of fact sheets providing information about the different elements of the Water Framework Directive monitoring programme can be found at [Monitoring & Assessment: Freshwater & Marine Publications | Environmental Protection Agency \(epa.ie\)](#).

Information on the Water Action Plan 2024, which sets out the measures that are necessary to protect and restore water quality in Ireland, can be found at <https://www.gov.ie/en/department-of-housing-local-government-and-heritage/policy-information/river-basin-management-plan-2022-2027/>.

To find out more about how to get involved in protecting and managing your local waters visit the Local Authority Waters Programme website at [www.lawaters.ie](http://www.lawaters.ie).

## Appendix 1 – Key Findings

### Biological indicators

- In 2023-2025, 54% of monitored river water bodies were in high or good biological condition. This represents no significant change in national river water quality
- Of the 717 river water bodies assessed in 2025, 90 improved in quality class, while 109 declined in quality class. The majority (515) remained unchanged. Three had no recent comparison.
- The aquatic invertebrate quality of our best quality rivers experienced a net decline of 5 water bodies from high quality in 2025, continuing the declining trend in their macroinvertebrate quality since 2012.
- Over half (54%) of monitored lakes are in high or good biological condition in 2023-2025, a 2% (5 water bodies) increase on 2022-2024. Lake biological quality has remained relatively stable since 2007.

### Nutrient indicators – nitrogen

- In 2023-2025, 43% of river sites continue to have nitrate concentrations that are too high to support good ecological quality. This represents little change since the last assessment. Concentrations remain elevated in the east and south east.
- Groundwater nitrate levels show no overall change, with over one-fifth (22%) of monitoring sites having elevated concentrations and exceedances persisting mainly in the South East and Midlands and East regions.
- One in five (20%) estuarine and coastal water bodies are in unsatisfactory condition for dissolved inorganic nitrogen, with all exceedances occurring in estuaries along the eastern and southern coasts.
- Nitrogen loads to the marine environment remain high and variable, with 2025 levels higher than recent years and the greatest contributions continuing to come from catchments in the south east.

### Nutrient indicators – phosphorus

- Annual average phosphate concentrations in 2023-2025 remain too high in 27% of river sites, with little overall change in three-year average levels despite some annual fluctuation.
- Almost one-third (31%) of lakes continue to have unsatisfactory total phosphorus concentrations, the majority of which are located in the Border region.
- Nearly all estuaries and coastal waters (97%) meet phosphate standards, with only three estuaries in the south west remaining in unsatisfactory condition. This represents no change since the previous assessment period.
- Phosphorus loadings to the marine environment have remained broadly stable in recent years, despite a slight increase in 2025.

# An Gníomhaireacht um Chaomhnú Comhshaoil

Tá an GCC freagrach as an gcomhshaoil a chosaint agus a fheabhsú, mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaoil a chosaint ar thionchar díobhálach na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

- Rialáil: Rialáil agus córais chomhlíonta comhshaoil éifeachtacha a chur i bhfeidhm, chun dea-thorthaí comhshaoil a bhaint amach agus díriú orthu siúd nach mbíonn ag cloí leo.
- Eolas: Sonraí, eolas agus measúnú ardchaighdeán, spriocdhírthe agus tráthúil a chur ar fáil i leith an chomhshaoil chun bonn eolais a chur faoin gcinnteoireacht.
- Abhcóideacht: Ag obair le daoine eile ar son timpeallachta glaine, táirgiúla agus dea-chosanta agus ar son cleachtas inbhuanaithe i dtaobh an chomhshaoil.

## I measc ár gcuid freagrachtaí tá:

### CEADÚNÚ

- Gníomhaíochtaí tionscail, dramhaíola agus stórála peitрил ar scála mór;
- Sceitheadh fuíolluisce uirbigh;
- Úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe;
- Foinsí radaíochta ianúcháin;
- Astaíochtaí gás ceaptha teasa ó thionscal agus ón eitlíocht trí Scéim an AE um Thrádáil Astaíochtaí.

### FORFHEIDHMÍÚ NÁISIÚNTA I LEITH CÚRSAÍ COMHSHAOIL

- Iniúchadh agus cigireacht ar shaoráidí a bhfuil ceadúnas acu ón GCC;
- Cur i bhfeidhm an dea-chleachtais a stiúradh i ngníomhaíochtaí agus i saoráidí rialáilte;
- Maoirseacht a dhéanamh ar fhreagrachtaí an údarais áitiúil as cosaint an chomhshaoil;
- Caighdeán an uisce óil phoiblí a rialáil agus údaruithe um sceitheadh fuíolluisce uirbigh a fhorfheidhmíú
- Caighdeán an uisce óil phoiblí agus phríobháidigh a mheasúnú agus tuairiscíú air;
- Comhordú a dhéanamh ar líonra d'eagraíochtaí seirbhíse poiblí chun tacú le gníomhú i gcoinne coireachta comhshaoil;
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaoil.

### BAINISTÍOCHT DRAMHAÍOLA AGUS CEIMICEÁIN SA CHOMHSHAOIL

- Rialacháin dramhaíola a chur i bhfeidhm agus a fhorfheidhmíú lena n-áirítear saincheisteanna forfheidhmíthe náisiúnta;
- Staitisticí dramhaíola náisiúnta a ullmhú agus a fhoilsiú chomh maith leis an bPlean Náisiúnta um Bainistíocht Dramhaíola Guaisí;
- An Clár Náisiúnta um Chosc Dramhaíola a fhorbairt agus a chur i bhfeidhm;
- Reachtaíocht ar rialú ceimiceán sa timpeallacht a chur i bhfeidhm agus tuairiscíú ar an reachtaíocht sin.

### BAINISTÍOCHT UISCE

- Plé le struchtúir náisiúnta agus réigiúnacha rialachais agus oibriúcháin chun an Chreat-treoir Uisce a chur i bhfeidhm;
- Monatóireacht, measúnú agus tuairiscíú a dhéanamh ar chaighdeán aibhneacha, lochanna, uisce idirchreasa agus cósta, uisce snámha agus screamhuisce chomh maith le tomhas ar leibhéal uisce agus sreabhadh abhann.

### EOLAÍOCHT AERÁIDE & ATHRÚ AERÁIDE

- Fardail agus réamh-mheastacháin a fhoilsiú um astaíochtaí gás ceaptha teasa na hÉireann;
- Rúnaíocht a chur ar fáil don Chomhairle Chomhairleach ar Athrú Aeráide agus tacaíocht a thabhairt don Idirphlé Náisiúnta ar Gníomhú ar son na hAeráide;

- Tacú le gníomhaíochtaí forbartha Náisiúnta, AE agus NA um Eolaíocht agus Beartas Aeráide.

### MONATÓIREACHT AGUS MEASÚNÚ AR AN GCOMHSHAOIL

- Córais náisiúnta um monatóireacht an chomhshaoil a cheapadh agus a chur i bhfeidhm: teicneolaíocht, bainistíocht sonraí, anailís agus réamhaisnéisiú;
- Tuairiscí ar Staid Timpeallacht na hÉireann agus ar Tháscairí a chur ar fáil;
- Monatóireacht a dhéanamh ar chaighdeán an aeir agus Treoir an AE i leith Aeir Ghlain don Eoraip a chur i bhfeidhm chomh maith leis an gCoinbhinsiún ar Aerthruailliú Fadraoin Trasteorann, agus an Treoir i leith na Teorann Náisiúnta Astaíochtaí;
- Maoirseacht a dhéanamh ar chur i bhfeidhm na Treorach i leith Torainn Timpeallachta;
- Measúnú a dhéanamh ar thionchar pleananna agus clár beartaithe ar chomhshaoil na hÉireann.

### TAIGHDE AGUS FORBAIRT COMHSHAOIL

- Comhordú a dhéanamh ar ghníomhaíochtaí taighde comhshaoil agus iad a mhaoiniú chun brú a aithint, bonn eolais a chur faoin mbeartas agus réitigh a chur ar fáil;
- Comhoibriú le gníomhaíocht náisiúnta agus AE um thaighde comhshaoil.

### COSAINN RAIDEOLAÍOCH

- Monatóireacht a dhéanamh ar leibhéal radaíochta agus nochtadh an phobail do radaíocht ianúcháin agus do réimsí leictreamaighnéadacha a mheas;
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha;
- Monatóireacht a dhéanamh ar fhorbairt thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta;
- Sainseirbhísí um chosaint ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

### TREOIR, ARDÚ FEASACHTA AGUS FAISNÉIS INROCHTANA

- Tuairiscíú, comhairle agus treoir neamhspleách, fianaise-bhunaithe a chur ar fáil don Rialtas, don tionscal agus don phobal ar ábhair maidir le cosaint comhshaoil agus raideolaíoch;
- An nasc idir sláinte agus folláine, an geilleagar agus timpeallacht ghlan a chur chun cinn;
- Feasacht comhshaoil a chur chun cinn lena n-áirítear tacú le hiompraíocht um éifeachtúlacht acmhainní agus aistriú aeráide;
- Tástáil radóin a chur chun cinn i dtithe agus in ionaid oibre agus feabhsúchán a mholadh áit is gá.

### COMHPHÁIRTÍOCHT AGUS LÍONRÚ

Oibriú le gníomhaireachtaí idirnáisiúnta agus náisiúnta, údarais réigiúnacha agus áitiúla, eagraíochtaí neamhrialtais, comhlachtaí ionadaíocha agus ranna rialtais chun cosaint comhshaoil agus raideolaíoch a chur ar fáil, chomh maith le taighde, comhordú agus cinnteoireacht bunaithe ar an eolaíocht.

### BAINISTÍOCHT AGUS STRUCHTÚR NA GNÍOMHAIREACHTA UM CHAOMHNÚ COMHSHAOIL

Tá an GCC á bainistiú ag Bord Iánamseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóir. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inbhuanaitheacht i leith Cúrsaí Comhshaoil
- An Oifig Forfheidhmíthe i leith Cúrsaí Comhshaoil
- An Oifig um Fhianaise agus Measúnú
- An Oifig um Chosaint ar Radaíocht agus Monatóireacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tugann coistí comhairleacha cabhair don Gníomhaireacht agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.



Environmental Protection Agency  
*An Ghníomhaireacht um Chaomhnú Comhshaoil*

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