

Brussels, 23 July 2026
(OR. en)

12018/26
ADD 14

ENV 963
CLIMA 403
AGRI 601

COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	15 July 2026
To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union

No. Cion doc.:	SWD(2026) 232 final - Part 15/27
Subject:	COMMISSION STAFF WORKING DOCUMENT Member State country fiche on the implementation of Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources based on Member States reports for the period 2020-2023

Delegations will find attached document SWD(2026) 232 final - Part 15/27.

Encl.: SWD(2026) 232 final - Part 15/27



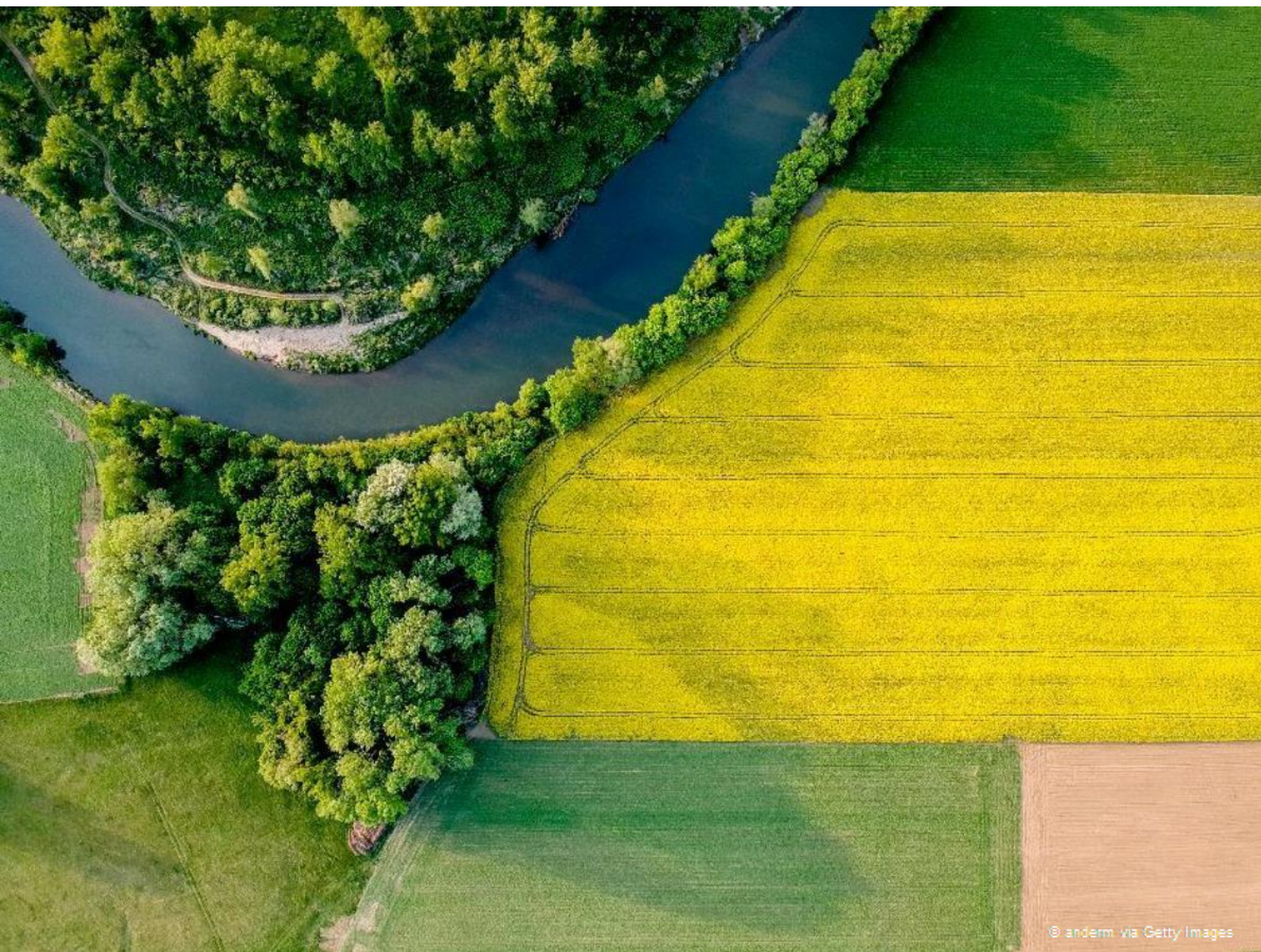
EUROPEAN
COMMISSION

Brussels, 15.7.2026
SWD(2026) 232 final

PART 15/27

COMMISSION STAFF WORKING DOCUMENT

Member State country fiche
on the implementation of Council Directive 91/676/EEC concerning the protection of
waters against pollution caused by nitrates from agricultural sources based on Member
States reports for the period 2020–2023



© andern via Getty Images

Ireland

Country staff working document
on the implementation of the Nitrates Directive

Period: 2020-2023

Contents

1. Key findings and recommendations	1
1.1. Key findings	1
1.2. Recommendations	3
2. Pressures from agriculture	4
2.1. Land use	4
2.2. Livestock density.....	6
2.3. Nitrogen and phosphorus fertiliser use	8
2.4. Nitrogen and phosphorus balance.....	9
2.5. Nitrogen discharge to the environment.....	9
3. Nitrate vulnerable zones	10
4. Nitrates in groundwater.....	11
4.1. Monitoring of nitrate concentrations in groundwater	11
4.2. Nitrate concentrations in groundwater	13
4.3. Trends in nitrate concentrations in groundwater	15
4.4. Nitrate pollution hotspots in groundwater.....	19
5. Nitrates in surface waters	21
5.1. Monitoring of nitrate concentrations in surface waters	21
5.2. Nitrate concentrations in surface waters.....	23
5.3. Trends in nitrate concentrations in surface waters.....	29
5.4. Nitrate pollution hotspots in surface waters	35
6. Eutrophication of surface waters	37
6.1. Monitoring of trophic status in surface waters.....	37
6.2. Methodology for the assessment of trophic status.....	38
6.3. Eutrophication of surface waters	39
6.4. Eutrophication hotspots in surface waters	45
7. Nitrates action programme	47
7.1. Measures in the action programme and code of good agricultural practices..	47
7.2. Controls.....	48
8. Water quality outlook	50

1. KEY FINDINGS AND RECOMMENDATIONS

Ireland submitted its report under the Nitrates Directive for the period 2020-2023 in August 2024 ⁽¹⁾ via electronic reporting on Reportnet 3 portal ⁽²⁾.

This country staff working document is presented in line with the reporting guidelines and it is based on the data reported by the Member State ⁽³⁾, Eurostat and other EU official data sources. The Irish authorities were consulted for factual correctness. There may be differences with the information presented in their national report. ⁽⁴⁾

The numbers presented below are indicators of the situation in the Member State but need further interpretation to draw specific conclusions. In some cases, changes in the monitoring networks and in methodology for assessing trophic status may complicate comparisons between reporting periods.

1.1. Key findings

Pressures from agriculture

In Ireland, the utilised agricultural area (UAA) accounts for 74% of the country's total land area, which is higher than the EU average (38%). The livestock density is 1.3 livestock units per hectare (LSU/ha) of UAA, which is higher than the EU average of 0.7 LSU/ha. Ireland did not report the gross nutrient and phosphorus balances to Eurostat for the period 2020-2023.

Monitoring network

For groundwater, the density of the monitoring network is around 3 stations per 1 000 km², which is lower than the EU average (8 stations). Compared to the previous reporting period, the density decreased by 3%.

For surface freshwater, the density of the monitoring network density is around 19 stations per 1 000 km², which is higher than the EU average (7 stations). Compared to the previous reporting period, the density increased by 415%. The monitoring network for surface waters includes rivers and lakes/water reservoirs.

For surface saline waters, the monitoring network includes transitional and coastal waters.

⁽¹⁾ Final version was received in July 2025.

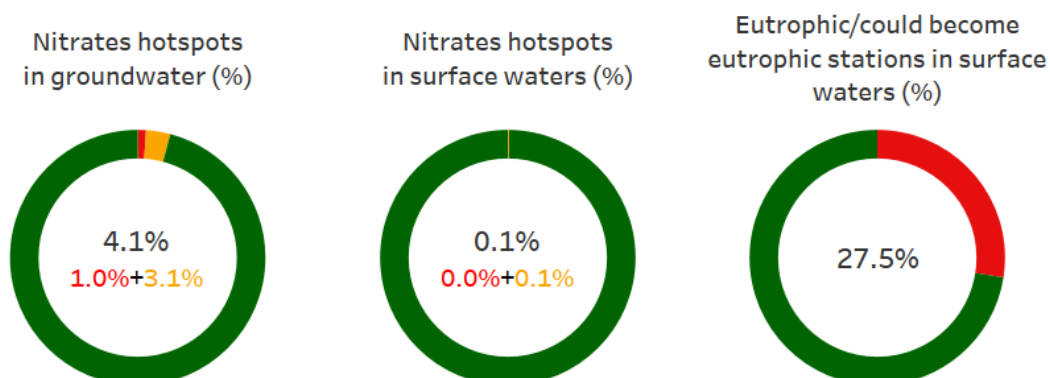
⁽²⁾ [Reportnet 3](#) is e-Reporting platform for reporting environmental and climate data to the European Environment Agency (EEA).

⁽³⁾ Only monitoring points electronically reported with nitrate concentration or trophic status, which were not removed from the monitoring network were considered for this assessment.

⁽⁴⁾ A uniform data-processing approach is applied to all Member States. In some instances, this may not fully correspond to the specific methodology used in the Member State.

Water quality

Figure 1 – Share of monitoring points showing pollution in groundwater and surface waters



Note: The percentage share of **nitrate hotspots** refers to monitoring points with average annual nitrate concentrations ≥ 50 mg/l (red), or between 37.5 and 49.99 mg/l with an increasing trend (orange). This is calculated relative to the total number of points with measurements. The percentage share of monitoring points classified as **eutrophic or could become eutrophic** (red) is calculated relative to the total number of points with trophic status reported.

In **groundwater**, 99.0% of monitoring points show nitrate concentrations below 50 mg/l.

Overall, 4.1% of monitoring points fall in two categories illustrated in Figure 1, i.e. they show nitrate concentrations ≥ 50 mg/l (1.0%) or between 37.5 and 49.99 mg/l with an increasing trend (3.1%). Compared to the data reported in the previous reporting period, this represents an increase of 1.1 percentage points (from 3.0% to 4.1%). The regions with the highest share are the Eastern and Midland Region (9.3%).

Compared to the previous reporting period, nitrate concentrations decreased in 13.9% of groundwater monitoring points and increased in 29.8%. Among points with nitrate concentration ≥ 50 mg/l, decreases (50.0%) were more frequent than increases (0%).

In **surface water**, 99.9% of monitoring points show nitrate concentrations below 50 mg/l and 72.5% are classified as non-eutrophic.

Overall, 0.1% of monitoring points fall in two categories illustrated in Figure 1, i.e., they show nitrate concentrations ≥ 50 mg/l (0%) or between 37.5 and 49.99 mg/l with an increasing trend (0.1%). Compared to the data reported in the previous reporting period, this represents an increase of 0.1 percentage points (from 0% to 0.1%). 26% of surface water monitoring stations show nitrate concentrations ≥ 10 mg/l, which is relevant for eutrophication.

Compared to the previous reporting period, nitrate concentrations decreased in 10.6% of surface water monitoring points and increased in 14.5%.

The share of monitoring points reported as eutrophic/could become eutrophic is 27.5% as illustrated in Figure 1. This represents an increase of 3.3 percentage points compared to the data reported in the previous period (from 24.2% to 27.5%). The regions with the highest share are the Southern Region (32.0%) and the Eastern and Midland Region (28.9%).

Nitrate Vulnerable Zones

In line with Article 3 paragraph 5, Ireland applies an action programme with mandatory measures throughout the entire national territory.

Action Programme

Ireland modified its action programme during the reporting period. Amendments included an increase in the fertiliser prohibition period, storage capacities for soiled water storage capacity increased, 10% reduction in chemical fertiliser limits on grassland, 6 metre buffer strips along watercourses for late harvested crops, the soil sampling requirements were expanded to include more land and a requirement for organic matter determination for all soils with greater than 20% organic matter was added. Some new requirements on slurry spreading and soil cultivation were also introduced.

Derogation

During the reporting period, the derogation decisions allowed Ireland the application of livestock manure up to a limit of 250 kg N/ha per year, under certain conditions, on farms with at least 80 % grassland, in the context of the Irish Action Programme.

1.2. Recommendations

- Review and where necessary reinforce measures to improve water quality, notably with a view to addressing:
 - high or increasing nitrate concentrations in groundwaters
 - high or increasing nitrate concentrations in surface waters
- Close existing data gaps on nutrient balances in the reporting to Eurostat
- When preparing the Nitrates Action Programme:
 - take into account objectives and deadlines of the Water Framework Directive, ensuring coherence with the 4th RBMP
 - consider introducing limitations on phosphorus fertilisation, if not yet implemented
 - ensure the cooperation between competent authorities in different sectors, such as agriculture and water, and with stakeholders
 - consider where measures could be simplified without compromising on results, working with the Commission and the other member States in the light of the findings of the evaluation of the Nitrates Directive
- Promote the dissemination of best practice, scientific knowledge and innovation to:
 - improve the analysis of expected future evolution in water quality and develop gap assessments for the nutrient load reductions required to reach water quality objectives
 - accelerate preparedness and resilience of action programmes and measures in the context of climate change

2. PRESSURES FROM AGRICULTURE

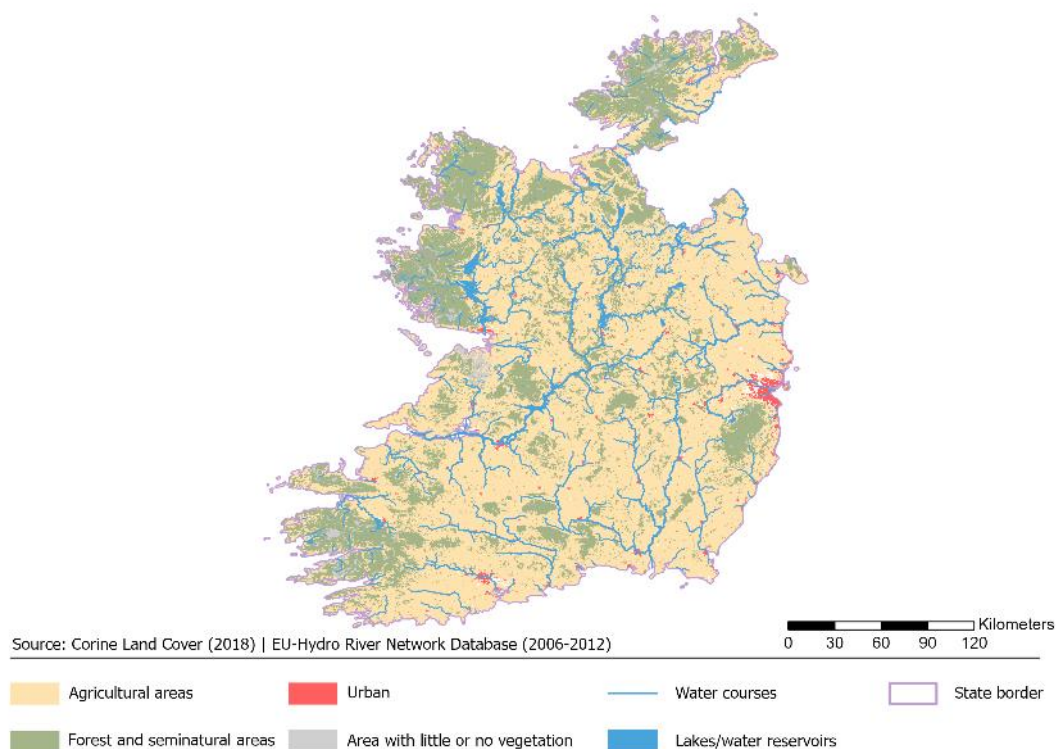
In Ireland, animal production accounted for the largest portion of the agricultural sector's total output value at 73.5% in the reporting period 2020–2023. Crop production followed with 21.7%, and other outputs made up 4.8% ⁽⁵⁾. The share of agricultural land used for organic farming increased from 1.7% in the reporting period 2016-2019 to 2.5% in the reporting period 2020-2023. ⁽⁶⁾

The risk of diffuse pollution of waters by nutrients from agriculture is primarily dependent on the agricultural pressures in the Member State, expressed in terms of utilised agricultural area (UAA), livestock density, the use of mineral and manure fertilisers, as well as the nitrogen and phosphorus balance. This section describes the evolution of these indicators.

2.1. Land use

The map below presents the distribution of land use in Ireland along with watercourses and lakes/water reservoirs.

Figure 2 – Land use distribution in Ireland



⁽⁵⁾ Source: Eurostat ([aact_eaa01](#))

⁽⁶⁾ Source: Eurostat ([ef_m_org](#))

The utilised agricultural area (UAA) in Ireland covered 5.1 million hectares in 2023, making up 73.6% of the country's total land area. Permanent grassland accounts for 73.5% of UAA, followed by arable land at 26.5%.

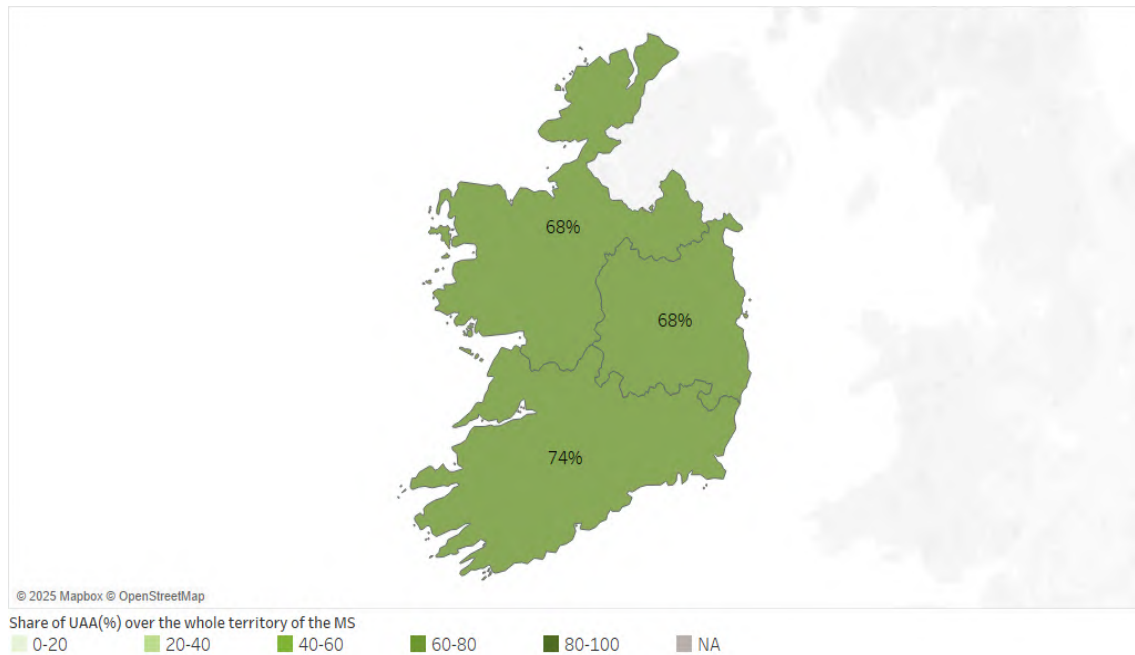
Table 1 – Evolution of the utilised agricultural area

	2010	2013	2016	2020	2023
utilised agricultural area (1000 ha)	4,991	4,959	4,884	4,920	5,051
arable land (1000 ha)	1,012	1,042	458	1,210	1,339
permanent grassland (1000 ha)	3,979	3,916	4,424	3,709	3,710
permanent crops (1000 ha)	1	2	2	2	2
kitchen gardens (1000 ha)	0	0	0	0	0

Source: Eurostat ([ef_lus_main](#))

In 2020, the share of the UAA ranged from 74% in Southern Region, to 68% in Northern and Western Region, and Eastern and Midland Region.

Figure 3 – Share of utilised agricultural area (UAA) at NUTS2 level in 2020 ⁽⁷⁾



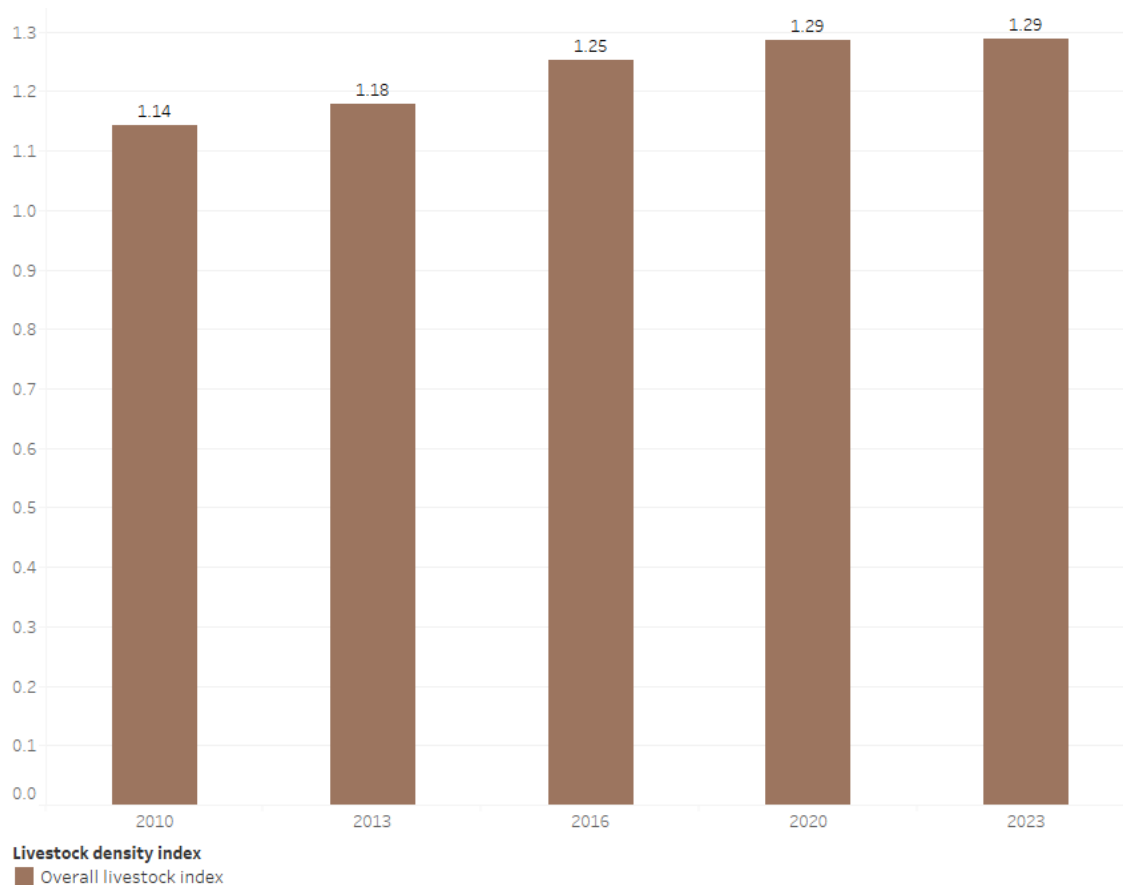
Source: Eurostat ([ef_lus_main](#))

⁽⁷⁾ Latest available data.

2.2. Livestock density

In Ireland, the livestock density was 1.29 livestock units per hectare (LSU/ha) of UAA in 2023. The livestock density has increased since 2010.

Figure 4 – Evolution of the livestock density (LSU/ha UAA)



Source: Eurostat ([ef_fsi_lskds](#))

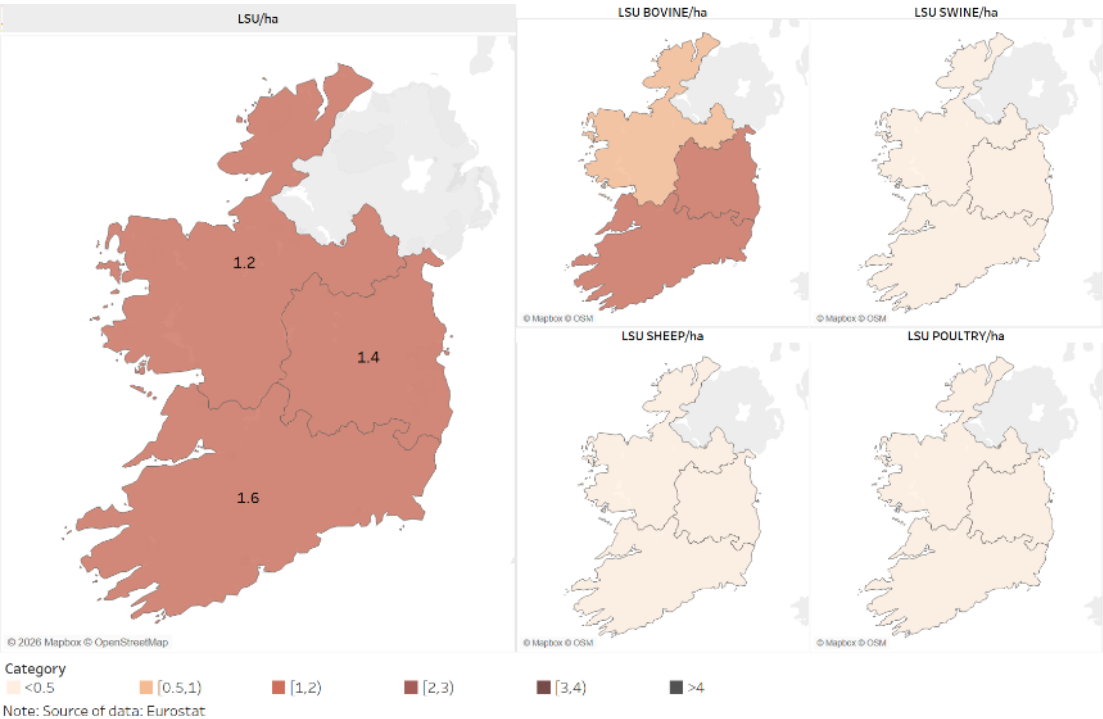
Table 2 – Evolution of the livestock numbers by animal type

	2007	2010	2013	2016	2020	2023
live bovines (Million heads)	6.25	5.92	6.31	6.61	6.53	6.53
of which dairy cows (Million heads)	1.02	1.01	1.08	1.30	1.46	1.51
live pigs (Million heads)	1.50	1.50	1.47	1.53	1.68	1.41
live poultry (Million heads)	NA	10.92	10.13	11.05	16.50	NA
live sheep (Million heads)	NA	4.75	3.32	3.44	3.88	3.74
live goats (Million heads)	0.01	NA	0.00	NA	NA	NA

Source: Eurostat, for live poultry and live sheep data complemented with FAOSTAT

There are regional variations, with higher livestock densities in the Southern Region and the Eastern and Midland Region.

Figure 5 – Livestock density distribution by animal type (LSU/ha UAA) at NUTS2 level in 2020 ⁽⁸⁾



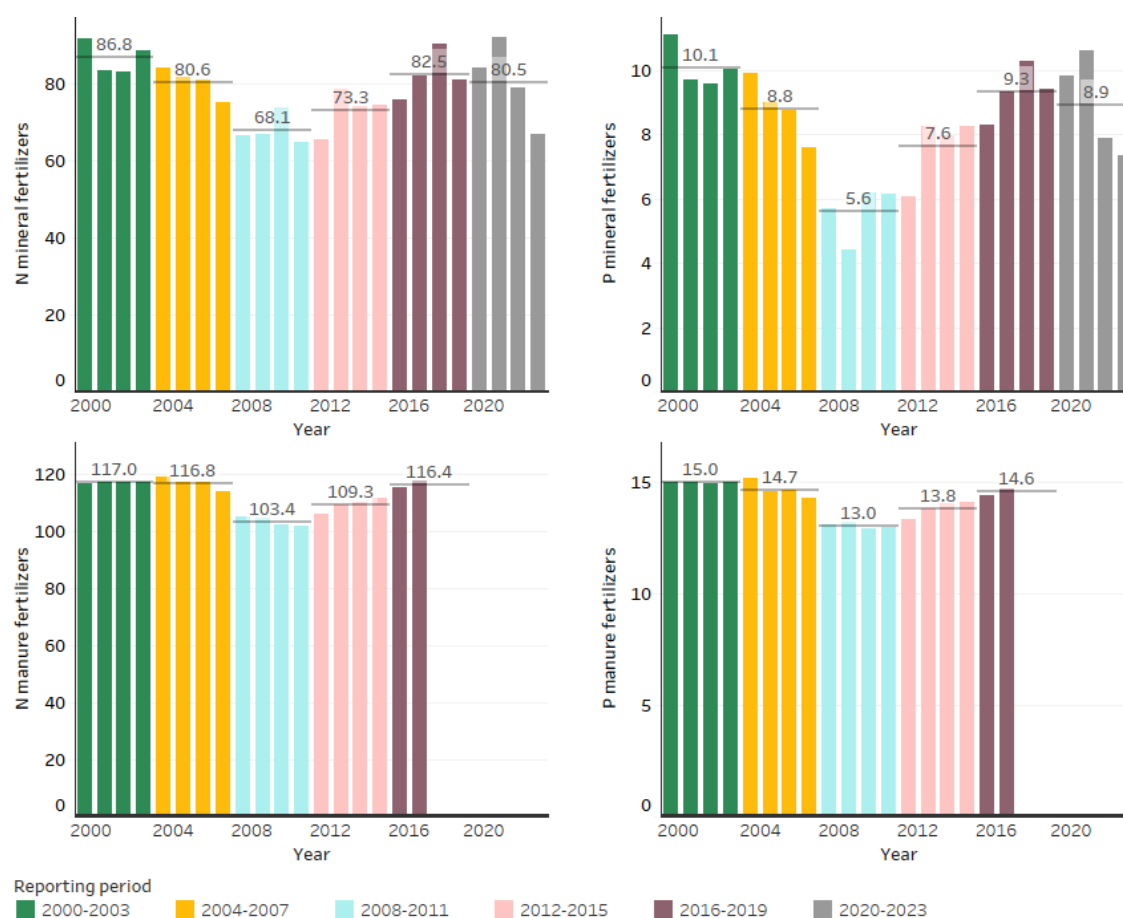
⁽⁸⁾ Latest available data.

2.3. Nitrogen and phosphorus fertiliser use

In Ireland, the use of **nitrogen (N) fertilisers** was 80.5 kg/ha UAA for mineral fertilisers in 2020-2023 and 116.4 kg/ha UAA for manure fertilisers in 2016-2017 ⁽⁹⁾. The use of mineral fertilisers has decreased by 2.0 kg/ha UAA. No data on the use of manure fertilisers were reported to Eurostat since 2018 ⁽¹⁰⁾.

The use of **phosphorus (P) fertilisers** was 8.9 kg/ha UAA for mineral fertilisers in 2020-2023 and 14.6 kg/ha UAA for manure fertilisers in 2016-2017 ⁽¹¹⁾. The use of mineral fertilisers decreased by 0.4 g/ha UAA since the last reporting period. No data on the use of manure fertilisers were reported to Eurostat since 2018 ⁽¹²⁾.

Figure 6 – Evolution of nitrogen and phosphorus fertiliser use (kg/ha UAA)



Source: Eurostat ([aei_pr_gnb](#))

⁽⁹⁾ According to the most recent values reported to Eurostat.

⁽¹⁰⁾ Additional data were included in the national report.

⁽¹¹⁾ More recent statistics are under preparation with Eurostat.

⁽¹²⁾ Additional data were included in the national report.

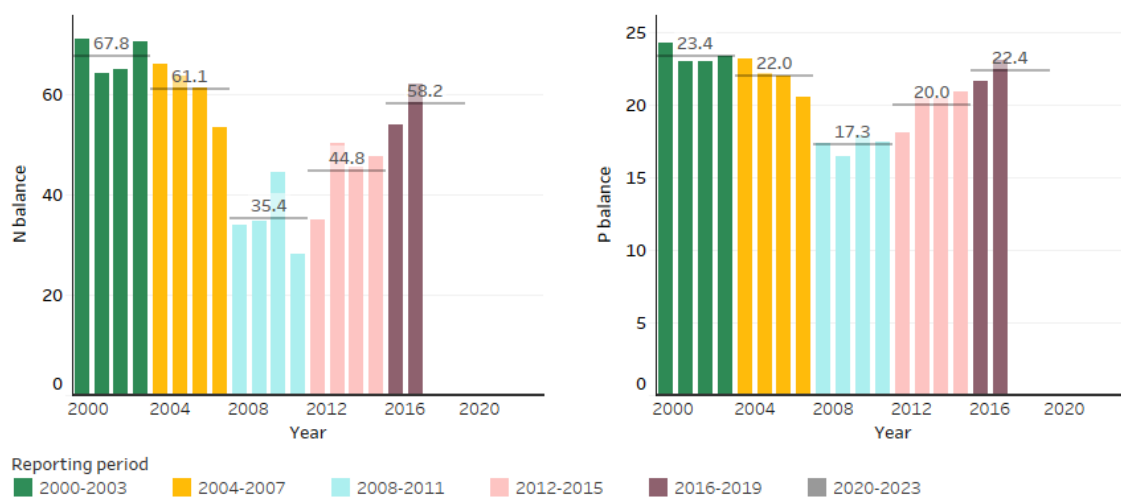
2.4. Nitrogen and phosphorus balance

The nutrient balance ⁽¹³⁾ per hectare of agricultural land (kg/ha UAA) is an indicator of the success that farmers have had in implementing balanced fertilisation and of the resulting nutrient pressure from agriculture. A high surplus (positive balance) indicates a risk of emissions into water and air.

In Ireland, the **gross nitrogen (N) balance** was 58.2 kg/ha UAA in 2016-2017. No additional data were reported to Eurostat since 2018.

The **gross phosphorus (P) balance** was 2.4 kg/ha UAA in 2016-2017. No additional data were reported to Eurostat since 2018.

Figure 7 – Evolution of gross nitrogen and phosphorus balance (kg/ha UAA)



Source: Eurostat ([aei_pr_gnb](#))

2.5. Nitrogen discharge to the environment

Ireland didn't provide an information on nitrogen losses to the environment in their report. Total application of organic and mineral nitrogen to agricultural land was 909.5 kilotonnes during the reporting period 2016-2019 and 932.2 kilotonnes during the reporting period 2020-2023.

⁽¹³⁾ [Gross nutrient balance \(aei_pr_gnb\)](#)

3. NITRATE VULNERABLE ZONES

In line with Article paragraph 5, Ireland applies an action programme with mandatory measures throughout the entire national territory (whole country approach) since 2003 and is thus exempted from designating NVZ.

4. NITRATES IN GROUNDWATER

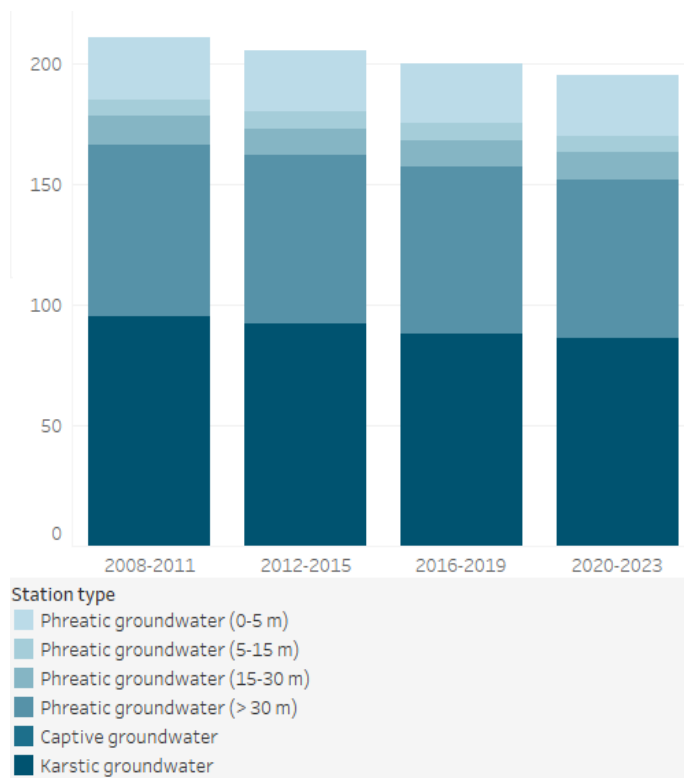
4.1. Monitoring of nitrate concentrations in groundwater

In Ireland, water monitoring is aligned with the Water Framework Directive and is carried out through programmes developed by the Environmental Protection Agency (EPA). The EPA is authorized to implement monitoring programmes that encompass the three categories specified in the WFD: surveillance, operational, and investigative monitoring.

During the reporting period 2020-2023 nitrate concentrations were reported at 195 groundwater monitoring points. The station density was 2.8 stations per 1 000 km².

The overall number of monitoring points decreased by 5 (2.5%) compared to the previous reporting period. Since 2008-2011 the total number of monitoring stations has decreased steadily. The graph below presents the changes in the monitoring network over the last four reporting periods.

Figure 8 – Evolution of groundwater monitoring network (monitoring points with measurements of nitrates)



In this reporting period, changes in nitrate concentrations compared to the previous monitoring period (trends) were assessed for all 195 monitoring points with measurements. The table below presents the number of monitoring points with measurements and trends in the last four reporting periods.

Table 3 – Number of groundwater monitoring points with measurements of nitrates and trends by station type ⁽¹⁴⁾

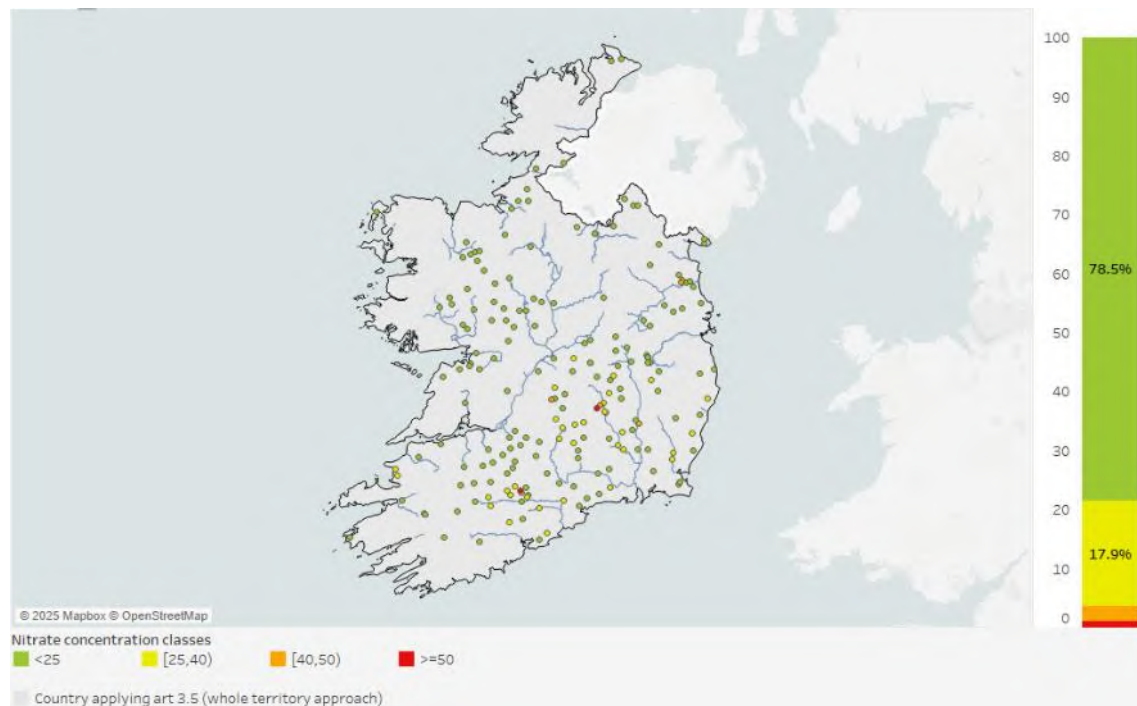
Station type	Stations with measurements				Stations with trends			
	2008-2011	2012-2015	2016-2019	2020-2023	2008-2011	2012-2015	2016-2019	2020-2023
Phreatic groundwater (0-5 m)	26	25	25	25	25	25	25	25
Phreatic groundwater (5-15 m)	7	7	7	7	7	7	7	7
Phreatic groundwater (15-30 m)	12	11	11	11	12	11	11	11
Phreatic groundwater (> 30 m)	71	70	69	66	68	70	69	66
Captive groundwater								
Karstic groundwater	95	92	88	86	92	92	88	86
Not specified								
Total	211	205	200	195	204	205	200	195

¹⁴⁾ Ireland reported that monitoring was discontinued in 5 monitoring points relative to the previous reporting period. Discontinuation may be due to nitrate concentrations below 25 mg/l, change in station code or type, or other specific reasons.

4.2. Nitrate concentrations in groundwater

In Ireland, 1.0% of groundwater monitoring points showed average nitrate concentrations equal to or above the drinking water threshold of 50 mg/l, whereas 2.6% had concentrations between 40-49.99 mg/l, 17.9% showed concentrations between 25-39.99 mg/ and 78.5% below 25 mg/l. The figure below shows a spatial distribution of the average nitrate concentrations and the shares in corresponding nitrate concentration classes.

Figure 9 – Map of average annual mean nitrate concentrations in groundwater and share of monitoring points by nitrate concentration class in the reporting period 2020-2023



Note: In the map, monitoring points with higher values are plotted on top. In the graph, the percentages below 5% are not labelled.

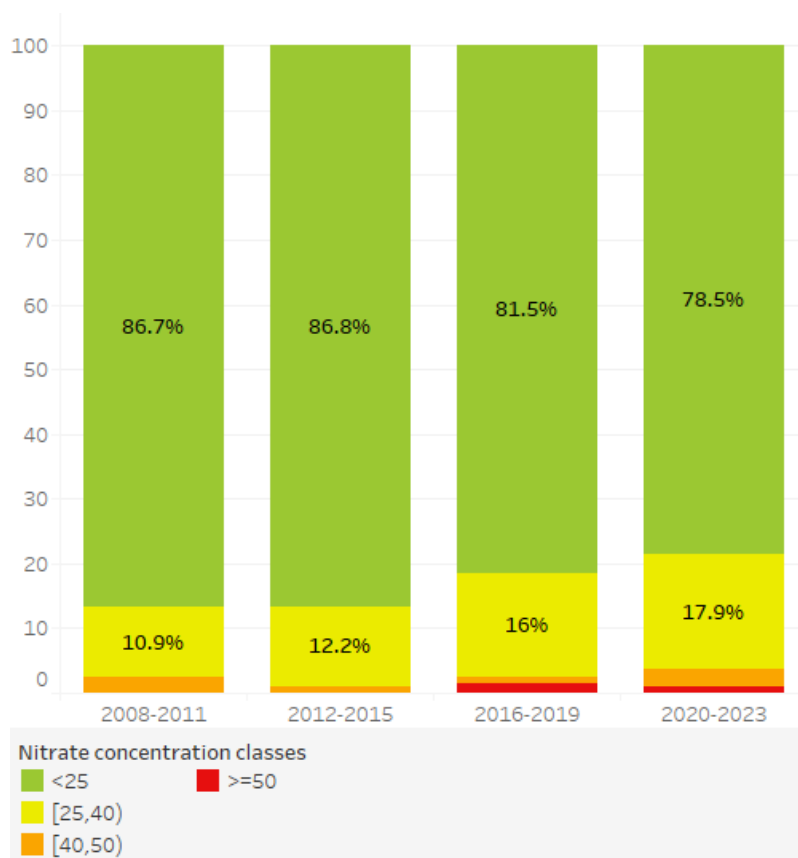
The station type category with the highest share of points with nitrate concentrations equal to or above the drinking water threshold of 50 mg/l was phreatic groundwater (0-5m) with a share of 4.0%, as shown in the table below.

Table 4 – Share of groundwater monitoring points by nitrate concentration class (mg/l) in the reporting period 2020-2023, categorised by station type

	Number of stations	% of Total	<25	[25,40)	[40,50)	≥50
Phreatic groundwater (0-5 m)	25	12.8%	72.0%	20.0%	4.0%	4.0%
Phreatic groundwater (5-15 m)	7	3.6%	100.0%			
Phreatic groundwater (15-30 m)	11	5.6%	90.9%	9.1%		
Phreatic groundwater (> 30 m)	66	33.8%	78.8%	18.2%	3.0%	
Captive groundwater						
Karstic groundwater	86	44.1%	76.7%	19.8%	2.3%	1.2%
Total	195	100.0%	78.5%	17.9%	2.6%	1.0%

Compared to the previous reporting period, the share of monitoring points with concentration ≥ 50 mg/l decreased from 1.5% to 1.0%. The graph below presents the share of monitoring points per classes of nitrate concentrations in the last four reporting periods.

Figure 10 – Share of monitoring points in groundwater by class of nitrate concentration ⁽¹⁵⁾ in the current and previous reporting periods



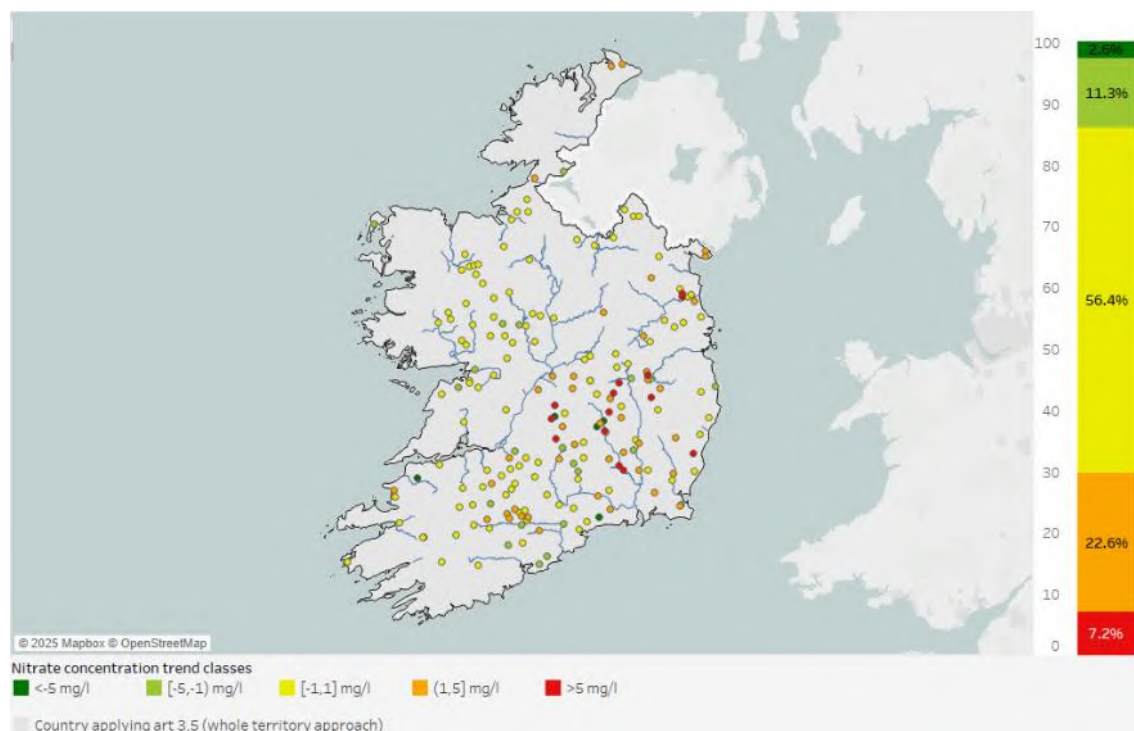
Note: The percentages below 5% are not labelled.

⁽¹⁵⁾ Average of annual mean values over the reporting period.

4.3. Trends in nitrate concentrations in groundwater

Compared to the last reporting period, there has been a decrease of nitrate concentrations in 13.9% of monitoring points and an increase in 29.8%. For the remaining 56.4% there was no significant change. The increase or decrease can be categorised as weak if it is between 1 and 5 mg/l, and as strong if it is above 5 mg/l.

Figure 11 – Map of trends in average annual mean nitrate concentrations ⁽¹⁶⁾ in groundwater between the periods 2016-2019 and 2020-2023 and share of monitoring points by trend class



Note: In the map, monitoring points with higher values are plotted on top.

Table 5 – Share of groundwater monitoring points by trend class (mg/l) between the periods 2016-2019 and 2020-2023, categorised by station type

	Total Number of Stations	% Total Number of Stations	<-5	[-5,-1)	[-1,1]	(1,5]	>5
Phreatic groundwater (0-5 m)	25	12.8%	8%	4%	60%	16%	12%
Phreatic groundwater (5-15 m)	7	3.6%		14.3%	14.3%	57.1%	14.3%
Phreatic groundwater (15-30 m)	11	5.6%	9.1%	27.3%	36.4%	27.3%	
Phreatic groundwater (>30 m)	66	33.8%		7.6%	54.5%	28.8%	9.1%
Captive groundwater							
Karstic groundwater	86	44.1%	2.3%	14%	62.8%	16.3%	4.7%
Total	195	100.0%	2.6%	11.3%	56.4%	22.6%	7.2%

⁽¹⁶⁾ The average of annual mean values of nitrate concentrations over the reporting period 2020-2023 compared to the average for the reporting period 2016-2019.

When looking at the trend for waters that were already polluted (equal to or above 50 mg/l), there has been no increase of nitrate concentration and a decrease for 50.0% (1 monitoring point). The graph below shows the increase (in red and orange) and decreases (in green) per nitrate concentration class.

Figure 12 – Share of groundwater monitoring points by classes of trend between the periods 2016-2019 and 2020-2023, across different nitrate concentration classes (<24.99 mg/l, 25-39.99 mg/l, 40-49.99 mg/l and ≥50mg/l) ⁽¹⁷⁾

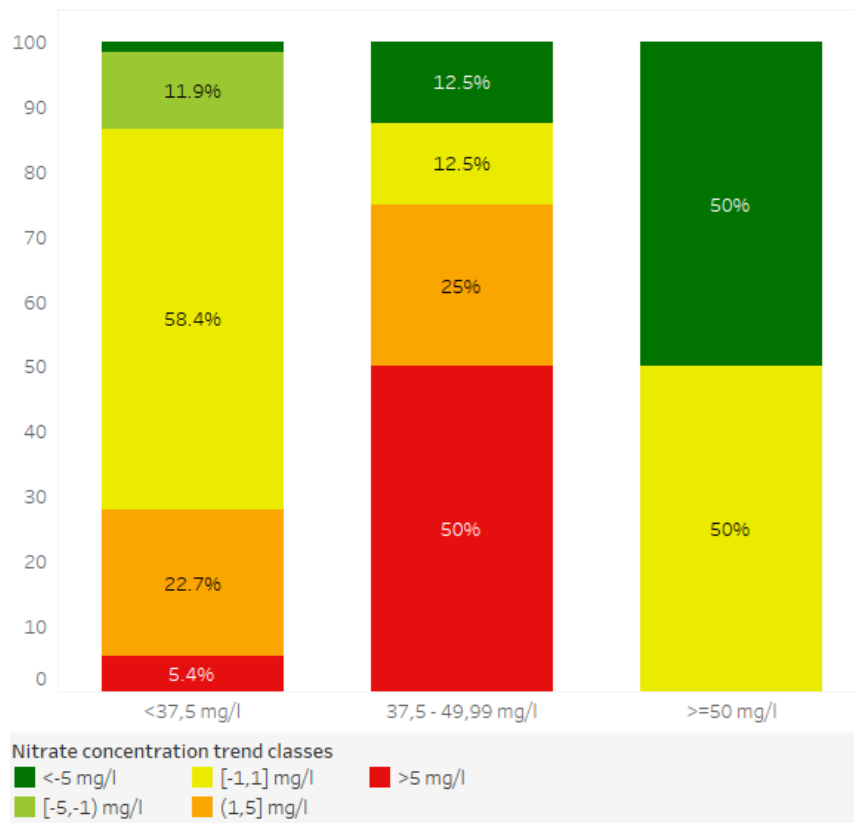


Note: The percentages below 5% are not labelled.

⁽¹⁷⁾ Nitrate concentration classes as per the Nitrates Directive report.

To better align the water quality assessment with the thresholds defined under the Groundwater Directive, trends were also calculated for the water quality class with nitrate concentrations between 37.5-49.99 mg/l. When looking at the trend in this concentration category, there has been an increase of nitrate concentration for 75.0% and a decrease for 12.5% of monitoring points.

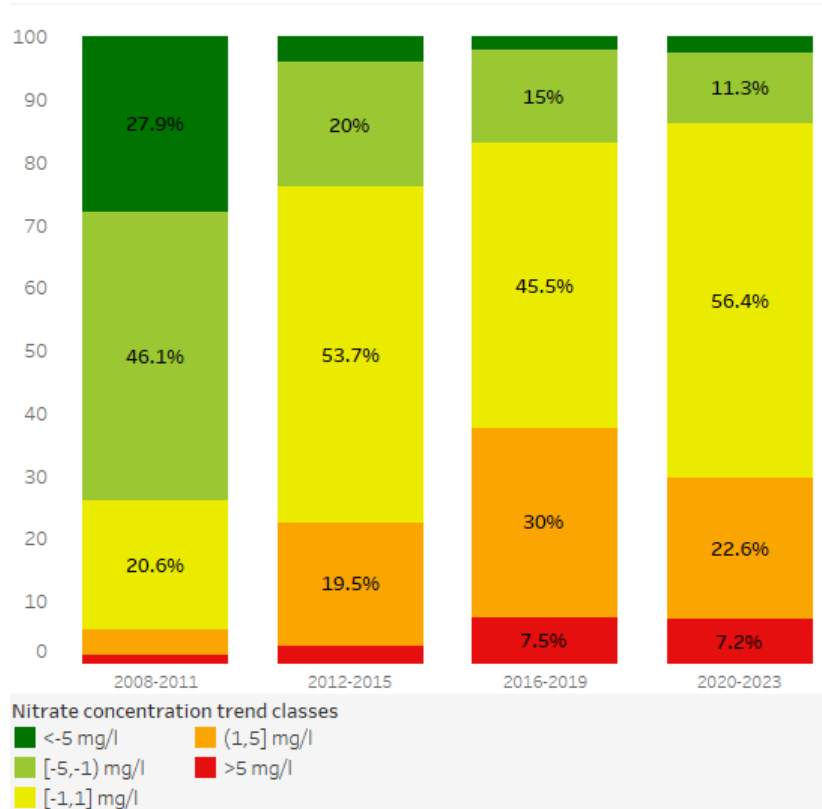
Figure 13 – Share of groundwater monitoring points by classes of trend between the periods 2016-2019 and 2020-2023, in different nitrate concentration classes (<37.5 mg/l, 37.5-49.99 mg/l and ≥50mg/l) ⁽¹⁸⁾



⁽¹⁸⁾ Nitrate concentration classes as in the Water Framework Directive guidance on GW status and trend assessment as division of nitrates quality standard (50mg/l and 75 % of this value [37.5 mg/l]).

Compared to the previous reporting period, there is a lower share of monitoring points with decreasing nitrate concentrations (13.9% in the current reporting period compared to 17.0% in the previous reporting period) but also a lower share of monitoring points with increasing nitrate concentrations (29.8% compared to 37.5%). The graph below shows the share of monitoring points with increases (in red and orange), decreases (in green) and without significant change (in yellow) in nitrate concentrations between reporting periods.

Figure 14 – Share of groundwater monitoring points by class of nitrate concentration trend ⁽¹⁹⁾ in the current and previous reporting periods



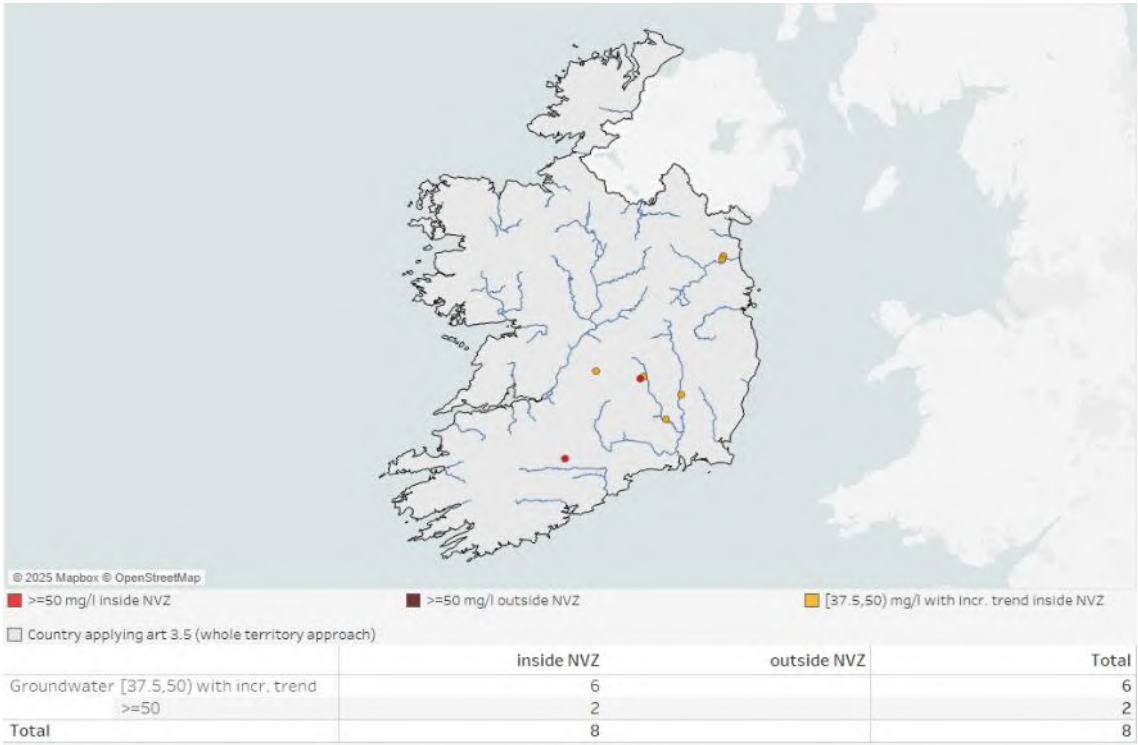
Note: The percentages below 5% are not labelled.

⁽¹⁹⁾ Change in average annual mean nitrate concentrations compared to the previous reporting period

4.4. Nitrate pollution hotspots in groundwater

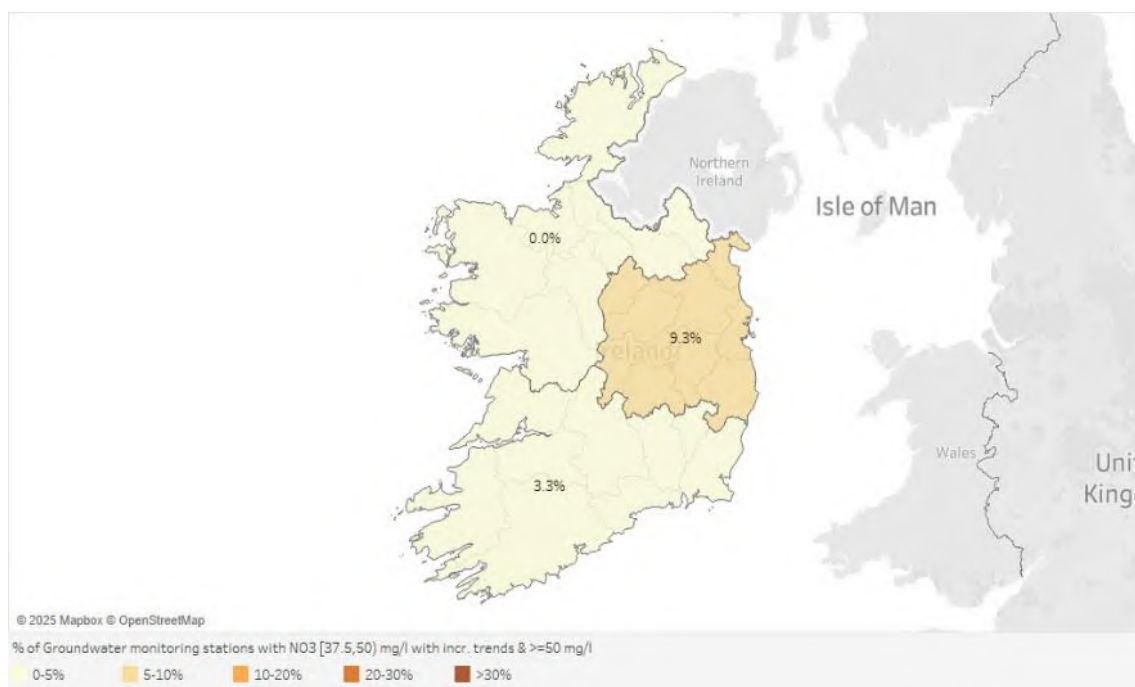
A nitrate pollution hotspot in groundwater is defined here as a monitoring point where the average annual nitrate concentration is either ≥ 50 mg/l or between 37.5 and 49.99 mg/l with an increasing trend. In Ireland there are 8 groundwater nitrate pollution hotspots.

Figure 15 – Groundwater nitrate pollution hotspots



The NUTS2 region with the highest share of hotspots are Eastern and Midland Region (9.3%).

Figure 16 – Share of groundwater nitrate pollution hotspots at NUTS2 level



5. NITRATES IN SURFACE WATERS

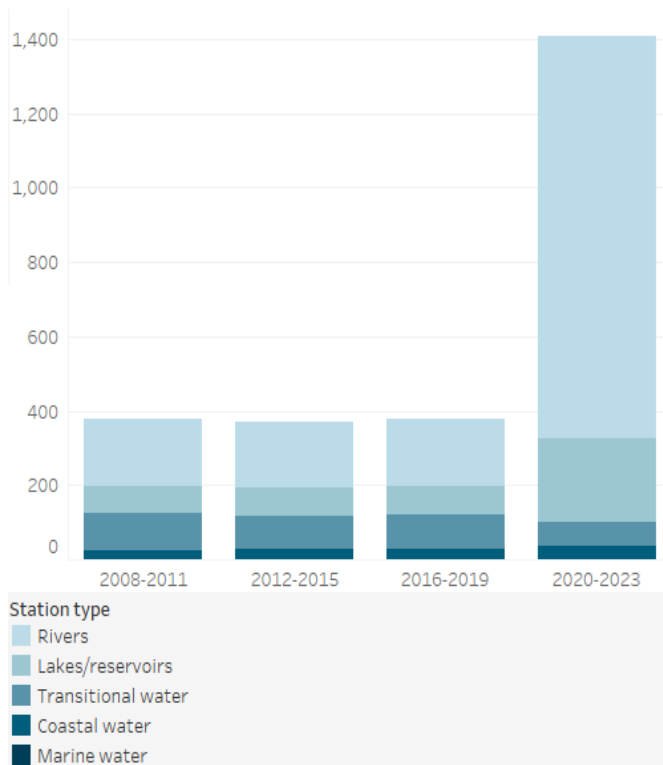
5.1. Monitoring of nitrate concentrations in surface waters

The surface water monitoring network is managed by the Environmental Protection Agency (EPA) and aligned with the monitoring network for the Water Framework Directive. Monitoring stations from the WFD operational monitoring network have supplemented those of the WFD surveillance monitoring network in this reporting period. However, some facilities from the original network were removed and replaced with alternative stations, leading to a slight decrease in the number of common sampling points between reporting periods. Data from most of the individual monitoring stations located within water bodies have been aggregated for the assessment.

During the reporting period 2020-2023, nitrate concentrations were reported at 1 409 surface water monitoring points. Among these, 77.0% were in rivers, 15.8% were in lakes or reservoirs, and 7.2% were in saline waters. The freshwater monitoring points density was 18.7 stations per 1 000 km².

The overall number of monitoring points in this reporting period increased by 1 033 (274.7%) compared to the previous reporting period. Before this strong increase, the total number of monitoring stations was relatively stable in the past three reporting periods. The graph below presents the changes in the monitoring network over the last four reporting periods.

Figure 17 – Evolution of surface water monitoring network (monitoring points with measurements of nitrates)



In this reporting period, changes in nitrate concentrations compared to the previous monitoring period (trends) were assessed for all 1 409 monitoring points with measurements (100%) ⁽²⁰⁾. The share of monitoring points with trends increased compared to the previous reporting period (96.3% in reporting period 2016-2019). The table below presents the number of monitoring points and the number of monitoring points with trends in the last four reporting periods.

Table 6 – Number of surface water monitoring points with measurements of nitrates and trends per type ⁽²¹⁾

Station type	Stations with measurements				Stations with trends			
	2008-2011	2012-2015	2016-2019	2020-2023	2008-2011	2012-2015	2016-2019	2020-2023
Rivers	178	180	180	1,085	148	176	180	1,085
Lakes/reservoirs	74	74	74	222	61	74	74	222
Transitional water	99	89	95	64	98	76	83	64
Coastal water	25	28	27	38	25	23	25	38
Marine water								
Total	376	371	376	1,409	332	349	362	1,409

⁽²⁰⁾ The Member State can report a monitoring point with trends that was monitored but not reported in the previous reporting period.

⁽²¹⁾ Ireland reported that monitoring was discontinued in 129 monitoring points relative to the previous reporting period. Discontinuation may be due to nitrate concentrations below 25 mg/l, change in station code or type, or other specific reasons.

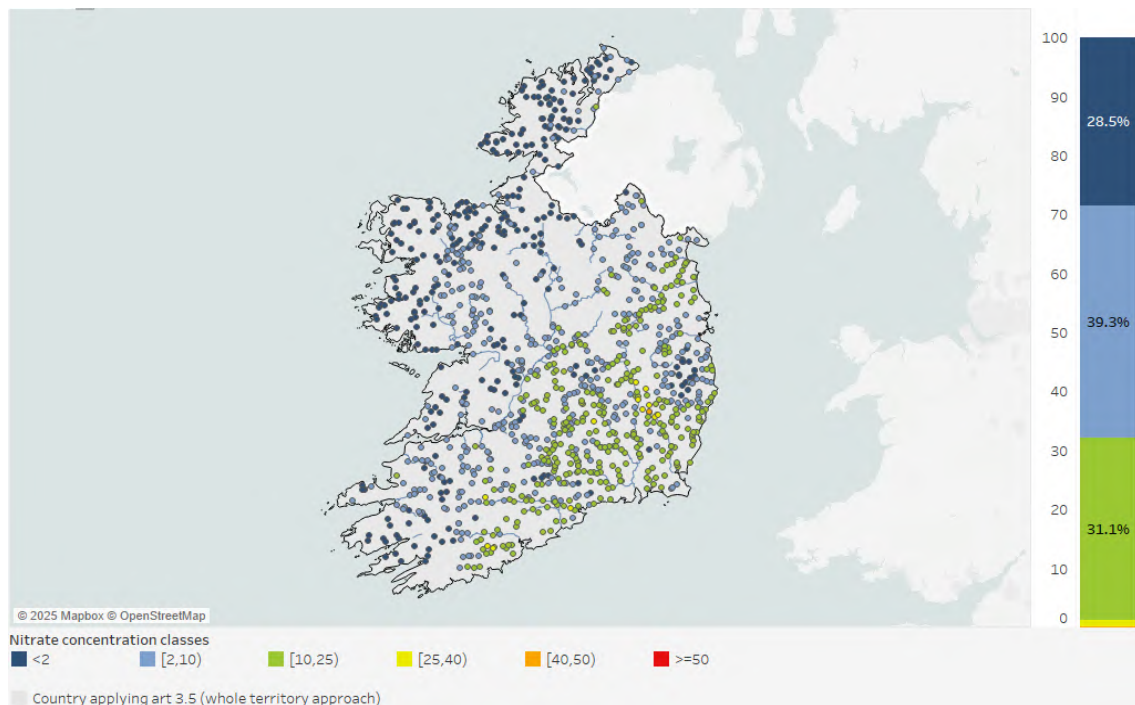
5.2. Nitrate concentrations in surface waters

Rivers

In Ireland, none of the monitoring points in rivers showed average nitrate concentrations equal to or above the drinking water threshold of 50 mg/l, whereas 0.1% had concentrations between 40-49.99 mg/l, 1.1% showed concentrations between 25-39.99 mg/l, 31.1% in the class 10-24.99 mg/l, 39.3% in the class 2-9.99 mg/l and 28.5% below 2 mg/l.

It is relevant to look at the distribution in nitrate concentration classes below 25 mg/l for surface water as there can be a risk of eutrophication in lower concentration classes.

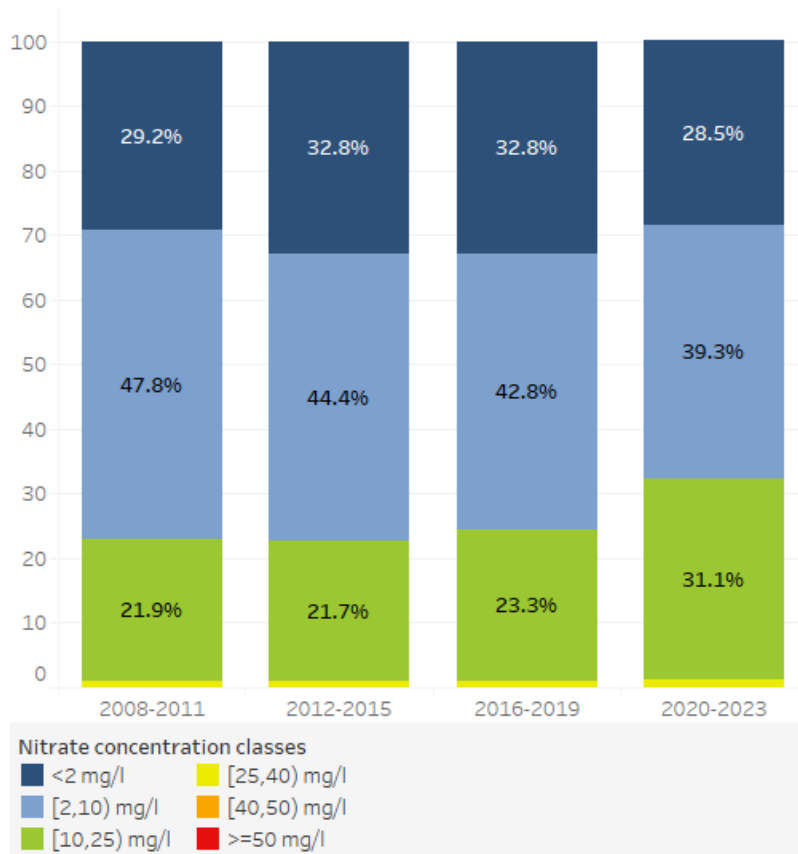
Figure 18 – Map of average annual mean nitrate concentrations in rivers and share of monitoring points by concentration class in the reporting period 2020-2023



Note: In the map, monitoring points with higher values are plotted on top. In the graph, the percentages below 5% are not labelled.

Compared to the previous reporting period, the share of monitoring points in rivers with concentrations ≥ 50 mg/l remained at 0%. The graph below presents the shares of monitoring points per classes of nitrate concentration in the last four reporting periods. Direct comparison between the previous and current reporting period is not possible due to a significant increase in monitoring points between these periods.

Figure 19 – Share of monitoring points in rivers by class of nitrate concentration ⁽²²⁾ in the current and previous reporting periods



The percentages below 5% are not labelled.

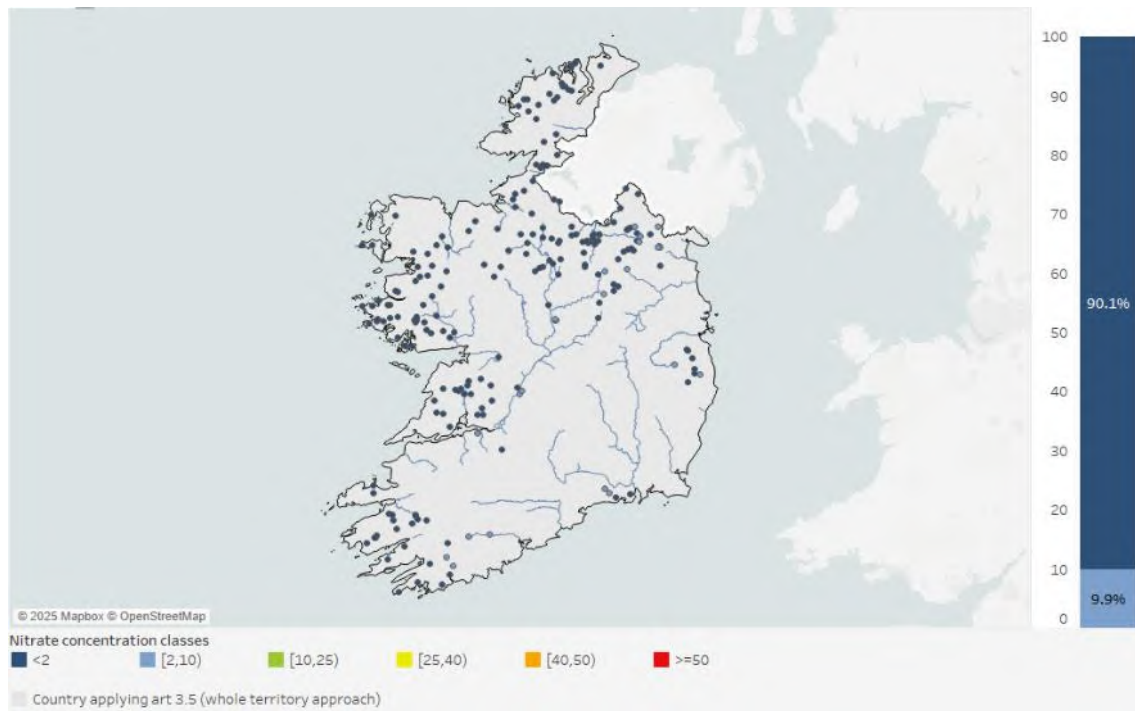
⁽²²⁾ Average of annual mean values over the reporting period.

Lakes/water reservoirs

In Ireland, none of the monitoring points in lakes/water reservoirs showed average nitrate concentrations equal to or above the drinking water threshold of 50 mg/l, and at or above 10 mg/l. Whereas 9.9% had concentrations between 2-9.99 mg/l and 90.1% below 2 mg/l.

It is relevant to look at the distribution in nitrate concentration classes below 25 mg/l for surface water as there can be a risk of eutrophication in lower concentration classes.

Figure 20 – Map of average annual mean nitrate concentrations in lakes/water reservoirs and share of monitoring points by concentration class in the reporting period 2020-2023



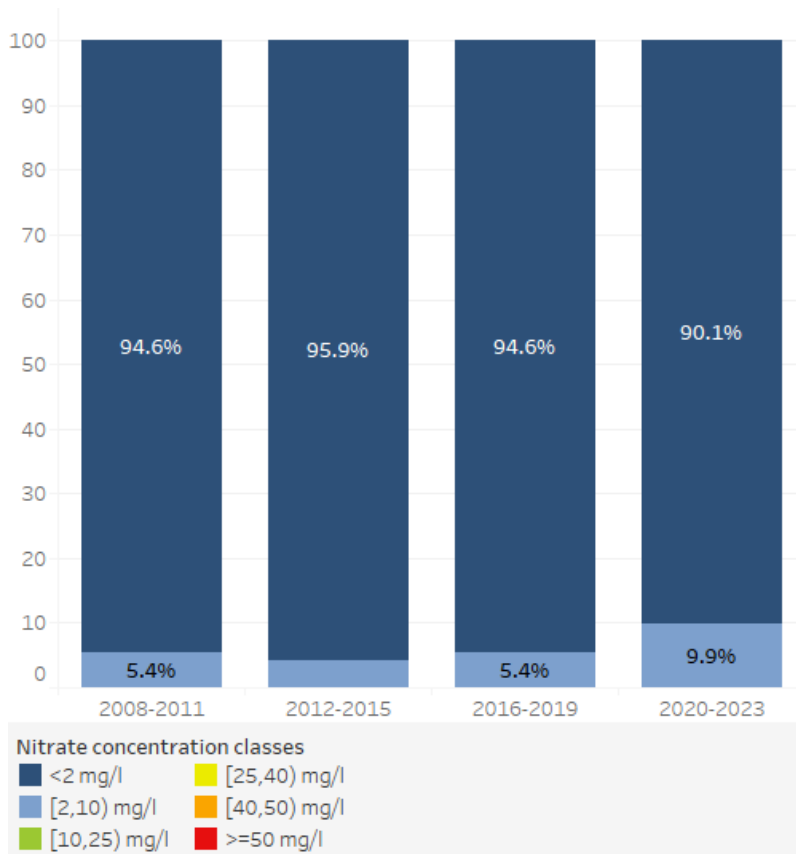
Note: In the map, monitoring points with higher values are plotted on top.

Table 7 – Share of freshwater monitoring points by nitrate concentration class (mg/l) in reporting period 2020-2023, categorised by station type

	Number of stations	% of Total	<2	[2,10)	[10,25)	[25,40)	[40,50)	>=50
Rivers	1,085	83.0%	28.5%	39.3%	31.1%	1.1%	0.1%	
Lakes/reservoirs	222	17.0%	90.1%	9.9%				
Total	1,307	100.0%	38.9%	34.3%	25.8%	0.9%	0.1%	

Compared to the previous reporting period, the share of monitoring points in lakes/water reservoirs with concentration ≥ 50 mg/l remained at 0%. The graph below presents the shares of monitoring points per classes of nitrate concentration in the last four reporting periods. Direct comparison between the previous and current reporting period is not possible due to a significant increase in monitoring points between these periods.

Figure 21 – Share of monitoring points in lakes/water reservoirs by class of nitrate concentration⁽²³⁾ in the current and previous reporting periods



Note: The percentages below 5% are not labelled.

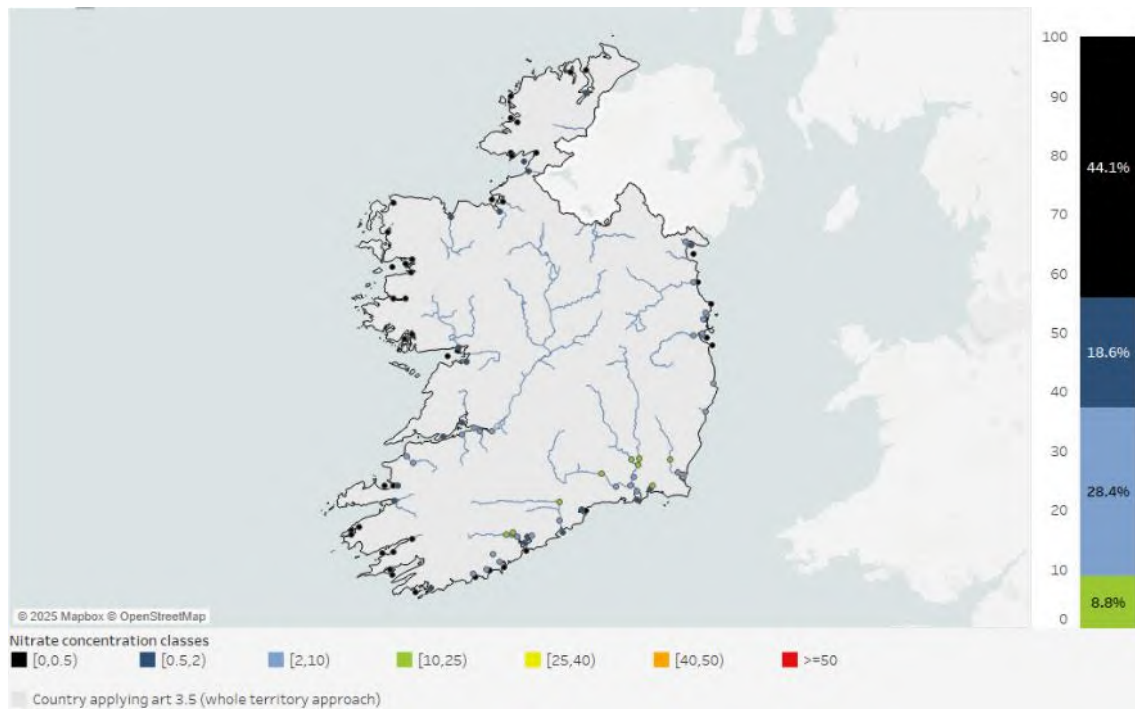
⁽²³⁾ Average of annual mean values over the reporting period.

Saline waters ⁽²⁴⁾

No points in saline waters monitoring points showed average nitrate concentrations ≥ 25 mg/l, 8.8% showed concentrations between 10-24.99 mg/l, 28.4% in the class 2-9.99 mg/l and 44.1% between 0.5-2 mg/l and 44.1% below 0.5 mg/l.

It is relevant to look in detail at very low nitrate concentrations, also below 0.5 mg/l and between 0.5 mg/l and 2 mg/l, because saline waters tend to have very low concentrations and some saline waters can become eutrophic even at concentrations below 2 mg/l.

Figure 22 – Map of average annual mean nitrate concentrations in saline waters and share of monitoring points by concentration class in reporting period 2020-2023



Note: In the map, monitoring points with higher values are plotted on top.

It is also relevant to look separately at transitional waters as they typically show higher nitrate concentrations. In Ireland, 14.1% of monitoring points showed average nitrate concentrations at or above 10 mg/l, 43.8% in the class 2-9.99 mg/l, 21.9% between 0.5-2 mg/l and 20.3% below 0.5 mg/l, as shown in the table below.

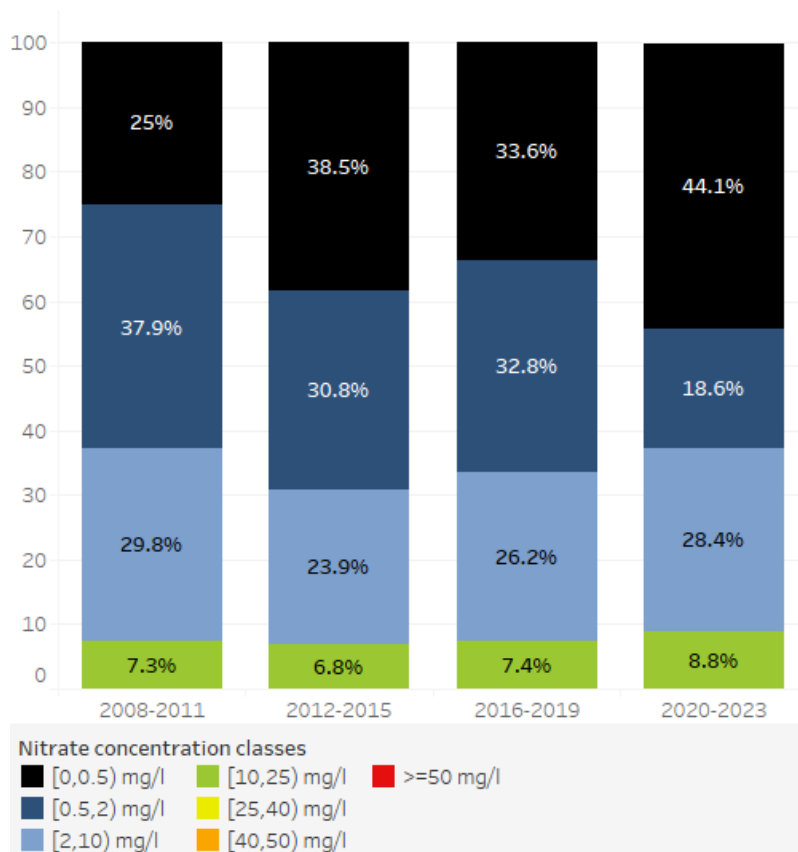
Table 8 – Share of saline water monitoring points by nitrate concentration class (mg/l) in the reporting period 2020-2023, categorised by station type

	Number of stations	% of Total	<0.5	[0.5,2)	[2,10)	[10,25)	[25,40)	[40,50)	≥ 50
Transitional water	64	62.7%	20.3%	21.9%	43.8%	14.1%			
Coastal water	38	37.3%	84.2%	13.2%	2.6%				
Marine water									
Total	102	100.0%	44.1%	18.6%	28.4%	8.8%			

⁽²⁴⁾ This includes coastal, marine, and transitional waters.

The graph below presents the shares of monitoring points per classes of nitrate concentration in the last four reporting periods.

Figure 23 – Share of monitoring points in saline waters by class of nitrate concentration ⁽²⁵⁾ in the current and previous reporting periods



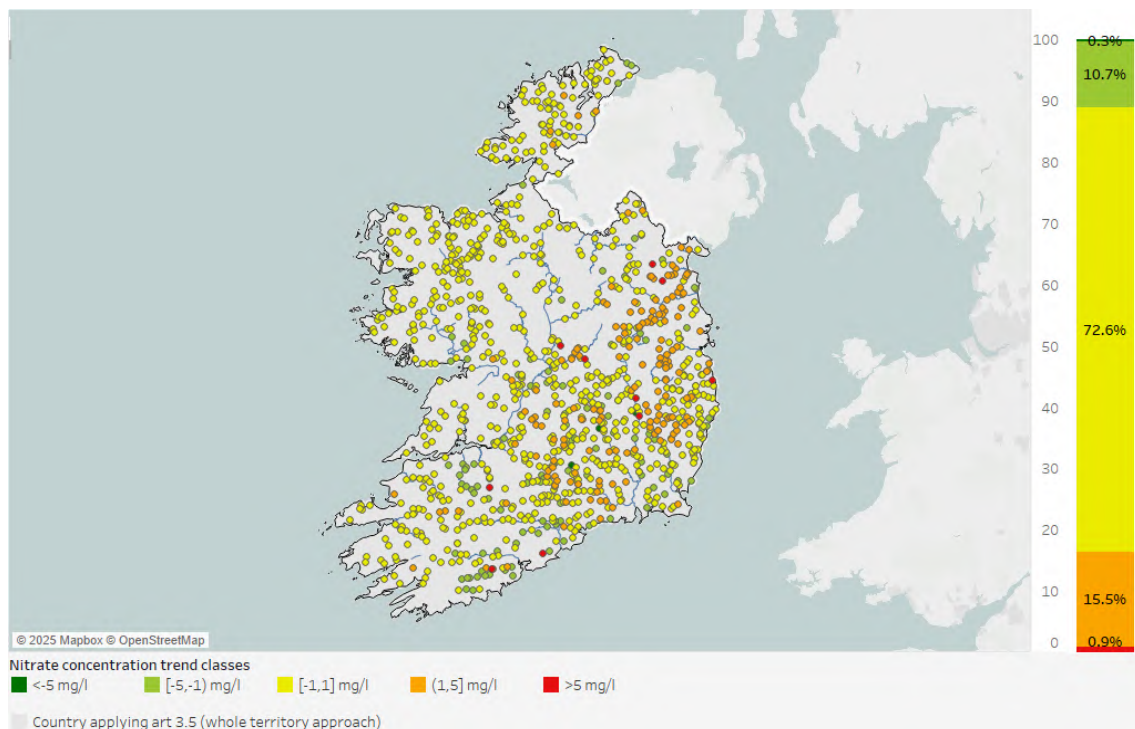
⁽²⁵⁾ Average of annual mean values over the reporting period.

5.3. Trends in nitrate concentrations in surface waters

Rivers

Compared to the last reporting period, there has been a decrease of nitrate concentrations in 11.0% of monitoring points and an increase in 16.4%. For the remaining 72.6% there was no significant change. The increase or decrease can be categorised as weak if it is between 1 and 5 mg/l, and as strong if it is above 5 mg/l.

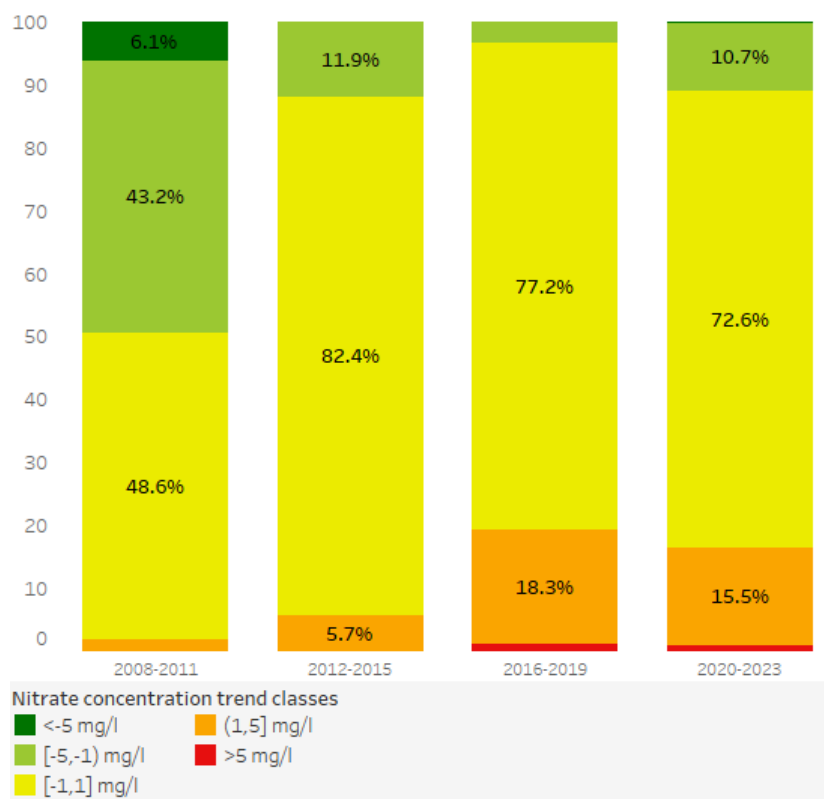
Figure 24 – Map of trends in average annual mean nitrate concentrations in rivers between the periods 2016-2019 and 2020-2023 and share of monitoring points by trend class



Note: In the map, monitoring points with higher values are plotted on top.

Compared to the previous reporting period, there is a higher share of monitoring points with decreasing nitrate concentrations (11.0% in the current reporting period compared to 3.3% in the previous reporting period) and a lower share of monitoring points with increasing nitrate concentrations (16.4% compared to 19.4%). The graph below shows the share of monitoring points with increases (in red and orange), decreases (in green) and without significant change (in yellow) in nitrate concentrations between reporting periods.

Figure 25 – Share of monitoring points in rivers by class of nitrate concentration trend ⁽²⁶⁾ in the current and previous reporting periods



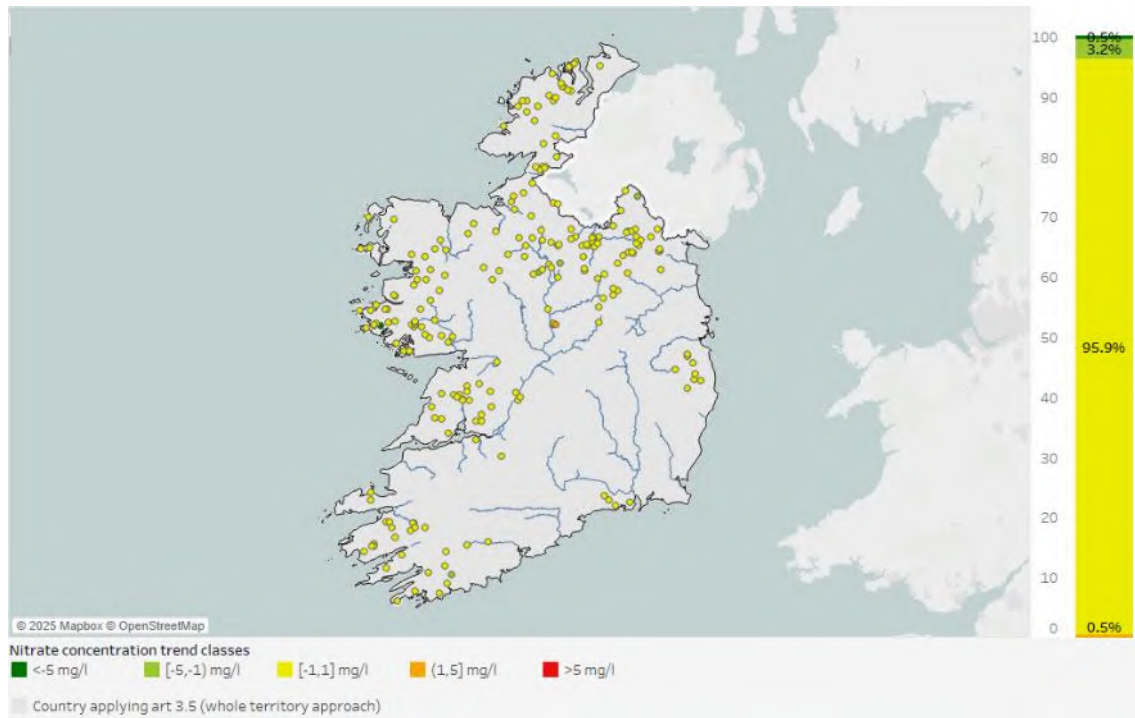
Note: The percentages below 5% are not labelled.

⁽²⁶⁾ Change in average annual mean nitrate concentrations compared to the previous reporting period.

Lakes and water reservoirs

Compared to the last reporting period, there has been a decrease of nitrate concentrations in 3.7% of monitoring points and an increase in 0.5%. For the remaining 95.9% there was no significant change. The increase or decrease can be categorised as weak if it is between 1 and 5 mg/l, and as strong if it is above 5 mg/l.

Figure 26 – Map of trends in average annual mean nitrate concentrations in lakes/water reservoirs between the periods 2016-2019 and 2020-2023 and share of monitoring points by trend class



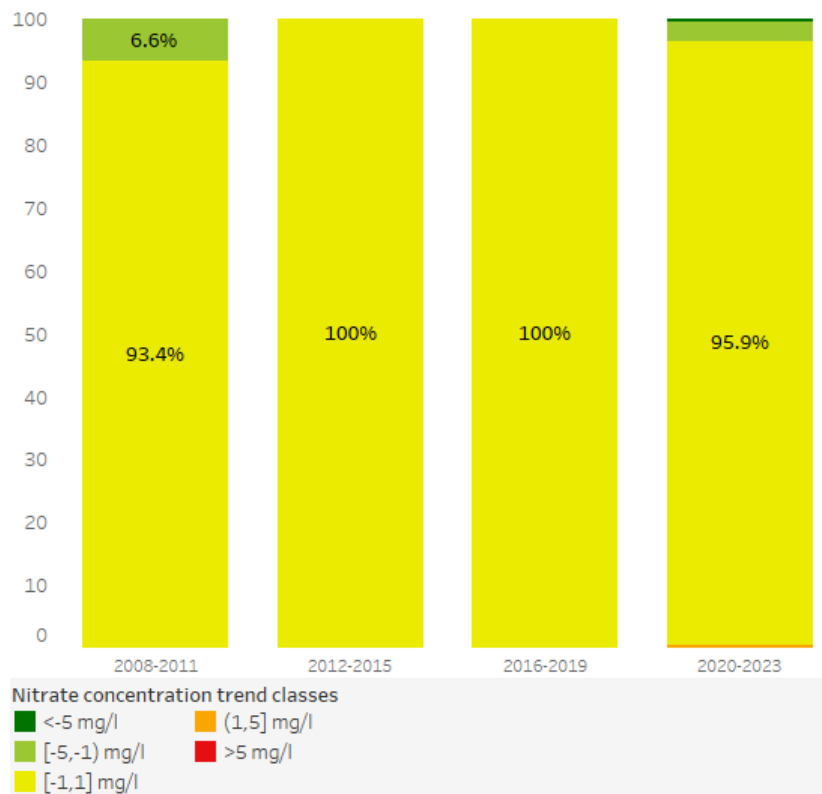
Note: In the map, monitoring points with higher values are plotted on top.

Table 9 – Share of freshwater monitoring points by trend class (mg/l) between the periods 2016-2019 and 2020-2023, categorised by station type

	Total Number of Stations	% Total Number of Stations	<-5	[-5,-1)	[-1,1]	(1,5]	>5
River	1,085	83.0%	0.3%	10.7%	72.6%	15.5%	0.9%
Lake/Reservoir	222	17.0%	0.5%	3.2%	95.9%	0.5%	
Total	1,307	100.0%	0.3%	9.4%	76.6%	12.9%	0.8%

Compared to the previous reporting period, there is a higher share of monitoring points with decreasing nitrate concentrations (3.7% in the current reporting period compared to 0% in the previous reporting period) but also a higher share of monitoring points with increasing nitrate concentrations (0.5% compared to 0%). The graph below shows the share of monitoring points with increases (in red and orange), decreases (in green) and without significant change (in yellow) in nitrate concentrations between reporting periods.

Figure 27 – Share of monitoring points in lakes/water reservoirs by class of nitrate concentration trend ⁽²⁷⁾ in the current and previous reporting periods



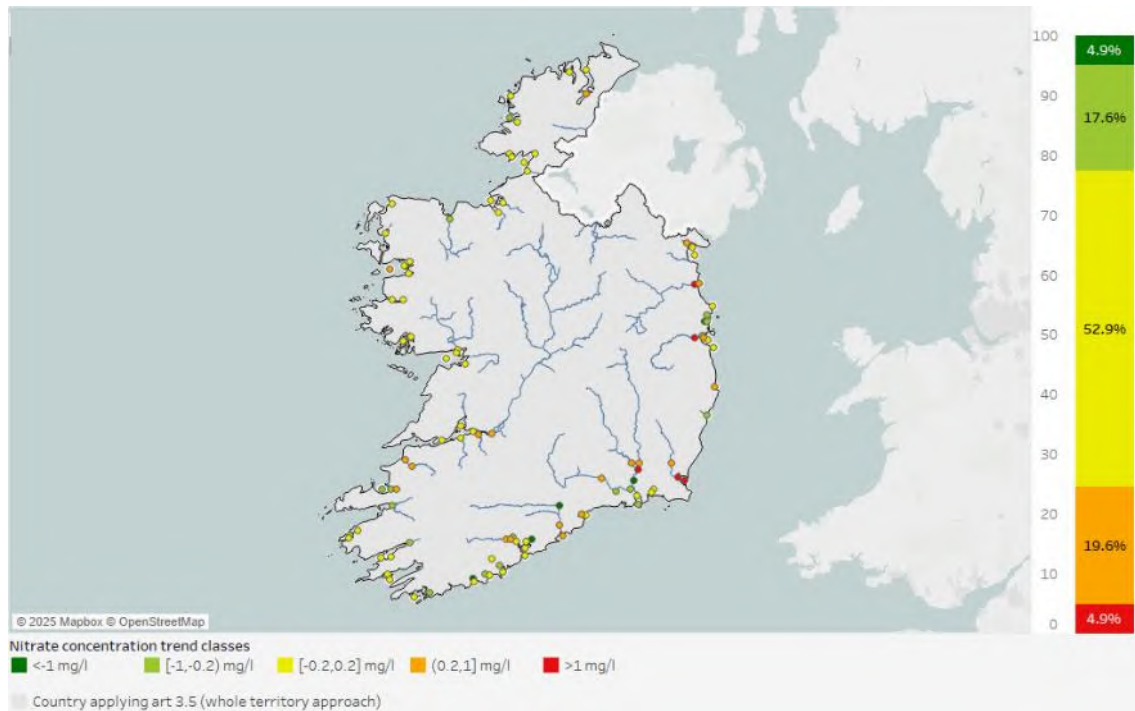
Note: The percentages below 5% are not labelled.

⁽²⁷⁾ Change in average annual mean nitrate concentrations compared to the previous reporting period.

Saline waters

Compared to the last reporting period, there has been a decrease of nitrate concentrations in 22.5% of monitoring points and an increase in 24.5%. For the remaining 52.9% there was no significant change. The increase or decrease can be categorised as weak if it is between 0.2 and 1 mg/l, and as strong if it is above 1 mg/l.

Figure 28 – Map of trends in average annual mean nitrate concentrations in saline waters between periods 2016-2019 and 2020-2023 and share of monitoring points by trend class



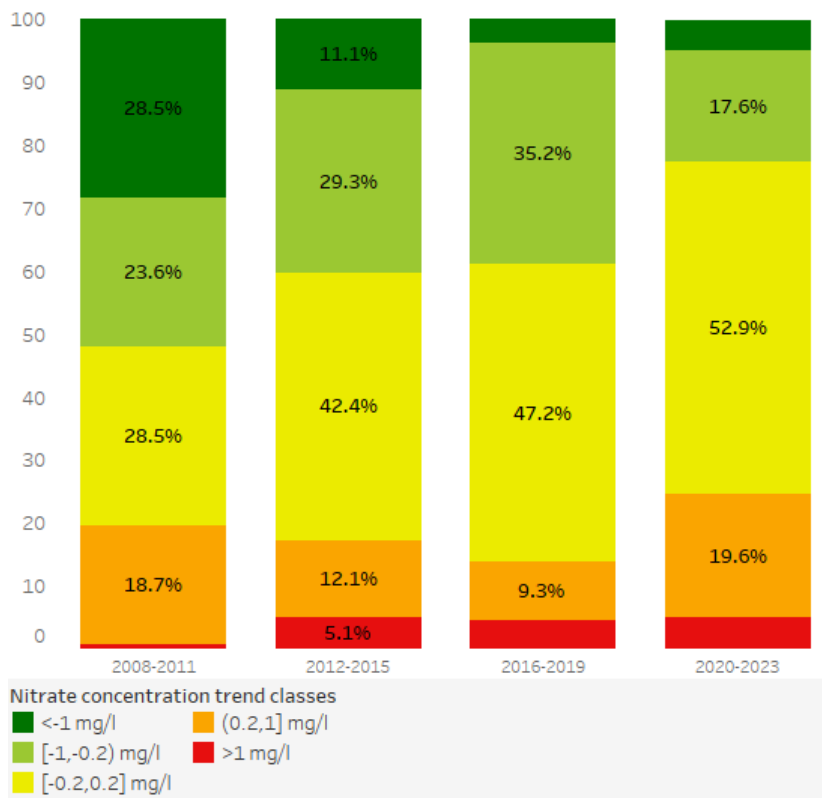
Note: In the map, monitoring points with higher values are plotted on top.

Table 10 – Share of saline water monitoring points by trend class (mg/l) between the periods 2016-2019 and 2020-2023, categorised by station type

	Total Number of Stations	% Total Number of Stations	<-1	[-1,-0.2)	[-0.2,0.2]	(0.2,1]	>1
Transitional water	64	62.7%	7.8%	18.8%	40.6%	26.6%	6.3%
Coastal water	38	37.3%		15.8%	73.7%	7.9%	2.6%
Marine water							
Total	102	100.0%	4.9%	17.6%	52.9%	19.6%	4.9%

Compared to the previous reporting period, there is a lower share of monitoring points with decrease of nitrate concentrations (22.5% in the current reporting period compared to 38.9 in the previous reporting period) and a higher share of monitoring points with increase of nitrate concentrations (24.5% compared to 13.9%). The graph below shows the share of monitoring points with increases (in red and orange), decreases (in green) and without significant change (in yellow) in nitrate concentrations between reporting periods.

Figure 29 – Share of monitoring points in saline waters by classes of nitrate concentrations ⁽²⁸⁾ in the current and previous reporting periods



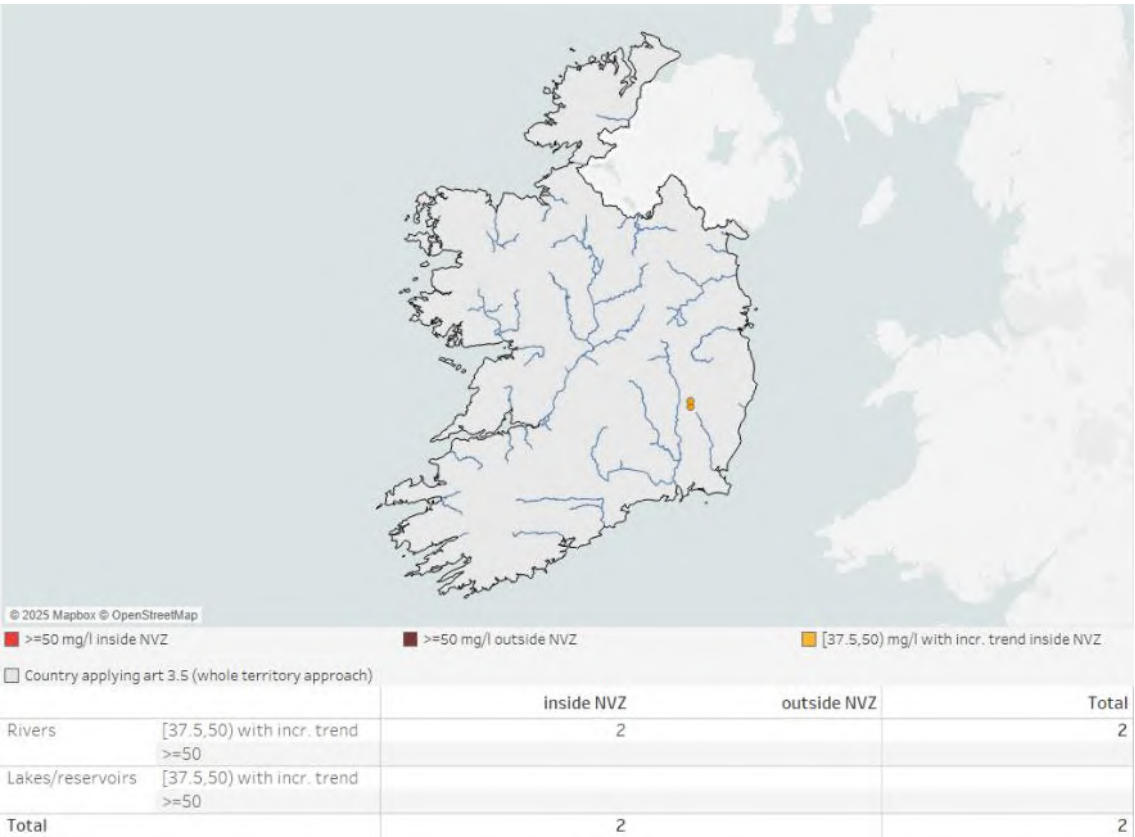
Note: The percentages below 5% are not labelled.

⁽²⁸⁾ Change in average annual mean nitrate concentrations compared to the previous reporting period.

5.4. Nitrate pollution hotspots in surface waters

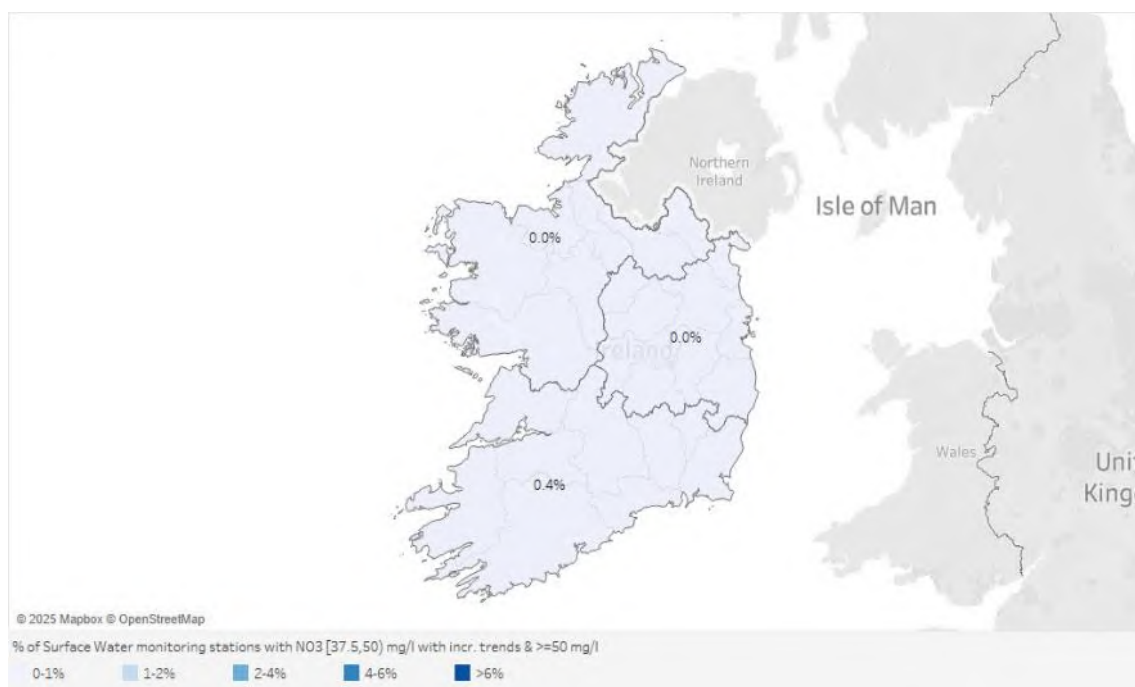
A nitrate pollution hotspot is defined here as a monitoring point where the average annual nitrate concentration is ≥ 50 mg/l or between 37.5 and 49.99 mg/l with an increasing trend. There are 2 surface water nitrate pollution hotspots.

Figure 30 – Surface water nitrate pollution hotspot



The highest share of the hotspots is in the Southern Region (0.4%).

Figure 31 – Share of surface water nitrate pollution hotspots at NUTS2 level



6. EUTROPHICATION OF SURFACE WATERS

6.1. Monitoring of trophic status in surface waters

The monitoring network is managed by the Environmental Protection Agency (EPA). The monitoring network used is the same as that employed for surface water quality assessment, incorporating both operational and surveillance monitoring. Ireland reported that the parameters and limit values used in the eutrophication assessment for the Nitrates Directive align with those of the Water Framework Directive.

During the reporting period 2020-2023 trophic status was reported at 1 408 monitoring points. Among these, 77.1% were in rivers, 15.8% were in lakes or reservoirs, and 7.2% were in saline waters. The station density of monitoring points, where trophic status was assessed equals to 18.7 stations per 1 000 km².

The overall number of freshwater monitoring points increased by 1 055 (418.7%), and number of saline water monitoring points increased by 76 (304.0%) compared to the previous reporting period.

Figure 32 – Evolution in surface water monitoring network (number of points with trophic status reported)

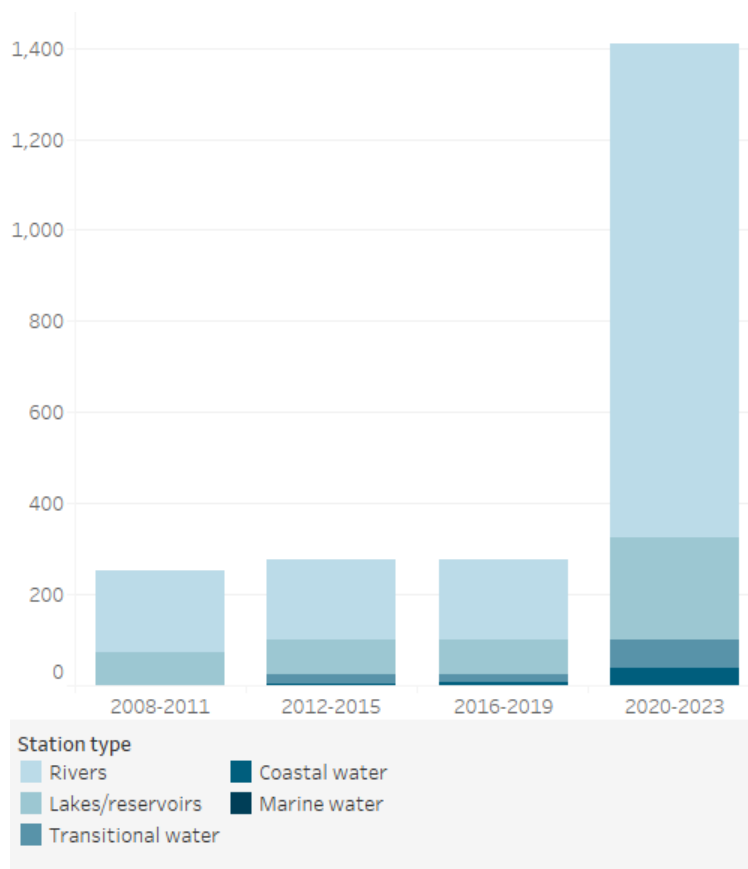


Table 11 – Number of monitoring points reporting trophic status by station type ⁽²⁹⁾

Station type	Stations With Trophic Status			
	2008-2011	2012-2015	2016-2019	2020-2023
Rivers	178	179	178	1,085
Lakes/reservoirs	74	74	74	222
Transitional water		20	18	63
Coastal water		5	7	38
Marine water				
Total	252	278	277	1,408

6.2. Methodology for the assessment of trophic status

The EPA has developed trophic assessment criteria for rivers and lakes. The trophic status of Irish surface water is determined using biological quality elements sensitive to nutrient levels. Specifically, the assessment utilizes the EPA's Quality Rating System (Q-value methodology) along with orthophosphate concentrations to evaluate ecological status. This biotic index comprises five levels of ecological status, defined by distinct assemblages of macroinvertebrates. River phosphorus data play a critical role in the assessment: concentrations below 0.035 mg/l phosphorus, which is the Irish Good Status (EQS), are classified as non-eutrophic. Conversely, concentrations exceeding 0.05 mg/l phosphorus are designated as eutrophic. Biological sampling for these assessments is conducted on a three-yearly rolling basis, ensuring that every river and lake is sampled at least once within each three-year period.

The trophic assessment method for transitional and coastal waters analyses nutrient enrichment—primarily inorganic nitrogen and molybdate reactive phosphorus—and examines the effects of eutrophication, such as algal growth (indicated by chlorophyll levels) and imbalances in organisms or water quality, including oxygen levels. Sampling is conducted four times per year for each water body: once in winter and three times in summer.

Ireland reported that the parameters and limit values used in the eutrophication assessment for the Nitrates Directive align with those of the Water Framework Directive.

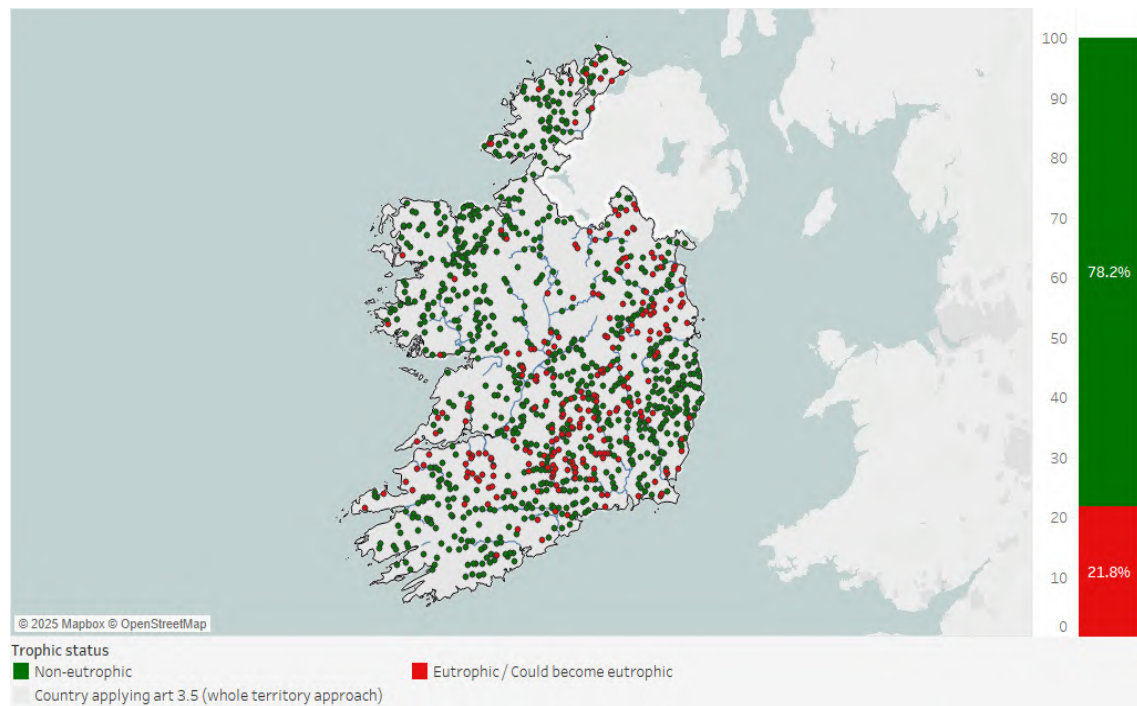
⁽²⁹⁾ Ireland reported that monitoring was discontinued in 7 monitoring points relative to the previous reporting period. Discontinuation may be due to nitrate concentrations below 25 mg/l, change in station code or type, or other specific reasons.

6.3. Eutrophication of surface waters

Rivers

21.8% of monitoring points in rivers were eutrophic/could become eutrophic. The figure below shows the shares in respective classes in a graph and spatial distribution in the map.

Figure 33 – Map of trophic status in rivers and share of monitoring points by trophic class in the reporting period 2020-2023

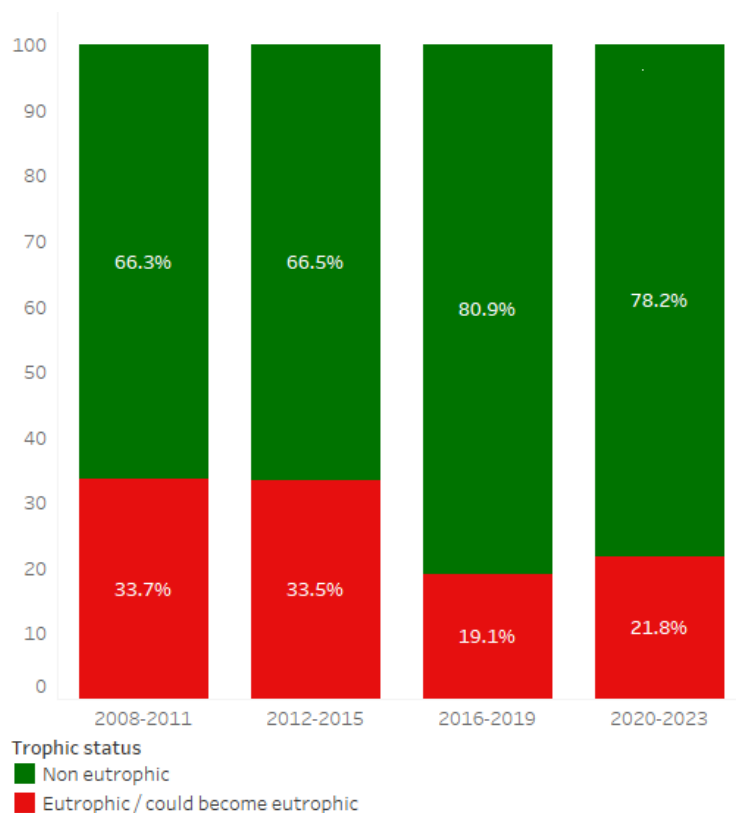


Note: In the map, eutrophic/could become eutrophic monitoring points are plotted on top.

Compared to the previous reporting period, the share of eutrophic/could become eutrophic monitoring points increased from 19.1% to 21.8%. However, direct comparison between the previous and current reporting period is not possible due to a significant increase in monitoring points between these periods.

The graph below presents the shares of monitoring points according to their trophic status in the last four reporting periods. However, there were changes in methodology and number of monitoring points between reporting periods. ⁽³⁰⁾

Figure 34 – Share of monitoring points in rivers by class of trophic status in the current and previous reporting periods

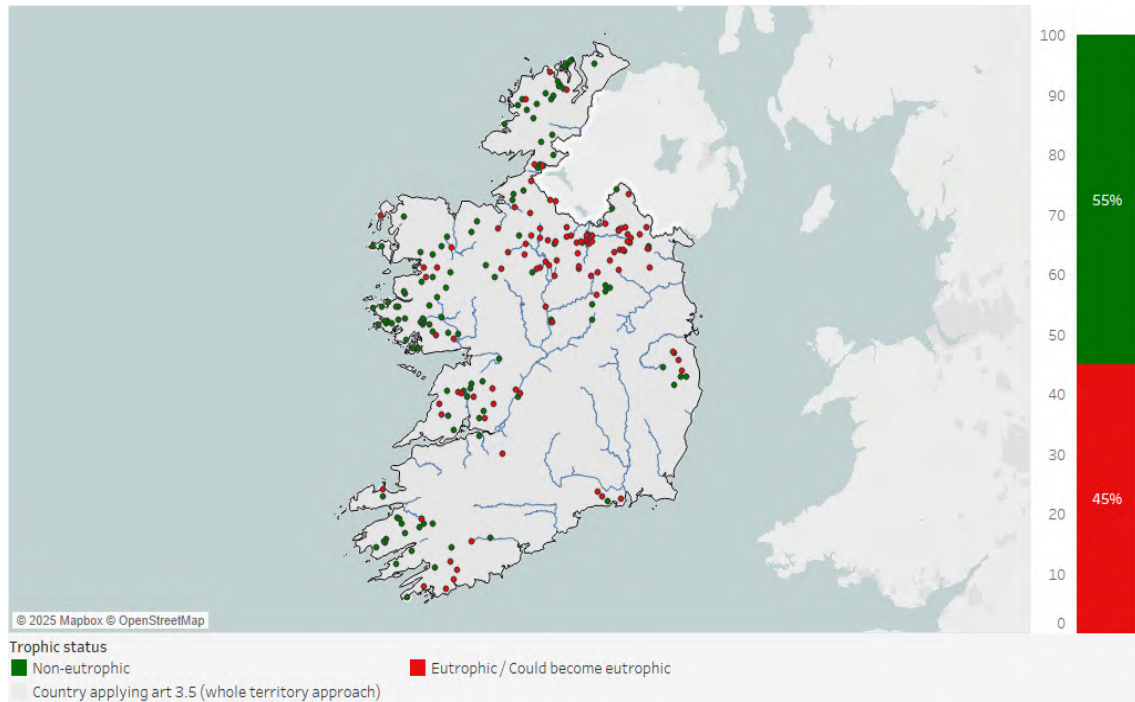


⁽³⁰⁾ Updated and comparable figures are available in the national report.

Lakes and water reservoirs

45.0% of monitoring points in lakes/water reservoirs were eutrophic/could become eutrophic. The figure below shows the shares in respective classes in a graph and spatial distribution in the map.

Figure 35 – Map of trophic status in lakes/water reservoirs and share of monitoring points by trophic class in the reporting period 2020-2023



Note: In the map, eutrophic/could become eutrophic monitoring points are plotted on top.

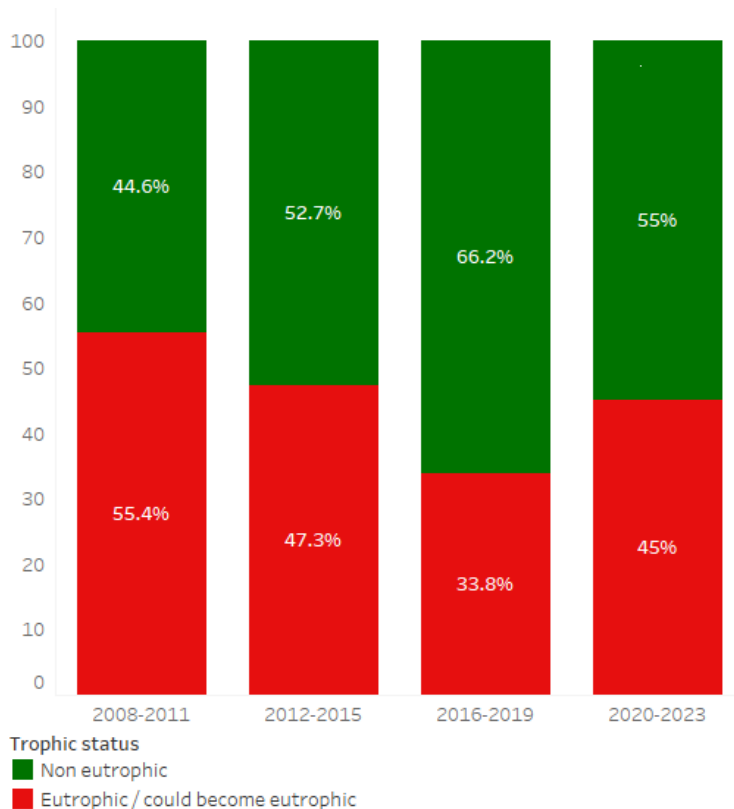
Table 12 – Share of freshwater monitoring points by class of trophic status, categorised by station type

Station type	Number of Stations	% of Total	Eutrophic/could become	
			Non-eutrophic	eutrophic
Rivers	1,085	83.0%	78.2%	21.8%
Lakes/reservoirs	222	17.0%	55.0%	45.0%
Total	1,307	100.0%	74.2%	25.8%

Compared to the previous reporting period, the share of eutrophic/could become eutrophic monitoring points increased from 33.8% to 45.0%. However, direct comparison between the previous and current reporting period is not possible due to a significant increase in monitoring points between these periods.

The graph below presents the shares of monitoring points according to their trophic status in the last four reporting periods. However, there were changes in methodology and number of monitoring points between reporting periods. ⁽³¹⁾

Figure 36 – Share of monitoring points in lakes/water reservoirs by class of trophic status in the current and previous reporting periods

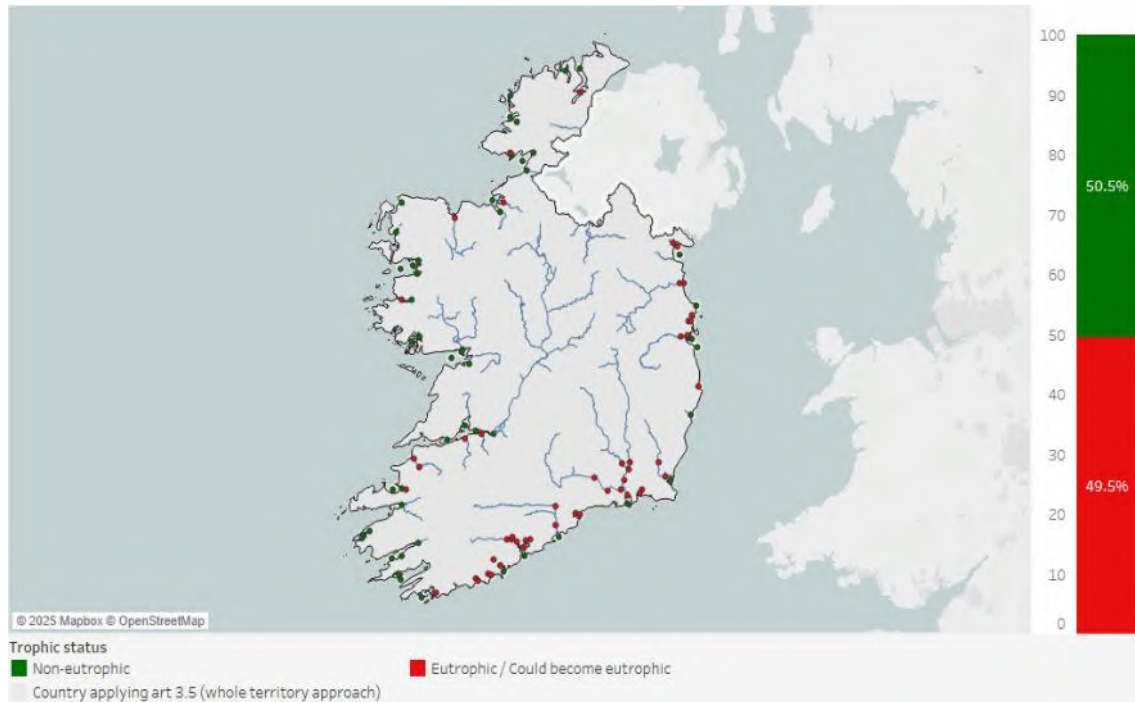


⁽³¹⁾ Updated and comparable figures are available in the national report.

Saline waters

49.5% of saline water monitoring points were eutrophic/could become eutrophic. The figure below shows the shares in respective classes in a graph and spatial distribution in the map.

Figure 37 – Map of trophic status in saline waters and share of monitoring points by trophic class in the reporting period 2020-2023



Note: In the map, eutrophic/could become eutrophic monitoring points are plotted on top.

It is relevant to look separately at different types of saline waters (transitional, coastal and marine). In Ireland, 65.1% of transitional water and 23.7% of coastal water monitoring points were eutrophic/could become eutrophic, as shown in the table below.

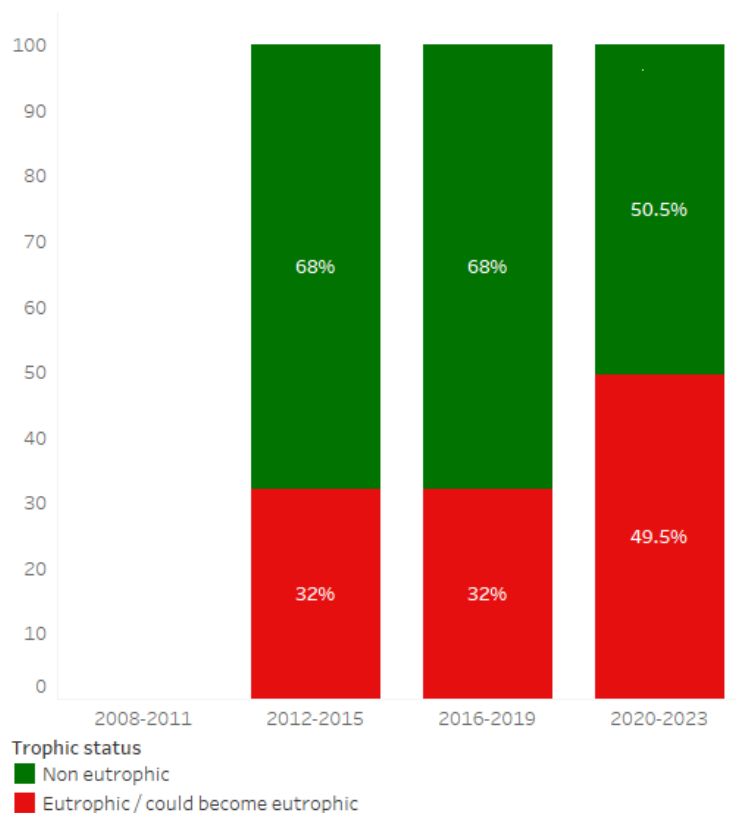
Table 13 – Share of saline water monitoring points by class of trophic status, categorised by station type

Station type	Number of Stations	% of Total	Eutrophic/could become eutrophic	
			Non-eutrophic	
Transitional water	63	62.4%	34.9%	65.1%
Coastal water	38	37.6%	76.3%	23.7%
Marine water				
Total	101	100.0%	50.5%	49.5%

Compared to the previous reporting period, the share of eutrophic/could become eutrophic monitoring points in saline waters increased from 32.5% to 49.5%. However, direct comparison between the previous and current reporting period is not possible due to a significant increase in monitoring points between these periods.

The graph below presents the shares of monitoring points according to their trophic status in the last four reporting periods. However, there were changes in methodology and number of monitoring points between reporting periods. ⁽³²⁾

Figure 38 – Share of monitoring points in saline waters by class of trophic status in the current and previous reporting periods

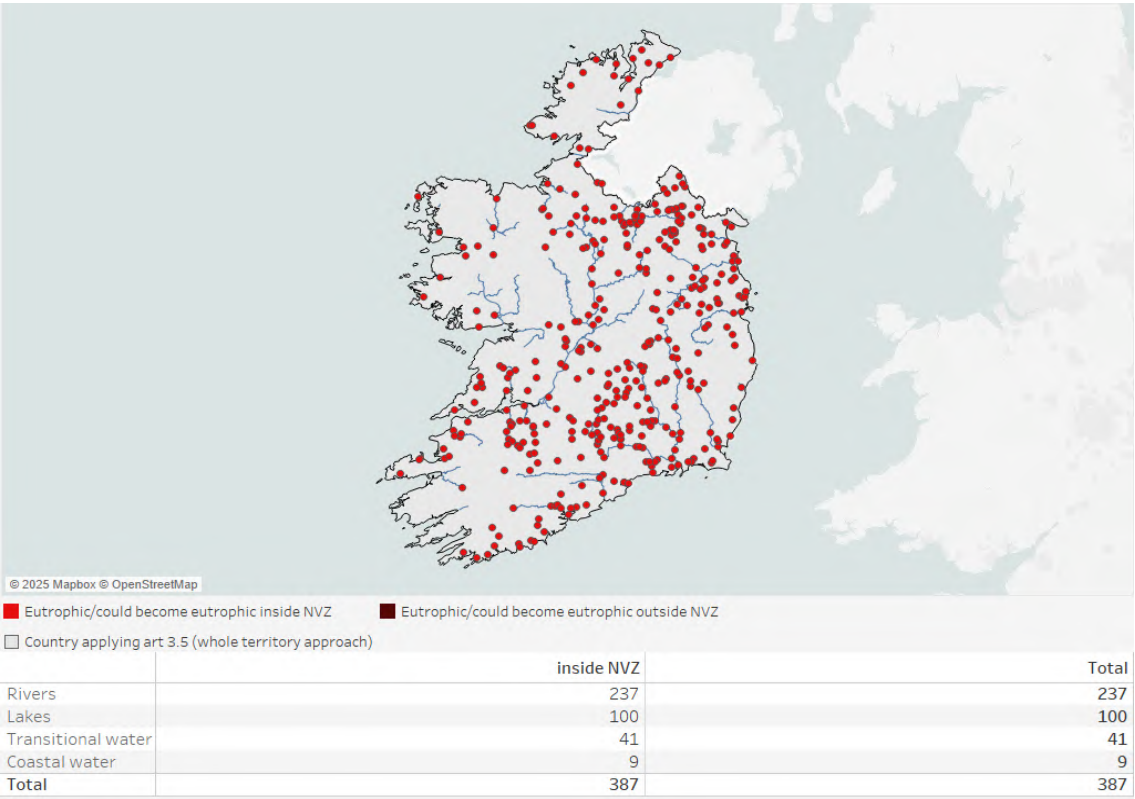


⁽³²⁾ Updated and comparable figures are available in the national report.

6.4. Eutrophication hotspots in surface waters

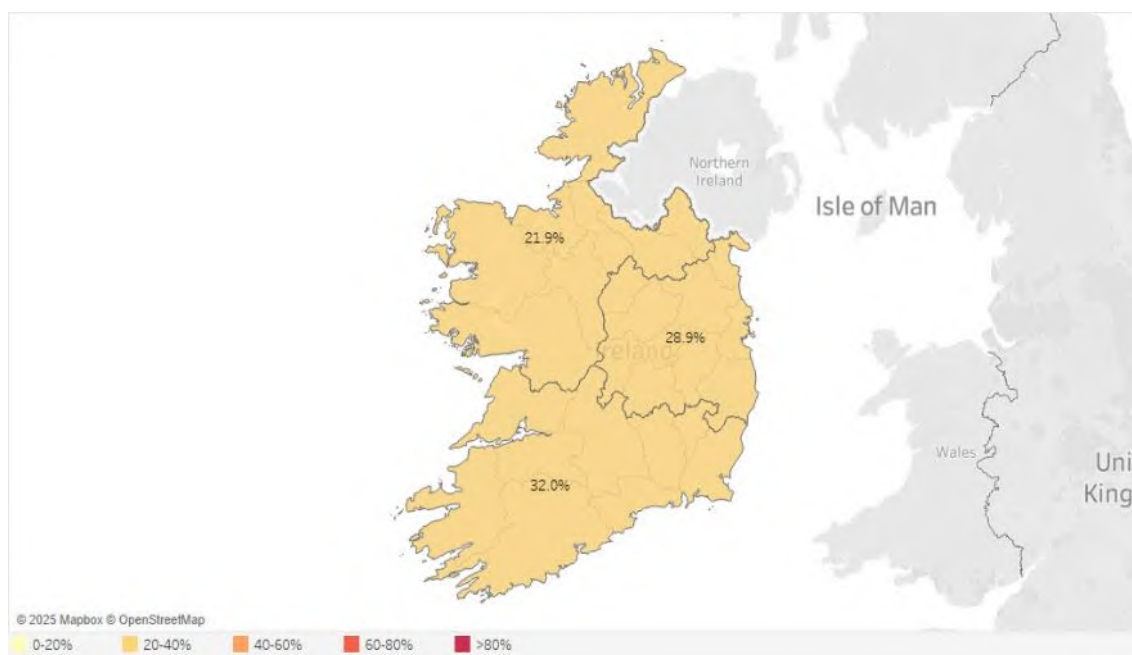
A eutrophication hotspot in surface waters is defined here as a monitoring point with trophic status evaluated as “eutrophic” or “could become eutrophic”. Overall, there are 387 surface water monitoring points which were reported eutrophic/could become eutrophic.

Figure 39 – Eutrophic/could become eutrophic monitoring points



The highest share of the hotspots is in Southern Region (32.0%) and Eastern and Midland Region (28.9%).

Figure 40 – Share of eutrophic/could become eutrophic monitoring points at NUTS2 level



7. NITRATES ACTION PROGRAMME

The Nitrates Directive mandates the establishment of a code of good agricultural practice that shall be implemented by farmers on a voluntary basis and promoted through training and information for farmers. Action programmes with mandatory requirements for farms should be established and enforced in NVZ or across the entire territory with mandatory measures applicable to all farms in those areas. These requirements primarily focus on implementing good practices for the handling of fertilisers and manure on farms to minimise the risk of nutrient leaching and run-off from fields. Annex II and III of the directive set the types of measures to be included. The directive leaves wide discretion to Member States to design the measures in line with local circumstances. Compliance with the action programme measures is monitored by public authorities.

The action programmes contain measures concerning fertiliser application (periods when land application of different types of fertilisers is prohibited, land application on steeply sloping ground, prohibition of land application on water-saturated, flooded, frozen or snow-covered ground, the conditions for land application of fertiliser near watercourses, balanced fertilisation and the amount of livestock manure that can be applied to the land), and the capacity of storage vessels for livestock manure. They may also include additional measures in relation to fertilizer planning and record keeping, land use management, including the use of crop rotation systems, minimum vegetation cover during sensitive periods, irrigation systems and other relevant measures complementing the nitrates action programme.

7.1. Measures in the action programme and code of good agricultural practices

The code of good agricultural practice was developed in 1996. In 2003, Ireland adopted a whole territory approach in the context of the Nitrates Directive. As a result, the action programme applies across the entire national territory.

In 2005, a nitrates action programme was finalised, and elements of this first action programme were given statutory effect by the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2006. Since 2006, there have been five action programmes implemented in Ireland. Ireland's fifth nitrates action programme (2022-2025) came into effect in 2022 ([S.I. No. 113/2022](#)). Four amendments were made to this regulation, in 2022, 2023 and 2025: [S.I. No 393/2022](#), [S.I. No. 716/2022](#), [S.I. No. 62/2023](#) and [S.I. No. 42/2025](#). Ireland's fifth nitrates action programme is given effect by the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (as amended). The same regulation includes the code of good agricultural practices.

Action programme amendments made during the 2020-2023 reporting period included: an extension of the fertilizer prohibition period, an increase in storage capacity for soiled water and a reduction of the maximal chemical nitrogen allowance for grassland. Additionally, buffer strip regulations were strengthened and requirements on green cover after ploughing were reinforced. Lastly, there was an increase in the number of farmers

required to complete soil sampling for analysis of phosphorus and a requirement for organic matter determination on all soils with organic matter content greater than 20%. New measures include a prohibited period for the spreading of soiled water for milk producers, the introduction of three new excretion rates for dairy cows and requirements for more farmers to use Low Emission Slurry Spreading equipment. New requirements were defined as well for shallow cultivation or sowing of a crop after harvest and a new measure on fencing the top of the riverbank or water's edge where livestock have access to watercourses.

A consolidated overview of the action programme currently in force is provided in a separate document. ⁽³³⁾

Derogations

Paragraph 2 of Annex III to the Nitrates Directive establishes that Member States intending to apply more livestock manure than 170 kg N/ha are to fix amounts so as not to prejudice the achievement of the objectives specified of the Directive. These amounts are to be justified based on objective criteria. Ireland was granted a derogation for the first time in 2007, which was renewed in 2011, 2014, 2018, 2022 and 2025. The derogation granted in 2022 by the Decision (EU) 2022/6962 allowed Ireland the application of livestock manure up to a limit of 250 kg N/ha per year, under certain conditions, on farms with at least 80 % grassland, in the context of the Irish Action Programme. This decision had a requirement for a two-year review of water quality with some areas reducing to a maximum limit for 220 kg N/ha from 1st January 2024.

7.2. Controls

The Department of Agriculture, Food and the Marine (DAFM) carries out agricultural inspections under the CAP Strategic Plan and Nitrates Derogation. Of 130,216 farmers concerned, the percentage of farms visited each year during the reporting period 2020-2023 was: 1.0% from DAFM only, 1.0% from DAFM on behalf of a competent authority (e.g., a local authority), and 5% of farm applicants to a derogation, which amounted to 10.0% of all farms throughout the fifth NAP (DAFM).

During the 2020-2023 reporting period, inspections for compliance with the Nitrates Derogation terms and conditions resulted in compliance rates of 93.0% in 2020, 87.5% in 2021, and 88.0% in 2022. Reasons provided by farmers for non-compliance included: a lack of up-to-date knowledge and understanding of the new measures and their purpose, incorrect advice from advisors, financial constraints limiting farm improvements, and a lack of clarity on the future of the nitrates derogation post-2025.

In addition to the inspections undertaken by DAFM, agricultural inspections are also undertaken by local authorities (the fifth NAP includes details on how these inspections take place) ⁽³⁴⁾. In 2022 and 2023, local authorities inspected 1,041 and 1,137 farms respectively, under the European Union (Good Agricultural Practice for Protection of Waters) Regulations.

⁽³³⁾ https://environment.ec.europa.eu/publications/summaries-national-nitrates-action-programmes_en

⁽³⁴⁾ <https://www.epa.ie/our-services/compliance--enforcement/support-and-supervision-of-local-authorities/national-agricultural-inspection-programme-naip/>

The inspection programmes are supported by free advice provided to farmers through the Agricultural Sustainability Support and Advisory Programme (ASSAP) ⁽³⁵⁾, as well as a European Innovation Partnership called Farming for Water, which implements non-regulatory, targeted additional measures at a farm and field level ⁽³⁶⁾.

³⁵ [ASSAP - Agricultural Sustainability Support and Advisory Programme - Teagasc | Agriculture and Food Development Authority](#)

³⁶ [Farming for Water European Innovation Partnership - Farming for Water EIP](#)

8. WATER QUALITY OUTLOOK

No statistical model was applied to forecast the recovery of polluted water bodies in Ireland. While some assumptions were made based on recent trends, these assumptions only referred to the previous reporting period from 2016 to 2019 for groundwater, with no consideration of other reference periods.

For surface water bodies (rivers & lakes/water reservoirs), trends were examined over an extended period, covering the reporting periods from 2012 to 2023.



Publications Office
of the European Union