

# Northern Ireland Environmental Statistics Report

*User Information Guide*

*May 2026*



## Introduction

This document provides data description and quality assessment for indicators included in the Northern Ireland environmental statistics report. It will continue to be reviewed and updated annually as required.

As this is an environmental publication, no hard copies have been published. This document may be made available in alternative formats, please contact us to discuss your requirements.

The latest version of the NI environmental statistics report is available on the [DAERA website](#).

## Data Quality Assessment

Indicators selected for inclusion and subsequently published in this report meet the following criteria:

- Regular collection with timely release of the data;
- Use of sound statistical methods, and
- Validated/quality assured by data provider

Data classed as 'very good' in terms of quality meet all of the criteria listed above and are known to be complete.

Data classed as 'good' in terms of quality meet all of the criteria listed above, but there may be minor issues associated with the data or known gaps in coverage which will be identified for users.

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# Chapter 1: Public Attitudes and Access to Nature

## 1.1 Level of concern for the environment

## 1.2 Environmental problems considered most important

## 1.3 Actions taken that have a positive impact on the environment

## 1.4 Amount paid for the last carrier bag bought

## 1.5 Considered the greatest threat to biodiversity

## 1.6 Considered important in helping to tackle climate change

### *Description of data and methodology (including strengths and limitations)*

Data provided relate to the level of public concern for the environment and what actions and attitudes the public take concerning environmental issues. These data are sourced from the Continuous Household Survey (Tables 1.1 to 1.6) conducted by the Central Survey Unit (CSU) of Northern Ireland Statistics & Research Agency. Further information on this survey can be found at: <https://www.nisra.gov.uk/statistics/central-survey-unit/continuous-household-survey>

The annual Continuous Household Survey (CHS) is designed and conducted by the Central Survey Unit of the Northern Ireland Statistics and Research Agency (NISRA). It is based on a sample of the general population resident in private households and has been running since 1983. The CHS is usually based on a probability sample of 9,000 addresses, for which a new sample is selected annually. This type of sample design is used so that estimates about the entire population can be made. The size of the sample is also sufficiently large so that the levels of precision around these estimates meet the standards required by customers.

Due to changes in the data collection methodology in response to the Covid-19 pandemic and a significant change in the sample and number of responses, caution should be used when comparing data from 2020/21 to other years. A revised set of environmental module questions suitable for telephone interviewing were introduced to the CHS from November 2020.

The interview schedule consists of core items that are included each year, modules that recur on a regular cycle and ad hoc modules. The interviews are usually spread equally over a 12 month period (from April to the following March) to minimise the effect of seasonal influences on the data.

In any data from a survey there is the possibility of non-response bias. Non-response bias arises if the characteristics of non-respondents differ significantly from those of respondents in such a way that they are reflected in the responses given in the survey. Accurate estimates of non-response bias can only be obtained by comparing characteristics of the achieved sample with the distribution of the same characteristics in the population at the time of sampling. Such comparisons are usually made to the latest Census or Mid-Year Populations Estimates. Due to a lower response rate in 2020/21 there was potential for a higher degree of non-response bias in the results for that year. Also effects of seasonal influences may arise in the results due to the restricted fieldwork for the environmental module in 2020/21.

Because CHS data are based on a sample rather than the whole population it is subject to sampling error. Sampling error is the difference between the estimate derived from a sample and the 'true' value that would result if a census of the whole population were taken under the same conditions. Users should be aware of this when interpreting the data.

If the survey observations are collected from a random sample (like the CHS sample design), statistical theory allows us to estimate the likely size of the sampling error for any percentage estimate in a survey. The size of the sampling error is usually expressed in terms of a statistical measure called the standard error. The standard error (SE) of a survey estimate is calculated using the following formula:

$$SE = \sqrt{p(100-p)/n}$$

Where:

p = the proportion (population variance)

n = achieved sample size

Another commonly used measure of sampling error is the confidence interval, which is calculated using the standard error. Confidence intervals usually indicate the range of values around a survey estimate within which we are 95 per cent sure that the true value for the whole population lies. Confidence intervals are more intuitive to use than standard errors and will usually be familiar to users who often use them when thinking about the level of precision around survey estimates. At the 95 per cent confidence level, the range of values equates to approximately two standard errors (actually 1.96) plus or minus from the survey estimate.

### *Use of data*

The surveys are designed to provide a regular source of information on a wide range of social and economic issues relevant to Northern Ireland. They can be used to gauge public awareness, opinion and attitude towards environmental issues over time.

### *Data Quality Assessment*

Good - These data are currently classified as National Statistics and are produced from government surveys which are of high quality. In addition, variance checks are employed as an integral part of the publication production process with any large discrepancies between current and previous year queried with the data provider. However in 2020/21, due to the covid-19 pandemic and an associated reduction in response rate/change in survey methodology caution has to be exercised when comparing to other years and interpreting the results.

### *Data links*

Table and charts using finalised CHS data including confidence intervals.

[Environment and Heating Statistics from Continuous Household Survey | Department of Agriculture, Environment and Rural Affairs \(daera-ni.gov.uk\)](#)

Disaggregation by Local Government District published on NISRA Data Portal.

[Data \(nisra.gov.uk\)](#)

## Access to Nature

### 1.7 Access to Nature

#### *Description of data and methodology (including strengths and limitations)*

The GreenspaceNI Map [GreenspaceNI Map | Greenspaces & Trails in Northern Ireland](#) has been developed by harmonising, combining and enhancing data from owners and managers of publicly accessible natural space which includes greenspace and off-road trails using data from providers including: Ordnance Survey of NI; Department of Agriculture, Environment and Rural Affairs; Outscape; all 11 Local Authorities; Department for Communities; Department for Infrastructure; Northern Ireland Environment Agency; Forest Service NI; NI Water; Northern Ireland Housing Executive; National Trust; Walk, Wheel, Cycle Trust; Woodland Trust; Ulster Wildlife, and the RSPB. In the 2026 annual update round, data updates were provided by 18 of the 23 data supply organisations (this includes new data and as well as confirmations of no change from the 2025 update round).

Data has been provided in a range of different formats: polygons, spreadsheets and points were provided each with varying levels of accuracy and attributes. Each has been refined and verified to create a comprehensive layer of greenspaces and off-road trails.

Greenspaces included are open and accessible to the public and for each, a set of criteria must be met:

- The area must be at least 0.5 hectares (a higher limit of 2 hectares has been set for analysis).
- It must be an area of natural greenspace (some polygons may include areas of non-natural land).
- It must have public access (in some cases there may be restricted access).

Off-road trails must be open and accessible to the public. A trail is included in the GreenspaceNI Map if:

- It is off-road (or described as off-road by the source).
- It has public access.

A full description of the categories and types of greenspaces and off-road trails included in the GreenspaceNI Map can be found on the [Outscape website](#).

Since April 2025, 26 additional off-road trails and 15 greenspace records were provided by data suppliers. Of these, 37 were pre-existing (i.e. in existence prior to the 2023 baseline but not previously captured within the GreenspaceNI Map), therefore they have been added to the 2023 baseline. The 4 newly constructed off-road trails are included in the 2026 statistics.

## ***Proximity analysis methodology***

The map is updated annually and results from the proximity analysis feed directly into monitoring key government targets. The Programme for Government 2024–2027 includes an Outdoor Recreation Indicator within its [Wellbeing Framework](#), designed to show whether access to nature is improving or declining. This measure is underpinned by this Accessible Natural Space Indicator, which uses the data monitor progress against the target set in the [Environmental Improvement Plan](#):

**Annual increase in % of households that have publicly accessible quality natural space >2ha within 400m and at least one site >20ha in size within 2km.**

The proximity analysis for the Accessible Natural Space Indicator follows a two-stage approach.

The first stage of the analysis involved mapping accessible greenspaces and off-road trails using a 400-metre walking distance threshold, applied through a network-based proximity approach.

- Access points associated with greenspaces larger than 2 hectares were selected as origins for network analysis.
- The OSNI transport network (roads dataset) was used to create a pedestrian-accessible service area around each access point.
- To improve accuracy, access point data was enhanced:
  - For porous sites, points were automatically generated at 100m intervals around polygon boundaries.
  - Where trails intersected with greenspaces and a comprehensive trail network existed, access points were placed at those intersections.
  - Where no access points could be derived from the above methods, they were manually created using a combination of base maps, street view imagery, and supporting datasets. In some cases, this was supplemented with ground truthing.
- Off-road trails were processed separately using a shape-preserving 400m buffer to represent accessible areas.
- A new combined polygon layer was then created, incorporating the network-based service areas from greenspaces and the buffered trail corridors.

The second stage determines how many residential households fall within these service areas using the LPS Pointer Address Dataset. In 2025, the methodology was refined to exclude non-residential addresses (e.g., containing commercial, industrial, and derelict properties). These property types are now excluded from the analysis, and only residential addresses are included in the proximity analysis. This change in

approach was also reflected in the revised 2023 and 2024 statistics for future comparison.

The enhanced filtering criteria is:

- "Building Status" must not be "demolished" or "derelict".
- "Classification" must be one of the following: "DO\_Apart", "DO\_Detached", "DO\_Semi", or "DO\_Terrace".

In apartment blocks, each unit (e.g., Flat 1, Flat 2) is recorded separately in the Pointer data and counted as an individual household. This approach improves accuracy and reflects actual household-level access.

The refined residential dataset was overlaid with the combined greenspace service areas/off-road trail buffer polygons layer and the households located within 400 metres of a greenspace or off-road trail selected.

### Revision to urban and rural analysis

From 2025 the urban and rural definitions were aligned with the [NISRA Rural-Urban Classification \(2015\)](#). This defines urban areas as settlements with a population of 5,000 or more – and rural areas are defined as settlements of less than 5,000, or open countryside. The 2023 and 2024 data was retrospectively analysed with this updated methodology.

|       | Settlement Type                    | Population size | Band | Count |
|-------|------------------------------------|-----------------|------|-------|
| Urban | Belfast                            |                 | A    | 1     |
|       | Derry                              |                 | B    | 1     |
|       | Large Town                         | 18,000+         | C    | 14    |
|       | Medium Town                        | 10,000 – 17,999 | D    | 10    |
|       | Small Town                         | 5,000 – 9,999   | E    | 17    |
| Rural | Intermediate Settlement            | 2,500 – 4,999   | F    | 24    |
|       | Village                            | 1,000 – 2,499   | G    | 69    |
|       | Open Countryside and Small Village | <1,000          | H    | -     |

### Use of data

The GreenspaceNI Map is managed by Outscape. The Map Viewer and Dashboard are publicly available. As an insight tool it is a resource for developing information about where public have access to natural space, for gap analysis, spatial planning, and resource targeting. Some examples of potential use of this data are listed below:

- Analysis of geographical areas to target resources to the areas of greatest need for the development of additional access to nature.

- The dataset can be used alongside asset location data (GPs, pharmacies, schools) and indicator data (population and deprivation), to help inform and support the strategic planning of services and physical assets across the health economy.
- It can be used by innovators and researchers in a range of apps, products, and innovations - providing the foundation to help create more nature rich and healthier communities.

### ***Data quality assessment***

Rated as 'Very Good' as is comprehensive, harmonised, and annually updated with new data provided by the data suppliers.

### ***Data links***

The following links may assist with any further information on the accessible greenspace and outdoor recreation metrics:

- GreenspaceNI Map <https://www.out-scape.com/news/greenspaceni-map/>
- SpatialNI Map Viewer <https://www.spatialni.gov.uk/gallery.html>
- People in the Outdoors Monitor for Northern Ireland (POMNI): <https://www.out-scape.com/pomni/>
- Outdoor trails and venues in Northern Ireland <https://www.outmoreni.com>

## Chapter 2: Climate Change

### Greenhouse Gases

#### 2.1 Total greenhouse gas emissions in Northern Ireland

##### *Description of data and methodology (including strengths and limitations)*

This statistical bulletin is updated annually and outlines key Northern Ireland figures from the Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland. The estimates are produced by Ricardo Energy & Environment and Aether on behalf of the Department for Business, Energy and Industrial Strategy, the Scottish Government, the Welsh Assembly Government and the Northern Ireland Department of Agriculture, Environment and Rural Affairs.

The Northern Ireland Greenhouse Gas (GHG) Inventory contains data detailing greenhouse gas emissions in Northern Ireland from 1990 to the latest reporting year. It is a subset of the UK GHG Inventory, which is produced to fulfil both European Union Monitoring Mechanism (EUMM) and United Nations Framework Convention on Climate Change (UNFCCC) reporting requirements the UK has under the Kyoto Protocol. It is compiled in line with international guidance from the International Panel on Climate Change (IPCC).

The objective of the UNFCCC is to stabilise GHG emissions and reduce the anthropogenic impact on the climate. To achieve this, the international community requires accurate information on GHG emissions trends to monitor progress towards targets.

Emissions are estimated by multiplying activity data by an emissions factor. Activity data can include, for example, the amount of fuel used in combustion at a power station. An emission factor is the emissions per unit of activity, reflecting the carbon content of the fuel. For some sources (e.g. the transport sector) calculating emissions is more complicated and therefore, a model is used.

Where possible, GHG inventories for constituent countries use the same methodology to calculate emissions as is used for the UK inventory.

However, for many emission sources the data available for constituent country emissions are less detailed than for the UK as a whole, and for some sources country-level data are not available. More information on data sources and methodology is available in the [UK Spatial Emissions Methodology Report](#). The GHG Inventories measure anthropogenic emissions, and so are strongly linked to the population and economic activity of a region. Emissions in a particular year can also be heavily influenced by the weather.

The statistics on greenhouse gas emissions follow international guidelines on quality and methodology for National Greenhouse Gas Inventories from the Intergovernmental Panel on Climate Change. These guidelines focus on the quality components of accuracy, completeness and transparency. The UNFCCC carries out regular reviews of

the national inventories. The most recent [Inventory review report](#) found that the UK inventory was generally in line with IPCC Guidelines.

### *Use of data*

The GHG inventories for England, Scotland, Wales and Northern Ireland help support evidence-based development of climate change policy to enable the tracking of progress towards achieving specific GHG emission reduction targets such as:

- The UK Climate Change Act which commits the UK to a 100 per cent reduction in emissions by 2050 from baseline levels.
- The NI Climate Change Act which commits NI to net zero emissions but does not require a reduction of more than 46% in methane emissions in 2050 compared to baseline levels.

The implementation of new UK and country-specific legislation means that the requirements of the GHG inventories for constituent countries are evolving, with a much greater focus on (i) sector-specific data accuracy, and (ii) sensitivity to policy impacts.

### *Data quality assessment*

Very Good - The estimates produced are of high quality and each year the greenhouse gas inventory is extended and updated with the whole historical data series revised to incorporate methodological improvements and new data. This takes into account revisions to the datasets which have been used in its compilation. However, there is always going to be some level of uncertainty in the estimates of greenhouse gas emissions, and this uncertainty changes from year-to-year as the methodology and input data of the inventories changes. These uncertainties are presented as a close approximation of the 95% confidence intervals and such figures are contained within the [Devolved Administration Greenhouse Gas reports](#). The major limitation of the data applies across the UK, but to Northern Ireland in particular, and concerns the uncertainty around the statistics. Uncertainty estimates for Northern Ireland emissions are available for the base year, the latest year (2023) and for the percentage change between the two years. For the base year, the 95% confidence interval is  $\pm 9\%$ , and for 2023 it is  $\pm 6\%$ . For the percentage reduction between the base year and 2023, the 95% confidence interval ranges from 20% to 37%. There remains greater uncertainty around emissions in Northern Ireland compared to other parts of the United Kingdom due to the relative importance of methane and nitrous oxide emissions in the agriculture sector. Emissions of these gases are more difficult to estimate than carbon dioxide, and the agriculture sector makes up a larger share of Northern Ireland's emissions than in other parts of the UK. In addition, the fuel activity data for Northern Ireland is more uncertain than other devolved administrations, due to the greater use of solid fuels and oils.

### *Data links*

More detail is available in the latest [NI Greenhouse Gas inventory statistical bulletin](#).

To complement the Greenhouse Gas inventory and greenhouse gas projections publications, NI Carbon Intensity Indicators have been developed. The [NI Carbon Intensity Indicators publication](#) aims to help Government track the effectiveness of carbon reduction policies.

More information and publications relating to climate change are available on the [Climate change landing page](#).

## Weather

### 2.2 Mean annual temperature

### 2.3 Number of warm and frost days per year

### 2.4 Annual rainfall

*Description of data and methodology (including strengths and limitations).*

These data tables provide details of temperature and rainfall changes from 1844 and 1853 respectively, to present. These meteorological data are sourced from Armagh Observatory, which has the longest series of meteorological records from a single site in the UK or Ireland.

The raw temperature data have been standardised and corrected for various instrumental and exposure effects. The complete daily rainfall series from 1836 to present has been standardised and is subject to data verification and correction.

#### *Use of data*

This databank is operated by Armagh Observatory as a resource for education, scientific research and the general public.

#### *Data quality assessment*

Very Good – These data are produced from daily readings of air temperature and rainfall.

#### *Data links*

Further details can be found at: <http://climate.armagh.ac.uk/main.html>

## Chapter 3: Air

### Nitrogen Dioxide and Particulate Matter

#### 3.1 Annual mean concentration of nitrogen dioxide.

#### 3.2 Annual mean concentration of particulate matter (PM<sub>10</sub>).

#### 3.3 Annual mean concentration of particulate matter (PM<sub>2.5</sub>).

#### *Description of data and methodology (including strengths and limitations)*

The data provides information on air quality including ambient concentrations of nitrogen dioxide and particulate matter. The ambient air quality data was downloaded from <http://www.airqualityni.co.uk>, a website which contains the monitored air quality data from the monitoring sites in Northern Ireland.

The data presented in this report for each air pollutant is generally an average of values for selected air pollution monitors (monitors are selected by type – e.g. ‘traffic/roadside’, ‘urban’, and ‘rural’). These averages are useful for indicating trends across specific types of sites in the NI monitoring network; however, they can mask problems / exceedances at individual sites. Although the average value for a pollutant may be below a regulatory threshold, this does not mean that no sites in NI are experiencing exceedances.

#### *Use of data*

The data is collected for the purpose of identifying elevated levels of pollutants which could pose a risk to human health, assessing compliance with limit values set out in the UK Air Quality Strategy and The Air Quality Standards Regulations (Northern Ireland) 2010, and identifying long term trends in air quality.

The data presented in this report is from a number of monitoring sites across Northern Ireland.

District councils use information from specific sites to assess local air quality in their areas (with regard to the UK Air Quality Strategy and Air Quality Regulations (Northern Ireland) (2003)), to declare Air Quality Management Areas, and then develop Air Quality Action Plans to address air quality issues.

#### *Data quality assessment*

Good - The ambient air quality data is sourced from the Northern Ireland air quality monitoring network. The sites forming part of the Automatic Urban and Rural Network (the UK’s national air quality monitoring network) are operated to a documented quality assurance and quality control programme, and data is subject to validation and ratification procedures, described on the Air Quality Archive at: <https://www.airqualityni.co.uk/data/verification-and-ratification>. Verification and ratification of non-AURN monitoring data is the responsibility of district councils, who ensure that their data is of a high quality and the results are AURN compatible by following these procedures where applicable.

There can sometimes be gaps in the data due to equipment failure at monitoring stations, meaning that data from individual stations in particular years may not meet minimum criteria. DAERA makes every effort to ensure the efficient operation of monitoring sites, with arrangements in place with contractors and local site operators to deal with equipment failure. Monitoring stations are closed or re-sited only when there is a clear need, and where it is felt that the long-term evidence base provided by monitoring of specific pollutants will not be adversely affected.

### *Data links*

Data from monitoring sites (shown on a map) are available in real time at [www.airqualityni.co.uk](http://www.airqualityni.co.uk).

DAERA produces an annual report on air quality (Air Pollution in NI) – see website for details <https://www.daera-ni.gov.uk/articles/air-pollution-northern-ireland>. Historical reports can be viewed via the following link: <https://www.airqualityni.co.uk/reports>

Data is fully compatible with UK reporting and monitoring standards <http://uk-air.defra.gov.uk/>

Please also see <https://www.airqualityni.co.uk/air-quality/standards> for air quality information on standards, objectives, target values and limit values.

## **Ammonia**

### **3.4 Annual ammonia emissions from agriculture.**

#### *Description of data and methodology (including strengths and limitations)*

The ammonia emissions data at National and Devolved Government level are provided by Rothamsted Research. The data presented in the ESR were published in the [Report: Air Pollutant Inventories for England, Scotland, Wales and Northern Ireland: 2005-2023 \(NAEI, 2025\)](#) in October 2025. These data are compiled as part of the annual submission of the UK ammonia emissions inventory, required under the revised Convention on Long Range Transboundary Air Pollution's amended Gothenburg Protocol (CLRTAP) and National Emissions Ceiling Regulations (2018) (NECR).

Activity data regarding livestock numbers and fertiliser nitrogen use are collected on an annual basis by Devolved Administration from the relevant survey web-sites (<https://www.daera-ni.gov.uk/articles/agricultural-census-historical-data>) and through direct liaison with the relevant statistical bodies (e.g. Farm Business Survey).

Activity data regarding farm management practices (e.g. livestock housing types, manure storage and spreading practices) are derived from both NI-specific data sources and ad-hoc surveys, as well as other surveys mostly relating to England (e.g. <https://www.gov.uk/government/collections/farm-practices-survey>) but extrapolated to the UK as a whole. The reported data are subject to uncertainties of approximately  $\pm 17$  per cent at the UK level.

### *Use of data*

The data are used by the UK Government for official reporting purposes under the CLRTAP and NECR. The data are also used by academic groups for modelling the impacts of ammonia emissions through eutrophication, acidification and fine particulate formation.

### *Data quality assessment*

Good – Activity data regarding livestock numbers and fertiliser nitrogen are generally considered to be robust. However, activity data regarding farm management practices are less robust and improved data sources are being sought.

### *Data links*

The data are reported annually on the National Atmospheric Emissions Inventory website in the publication 'Air Quality Pollutant Inventories for England, Scotland, Wales and Northern Ireland' – see <http://naei.beis.gov.uk/reports/>

[Report: Air Pollutant Inventories for England, Scotland, Wales and Northern Ireland: 2005-2023 \(NAEI, 2025\)](#)

Data are reported at UK level using the same methods.

## Chapter 4: Water and Marine

### Water Quality

#### 4.1 Annual mean nitrate concentrations (in groundwater)

#### 4.2 Annual mean nitrate concentrations (in rivers)

#### 4.5 Trends in annual private and trade discharge consent compliance

#### 4.6 Summary of compliance of Water Utility Sector Wastewater Treatment Works (WwTW)

##### *Description of data and methodology (including strengths and limitations)*

The figures in this section report on the condition of Northern Ireland's inland waters including river, lake and groundwater quality. Data relating to the levels of compliance with wastewater standards are also reported. These data are provided by the Northern Ireland Environment Agency.

The Water Framework Directive monitoring strategy can be found here:

<https://www.daera-ni.gov.uk/publications/aquatic-monitoring-strategy-2006-07-and-water-framework-directive-monitoring-plans-2006>

The European Water Framework Directive (2000/60/EC) has been transposed into Northern Ireland regulations through The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017. The Water (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 ensures that the Water Framework Directive (as transposed) and the various supporting pieces of water legislation continue to operate here after 1 January 2021.

Directive 2000/60/EC requires the establishment of monitoring programmes for surface waters, transitional waters and groundwater and deals with: methods and frequency of monitoring required, and the development of monitoring networks built on existing programmes to ensure they meet the monitoring, classification and reporting requirements of the WFD.

The document 'Rationale for Water Framework Directive Freshwater Classification' describes how WFD freshwater classification has been undertaken for the first River Basin Plan. It describes the rationale behind classification, the biological, chemical and physical quality elements monitored, the monitoring networks and how classification was produced - <https://www.daera-ni.gov.uk/publications/uktag-recommendations-surface-water-classification-schemes-purposes-water-framework>

Northern Ireland Environment Agency (NIEA) has operated a groundwater monitoring network since 2000. In 2006 a major review was undertaken to ensure a fit-for-purpose network was in place to meet the requirements of the Water Framework Directive (2000/60/EC) for groundwater monitoring. Since then a lot of boreholes have been lost from the network as groundwater is no longer utilized for public supply. The current groundwater monitoring network consists of a small number of boreholes and springs and NIEA rely on the co-operation of land/ property owners to continue sampling from their groundwater source to monitor this network. This means that the network can change due to businesses closing or changing groundwater usage.

Article 8 of the Water Framework Directive (WFD) establishes the requirement for a monitoring programme for groundwater. Monitoring data are used to inform whether Article 4 environmental objectives are met, including the assessment of groundwater chemical status and significant, long-term pollutants trends resulting from human activity. Data from the monitoring network also inform the programme of measures and support the validation of Annex II risk assessments. Furthermore, the Groundwater Daughter Directive (2006/118/ EC) deals with objectives for groundwater quality (which is informed by monitoring) and creates measures to prevent and control groundwater pollution. It includes criteria for assessing good groundwater chemical status, for identifying pollution trends, and for establishing starting points for trend reversal.

Reducing nutrients is an integral part of the Water Framework Directive (2000), which establishes a comprehensive, cross-border approach to water protection organised around river basin districts (RBDs), with the aim of achieving good status for European bodies of water. NIEA monitors a number of quality elements and parameters when considering eutrophication pressures, including nitrates. Eutrophic waters are identified using WFD nutrient standards.

The surface freshwater monitoring network coverage in Northern Ireland aims to fulfil all monitoring obligations under multiple directives such as WFD and the Nitrates Directive (91/676/EEC) (ND). However, financial and resource constraints have led to multiple revisions of the surface freshwater monitoring network since 2010. A review of the surface freshwater monitoring programme was undertaken for the second cycle of the River Basin Management Plans (RBMP). As a result, changes were implemented in 2015 through better targeting and by adopting a risk-based approach to monitoring. Any modifications to the monitoring network programme have taken into account the need to ensure long-term reporting of water quality parameters in surface waters in Northern Ireland. For the second cycle there are 496 surface water bodies in Northern Ireland, including 450 rivers, 21 lakes, and 25 transitional and coastal waters. More information on the revisions of the surface water monitoring network implemented in 2015 can be found at the following link:

<https://www.daera-ni.gov.uk/sites/default/files/publications/doe/water-body-boundary-changes-for-the-final-river-basin-plans-2015.pdf>

<https://www.daera-ni.gov.uk/sites/default/files/publications/doe/water-report-ni-wfd-statistics-october-2015.pdf>

The data for Industrial Discharge Quality are obtained through samples of effluent lifted by water quality staff, with testing carried out at the laboratory in Lisburn. Results are then fed into the database to allow the calculation of compliance statistics.

Compliance with the requirements of the Urban Wastewater Treatment (UWWT) Regulations is assessed by NIEA based on monitoring data supplied by Northern Ireland Water (NIW) according to an agreed sample programme. Details of the sampling requirements, analysis procedures, analytical quality control criteria and compliance assessment are included in the UWWT Regulations.

<http://www.legislation.gov.uk/nisr/2007/187/contents/made>

Samples of WWTW effluent are collected by RPS Ltd on behalf of NIW and the PPP operators. These samples are analysed in the NIW Wastewater Analysis Laboratory, Altnagelvin, Londonderry. Samples are collected and analysed for UWWT Regulations and Water Order. The results are sent from NIW to NIEA Water Utility Regulation Group (WURG), inputted into the database and compliance calculated. A copy of the NIW Wastewater Analysis Labs annual UKAS inspection report is supplied to NIEA.

NIEA has a 6-year program for analysis of WWTW effluents to assess for Priority Substances. The effluent samples are taken by NIEA staff and analysed in the NIEA laboratory. Sample results are examined according to the standards in The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015.

### *Use of data*

Data are requested by consultants, environmental stakeholder groups and academia. It is used by the Agency for determining compliance, inform enforcement decisions, encourage improved performance, advise NIW Price control investment programs, and may also be used within the UK for ongoing work with the development of WFD Regulations environmental standards and procedures. The Data allows for reporting against Departmental targets and is reported to the Minister/Chief executive.

Data are often requested by Catchment Management Officers attending Catchment Stakeholder Groups. Local angling and other environmental groups also request information regarding specific WWTWs.

The data also contribute towards future plans and have been used to answer questions from elected representatives and parliamentary committees.

The data are used for monitoring against the following directives:

- The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015  
[http://www.legislation.gov.uk/nisr/2015/351/pdfs/nisr\\_20150351\\_en.pdf](http://www.legislation.gov.uk/nisr/2015/351/pdfs/nisr_20150351_en.pdf)
- Groundwater Daughter Directive (2006/ 118/ EC)  
<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006L0118>
- Nitrates Directive (91/676/EC) aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices.  
<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1991L0676:20081211:EN:PDF>

The EC Urban Waste Water Treatment Directive (UWWTD, 91/271/EEC) (<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1991:135:0040:0052:EN:PDF>) sets down minimum standards for the discharge of treated effluent from Wastewater Treatment Works (WwTWs). The Directive is transposed into Northern Ireland legislation by the Urban Wastewater Treatment Regulations (Northern Ireland) 2007 S. R. No 187 (<http://www.legislation.gov.uk/nisr/2007/187/introduction/made>). The

goals of both Directives are complementary and aimed at reducing nutrient inputs into waters from the urban and agricultural sectors.

An AMAP program is carried out which samples WwTW that qualify under the terms of the Convention for the Protection of the Marine Environment of the North-East Atlantic (or OSPAR Convention). The data from the analysis of these samples are placed into a spreadsheet which is then collated with the other OSPAR data before being sent to Defra for the UK OSPAR submission.

[Convention Text | OSPAR Commission](#)

### *Data quality assessment*

Very Good – These data are of high quality and are collected through quality controlled scientific monitoring programmes. Monitoring of river, lake and groundwater quality is carried out routinely against national standards for the Water Framework Directive. Monitoring of effluent discharge is conducted, and compliance is assessed against limits set under the Water (NI) Order and Pollution Prevention and Control Regulations (NI). In addition, variance checks are employed as an integral part of the publication production process and any large discrepancies between current and previous year queried with the data provider.

### *Data links*

Data are published in the Northern Ireland Water Framework Directive Statistics Report. They will also appear in the NIEA water statistics booklet and on the NIEA WFD web mapper. There will be EC publications that include the data such as from the European Environment Agency.

Please see links below:

<https://www.daera-ni.gov.uk/publications/northern-ireland-water-framework-directive-statistics-report-2021>

[Northern Ireland water management facts and figures 2014 | Department of Agriculture, Environment and Rural Affairs](#)

<https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=7e234827aa7a405d990359aa92c7c287>

(Data under review and may be revised).

<https://www.daera-ni.gov.uk/articles/nitrates-directive>

[http://ec.europa.eu/environment/water/index\\_en.htm](http://ec.europa.eu/environment/water/index_en.htm)

A major reason for collecting the data is to allow comparison within Europe and the UK.

Some examples include:

[http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/all-viewers#c0=5&c5=&b\\_start=0&c7=water](http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/all-viewers#c0=5&c5=&b_start=0&c7=water)

[http://data.defra.gov.uk/env/doc/Environmental\\_per\\_cent20Statistics\\_per\\_cent20key\\_per\\_cent20facts\\_per\\_cent202012.pdf](http://data.defra.gov.uk/env/doc/Environmental_per_cent20Statistics_per_cent20key_per_cent20facts_per_cent202012.pdf)

The Water Utility Compliance Assessment Reports are published annually. This webpage has links to previous reports dating back to 2001:

<https://www.daera-ni.gov.uk/articles/regulating-sewage-discharges>

UWWTD compliance was reported to the European Environment Agency (EEA) every two years via the Environment Agency and DEFRA.

It has been decided that after the UK leaving the European Union, the Environmental Regulators for the 4 regions of the UK will publish themselves the data that was previously reported to the EEA. The NIEA Water Utility Regulation team will publish this on its website once the exact format of the data is decided.

The data is published in a report, Wastewater Treatment in the United Kingdom – 2012, published by DEFRA.

<https://www.gov.uk/government/publications/waste-water-treatment-in-the-uk-2012>

[This reporting requirement is no longer active since the UK exited the EU.](#)

River and lake quality:

<https://www.daera-ni.gov.uk/topics/water/river-basin-management>

<https://www.daera-ni.gov.uk/articles/status-rivers-and-lakes>

Groundwater quality: <https://www.daera-ni.gov.uk/articles/groundwater>

Discharge quality: <https://www.daera-ni.gov.uk/topics/water/discharges>

## **River Quality – Soluble Reactive Phosphorus**

### **4.3 soluble reactive phosphorus (SRP) in rivers**

*Description of data and methodology (including strengths and limitations)*

The figures in this section report on the condition of river quality in Northern Ireland.

Within Northern Ireland, the Water Framework Directive (WFD) is implemented through The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015 and The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017. The Water (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 ensure that the Water Framework Directive (as transposed) and the supporting legislation continue to operate. The WFD 2017 Regulations are the main driver for assessing our water environment and pushing us towards achieving Good status for our water environments. Reducing nutrients is an integral part of the WFD 2017 Regulations which establishes a comprehensive, cross-border approach to water protection organised around river basin districts (RBDs). The Northern Ireland Environment Agency monitors a number of quality elements and parameters when considering eutrophication pressures, including nitrates and

phosphorus. Eutrophic waters are identified using nutrient standards in accordance with the WFD 2017 Regulations.

Data is provided under the WFD 2017 Regulations by the Department of Agriculture Environment and Rural Affairs: <https://www.daera-ni.gov.uk/articles/water-framework-directive>

The classification under WFD 2017 Regulations is no longer updated annually so this indicator (SRP) has been used to assess river quality on an annual basis. As SRP is a WFD water quality parameter, assessment is made using well established standards and procedures. Soluble reactive phosphorus levels are monitored across Northern Ireland at various frequencies at around 400 sites as required under WFD 2017 Regulations. The 93 river surveillance sites reported for this indicator are sampled at a frequency that enables assessments to be undertaken on an annual basis. Unlike other water quality parameters monitored as required by the WFD 2017 Regulations, there is a site-specific relationship between phosphorus concentrations, river alkalinity and altitude. In Northern Ireland, the dominant river typology is lowland (<200m), small (10-100km<sup>2</sup>) and calcareous (alkaline). More information on the classification methodology is available here: [River and Lake Monitoring and Classification Methodology.PDF](#)

#### *Use of data*

The figures are used by DAERA to:

- (i) Monitor progress against Water Framework Directive Regulations  
<https://www.legislation.gov.uk/nisr/2015/351/body>  
<https://www.legislation.gov.uk/nisr/2017/81/contents/made>
- (ii) Monitor progress against the Nutrient Action Programme Regulations (NI) 2019. The Nutrients Action Programme (NAP) is the key measure to control nutrient pollution from agricultural sources and contribute to improved water quality.  
<https://www.legislation.gov.uk/nisr/2019/81/contents>
- (iii) Answer Assembly Questions, correspondence cases, Ministerial briefings and general queries.

This indicator was a population indicator in the draft Programme for Government (PfG) 2016-2021 framework. This indicator is currently assessed under the Cleaner Environment strategic domain in the Programme for Government (PfG) 2024-2027 Wellbeing Framework.

#### *Data quality assessment*

Very Good - these data are derived from an administrative system with full coverage and incorporating various validation checks. Monitoring of river, lake and groundwater quality is carried out routinely against standards for the WFD 2017 Regulations. The WFD Classifications are required to report on a 6-yearly basis. The latest update was an interim update published in 2024.

## Data links

<https://www.daera-ni.gov.uk/articles/water-framework-directive>

[Water Classification Statistics for Northern Ireland 2024 Report | Department of Agriculture, Environment and Rural Affairs](#)

## Number of Coastal Water Bodies in Good Ecological Status

### 4.4 Coastal Water Bodies in Good Ecological Status

#### *Description of data and methodology (including strengths and limitations)*

The ecological status of transitional (estuarine) and coastal waters in Northern Ireland is assessed under the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017. Twenty-five transitional and coastal water bodies have been delineated in Northern Ireland. These lie within one nautical mile of the shoreline and include estuaries and sea loughs. The assessment of ecological status is based on monitoring data collected on a variety of biological quality elements such as phytoplankton, macroalgae, angiosperms (e.g. seagrass), zoobenthos, and fishes. Where applicable, attributes of each quality element are monitored and compared with conditions expected under natural or pristine circumstances. The degree to which each quality element deviates from the reference condition provides a measure of ecological status. Each biological quality element is converted to a standardized ecological quality ratio (EQR), which ranges between zero and one where values close to one are considered near-natural while those close to zero are considered bad. The EQR values are then assigned to one of five quality classes (high, good, moderate, poor, bad) according to the degree of deviation from the reference.

In addition to biological quality elements, various supporting quality elements are also monitored; these include physico-chemical parameters such as dissolved oxygen, nutrients (dissolved inorganic nitrogen), specific pollutants, and hydromorphological characteristics. The presence and establishment of high impact invasive species is also assessed. Supporting quality elements such as dissolved oxygen and nutrients are evaluated against environmental standards or concentrations and are classified as either high, good, or less than good (moderate). Specific pollutants are assessed according to whether concentrations are below the environmental quality standard (high) or whether the standard has been breached (moderate).

Ecological status is determined by the least favourable (worst) class of all the quality elements monitored; biological quality elements comprise five classes (high, good, moderate, poor, bad) while supporting quality elements comprise a maximum of three classes (high, good, moderate). Using hydromorphological characteristics, some water bodies were identified as heavily modified; these water bodies were classified according to their ecological potential.

#### **4.4a Dissolved Inorganic Nitrogen (DIN) enrichment in Transitional and Coastal waters**

##### *Description of data and methodology (including strengths and limitations)*

Excess nutrients (dissolved inorganic nitrogen) have been identified as a key quality element responsible for many transitional and coastal waters not achieving good ecological status. This is particularly noticeable in the sheltered waters of estuaries and sea loughs, which suggests catchment-based inputs mainly from diffuse (agricultural) and point (domestic and industrial) sources. While ecological status classification under Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017 provides an assessment of the nutrient status of a particular water body, it has limited utility for examining trends. A dissolved inorganic nitrogen (DIN) enrichment indicator has been developed to provide a general indication of overall nutrient trends – whether nutrient values are increasing (worsening) or declining (improving).

Surface water samples for nutrient analysis are collected during the winter (November to February). This is the period when algal growth is at a minimum and nutrient levels reach their maximum. Dissolved inorganic nitrogen (DIN) concentration ( $\mu\text{M}$ ) is calculated as the sum of nitrate ( $\text{NO}_3$ ), nitrite ( $\text{NO}_2$ ), and ammonia ( $\text{NH}_3$ ). Dissolved inorganic nitrogen concentrations are then salinity-normalised based on a conservative mixing curve of DIN versus salinity provided by the UK Technical Advisory Group (UKTAG). The normalisation procedure ensures that all data are comparable and that variations in DIN due to salinity are taken into account. Coastal water bodies are normalised to a salinity of 32 while transitional (estuarine) waters are normalised to a salinity of 25.

A 6-year moving average DIN value is calculated for each water body and this is assessed against standards or threshold values provided by UKTAG. The nutrient enrichment indicator is based on the degree to which DIN values either exceed or fall below the threshold for good status. This threshold value is  $30 \mu\text{M}$  for transitional waters and  $18 \mu\text{M}$  for coastal waters. By expressing DIN concentrations as a function of the relevant thresholds, a standardised enrichment value is obtained for all water bodies irrespective of their type and normalisation procedure. An overall percentage DIN enrichment indicator is calculated as the mean enrichment value for all water bodies for a particular year. An enrichment value close to zero indicates that DIN values are, on average, close to the good threshold; values above zero indicate excess nutrients overall. It should be noted, however, that this indicator is NOT designed to provide an assessment of nutrient status, but rather a general indication of overall trends, whether nutrient values are increasing (worsening) or declining (improving). A threshold of  $\pm 5\%$  has been set as an indication of change.

##### *Use of data*

To monitor and assess the ecological status of Northern Ireland's transitional (estuarine) and coastal waters; to monitor overall trends in nutrient (dissolved inorganic nitrogen) enrichment.

### *Data quality assessment*

All monitoring programmes, data, and assessments associated with this indicator are undertaken according to national standards developed for the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017. DAERA also participates in both internal and external quality control schemes.

### *Data links*

All data are provided by [DAERA Marine and Fisheries Division](#).

More information on marine data sets can be found at:

<https://www.nidirect.gov.uk/articles/accessing-environmental-information>

Direct information on marine nutrient data can be found at:

[https://portal.medin.org.uk/portal/start.php#details?tpc=010\\_c7ab5ac60a8471479f43c56b525b3e34](https://portal.medin.org.uk/portal/start.php#details?tpc=010_c7ab5ac60a8471479f43c56b525b3e34)

## **Water Pollution Incidents**

### **4.7 Severity of substantiated water pollution incidents**

#### *Description of data and methodology (including strengths and limitations)*

The figures in this section report on water pollution incidents. These data are provided by Northern Ireland Environment Agency.

The initial report/complaint data are received via telephone and email from the public, other government departments, stakeholders or NIEA staff.

A dedicated team inputs this data into the database and assigns a member of staff to investigate the report and input any further data associated with this report. The Lead Investigating Officer (LIO) will investigate the incident and update the Pollution Incidents Management System (PIMS) database with the details of the confirmed severity following investigation.

The data are audited monthly to ensure correctness of detail and confirming that current procedures and processes are being complied with.

One limitation is that the appropriate enforcement action for each incident is not evident from the raw data. Enforcement action is taken in line with the DAERA enforcement policy and is subject to a range of factors which can vary from case to case. These factors will not be evident from the raw data and the user will not be aware of all the factors when attempting to interpret this data.

The strength of the data is their reliability and accuracy. This is due to the robust methodologies by which they are collated, managed and regularly audited. The data have been available for several years allowing trend analyses and graphical demonstration of same.

### *Use of data*

The information is collected for the purpose of recording, monitoring and managing all aspects and enforcement outcomes associated with water pollution incidents in Northern Ireland.

Regular requests are made to the team by the DAERA Minister, MLAs, Councillors, Press Office, NGOs and other stakeholders to provide them with the number, type and severity of pollution incidents in their area. Specific incident details are often requested. Data are supplied to the Minister and Press Office in respect of certain significant or high-profile incidents e.g. where there is significant media interest.

### *Data quality assessment*

Very Good – These data are of high quality and are collected through quality controlled scientific monitoring programmes.

### *Data links*

NIEA incident severity categorisation is directly comparable to England and Wales with NIEA High Severity = E&W Category 1; Medium Severity = E&W Category 2; Low Severity = E&W Category 3

## **Marine Water Quality**

### **4.8 Water Framework Directive Shellfish Water Protected Areas**

These sections look at the quality of Northern Ireland's estuarine and coastal water. These data are provided by DAERA Marine and Fisheries Division.

Monitoring of marine water quality, including shellfish waters, is carried out in line with national standards developed for the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017. DAERA Marine and Fisheries Division participates in both internal and external quality control schemes. These measures and controls mean there are high levels of confidence in the data reported.

### *Use of data*

To allow DAERA Marine and Fisheries Division to monitor the status of these water bodies and assess current standards against relative Regulations.

### *Data quality assessment*

Good - These data are of high quality and are collected through scientific monitoring programmes however, there may be some gaps in the data.

### *Data links*

For more details please see:

<https://www.legislation.gov.uk/nisr/2017/81/contents/made>

[http://www.legislation.gov.uk/nisr/2015/351/pdfs/nisr\\_20150351\\_en.pdf](http://www.legislation.gov.uk/nisr/2015/351/pdfs/nisr_20150351_en.pdf)

<https://www.daera-ni.gov.uk/articles/designated-shellfish-waters>

<https://www.daera-ni.gov.uk/topics/water/river-basin-management>

<https://www.daera-ni.gov.uk/publications/shellfish-action-plans-2019>

<https://www.daera-ni.gov.uk/articles/bathing-water-quality>

## Sea Temperature

### 4.9 Average monthly sea temperature, Irish Sea

#### *Description of data and methodology (including strengths and limitations)*

This section looks at Northern Ireland's sea temperature. These data are provided by the Agri-Food and Biosciences Institute (AFBI).

Data are collected using temperature sensors (thermistors) attached (near the surface and seabed) to a permanent mooring in the north western Irish Sea. Data are downloaded from sensors during regular marine surveys. Sensors are robust, have a five year battery life and are accurate to 0.01 degrees Celsius. Temperature values are recorded every three hours and the figures presented in this report show a daily average of these values. Where there are gaps, missing daily temperatures were filled using modelled data based upon a climatology derived from mean seasonal cycle (day-of-year) over a 10-year period between 2012–2023 reference period.

#### *Use of data*

Data are collected as part of a long-term research programme investigating the influence of the physical environment on the marine ecosystem in the Irish Sea. The time-series now consists of 30 years of data and it will now be possible for marine scientists to undertake a detailed analysis of the data to investigate inter-annual variability in the seasonal development of water column stratification and to determine whether there are any trends in the data.

#### *Data Quality Assessment*

Very Good – Daily sea temperature levels are recorded every three hours, at the Irish Sea mooring site, and from these readings a daily mean is calculated. The raw temperature data are subject to a regular calibration check.

#### *Data links*

Thermistors record temperature data which are reported in degrees Celsius which is accepted and comparable to other temperature measurements in UK and Europe.

<https://www.afbini.gov.uk/articles/coastal-monitoring>

## Chapter 5: Biodiversity and Land

### Nature Conservation Designations

#### 5.1(a) Area of nature conservation designations

#### 5.1(b) Areas of Special Scientific Interest (ASSI) and Marine Conservation Zones (MCZ)

#### 5.1(c) Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites

##### *Description of data and methodology (including strengths and limitations)*

There are two proposed SPAs in the marine area which are currently not represented in this section: East Coast and Carlingford Lough pSPAs. They are awaiting completion of formal designation, and so cannot be strictly included within Figure 5.1(a) which represents those areas already designated. However, they still qualify for protection and proposed management measures under current policy measures.

Nature conservation designations area data are compiled via a series of scientific site surveys, and office based scientific analysis. Site surveys utilise Global Navigation Satellite System (GNSS) technology and office analysis utilises Geographical Information Systems (GIS) and Ordnance Survey NI (OSNI) basemaps and ortho-rectified aerial photography.

The resolution attached to GNSS technologies and OSNI GIS basemaps is constantly evolving and improving: therefore, the precision attached to new designation boundaries and associated area calculations has also improved.

Data are provided in a clear manner giving ease of interpretation, but readers should be aware that there is overlap of designated areas i.e. ASSI/ MCZ/ SAC/ SPA/ Ramsar.

##### *Use of data*

The designation of MCZs, SACs, SPAs and ASSIs is required under The Conservation (Natural Habitats, etc) Regulations (Northern Ireland) (as amended) and the Environment Order (Northern Ireland) Order 2002. Data are required for monitoring progress towards the achievement of various related targets.

The data are also used to answer questions from the general public, nature conservation bodies and political representatives; and for DAERA management purposes.

The EC Habitats and Birds Directives placed an obligation on Member States to report on conservation gains/losses through its Article 17 and Article 12 reporting process respectively; data collected form an integral part of this. Since EU Exit the 2019 amended Conservation (Natural Habitats, etc) Regulations (Northern Ireland) replaces the reporting obligations in the EC Directives, ensuring that similar reports remain a requirement. Most recent Habitats Regulations Reports are available at <https://www.daera-ni.gov.uk/topics/habitats-regulations>

## *Data Quality Assessment*

Very Good – These data are of high quality with data collected through scientific monitoring programmes.

### *Data links*

Please see links below for more information:

<https://www.daera-ni.gov.uk/topics/biodiversity-land-and-landscapes/protected-areas>

<https://www.daera-ni.gov.uk/topics/biodiversity>

The following links may assist with any geographical analysis you may wish to undertake:

<https://www.daera-ni.gov.uk/articles/digital-datasets>

<https://www.opendatani.gov.uk/@department-of-agriculture-environment-and-rural-affairs/northern-ireland-marine-protected-areas-mpas3>

<https://www.daera-ni.gov.uk/services/marine-mapviewer?msclkid=bfbf1a85b9a411ec9778729e66e0f98d>

[www.spatialni.gov.uk](http://www.spatialni.gov.uk)

## **Monitoring Nature Conservation Protected Areas**

### **5.2a Condition of Features within Marine and Terrestrial protected sites, 2017/18 - 2025/26**

#### *Description of data and methodology (including strengths and limitations)*

DAERA and NIEA use a metric which is based on the qualifying features across protected sites. The features are the reasons for which sites are notified or designated. They include the key species, habitats and earth science areas of interest across the range of terrestrial, freshwater, coastal and marine sites.

This metric gives a clear indication of feature status, which may inform future evidence collection and monitoring strategy, as well as management approaches to features, especially those in declining or unfavourable condition.

It is important to point out that the majority of sites are multi-feature, and inevitably many features are classified as unfavourable because of just one failing attribute. In reality, overall the sites remain diverse, natural and special places. It is also important to point out that because a feature is unfavourable, it doesn't necessarily mean the area is being poorly managed. In some cases, pressures outside the site boundary negatively impact feature condition, e.g. air or water quality.

Methodology for collection of data follows UK Common Standards Monitoring protocols (see website of the Joint Nature Conservation Committee (JNCC) - <http://jncc.defra.gov.uk/page-2217>).

Each site has tailored Conservation Objectives which detail the attributes, (measurable targets), for each interest feature within the site. The condition assessment determines the condition status of each interest feature when compared against relevant feature attributes.

Data are generally collected and analysed on a rolling programme. Only a sample of designated features are monitored each year; for Northern Ireland there are 1000+ total features across the terrestrial and marine environment.

Where resources allow, field teams will complete additional site integrity and proxy monitoring ad hoc throughout the cycle timeframe to assess condition, pressures and threats on sites and features.

For the 2026 output, the total features condition assessment figure has been calculated based on a combination of those features whose condition has been assessed and reported on since the previous Environmental Statistics Report (April 2024 - March 2025 updates), and an assumption of feature condition for those not assessed within that period. The assumption is that those features' condition has experienced no change since their latest condition assessment.

The condition of features is assessed using one of the following condition categories from the JNCC Statement on Common Standards Monitoring, available at JNCC (2019):

- Favourable: Condition objectives are being met
- Unfavourable: Condition objectives are not being met
- Partially destroyed: The feature, habitat or processes essential to support it have been removed or irretrievably altered. A condition assessment should be carried out on the remaining, intact feature.
- Destroyed: The feature, its supporting habitat or processes have been affected (completely or partially) to such an extent that there is no hope of recovery.

There are additional trend qualifiers which were previously considered part of the common standards, and are now listed as optional with the choice to use these lying with each of the UK's Country Nature Conservation Bodies:

- Favourable - maintained: Conservation objectives were being met at the previous assessment and are still being met.
- Favourable - recovered: An interest feature can be recorded as having recovered if it has gained favourable condition, having been recorded as unfavourable on the previous assessment.
- Favourable - declining: Reflects instances where all targets are being met, but identified pressures would indicate that unfavourable condition will result if the pressures are left unaddressed.
- Unfavourable - recovering: Feature has begun to show, or is continuing to show, a trend towards favourable condition.

- Unfavourable - no change: A feature may remain in a more-or-less steady unfavourable state/deterioration; it is unfavourable but neither declining nor recovering. In rare cases, an interest feature might not be able to regain its original condition following a damaging activity, but a new stable state might be achieved.
- Unfavourable - declining: Possible consequence of a damaging activity. In this case, recovery is possible and may occur either spontaneously or if suitable management input is made.

The metric in this report displays only the unfavourable recovering sub-category as it shows positive movement towards favourable condition. The aim of protected sites management is to achieve favourable condition for the site's features. This is enshrined in a range of international commitments including the Convention on Biological Diversity and local strategies.

JNCC (2022) A Statement on Common Standards for Monitoring Protected Sites 2022, <https://hub.jncc.gov.uk/assets/0450edfd-a56b-4f65-aff6-3ef66187dc81>

Table 5.2b in the main report disaggregates feature types into habitats, species and earth science categories. Further information on feature breakdown is provided in the table below, and detailed descriptions and definitions of feature types and categories can be found at the following links:

JNCC Common Standards Monitoring Guidance. <https://jncc.gov.uk/our-work/common-standards-monitoring-guidance/>

Northern Ireland Priority Habitat Guides. <https://www.daera-ni.gov.uk/articles/northern-ireland-priority-habitat-guides>

| Feature type    | Breakdown                 |
|-----------------|---------------------------|
| <b>Habitats</b> |                           |
| Bogs            | Blanket bog               |
|                 | Lowland raised bog        |
| Coastal         | Coastal saltmarsh         |
|                 | Coastal vegetated shingle |
|                 | Coastal sand dunes        |
|                 | Maritime cliff and slopes |
|                 | Dystrophic lakes          |
| Freshwater      | Eutrophic standing waters |
|                 | Marl lakes                |
|                 | Mesotrophic lakes         |
|                 | Oligotrophic lakes        |
|                 | River                     |
|                 | Calcareous grassland      |
| Grasslands      | Lowland meadow            |
|                 | Upland mosaic             |
|                 | Wet heath                 |
|                 |                           |

| <b>Habitats</b> <i>(continued)</i> |                                      |
|------------------------------------|--------------------------------------|
| Inland Rock                        | Inland rock                          |
|                                    | Limestone pavement                   |
| Marine                             | -                                    |
| Fen, marsh, swamp                  | Fens                                 |
|                                    | Reedbeds and swamps                  |
|                                    | Turloughs                            |
|                                    | Upland flushes, fens and swamps      |
| Woodlands                          | Mixed ashwoods                       |
|                                    | Oakwood                              |
|                                    | Wet woodland                         |
|                                    | Wood pasture and parkland            |
| <b>Species</b>                     |                                      |
| Birds                              | Breeding birds                       |
|                                    | Non breeding birds                   |
| Fish                               | Fish                                 |
| Fungi                              | Fungi                                |
| Invertebrates                      | Invertebrates                        |
| Marine mammals                     | Maine mammals                        |
| Non-vascular plants                | Bryophytes<br>Lichens                |
| Terrestrial mammals                | Bat<br>Otter                         |
| Vascular plants                    | Vascular plants                      |
| <b>Earth Science</b>               |                                      |
| Earth Science                      | Geomorphology                        |
|                                    | Quaternary geology and geomorphology |
|                                    | Igneous petrology                    |
|                                    | Palaeontology                        |
|                                    | Stratigraphy                         |
|                                    | Structural and metamorphic geology   |
|                                    | Mineralogy                           |
|                                    | Other earth science                  |

### *Use of data*

Data are collected for the purpose of informing site management decisions on the protected site network (ASSIs, SACs and SPAs). Data are also used for reporting purposes (e.g. Habitats Regulations Reporting (formerly Article 17 Reporting) and Bern Convention Reporting).

Habitats Regulations Reporting for Northern Ireland is available at:  
<https://www.daera-ni.gov.uk/topics/habitats-regulations>

### *Data Quality Assessment*

Good – These data are of high quality with data collected through scientific monitoring programmes. The condition of features within Areas of Special Scientific Interest and Marine Protected Areas is assessed over a rolling monitoring programme. However, there is a time lag issue with the data.

The timetable for assessment is running behind schedule; hence the classification is good rather than very good.

### *Data links*

The data are provided (in part) for UK Biodiversity Indicators.  
<http://jncc.defra.gov.uk/page-4229>

Please see links below for more information:

<https://www.daera-ni.gov.uk/landing-pages/protected-areas>

The following links may assist with any geographical analysis you may wish to undertake:

<https://www.daera-ni.gov.uk/articles/daera-map-viewers>

## Wild Birds

### 5.3a Change to wild bird populations in Northern Ireland, 1996 – 2024, 56 species

### 5.3b Wild bird populations in Northern Ireland by habitat type, 1996 – 2024

#### *Description of data and methodology (including strengths and limitations)*

This section reports on wild bird populations. These data are sourced from the British Trust for Ornithology (BTO), with acknowledgement to other partners in the Breeding Bird Survey: The Joint Nature Conservation Committee (JNCC) and the Royal Society for the Protection of Birds (RSPB).

The data on Northern Ireland wild bird population is monitored as part of the UK BTO/JNCC/RSPB Breeding Bird Survey. The data are generally collected by volunteers across the UK on a 1km square basis. Through careful design the survey provides reliable trends. In 2024, 139 squares were surveyed in Northern Ireland. Of these, 56 squares were surveyed by professional fieldworkers, funded by the Northern Ireland Environment Agency, and 83 by dedicated volunteers. However, because of the relatively small number of squares surveyed in Northern Ireland, statistically robust information on species-specific trends are only routinely reported for the 39 most common species but data from some less abundant species can contribute to an overall Wild Bird Index (see below) for Northern Ireland, where those trends are assessed to be sufficiently robust. The Index currently includes data from 56 species.

Further details on the UK Breeding Bird Survey can be found at:

[Breeding Bird Survey \(BBS\) | BTO](#)

Although all species are recorded, it is generally only the more common species of birds that can be monitored effectively. The survey methodology is not designed to investigate trends in the more scarce or rare species. Combined trends in 'wild bird' populations can be used to provide a general indication of the overall 'health' of the environment, here and in composite bird indicators used elsewhere in the UK, across Europe and globally.

The Wild Bird Index (WBI) measures average population trends of a suite of representative wild birds, as an indicator of the general health of the wider environment. The WBI is an easy-to-understand indicator that can be calculated for different geographic areas and habitats. This means that different Wild Bird Indices (WBIs) can be produced for areas such as farmland and woodland, or inside and outside protected areas if suitable data are available.

#### *Use of data*

The wild bird data are collected to enable estimates of changes in both the sizes and ranges of the populations so help prioritise conservation action by a range of bodies e.g. Government Departments, NGOs. The data can be used by NIEA to identify Northern Ireland Priority Species under the terms of the Northern Ireland Biodiversity Strategy.

The data can also be used by NIEA to identify species that may need to be included in the schedules of any appropriate wildlife legislation e.g. the WANE Act.

The RSPB and other conservation NGOs could use the data to select species for specific conservation action.

### *Data Quality Assessment*

Very Good (medium to long term) – The indices reported are considered to give reliable medium to long term trends, but strong reliance should not be attached to levels for individual years or short-term changes from year to year. To maximise species inclusion in the indicator, we include some species with small sample sizes which are not included in the BBS report. The trends for those species can be unreliable and are reviewed annually.

A statement on the Quality of BTO data can be found at: <https://www.bto.org/our-science/data/data-quality>

### *Data links*

The BTO data are collected across the UK and these trends can be directly compared to trends for similar species in Scotland, England and Wales as well as trends at a UK level: <https://www.bto.org/our-science/data>

A range of 'atlas' type reports are available from the BTO web site: <https://www.bto.org/our-science/projects/birdatlas>

## Sustainable Land Management

### 5.4 Northern Ireland agri-environment schemes, area under agreements

#### *Description of data and methodology (including strengths and limitations)*

This section examines the role of agri-environment schemes on our land. These data are sourced from Department of Agriculture, Environment and Rural Affairs (DAERA).

The data are collected using two DAERA systems: the Customer information System, and Grants and Subsidies System. These systems record information about the participant agreements including the total area under agreement and detailed information about land management of habitats. However, reports from the two separate systems must be collated, validated and summarised before meaningful results can be produced from the data.

In some cases DAERA has converted the data to a percentage of agricultural land under agreement to give it context to the end user. The data may be misinterpreted if not quoted relative to overall agricultural land area. The statistics quoted for Countryside Management Schemes are a combined total for two different schemes - NICMS and CMS. These schemes are managed and delivered under different legislation and rules.

#### *Use of data*

The Agri-environment Programme (AEP) was funded under Measure 2.2 of the NI Rural Development Programme (NIRDP) 2007 – 2013 and continues primarily under Measure 10 of the 2014 - 2020 NIRDP. Progress of the AEP is measured against NIRDP targets which were set at the beginning of the Programme in 2007 and in 2015. Progress is published at the end of each Programme year, in the Mid-Term Evaluation (link provided below) and at the end of the NIRDP.

<https://www.daera-ni.gov.uk/publications/northern-ireland-rural-development-programme-nirdp-2007-2013-mid-term-evaluation-update>

The targets are based on the number of participants in agri-environment schemes and the area of land (ha) under agreement. Therefore, the data is collected to monitor progress against these targets for the purpose of reporting the information to the European Union.

The data is used by the Monitoring Committee of the NIRDP and also by the Environmental Sub-group of this Committee. There are bi-annual meetings of both groups and interim progress is also reported using the data. Requests for this information are regularly received by students completing degrees and post-graduate qualifications.

Requests have been received from non-government organisations with farming and / or environmental interests.

This data is occasionally used to answer official communications from the NI Assembly.

The data may also be publicly displayed at events such as the annual RUAS Balmoral Show and RUAS Winter Fair to highlight that the funding for these schemes is being used by farmers to manage their land to benefit the environment.

Data has also been collected to report against targets set in DAERA Business Plan.

#### *Data Quality Assessment*

Very Good – This data is derived from the following computer systems - Grants and Subsidies (GAS) and Agri-environment Schemes (CISAES). These systems are used to record individual land parcels data, including agri-environment scheme agreement data. Validation checks are incorporated within and between these computer systems to ensure that data generated are accurate and the data are checked for discrepancies as part of the scheme's annual payment process.

#### *Data links*

The Annual and End of Programme data for the NIRD P are published approximately six months after the 31 December of the year of report. It will be published on the DAERA website at [2014 - 2020 Rural Development Programme | Department of Agriculture, Environment and Rural Affairs](#) .

Member States and regions within member states of the EU each have a Rural Development Programme. Data showing progress against targets are published by the Managing Authority and by Europe.

Rural Development information is also published on the EU website at: [https://ec.europa.eu/agriculture/rural-development-2014-2020\\_en](https://ec.europa.eu/agriculture/rural-development-2014-2020_en)

## Area of Woodland

### 5.5 Area of new forest and woodland plantings

#### *Description of data and methodology (including strengths and limitations)*

This section examines woodland plantings. These data are sourced from the Northern Ireland Forest Service. The data are used to report against Forest Service annual reports and are subject to appropriate validation and audit.

#### *Use of data*

Data are collected in order to manage the Forestry Grant Scheme. The data are used to inform forestry service publications such as the annual report. Also data created with EFS grant aid.

#### *Data Quality Assessment*

Very Good – Data are subject to validation and audit.

#### *Data links*

Detailed statistics are published in the web publication - Forestry Statistics which include UK statistics on woodland areas, planting, environment etc. and some statistics are available on international forestry.

<https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/>

## Chapter 6: Waste

### Waste

#### 6.1 Waste sent for preparing for reuse, dry recycling and composting

##### *Description of data and methodology (including strengths and limitations)*

The figures in this section report on the amount of local authority collected municipal and household waste sent for preparing for reuse, dry recycling and composting.

LAC municipal waste is defined as waste which is collected under arrangements made by a district council. Includes materials (except soil, rubble and plasterboard) collected directly from households (e.g. kerbside collections) or indirectly (e.g. bring sites, civic amenity sites, collected by private and voluntary organisations not included elsewhere or street sweepings).

Data used in this report are taken from the Northern Ireland LAC Municipal Waste Management Statistics Annual Report which uses data from WasteDataFlow (WDF), a web based system for LAC municipal waste reporting by UK local authorities for government.

##### *Use of data*

Data contained in this release are published primarily to provide an indication of the progress towards achieving waste strategy targets.

The waste data help to inform the lifestyle choices of the public, specifically decisions about how to dispose of waste. Waste statistics are used in the 'Rethink Waste' campaign <https://www.recyclenow.com/ni> which influences choices that ultimately impact upon the quantity and type of waste that is generated, reused and recycled. The Department of Agriculture, Environment and Rural Affairs delivers the Northern Ireland Waste Management Strategy through the Rethink Waste Programme.

Data contained in this release provide an indication of the progress towards achieving waste strategy targets. They allow for the assessment of the performance of the councils and waste management groups in Northern Ireland in managing waste arisings, recycling, composting and landfill.

Waste data feed into Northern Ireland specific and UK wide research projects carried out by Waste and Resource Action Programme (WRAP)  
<http://www.wrap.org.uk>.  
<https://myrecyclingni.org.uk/>

Additionally, waste management information is used to inform the media, special interest groups (such as the Chartered Institute of Waste Management (CIWM) which is the professional body representing waste and resource professionals), academics (for example those who would have an interest and/or involvement in the WRAP research

mentioned above) and by the DAERA to respond to parliamentary/assembly questions and ad hoc queries from the public.

The household waste recycling rate was used as a population indicator in the Programme for Government (PfG) 2016-2021 and is included as a [wellbeing framework indicator](#) in the latest Programme for Government (PfG) 2024-2027.

The NISRA Data Portal provides access to waste information with the aim of making it available to as wide an audience as possible by providing interactive tables, charts and mapping facilities that enable the statistics to be interpreted readily in a spatial context. <https://data.nisra.gov.uk/>

#### *Data quality assessment*

Very good - These data are derived from WDF with full coverage for all district councils and incorporating various validation checks. The system provides a complete picture of district council controlled waste activity in NI and sampling errors associated with survey data are not, therefore, an issue. In addition, variance checks are employed as an integral part of the publication production process with any large discrepancies between current and previous year queried with the data provider.

#### *Data links*

Please refer to [Northern Ireland local authority collected municipal waste management statistics 2024-25 | Department of Agriculture, Environment and Rural Affairs](#) for a detailed description of the data and methodology, for information on how the data are used, for an assessment on data quality and for further links.

Please refer to <https://www.daera-ni.gov.uk/articles/northern-ireland-local-authority-collected-municipal-waste-management-statistics> and <https://www.daera-ni.gov.uk/articles/published-waste-data> for the published statistics reports from which the data presented in this report are taken.

NI Waste Management Strategy: <https://www.daera-ni.gov.uk/sites/default/files/publications/doe/waste-policy-delivering-resource-efficiency-northern-ireland-waste-management-strategy-2013.pdf>

## Chapter 7: Historic Environment

### Monuments

#### 7.1a Total number of scheduled historic monuments

#### 7.1b Number of scheduled monument consent applications received

##### *Description of data and methodology (including strengths and limitations)*

Data displayed in Figure 7.1a is collected to inform the protection of Heritage Assets in Northern Ireland. This outlines the total number of Scheduled historic monuments in Northern Ireland in the years 2001/02-2024/25. Under Article 3 of the Historic Monuments and Archaeological Objects (NI) Order 1995 the Department for Communities (DfC) is required to compile and maintain a schedule of monuments. DfC is also obliged to publish this information.

Data outlined in Figure 7.1b reflects regulation of proposed works sought under Scheduled Monument Consent, to areas that have a statutory designation on them. The statistic reflects applications for Scheduled Monument Consent. Data from 2014/15 includes requests for addendums to existing consents.

From 2023/24, HED has recorded scheduled monument consent where the applicant is, or is on behalf of a Crown Body, separately as “Scheduled Monument Clearance”. In addition, Scheduled Monument Clearance for monuments in State Care that are in the care of HED is recorded separately as “Scheduled Monument Approvals”. Both Scheduled Monument Clearance and Scheduled Monument Approvals contain similar provisions to Scheduled Monument Consent, but the distinction has been made for legislative reasons. In previous years, these requests would have been counted in the Scheduled Monument Consent data. For consistency, from 2023/24 data contains the number of requests for Scheduled Monument Consent, Scheduled Monument Clearance and Scheduled Monument Approvals.

Ancillary to these statistics, each site is scored on the basis of current and future risk and present condition by a Warden and registered on a database (Northern Ireland Sites and Monuments Records Database). This scoring is used to inform a strategic risk-based inspection regime and to inform the targeting of resources where the need is greatest to achieve optimum management. Information can be gleaned from the database at any given time in order to help prioritise inspections.

The database and supporting digital records management systems are designed to receive all information in relation to the scheduled site management programme, in relation to designation, consents, agreements and warden condition reports. A major strength is that all the key players in the scheduled monument management process (including the Field Monument Wardens who work remotely) can enter reports and information so that it is readily available to others for review and analyse. An on-screen history of each site is systematically built up, providing a valuable amount of data to the user at an immediate level. It is possible to validate the impacts of land–use change, population and ownership changes on scheduled monuments.

### *Use of data*

Data on Scheduled monuments, particularly the GIS data is used on a widespread scale by other bodies including DAERA and local authorities to inform decision making on a range of protection, strategic land use planning and land management issues.

The data is used in the compilation of annual reports, and to inform local authorities or other relevant stakeholders on statutorily designated sites in their areas.

All Historic Environment GIS map-based data is available online to the general public, informing them of statutorily protected sites and monuments in their respective areas. For local community groups this can be a valuable aid in engaging with historic sites in their area and applications for funding.

The polygons available on GIS are extremely useful in providing an illustrative geo-spatial reference immediately for a protected zone. Works proposed inside these areas usually require the necessary Scheduled Monument Consent in advance.

Many Scheduled monuments are located on agricultural land and land use change, particularly land improvement toward arable or grazing, or development, is one of the biggest factors in regard to potential impacts on historic sites.

In terms of demographics, it would be fair to say that in lesser populated areas historic sites and monuments generally fare better in terms of their overall condition.

### *Data Quality Assessment*

Very Good – The figures are derived from an administrative database which incorporates various validation checks. The Scheduled monuments data are audited regularly to ensure that the targeted numbers of sites have been scheduled. Consents data are recorded as applications are sought throughout the year.

### *Data links*

The total number of Scheduled monuments is published online, in list form, categorised under county and specifying the site, its unique number, the townland and the grid reference. This is updated when new sites are scheduled on an annual basis.

The GIS data and a public version of the Northern Ireland Sites and Monuments Record (NISMR) database are also available online and are updated as and when new sites are scheduled:

<https://www.communities-ni.gov.uk/services/sites-and-monuments-record>.

Under the Valletta Convention it is necessary to develop and implement national policies for the Protection of Archaeological assets as sources of scientific and documentary evidence in line with principles of integrated conservation.

Other heritage bodies based in the UK also designate scheduled monuments in this way and hold comparable data.

For more information on the Protection of Historic Monuments, please see:  
<https://www.communities-ni.gov.uk/articles/scheduled-historic-monuments>

## Listed Buildings

### 7.2 Number of listed buildings by grade

#### *Description of data and methodology (including strengths and limitations)*

The information is currently recorded manually at the end of each financial year from the Northern Ireland Buildings Database.

The Department protects historic buildings by listing following an assessment process. Further details are published on the DfC website at the following location:  
<https://www.communities-ni.gov.uk/articles/listed-buildings>.

Data are based on numbers of records held in the database and do not reflect the total number of Buildings protected under this Article.

A clarification is included in each report confirming that because some listings include multiple buildings, such as terraces or farm buildings under a single listing reference, the total number of structures is greater than the figure given.

Changes in these data principally reflect the ongoing Second Survey of Buildings of Architectural and Historic interest.

#### *Use of data*

The main use of these data is to review the number and range of buildings that are listed in Northern Ireland over time. This information was initially collected, in this form, for a Northern Ireland Audit Office report on the protection of historic buildings which was published in March 2011. The Department for Communities is required under Section 80 of the Planning Act (Northern Ireland) 2011 to compile and amend a list of buildings of Special, Architectural and Historic interest.

The data are used by the following:

1. DfC – to keep an overview of listing numbers and to utilise when responding to queries or making presentations on their work.
2. The Northern Ireland Environmental Statistics Report – includes time series of data from 2003/04.
3. Public (Listing information).

#### *Data Quality Assessment*

Very Good – The figures are derived from the DfC Buildings database with full coverage and incorporating various validation checks. Buildings are selected to become listed after systematic or ad-hoc surveys. The systematic First Survey of the whole of Northern Ireland was completed by 1994 and a Second Survey is ongoing.

### *Data links*

Data are comparable with other parts of the UK who also list buildings.

## **Buildings and Monuments at Risk**

### **7.3 Number of buildings and monuments at risk**

#### *Description of data and methodology (including strengths and limitations)*

The information is currently recorded manually at the end of each financial year from a spreadsheet maintained by Ulster Architectural Heritage. The Department considers proposals for inclusion on the register relative to established criteria. Further details are published on the DfC website at the following location: <https://www.communities-ni.gov.uk/articles/heritage-risk>.

Data are based on numbers of records held in the spreadsheet.

Changes in the data principally reflect updates by the UAH based upon information they have received or have noted during survey work. Significant effort was put into updating records in 2019/20 and 2020/21 resulting in an increase in the number of buildings and monuments recorded as being at risk. This has continued in subsequent years. This period has coincided with the COVID-19 pandemic, an increase in banks and other functions leaving high streets and high inflation. It is to be expected that this will have also contributed to increased levels of vacancy and risk.

#### *Use of data*

The data are used by the following:

1. DfC – to keep an overview of heritage at risk numbers and to inform policy in this area.
2. District Councils - Many District councils have adopted the register as a measure of the impact of heritage policy in their areas. Because it is not based upon a systematic survey it is not a very good indicator of this as it can be expected that more diligent recording in some areas may result in a higher number of at risk structures being identified.
3. The public - to consider potential heritage properties in need of investment.
4. The Northern Ireland Environmental Statistics Report - includes time series of data from 2003/04.

#### *Data quality assessment*

Good – these data are not based upon a comprehensive survey but upon buildings and monuments which the Department becomes aware of through the activities of its employees and contractors. Therefore, there is a danger that a proportion of suitable buildings have not been identified. There have been inconsistencies, on occasion, in the reporting provided to the Department by UAH's changing caseworkers.

In 2023/24, a statistical survey on the condition of listed buildings was carried out. The 2023/24 survey recorded that around half of listed buildings (50.7 %) were 'Not at Risk', 25.1% of buildings were of 'Low' risk, 14.6% of buildings were classed as 'Moderate' risk, 0.6% of buildings were classed as 'High' risk and 6.2% were classed as 'Critical' risk.

This means that just under half (47%) of Northern Ireland's listed buildings at that time were considered at some form of risk with 7% at high or critical risk, a total of approximately 620 of Northern Ireland's 9,127 listed buildings at that time.

The Heritage at Risk in Northern Ireland (HARNI) recorded around 886 listed buildings in the same period. The discrepancy between the number recorded in the condition survey and the number on the HARNI register is explained by the fact that some buildings considered to be of moderate risk for example due to vacancy rather than condition are included in the latter.

### *Data links*

Listed Building Condition Survey 2023-24:

[Survey on the Condition of Listed Buildings | Department for Communities](#)

Ulster Architectural Heritage HAR Report 2023-24

[Heritage-at-Risk-Review-23-24-1-2-1.pdf](#)

Data are comparable with UK agencies - background links below:

<https://historicengland.org.uk/advice/heritage-at-risk>

<https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/buildings-at-risk-register/>

<http://www.savebritainsheritage.org/>

<https://cadw.gov.wales/advice-support/historic-assets/listed-buildings/listed-buildings-risk#section-managing-listed-buildings-at-risk>

## **Listed Buildings Grant Funding**

### **7.4 Value of grant paid and the number of buildings in receipt of grant in each listed building grade**

*Description of data and methodology (including strengths and limitations).*

Collection and compilation of data is via the DfC Grant and Buildings Database and since 2016 from the Historic Environment Fund Repair Stream spreadsheet.

The information is currently recorded manually at the end of each financial year from the relevant spreadsheet. Data is comparable with other parts of the UK who also list buildings which are of special architectural or historic interest.

The drop in expenditure in 2023/24 reflects a change in the grant scheme to process applications a year ahead of the year of expenditure. This change was to maximise the time available to carry out repair work on site.

### *Use of data*

The data are used in the following ways:

1. Monitoring of Spend and Financial Management
2. Ministers Queries/FOI/Environmental Information Regulations
3. The Northern Ireland Environmental Statistics Report - includes time series of data from 2007/08
4. Other UK Departments for comparison purposes

### *Data Quality Assessment*

Very Good - The figures are derived from the Historic Environment Fund Repair Stream spreadsheet incorporating various validation checks.

### *Data links*

The Listed Building Grant Scheme was replaced by the Historic Environment Fund in September 2016. However, the Repair Stream of this fund is comparable. More information on the Fund can be found here: <https://www.communities-ni.gov.uk/topics/historic-environment/historic-environment-funding-grants>.

## **Excavation licences**

### **7.5 Number of excavation licences issued**

*Description of data and methodology (including strengths and limitations).*

Historically, excavation has been one of the main sources of information about our past, particularly for the comparatively long period when there were no written records. Unfortunately, the process also involves the destruction of the very material which provides this information, so excavation is generally viewed as a last resort with the exception of small scale research projects. In Northern Ireland, a licence is required for all archaeological excavations and more general searches for archaeological objects, with licenses issued to suitably qualified individuals in specified locations and for particular reasons. The Historic Environment Division (HED) of DfC is the licensing authority, responsible for processing applications, issuing licences and supervising the excavation process through to publication of the results.

It should be borne in mind that other factors can influence the number of licences issued. For example, proposed changes in planning control or policy can lead to an increase or decrease in planning applications and associated excavation licence applications. It should be noted that since 2019 HED no longer requires an excavation licence for geophysical survey on the basis that such investigation does not constitute a

licensable activity. However, if a geophysical project is located on a scheduled or State Care site, a Detection Device Consent is required from HED.

From 1<sup>st</sup> January 2025, HED has recorded those excavation licences required by its own staff, for works on its own property, separately as excavation licence approvals'. Excavation licence approvals contain similar provisions to excavation licences, but the distinction has been made for legislative reasons. For consistency, the 'Number of excavation licences issued' for 2024/25 includes the excavation licence approvals that were issued to HED staff for the period in question.

It is also important to recognise that the scale of excavation varies widely from licence to licence, as does the amount of archaeology encountered. Some licences are for small scale investigation on a single house plot or development site. Others are issued in association with major housing schemes or infrastructure developments such as road schemes, sites of energy production and quarries.

One condition of the excavation licence is that the licensee must produce a report on the results of the excavation – a short report within 4 weeks and a fully illustrated comprehensive report within 6 months from the end of the excavation, unless an alternative date is agreed with HED. In those excavations which take place because of a planning condition, production of these reports is also a condition of the planning permission.

These reports reflect the size and complexity of the area excavated and can range from a short document incorporated into the Historic Environment Record curated by HED to a major publication or monograph. Production of these documents ensures that sites which could not be preserved *in situ* are preserved by record and ensures that information on the archaeology of Northern Ireland is publicly available. All excavation reports that have been classified as "final" by HED are available to view through the [HED Map Viewer 2024](#).

### *Use of data*

The Historic Environment Division of DfC maintains an excavation database, recording the process of each application from receipt to classification of excavation reports as final. The database is central to managing the licensing process, tracking the record of each licence and licensee and allowing independent checks that HED staff is complying with customer care targets in the process of applications. All applications to carry out excavations and the associated documentation through to final report are also now integrated into the NICS digital information management system.

### *Data Quality Assessment*

Very good – All excavations must be licensed and Historic Environment Division is the sole body for processing and granting excavation licences. Excavations are regularly inspected by HED Curatorial Staff to ensure that the excavation is being carried out as per the approved archaeological programme of works and under the terms and conditions of the archaeological licence. All applications are logged on the HED database with a unique identifier. Heritage Advice and Regulation Branch of HED reports on applications and licenses issued monthly and HED reports quarterly on the

percentage of applications that have been processed within the stipulated timeframes via a balanced scorecard. The processing of licence applications is also subject to scrutiny by Internal Audit.

#### *Data links*

Data on excavations is not comparable with other parts of the UK as NI is the only part of the UK in which a licence to carry out archaeological excavation is required.

Further information on archaeological excavation and survey in Northern Ireland can be found at:

<https://www.communities-ni.gov.uk/articles/archaeology-northern-ireland>.

Further information on archaeological objects and excavation licensing can be found at:

<https://www.communities-ni.gov.uk/articles/protecting-northern-irelands-archaeology>.

Summaries on excavations carried out throughout Ireland can be found at:

<https://excavations.ie>.

## Appendix 1: Reader Information

### Data collection and timeliness

To inform this publication, data are supplied from a variety of sources. As most of this information is readily available it is not thought to create an unreasonable burden on the data suppliers. Due to the nature of compendium publications, some data are available earlier than others but we cannot publish until the final piece of data is provided. It should also be noted that the timing and availability of data varies across datasets and data suppliers. Therefore, more up-to-date data may become available directly from the individual data suppliers at differing points in time.

### Main Uses of Data

This publication provides annual updates of key environmental indicators, ensuring that the most up to date information is readily available for policy makers, environmental interest groups, academics and the public.

#### *Policy Development and Briefing*

The information in the publication is used for input into and monitoring of a number of strategies and policies. For example, the indicator data have been used for the Second Report of the Northern Ireland Biodiversity Group 2005-2009 on Delivery of the Northern Ireland Biodiversity Strategy. In addition, the data were used to inform the major review of the Regional Development Strategy 2035. The data included in previous NI Environmental Statistics Reports have been included in the NI chapter of the [UK National Ecosystem Assessment](#), the NI summary of which was officially launched in October 2011. The data included in NI Environmental Statistics Report were used heavily in the development of the 2013 Northern Ireland State of the Environment Report: From Evidence to Opportunity. The data have also been used for associated European updates (via input to UK reporting) including the 2015 European State Outlook Report. The Northern Ireland local authorities will use the report to assist with the collation of environmental assets for the new development plans. The indicators within this report were used for the Programme for Government (PfG) framework 2016-2021 and several have been included as [wellbeing framework indicators](#) in the latest Programme for Government (PfG) 2024-2027. Several statistics included are used to update indicators in the Annual progress report (APR) of the NI [Environmental Improvement Plan](#).

#### *General Information and Research*

The publication is generally used for reference and is a good starting point when looking for information on key environmental indicators specific to Northern Ireland. It is circulated to a number of internal and external users including Sustainable Northern Ireland; Northern Ireland Environment Link and Northern Ireland Local Government Association. In addition, some of the indicators will be used for comparative statistics of key UK environmental indicators.

## **Rounding and Summing**

There may be slight discrepancies between totals and the sum of the constituent items due to rounding.

## **Data revisions/corrections**

Balancing the aims of accuracy and timeliness of publication means that revisions of data are an expected part of the production of statistics as more information becomes available. Where significant revisions are made to final data, users will be provided with clear information indicating that this is the case. Despite best efforts, there may be occasions whereby publications need to be amended for errors.

If an error is deemed to be material, the electronic publication of the data will be amended as soon as possible and alerts placed on the website notifying the change.

If an error is deemed to be minor, a correction will be made within the next release for publication.

In all cases, the nature and extent of the revisions will be explained clearly for users.

## **Environmental Information Elsewhere in the United Kingdom, Ireland and Europe**

While it is our intention to direct users to environmental information elsewhere in the UK and Europe, users should be aware that environmental indicators are not always measured in a comparable manner to those in Northern Ireland. Details of environmental data published elsewhere in the UK and Europe can be found at the following links.

England

<https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/about/statistics>

Scotland

<http://www.scotland.gov.uk/Topics/Statistics/Browse/Environment>

Wales

[https://gov.wales/statistics-and-research?field\\_policy\\_areas\\_per cent5B103 per cent5D=103](https://gov.wales/statistics-and-research?field_policy_areas_per cent5B103 per cent5D=103)

Ireland

<https://www.cso.ie/en/interactivezone/statisticsexplained/environment/>

European Union Member States

<https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/wdn-20201118-1>

## Appendix 2: Summary of changes to indicators since previous publication

| Indicator and 2026 reference number   | Source                                  | Details of change   |
|---|---|---|
| Indicator 3.1a Annual mean concentration of nitrogen dioxide (NO <sub>2</sub> ).    | DAERA AirQualityNI monitoring site data | Indicator revised to include Ballykeel monitoring station in the calculation of background sites and removed from the calculation of traffic sites. Change implemented from 2016 onwards. |
| Indicator 3.3 Annual mean concentration of particulate matter (PM <sub>2.5</sub> ). | DAERA AirQualityNI monitoring site data | PM <sub>2.5</sub> indicator added with data produced for both urban sites and Lough Navar (Rural).  |
| Indicator 4.4 coastal water bodies in good ecological status.                       | DAERA Marine & Fisheries Division       | Indicator amended to measure good ecological status. Includes specific pollutants in assessment.  |

## Appendix 3: Glossary of terms

|   |  |
|---|--|
| <b>A</b>                                    |  |
| Arboriculturist                             | Arboriculturists cultivate and manage trees, hedgerows and shrubs. The work is undertaken in both rural and urban settings and includes all aspects of felling, preserving, planting and protecting trees, sometimes using heavy equipment. They also provide information and advice on specific tree-related issues.                      |
| Acidification                               | The process of a substance becoming more acidic or decreasing in pH, generally in reference to surface waters and soils.   |
| Agri-food                                   | Agricultural production and food and drink processing.   |
| Ammonia (NH <sub>3</sub> )                  | A colourless, corrosive, pungent-smelling, gaseous pollutant, formed mainly by the decomposition of organic material.  |
| Annual Mean                                 | The average over the year.   |
| Anthropogenic                               | Caused or produced by humans   |
| Areas of Special Scientific Interest (ASSI) | Protected areas that represent the best of our wildlife and geological sites that make a considerable contribution to the conservation of our most valuable natural places.  |
| <b>B</b>                                    |  |
| Biodegradable                               | Capable of being decomposed by bacteria or other living organisms and thereby avoiding pollution.  |
| Biodiversity                                | The variability among living organisms and the ecological complexes of which they are part.  |
| <b>C</b>                                    |  |
| Carbon Dioxide (CO <sub>2</sub> )           | A naturally occurring gas found in the atmosphere which is the most important greenhouse gas produced by human activities, primarily through the combustion of fossil fuels.   |
| Catchment                                   | Term used to describe an area which is drained by a river.   |
| Chlorophyll                                 | A green pigment, present in all green plants and in cyanobacteria, which is responsible for the absorption of light to provide energy for photosynthesis.  |
| Climate Change                              | A change in global climate which is attributed directly or indirectly to human activity and which is in addition to natural climate variability observed over comparable time periods.   |
| <i>Clostridium Perfringens</i>              | Species of clostridium bacteria whose spores produce a toxin that causes blood poisoning, gas gangrene, infection of wounds, and a type of food poisoning that may be mild for healthy adults but can be serious for elderly, infirm, or the very young. Also called Welch's Bacillus. Written also as C. perfringens or Clos. Perfringen. |
| Coliforms                                   | A broad class of bacteria found in our environment, including human faeces and other warm-blooded animals.   |

|                               |   |
|-------------------------------|---|
| Colony Forming Units          | A measure of viable (living) bacterial numbers  |
| Compliance                    | Adhering to laws, regulations and policies.   |
| Controlled Waste              | Household, industrial and commercial waste or any such wastes that require a waste management licence for treatment, transfer or disposal.  |
| <b>D</b>                      |   |
| Designation                   | The process of identifying an area and affording it a special status.   |
| Discharge Consent             | Authorisation from an environmental regulator required prior to the discharge of anything other than uncontaminated water to surface waters or ground waters  |
| Dissolved Oxygen              | The amount of oxygen dissolved in a body of water as an indication of the degree of health of the water and its ability to support a balanced aquatic ecosystem.  |
| <b>E</b>                      |   |
| Ecosystem                     | A natural unit consisting of all plants, animals and micro-organisms in an area which function together with the non-living environmental factors.  |
| Effluent                      | A discharge of pollutants into the environment, partially or completely treated or in its natural state; generally used in regard to discharges into waters.  |
| Emission                      | The direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources into air, water or onto land.  |
| European Union (EU)           | A super national and intergovernmental body comprising twenty-seven European countries.   |
| Eutrophication                | The enrichment by nutrients, especially compounds of nitrogen and/or phosphorous, causing an increase in the growth of algae and plants that produces an undesirable disturbance to the natural balance of an ecosystem.  |
| <b>F</b>                      |   |
| Faecal Coliforms              | A subgroup of bacteria of the coliform type that live mainly in the gut of warm-blooded animals.  |
| Fluorinated gases ('F-gases') | A family of gases containing fluorine used in a range of industrial applications. Because they do not damage the atmospheric ozone layer, they are often used as substitutes for ozone-depleting substances. However, F-gases are powerful greenhouse gases, with a global warming effect up to 23,000 times greater than carbon dioxide (CO <sub>2</sub> ), and their emissions are rising strongly. |
| <b>G</b>                      |   |
| Good Environmental Status     | The overall state of the environment that provides ecologically diverse and dynamic ecosystems which are healthy and productive.  |

|                    |  |
|--------------------|--|
| GPS                | Global Positioning System, a radio navigation system that allows land, sea, and airborne users to determine their exact location, velocity, and time 24 hours a day, in all weather conditions, anywhere in the world.   |
| Greenfield         | Undeveloped land in a city or rural area either used for agriculture, landscape design, or left to naturally evolve.   |
| Greenhouse Gases   | Components of the atmosphere which contribute to the greenhouse effect by absorbing and radiating solar heat.  |
| Groundwater        | All water which is below the surface of the ground in the saturated zone and which is in direct contact with the ground or subsoil.  |
| <b>H</b>           |  |
| Habitat            | Place where an organism (e.g. human, animal, plant, micro-organism) or population lives, characterised by its surroundings, both living and non-living.  |
| Habitats Directive | EC Directive aiming to achieve the conservation of natural habitats and species, as well as the protection and where possible improvement of biodiversity. The main aim is to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements, and create a network of protected areas across the European Union known as "Natura 2000". |
| Heritage Assets    | Buildings, landscapes, buried remains and historic areas of architectural or historic interest. Some have statutory protection as listed buildings or scheduled monuments. Others are included in designated conservation areas, historic parks and gardens, World Heritage Sites, and Areas of Outstanding Natural Beauty.  |
| Household waste    | Waste collected by Local Authorities from households.  |
| Hydrogen Ion       | An ionized hydrogen atom, occurring in plasmas and in aqueous solutions of acids, in which it is solvated by one or more water molecules.  |
| Hydromorphological | Hydromorphology is a term used in river basin management to describe the combination of hydrological and geomorphological (structural) processes and attributes of rivers, lakes, estuaries and coastal waters.  |
| <b>I</b>           |  |
| Indicator          | An observed value representative of a phenomenon to study. In general, indicators quantify information by aggregating different and multiple data.   |
| Indigenous         | Originating and living, or occurring naturally in an area or environment.  |
| Inorganic          | Not composed of organic matter.  |
| <b>K</b>           |  |
| kt NH <sub>3</sub> | Kilotonnes of Ammonia.   |

|                                     |  |
|-------------------------------------|--|
| <b>L</b>                            |  |
| Lake                                | An area of variable size filled with water, localized in a basin that is surrounded by land, apart from any river or other outlet that serves to feed or drain the lake.   |
| Landfill                            | Area of land in or on which waste is deposited.  |
| Land Use                            | The human employment of the land; a change in land use at any location may involve a shift to a different type of use (e.g. from farming to residential) or a change in the intensity of use.  |
| Leachate                            | Liquid that leaks from waste disposal sites.   |
| Listed building                     | A building officially designated as being of architectural or historic importance and having protection from demolition or major alterations.  |
| <b>M</b>                            |  |
| Macroinvertebrates                  | Organisms without backbones, which are visible to the eye without the aid of a microscope.   |
| Macrophytes                         | An aquatic plant large enough to be seen by the naked eye.   |
| Mandatory                           | Obligatory.  |
| Methane (CH <sub>4</sub> )          | A colourless, non-poisonous, flammable gas with a high global warming potential. It is the principal component of natural gas and is produced by the anaerobic decomposition of organic matter. Important sources include marshes and landfill sites.  |
| Municipal Waste                     | Household waste and any other waste under the control of (i.e. collected by) Councils or agents acting on their behalf   |
| <b>N</b>                            |  |
| Nitrous Oxide (N <sub>2</sub> O)    | A colourless, non-flammable gas which contributes to the greenhouse effect. It is used in medicine as an anaesthetic and is commonly known as "laughing gas".  |
| Nitrogen dioxide (NO <sub>2</sub> ) | Some nitrogen dioxide is formed naturally in the atmosphere by lightning and some is produced by plants, soil and water. However, only about 1 per cent of the total amount of nitrogen dioxide found in our cities' air is formed this way. It is an important air pollutant because it contributes to the formation of photochemical smog, which can have significant impacts on human health. |
| Nutrient                            | Element or chemical essential for growth.  |
| <b>O</b>                            |  |
| Organic                             | Containing carbon compounds.   |
| OSPAR                               | An international convention for the protection of the marine environment of the north east Atlantic, to which both the UK and Ireland are signatories. The name 'OSPAR' is derived from the earlier Oslo and Paris Conventions, which were combined in 1998.   |

|   |   |
|---|---|
| Ozone                                   | A pungent, colourless, naturally occurring but toxic gas. Close to the earth's surface ground-level ozone is produced photochemically from hydrocarbons, NO <sub>x</sub> and sunlight, and is a major component of smog. In the stratosphere, it protects the earth from harmful ultraviolet radiation.                       |
| <b>P</b>                                |   |
| Particulate                             | Fine particle of solid or liquid suspended in gas.  |
| pH                                      | A unit for measuring hydrogen ion concentrations. A pH of 7 indicates a "neutral" water or solution. At pH lower than 7, a solution is acidic. At pH higher than 7, a solution is alkaline.   |
| PM <sub>10</sub>                        | Particulate Matter less than 10 microns in diameter, such as solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles allows them to easily enter the air sacs in the lungs where they may be deposited, resulting in adverse health effects. PM <sub>10</sub> also reduces visibility. |
| Pollutants                              | Substances which, when present in the environment under certain conditions, may become injurious to human, animal, plant or microbial life, or to property, or which may interfere with the use and enjoyment of life or property.  |
| Pollution                               | The introduction of pollutants into the environment.  |
| Polycyclic aromatic hydrocarbons (PAHs) | A group of more than 100 different chemicals that are released from burning coal, oil, gasoline, trash, tobacco, wood, or other organic substances such as charcoal-broiled meat. They are also called polynuclear aromatic hydrocarbons  |
| Priority habitats and species           | Habitats and species that are conservation priorities which are under threat because of their rarity and rate of decline.   |
| Phytobenthos                            | Benthic organisms that are plants or algae.   |
| Photoplankton                           | Plankton consisting of microscopic plant.   |
| <b>R</b>                                |   |
| Ramsar sites                            | Covers all aspects of wetland conservation and wise use, recognising wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities.  |
| Recycling                               | Using waste materials in manufacturing other products of an identical or similar nature.  |
| Renewable Energy                        | Energy derived from a resource that can be exploited without depletion because it is constantly replenished, e.g. solar radiation and wind.   |
| <b>S</b>                                |   |
| Scheduling                              | Including on a list for legal preservation or protection.   |

|                                      |  |
|--------------------------------------|--|
| Special Areas of Conservation (SACs) | Given greater protection under the European legislation of The Habitat's Directive. They have been designated because of a possible threat to the special habitats or species which they contain and to provide increased protection to a variety of animals, plants and habitats of importance to biodiversity both on a national and international scale.  |
| Special Protection Areas (SPAs)      | Designated under the European Commission Directive on the Conservation of Wild Birds. All European Community member States are required to identify internationally important areas for breeding, over-wintering and migrating birds and designate them as Special Protection Areas (SPAs).  |
| Sulphur Dioxide (SO <sub>2</sub> )   | A pungent, colourless, gas. Released naturally by volcanic activity, large amounts are also produced by the combustion of fossil fuels, especially coal and oil.   |
| Surface water                        | Water on the surface of the planet such as in a stream, river, lake, wetland, or ocean.  |
| Sustainable Development              | The ability to meet our needs and enjoy a better quality of life without jeopardising the quality of life of future generations.   |
| <b>T</b>                             |  |
| Total Phosphorus                     | Total phosphorus (TP) is a measure of all the forms of phosphorus, dissolved or particulate, that are found in a sample.   |
| Turbidity                            | Muddiness created by stirring up sediment or having foreign particles suspended.   |
| <b>W</b>                             |  |
| Waste                                | Any substance or object which the holder discards or intends or is required to discard.  |
| Waste Arisings                       | A measure of the amount of waste generated by a specified sector or activity.  |
| Water body                           | Any significant accumulation of water.   |
| Water Framework Directive            | EU Directive aiming to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. Its main aims are to: protect and enhance aquatic ecosystems and prevent their deterioration; promote sustainable water use; reduce discharges, emissions and losses of priority substances; and contribute to reducing the effects of floods and droughts. |

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