Northern Ireland Environmental Statistics Report

May 2023
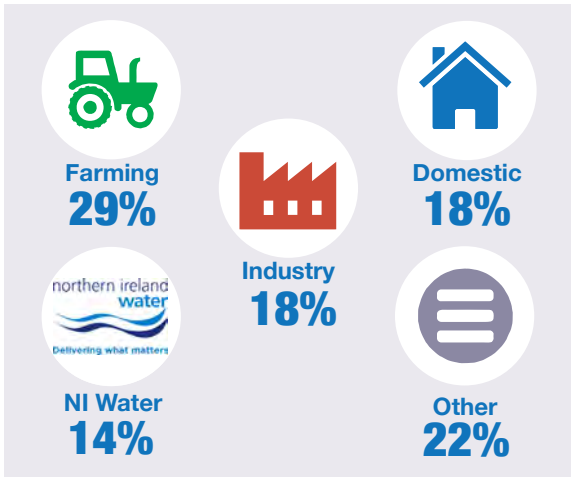
Sustainability *at the heart of a living, working, active landscape valued by everyone.*

Source of substantiated water pollution incidents 2022

Farming **29%**

Industry **18%**

Domestic **18%**

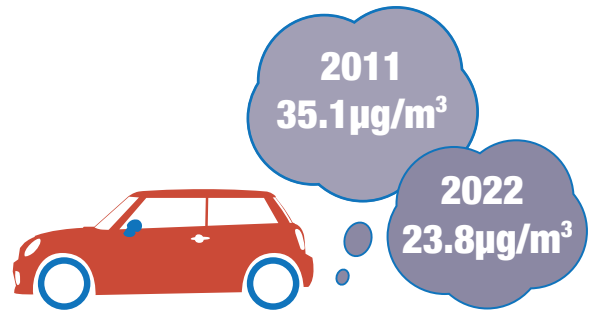NI Water **14%**

Other **22%**

55% of features within protected areas are in favourable condition in 2022/23.

Biodiversity
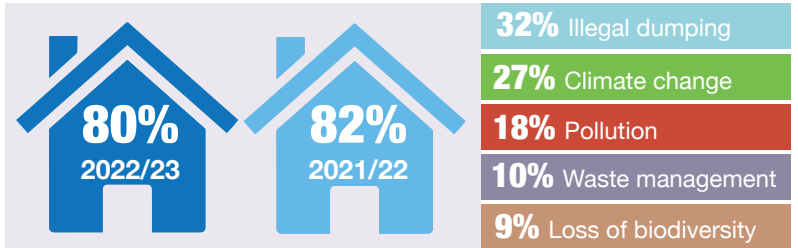
Households concerned about the environment 2022/23 and 2021/22

80% 2022/23

82% 2021/22

Problems considered most important

32% Illegal dumping

27% Climate change

18% Pollution

10% Waste management

9% Loss of biodiversity

9,063

Listed Buildings 2021/22

2011 35.1μg/m^3

2022 23.8μg/m^3

Urban roadside mean concentration of nitrogen dioxide (NO_2).
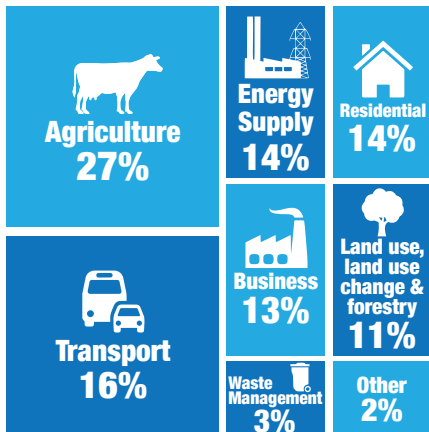
2020 NI Greenhouse Gas emissions 20.9 MtCO$_2$e

Agriculture **27%**

Energy Supply **14%**

Residential **14%**

Business **13%**

Land use, land use change & forestry **11%**

Transport **16%**

Waste Management **3%**

Other **2%**

Recycling Rate **50.1%** in 2021/22

Down from **50.9%** in 2020/21
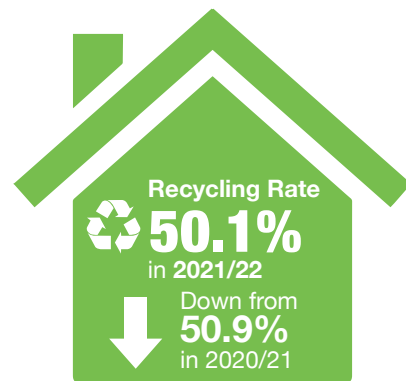
Household recycling rate 2021/22

Key Points

Public Attitudes
- The level of public concern about environmental issues was high in 2022/23, with 80 per cent very or fairly concerned about the environment.
- Illegal dumping of waste and litter was the biggest environmental concern for households (32 per cent) in Northern Ireland in 2022/23.

Air & Climate
- Roadside nitrogen dioxide levels have decreased from 35.1µg/m3 in 2011 to 23.8µg/m^3 in 2022.
- In 2020, Northern Ireland's greenhouse gas emissions were estimated to be 20.9 MtCO2e, a reduction of 24 per cent since 1990.

Water and Marine
- In 2022 soluble reactive phosphorus (SRP) was measured at 93 surveillance rivers across Northern Ireland giving an average concentration of 0.073 mg/l of phosphorus per litre of water.
- Of the twenty-five inshore coastal waterbodies delineated in Northern Ireland, 13 (52 per cent) have been assessed at good or better ecological condition.
- In 2022, there were 1,535 water pollution incidents reported, of which 676 (44 per cent) were substantiated (confirmed) as having an impact on the water quality of the receiving waterway.

Biodiversity
- In 2022/23, 55 per cent of features within Marine and Terrestrial protected sites were in Favourable condition while 36 per cent were in Unfavourable condition.

Historic Environment
- Listed buildings are those of special architectural or historic interest. The number of listed buildings in 2021/22 was 9,063, an increase of 11 per cent compared to 2003/04.

Contents

Introduction

This compendium report provides information on a range of environmental indicators for seven main topics: Public attitudes and Access to Nature, Climate Change, Air, Water and Marine, Biodiversity and Land, Waste and finally Historic Environment. The indicators presented are based on the most recently available data at the time of publication with most providing data on trends over time and where applicable, performance against quantified targets. The indicators that are included were determined in agreement with key data providers, policy colleagues and other interested parties. The report also includes indicators that were population indicators in the draft Programme for Government (PfG) 2016-2021, which DAERA had primary responsibility to report on.

This report provides some commentary on each of the indicators and describes any trends that they illustrate. All figures in the report, apart from those with maps only, have corresponding tables which can be found in the associated data tables available online.

This report is updated annually and each year the indicators are reviewed for their usefulness and relevance. Additional indicators will also be considered for future years. A major rationalisation of the report was completed in 2020 to concentrate on those statistics that are first released in this report and statistics that were produced for PfG monitoring. If you have any comments on the indicators currently published or suggestions for future reports, please send the details to the contact listed at the beginning of the report.

Reader Information

This document may be made available in alternative formats, please contact us to discuss your requirements. Definitions of key terms used in this publication are available in the User Guidance.

Purpose

This is an annual publication which provides information on a range of environmental indicators in Northern Ireland.

The data contained are used to measure progress towards achieving targets from various strategies including:
- Air Quality Directives
- Water Framework Directive

The data are also used by media, the general public and special interest groups to inform policy and lifestyle choices related to the environment.

Next Updates

- This report is published annually with the next update scheduled for May 2024.
- The scheduled dates for all upcoming publications are available from the GOV.UK statistics release calendar: https://www.gov.uk/government/statistics

1 Public Attitudes and Access to Nature

People and households use up significant levels of resources, such as water, energy and food, and can exert pressure on the environment. Our lifestyle choices also impact upon the state of the environment. This chapter looks at our interaction with and changing attitudes towards the environment and signposts the reader to information on Northern Ireland's changing population and environmental pressures. Physically connecting and engaging people with the natural environment through the provision of quality natural spaces brings additional benefits to society including improving health and well-being (exercise, social engagement and mental well-being).

Key points in this chapter:

- The level of public concern about environmental issues was high in 2022/23, with 80 per cent very or fairly concerned about the environment.

- Illegal dumping of waste and litter was the biggest environmental concern for households (32 per cent) in Northern Ireland in 2022/23.

- The most common actions taken by households for environmental reasons in 2022/23 were reusing, recycling and disposing of waste products appropriately (94 per cent), reducing food waste (75 per cent) and reducing consumption of household utilities (70 per cent).

- Pollution of air, land and water was considered to be the greatest threat to biodiversity for households (42 per cent) in Northern Ireland in 2022/23.

- In April 2023, 50 per cent of households in Northern Ireland had accessible natural space within 400 metres.

Other sources of information published elsewhere which illustrate the various pressures on the environment are provided below.

Both population and number of households in Northern Ireland show increasing trends. The number of households has tended to increase at a faster rate than the population resulting in a declining number of people per household. NISRA provide information on population projections as well as an annual update of their mid-year estimates. NISRA population statistics

Prior to the Covid-19 pandemic, air passenger numbers have increased over the recent years in Northern Ireland with the advent of low-fare airlines a major factor in this. The Civil Aviation Authority produces air traffic statistics including the number of passengers departing from individual UK airports.

Car travel continues to dominate the way we do most of our day-to-day travelling. Information on how and why people travel in Northern Ireland including the number of journeys per person, average distance travelled can be sourced from the Department of Infrastructure statistics and research section.

The number of carrier bags dispensed by retailers under the carrier bag levy in Northern Ireland continue to decline. The latest statistics can be found in the [carrier bag levy annual report](#).

[Data tables](#) and further information for this chapter can be found online.

Level of Concern for the Environment

Figure 1.1 Level of concern for the environment, 2003/04 – 2022/23
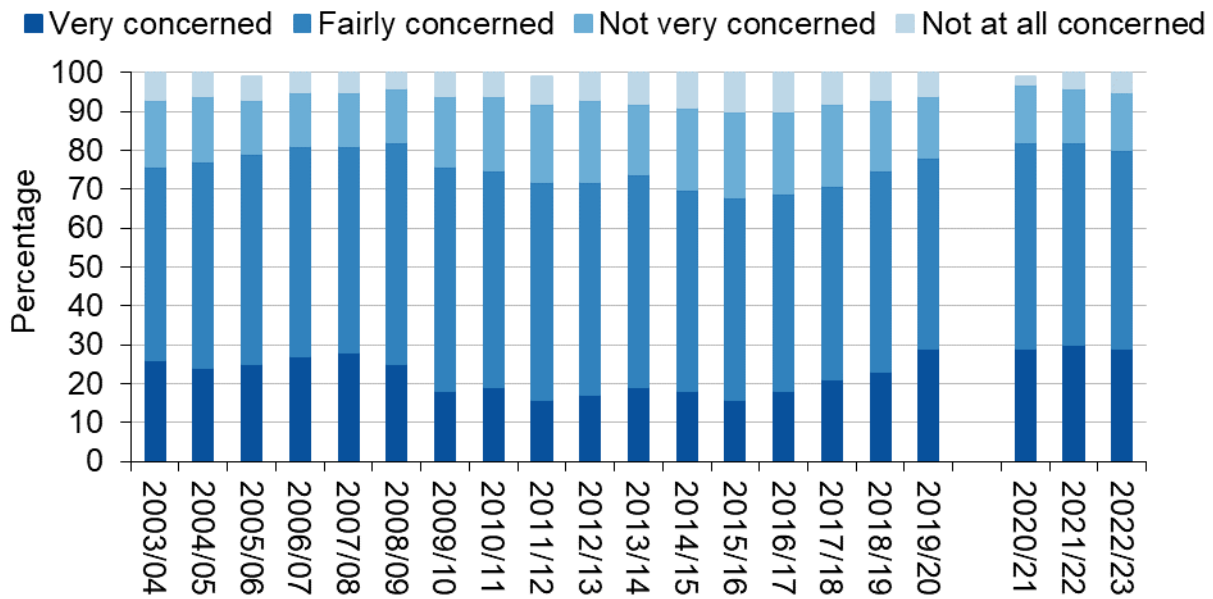
Source: Continuous Household Survey, NISRA

Note: Provisional data. Finalised information published in August 2023.
Caution should be used when comparing data from 2020/21 onwards to previous years due to the impact of the Covid-19 pandemic.

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 onwards to previous years.

Northern Ireland households were asked to provide their views on environmental issues in NISRA's Continuous Household Survey (CHS)[1].

In 2022/23, the proportion of respondents very or fairly concerned about the environment was 80 per cent. This is a decrease from the 82 per cent of respondents concerned about the environment in 2020/21.

When broken down by age and sex, the percentage of males and females very or fairly concerned about the environment were similar, as were the percentages in the three different age groups, 16-34, 35-54 and 55+.

Charts providing a breakdown of 2022/23 data by age and sex are available in the accompanying data tables.

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[1] https://www.nisra.gov.uk/publications/chs-survey-documents

Environmental Problems Considered Most Important

Figure 1.2 Environmental problems considered most important, 2022/23
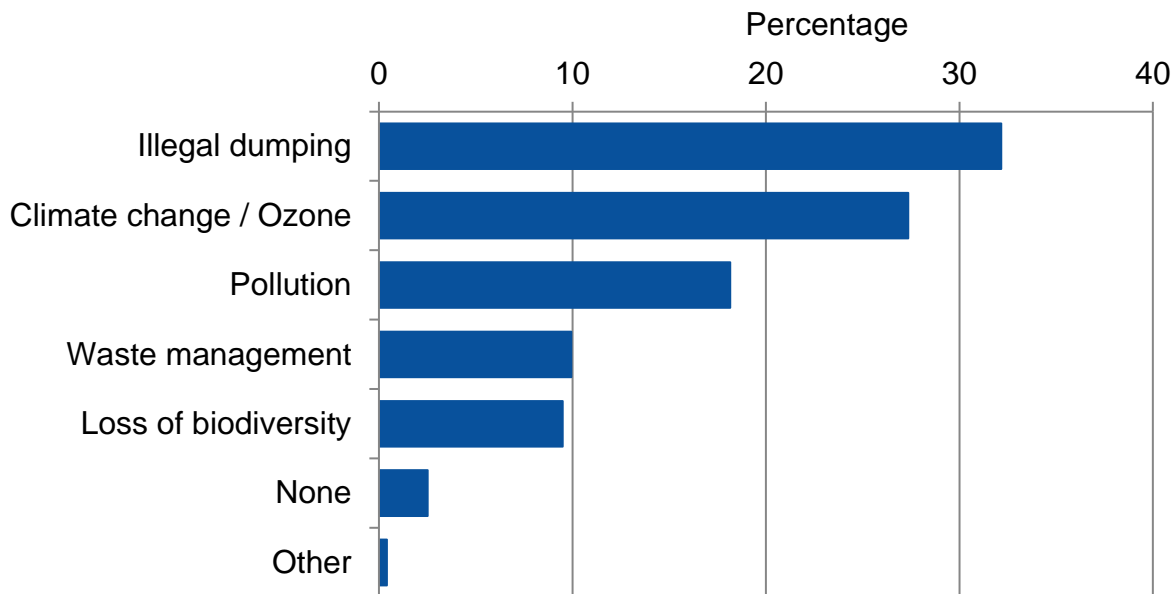
Percentage

Source: Continuous Household Survey, NISRA

Note: Provisional data. Finalised information published in August 2023.

Households were asked to consider the list of environmental problems shown in Figure 1.2 and state which, if any, they thought was the most important issue to them. Results show that in 2022/23, the most commonly selected environmental problems were illegal dumping of waste and litter (32 per cent), Climate change and ozone layer depletion (27 per cent) and pollution of air, water and soil (18 per cent). This was similar to the 2021/22 results for illegal dumping of waste and litter (33 per cent), Climate change and ozone layer depletion (26 per cent) and pollution of air, water and soil (17 per cent).

When analysed by age, respondents aged 55+ were more likely to select illegal dumping of waste and litter as the most important issue than other age categories.

Charts providing a breakdown of 2022/23 data by age and sex are available in the accompanying data tables.

Actions Taken That Have a Positive Impact on the Environment

Figure 1.3 Actions taken that have a positive impact on the environment, 2022/23

Source: Continuous Household Survey, NISRA

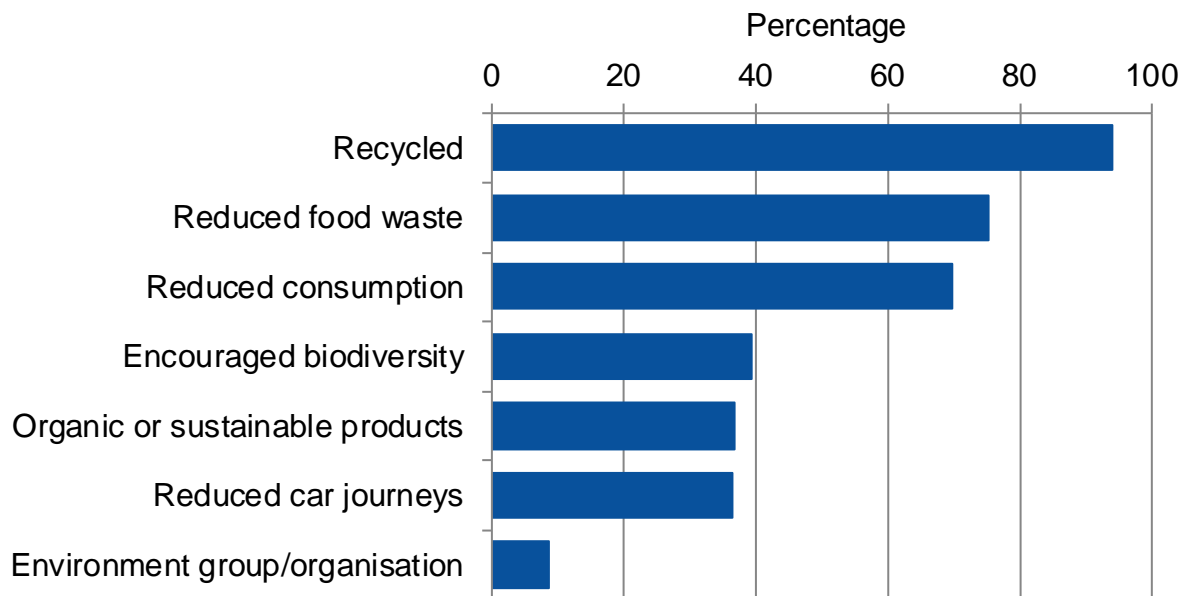*Note: Provisional data. Finalised information published in August 2023.*

The Continuous Household Survey asked respondents what actions they had taken in the last 12 months that had a positive impact on the environment.

Results indicate that in 2022/23, the top three actions taken by households were: reused, recycled and disposed of waste products appropriately (94 per cent); reduced food waste (75 per cent) and reduced consumption of household utilities (70 per cent). Whilst the top three categories remain the same as in 2021/22 there has been an increase in the proportion selecting reduced food waste from the 70 per cent recorded in 2021/22. The proportion of respondents that selected reduced consumption of household utilities has increased dramatically from 52 per cent in 2021/22 to 70 per cent in 2022/23 in response to the extremely high energy costs experienced in 2022.

In 2022/23, females were more likely to take action to reduce food waste, 79 per cent compared to 70 per cent of males. Three-quarters of the respondents aged 35-54 reduced consumption of household utilities in 2022/23 and were more likely to have selected this compared to other age categories.

Charts providing a breakdown of 2022/23 data by age and sex are available in the accompanying data tables.

Amount Paid for the Last Carrier Bag Bought

Figure 1.4 Amount paid for the last carrier bag bought, 2022/23
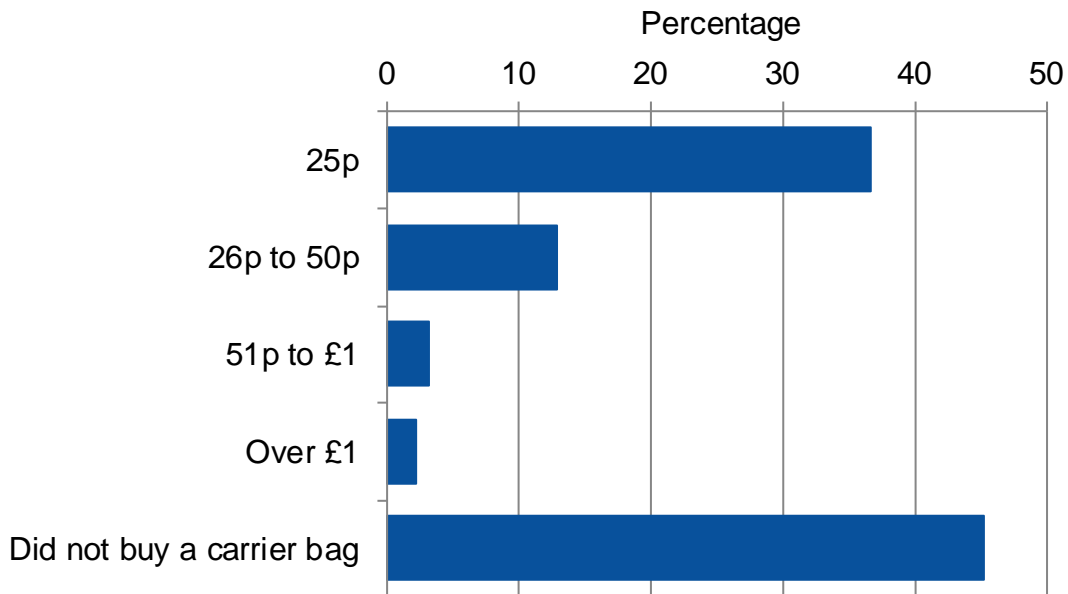
Percentage

Source: Continuous Household Survey, NISRA

Note: Provisional data. Finalised information published in August 2023.

Household respondents were asked how much they paid for the last carrier bag they bought.

Note that the question responses changed in 2022/23 following a revision to the carrier bag levy. From 1st April 2022, the Carrier Bags Charge Regulations were extended so that the levy is 25p and applies to all new carrier bags with a retail price of £5 or less. This is regardless of the material used and whether they are single use or reusable.

Approximately 45 per cent of respondents said that they did not buy a carrier bag, whilst 37 per cent bought bags costing 25 pence. A further 13 per cent paid 26p – 50 pence the last time they bought a bag.

Males were more likely to have bought the lowest costing carrier bag than females, with 39 per cent responding that they bought a bag for 25 pence compared to 35 per cent of females.

When analysing by age, those aged 55+ were the least likely to buy a carrier bag.

Charts providing a breakdown of 2022/23 data by age and sex are available in the accompanying data tables.

Considered the Greatest Threat to Biodiversity

Figure 1.5 Considered the greatest threat to biodiversity, 2022/23
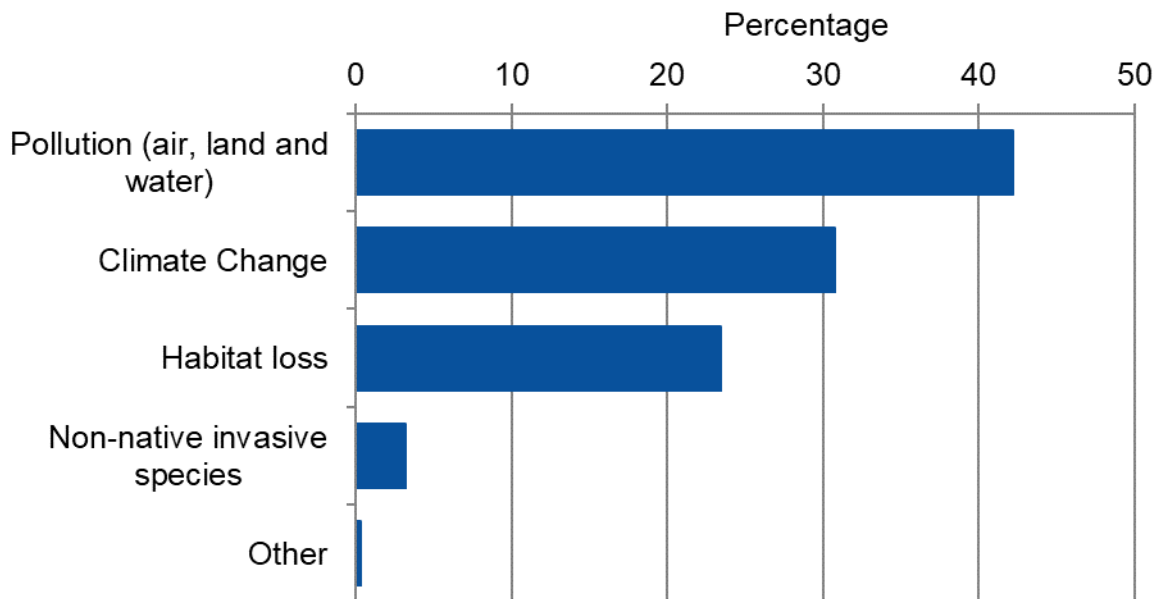
Source: Continuous Household Survey, NISRA

Note: Provisional data. Finalised information published in August 2023.

Household respondents were asked what they considered to be the greatest threat to biodiversity. Biodiversity encompasses the whole variety of life on Earth. It includes all species of plants, fungi and animals, i.e. the entire natural world.

In 2022/23 most respondents selected pollution of air, land and water (42 per cent), climate change (31 per cent) and habitat loss by human activity (23 per cent). This was similar to the percentages recorded in 2021/21 for pollution of air, land and water (40 per cent), climate change (33 per cent) and habitat loss by human activity (25 per cent).

Respondents aged 16-34 were more likely to consider climate change as a greater threat to biodiversity than those in the 35-54 age category, whilst those aged 35-54 were more likely than the 55+ age category to consider habitat loss by human activity as a greater threat.

Charts providing a breakdown of 2022/23 data by age and sex are available in the accompanying data tables.

Considered important in helping to tackle climate change in Northern Ireland

Figure 1.6 Considered important in helping to tackle climate change, 2022/23
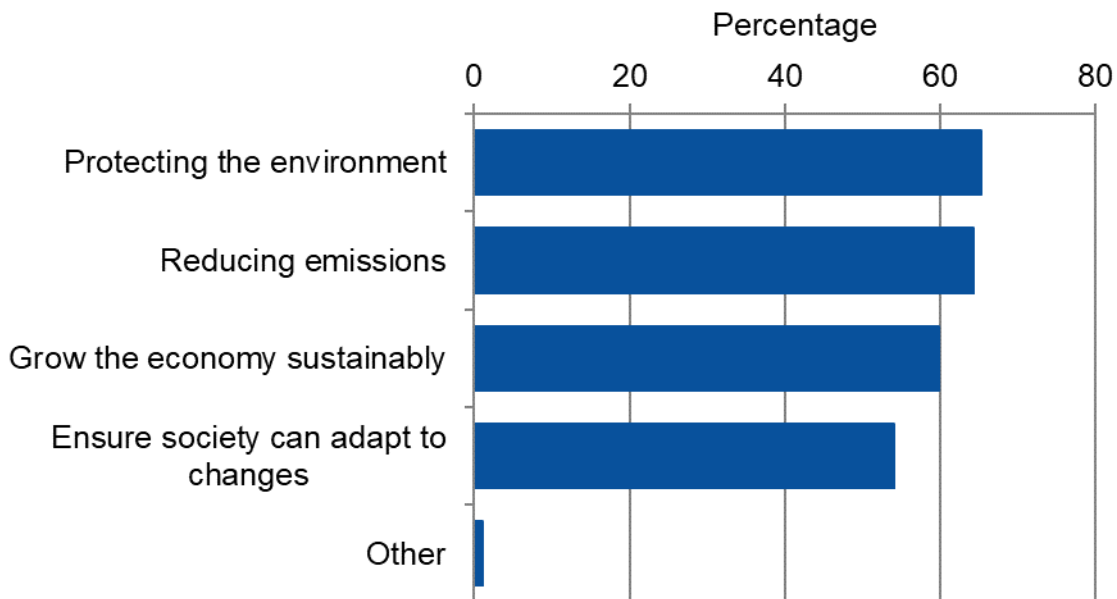
Source: Continuous Household Survey, NISRA

Note: Provisional data. Finalised information published in August 2023.

Household respondents were provided with some background information about the NI Executive's Green Growth Strategy and how it was developed to help plan future actions to tackle the climate crisis and deliver sustainable prosperity.

Households were asked, which of the following do you consider important in helping to tackle climate change in Northern Ireland. This is the first year the question was asked with four answer categories suggested as follows: protecting the environment e.g. actions to protect and enhance natural areas, ensure society can adapt to changes brought about by climate change, grow the economy in an environmentally sustainable way, and reducing emissions. Multiple-response answers were permitted so respondents could select as many answers as deemed appropriate.

Most answer categories were popular with almost two thirds selecting protecting the environment (65 per cent), followed by reducing emissions (64 per cent), grow the economy in an environmentally sustainable way (60 per cent) and ensure society can adapt to changes brought about by climate change (54 per cent).

Respondents aged 35-54 were more likely to consider protecting the environment as important in helping to tackle climate change than both the 16-34 and 55+ age categories. The 35-54 age category were also more likely than the older age categories to select grow the economy in an environmentally sustainable way.

Charts providing a breakdown of 2022/23 data by age and sex are available in the accompanying data tables.

Accessible Natural Space

Figure 1.7 Accessible Natural Space, April 2023
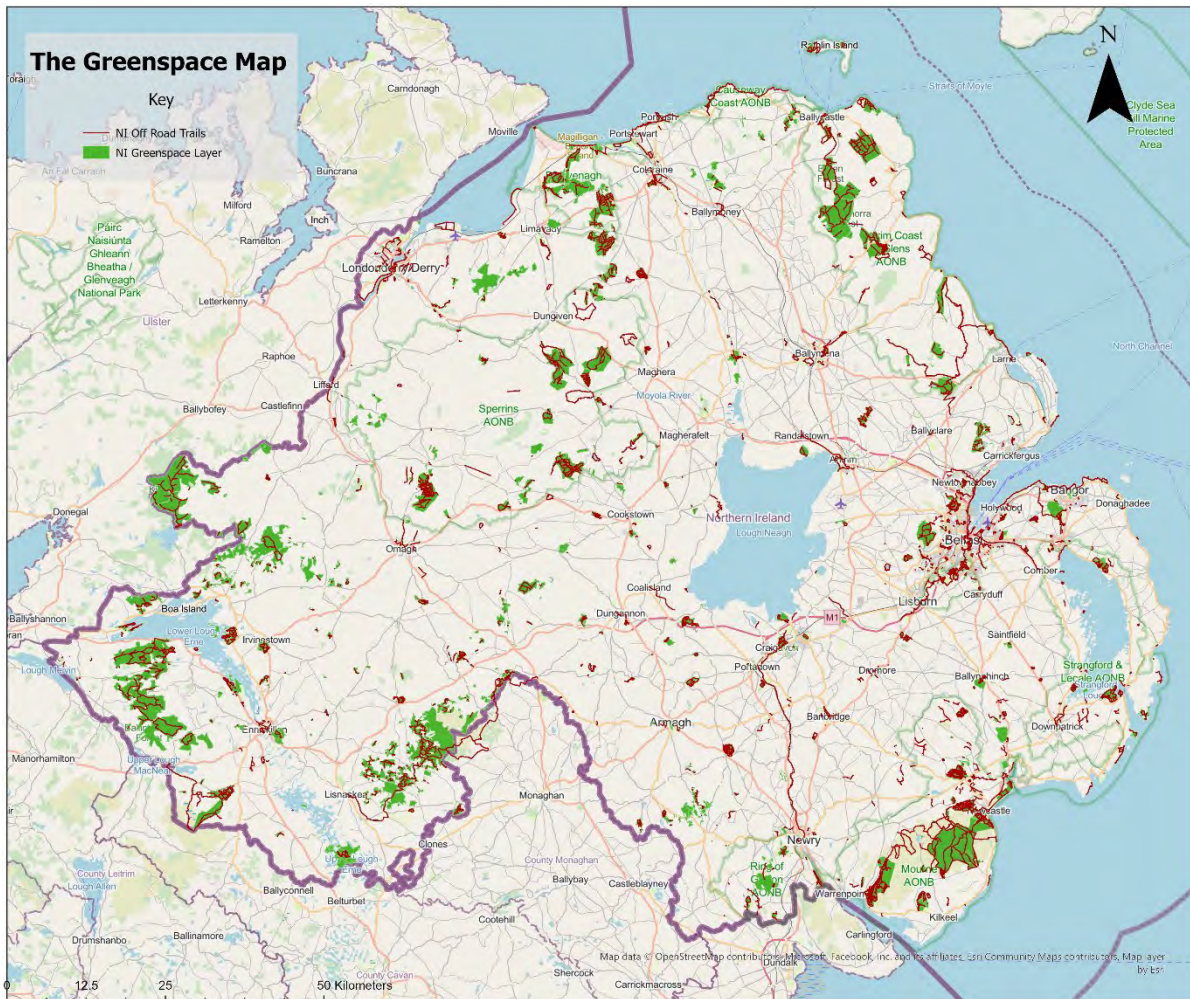
Source: Outdoor Recreation NI

Figure 1.7 is a collated Northern Ireland-wide map of all accessible natural space over two hectares and off-road routes. It includes natural spaces and trails where the public have the landowner's permission to visit, such as in urban and country parks, forests, beaches and walking trails.

This indicator was under development in 2021/2022 to measure access to natural space. The April 2023 Greenspace Map has been developed by harmonising, combining and enhancing data from owners and managers. This will be the baseline for future comparison. The Greenspace Map for April 2023 records 98,853 ha of Greenspace over 2 hectares and 2,926 miles of Trails.

The results from the April 2023 analysis found that:

- 49.7 per cent of households in NI are within 400m of Greenspace >2ha, Bluespace or Trails.
- 74.8 per cent of households are within 1km of Greenspace >2ha, Bluespace or Trails.

- 83.1 per cent of households are within 2km >2ha of Greenspace, Bluespace or Trails.

Further, analysis shows that 59 per cent of households within urban areas are within 400m of a Greenspace, Bluespace or Trail, whereas 10 per cent of households within rural areas are within 400m of a Greenspace, Bluespace or Trail.

Connection with nature during time spent outdoors is aligned with greater care and concern for biodiversity, landscapes and the environment and increased pro-nature conservation behaviours.

The closer we live to accessible natural space, the more likely we are to make use of it on a regular and sustained basis. Outdoor recreation in nature brings additional benefits to society including improving health and well-being (exercise, social engagement and mental well-being), increasing active travel, growing and greening the economy, tackling inequality and enhancing education and learning.

During the Covid-19 pandemic people relied on outdoor physical activities for their daily exercise. This highlighted the need for safe, high quality, accessible and welcoming natural spaces and places. Outdoor recreation increased significantly during this time and this level has continued higher than previously.

Access to and participation in outdoor recreation within natural space is not equal across society. This accessible natural space indicator is designed so:
- Progress to increase accessible natural space where it is lacking can be measured and monitored;
- It can be used to inform planning (e.g. housing, infrastructure and transport, and integrating good green infrastructure that connects people to nature and enables active travel), gap analysis in current provision, resource allocation, site suitability assessments and demographic analysis (e.g. health and deprivation etc), and;
- The data can be transformed to be accessible and visually engaging and published on Spatial NI (for stakeholders), OutmoreNI (for consumers) and OpenDataNI.

Annually it will show where new areas of accessible natural space and trails have been created or new links to these, increasing the percentage of the population with access. It will also show where access has been lost.

Open space strategies and outdoor recreation plans have been drawn up for a number of regional areas including local authorities and Areas of Outstanding Natural Beauty (AONB).

2 Climate Change

Climate change is one of the most serious threats we face today, not only to our environment, but to our economic prosperity and global security and has the power to affect us no matter where we live. The overwhelming scientific evidence from the Intergovernmental Panel on Climate Change (IPPC) has highlighted the dramatic changes to our climate and their causes.

Northern Ireland faces changes to its climate over the next century. Projections suggest that we may face hotter, drier summers and warmer, wetter winters as a result of climate change. This chapter will report on greenhouse gas emissions and present a time series of temperature and rainfall data calculated using Armagh Observatory temperature records.

Key points in this chapter:

- In 2020, Northern Ireland's greenhouse gas emissions were estimated to be 20.9 MtCO2e, a reduction of 24 per cent since the baseline levels. The largest sectors in terms of emissions in 2020 were agriculture (27 per cent), transport (16 per cent) and residential (14 per cent).

- Climate records suggest that the mean annual temperature has been steadily increasing since the end of the 19th century. The number of days per year where the temperature exceeded 20°C has also been increasing in the same timescale.

Other sources of information published elsewhere provide further details of greenhouse gas emissions and efforts to reduce the quantities emitted in Northern Ireland.

For the 12 month period January 2022 to December 2022, 51 per cent of total electricity consumption in Northern Ireland was generated from renewable sources located in Northern Ireland.

The overall number of renewable energy applications received in 2021/22 was 82, a decrease from 100 in 2020/21 and well below the peak of 820 in 2011/12.

Data tables and further information for this chapter can be found online.

Greenhouse Gas Emissions

Figure 2.1 Total greenhouse gas emissions in Northern Ireland, 1990 – 2020
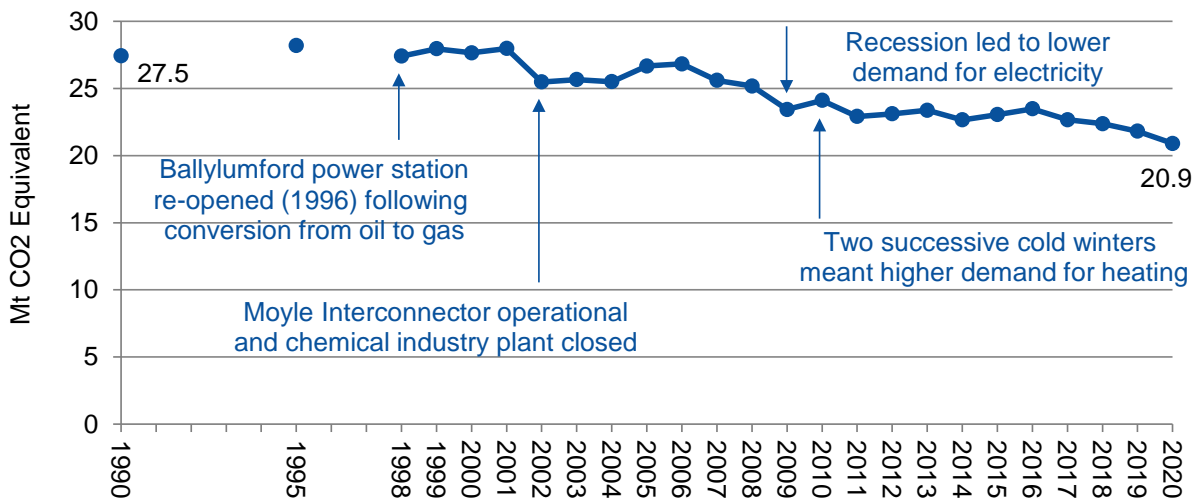
Source: Aether and Ricardo Energy & Environment
Note: The base year for UK greenhouse gas emissions is 1990 for carbon dioxide, methane and nitrous oxide, and 1995 for fluorinated gases.

Greenhouse gas emissions for England, Scotland, Wales and Northern Ireland are published annually, detailing estimates of greenhouse gas emissions since 1990. The estimates are consistent with the United Nations Framework Convention on Climate Change reporting guidelines. The NI Climate Change Act (2022) commits NI to reducing emissions by 100 per cent by 2050 from baseline levels[2]. The base year is 1990 for carbon dioxide, methane and nitrous oxide, and 1995 for the fluorinated gases.

In 2020, Northern Ireland's total greenhouse gas emissions accounted for 5 per cent of the UK total, higher than its population share of 3 per cent. Since the base year, Northern Ireland's total greenhouse gas emissions have decreased by 24 per cent from 27.5 to 20.9 million tonnes of carbon dioxide equivalent ($MtCO_2e$).

The largest sectors in terms of emissions in 2020 were agriculture (27 per cent), transport (16 per cent) and residential (14 per cent). Most sectors showed a decreasing trend since the base year. The largest decreases, in terms of tonnes of carbon dioxide equivalent, were in the energy supply, waste management and business sectors. These were driven by improvements in energy efficiency, fuel switching from coal to natural gas, which became available in the late 1990s, and the introduction of methane capture and oxidation systems in landfill management.

The 1990-2021 statistical bulletin on greenhouse gas emissions will be published in June 2023.

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[2] Given the small differences involved, all references to '1990', within figures, refer to 'base year' estimates as provided by the Greenhouse Gas Inventory.

Mean Annual Temperature

Figure 2.2 Mean annual temperature, 1844 – 2022
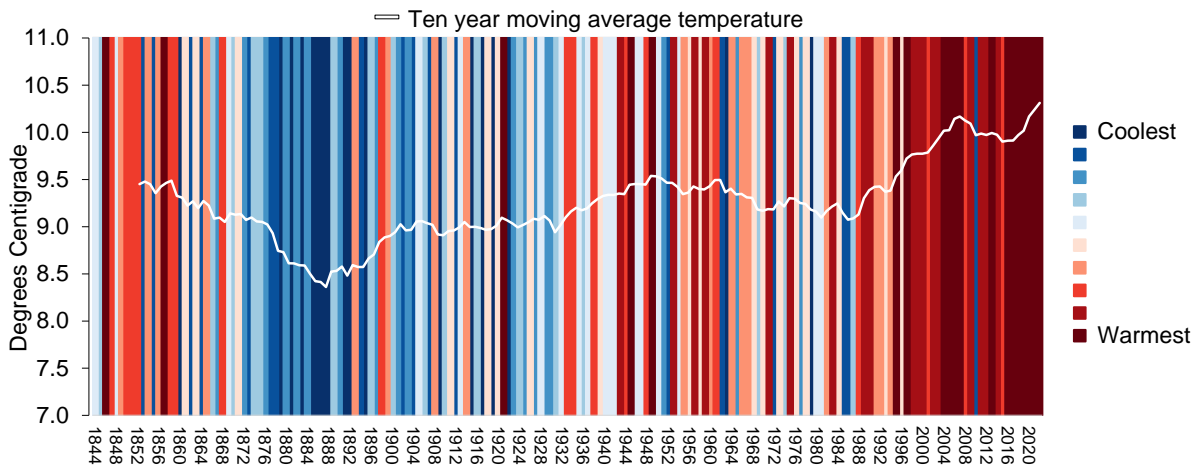
Source: Armagh Observatory

The mean annual temperature for Northern Ireland has been calculated from the Armagh Observatory temperature records.

The ten year moving average trend line shows that the mean annual temperature reached a low towards the end of the 19th century, and has been steadily increasing since.

By the end of the 20th century, the ten-year moving average temperature had risen to its highest levels since the temperature records began.

The lowest mean annual temperature (7.35°C) was recorded in 1879.

The mean annual temperature in 2022 (10.78°C) was the highest ever recorded.

Warm and Frost Days per Year

Figure 2.3 Number of warm and frost days per year, 1844 – 2022
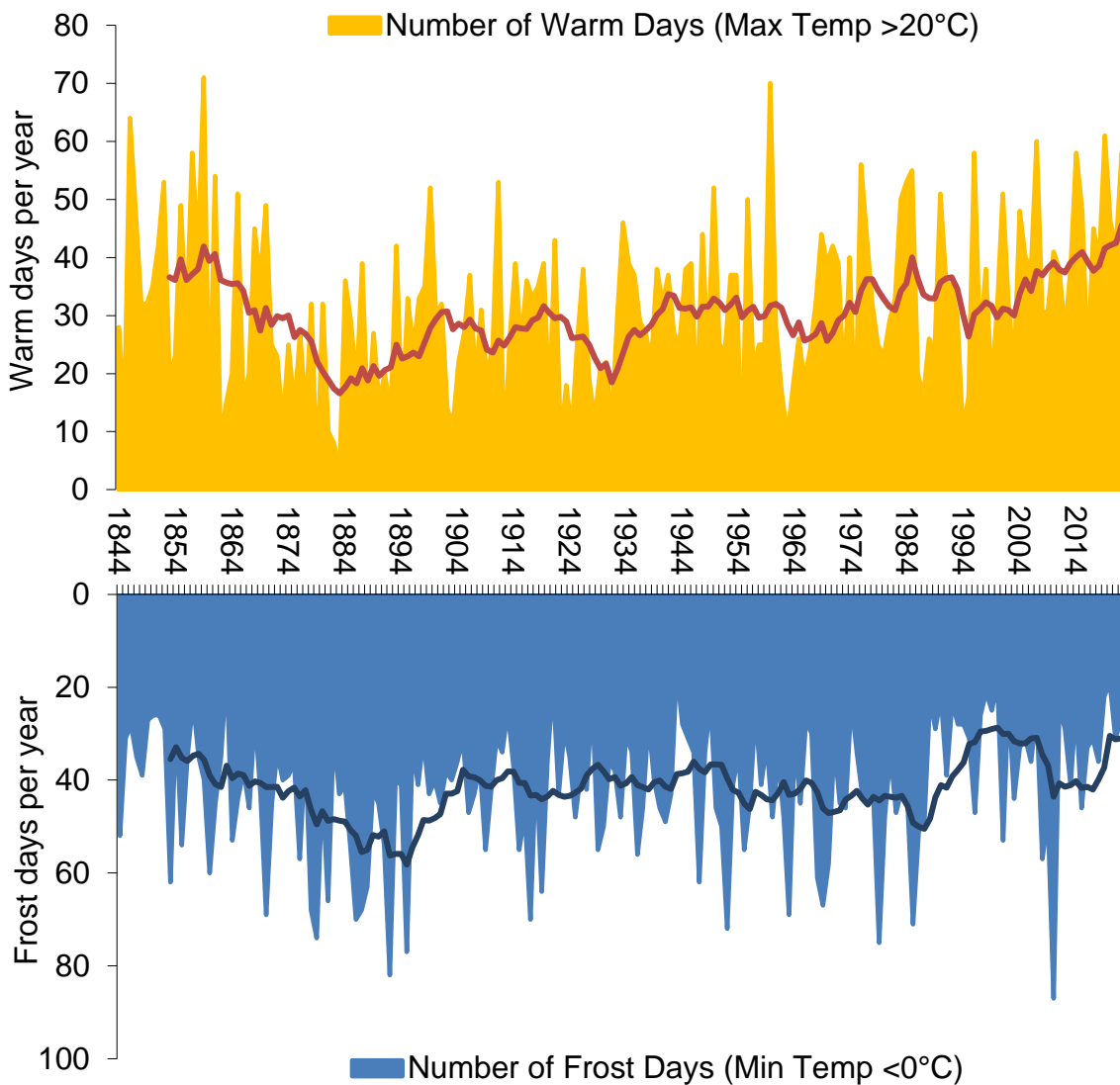
Source: Armagh Observatory

The number of days per year where temperatures were recorded exceeding 20°C or falling below 0°C has been calculated from the Armagh Observatory temperature records.

The ten year moving average trend line shows that the number of warm days per year reached a low towards the end of the 19th century, and has been steadily increasing since. The number of frost days per year reached a high at the end of the 19th century.

The lowest number of recorded frost days per year was 16 days, in 1863 and 1943, whilst the highest number of warm days was recorded in 1859 at 71 days.

Annual Rainfall

Figure 2.4 Annual rainfall, 1853 – 2022
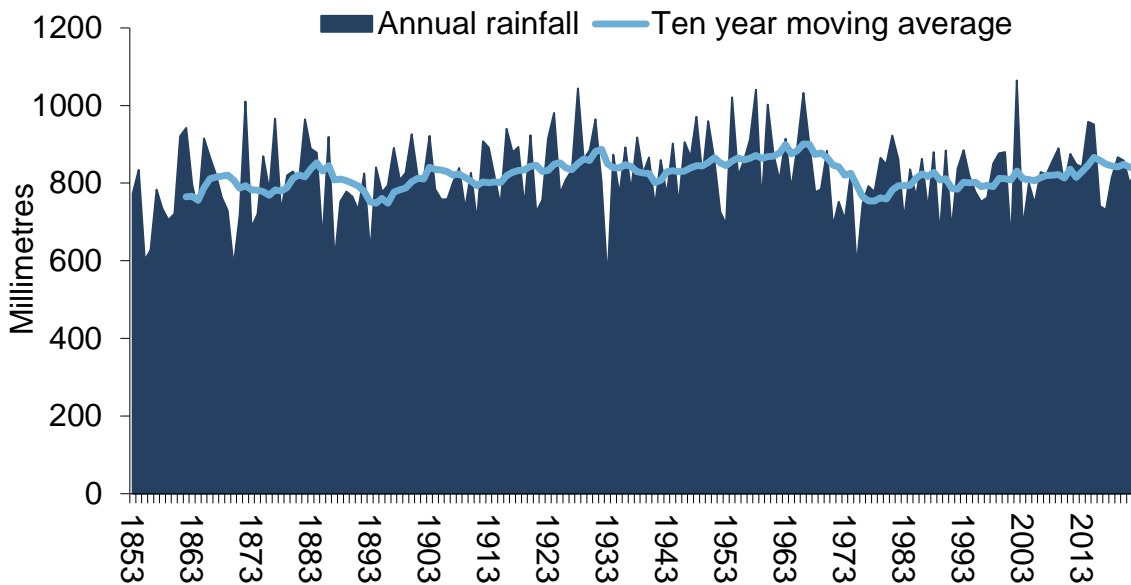
Source: Armagh Observatory

The amount of annual rainfall from 1853 to 2022 has been calculated from the Armagh Observatory temperature records.

Since 1853 the ten year moving average has remained between 748 millimetres and 901 millimetres of rain per year.

2002 saw the highest level (1,065 millimetres) of annual rainfall over the time series, whilst the lowest level of annual rainfall was recorded in 1933 at 550 millimetres.

3 Air

The air that we breathe is vital to our health and wellbeing. Good air quality is essential for human health, the climate, habitats, and the built environment. Pollutants from human activity are present in our atmosphere which may adversely impact upon our health and natural environment. This chapter will report on the quality of our air.

There are 22 air quality monitoring stations in Northern Ireland. Levels of carbon monoxide, nitrogen oxides, sulphur dioxide, particulate matter, ozone, benzene, and polycyclic aromatic hydrocarbons are monitored at many of these stations and are measured against UK Air Quality Strategy objectives and The Air Quality Standards Regulations (Northern Ireland) 2010.

Weather conditions can be a contributing factor to some periods of poor air quality and subsequent elevated levels of air pollutants. This is true of hot, sunny weather which can lead to higher levels of ozone, and winter weather where temperature inversions can lead to increased levels of pollutants, especially particulate matter, at ground level.

Key points in this chapter:

- Roadside nitrogen dioxide levels have decreased from 35.1µg/m^3 in 2011 to 23.8µg/m^3 in 2022.

- In 2022, the mean nitrogen dioxide level for the ten sites, previously used as an indicator for PfG reporting was 26.9µg/m^3. This was 0.6µg/m^3 greater than the level reported in 2021.

- In 2022 there was no breach of the UK Strategy Objective or The Air Quality Standards Regulations Limit Values of 40 µg/m^3 for the annual mean concentration of particle matter (PM$_{10}$). The annual mean concentration of PM$_{10}$ across urban areas was 14 µg/m^3 and the mean for the Lough Navar rural background monitoring site was 7 µg/m^3.

- In 2021, of the ammonia emissions from agriculture, 86 per cent came from livestock, 8 per cent from the application of fertilisers containing nitrogen and 6 per cent from the application of other organic materials to land (sewage sludge and digestate).

A comprehensive summary of air pollution in Northern Ireland is available from DAERA via the annually published report.

Data tables and further information for this chapter can be found online.

Nitrogen Dioxide

Figure 3.1a Annual mean concentration of nitrogen dioxide (NO$_2$), 2011 – 2022

Urban background sites mean — Urban roadside sites mean
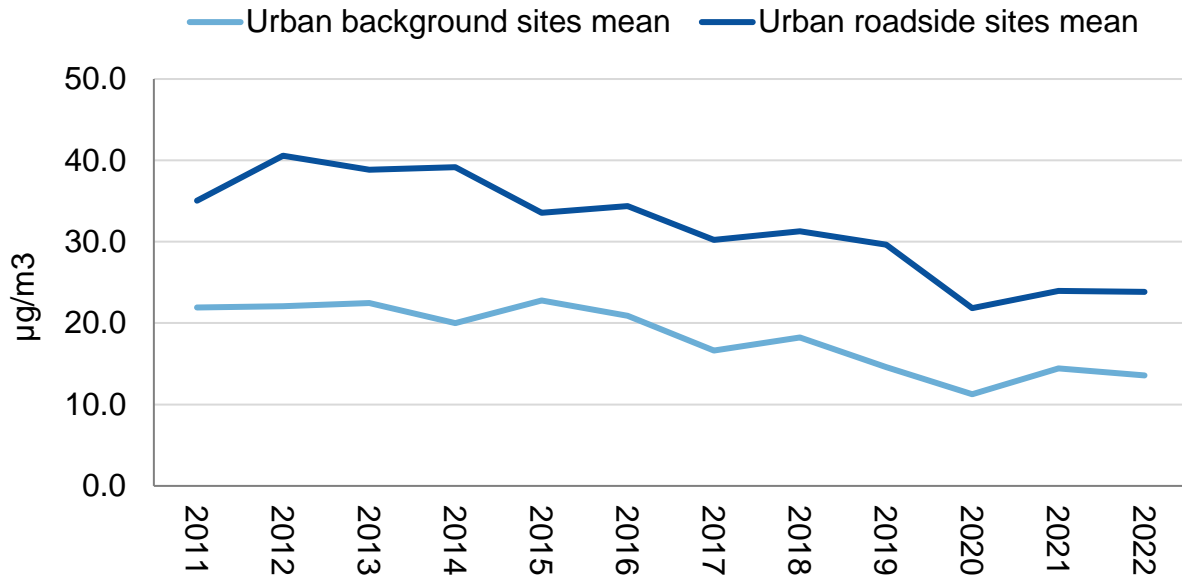
Source: DAERA

Nitrogen dioxide (NO$_2$) is part of a group of gaseous air pollutants produced as a result of domestic and industrial combustion, road transport, other forms of transport and energy generation. NO$_2$ can exacerbate symptoms of heart and lung conditions, thereby reducing quality of life for affected individuals. NO$_2$ can also adversely affect plant life and biodiversity in sensitive habitats.

In 2022, nitrogen dioxide was monitored using automatic techniques at 16 sites across Northern Ireland. The UK Air Quality Strategy sets objectives for an hourly mean limit of 200µg/m^3 and no more than 18 exceedances of this hourly limit are allowed per year. In addition, there is an annual mean limit of 40µg/m^3.

Figures for 2022 are provisional as the final data ratification was not completed before these statistics were produced, see the Environmental Statistics Report user guidance document for further details of validation and ratification process. The average annual mean concentration of NO$_2$ across Northern Ireland's urban background sites remained relatively stable between 2011 and 2016, varying between 20 and 23µg/m^3. Since 2017 the average annual mean concentration of NO$_2$ has fallen below this level and was 13.6µg/m^3 across Northern Ireland's urban background sites in 2022.

Roadside nitrogen dioxide levels have decreased from 35.1µg/m^3 in 2011 to 23.8µg/m^3 in 2022.

Figure 3.1b Annual mean concentration of nitrogen dioxide (NO₂), 2011 – 2022, 10 sites
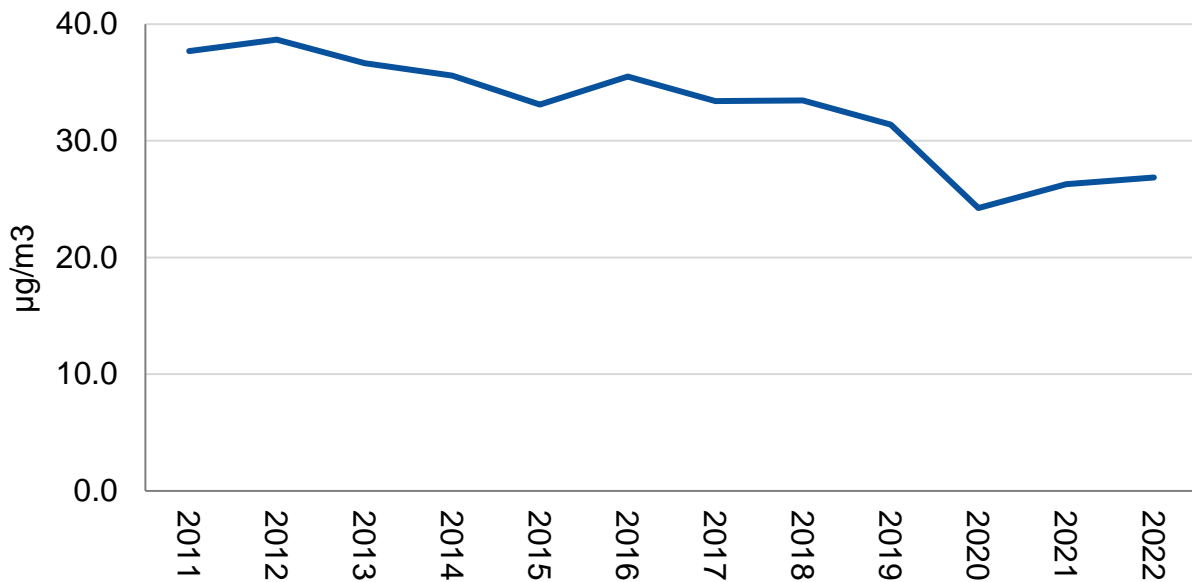
Source: DAERA

This indicator was previously used as a population indicator in the Programme for Government (PfG) framework. The ten sites included to produce the average statistic shown above are:

- Armagh Lonsdale Road,
- Belfast Newtownards Road,
- Belfast Ormeau Road,
- Belfast Stockman's Lane,
- Belfast Westlink Roden Street,
- Castlereagh Dundonald,
- Derry Dale's Corner,
- Downpatrick Roadside,
- Newtownabbey Antrim Road,
- North Down Holywood A2.

In 2022, the mean nitrogen dioxide level for the ten sites above was 26.9µg/m³. This was 0.6µg/m³ greater than the level reported in 2021.

NO₂ levels have shown a gradual reducing trend from 2011 to 2019. Emission dipped in 2020 to 24.3µg/m³ coinciding with restrictions implemented in response to the Covid-19 pandemic.

Particulate Matter

Figure 3.2 Annual mean concentration of particulate matter (PM10), 2009 – 2022
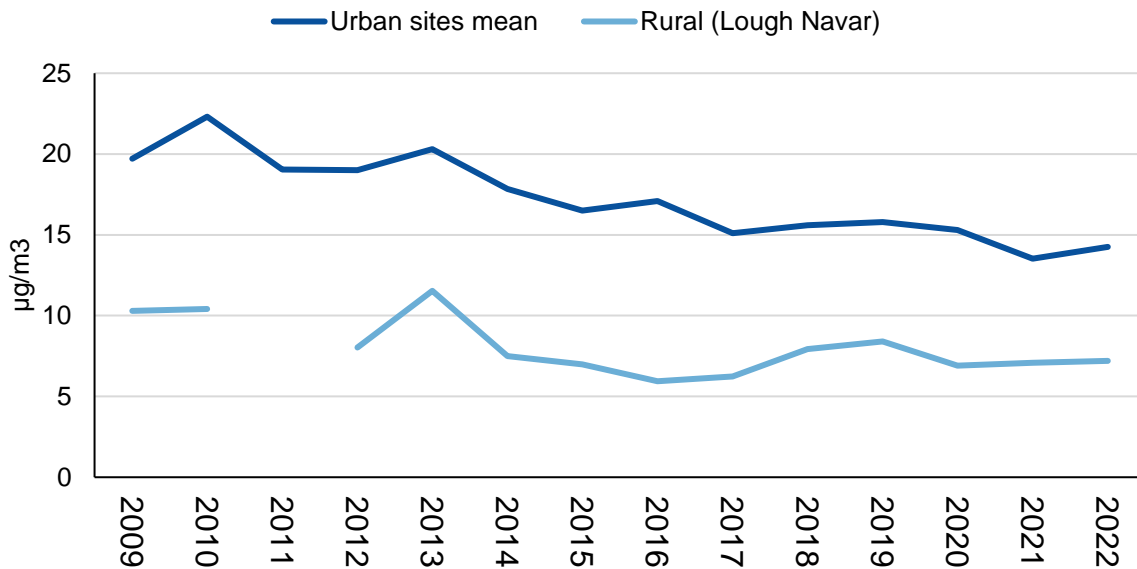
Source: DAERA
Note: There is no value for Lough Navar for 2011 due to low data capture.

Particulate matter in the atmosphere with a diameter of less than or equal to 10 microns (PM_{10}) arises from both man-made and natural sources. Road transport and fossil fuel combustion produce the majority of airborne particulate matter found in the air in urban locations. Fine particles can be carried deep into the lungs where they can cause inflammation and a worsening of symptoms in people with heart and lung diseases. In addition, they may carry surface-absorbed carcinogenic compounds into the lungs.

The UK Air Quality Strategy sets objectives for an annual mean objective of 40 $\mu g/m^3$ for PM_{10}. It also sets a daily mean limit (24-hour mean) of 50 $\mu g/m^3$ which is not to be exceeded more than 35 times a year.

Figures for 2022 are provisional as the final data ratification was not completed before these statistics were produced, see the Environmental Statistics Report user guidance document for further details of validation and ratification process. In 2022, at all 12 sites where PM_{10} is monitored, there was no breach of the UK Strategy Objective or The Air Quality Standards Regulations Limit Values of 40 $\mu g/m^3$ for the annual mean concentration of this pollutant.

The annual mean concentration of PM_{10} across urban areas in Northern Ireland in 2022 was 14 $\mu g/m^3$ and the annual mean for the Lough Navar rural background monitoring site was 7 $\mu g/m^3$. In the period since 2009, the annual mean concentration of PM_{10} at the rural Lough Navar site has been no higher than 12 $\mu g/m^3$ while the annual mean concentration across Northern Ireland's urban monitoring sites has reached a maximum of 22 $\mu g/m^3$ (in 2010) but has shown a gradual decline since.

Ammonia

Figure 3.3 Annual ammonia emissions from agriculture, 2001 – 2021
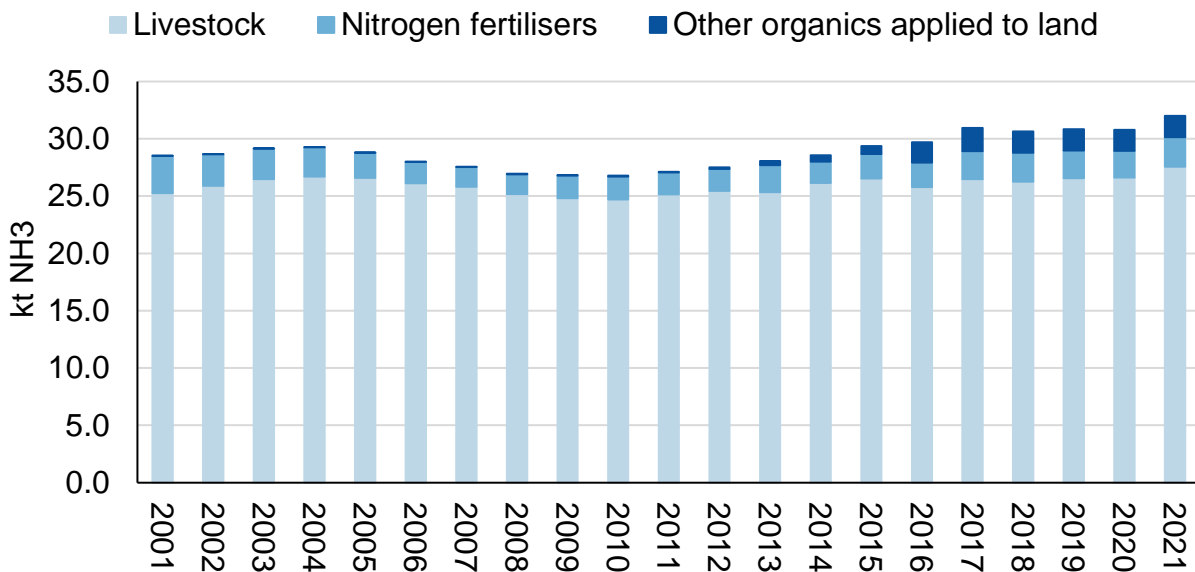
Source: Rothamsted Research, North Wyke
Note: Provisional data. Finalised information published in NAEI Air Quality Pollutant Inventory in October 2023.

Ammonia is an air pollutant which arises mainly from agricultural practices. The agriculture sector accounted for the majority of ammonia emissions in Northern Ireland in 2021. Other sources include transport, commercial and domestic combustion and industrial processes.

In 2021, of the ammonia emissions from agriculture, 86 per cent came from livestock, 8 per cent from the application of fertilisers containing nitrogen and 6 per cent from the application of other organic materials to land (sewage sludge and digestate). Estimates of total ammonia emissions from agriculture are based on numbers of cattle, sheep, pigs, poultry, horses, goats and deer together with associated information on livestock and manure management practices and the use of nitrogen-containing fertilisers.

Emissions from livestock have increased by 9.1 per cent since 2001 (from 25.3kt to 27.6kt in 2021). This compares with a 14.8 per cent decrease for the UK as a whole over the same period. Cattle numbers have declined to a lesser extent in NI compared with the UK as a whole. Dairy cow numbers have also increased in NI. Pig and poultry numbers have increased over this period in NI in contrast to decreasing or stable populations for the UK as a whole.

The ammonia emissions from nitrogen fertilisers have declined by 0.7 kilotonnes (from 3.3kt in 2001 to 2.6kt in 2021), a 21 per cent decrease. This is directly associated with a significant reduction in fertiliser use, particularly on grassland. Overall, ammonia emissions have increased, by 12.1 per cent, from 28.5kt in 2001 to 32.0kt in 2021.

4 Water and Marine

Water is an essential natural resource and plays a vital role in maintaining biodiversity, our health and social welfare and our economic development. Our rivers, lakes, estuaries, seas and groundwater provide water to sustain many of our core social and economic activities, and also provide drinking water for our population.

The majority of Northern Ireland's 650 km of coastline is protected for its special interest and a number of our coastal species and habitats are recognised as internationally important. The marine life in the seas surrounding Northern Ireland is rich and varied and includes marine mammals such as harbour seals, whales, dolphins, seabirds, waterfowl and other species that migrate here.

This chapter looks at the quality of Northern Ireland's inland and coastal waters, including levels of compliance with waste water standards, pollution incidents and Irish Sea temperatures.

Key points in this chapter:

- Of the twenty-five inshore coastal waterbodies delineated in Northern Ireland, 13 (52 per cent) have been assessed at good or better ecological condition.

- In 2022 soluble reactive phosphorus (SRP) was measured at 93 surveillance rivers across Northern Ireland giving an average concentration of 0.073 mg/l of phosphorus per litre of water. This was 0.026 mg/l more than the lowest figure reported in this time series, 0.047 mg/l in 2012.

- Water pollution incidents are investigated by Northern Ireland Environment Agency (NIEA). In 2022 there were 1,535 incidents reported to NIEA or discovered by NIEA during inspections, of which 676 (44 per cent) were substantiated (confirmed) as having an impact on the water quality of the receiving waterway. Of these, 13 per cent were considered to be of High or Medium Severity.

- Two out of nine designated shellfish water protected areas (SWPAs) complied with the Water Framework Directive guideline E. Coli standard in Shellfish Flesh in 2022.

Statistics related to drinking water quality, bathing water quality, blue flag beaches, marine water quality and beach litter are available online.

Whilst statistics on the state of the water environment are published annually in this report, Water Framework Directive data are not updated each year due to the timescales of monitoring. The latest Water Framework Directive statistics on the status of all water body types: rivers, lakes, transitional & coastal and groundwater were published in 2021.

Data tables and further information for this chapter can be found online.

Groundwater Quality

Figure 4.1 Annual mean nitrate concentrations (in groundwater), 2000 – 2021
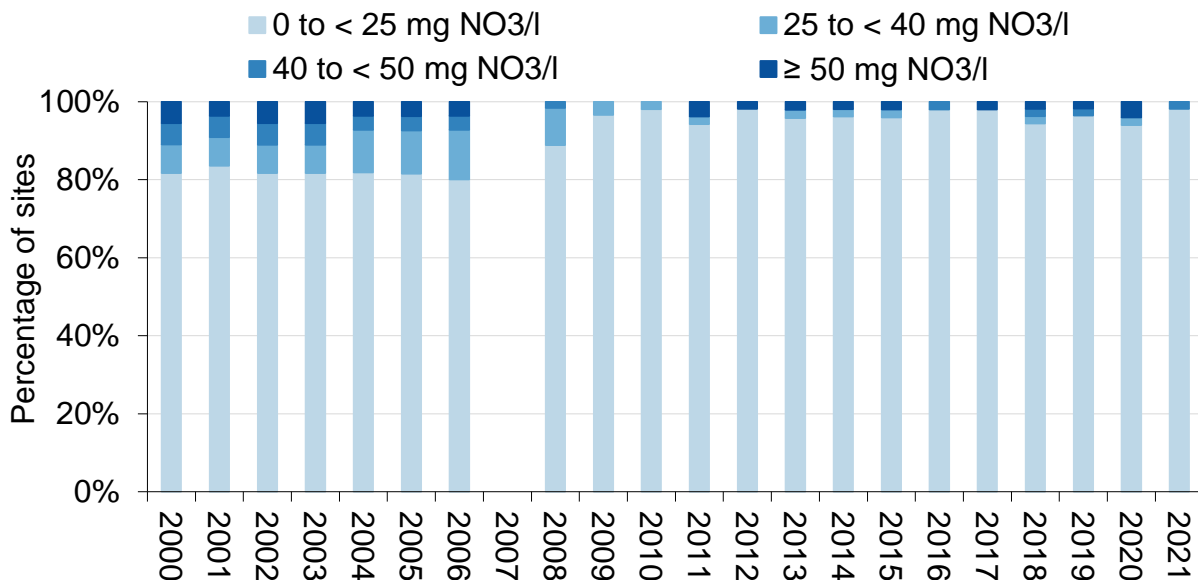
Source: NIEA

Note: no figures for 2007 as a major review of the network was undertaken during that period.

The Northern Ireland regional groundwater monitoring of nitrate concentrations was initiated in 2000 and is ongoing (Figure 4.1). The Water (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 ensures that the Water Framework Directive (as transposed) maintains the Groundwater Daughter Directive (2006/118/EC) groundwater quality standard of 50 mg NO_3/l. In the period 2000 to 2006, 91 per cent of sites had an annual mean concentration of less than 40 mg NO_3/l, in which 82 per cent of these sites had concentrations of less than 25 mg NO_3/l.

The regional network of monitoring sites was reviewed in 2007/2008. The nitrate groundwater monitoring programme resumed in 2008. The figures both pre and post review are broadly comparable.

In 2021, nitrate concentrations were monitored at 56 groundwater sites across Northern Ireland giving an average concentration of 5.01 mg NO_3/l. At 55 of the 56 groundwater monitoring stations (98.2 per cent) in 2021, groundwater nitrate concentrations were consistently below 25 mg NO_3/l.

The 1 site (1.8 per cent) that reported between 40 and 50 mg NO_3/l in 2021 can be described as the following: It was added to the network in 2018, had an average value of 50.47 mg NO_3/l in 2020 and an average value of 45.30 mg NO_3/l in 2021.

NIEA relies on third parties to assist in providing monitoring points which can be withdrawn / decommissioned. Access was lost to one site that was consistently over 50mg NO_3/l for the last number of years with a 2020 average of 81.45 mg NO_3/l. NIEA continues to work towards expanding the groundwater monitoring network across Northern Ireland.

River Quality - nitrate

Figure 4.2 Annual mean nitrate concentrations (in rivers), 2000 – 2021
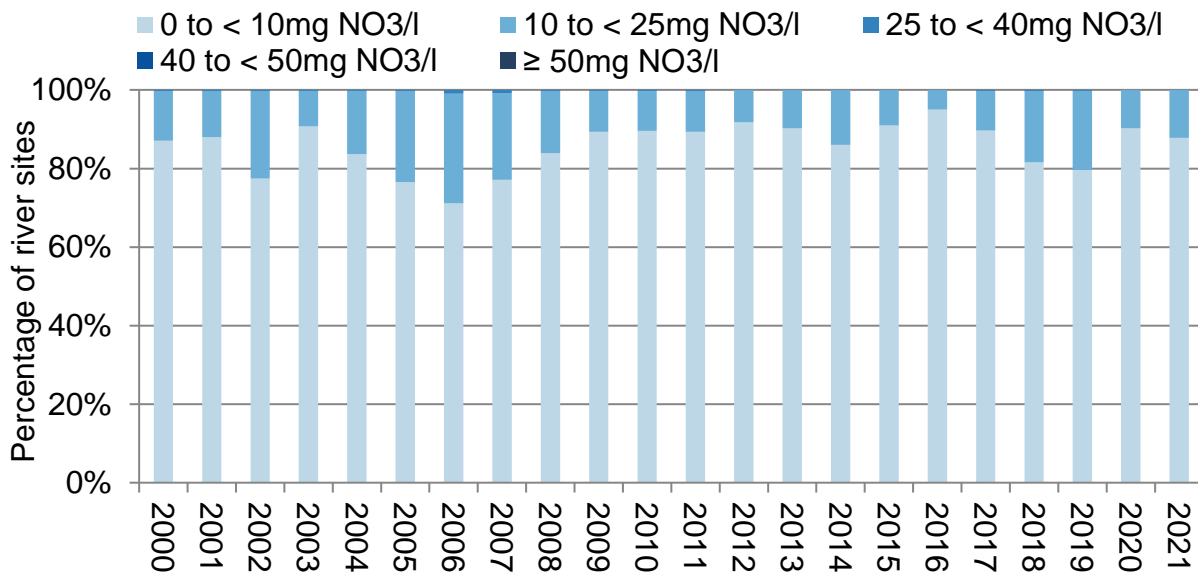
Source: NIEA
Note: Due to restrictions imposed as a result of the Covid-19 pandemic, river monitoring was affected with samples not taken in April and May and a limited number taken in March and December of 2020.

Under the Nitrates Directive, Northern Ireland must monitor surface waters for nitrate pollution against a mandatory standard of 50 mg NO_3/l. In addition, a guide standard for surface waters is operational where 90 per cent of samples should be less than 25 mg NO_3/l.

In the period 2000 to 2011, over 99 per cent of sites had an annual mean concentration of less than 25 mg NO_3/l. In the period 2012 to 2016, all rivers that were monitored for nitrate had an annual mean concentration of less than 25 mg NO_3/l. In 2021, 100 per cent of sites had an annual mean concentration of less than 25 mg NO_3/l.

Long-term seasonal trend analysis shows that the monthly trends in average nitrate concentrations in rivers in Northern Ireland are predominantly decreasing or stable over the 28-year period, 1992-2019, which may be attributed to the measures implemented through the Nutrient Action Programme.

River Quality – Soluble Reactive Phosphorus

Figure 4.3 Soluble Reactive Phosphorus (SRP) in rivers, 2004 – 2022

Source: DAERA
Note: Due to restrictions imposed as a result of the Covid-19 pandemic, river monitoring was affected with samples not taken in April and May and limited numbers taken in March and December of 2020.
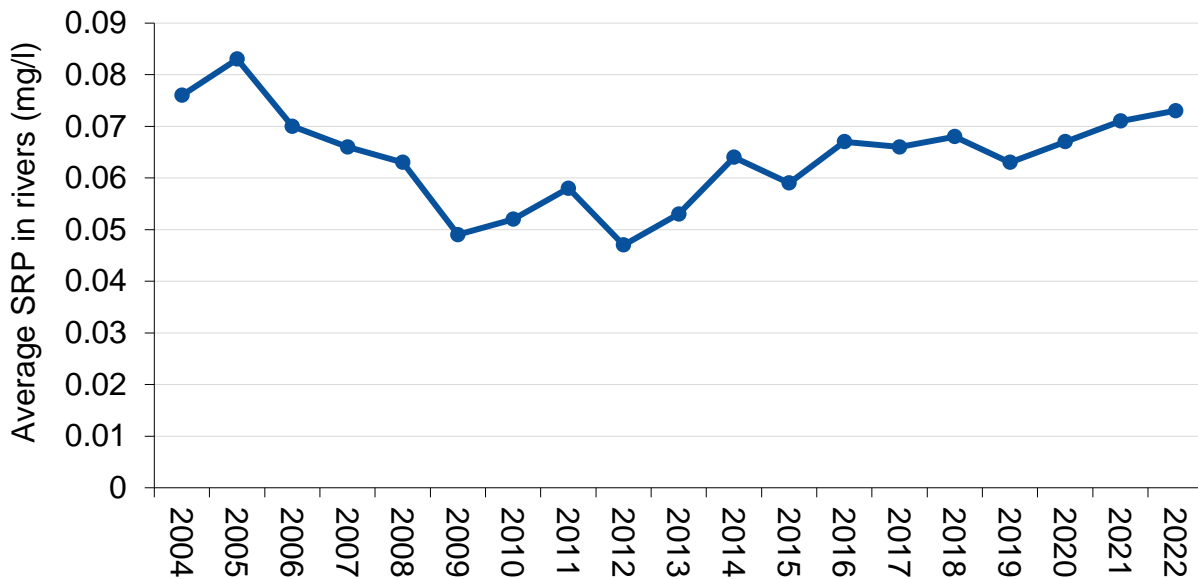
Soluble Reactive Phosphorus (SRP) is a plant nutrient, which, when present in rivers in elevated concentrations, can lead to accelerated growth of algae and other plants. The impact on the composition and abundance of plant species can have adverse implications for other aspects of water quality, such as oxygen levels, and for the characteristics of river habitats. These various changes can cause undesirable disturbances to populations of water animals, such as invertebrates and fish.

The introduction of The Phosphorus (Use in Agriculture) Regulations (Northern Ireland) 2006 has contributed to a reduction in phosphorus from agricultural activities, in conjunction with ongoing improvements in domestic wastewater treatment through investment by Northern Ireland Water. From the low of 0.047 mg/l reported in 2012, levels of soluble reactive phosphorus in the 93 Surveillance Rivers have increased to 0.073 mg/l in 2022.

This indicator was a population indicator in the draft Programme for Government (PfG) 2016-2021 framework.

Coastal Water Bodies in Good Ecological Condition

Figure 4.4 Number of coastal water bodies in good ecological condition 2015-2022
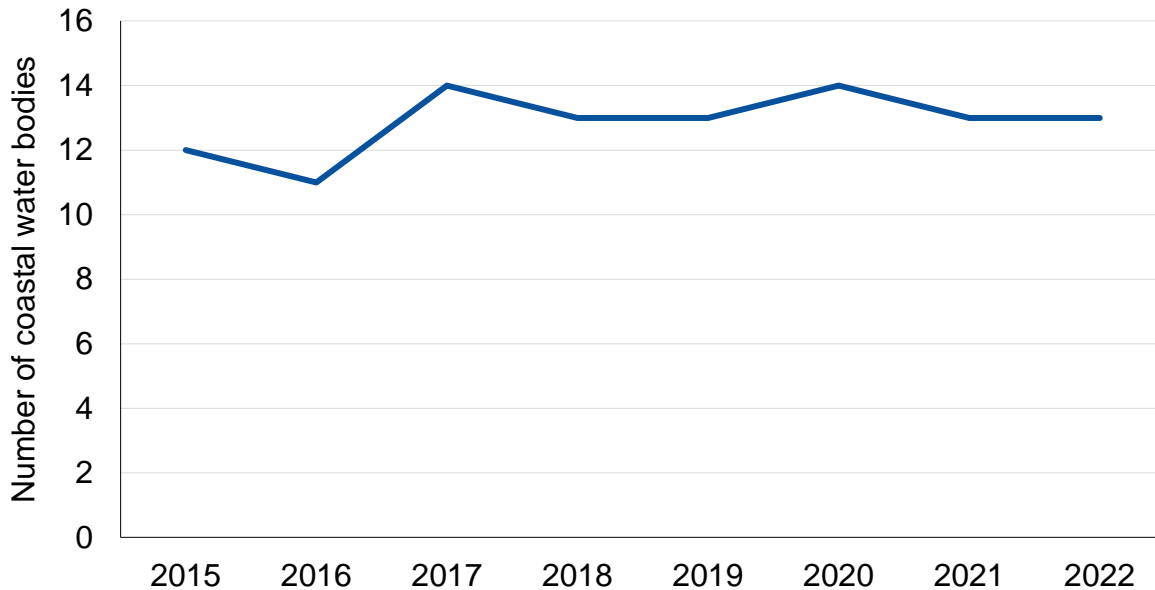
Source: DAERA Marine and Fisheries Division

Twenty-five inshore (less than one nautical mile) coastal waterbodies (including estuaries and sea loughs) have been delineated in Northern Ireland. Some 13 water bodies (52 per cent) have been assessed at good or better ecological condition.

This is based on monitoring data for a variety of biotic (e.g. flora and fauna) and abiotic (e.g. dissolved oxygen, nutrients) components. Four water bodies (16 per cent) failed to meet good condition due to a single quality element, while the remaining eight water bodies (32 per cent) did not achieve good condition due to two failing parameters. Excessive nutrient (dissolved inorganic nitrogen) was the most frequent failing element and was reported in 10 of the 12 water bodies that failed to achieve good condition.

Excessive levels of marine nutrients can lead to local imbalances of marine phytoplankton (planktonic blooms) and macroalgae (seaweeds) a process known as eutrophication. Local effects can include smothering of other marine plants and animals, and in severe cases, can lead to reduced dissolved oxygen concentrations, which can result in fish kills. This assessment suggests that high nutrient levels, particularly in inshore estuarine waters and sea loughs, are a key element responsible for coastal water bodies not attaining good ecological condition.

Industrial Discharge Quality

Figure 4.5 Trends in annual private and trade discharge consent compliance, 2001 – 2022
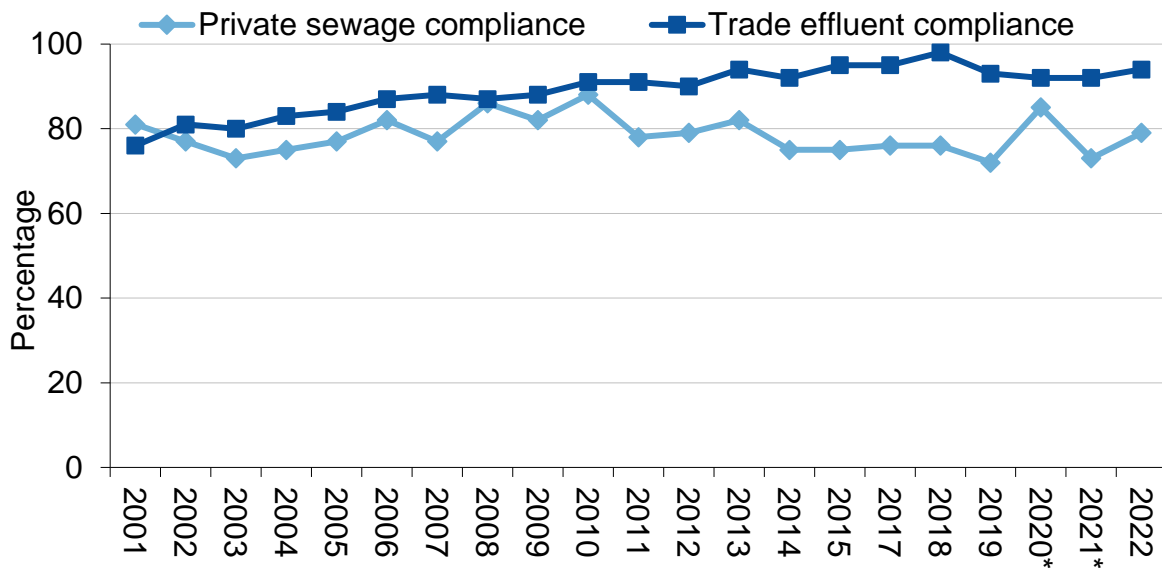
Source: NIEA
* Caution should be used when comparing 2020 and 2021 data with other years due to a lower sampling rate.

The monitoring of effluent discharges gives an indication of levels of pollution to the water environment and improvements in controls.

The 2022 sampling year saw a return to close to pre-pandemic levels of sampling being achieved, with around 81 per cent of scheduled samples being taken during the calendar year; a total of over 3,300 samples. Compliance is assessed on a pass/fail basis. Sample frequency is determined by volume of the discharge, with higher volumes receiving more frequent assessment.

Compliance with consent standards for both Private Sewage and Industrial consents shows a slight improvement on the previous year's data.

Water Utility Discharge Quality

Figure 4.6 Summary of compliance of Water Utility Waste Water Treatment Works (WWTW), 2007 – 2022
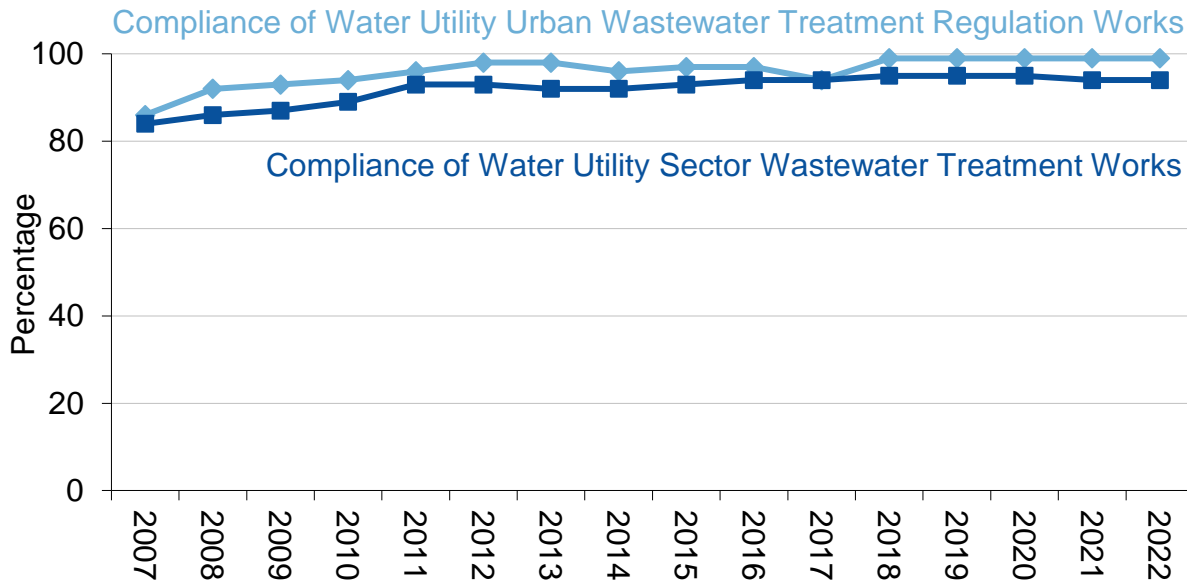
Source: NIEA

Compliance of WwTW with the Standards in Water Order Consents (WOC)
Compliance of Wastewater Treatment Works (WwTW) with numeric conditions of Water Order consents was introduced in 2007. It is a key performance indicator for the water utility sector and has improved since 2007 with compliance now at 94 per cent.

Northern Ireland Water (NIW) compliance is assessed against numeric standards set for discharges serving a population equivalent greater than 249. The number of WwTW has dropped from 244 in 2007, to 240 in 2022. Numeric compliance is also assessed for six WwTW operated under Public Private Partnership (PPP) contracts which continued to achieve 100 per cent compliance. Of the 240 WwTW assessed, 225 complied with the numeric conditions of their Water Order Consents.

Compliance of WwTW with the Urban Waste Water Treatment Regulations
Numeric compliance is assessed against the requirements of the Urban Waste Water Treatment (UWWT) Regulations (Northern Ireland) 2007 for 78 WwTW under the Regulations in 2022. Compliance has improved since 2007 and reached 99 per cent in 2022. There was one non-compliant WwTW in 2022.

Water Pollution Incidents

Figure 4.7a Severity of substantiated water pollution incidents, 2001 – 2022
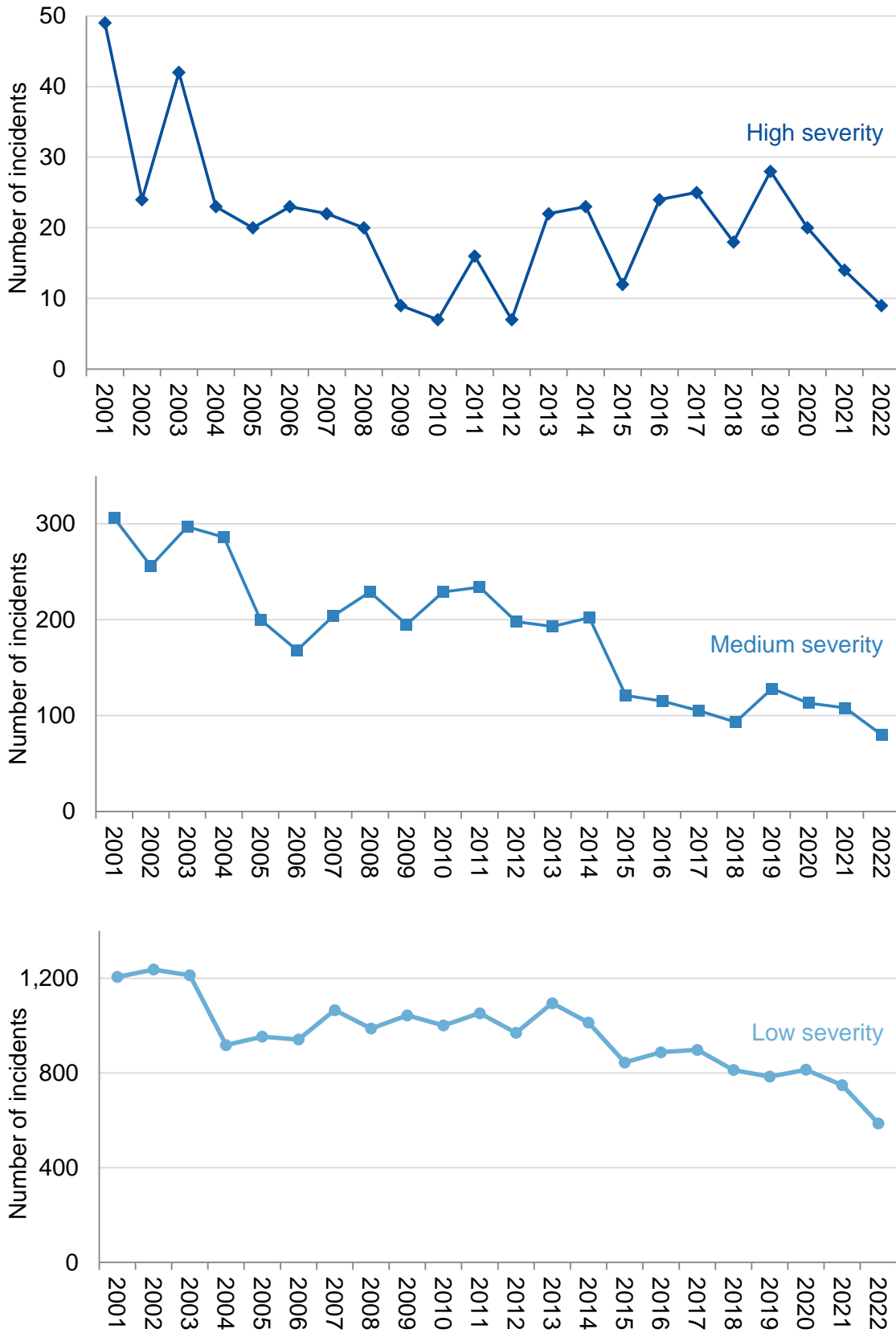
Source: NIEA

Figure 4.7b Source of Substantiated Water Pollution Incidents, 2005 – 2022
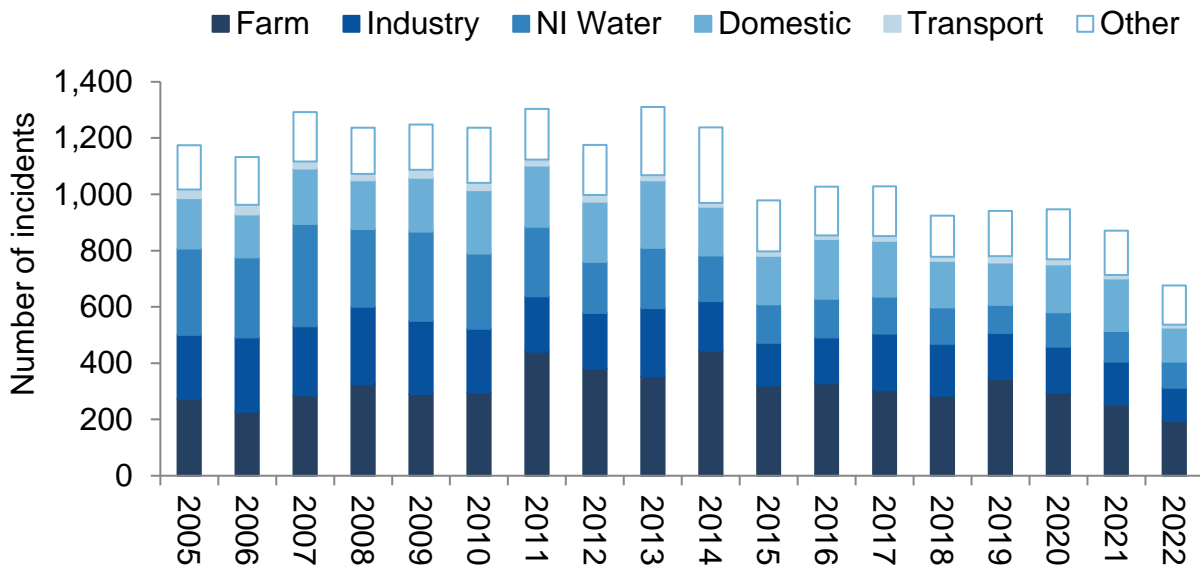
Source: NIEA

In 2022, there were 1,535 incidents either reported to NIEA or discovered by NIEA staff during inspections or proactive work, of which 676 (44 per cent) were substantiated (confirmed) as having an impact on the water quality of the receiving waterway.

The total number of reported and discovered incidents decreased by 19 per cent compared with last reported year (1,893) and the number of substantiated incidents in 2022 (676) decreased by 22 per cent compared to 2021 (871). The total number of substantiated incidents in 2022 was 49 per cent lower than the average annual level recorded in the period 2001 – 2010 (1,316).

Substantiated pollution incidents are classified according to their environmental impact severity. A total of 89 (13 per cent) high and medium severity incidents were investigated during 2022. This was a decrease of 27 per cent compared with 2021 figure (122).

In 2022, Farming (29 per cent), accounted for the largest proportion of substantiated incidents investigated by NIEA, followed by Other (21 per cent), Domestic (18 per cent), Industry (18 per cent), Northern Ireland Water Ltd (14 per cent) and Transport (1 per cent).

Shellfish Water Protected Areas

Figure 4.8 Shellfish waters directive compliance, 2008 - 2022
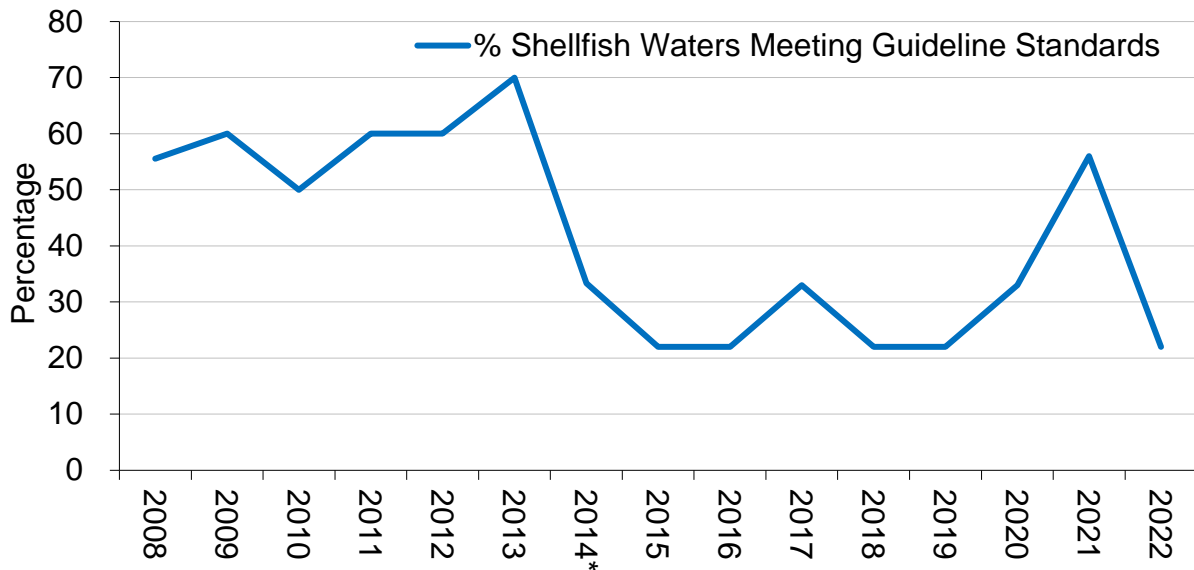
Source: DAERA Marine and Fisheries Division
Note: From 2008-2013, compliance was measured against guideline E. Coli standard in flesh as set out in the Shellfish Waters Directive.
*In January 2014, the Shellfish Waters Directive was subsumed into the Water Framework Directive (WFD). The WFD Guideline standard is slightly tighter than the existing standard in the Shellfish Waters Directive.
** No data for Marlfield from 2014 hence the total number of shellfish waters is 9 for these years.

Designated Shellfish Water Protected Areas (SWPAs) are areas designated for the protection of shellfish growth and production. Good water quality is important for the production of high quality shellfish. In Northern Ireland there are currently ten Shellfish Water Protected Areas which were designated under the Shellfish Waters Directive and are currently managed under the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017. These SWPAs are located within Lough Foyle (Longfield Bank and Balls Point), Larne Lough, Belfast Lough, Strangford Lough (Skate Rock, Reagh Bay/ Paddy's Point and Marlfield Bay), Killough Harbour, Dundrum Bay and Carlingford Lough. Further information regarding areas sampled can be found at https://www.daera-ni.gov.uk/publications/shellfish-action-plans-2019

In January 2014, the Shellfish Waters Directive was subsumed into the Water Framework Directive, resulting in more stringent *E. coli* standards and a noticeable "drop" in the percentage of designated shellfish waters. In 2022, two out of nine designated shellfish waters (22 per cent) complied with the guideline E coli standard. In 2021 the percentage compliance was 56 per cent with five out of nine designated shellfish waters achieving compliance. No data was available for Marlfield in Strangford Lough which has not seen any shellfish harvesting for a number of years. The Department will consider the de-designation of this site if harvesting is not recommended.

Comprehensive monitoring programmes are in place to assess the status of Shellfish Water Protected Areas under the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017 and classification under the EU Hygiene Regulations (854/2004). A suite of determinants are assessed to determine ecological status and the overall objective under Water Framework Directive (Table 4.8ii included in the data tables).

DAERA Environment Marine and Fisheries Division continue to manage Shellfish Water Protected Areas to ensure that there is no deterioration in water quality; also that steady progress is made towards compliance with guideline standards. Compliance with guideline standards are determined by measuring *E.coli* and other prescribed contaminants in shellfish flesh. Relevant shellfish waters contaminants are monitored under Water Framework Directive Annex VIII and Annex X specific pollutants and priority hazardous substances.

Shellfish beds are classified by the Food Standards Agency in Northern Ireland (FSA in NI) to determine the levels of post-harvest treatment that is required before shellfish can be placed on the market for consumption. Monthly monitoring of shellfish flesh is conducted to ensure that the classification that has been awarded by the FSA in NI remains appropriate, ensuring that levels of marine biotoxins and chemical contaminants within the shellfish flesh do not exceed regulatory limits or cause a risk to public health.

DAERA Environment Marine and Fisheries Division work closely with the FSA in NI in managing shellfisheries from both an environmental and public health perspective.

A full list of shellfish waters and the compliance standard met for each year from 2008 to 2022 is included in the data tables that accompany this report.

Sea Temperature

Figure 4.9 Average monthly sea temperature by depth, Irish Sea, January – December 2022
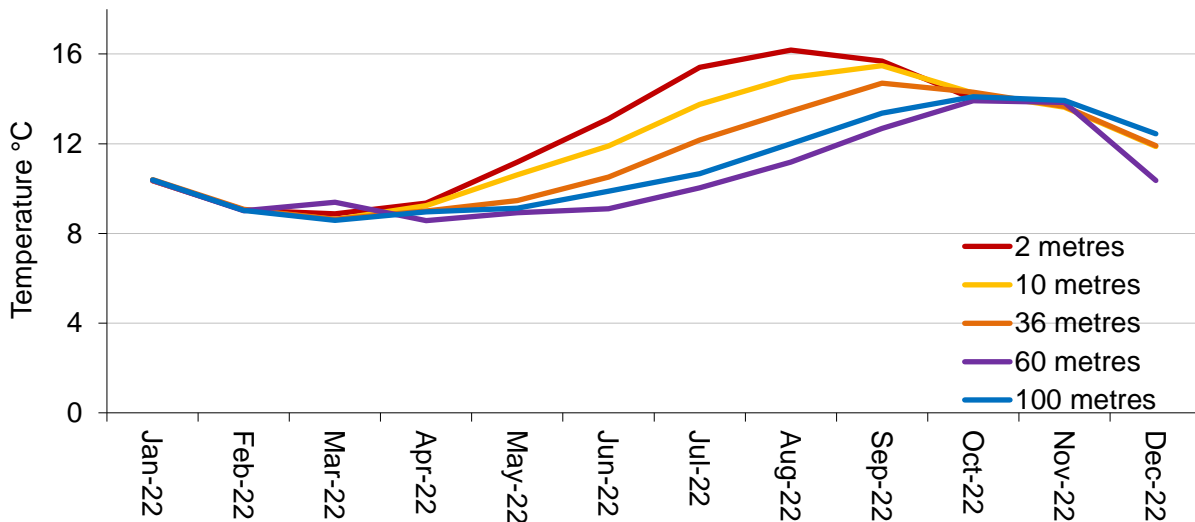
Source: AFBI

As part of a long-term research programme investigating how the physical environment affects the Irish Sea's marine ecosystem, the Agri-Food and Biosciences Institute maintain an instrumented mooring in the western Irish Sea measuring the nutrients essential for a healthy ecosystem, temperature, salinity, chlorophyll, turbidity and met-ocean parameters such as wave height.

The temperature of the sea is recorded by thermistors at different depths every three hours, and from these measurements daily mean values are calculated. One thermistor is located on the underside of the moored buoy at ~2 metres depth, and another close to the anchor at a depth of ~90 metres. Other thermistors are located along the mooring line at 10, 36 and 60 metres. This mooring is just one of several permanent coastal monitoring stations maintained by AFBI. The time-series now consists of almost 27 years of data and a detailed analysis of the data to investigate inter-annual variability in the seasonal development (onset, duration, breakdown) of water column stratification is currently underway. In recent years we have seen the highest ever recorded temperature in the western Irish Sea (19.72 °C on the 22nd July 2021), and an upward trend in annual near surface temperatures between 2012 and 2022 has been identified which may provide the first empirical data of warming trend in the western Irish Sea.

Monitoring is essential to understand the health and functioning of the western Irish Sea, as the gyre in this area is a regionally important oceanographic feature that controls our Irish Sea fisheries. The lowest water temperature is usually recorded in February and the warmest in August. During the autumn and winter months there is generally little difference in the temperature of the water close to the surface and near the seabed. Warming of the surface layers during spring and summer causes the water column to stratify, isolating the bottom water from the surface, meaning the bottom water does not warm up as much or mix with the surface water. During the summer the temperature differences between surface and bottom water layers can be as much as 7 or 8 °C, and there are differences in ecologically-significant parameters such as

dissolved oxygen and nutrient concentrations. Changes in the temperature and structure of the area will affect the broader ecosystem which in turn affects the fisheries.

5 Biodiversity and Land

Biodiversity describes the vast range of living organisms on earth. Biological diversity has been defined as:

> "The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems".
> *Convention on Biological Diversity, 1992*

The state of our biodiversity reflects the state of our air, water and land environments. Land and landscape management have the greatest visual impact on our environment and our appreciation of it. Whether the land is used for agriculture, housing or forestry its value is immense and perhaps most importantly, it is a limited resource. This chapter includes statistics on the extent of nature conservation designations in Northern Ireland, the condition of some of these designations, bird populations, forest and woodland plantings and the role of agri-environment schemes on our land.

Key points in this chapter:

- By March 2023, 111,159 hectares across 394 sites were declared Areas of Special Scientific Interest (ASSI). 246,300 hectares across 58 sites were declared Special Areas of Conservation (SACs) and 114,600 hectares across 16 sites as Special Protection Areas (SPAs). 77,700 hectares across 20 sites were declared Ramsar sites (areas of wetland and waterfowl conservation), and 26,178 hectares across 5 sites as Marine Conservation Zones (MCZs).

- In 2022/23, 55 per cent of features within Marine and Terrestrial protected sites were in Favourable condition while 36 per cent were in Unfavourable condition. Some 3 per cent were in Unfavourable-Recovering condition with less than 1 per cent Destroyed.

- The wild bird population indicator using 56 bird species shows decreased levels in 2021 compared to 1996. Bird populations peaked in 2005 and have been in decline since, driven principally by bird species found in farmland habitats.

- In 2022/23, 451 hectares of new woodland (72 hectares conifer and 379 hectares broadleaf) were planted by NI Forest Service and private landowners supported by grant aid.

- Agri-environment schemes encourage farmers and landowners to manage their land to benefit the environment. At the end of 2023, 63,800 hectares of land in Northern Ireland were under agri-environment scheme agreement.

The number of Green Flag Award winning sites in Northern Ireland has grown sharply in the last 10 years.

Data tables and further information for this chapter can be found online.

Nature Conservation Designations

Figure 5.1(a) Area of nature conservation designations, 2000/01 – 2022/23
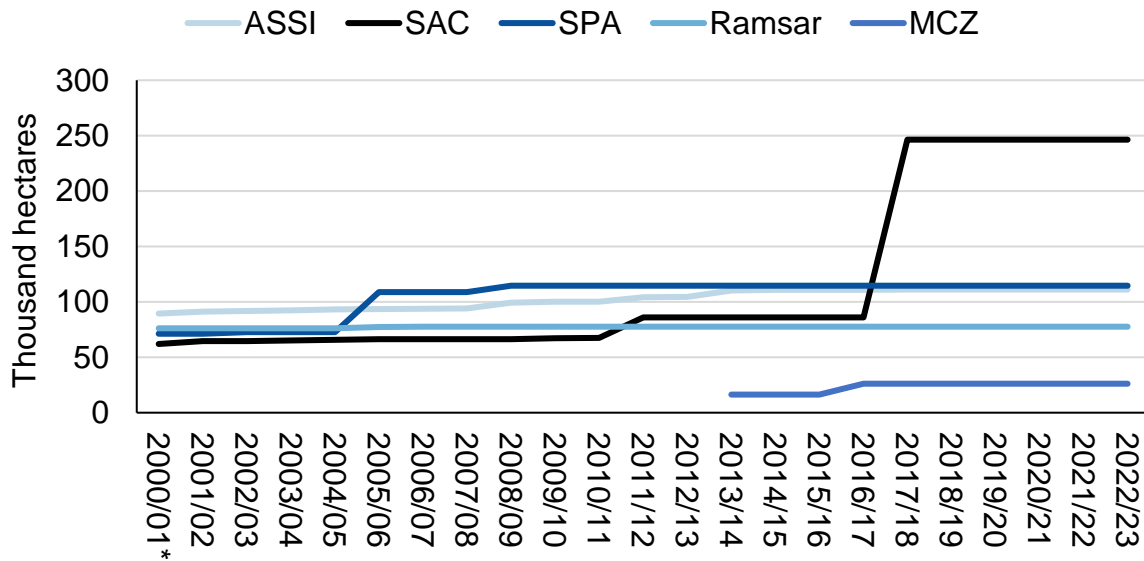
Source: NIEA
* These figures include all conservation designations up to and including 2000/01.

Identifying and protecting areas of special nature and geological interest has been a cornerstone of conservation action on land in Northern Ireland over the last 50 years, and at sea from the mid-2000s. Areas which are particularly important for certain species, habitats or earth science features have been formally designated in accordance with a number of pieces of national and international legislation, into one or more of the designations displayed in Figure 5.1(a). These are areas of protection which aim to retain and enhance the nature conservation value of these species and habitats, and therefore their associated wider ecosystem benefits too. The on-going protection and management of this network of sites ensures that important natural and cultural assets can be enjoyed by this and future generations.

By 31st March 2023, a total of 111,159 hectares across 394 sites were declared Areas of Special Scientific Interest (ASSI). 246,300 hectares across 58 sites were declared Special Areas of Conservation (SACs) and 114,600 hectares across 16 sites as Special Protection Areas (SPAs). 77,700 hectares across 20 sites were declared as Ramsar sites (areas of wetland and waterfowl conservation), and 26,178 hectares across 5 sites as Marine Conservation Zones (MCZs). These sites (Figure 5.1b & c) capture the most important and, in some cases, threatened species and habitats on land, including rivers and lakes, at the coast, and in areas of our surrounding seas.

Figure 5.1(b) Areas of Special Scientific Interest (ASSI) and Marine Conservation Zones (MCZ), designated between 1976 and 2023
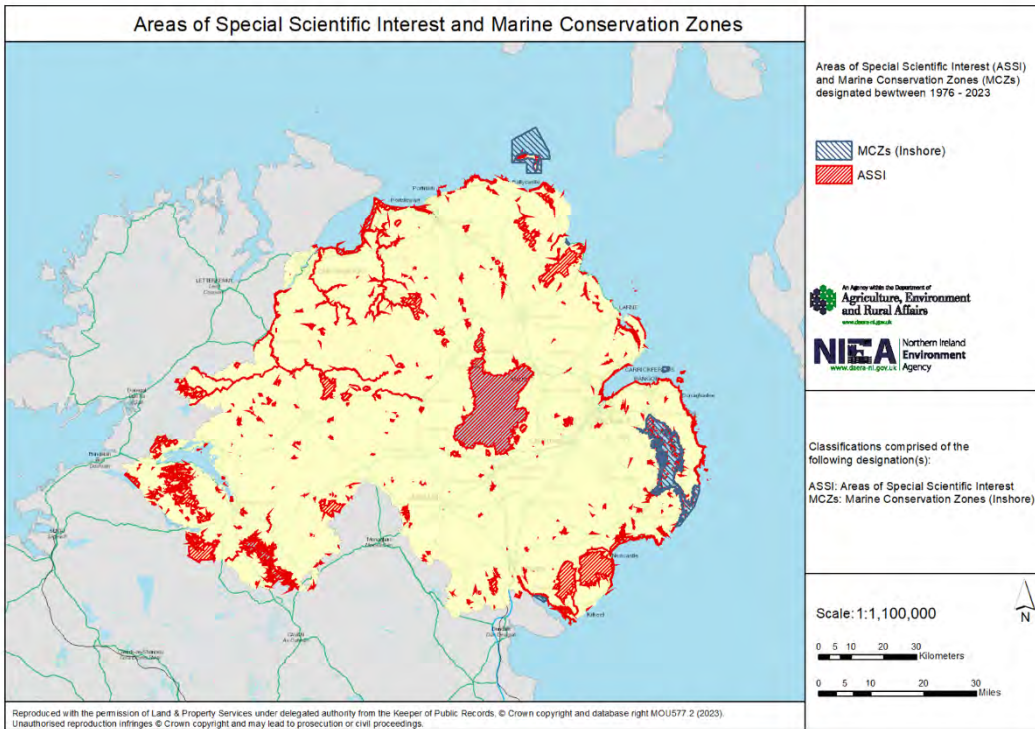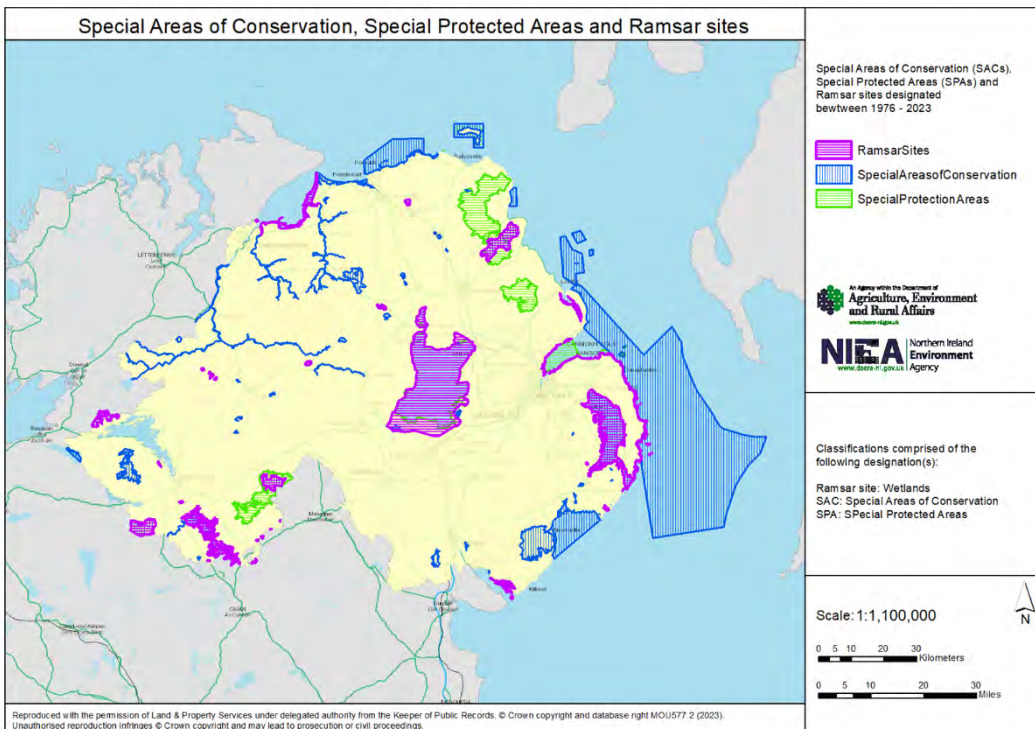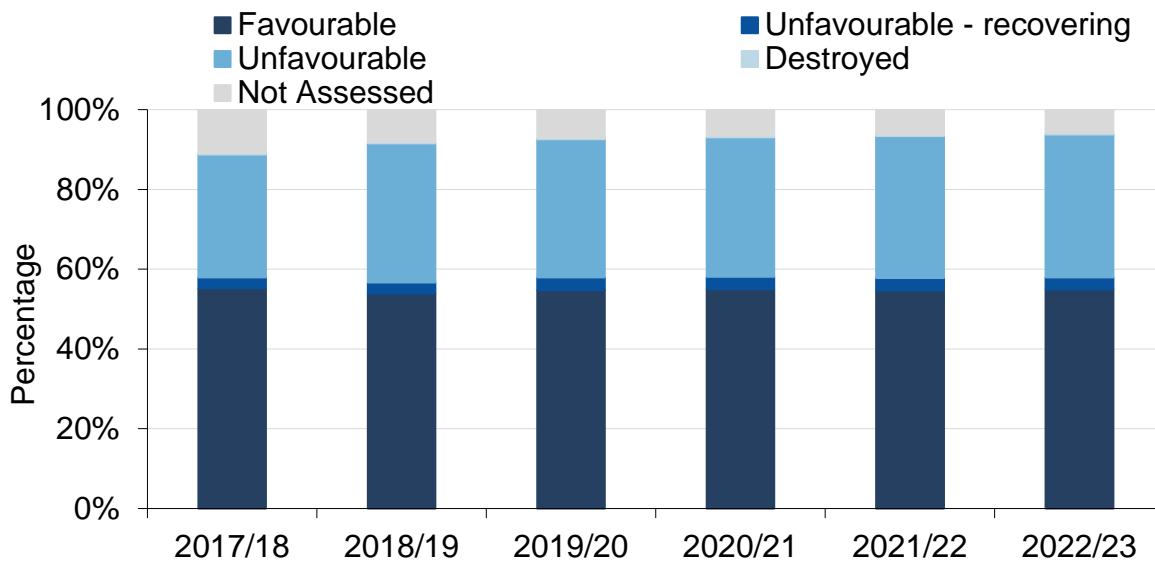

Figure 5.1(c) Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites, designated between 1976 and 2023

Condition of features

Figure 5.2a Condition of Features within Marine and Terrestrial protected sites, 2017/18 - 2022/23

Source: NIEA

Protected sites have been designated based on specific qualifying features, namely species, habitats and geological features. A site will have at least one, and often multiple, features of interest. To comply with the parent legislation, regular monitoring of and reporting on the features is required, to assess their condition. This is undertaken within a six-year cycle.

The monitoring process involves an evaluation of the condition of the qualifying features in each protected area. This is known as 'Condition Assessment' monitoring and follows the UK Common Standards Monitoring (CSM) approach to ensure NI monitoring is focussed, and consistent with methods used throughout the UK. Further information on CSM can be found at JNCC (2004)[3].

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.

The JNCC Statement on Common Standards Monitoring (JNCC, 2022)[4] assesses interest features using one of the following condition categories:

- Favourable: Condition objectives are being met

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[3] JNCC (2004). *JNCC Common Standards Monitoring: Introduction to the Guidance Manual, February 2004.* https://data.jncc.gov.uk/data/f6fef832-93f0-4733-bf1d-535d28e5007e/CSM-Introduction-2004.pdf

[4] JNCC (2022). *A Statement on Common Standards for Monitoring Protected Sites 2022* *https://data.jncc.gov.uk/data/0450edfd-a56b-4f65-aff6-3ef66187dc81/csm-statement-2022-v-2-1.pdf*

- 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.

These can be further sub-categorised to capture details of pressures on the feature which may contribute to decline, or where recovery of a feature is taking place:

- Unfavourable Recovering: The feature has begun, or is continuing, to show a trend towards favourable condition.

This metric 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.

For the first time in 2022, and continued in 2023, a combined feature condition metric for Northern Ireland has been produced for total network features on land and at sea. This is a more continuous approach to align with reporting methods used in other regions of the UK.

The most up-to-date figures for the 2022/23 reporting period highlight that 55 per cent of all features are in favourable condition, 36 per cent are in unfavourable condition, 3 per cent are unfavourable-recovering and less than 1 per cent are destroyed. Six per cent of features have not had a formal condition assessment, and so a feature condition assessment cannot be determined for these features.

When split into habitats, species and earth science features assessed, 38 per cent of habitats and 57 per cent of species features are in favourable condition, compared to 94 per cent of earth science features in favourable condition. This reflects the relative stability of geological features compared to the increasing pressures on the natural environment, contributing to the comparatively lower percentages for habitats and species features.

There is considerable variation in the proportion of features in favourable condition across the different habitat and species feature categories; a more detailed breakdown of the proportion of individual natural feature types in favourable condition within these categories can be viewed in Table 5.2b.

Table 5.2b Condition of features within Terrestrial and Marine protected sites by type of feature, year ended March 2023

Feature Type	Number of Features	Number of Features in Favourable Condition	Proportion Favourable %
Habitats			
Bogs	53	13	25%
Coastal	52	19	37%
Freshwater	58	17	29%
Grasslands	102	65	64%
Heathlands	43	6	14%
Inland Rock	16	11	69%
Marine	46	40	87%
Fen, marsh & swamp	89	26	29%
Woodlands	80	6	8%
Habitats Total	**539**	**203**	**38%**
Species			
Birds	369	230	62%
Fish	9	4	44%
Invertebrates	133	68	51%
Marine Mammals	7	6	86%
Non-Vascular Plants	42	18	43%
Terrestrial Mammals	11	10	91%
Vascular Plants	71	30	42%
Species Total	**642**	**366**	**57%**
Earth Science			
Earth Science	204	192	94%
Earth Science Total	**204**	**192**	**94%**
Total	**1,385**	**761**	**55%**

In 2022-23 NIEA commenced a programme of more detailed species Common Standards Monitoring for terrestrial features. Reporting on some species feature assemblages or groups is now more closely aligned to the niche habitat requirements of those species groups, in line with Common Standards Monitoring recommendations.[5] This has resulted in the number of reported features increasing. This change will be noticeable from this year, and in the coming years as NIEA continues to refine how particular species groups are monitored to achieve greater consistency and relevance for informing management action.

Restoring features that are currently in unfavourable condition to favourable condition can take a long time. DAERA will continue work to bring the protected sites network features into favourable condition through effective management.

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[5] Common Standards Monitoring guidance | JNCC - Adviser to Government on Nature Conservation

On Land

NIEA is continuing to work with landowners and other stakeholders to ensure that management of protected areas is in place.

In 2022/23, the area of terrestrial protected sites under management in Northern Ireland was recorded as at least 35,896 hectares.

A range of initiatives and delivery mechanisms, which include potential funding, have been identified to help achieve favourable condition for terrestrial sites, including:

- Roll out of the Environmental Farming Scheme Higher Level agreements which commenced in early 2018.
- Management of Sensitive Sites (MOSS) scheme to support favourable management in designated sites.
- Continue to provide support to the two INTERREG Va Habitats projects delivering a series of conservation management plans and conservation actions for a range of cross border sites.
- Working with local authorities to protect priority habitats and species advising on development control and new area plans.
- Developing working examples on the most effective way of measuring natural capital to ensure that the full benefits of natural assets are realised which will ultimately inform elements of CMPs.
- Working with DAERA's grant-aid budget and external EU and Heritage Lottery Fund (HLF) funding to manage designated sites and priority habitats and species.

At Sea

Northern Ireland has exceeded its "30 by 30" target for protected areas designation in the marine area, the aim to designate 30 per cent of sea area for protection by 2030. Thirty eight per cent of our waters fall within the Northern Ireland Marine Protected Area (MPA) network. Some additional designations will be required to achieve the target of being ecologically coherent. Northern Ireland must deliver against international obligations which focus on nature positive conservation and management actions, including the Convention on Biological Diversity (CBD) Global Biodiversity Framework targets. Targets 2 and 3 are particularly relevant to the application and management of protected areas, as they centre on restoration of degraded habitats, and effective conservation of areas of particular importance for biodiversity and ecosystem function.

In 2022/23, the area of marine protected sites under management in Northern Ireland was recorded as 21,168 hectares.

During this period, DAERA has been working with stakeholders to develop effective management for MPAs.

A range of initiatives and delivery mechanisms, which include potential funding, have been identified to help achieve favourable condition for marine sites, including:

- DAERA conducted a public consultation on proposed fisheries management measures in 2020 and has introduced regulations to manage fishing activities in select MPAs as of 01 January 2023;
- DAERA has led on the co-design and co-development of a Northern Ireland Blue Carbon Action Plan with stakeholders, to protect, restore and where possible create habitats that are natural carbon stores. A 2020 study by Ulster Wildlife estimated that 56 per cent of blue carbon habitats are within the existing MPA network. This Plan is in draft for public consultation in Summer 2023.
- A review of the Northern Ireland MPA Strategy, first published in 2014, was launched alongside the development of the Blue Carbon Action Plan. It follows a similar co-design and co-development approach with stakeholders and aims to advance agreed objectives and actions which align more closely with Northern Ireland priorities for protection and enhancement of our marine area. Draft actions include implementing management plans within the network via the MPA site management groups.
- Initiating the development of options for management of personal watercraft in MPAs; and
- Providing oversight for the INTERREG VA Marine Protected Area Management and Monitoring (MarPAMM) project, to develop regional and cross border MPA management plans.

Wild Birds

Figure 5.3a Change to wild bird populations in Northern Ireland, 1996 – 2021, 56 species
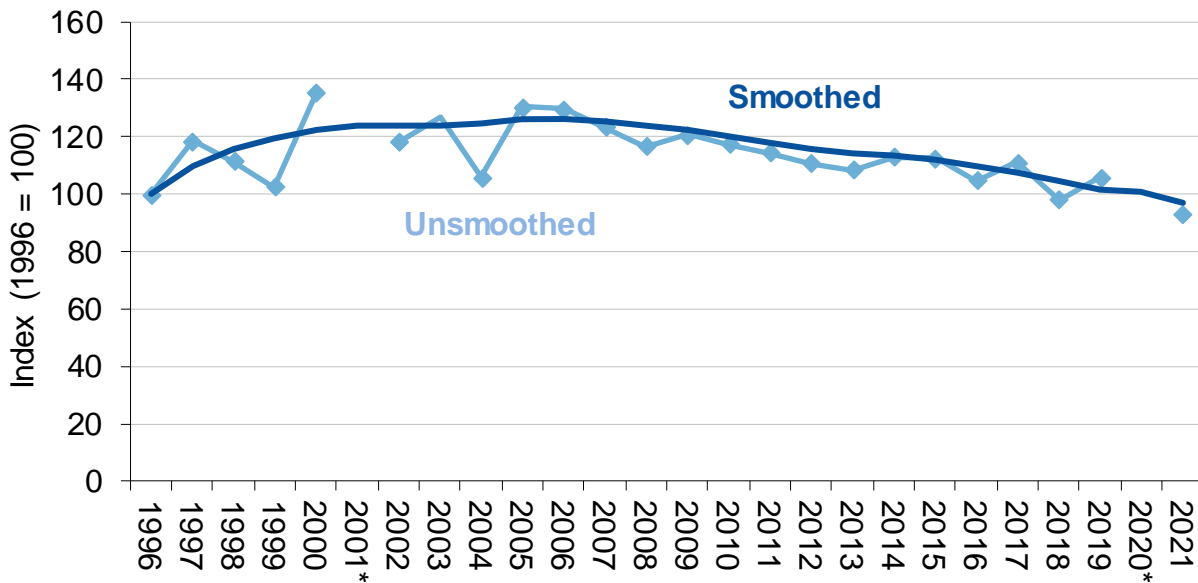
Data Source: British Trust for Ornithology

Note: No unsmoothed index values for 2001 or 2020 due to foot-and-mouth outbreak and Covid-19 impacts on data collection.

Northern Ireland's wild bird population is monitored as part of the UK (BTO/JNCC/RSPB) Breeding Bird Survey, which is undertaken annually at almost 4,000 sites (1km grid squares) across the UK (152 were covered in Northern Ireland during 2021 representing record coverage). The Breeding Bird Survey is not designed to cover marine species and hence only terrestrial and freshwater species, or populations of those species (e.g. Cormorant), are included in the indicator.

Due to the nature of the data analysis, the number of species for which trends are available can vary year-on-year. Previously, the Northern Ireland Wild Bird Indicator has been based on those species which are recorded in at least 30 Breeding Bird Survey squares, on average, since 1994. In 2021 information on trends was available for 38 of the most common species, a short-term trend for Feral Pigeon being calculable for the first time. The approach to assessing the robustness of species trends in indicators and a shift of the time period assessed that was implemented into wild bird indicator production for Northern Ireland when calculated in 2021 allows the inclusion of data for species which occur in between 10 and 30 squares (i.e. below the standard threshold for reporting in BBS, other than those which are subject to large year to year fluctuations or whose habitat is not adequately represented in the dataset). As a result, the new indicator is again based on 56 species. Feral Pigeon was not added to the indicator due to the lack of a long-term trend, however its population is largely of domesticated and hence non-native origin. The Breeding Bird Survey began in 1994 but there was very limited coverage in Northern Ireland initially. The indicator trend therefore starts from 1996.There is no unsmoothed index values for 2001 due to the impact that the foot and mouth outbreak had on the collection of data, or for 2020 when most observers were not able to travel to their squares due to COVID-19

restrictions. However, the smoothed indices include values for these two years based on the model predictions.

The indicator shows that wild bird abundance in Northern Ireland is at a similar level to that at the start of the Breeding Bird Survey but a steady, shallow decline has been occurring since the mid 2000s and the index value in 2021 is 3 per cent lower than in 1996. This trend appears to have been driven principally by the ongoing decline of farmland bird numbers, i.e. those most associated with agricultural land and the broadly stable trend for woodland birds, the two most species-rich groups (see figure 5.3b). Between year changes varied considerably in size and direction between species. It should be noted that the Breeding Bird Survey sampling approach represents habitats largely in the proportions that they occur, and hence tends to produce robust trends for species that are sufficiently common and widespread. Breeding Bird Survey methods are not ideal for estimating numbers of some scarcer or seldom detected groups of birds, such as the rarer birds of prey, waders and other habitat specialists, and these are consequently under-represented in the index.

Among the 37 species for which long-term trends are reported annually by the Breeding Bird Survey some substantial increases by individual species have been recorded since the survey began. In the last BBS report, trend data for the more widespread species were available for three time periods: long-term (1995-2020), medium-term (2010-2020) and for shorter periods. Between 1995 and 2020, 15 of the 37 species have shown a statistically significant increasing trend while only two, Skylark and Greenfinch, exhibit significant long-term declines, with the remainder showing no statistically significant changes. The long-term increases of more than 12-fold in Buzzard and 15-fold in Blackcap are particularly dramatic. Buzzards have undoubtedly benefitted from a reduction in persecution and decreased use of persistent pesticides since the 1970s, while the increase of the Blackcap in Northern Ireland is likely to be linked to a combination of climate change, earlier laying and a general increase and north-westerly spread of the breeding population across the UK. Skylark declines are attributed to long-term changes in agricultural practices such as the switch to autumn sowing and loss of arable, and in the uplands by intensification of land management.

The analysis of data for the shorter-term changes indicates that numbers of Hooded Crow and Blackcap have increased by more than 40 per cent during the last ten years, while numbers of Linnet, Sedge Warbler, Lesser Redpoll, Swallow and Greenfinch have declined. The marked fall in Greenfinch numbers, largely driven by the effects of Trichomonosis, a disease carried by a protozoan parasite, is still apparent.

Wild Birds by Habitat Type

Figure 5.3b Wild bird populations in Northern Ireland by habitat type, 1996 – 2021
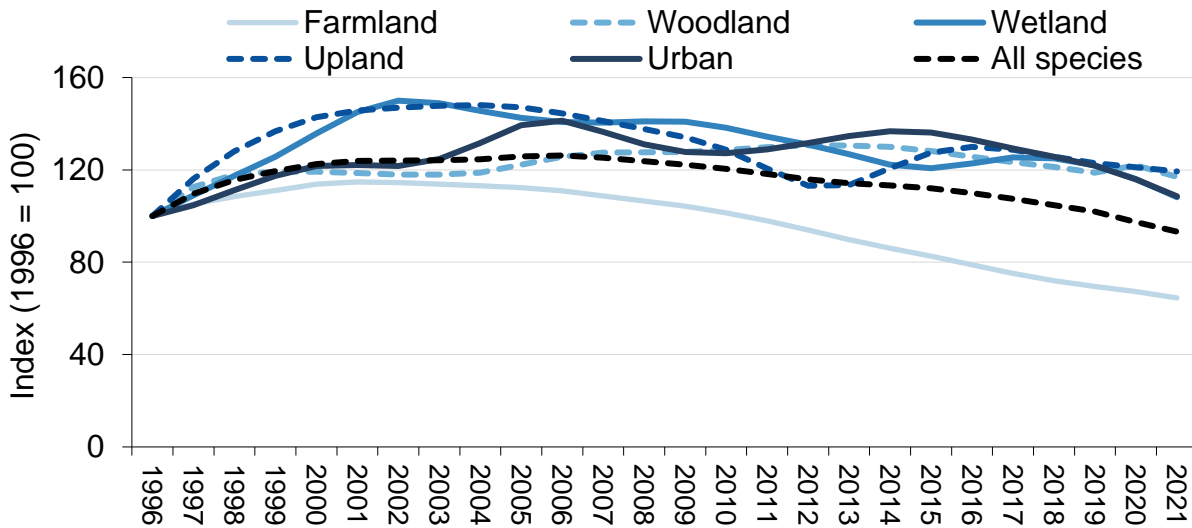
Source: British Trust for Ornithology

The inclusion of 56 species in the indicator has allowed trends for species associated with particular habitats to be aggregated in the calculations. Trends are available for five habitat-specific groups of birds: Farmland, Woodland, Wetland, Upland and Urban. The species composition of these groups is shown in Table 5.3c of the data tables, the trends are shown above, providing an indication of the relative health of bird populations in those habitats. Figure 5.3b shows the smoothed indicator trend for each habitat, a standard approach to reporting which reduces the influence of large year to year fluctuations in numbers detected and highlights the underlying trend.

Farmland is the major habitat in Northern Ireland, here represented by 17 species, and the indicator associated with that habitat shows a marked decline over this 25 year period (1996-2021) of about 35 per cent. Of those 17 species, 13 species (76 per cent) are in decline, four of them by at least 65 per cent (Greenfinch, Kestrel, Lapwing and Grasshopper Warbler) and two species by around 50 per cent (Skylark and Yellowhammer). Three species (18 per cent) particularly Goldfinch but also Woodpigeon and Jackdaw are increasing, and Starling numbers are largely stable. Except for Starling, these patterns largely reflect the situation more broadly in the UK as a whole. Farmland birds in Northern Ireland have been exposed to similar pressures arising from agricultural intensification including increasing use of chemical pesticides and fertilisers, greater livestock densities and the loss of hedgerows but have been particularly affected by the decline of mixed farming, especially through the reduction of arable production, a switch from haymaking to multiple-cut silage and the drainage of wet meadows.

The **wetland** species suite, six in total, is both limited (there is a lack of robust trends for a number of widespread species) and diverse taxonomically. This indicator of wetlands and waterways shows a gradual rise and then gradual fall and in 2021 is 8 per cent higher than in 1996. Two species have declined, Sedge Warbler by more than 50

per cent and Moorhen to a lesser extent and based on a small sample. Numbers of Grey Heron are stable and the other three species have increased, especially Mallard by more than 160%. The increase in Mallard may, however, be influenced by the rearing and release of birds for wildfowling. This indicator lacks species trends for many widespread species associated with water, such as Coot, grebes, swans as well as most ducks and most waders, which are not detected on sufficient sites to calculate a trend.

Woodland is a relatively scarce habitat in Northern Ireland and many of the 20 'woodland' species whose population trends comprise this indicator are likely to be occupying woody structures in farmland (treelines, hedgerows) as well as occupying wooded areas in built-up areas, such as gardens, rather than forests. The indicator shows a gradual increase and then a gradual decline and is currently up by almost 20 per cent since 1996. Most species patterns reflect this. Of the 20 constituent species, four (20 per cent) are in decline, particularly Spotted Flycatcher and Siskin but also Sparrowhawk and Lesser Redpoll (albeit some based on small sample sizes). Populations of six species (30 per cent) are stable (including Willow Warbler, Robin, Blue Tit and Chaffinch) and 12 species are increasing, especially Blackcap whose numbers have increased almost 10-fold. Other species that show increases include Great Tit, Song Thrush and Long-tailed Tit. A number of woodland species are likely to have benefitted from the increase in commercial forestry and planting of amenity woodland since the start of the Breeding Bird Survey, particularly where this habitat had been scarcer.

Although the **upland** bird indicator shows an increase of 19 per cent between 1996 and 2021, the species trends are split equally between positive and negative, with four species (50 per cent) in decline and the other four increasing. The species declining most strongly are Curlew, Cuckoo and to a lesser extend Wheatear, whereas Buzzard shows a very marked increase, and hence strongly influences the trajectory of this sub-indicator. This reflects the diverse pressures on this group of species. As for all indicators, species inclusion is a complex issue. In the current upland indicator, species associated with upland streams (such as Grey Wagtail) and species found in both upland and lowland habitats such as Curlew or Hooded Crow have been included.

There are only five species considered to be strongly associated with **urban** habitats, and one of these (Pied Wagtail) is found in a wide range of habitats rather than being a true urban specialist. The urban bird indicator shows an increase of eight per cent between 1996 and 2021, driven by increases in four species, especially Collared Dove but also House Sparrow. Only Swift shows a decline, of more than 50%.

Sustainable Land Management

Figure 5.4 Northern Ireland agri-environment schemes, area under agreements, 2001 – 2022
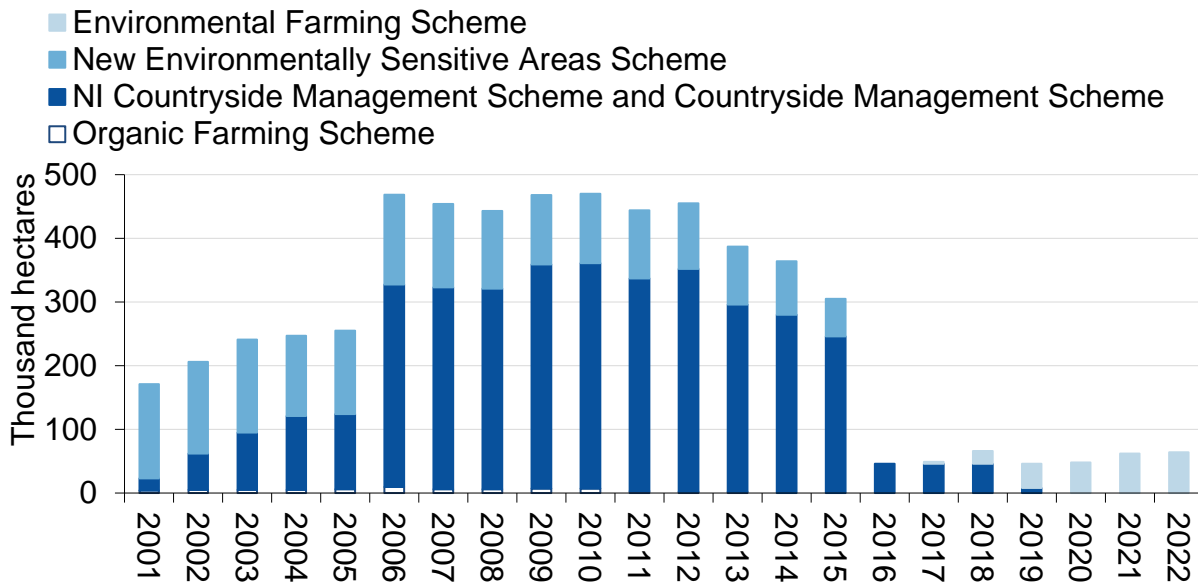
Source: DAERA

Agri-environment schemes delivered by The Department of Agriculture, Environment & Rural Affairs (DAERA) are voluntary and support farmers and landowners to manage their land to benefit the environment.

In 2017 DAERA launched the Environmental Farming Scheme (EFS) (https://www.daera-ni.gov.uk/topics/rural-development/environmental-farming-scheme-efs). This is a voluntary scheme under the NI Rural Development Programme 2014-2020, which is part financed by the EU. It offers participants a 5-year agreement to deliver a range of environmental measures. The EFS has been designed to address specific environmental needs, primarily related to biodiversity, climate change and water quality. It is targeted and prioritised to deliver maximum environmental benefit and value for money.

The EFS has three levels:-
- A Higher Level, primarily for environmentally designated sites - Special Area of Conservation [SAC], Special Protection Area [SPA], RAMSAR, biological Areas of Special Scientific Interest [ASSI] and for priority habitats and species;
- A Wider Level to deliver benefits across the countryside, outside of environmentally designated areas; and
- A Group Level to facilitate co-operative action by Wider or Higher level farmers in specific areas such as environmentally designated areas, priority habitats, or river catchments.

Businesses can undertake to setup and manage a range of environmental measures in their EFS agreement. The first EFS agreements commenced on 1 July 2017, followed by Higher Level agreements on 1st January 2018. The first tranche of agreements

completed their five years on 31 December 2022, and three quarters of these applied again for tranche 6, starting in 2023.

By the end of 2022 there are five tranches of the scheme with almost 5,000 agreements covering 63,800 hectares of land.

EFS Higher level agreements contain a site-specific remedial management plan, with the aim of maintaining and enhancing the biodiversity value of the habitat. For example, 2,000 hectares of breeding wader bird sites and 31,000 hectares of Moorland habitat (which includes blanket bog) are under appropriate management. The scheme has also supported the installation of 650 bird boxes and 213 bat boxes.

Under the EFS Wider Level by 2021 support was agreed for the completion of 2,150km of water quality measures (e.g. creation of riparian buffers and watercourse bank stabilisation).   Agreements were in place for scheme options which cover Biodiversity actions to be carried out across 1,100 hectares of farmland. There is support being provided for climate change actions through agreements on Agro-forestry, tree corridor planting, and for 514km of new native hedgerow planting in 2022.

Area of Woodland

Figure 5.5 Area of new forest and woodland plantings by private landowners supported by grant aid and NI Forest Service planting, 2000/01 – 2022/23
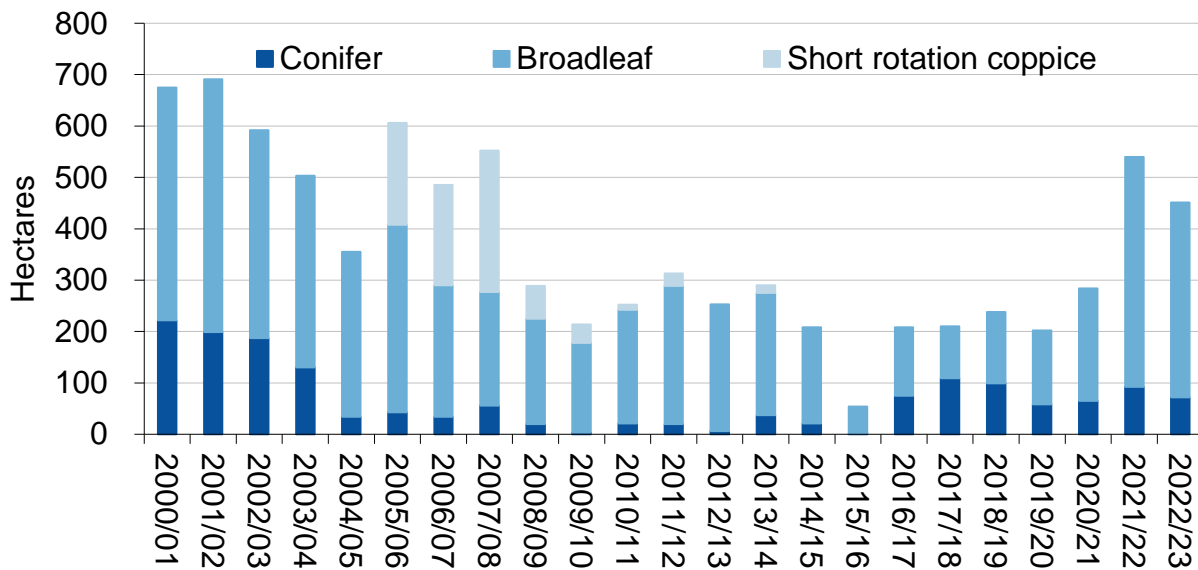
Source: Northern Ireland Forest Service

In Northern Ireland, over 52 per cent of forests and woodlands are managed by Forest Service. https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/

Grant support to encourage afforestation and sustainable management of non-Forest Service woodlands is provided by forestry measures in the 2014-2020 Rural Development Programme. In 2022/23, 451 hectares of new woodland (72 hectares conifer and 379 hectares broadleaf) were planted and part funded by the European Commission under the Forestry Grant Schemes.

6 Waste

Waste and, especially, how we deal with it, is becoming an increasingly important issue. Waste is produced by households, by industrial processes, by the construction and demolition industry, through commercial activities and agricultural practices and by public services and utilities. Waste can affect the environment through its visual impact or by emissions to the air, groundwater and surface water as well as the contamination of land.

This chapter reports on the amount of waste collected by local authorities which is sent for preparing for reuse, recycling, composting.

Key points in this chapter:

- In 2021/22, Northern Ireland's household waste recycling rate was 50.1 per cent, This was a 0.8 percentage point decrease compared to 2020/21.

- The recycling rate for all waste collected, both household and non-household waste, was 49.7 per cent in 2021/22.

Other statistics related to waste collected by local authorities in Northern Ireland are available.

The Local Authority Municipal Waste Management Statistics show that amount of waste sent for energy recovery via incineration has grown exponentially since 2006-07, whilst the proportion of waste sent to landfill has more than halved in the same timescale.

Data tables and further information for this chapter can be found online.

Recycling (preparing for reuse, dry recycling and composting)

Figure 6.1 Waste sent for preparing for reuse, dry recycling and composting, 2005/06 – 2021/22

Source: DAERA
Note: reuse was included with recycling and composting from 2012/13 onwards. The impact was small, adding 0.2 percentage points to the NI rate.

Reuse, dry recycling and composting (referred to as 'recycling' for the rest of this section) is based on materials collected for recycling at the kerbside, civic amenity sites, bring sites and those collected by a third party, such as charities/voluntary groups. Recycling of waste is becoming much more common in Northern Ireland. The revised Northern Ireland Waste Management Strategy (Delivering Resource Efficiency, 2013) proposed to achieve a 50 per cent recycling rate by 2020 for local authority collected household waste.

In 2021/22, the tonnage of local authority collected municipal waste sent for preparing for reuse, dry recycling and composting was 513,791 tonnes. The recycling rate was 49.7 per cent. This was similar to the 50.0 per cent recycling rate recorded in 2020/21.

The recycling rate for household waste was 50.1 per cent in 2021/22. This was a decrease compared to the 2020/21 recycling rate of 50.9 per cent. The proportion of household waste sent for preparing for reuse was 0.3 per cent, dry recycling made up 23.2 per cent and composting was 26.6 per cent.

7 Historic Environment

The historic environment is everything that has been created by people over time. Northern Ireland has a rich heritage of archaeological sites, monuments, buildings, historic landscapes and maritime features that form this environment and represent the aspirations and achievements of past societies, providing evidence of settlement, agricultural, industrial and ritual activity from 9,000 years ago to the present day.

This chapter looks at the numbers of designated heritage assets in Northern Ireland, including those which are at risk. Key points in this chapter:

- In 2021/22, there were a total of 2,019 scheduled historic monuments protected under Article 3 of the Historic Monuments and Archaeological Objects (NI) Order 1995. Overall, there has been a 33 per cent increase in the number of scheduled monuments since 2001/02.
- Listed buildings are those of special architectural or historic interest and provide an indication of the extent of this historical architectural resource. There has been a modest increase in the number of buildings listed in recent years, with a total of 9,063 statutory listings in 2021/22, compared with 8,191 in 2003/04.
- Buildings that are classified as 'at risk' in Northern Ireland are recorded on the online Heritage at Risk in Northern Ireland (HARNI) register. In 2021/22, there were 892 historic buildings and structures on this database, an increase of 130 compared to 2020/21.

Data tables and further information for this chapter can be found online.

Monuments

**Figure 7.1a Total number of scheduled historic monuments, 2001/02 – 2021/22**
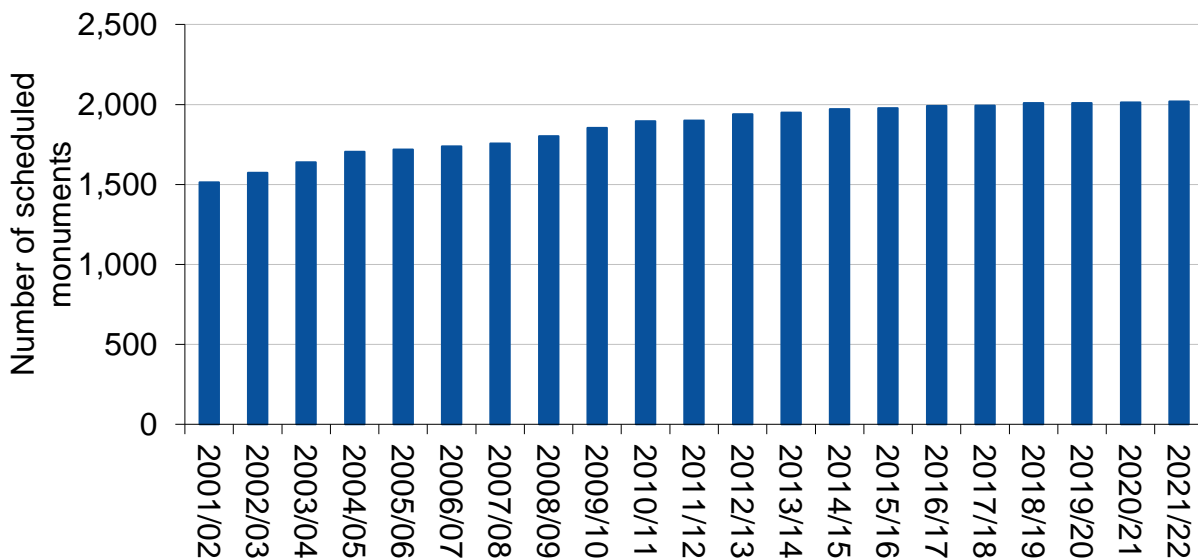
Source: DfC Historic Environment Division

Scheduled historic monuments comprise a selection of the most important, or most rare and vulnerable, of our archaeological sites. They include a range of site types, such as megalithic tombs, prehistoric and early Christian ritual and settlement earthworks, church and castle ruins and features of industrial, defence or maritime heritage importance. These sites are generally in private ownership and the purpose of scheduling is to provide statutory protection to them and to improve or stabilise their condition through advice and guidance. Monuments are monitored for condition and risk by field monument wardens. From April 2015, a risk-based inspection regime has been employed ensuring that the most vulnerable monuments receive increased inspections aimed toward improving their condition.

There were 7 monuments newly scheduled during 2021/22. The recorded numbers of scheduled monuments have increased since 2001/02 reflecting ongoing survey, designation, and assessment. The figures provide an indication of this aspect of the rich cultural and built heritage of Northern Ireland, an increasingly important source of "soft power" and an important contributor to the Northern Ireland economy, through attracting tourism and filming. Overall, there has been a 33 per cent increase in the number of scheduled monuments rising from 1,513 in 2001/02 to 2,019 in 2021/22.

The trend is a general increase as new sites are selected for scheduling each year, against criteria established in policy (https://www.communities-ni.gov.uk/publications/criteria-scheduling-historic-monuments-and-listing-buildings-special-architectural-or-historic) and to better reflect and protect the array of cultural heritage across Northern Ireland. Amendments to existing entries in the schedule are also occasionally made on the basis of new evidence. Scheduled monuments are managed by their owners under Historic Environment Division guidance.

Figure 7.1b Number of scheduled monument consent applications received, 2001/02 – 2021/22
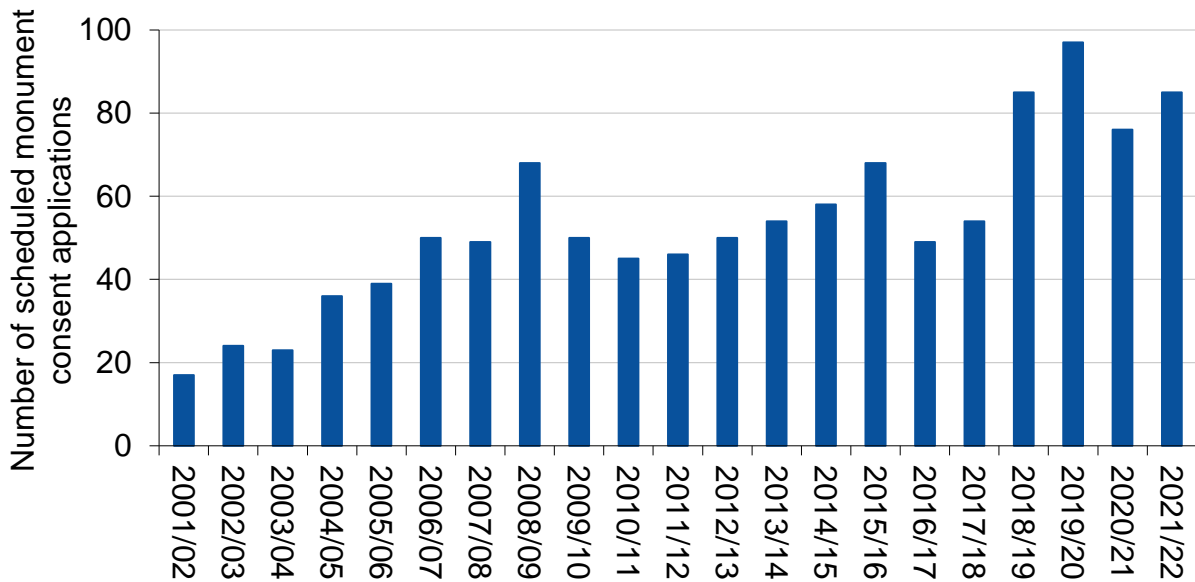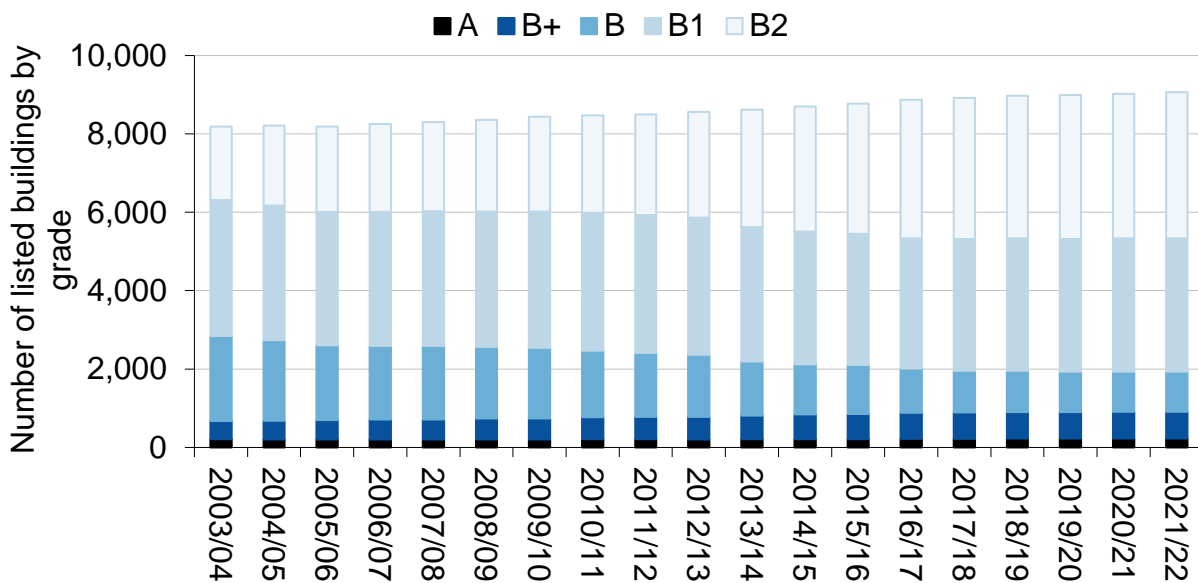

Source: DfC Historic Environment Division

Scheduled Monument Consent must be sought and granted for proposed works which may alter or disturb the fabric of a Scheduled historic monument, its ground surface or setting. Many Scheduled historic monuments are located in rural areas and these owners tend to come from within the agricultural sector. Prior to 2004/05, applications for Consent ran at numbers below 30 per year. From 2006/07 to 2017/18, applications ranged from 45 to 70. Application numbers increased in 2018/19 and reached 97 in 2019/20, the highest number presented in the time series above. The number of applications for Consent in 2021/22 was 85. An increase in government and local council projects, such as trails and site infrastructure, to aid well-being and tourism activities, is one reason for the increase in numbers in recent years.

Listed Buildings

Figure 7.2 Number of listed buildings by grade, 2003/04 – 2021/22

Source: DfC Historic Environment Division

Listed buildings are those of special architectural or historic interest and represent our most important historic buildings.

All of Northern Ireland was surveyed between 1970 and 1995 and suitable buildings were protected by listing. Such structures can range from large stately homes to small gate screens, but all must meet the test of Section 80 of the Planning Act (Northern Ireland) 2011 that they must be of 'special architectural or historic interest'.

The number of listed buildings in 2021/22 was 9,063, an increase of 11 per cent compared to 2003/04 (8,191). Some listings include multiple buildings, therefore, the total number of buildings protected in this way is slightly higher.

A second, area-based survey of all historic buildings (the Second Survey) has been underway since 1997 and is largely responsible for the increase. However, it should be noted that a significant number of buildings have also been found to no longer meet the legislative test as part of this process and have therefore been removed.

Budget to carry out the survey significantly reduced in 2014/15 and the increase in subsequent years is due to the processing of existing records. That is likely to reduce over the next few years as this reserve of data is exhausted.

The number of grade B buildings is expected to continue to reduce over time. Most of these buildings are churches which were ineligible for grant aid in 1986 when the B category was split into grade B1 and B2 for grant purposes. Grade B buildings are being allocated to either the B1 or B2 category as part of the Second Survey.

More detail on the grading of listing buildings can be found on page 17 of 'Criteria for the Scheduling of Historic Monuments and the Listing of Buildings of Special Architectural or

Historic Interest, with associated procedures' (May 2019): https://www.communities-ni.gov.uk/publications/criteria-scheduling-historic-monuments-and-listing-buildings-special-architectural-or-historic.

Records of all listed buildings are published on the Northern Ireland Buildings Database at: www.communities-ni.gov.uk/services/buildings-database

You can also see where listed buildings are located in your area and link to the buildings database via the Historic Environment Map Viewer at: Historic Environment Map Viewer | Department for Communities (communities-ni.gov.uk)

Buildings and Monuments at Risk

Figure 7.3 Number of buildings and monuments at risk, 2003/04 – 2021/22
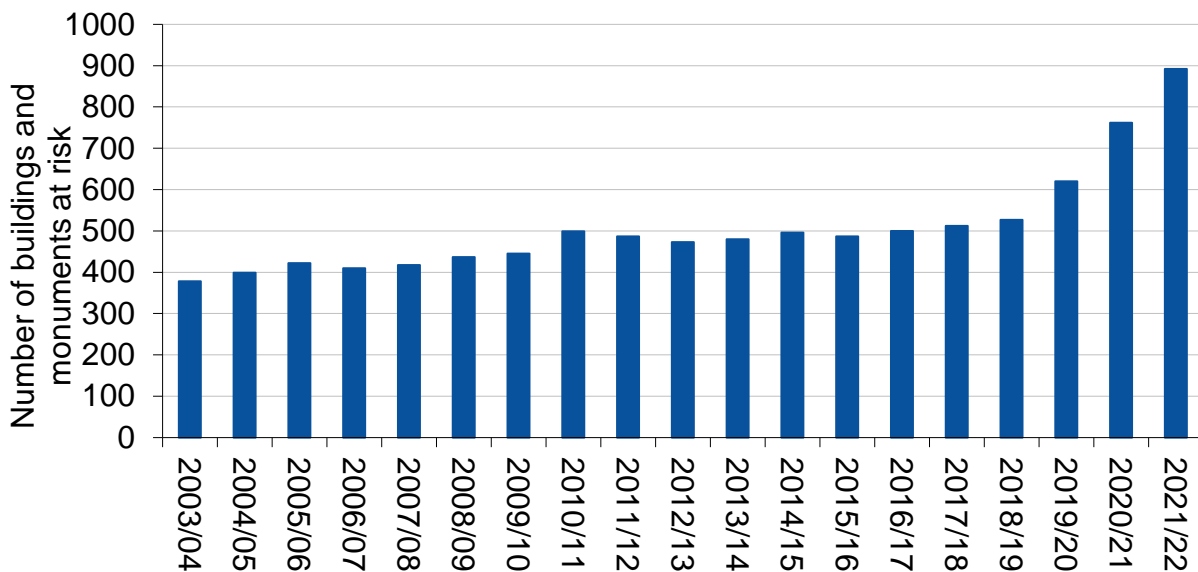
Source: DfC Historic Environment Division

A listed building or structure is at risk when its condition and management is deemed to be poor and unsustainable, placing the building or structure under threat of deterioration and/or demolition.

Such listed buildings, structures and some scheduled monuments are recorded on an on-line database: the Heritage at Risk in Northern Ireland (HARNI) register.

The HARNI register provides an indicator of changes in the number of heritage assets judged to be at risk. The register is compiled using available information and is not based upon a systematic survey. In 2021/22, there were 892 buildings and structures on the HARNI database, an increase of 130 compared to 2020/21. There has been a 69 per cent increase in the number of entries on the register since 2018/19. It is not clear if this reflects a sudden change due to the COVID-19 pandemic and other recent economic changes or a longer-term trend resulting from improved survey work.

The number of buildings on the register can be expected to rise as more detailed information is made available through surveys.

Between 2003/04 and 2021/22, 326 buildings and monuments were removed from the list because they were conserved.

National Statistics

National Statistics status means that our statistics meet the highest standards of trustworthiness, quality and public value, and it is our responsibility to maintain compliance with these standards.

These statistics were first designated as National Statistics, and underwent a full assessment against the Code of Practice, in September 2013 by the UK Statistics Authority https://www.statisticsauthority.gov.uk/publication/statistics-on-the-environment-and-waste-management-in-northern-ireland

No official compliance checks have been completed since, however, we have continued to comply with the Code of Practice since designation and have made the following improvements:

- Added more value by consulting on the report in 2017 [https://www.daera-ni.gov.uk/consultations/consultation-ni-environmental-statistics-report] and attending and presenting at the DAERA statistics user group meeting [DAERAstats-user-group].

- Ongoing quality assurance of the indicators contained within the report by reviewing methods and indicators annually.

- Improved statistical output by creating infographics to accompany the report and tables.

- Sought and implemented recommendations from GSS good practice team to improve the publication.

- In 2020, consulted with senior managers and internal users to streamline the content to concentrate on first released statistics and statistics that were produced for PfG monitoring.

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