

Draft Clean Air Strategy

Habitats Regulation Assessment Appropriate Assessment Report August 2026

Draft Clean Air Strategy for Northern Ireland

HRA Appropriate Assessment Report

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1. Executive Summary

The draft Northern Ireland Clean Air Strategy 2026-2032 (herein referred to as the “draft CAS”) sets out the Department of Agriculture, Environment and Rural Affairs (DAERA) commitment and long-term ambition to improve air quality, alongside the steps we will take to deliver this. The draft CAS outlines the current policy, legislation and measures in place to control air pollution and sets out further areas for action.

Aim: The aim of the strategy is: *To improve air quality across Northern Ireland by 2032 for the benefit of human health and the environment.*

Goals:

1. To improve air quality to support better human health, prevent ill health and premature deaths associated with air pollution.
2. To reduce air pollution for a cleaner environment.
3. To increase public awareness of air quality issues and empower the public to take personal action to improve air quality.

Strategic objectives:

1. **Develop our evidence** base by building on our existing high quality air quality network.
2. **Improve legislation** by updating existing legislation to protect Northern Ireland’s air quality and human health. New ambitious PM_{2.5} and PM₁₀ limits/targets are intended to be introduced, following consultation.

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3. **Raise awareness and change behaviour** by providing people with easy to understand and accurate information to allow people to make better informed decisions and change behaviour.
4. **Work towards zero pollution** by preventing air pollution at source.
5. **Deliver change through partners** by working together to manage and improve Northern Ireland's air quality.

19 Actions have been drafted to achieve these Strategic Objectives and are included in Section 5 below and in more detail in Annex A of the draft CAS.

On completion of the Appropriate Assessment (AA) Screening, it was determined that the draft CAS should undergo an AA. The objective of the draft CAS is to improve Northern Ireland's environment in general through improved air quality and by extension also improve the habitats covered by the Habitats Regulations Assessment process.

The draft CAS offers a clear framework to prioritise actions that will maximise environmental and societal benefits and has the potential to significantly reduce negative environmental impacts. The potential for likely significant negative effects on European sites could not be entirely ruled out at the Screening stage of the AA therefore a full HRA AA was undertaken.

The AA concluded that none of the actions proposed in the draft CAS were likely to result in significant negative effects and that overall, the combined effects in the draft CAS should benefit European sites. It was concluded that any mitigation measures should be undertaken at local planning level for individual projects resulting from the draft CAS.

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2. Introduction

According to a report from the British Heart Foundation, Northern Ireland (BHF NI) released in 2023, Air Pollution and Mortality on the Island of Irelandⁱ, reports that 936 deaths in Northern Ireland were attributed to fine particulate matter (PM_{2.5}) air pollution, with 314 of these deaths being attributed to circulatory diseases. Air quality also affects the wider environment in Northern Ireland with air pollution damaging ecosystems.

Northern Ireland faces similar issues with air pollution compared to the rest of the United Kingdom (UK) and Europe, most notably, levels of nitrogen dioxide (NO₂) found in urban centres, arising principally from road traffic. Some differences do however exist with Northern Ireland experiencing more significant problems with emissions from residential solid fuel burning and ammonia (NH₃) from agriculture. Air pollution is transboundary, and some pollutants can travel long distances in the air.

Some pollutants in parts of Northern Ireland continue to exceed air quality objectives set out in the UK Air Quality Strategy 2007. An increased effort to reduce air pollution is essential, together with monitoring to assess progress and to provide sound, evidence for further policy development and interventions.

The draft CAS outlines the current policy, legislation and measures in place to control air pollution and sets out further areas for action. Following public consultation, the final strategy will play an important role in ensuring we build on the successes already achieved, further improving air quality for all.

This report sets out the rationale and decision-making process, at a strategic and whole of Northern Ireland level with regard to the requirement for an AA, from the

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introduction of the draft CAS. In doing so, the document complies with the requirements of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (the Habitats Regulations)¹ which transposes the requirements of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora into Northern Ireland law.

AA is a process for undertaking a comprehensive ecological impact assessment of a plan or project, or in this case, a strategy, examining its implications, on its own or in combination with other plans and projects, on one or more European Sites in view of the sites' Conservation Objectives, as referred to in Article 6(3) of the EU Habitats Directive.

The objective of the Habitats Regulation Assessment (HRA) process is to test if a plan, project proposal or strategy could significantly harm the designated features of a European site. Plans, projects and strategies can only be permitted having ascertained that there will be no adverse effect on the integrity of any European site(s).

3. Summary of the draft CAS

Clean air is essential for protecting health in Northern Ireland because air pollution affects people at every stage of life, from pregnancy to older age. Pollutants such as particulate matter (PM_{2.5} and PM₁₀), and nitrogen dioxide (NO₂), can cause or worsen respiratory conditions like asthma, and long-term exposure is linked to heart

¹ <https://www.legislation.gov.uk/nisr/1995/380/contents/made>

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disease, stroke, and dementia. Children are particularly vulnerable because polluted air can impair lung development and immune function. Poor air quality also contributes to cancer risk, as confirmed by the International Agency for Research on Cancerⁱⁱ.

The total Health and Social Care cost of air pollution in Northern Ireland between 2017–2025 was estimated to be £55m to £190mⁱⁱⁱ. Secondary care is likely to see the largest share of this expenditure. For the period 2017-2035, the combined cost is estimated to be in the region of £182m - £635m with air pollution expected to cause 84,000 new cases of disease in Northern Ireland during this time.

In Northern Ireland, urban traffic emissions and domestic solid fuel burning are major sources of harmful pollutants primarily for nitrogen dioxide and particulate matter, while ammonia mainly from agriculture impacts both health and ecosystems.

The draft CAS will provide direction and a framework for action to improve air quality which will support better human health, increase public awareness of air quality issues to encourage behavioural change, reduce air pollution and protect the natural environment.

For the purposes of this draft strategy, we are focused on the reduction of the main air pollutants that have direct effects on human health. Ammonia emissions and levels are the subject of other policy measures, for example the draft Ammonia Strategy^{iv}.

The main sources of harmful air pollution in Northern Ireland are shown in Table 1:

Table 1: Key pollutants and their sources in Northern Ireland

Pollutant	Major Sources
Nitrogen oxides (NO _x includes NO, NO ₂)	• Domestic and industrial Combustion • Energy production • Transport
Sulphur Dioxide (SO ₂)	• Combustion of fuels containing sulphur • Industry • Household heating
Particulate Matter (PM ₁₀ and PM _{2.5})	• Industrial combustion • Domestic combustion • Road transport • Formation from reactions involving other pollutants e.g. ammonia, SO₂, NO_x
Ground-level ozone (O ₃)	• Secondary pollutant formed by chemical reactions in presence of sunlight
Ammonia (NH ₃) (not within the scope of the draft CAS as it has its own strategy)	• Agricultural activities • Waste
Polycyclic Aromatic Hydrocarbons (PAHs)	• Domestic combustion

While progress has been made, levels of pollutants such as fine particles (PM_{2.5}), nitrogen dioxide (NO₂), and ozone still exceed the latest World Health Organization

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guidelines in many areas. This strategy sets out how we will work together to reduce these pollutants, protect health, and create a cleaner environment for everyone.

In preparing the draft CAS, a significant level of research and collaboration has taken place to inform its content. Inter-linkages with other strategies have been considered, as were air quality strategies for neighbouring regions, and international best practice, to inform priorities, responsibilities and actions.

3.1 Structure of the draft CAS

Aim The aim of the draft strategy is: To improve air quality across Northern Ireland by 2032 for the benefit of human health and the environment.

Goals - We have proposed three key goals which we want to achieve by 2032:

1. To improve air quality to support better human health and prevent ill health and premature deaths associated with air pollution
2. To reduce air pollution for a cleaner environment
3. To increase public awareness of air quality issues and empower the public to take personal action to improve air quality.



The five **strategic objectives** provide the overarching framework through which we will achieve the goals set out above. Actions listed in this draft strategy are also considered as ‘measures which are to be taken by relevant authorities and other persons for the purpose of achieving those objectives’, as required under Article 10 Part III of The Environment (Northern Ireland) Order 2002² (the Environment Order).

Objective 1. Develop our evidence base

We will build on our existing air quality network. This will provide more scientific air quality data, which will help to strengthen our evidence base and support further policy development. This will be important to inform future decisions and measure success.

² Part III of The Environment (Northern Ireland) Order 2002 (pages 6 - 7), accessed 30/04/26, <https://www.legislation.gov.uk/nisi/2002/3153/data.pdf>

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1.1 Undertake knowledge surveys

DAERA will carry out two knowledge surveys, one before any public awareness campaigns have taken place, and one at the end of the strategy in December 2032. These knowledge surveys will measure the level of public understanding of air quality and pollutants, and will develop a comprehensive evidence base, to assess the impact of the awareness campaigns.

A baseline survey was conducted before the consultation, and awareness campaigns were carried out. The same survey will be repeated after all campaigns conclude at the end of this strategy in 2032. By comparing the results of the two surveys, DAERA can determine if the campaigns or actions, have increased awareness of air quality issues in Northern Ireland, or helped to bring about positive change. DAERA can then adapt its messaging and policies to support people to reduce air pollution.

1.2 Review the Northern Ireland air quality monitoring network

DAERA has commissioned an independent air quality expert to review the Northern Ireland air quality monitoring network. This will ensure the necessary monitoring coverage is in place for, legislative compliance, protection of human health, protection of the environment, provision of air quality alerts, and ongoing assessment of emissions levels considering the 2021 WHO global air quality guidelines. By December 2027 DAERA will analyse the findings and prioritise recommendations.

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1.3 Expand and upgrade the NI air quality monitoring network

DAERA will regularly engage with District Councils. This will include two formal meetings each year, through the Local Air Quality Management (LAQM) regime. The meetings will discuss the locations for additional monitoring sites, which additional pollutants will be monitored at existing sites, and upgrading and expanding air quality monitoring in Northern Ireland. Monitoring data will be made available on www.airqualityni.co.uk and the 'Air Pollution in Northern Ireland Annual Report'³.

1.4 Assess the feasibility of establishing ultra-fine particulate matter monitoring in Northern Ireland

Within one year of publication of the PEACEPLUS Clean Air Project (PEACE-Air) report, which will be delivered by 31 May 2029, DAERA will consider the report's recommendations regarding ultrafine particulate monitoring in Northern Ireland and determine the need for monitoring.

1.5 Develop an Air Quality Model Application

By the end of 2032, DfI will have developed and added an Air Quality model application to the Department for Infrastructure's bespoke NI Transport Emissions Model (TEM). DfI will engage with DAERA on what pollutants will be modelled.

³ DAERA Air Pollution in Northern Ireland Reports, accessed 30/04/26, <https://www.airqualityni.co.uk/reports>

Objective 2. Improve legislation

DAERA will, subject to consultation and Assembly approval, update existing legislation to introduce new PM_{2.5} and PM₁₀ limits/targets/objectives; review air quality definitions and will consider further options on stove and solid fuel labelling and stove smoke emission rate in smoke control areas (SCAs) following a UK wide consultation⁴.

Actions

2.1 Consult on new PM_{2.5} and PM₁₀ limit values and make relevant legislative changes

In 2026 DAERA will consult on an annual average air quality limit/objective of 20 µg/m³ for PM₁₀ and 10 µg/m³ for PM_{2.5} in line with World Health Organisation Air Quality Guidelines Interim Target 4. It will also consult on a new annual average target value of 8µg/m³ for PM_{2.5}. These limits will be set out in new secondary legislation which will amend the Air Quality Standards Regulations (Northern Ireland) 2010; and Air Quality Regulations (Northern Ireland) 2003 to be achieved by 1 January 2028.

In complying with any future regulations, other NICS Departments will be required to take the necessary actions within their remit to reduce emissions, as required by the Air Quality Regulations (Northern Ireland) 2003, and be fully involved in LAQM as

⁴ Consultation on solid fuel burning - taking action to reduce fine particulate matter and smoke emissions, <https://consult.defra.gov.uk/domestic-burning/consultation-on-solid-fuel-burning/>

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well as supporting District Councils through adoption and implementation of measures within the remit of the NICS Departments.

2.2 Review and simplify air quality policy monitoring terms for the public

By the end of December 2028, DAERA will undertake a review of the use of technical definitions and terms used within air quality policy and monitoring regimes. This review will aim to simplify these terms and make this information more accessible for the public. Examples include - standards, objectives, critical load, critical level, target value and limit values. These terms come from a variety of policies and pieces of legislation including CAFÉ Directive, AQS Regs (NI) 2010, NECD, and the UK ASQ.

2.3 DAERA will work with the UK Government to analyse the consultation responses to the 2026 UK wide consultation on solid fuel burning

Within six months of responses being shared by the Department for Environment, Food and Rural Affairs (DEFRA), DAERA will analyse the Northern Ireland specific responses to the 2026 UK wide consultation. This consultation gathered views on new smoke emission rates for appliances in SCAs, health and emissions labelling for stoves and health labelling on the packaging of solid fuels. This analysis will determine further options which could be taken forward in Northern Ireland by DAERA, DoH and DfE, which may require new UK wide legislation and consent from the relevant Department in Northern Ireland.

Objective 3. Raise Awareness and bring about Behavioural Change

DAERA will run awareness campaigns to inform the public about the risks to their health of air pollution. These campaigns will inform the public of the actions they can

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take, or alternative decisions they can make, to reduce their personal contribution to air pollution. DAERA will also evaluate the impact of the awareness campaigns, to ensure they are successful.

Actions

3.1 Launch Air Quality Awareness and Behaviour Change Campaigns

DAERA will develop and launch an awareness and behaviour change campaign, for each year for the duration of this Strategy. Possible topics include:

- 'No idling' at schools
- Solid fuel burning
- Wet wood burning
- Clean Air Primary Schools Campaign
- Indoor air quality
- Clean Air Night/Day

DAERA will lead these campaigns, assisted by other NICS Departments, and will be guided by best practice approaches. The campaigns will aim to ensure improved public awareness of the sources of information about national and local pollution levels. The campaigns will also aim to help the public understand the sources of harmful air pollution, and the consequences for human health.

Objective 4. Work towards zero pollution

Together, we will prevent air pollution at source. If prevention is not fully possible, air pollution should be minimised; and, if air pollution has occurred, it should be remediated through existing regulations.

Actions

4.1 Achieve a fair and just transition to phasing out of coal, manufactured solid fuels and unseasoned wood for home heating

By the end of 2027, DAERA will issue a 'Call for Evidence', to seek views on bringing forward secondary legislation, to restrict or phase out coal and/or, manufactured solid fuels, and/or unseasoned wood.

Alongside any proposals to phase out or restrict solid fuel burning, DAERA will work with other government departments to ensure support is in place to deliver a Just Transition to cleaner, decarbonised heating that will positively impact air quality.

4.2 Produce Local Draft Transport Plans

By December 2026, DfI will publish local draft Transport Plans covering Belfast and the Northwest, for consultation. (Publication of the final Local Transport Plans by December 2027.) These plans will outline how the transport network could be integrated and re-balanced, improving air quality and facilitating healthy and sustainable transport choices.

4.3 Conduct diesel particulate filter tests

By 2026, the Driver and Vehicle Agency (DVA) will begin the introduction of a diesel emissions Particulate Number (PN) test on all cars and light goods vehicles registered from 1 January 2013.

The planned legislative amendment will also provide for light and heavy vehicles to undergo a PN diesel emissions test during roadside enforcement checks.

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DVA will report on the outcomes of annual tests that result in a major defect being recorded and where roadside inspections identify emissions defects that result in fines or prohibition notices. Findings to be made publicly available.

Objective 5. Deliver Change through Partners

DAERA will work other government departments and delivery partners, to bring about change and improve Northern Ireland's air quality.

Actions

5.1 Establish a Northern Ireland Clean Air Forum

A Clean Air Forum will be established within three months of the launch of the strategy.

The Forum will create a strong working partnership between DAERA, NICS Departments, NI District Councils and non-Government Organisations. It will be an effective forum that acts as a link between neighbouring government jurisdictions, with a focus on enhancing cooperation north-south, as well as east-west air pollution matters, and emerging issues such as indoor air quality.

5.2 Increase investment in Active Travel

DfI will increase investment in active travel to 10% of the overall transport budget by 2030, primarily through the implementation of the Active Travel Delivery Plan, the Belfast Cycling Network Delivery Plan, the Strategic Plan for Greenways, and continue to promote active travel through ongoing engagement with schools.

5.3 Deliver a transboundary air pollution collaborative project (PEACEPLUS)

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By May 2029 DAERA as an observer providing policy advice and NIEA, as an associated partner, will have participated in and delivered the €6.5M PEACEPLUS Clean Air (PEACE-Air) project focussing on solid fuel, transport and ammonia emissions.

The PEACE-Air⁵ project must be delivered by 31 May 2029 to meet the requirements of the PEACEPLUS Programme. It will focus on 4 specific work packages (WP):

WP1: Solid fuel burning.

WP2: Transport-related air pollution.

WP3: Ammonia pollution and impacts on biodiversity and sensitive ecosystems
Speciation of particulate matter.

WP4: Cross-cutting strategies for community engagement, capacity building, and legacy.

5.4 Establish an Air Quality Common Framework

By 2032 DAERA will have worked with DEFRA and the other devolved governments, to finalise, agree and implement the UK Air Quality Common Framework following EU Exit.

5.5 Improve policy integration between air quality, noise and net zero

By 2030 when reviewing policy and technical guidance relating to air quality, net zero and environmental noise, DAERA will ensure improved connectivity between air

⁵ PeacePlus, Northern Ireland – Ireland, accessed 30/04/26, <https://peace-air.eu/>

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quality, net zero and noise in its policies. This will include Local Air Quality Management Technical Guidance (TG22)⁶ and Northern Ireland Policy Guidance PGNI (09)⁷.

By the same date, all departments will also have considered the impact on air quality and noise of other policies/measures which relate to climate change and net-zero.

5.6 Review the LAQM process and associated guidance

Following a review of the air quality monitoring network, and engagement with councils on improvement of the network, DAERA will, by 2032 review the Local Air Quality Management (LAQM) process for Northern Ireland.

5.7 Review the LAQM Grant

By the end of December 2029 following publication of the revised Local Air Quality Management (LAQM) Policy and Technical Guidance (TG22) DAERA will review the LAQM Grant by the end of December 2031, at the end of the current grant duration. This review will aim to ensure good value for money for DAERA and the district councils, and to optimise the benefit for the public through improved air quality.

Each action has a time bound outcome (ranging from 2026 to 2032), along with a Lead Department and Potential delivery Partner(s). More details are listed in Annex A of the draft CAS and include DAERA, the NI Executive, the Department for the Economy (DfE), Department for Infrastructure (DfI), Department of Health (DoH), the

⁶ DEFRA, Local Air Quality Management Technical Guidance (TG22), August 2022, accessed 30/04/26, <https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf>

⁷ DoE (now DAERA), Local Air Quality Management Policy Guidance – LAQM PGNI (09) June 2010, accessed 30/04/26, <https://laqm.defra.gov.uk/air-quality/guidance/northern-ireland-policy-guidance/>

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NI District Councils, as well as agencies including the Northern Ireland Environment Agency (NIEA) and the Public Health Authority (PHA).

4. Legislative context for the draft CAS

DAERA has a legal requirement to publish an air quality strategy (draft CAS). Under Article 10 Part III of The Environment (Northern Ireland) Order 2002^v (the Environment Order), the Department is required to prepare and publish a statement containing policies with respect to the assessment or management of the quality of air. The strategy must include:

- **standards** relating to the quality of air;
- **objectives** for the restriction of the levels at which particular substances are present in the air; and
- **measures** which are to be taken by relevant authorities and other persons for the purpose of achieving those objectives.

Measures can take the form of policies, technological advancement or encourage behavioural change. For the purposes of this draft strategy, the measures required will take the form of 'Actions' which are set out in section 5.2 above and Annex A of the draft CAS. In the course of the SEA exercise, potential positive and negative impacts of each action was assessed. This is covered below in section 16.1 "Effects of the draft CAS alone."

Prior to publication of this draft strategy, Northern Ireland is currently included in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 (UK AQS 2007)^{vi}. However, a Northern Ireland strategy is preferable for dealing with regional air quality matters. Furthermore, DEFRA will withdraw the UK AQS 2007 once a Northern

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Ireland strategy has been published. This strategy will capture the UK AQS 2007 objectives, limits and target values which have been included in Annex I of this strategy. This will ensure that there is no reduction in the protection to human health and the environment.

4.1 Northern Ireland Policy Landscape

Existing standards, limit values, target values and objectives, for air quality in Northern Ireland, primarily come from the CAFÉ Directive, Air Quality Standards Regulations (Northern Ireland) 2010 (AQS Regs (NI) 2010), National Emissions Ceiling Directive (NECD), and the UK AQS 2007.

Since the last WHO 2005 global update, there has been a marked increase in the robustness and quantity of evidence that shows how air pollution affects different aspects of health. For that reason, and after a systematic review of the accumulated evidence, several of the updated AQG values are now lower than 15 years ago. There are also now clearer insights about sources of emissions and the contribution of air pollutants to the global burden of disease. This will mean that change is necessary if we are to work towards compliance with the more recent WHO 2021 Air Quality Guidelines. Several Directives and International Treaties are also part of the Northern Ireland air quality policy landscape.

4.2 Strategic alignment - interacting and supporting policies

This strategy will contribute to delivery of the UN Sustainable Development Goals^{vii} and it also follows the principles of One Health, recognising that the health of humans, domestic and wild animals (to a lesser extent in this strategy), plants, and the wider environment and ecosystems, are closely linked and inter-dependent^{viii}.

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The Programme for Government (PfG) 2024-2027^{ix} sets out how the Executive will create a brighter future to improve wellbeing for all. Through the 2024-2027 PfG, the Executive want a society focused on well-being with an economy that can grow sustainably whilst reducing our emissions and protecting our environment. Through our proposed actions we will take steps to support a fairer, cleaner, healthier future for all. The DAERA Corporate Plan 2025-2027^x also supports implementation of this strategy by prioritising sustainable living, air and health.

This draft CAS is also underpinned by a range of influencing and supporting policies across government. Key frameworks and strategies include DAERA's smoke control regime^{xi}, Local Air Quality Management regimes^{xii}, the draft Green Growth Strategy^{xiii}, the Environmental Improvement Plan^{xiv}, the draft Ammonia Strategy for Northern Ireland^{xv}, Soil Nutrient Health Scheme^{xvi}, the Sustainable Agricultural Programme^{xvii}, the Nutrients Action Programme^{xviii}, the Energy Strategy - Path to Net Zero Energy^{xix}, the Cancer Strategy for Northern Ireland 2022 - 2032^{xx}, Warm Healthy Homes 2026-2036: A new Fuel Poverty Strategy for Northern Ireland^{xxi}, draft Transport Strategy 2035,^{xxii} the Climate Change Act (Northern Ireland) 2022^{xxiii} ^{xxiv} and the draft Climate Action Plan. Annex H of the draft CAS contains further information.

Industrial emissions, waste incineration and the UK Emissions Trading Scheme (ETS), which incentivises participants to reduce their emissions intensity are outside the scope of this strategy and are being taken forward under other DAERA work streams.

DAERA works closely with the Irish Department of Climate, Energy and the Environment (DCEE) and DEFRA to ensure the effects of transboundary air pollution

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are minimised. This working relationship will ensure there is an awareness of new and emerging policies, best practice and knowledge.

4.3 Indoor air quality

There are currently no regulations with specific limits for indoor air quality. However, there are a number of regulations that restrict emissions of specified compounds in some indoor environments. While DAERA has a legislative responsibility for outdoor (ambient) air quality, it does not have responsibility for indoor air quality. However, DAERA does have policy responsibility for chemicals which are used in household soft furnishings and many day-to-day household products. Through regulating chemicals and by improving outdoor air quality, indoor air quality will also benefit. However, this means that a wide range of indoor biological and physical pollutants remain outside the remit of this strategy.

5. Legislative Context for the HRA Appropriate Assessment

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora,⁸ better known as 'The Habitats Directive', provides legal protection for habitats and species of European importance. Articles 3 to 9 of the Directive provide the legislative means to protect habitats and species of community interest through the establishment and conservation of a European Union (EU) wide network of sites known as Natura 2000 (hereafter referred to as 'European sites'). European sites comprise:

⁸ https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en

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- Special Areas of Conservation (SAC) designated for habitats, plants, and non-bird species, under the Habitats Directive (92/43/EEC); and
- Special Protection Areas (SPA) designated for bird species and their habitats, under the Birds Directive (79/409/ECC as codified by Directive 2009/147/EC).

Together these sites form part of the UK national site network. Ramsar sites have been designated under the Ramsar Convention on Wetlands.

Article 6 of the Habitats Directive plays a crucial role in the management of the sites that make up the Natura 2000 network. Articles 6(1) and 6(2) set out the need to identify conservation objectives and prevent deterioration of the habitats and species for which the sites have been designated. Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European Sites.

Article 6(3) establishes the requirement for an AA:

Any plan or project not directly connected with or necessary to the management of the [European] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to AA of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Article 6(4) states:

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If, in spite of a negative assessment of the implications for the [European] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

If screening for AA determines the likelihood for significant effects on a European site(s), in view of the conservation objectives of the site, then an AA must be carried out for the strategy, to inform the decision making.

Under this legislation Public Bodies are referred to as 'Competent Authorities'. Where a competent authority proposes to carry out or issue any form of authorisation for works or activities where the site in question is designated as being part of the UK national site network, the works are subject to the requirements of The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended).

The aim of the HRA is to test if a plan or project proposal, or in this case, a strategy could significantly harm the designated features of a European site. Plans, projects and strategies can only be permitted having ascertained that there will be no adverse effect on the integrity of any European site(s).

To this end an HRA is required to be undertaken prior to carrying out or issuing any form or permission or authorisation. The draft CAS does not explicitly carry out or issue any form of permission or authorisation to develop any sites in NI or any developments that may affect designated European sites, however, for the purposes of this assessment, Northern Ireland will be effectively assessed as the 'site'.

6. Stages of HRA AA

The HRA is conducted in line with current guidance and best practices, however, due to the nature of the draft CAS, a site-specific approach is not possible. The assessment references the general EC guidance on HRA⁹, follows the stages outlined below. These stages are iterative and may be revisited as needed in response to new information, recommendations, or changes to the draft CAS, until it can be confirmed that no significant adverse effects remain.

The AA process progresses through four stages. If at any stage in the process it is determined that there will be no adverse effect on the integrity of a European site in view of the sites' Conservation Objectives, the process is effectively completed. The four stages are as follows:

- Stage 1 – Screening of the proposed plan or project for AA;
- Stage 2 – An AA of the proposed plan or project;
- Stage 3 – Assessment of alternative solutions; and
- Stage 4 – Imperative Reasons of Overriding Public Interest (IROPI)/ Derogation.

Stage 1: Screening for AA

The aim of screening is to assess firstly if the plan or project is directly connected with or necessary to the management of European site(s); or in view of best scientific knowledge, if the plan or project, individually or in combination with other plans or

⁹ [Habitats regulations assessments: protecting a European site - GOV.UK](https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site).

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projects, is likely to have a significant effect on a European site. This is done by examining the proposed plan or project and the Conservation Objectives of any European Sites that might potentially be affected. If screening determines that there is a likelihood of significant effects or there is uncertainty regarding the significance of effects, then it will be recommended that the plan is brought forward to the next stage of the AA process.

In spring 2018 the 'Sweetman' European Court of Justice ruling clarified that 'mitigation' (i.e. measures that are specifically introduced to avoid or reduce a harmful effect on a European site that would otherwise arise) should not be considered when forming a view on likely significant effects. Mitigation should instead only be considered at the AA stage.

Stage 2: AA

The aim of Stage 2 of the AA process is to identify any adverse impacts that the plan or project might have on the integrity of relevant European sites. As part of the assessment, a key consideration is 'in combination' effects with other plans or projects. Where adverse impacts are identified, mitigation measures can be proposed that would avoid, reduce or remedy any such negative impacts and the plan or project should then be amended accordingly, thereby avoiding the need to progress to Stage 3.

Stage 3: Alternative Solutions

If it is not possible during Stage 2 of the AA process to conclude that there will be no adverse effects on site integrity, Stage 3 of the process must be undertaken which is to objectively assess whether alternative solutions exist by which the objectives of the plan or project can be achieved. Explicitly, this means alternative solutions that

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do not have adverse impacts on the integrity of a European site. It should also be noted that EU guidance on this stage of the process states that, 'other assessment criteria, such as economic criteria, cannot be seen as overruling ecological criteria' (EC, 2002). In other words, if alternative solutions exist that do not have adverse impacts on European sites, they should be adopted regardless of economic considerations. This stage of the AA process should result in the identification of the least damaging options for the plan or project.

Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)

This stage of the AA process is undertaken when it has been determined that a plan or project will have adverse effects on the integrity of a European site, but that no alternatives exist. At this stage of the AA process, it is the characteristics of the plan or project itself that will determine whether or not the competent authority can allow it to progress. This is the determination of 'over-riding public interest'. It is important to note that in the case of European sites that include in their qualifying features 'priority' habitats or species (Special Areas of Conservation), as defined in Annex I and II of the Habitats Directive, the demonstration of 'over-riding public interest' is not sufficient and it must be demonstrated that the plan or project is necessary for 'human health or public safety considerations'. Where plans or projects meet these criteria, they can be allowed, provided adequate compensatory measures are proposed. Stage 4 of the process defines and describes these compensation measures.

6.1 Stage 1 AA Screening Process

During the screening phase of the HRA a Test of Likely Significant Effects (ToLSE) is carried out. This is a brief high-level assessment that determines if the subsequent full AA is required.

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- An effect should be considered “likely” if it cannot be excluded, based on objective information, that it will have a significant effect on the site (ECJ Waddenzee, para 44¹⁰).
- An effect should be considered ‘significant’, “if it undermines the conservation objectives” (para 48); and
- Where a plan or project influences a site “but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned” (para 47).

The screening for Likely Significant Effects (LSEs) is a two-stage process. Firstly, it should determine whether there are any issues that could result in negative impact pathways, and secondly, it establishes whether there are any Natura 2000 (Habitats) sites that might be affected, identifying those most likely to be impacted by the strategy and the impact pathways requiring further consideration.

It is important to note that, in line with the *People Over Wind and Sweetman v Coillite Teoranta* (C323/17)¹¹ ruling, mitigation measures specifically introduced to avoid or reduce harmful effects on a European site must not be considered at the LSE screening stage. Mitigation is only considered in the AA stage. This HRA has been prepared in accordance with this legal requirement.

The LSE screening is conducted in accordance with the precautionary principle, with the main purpose being to determine whether a more detailed AA is required. The draft CAS objectives, targets and actions will be screened out from having LSEs on European sites where any of the following apply:

¹⁰ [LexUriServ.do](#) Case C-127/02.

¹¹ [People Over Wind and Sweetman v Coillite Teoranta \(C323/17\)](#).

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- They are environmentally positive.
- They will not themselves lead to any development.
- They make provision for change but could have no conceivable effect on a European site e.g. where there is no pathway between the objectives, targets or actions and the qualifying features on the site.
- An effect of the strategy is too general e.g. lack of detail regarding, where, when, or how the objective, target or action may be implemented, or which sites may be affected.
- They largely reference other existing policies or strategy documents, rather than introducing new mechanisms or requirements.
- They are 'criteria-based' or general objectives, targets or actions with no spatial element.

European sites comprise (a) Special Areas of Conservation (SACs) that are designated under the Habitats Directive as requiring the conservation of important, rare or threatened habitats and species (other than birds) and (b) Special Protection Areas (SPAs), which are designated under the Conservation (Natural Habitats, etc.) (Amendment) (Northern Ireland) (EU Exit) Regulations 2019. Collectively these sites formed the Natura 2000 Network, now known as the "National Site Network" in the UK. The AA also considers transboundary impacts where it is identified that the implementation of the plan has the potential to impact on European sites outside the Member State territory.

Management of European Sites

AA Screening is not required where the plan or proposed development is connected with, or necessary to the management of any European site. In this case, the

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proposed strategy **is not** directly connected with or necessary to the management of any European site(s).

Identification of European Sites and Zone of Influence

In Northern Ireland, sites that were within the Natura 2000 Network are now referred to as European sites and comprise Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Northern Ireland has 58 areas that have been designated as SACs covering terrestrial, freshwater and marine habitats. Some of these are cross-border sites. These are designated to protect special habitats or species of international importance, as listed in The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), to ensure ‘the conservation of a wide range of rare, threatened or endemic animal and plant species. Some 200 rare and characteristic habitat types are also targeted for conservation in their own right.’

The habitats and species that occur in our SACs are called ‘features’ and they are of international importance. These SACs are vitally important as their purpose is to protect Northern Ireland’s biodiversity. Important features of Northern Ireland’s SACs include freshwater pearl mussel, grey seal, bogs, otters, salmon, sand dunes, rivers and lakes, estuaries, heaths, mountains and woodland.

Post transition, the UK is still required to identify internationally important areas for breeding, over-wintering and migrating birds and designate them as SPAs. SPAs are designated for the protection of endangered species of wild birds including listed rare and vulnerable species, regularly occurring migratory species as well as wetland habitats that support such species. There are 16 SPAs designated within Northern Ireland.

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The draft CAS does not consider or guide the development of specific sites within Northern Ireland, therefore, this assessment considers that, since the draft CAS is a national strategy, that all European Sites within Northern Ireland are considered.

6.2 Stage 2 Appropriate Assessment

Where the screening is unable to conclude ‘no LSE’, the analysis must proceed to an Appropriate Assessment (AA). Case law has clarified that an “Appropriate Assessment” is not a technical term with a prescribed level of analysis; rather, it refers to whatever level of assessment is appropriate to form a conclusion regarding effects on the integrity of European sites considering their conservation objectives.

The Holohan ruling (C-461/17)¹² further clarified that typical habitats or species present on, or outside, the site must be included in the AA if they are necessary for the conservation of the habitat types and species for which the protected area is designated.

The analysis at the AA stage is more detailed than at the screening stage. A key consideration is the ability to mitigate any potential negative effects. The purpose of the AA is to conclude whether there would be an adverse effect on site integrity or a disruption of the coherent structure and function of the European site(s) in view of their conservation objectives.

6.3 Stage 3 - Mitigation Measures

Mitigation measures are designed to prevent, reduce or offset potential adverse effects of a plan or project on European sites. In the context of the draft CAS,

¹² [Holohan and Others v An Bord Pleanála, Case C-461/17, ECLI:EU:C:2018:883, Judgment of 7 November 2018.](#)

mitigation measures serve to ensure that the implementation of draft CAS objectives, targets and actions do not compromise the integrity of Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites.

The purpose of mitigation is to address risks and impact pathways, (such as air and water pollution, habitat loss, disturbance and cumulative effects) by embedding safeguards and best practices at a strategic level. Effective mitigation not only protects sensitive habitats and species but also supports compliance with legal obligations under the Conservation Regulations and related legislation. Mitigation measures are considered in more detail in Section 16.

7. Geographic Scope

Northern Ireland is recognised for its rich ecological diversity within a relatively compact geographical area. For Northern Ireland, the need for an AA is set out in the Conservation (Natural Habitats etc) Regulations 1995¹³ (as amended). The HRA process applies the 'Precautionary Principle' to European habitat sites. Plans and projects can only be permitted after it is ascertained that there will be no adverse effect on the integrity of the site(s) in question. Plans and projects with predicted adverse impacts on the integrity of relevant European sites may still be permitted if there are no alternatives and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

¹³ [The Conservation \(Natural Habitats, etc.\) Regulations \(Northern Ireland\) 1995.](#)

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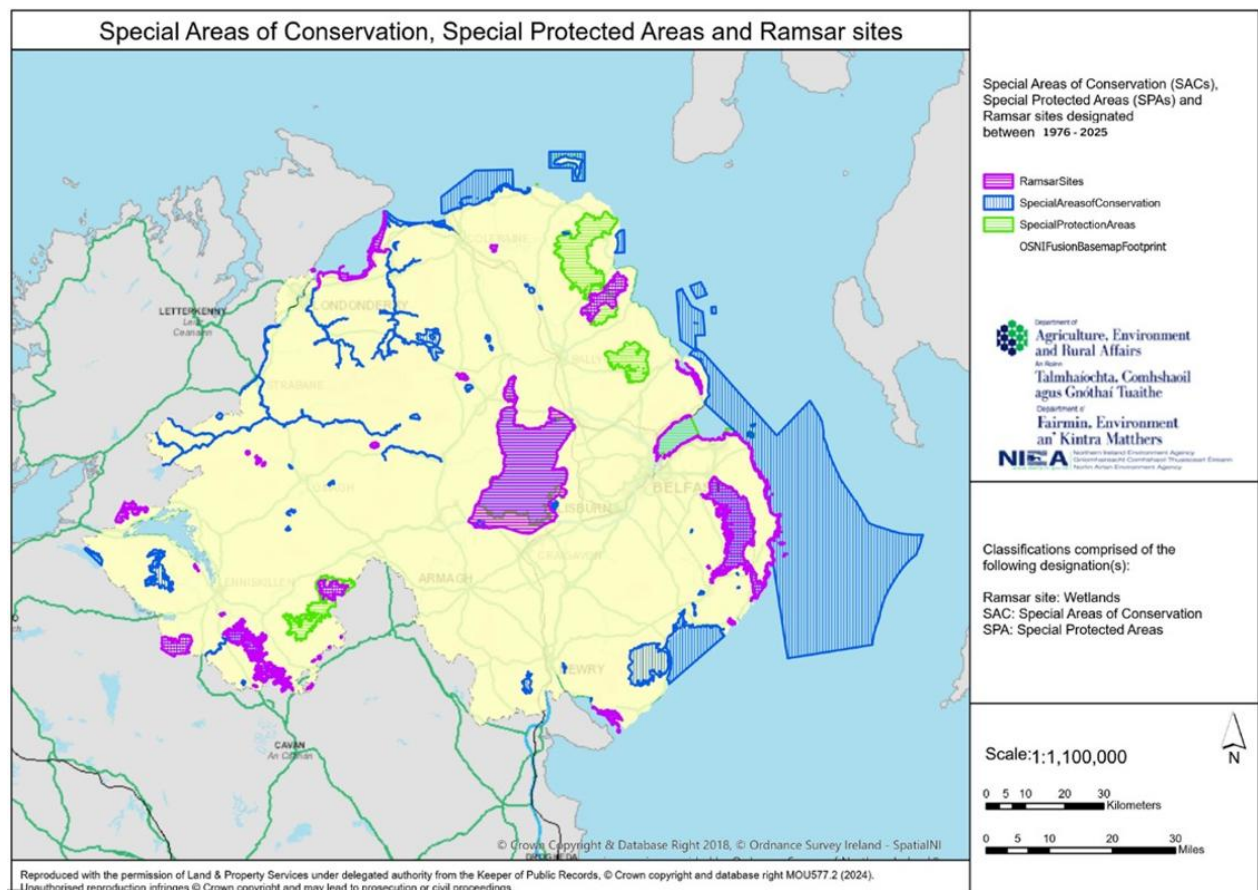
There are no universally established criteria for defining the physical boundaries of a Habitats Regulation Assessment. The source-pathway-receptor (SPR) model serves as a framework for evaluating environmental risks and pollution control. It identifies potential sources of harm, the routes through which the harm may be transmitted (pathways), and the individuals or elements that could be affected (receptors). This model helps illustrate how pollutants can travel and impact different parts of the environment.

European sites considered in this assessment include all sites within Northern Ireland and those within a 15km buffer zone that could potentially be affected by the strategy. This distance was selected on the basis that the potential for aquatic pollution effects beyond 15 km is likely to be minimal due to dilution. Other potential impacts from measures proposed in the draft CAS (such as noise, visual disturbance, air pollution, or the loss of functionally linked habitats) are also generally not expected to be significant beyond this distance. In the terrestrial environment the effects are likely to occur over a much shorter range. The sites include:

- Special Areas of Conservation (SACs)- protecting habitats and species of European importance.
- Special Protected areas (SPAs)- protecting bird species and habitats.
- Ramsar sites - protecting wetlands of international importance.

The following European sites are wholly located with Northern Ireland and are considered in this HRA: 58 Special Areas of Conservation (SACs); 16 Special Protected Areas (SPAs); 20 Ramsar sites; European sites that are not wholly or are partially within Northern Ireland are also considered for potential impacts. Many of these sites are sensitive to atmospheric pollution.

Figure 1 : Special Areas of Conservation (SACs), Special Protection Areas (between 1976 and 2025SPAs) and Ramsar sites, designated



7.1 Other Plans in Scope

The HRA regulations require that the impacts of the draft CAS are not considered in isolation but in combination with other plans and projects that may also be affecting the European sites in question. This part of the assessment is intended to identify any cumulative effects that may be missed when considering plans individually which

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may result in an overall significant impact. All objectives, targets and actions within the draft CAS must therefore be considered both on a stand-alone and an in-combination basis.

The assessment is initially undertaken on the draft CAS as a standalone strategy, with each individual objective, target and action scrutinised to determine whether it is likely to give rise to likely significant effects (LSEs) on European designated sites. Following this, the HRA assessment considers the potential for effects in combination with other relevant plans and projects, in accordance with the requirements of The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended). Where the assessment identifies the potential for LSEs, either alone or in combination, on the qualifying features of a European site, an AA is required. The AA further evaluates whether the plan, project or strategy would have an adverse effect on the integrity of the site, considering site conservation objectives. If such effects cannot be ruled out, the HRA assessment also sets out recommendations for mitigation measures, which may include changes to the wording of objectives, targets and actions or the implementation of additional environmental safeguards to ensure compliance with the Habitats Regulations.

7.1.1 International

Table 2: Summary of key international plans and programmes relevant to the draft Northern Ireland Clean Air Strategy

Links with international plans and programmes
• Birds Directive [2009/147/EC] • Bonn Convention [L210, 19/07/1982 (1983)]

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Links with international plans and programmes

- Convention for the Protection of the Architectural Heritage of Europe [Granada 1985]
- Convention of Wetlands of International Importance especially as Waterfowl
- Drinking Water Directive [98/83/EC]
- EIA Directive [85/337/EEC] [2014/52/EU]
- Environmental Liability Directive [2004/35/EC]
- Environmental Noise Directive [2002/49/EC]
- Environmental Quality Standards Directive [2008/105/EC]
- EU Action Plan: Towards Zero Pollution for Air, Water and Soil [COM (2021)400]
- EU Biodiversity Strategy for 2030 [COM (2020)380]
- EU Floods Directive [2007/60/EC]
- European Climate Pact [COM (2020)788]
- European Convention on the Protection of the Archaeological Heritage (Valletta 1992)
- European Landscape Convention [ETS No. 176]
- Groundwater Directive [80/68/EEC] and Daughter Directive [2006/118/EC]
- Habitat (1971) [UN Treaty Series No. 14583]
- Habitats Directive [92/43/EEC]
- Paris Agreement (UNFCCC, 2015)
- SEA Directive [2001/42/EC]
- Second European Climate Change Programme [ECCP II] 2005
- Soils Thematic Strategy [COM (2006) 231]
- The Ambient Air Quality and Cleaner Air for Europe Directive [2008/50/EC]

Links with international plans and programmes
• UN Kyoto Protocol, The United Nations Framework Convention on Climate Change (UNFCCC, 1997) • World Heritage Convention [WHC-2005/WS/02] • The National Emissions Ceilings Directive 2016/2284/EC (NECD) • The Cleaner Air for Europe Directive 2008/50/EC (CAFÉ Directive) • The Fourth Air Quality Daughter Directive 2004/107/EC (FAQDD) • Regulations that implement international commitments under the United Nations Economic Commission for Europe (UNECE) Convention on Long-range Transboundary Air Pollution (CLRTAP) • The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) • The 2002 Protocol Pollutant Release and Transfer Registers (Kiev Protocol) • The 1998 UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) • Directive 2010/75/EU on Industrial emissions standards and best available techniques

7.1.2 National

Table 3: Summary of key national plans and programmes relevant to the draft Northern Ireland Clean Air Strategy

Links with national plans and programmes
• A Strategic Planning Policy Statement for Northern Ireland (2015)

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Links with national plans and programmes

- Abstraction and Impoundment (Licensing) Regulations (Northern Ireland) 2006
- Accessible Transport Strategy 2025
- Air Quality (Ozone) Regulations (Northern Ireland) (2003)
- Air Quality Standards Regulations (Northern Ireland) 2010
- Air Quality Regulations (Northern Ireland) 2003
- Archaeology 2030: A Strategic Approach for Northern Ireland
- Biodiversity Strategy for Northern Ireland to 2020
- Building A Bicycle Strategy for Northern Ireland (2015)
- Building an Active Travel Future for Northern Ireland (2013)
- Children Young People's Strategy 2019-2029
- Circular Economy Programme 2021-2027 (EPA)
- Climate Action Plan 2025 (DCEE)
- Climate Change Act (Northern Ireland) 2022
- Climate Change Act 2008
- Climate Change Risk Assessment (CCRA) for Northern Ireland
- Control of Pollution (Oil Storage) Regulations (NI) 2010
- Disability Discrimination (Northern Ireland) Order 2006
- Disability Discrimination Action 1995
- Emerging issues from the draft Northern Ireland Energy Strategy 2050
- Emerging issues from the draft Rural Policy Framework for Northern Ireland
- Energy Act 2008 and amendments 2011

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Links with national plans and programmes

- Ensuring a Sustainable Transport Future: A New Approach to Regional Transportation
- Environment Act 1995 Part IV Local Air Quality Management
- Environmental Noise Regulations (Northern Ireland) 2006
- Environmentally Sensitive Areas Designation Order (Northern Ireland) 2005
- Exercise Explore Enjoy: A Strategic Plan for Greenways (2016)
- Historic Monuments and Archaeological Objects (NI) Order 1995
- Local Development Plans of adjacent council areas
- Marine Act (Northern Ireland) 2013
- Marine and Coastal Access Act 2009
- Northern Ireland (Miscellaneous Provisions) Act 2006
- Northern Ireland Climate Change Adaption Programme 2019
- Northern Ireland Energy Strategy – Path to Net Zero Energy
- Northern Ireland Intelligent Transport Systems (ITS) Strategy 2025
- PEACE-Air Project
- Planning for the Future of Transport - Time for Change (2021)
- Plastic Packaging Tax Regulations 2022
- River Basin Management Plans
- Rural Needs Act (Northern Ireland) 2016
- Shaping Our Future - Regional Development Strategy for Northern Ireland 2035
- The Environment (Northern Ireland) Order 2002

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Links with national plans and programmes

- The Environment Act 2021
- The Marine Strategy Regulations 2010
- The Planning Act (Northern Ireland) 2011
- The Strategic Planning Policy Statement (SPPS) for Northern Ireland
- The Water (Northern Ireland) Order 1999
- The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017 and amendments
- The Water Supply (Water Quality) Regulations (Northern Ireland) 2017
- The Wildlife (Amendment) Act 2000
- The Wildlife (NI) Order 1985 and amendments
- The Windsor Framework
- Towards an Integrated Coastal Zone Management Strategy for Northern Ireland 2006-2026
- UK Marine Policy Statement
- UK Marine Strategy
- Water Action Plan 2024 (DHLGH)
- Water and Sewerage Services (Northern Ireland) Order 2006
- Whole of Government Circular Economy Strategy
- Wildlife and Natural Environment Act (Northern Ireland) 2011

8. Baseline Information and Environmental Issues

This section describes the environmental baseline information for Northern Ireland, of most relevance to the HRA for the draft CAS. The identification of environmental problems must be based on evidence related to baseline information. This includes: a description of the state of the environment at present; a discussion of the key problems and issues currently being faced in Northern Ireland; and a description of the expected evolution of the environmental baseline position and key trends likely to be experienced.

In response to the SEA and HRA Scoping exercise, NIEA Natural Environment Division (NED) noted that the baseline information was disproportionately focused on Air Quality and referenced several resources that highlight the current state of the environment in Northern Ireland.

- Northern Ireland Environmental Statistics Reports: <https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report>
- Designated Scientific Sites: www.daera-ni.gov.uk/landing-pages/protected-areas
- Regional Landscape Character Map viewer: <https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer>

DAERA have a map browser for NI protected sites and known priority habitat:

www.daera-ni.gov.uk/services/natural-environment-map-viewer

Our natural environment datasets are available at the link below:

www.daera-ni.gov.uk/articles/download-digital-datasets

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DAERA also has two map viewers in relation to the aquatic environment that may be of use, Water Information Request Web Viewer and NIEA Catchment Data Map Viewer both of which can be found at <https://www.daera-ni.gov.uk/articles/daera-map-viewers>

This HRA AA Report aims to provide a comprehensive and proportionate baseline for all SEA topics of relevance to the HRA, rather than just focusing on air quality. Many of these topics and themes have recently been assessed for other DAERA plans, programmes and strategies. This has included Discussion Documents, Public Consultations, SEA Environmental Reports and Habitats Regulation Assessments.

To avoid duplication of work, some of the baseline information below has been sourced from other assessments carried out recently for DAERA, including the SEA Environmental Report, whereby those with specific expertise have already explored these issues in some detail. In most cases the baseline is likely to be much more significantly impacted by other environmental issues than Air Quality. Similarly, other DAERA initiatives are more likely to positively impact these themes and topics than the draft CAS, where the focus is primarily improving air quality for the benefit of human health. The impacts of the draft CAS on the baselines for these themes and topics, whilst positive, are often secondary and in some cases may be considered negligible in comparison to other impacts.

NIEA suggested that the SEA Environmental Report would ideally include an assessment of the likely evolution of the baseline environment in the absence of the plan. This has been considered as far as is reasonable below, however the presence or absence of the draft CAS is unlikely to be the primary source of impact in most of these receptors. The final indicators will be informed by the views received following public consultation.

8.1.1 SEA Theme 1 Biodiversity, Flora and Fauna baseline summary

Special Protection Area (SPA)

SPAs that are designated under the EU Directive on the Conservation of Wild Birds (EC/79/409), “The Birds Directive”, identify areas that are important for breeding, feeding, wintering or migration of rare and vulnerable bird species. There are 16 SPAs designated under The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland, nine of which have marine components as a primary factor for their designation.

Special Areas of Conservation (SAC)

Existing SACs in Northern Ireland were designated in accordance with the Habitats Directive (92/43/EEC) for the conservation of certain habitats and species. Together SPAs and SACs formed part of the Natura 2000 network of protected sites prior to the UK’s exit from the EU. There is now a UK National Site Network of European sites, comprising existing designated sites and any future sites designated under the Habitats Regulations. SACs and SPAs in the Ireland remain part of the Natura 2000 site network.

Ramsar sites

Ramsar sites are designated under the “Ramsar Convention” (Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, Iran 1971), an international treaty for the conservation and sustainable use of wetlands. There are 20 Ramsar sites designated under the Convention on Wetlands of International Importance (the Ramsar Convention) in Northern Ireland, seven of which have marine components as a primary factor for their designation.

Areas of Special Scientific Interest (ASSI)

Areas of Special Scientific Interest (ASSI) are protected under the Environment (Northern Ireland) Order 2002. This requires NIEA to designate land as an ASSI that it considers to be of special scientific interest, owing to the flora or fauna present, or the presence of geological features. Northern Ireland contains a total of 394 ASSIs. Regarding the habitats within these ASSIs, approximately 31% of habitat features are in an unfavourable condition, whilst 69% are in a favourable condition. In terms of the species found within these ASSIs, approximately 22% are in an unfavourable condition, whilst 78% are in a favourable condition.

Marine Conservation Zones (MCZ)

Marine Conservation Zones (MCZs) protect nationally important marine species, habitats and features of geological or geomorphological interest. Priority Marine Features (PMF) is a collective term for the features considered to be of conservation importance in the Northern Ireland inshore region and form the basis of MCZ designation under the Marine Act (NI) 2013 and the UK Marine and Coastal Access Act 2009 for inshore and offshore regions, respectively. These sites should complement the marine components of sites designated under the Birds and Habitats Directives, coastal ASSIs and Ramsar sites, together forming a network of Marine Protected Areas (MPAs). There are five MCZs in Northern Ireland.

8.1.2 Key habitats and species

The Northern Ireland Biodiversity Action Plan, in addition to implementing UK-wide biodiversity priorities in Northern Ireland, identifies habitats and species that are of particular importance in the Northern Ireland context. Such habitats include fens, grassland, heathland, peatland, and woodland. Species identified as being particularly important in Northern Ireland include:

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- Irish Hare (*Lepus timidus hibernicus*)
- Chough (*Pyrrhocorax pyrrhocorax*)
- Curlew (*Numenius arquata*)
- Red Squirrel (*Sciurus vulgaris*)

The UK Land Cover Map 2015¹⁴ reveals the proportion of land cover for habitat classes across Northern Ireland as follows:

- 3.3% broadleaved (6.1% UK average)
- 5.2% coniferous woodland (6.4% UK average)
- 6.8% arable (23.1% UK average)
- 57.3% improved grassland (30.4% UK average)
- 1.9% heather (4.0% UK average)
- 4.4% heather grassland (6.3% UK average)
- 6.5% bog (3.9% UK average)
- 0.6% urban (1.6% UK average)
- 3.5% suburban (5.6% UK average)
- 10.5% “other” (e.g., acid grassland, calcareous grassland, fen/marsh/swamp, open freshwater, littoral sediments/rock, montane, etc.) (12.6% UK average)

Updated and published in 2021 by the UK Centre for Ecology and Hydrology (CEH), the UK Land Cover Map 2022 shows the location of 21 broad land cover classes based on UK Biodiversity Action Plan (BAP) broad habitats. Available to view on the

¹⁴ UK Centre for Ecology & Hydrology (UKCEH) **Land Cover Map 2015 (LCM2015)** dataset.

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UK's Centre for Ecology and Hydrology's [website](#)¹⁵, high-resolution data for the whole of the UK can be observed.

Habitats and species will potentially face increasing pressures from future housing, population, employment and infrastructure within Northern Ireland, with the potential for negative impacts on the wider ecological network. This may include a loss of habitats and impacts on biodiversity networks.

Internationally and nationally designated sites are particularly sensitive to air quality issues and recreational pressures. Regarding air quality, exceeding critical values for air pollutants may result in changes to the chemical status of habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats. Additionally, the nature, scale, timing and duration of some human activities can result in the disturbance of species at a level that may substantially affect their behaviour and consequently affect the long-term viability of their populations.

To maintain and improve the condition of biodiversity in the future, it will be important to not only protect and enhance key habitats but the connections between them. It will be crucial to effectively coordinate the delivery of infrastructure to ensure that opportunities to improve green infrastructure and ecological corridors are maximised. Planning policy can proactively promote biodiversity enhancement and support wider ecological connectivity, i.e. delivering on Biodiversity Net Gain (BNG) and the greening of urban areas to address impacts of climate change. BNG is not currently mandatory in Northern Ireland. Unlike England, where a 10% mandatory BNG requirement is enforced under the Environment Act, Northern Ireland's planning

¹⁵ [UK Centre for Ecology & Hydrology](#).

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system operates independently. As part of proposals within the draft Northern Ireland Nature Recovery Strategy DAERA is proposing an action to explore and review options around the adoption of a BNG approach within the planning system.

8.1.3 Biodiversity, Flora and Fauna future baseline summary

Habitats and species will potentially face increasing pressures from future housing, population, employment, infrastructure delivery and agricultural intensification within Northern Ireland, with the potential for negative impacts on the wider ecological network. This may include a loss of habitats and impacts on biodiversity networks. The potential impacts on biodiversity, either directly or indirectly from the draft CAS are not likely to include significant changes in habitat, changes in species distribution, changes in hydrology or changes in ecosystem functioning.

Internationally and nationally designated sites are particularly sensitive to air quality issues and recreational pressures. Regarding air quality, exceeding critical values for air pollutants may result in changes to the chemical status of habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition thereby affecting the quality and availability of nesting, feeding or roosting habitats. Additionally, the nature, scale, timing and duration of some human activities can result in the disturbance of species at a level that may substantially affect their behaviour and consequently affect the long-term viability of their populations. To maintain and improve the condition of biodiversity in the future, it will be important to not only protect and enhance key habitats but the connections between them. It will be crucial to effectively coordinate the delivery of infrastructure to ensure that opportunities to improve green infrastructure and ecological corridors are maximised.

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Planning policy can proactively promote biodiversity enhancement and support wider ecological connectivity. There is the potential for carbon sequestration opportunities to be capitalised upon, in the form of woodland, wetland and grassland creation/ recreation/ improvement.

8.2. Baseline Theme 2 – Water, Marine, Coastal & Soil & Mineral Resources

Further to feedback from the SEA Scoping exercise, Marine and Coastal topics have been included alongside Water, with Soil and Mineral Resources being considered separately within this theme.

8.2.1 Water, Marine & Coastal baseline summary

The water resources located within Northern Ireland include a network of main rivers, lakes (including Lough Neagh, which is the largest freshwater lake in the British Isles by area), small streams, brooks, drainage ditches and small pools located within and adjacent to field margins.

There are 571 water bodies in Northern Ireland, of which 496 are surface water bodies.¹⁶ This includes 450 rivers, 21 lakes, and 25 transitional and coastal waters (marine). The remaining 75 water bodies are groundwater resources.

River monitoring is carried out routinely by DAERA against Water Framework Directive (WFD) standards. This monitoring includes chemical and biological indicators of ecological water quality, with the overall water body classifications being high, good, moderate, poor, and bad. In 2018, 31.3% of Northern Ireland's river

¹⁶ <https://www.daera-ni.gov.uk/publications/water-classification-statistics-northern-ireland-2024-report>

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water bodies were classified as 'good' or 'better', which represents a slight decline since 2015, when 32.7% of river water bodies were classified as 'good' or 'better'. In 2024, 131 (29 %) of the 450 river water bodies were classified as good or high ecological status.

The key issues preventing water bodies from reaching 'good' status can be attributed to physical modifications; pollution from towns, cities, and transport; and changes to the natural flow and levels of water.

The Water Framework Directive (WFD) is implemented through River Basin Plans, creating a six-yearly cycle of planning, action, and review. The second planning period covered the period December 2015 to December 2021. The 3rd cycle River Basin Management Plan for Northern Ireland covers the period from 1 January 2022 to 31 December 2027.¹⁷ The WFD requires NIEA to protect the status of the water bodies from deterioration and where necessary and practicable to restore water bodies to 'good' status. The third cycle of River Basin Management Plans was published in June 2025.

Water is essential for the maintenance of biodiversity, supports the population through the provision of drinking water and rivers, lakes, estuaries, seas, and groundwater sustain many core activities. Although there have been improvements in drinking water quality and water utility discharge quality, and a decrease in incidents of water pollution, the most recent status of WFD surface waterbodies in

¹⁷ <https://www.daera-ni.gov.uk/publications/third-cycle-river-basin-management-plan-supporting-documents>

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Northern Ireland (2021) highlights that none have achieved a good or high overall status.¹⁸

While the overall failure for any waterbodies to achieve a good or high status relates to an update in the monitoring of persistent chemicals, as discussed below, pressure assessments have identified that two significant pressure sources related to nutrients are continuing to prevent the achievement of good status for waterbodies: agricultural activities and sewage-related problems.¹⁹

An excessive supply of nutrients to waterbodies, particularly nitrogen and phosphorus, can lead to eutrophication, whereby these elevated concentrations result in accelerated growth of plants and algae. This reduces oxygen levels in the system, which can cause a loss of sensitive species and impact upon the ecological status of the waterbody. Elevated nutrient concentrations, arising from both point (e.g., sewage discharges) and diffuse (e.g., agricultural runoff) anthropogenic sources, represent the most significant threat to water quality in Northern Ireland. In freshwaters, phosphorus is usually the limiting nutrient for plant and algal growth, whereas in marine waters nitrogen is generally the limiting nutrient. Water quality can also be adversely affected through the addition of hazardous substances such as pesticides and heavy metals, specific pollutants and microbial contamination.

The key environmental issues for water, marine and coastal topics comprise:

¹⁸ <https://www.daera-ni.gov.uk/publications/northern-ireland-water-framework-directive-statistics-report-2021>

¹⁹ <https://www.daera-ni.gov.uk/news/third-cycle-river-basin-management-plan-2021-2027-published>

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- Potential for effects on the ecological status of WFD surface waterbodies via changes in the levels of nutrient pollution and sedimentation;
- Potential for effects on the status of WFD Protected Areas, including for water-dependent habitats and species, economically significant aquatic species, drinking water, recreation and nutrient sensitive areas;
- Potential for effects on nutrient concentrations within freshwater and marine waterbodies;
- Potential for effects on groundwater quality, including the potential for microbial and chemical contamination of drinking water supplies; and
- Potential effects of topography and land use practices to risk of nutrient and sediment loss and subsequent water pollution.

There have been significant changes in the monitoring and overall classification for rivers, lakes, and transitional and coastal waterbodies. New priority substances were introduced into the monitoring programme in 2018, and the 'chemical status assessment' now includes the presence of ubiquitous, persistent, bioaccumulative, toxic (uPBT) substances. Although a number of these substances are now banned or have restricted use, their widespread past use has resulted in accumulation in the aquatic environment and breaching of Environmental Quality Standards (EQS). These substances were found at all monitoring stations, and uPBT failures were extrapolated to all surface waterbodies across Northern Ireland; as the 'Overall Surface Water Status' from 2021 incorporates the chemical classification including uPBT substances, as well as cypermethrin failures, this has resulted in no waterbodies meeting a good or high 'Overall Surface Water Status'.

WFD waterbodies are monitored on a rolling programme within each river basin management planning cycle. 'Waterbodies' are the basic management units for

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reporting and assessing compliance with the environmental objectives of the WFD Regulations. There are 496 WFD surface waterbodies in Northern Ireland, comprising 450 rivers, 21 lakes and 25 transitional and coastal waters. The latest classification results for surface waterbodies are presented in the Water Classification Statistics for Northern Ireland 2024 Report²⁰

River status – In 2018, 31% (141 rivers) of the 450 river waterbodies monitored in Northern Ireland were classified as good or high ecological status. In 2021, 31% (140 rivers) achieved good or high ecological status, and in 2024 29% (131 rivers) achieved good or high ecological status. In 2024, 17% of monitored rivers in the North East RBD, 22% in the Neagh Bann RBD and 44% in the North West RBD achieved good or high ecological status. Considering chemical status with the exclusion of uPBT and cypermethrin, 91% of river waterbodies were classified as good status in 2018, 93% in 2021 and 92% in 2024. In 2024, 94% of monitored rivers in the North East RBD, 90% in the Neagh Bann RBD and 93% in the North West RBD achieved good or high chemical status.

Transitional and Coastal status – In 2018, 2021 and 2024, 40% (10) of the 25 transitional and coastal waterbodies monitored in Northern Ireland were classified as good ecological status. In 2024, 47% of monitored transitional and coastal waterbodies in the North East RBD, 40% in the Neagh Bann RBD and none in the North West RBD achieved good ecological status. Considering chemical status with the exclusion of uPBT and cypermethrin, 44% of transitional and coastal waterbodies were classified as good status in 2018, 88% in 2021 and 32% in 2024. In 2024, 35%

²⁰ <https://www.daera-ni.gov.uk/publications/water-classification-statistics-northern-ireland-2024-report>

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of monitored transitional and coastal waterbodies in the North East RBD, 40% in the Neagh Bann RBD and 0% in the North West RBD achieved good chemical status.

Lake status – In 2018, 24% (5) of the 21 lake waterbodies monitored in Northern Ireland were classified as good ecological status. In 2021, 14% (3 lakes) achieved good ecological status, and in 2024 24% (5 lakes) achieved good ecological status. In 2024, 33% (1) of monitored lakes in the North East RBD, 20% (2) in the Neagh Bann RBD and 25% (2) in the North West RBD achieved good or high ecological status. Considering chemical status with the exclusion of uPBT and cypermethrin, all lakes were classified as good chemical status in 2018, 2021 and 2024.

Comparison of ecological status shows little to no change in status from the previous reporting, and a decline in status for lake waterbodies. Pressure assessments have identified that agricultural activities and sewage-related problems are continuing to prevent the achievement of good status for waterbodies.

8.2.2 Water, Marine & Coastal future baseline summary

Population growth in most areas, future development and climate change combined are likely to increase pressure on water resources. Climate change could likely increase flooding which could lead to adverse effects on water quality from overflowing of storm water drains and leaching of contaminated soils into surface waters. However, water companies are required to comply with water supply quality and discharge regulations and should therefore maintain adequate water supply and wastewater management arrangements. The requirements of the Water Framework Directive are intended to lead to continued improvements to water quality within Northern Ireland.

8.3.1 Soil and Land baseline summary

Land is a limited resource with competition for use for agriculture, forestry, and other uses. The value and use of the land will generally depend on its quality, location and any restrictions placed on it. The Agricultural Land Classification (ALC) system broadly aligns to the classifications given to land within England and Wales, subdividing Grades 3 into a and b, with Grades 1, 2, and 3a being classified as 'best and most versatile' land ("BMV land").

Northern Ireland has significant natural resources such as carbon-rich soils (including substantial peatland) and high-quality grassland cover.

The Agri-Food and Biosciences Institute (AFBI) revealed that Northern Ireland contains:

- 0% Grade 1,
- 7.1% Grade 2,
- 23.9% Grade 3a,
- 26.1% Grade 3b,
- 30.6% Grade 4, and
- 7.8% Grade 5 land (which includes urban land).

The remaining 4.5% of Northern Ireland is water. In this context, with approximately 33% of land cover within Northern Ireland classified as Grade 2 or 3a, there is a need to avoid loss of higher quality BMV land.

Public Authorities (i.e. government departments, councils, non-departmental public bodies and arms-length bodies), the Crown Estate and charities own considerable areas of land in Northern Ireland. Most land, however, is owned by private landowners, primarily farmers. Land management is strongly influenced by

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government and EU policies under the Northern Ireland Protocol and financial measures. The current focus is on the reduction of nutrient loading in Northern Ireland, particularly considering the blue green algae issue in the Lough Neagh.

The impact of nutrient loading is being tackled through the updated Nutrient Action Programme, Sustainable Catchment Programme (SCP) and Farming with Nature (FwN, to incentivise sustainable land use²¹). A Lough Neagh Report and Action Plan specific to blue green algae has also been published by DAERA²². Significant work is ongoing, testing fields across Northern Ireland via the Soil Nutrient Health Scheme. Soil is important in Northern Ireland for the role it plays both in supporting agriculture and in forming important natural habitats, and the degradation of soil resources threatens both these interests.

The Soil Nutrient Health Scheme ²³ is the largest baseline soil sampling programme undertaken globally. It is being coordinated by AFBI and has been running for four years (2022-2026) considering up to 700,000 fields within Northern Ireland. It has provided comprehensive regional soil nutrient baseline information and provided farmers with detailed information on the nutrient status of their soils. The collection of high-resolution Light Detection and Ranging (LiDAR) data will provide information via hydrological modelling on the areas of highest risk for runoff from fields and subsequent nutrient losses to waterbodies. This information should help to optimise nutrient management for the application of slurry and fertilisers, whilst improving

²¹ [Muir takes action on water quality and Lough Neagh | Department of Agriculture, Environment and Rural Affairs](#)

²² The Lough Neagh Report, Blue Green Algae and Water Quality in Northern Ireland, July 2024, DAERA

²³ [Nutrients Action Programme 2027-2030](#)

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farm profitability, as well as reducing nutrient loss to waterbodies, therefore contributing to achieving the aims of the NAP. The Soil Nutrient Health Scheme will also estimate the carbon stored both within soils and above ground biomass for each farm in Northern Ireland, with the aim of contributing to the transition to Net Zero farming in Northern Ireland. In the scheme, uptake by farm businesses is over 92%, with participation required to be eligible for the incoming Farm Sustainability Payment by DAERA.

Agri-environment schemes encourage farmers and landowners to manage their land in a manner that benefits the environment (specifically to enhance biodiversity, improve water quality, enhance the landscape and heritage features, and help reduce the impact of climate change) by integrating sustainable environmental management into the everyday workings of the farm. In return for this, farmers and landowners receive a payment, based on the area of habitat and archaeological features present on the farm, and the area/length of habitat enhancement options carried out.

The topography of Northern Ireland is such that areas of lower elevation are predominantly located within the centre, where the largest lake in the British Isles, Lough Neagh, is situated. In all directions from this point, the land generally becomes steeper, culminating in highland regions on all sides. The Antrim Hills, which reach a height of over 550m at Trostan, are to the north and east. To the south-east, the rounded landscape of Drumlin hills is punctuated by Slieve Croob in County Down and culminates in the Mourne Mountain range which rises to its highest point at Slieve Donard at over 850m in elevation. Land use in Northern Ireland, is identified within the most recent Corine dataset (2018). The predominant land use is 'Pastures' (8,889km²), followed by 'Natural grassland' (1024km²), 'Moors

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and heathland' (640km²) and 'Peat bogs' (550km²). Pastures, which comprise approximately 63% of land cover across Northern Ireland, are located across the country, with the exception of upland areas such as the Mourne Mountains in the south-east, the Antrim Hills in the north-east, the Sperrins in the west and raised bog peatland areas in mid-Ulster. Approximately 77% of the total Northern Ireland land area (1.35 million hectares) is used for agriculture, including common rough grazing, and around 9% of the land area is used for forestry. Most farmland in Northern Ireland is under grass, in fact only 1,767 farms (6.7%) have arable or horticultural crops. In 2024, cattle and sheep were present on 20,652 farms indicating the dominance of cattle within farming livestock in Northern Ireland. In addition, pigs and/or poultry (for commercial purposes) were present on 743 farms.

Dominant Land Cover Types within Northern Ireland:

Land Cover Class	Total Land Cover (km ²)	% of Total
Pastures	8,889	63
Complex Cultivation Patterns	227	2
Peat Bogs	550	4
Land Principally Occupied by Agriculture	243	2
Natural Grassland	1024	7
Coniferous Forest	463	3
Moors and Heathland	640	5
Non-Irrigated Arable Land	405	3
Urban (Continuous urban fabric)	30	0
Sub-urban (Discontinuous urban fabric)	249	2

8.3.2 Soil and Land future baseline summary

Soil erosion is likely to continue due to surface water flash flooding and other causes. Compaction and sealing is also likely to continue, for example through an increase in developed areas and impermeable surfaces. Continued pressure for development and new infrastructure within the undeveloped areas of Northern Ireland has the potential to displace areas of BMV land. There is potential pressure for development and increasing urbanisation leading to the loss of BMV land.

8.4. Baseline SEA Theme 4 – Landscape & Seascape

‘Landscape’ is defined by the European Landscape Convention as ‘an area as perceived by people whose character is the result of the action and interaction of natural and/or human factors’ and ‘it concerns landscapes that might be considered outstanding as well as every day or degraded landscapes’.

Northern Ireland has attractive, largely unspoilt, and high-quality rural landscapes, numerous protected area designations and major rural tourism attractions.

Landscape forms an important part of Northern Ireland’s identity and culture, which influences the economy and the wellbeing of the population.

The current landscape of Northern Ireland is a product of land use changes and human interventions that have taken place in the c.9,000 years since the area was first settled. Although population growth in the late 20th and early 21st centuries expanded the extent of built-up areas, the Northern Ireland landscape remains predominantly rural, with agriculture the most prevailing land use²⁴.

²⁴ NAP SEA - 3.2.9 [Nutrients Action Programme 2027-2030](#)

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HED Historic Environment Digital Datasets²⁵ provides current information on recorded (designated and non-designated) heritage assets, which is also available to view on their Historic Environment map viewer. This evidence base helps inform an assessment of the likelihood of significant environmental effects on cultural heritage including but not limited to, consideration of impacts for heating historic buildings, industrial heritage skills & crafts, reuse of linear heritage assets for active travel and impacts for unidentified heritage sites etc. Information on Conservation Area boundaries and guidance is available at <https://www.infrastructure-ni.gov.uk/articles/conservation-area-guides-z-list>

8.4.1 Landscape & Seascape baseline Summary

Areas of Outstanding Natural Beauty

Through the Nature Conservation and Amenity Lands Order (Northern Ireland) 1985 (NCALO), the finest landscapes with the highest scenic value in Northern Ireland can be designated as Areas of Outstanding Natural Beauty (AONBs). These areas cover approximately 325,000 hectares, or c. 20% of the total land area of Northern Ireland. There are eight AONBs that are primarily located along Northern Ireland's coastline, except for Lagan Valley and Sperrin. The AONBs are:

- Antrim Coast and Glens
- Binevenagh
- Causeway Coast
- Lagan Valley
- Mourne

²⁵ <https://www.communities-ni.gov.uk/publications/historic-environment-digital-datasets>

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- Ring of Gullion
- Sperrin
- Strangford and Lecale

There is one UNESCO World heritage Site, the Giant's Causeway, Co. Antrim.

In addition, the Northern Ireland Landscape Character Assessment 2000, described below, identified special landscapes that it termed Areas of Scenic Quality. Some of these areas have been included in Local Area Plans, where they may be designated as Areas of High Scenic Value (AoHSV).

In Ireland, there are six areas designated as National Parks, as they are recognised as nationally important landscapes; none of these areas are in proximity to the border with Northern Ireland.

Seascape Character Areas

There are a total of 24 Regional Seascape Character Areas around the coast of Northern Ireland, which "...represent a unique geographic area of land, intertidal and marine area with a recognisable sense of place and identity"²⁶.

These are:

- Ards Peninsula
- Atlantic
- Ballycastle Coast
- Belfast Harbour
- Belfast Lough

²⁶ [Northern Ireland Regional Seascape Character Assessment](#)

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- Carlingford Lough
- Causeway Coast
- Dundrum Bay
- Foyle Estuary
- Irish Sea - South Down
- Larne Lough
- Lecale Coast
- Lough Foyle
- Mourne Coast
- Newry Estuary
- North Channel
- North Coast Strands & Dunes
- Northern Glens Coast
- Rathlin
- Southern Glens Coast
- Strangford Lough
- The Gobbins
- The Skerries & Dunluce Coast
- Torr Head Coast

Visual amenity

It is useful to note that the views across the region are also an important consideration in the planning process as the scale, height and mass of development can ultimately impact important views if they are not considered and assessed through the process. Changes due to both development and landscape manipulation can degrade these views over time. In this respect, views experienced from the road

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and rail networks can often be far-reaching and dramatic, particularly within more rural areas of Northern Ireland, coastal areas, within AONBs, and on approach into key towns and cities.

8.4.2 Landscape & Seascape future baseline summary

Investment in the right types of infrastructure in the appropriate locations should be encouraged through collaboration with the private sector to enable suitable locations for development. DAERA currently comments and responds accordingly to all input requests that are submitted to DAERA for the planning of infrastructure.

Infrastructure associated with the draft CAS to 2032 is very low impact, for example temporary low-cost air quality monitors and diffusion tubes temporarily located on lamp posts, additional monitors located with existing air quality monitoring station cabinets (no additional visual impact). The draft CAS will likely result in some new air quality monitoring, the locations of which have yet to be determined. The primary focus of placing these monitors will be capturing representative air quality samples.

Monitoring stations are usually classified according to the type of environment in which they are located. This allows more meaningful evaluation of the data and allows the data user to compare data from sites of a similar type. The monitoring site classifications are used by District Councils for Local Air Quality Management purposes. These site descriptions typically reflect the general surroundings (e.g. urban or rural), and/or indicate important sources of pollution (e.g. 'roadside' or 'industrial').

While the visual impact will be a secondary consideration, it remains an important consideration. These structures are typically under two meters in height,

approximately one meter deep and two metres wider. Examples can be seen at:
<https://www.airqualityni.co.uk/site/LVD2#site-photos>

8.5 Baseline SEA Theme 5 - Air Quality and Noise

Air quality in Northern Ireland has improved substantially in recent decades. Concentrations of sulphur dioxide, a pollutant associated with coal and oil combustion, have declined significantly over the past twenty years. However, some pollutants in some parts of Northern Ireland continue to exceed air quality objectives.

8.5.1 Air Quality Management Areas

There are currently 19 Air Quality Management Areas (AQMAs) in Northern Ireland, spread across nine district councils. Of these AQMAs, the majority have been declared due to exceedances in the objectives for nitrogen dioxide (NO₂); however, some have been declared due to exceedances in the objectives for particulate matter (PM₁₀).

These AQMAs are largely concentrated in the main cities and towns within Northern Ireland. The largest AQMA is the Armagh City, Banbridge and Craigavon Borough Council AQMA, which covers the entire district council. The AQMA encompasses the following key routes along Northern Ireland's road network: M1, A1, A3, A27, and the A28. District Council Action Plans (DCAPs) are currently not available for any of the 19 AQMAs in Northern Ireland.

8.5.2 Northern Ireland's main air pollutants and their sources

Northern Ireland's main air pollutants are particulate matter (PM₁₀, PM_{2.5}, PM_{0.1}), nitrogen oxides (NO_x), ozone (O₃), sulphur dioxide (SO₂), and polycyclic aromatic hydrocarbons (PAHs). PM_{2.5} is one of the most harmful, entering lungs, then the

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bloodstream, where it increases the risks of heart disease and stroke. NO₂ from traffic worsens respiratory conditions, while ozone irritates airways and damages crops. SO₂, mainly from coal burning, affects lungs and ecosystems, and PAHs from solid fuel burning are linked to cancer. In Northern Ireland, domestic heating, transport, and agriculture are key sources.

8.5.3 Current status of air quality in Northern Ireland

Monitored air pollution levels in Northern Ireland show compliance as well as exceedances of air quality objectives. Whilst concentrations of sulphur dioxide (SO₂), a pollutant associated with coal and oil combustion, have declined significantly since the 1990s, and a decreasing trend in nitrogen dioxide (NO₂) concentrations has been observed at some monitoring sites in Northern Ireland, a number of pollutants in some parts of Northern Ireland continue to exceed air quality objectives, one of which is ozone.

There is also growing concern in Northern Ireland, and across the UK regarding particulate matter, including ultra-fine particulate matter (PM_{0.1}) which are particles smaller than 0.1 microns, and the impact of this pollutant on health. There are a wide range of technical terms and concepts in national and international initiatives, for example, standards, limit values, target values and objectives. Use of these technical terms is unavoidable. Several of these terms feature in the draft CAS and are defined in Annex F of the draft CAS. Two key concepts provide the central structure. These are Standards and Objectives as set out in Part III of the Environment (Northern Ireland Order) 2002.

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In 2024, Northern Ireland met the limit values and target values of the Air Quality Standards Regulations (Northern Ireland) 2010 (AQSRNI). UK Air Quality Strategy Objectives for all measured pollutants were also met, except for the PAH, benzo[a]pyrene.

Progress is needed on particulate matter (measured as PM₁₀ and PM_{2.5}), ozone and nitrogen dioxide to meet the more stringent World Health Organization (WHO) guidelines, to reduce the negative impacts of air pollution and save lives. There is growing concern regarding particulate pollution and its impact on human health. Although monitoring has expanded in Northern Ireland, some harmful pollutants, including ultrafine particles (PM_{0.1}), are not currently monitored. Overall, Northern Ireland needs stronger measures to meet international health-based standards and protect vulnerable communities.

8.5.4 Source emissions: National Atmospheric Emissions Inventory

According to data from the National Atmospheric Emissions Inventory, between 2013 and 2023, Northern Ireland saw a 63% reduction in SO₂ emissions, largely due to decreased coal use in the power generation sector. NO_x emissions fell 57% between 2005 and 2020, driven by a cleaner fuels energy sector and stricter vehicle standards in the transport sector.

Benzo[a]pyrene (B[a]P) emissions dropped from 2022 to 2023 due to reduced domestic burning of solid fuels. PM_{2.5} emissions have steadily declined since 2019, influenced by cleaner residential heating, as well as phasing out of coal in industrial combustion and energy production. PM₁₀ emissions decreased by 33% since 2005,

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with agriculture now the largest contributor.²⁷ Further detail on Northern Ireland emissions is set out in Annex D of the draft CAS.

Table 3: Changes in emissions for key pollutants in Northern Ireland

Pollutant	% change in emissions in 2023 compared to 2005 base year	% change in emissions in 2023 compared to 2022
Carbon monoxide	59% decrease	17% decrease
Nitrogen oxides	63% decrease	10% decrease
NMVOCs	16% decrease	2% increase
PM ₁₀	33% decrease	9% decrease
PM _{2.5}	43% decrease	15% decrease
Sulphur dioxide	84% decrease	26% decrease
Lead	35% decrease	5% decrease
Dioxins and Furans	49% decrease	10% decrease
Benzo[a]pyrene	7% decrease	28% decrease
Mercury	53% decrease	10% decrease

8.5.5 Air quality data and information

The latest measured real-time air quality results from across Northern Ireland are presented in an interactive map on DAERA's Northern Ireland Air website

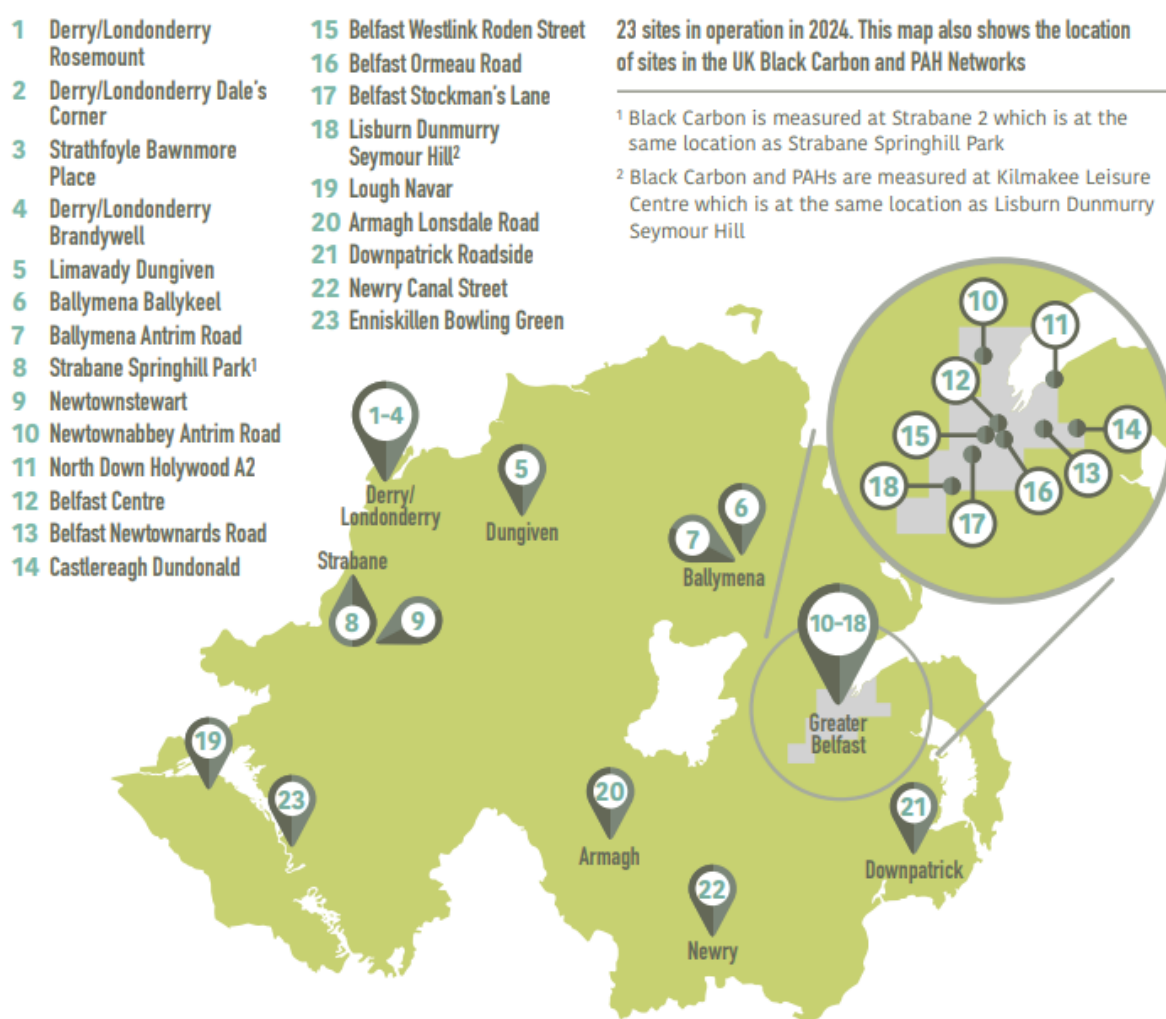
²⁷https://naei.energysecurity.gov.uk/sites/default/files/2025-09/DG_AP_Inventory_2005-2023_Report_FINAL_for_publication.pdf

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www.airqualityni.co.uk which also contains an archive of data from 1986 to the present day. Air pollution forecasts are included on the site along with a free App available to download. There is also the option to subscribe to free air pollution alerts, issued when air pollution is high.

Figure 2: Map of Northern Ireland Monitoring Stations



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A summary of compliance status for the pollutants measured in Northern Ireland with the limit values and target values of the Air Quality Standards Regulations (NI) 2010, the UK Air Quality Strategy Objectives and the WHO Air Quality Guidelines 2021, is shown in Table 2 below.

Table 4. Summary of compliance status for pollutants measured in Northern Ireland in 2024^{xxv}

Pollutant and units	Monitoring sites	Averaging time	Air Quality Standards Regulations (Northern Ireland) Limits/Targets	AQSR Compliance	UK Air Quality Strategy Objective	AQS Objective Compliance	WHO Air Quality Guidelines 2021	WHO AQ Guideline Compliance
PM₁₀ µg m⁻³	Armagh Lonsdale Road, Ballymena Ballykeel, Belfast Centre, Belfast Stockman's Lane,	Annual Mean	40	Compliant	40	Compliant	15	Non-compliant at the following sites: Belfast Stockman's Lane Newry Canal Street
	Derry/Londonderry Rosemount, Enniskillen Bowling Green (annualised),	24-hour	50 (not to be exceeded more than 35 times a year)	Compliant	50 (not to be exceeded more than 35 times a year)	Compliant	45 (99 th % percentile of 24-hour means i.e. 3-4 exceedance days/year))	Compliant

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	Lisburn Dunmurry Seymour Hill, Lough Navar, Newry Canal Street, Newtownstewart, North Down Holywood A2, Strabane Springhill Park, Strathfoyle Bawnmore Place							
PM_{2.5} µg m⁻³	Ballymena Ballykeel, Belfast Centre, Derry/Londonderry Rosemount, Enniskillen Bowling Green (annualised), Lisburn Dunmurry Seymour Hill, Lough Navar, Newtownstewart,	Annual Mean	25	Compliant	20	Compliant	5	Non-compliant at all sites except Lough Navar
		24-hour	-	-	-	-	15 (99th percentile of 24-hour means i.e. 3-4 exceedance days/year)	Non-compliant at all sites except Lough Navar

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	North Down Holywood A2, Strabane Springhill Park, Strathfoyle Bawnmore Place.							
NO ₂ µg m ⁻³	Armagh Lonsdale Road, Ballymena Antrim Road, Ballymena Ballykeel, Belfast Centre, Belfast Newtownards Road, Belfast Ormeau Road, Belfast Stockman's Lane,	Annual Mean	40	Compliant	40	Compliant	10	Non-compliant at all sites except Ballymena Ballykeel and Derry/Londonderry Rosemount.
		24-hour	-	-	-	-	25 (99th percentile of 24-hour means i.e. 3-4 exceedance days/year)	Non-compliant at all sites except Ballymena Ballykeel.
	Belfast Westlink Roden Street, Castlereagh Dundonald,	1-hour	200 (not to be exceeded more than 18 times a calendar year)	Compliant	200 (not to be exceeded more than 18 times a calendar year)	Compliant	200 (from previous 2005 guidelines, still valid)	Compliant

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	Derry/Londonderry Dale's Corner, Derry/Londonderry Rosemount, Downpatrick Roadside, Limavady Dungiven, Newry Canal Street, Newtownabbey Antrim Road, North Down Holywood A2							
O₃ µg m⁻³	Derry/Londonderry Rosemount,	Peak season	-	-	-	-	60 (Avg. of	60 (Avg. of
	Lough Navar,	Mean						
	Belfast Centre	Daily maximum 8-hour running mean	120 (not to be exceeded more than 25 times a year, averaged over 3 years)	Compliant	100 (not to be exceeded more than 10 times a year)	Compliant	100 (99th	Compliant

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SO₂ µg m⁻³	Ballymena Ballykeel, Belfast Centre, Derry/Londonderry Rosemount, Strabane Springhill Park	24-hour	125 (not to be exceeded more than 3 times a year)	Compliant	125 (not to be exceeded more than 3 times a year)	Compliant	40 (99th percentile of 24-hour means)	Compliant
		1-hour	350 (not to be exceeded more than 24 times a year)	Compliant	350 (not to be exceeded more than 24 times a year)	Compliant	-	-
		15-min	-	-	266 (not to be exceeded more than 35 times a year)	Compliant	-	-
CO mg m⁻³	Belfast Centre	24-hour	-	-	-	-	4	Compliant
		Daily maximum 8-hour running mean	10	Compliant	10	Compliant	10	Compliant
		1-hour	-	-	-	-	35	Compliant
		15-minute	-	-	-	-	100	Compliant
Benzene µg m⁻³	Belfast Centre	Annual Mean	5	Compliant	3.25 as max. running	Compliant	-	-

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					annual mean			
Pb $\mu\text{g m}^{-3}$	Belfast Centre	Annual Mean limit value	0.5	Compliant	0.5, 0.25	Compliant	-	-
As ng m^{-3}	Belfast Centre	Annual Mean target value	6	Compliant	-	-	-	-
Cd ng m^{-3}	Belfast Centre	Annual Mean target value	5	Compliant	-	-	-	-
Ni ng m^{-3}	Belfast Centre	Annual Mean target value	20	Compliant	-	-	-	-
Benzo[a] pyrene ng m^{-3}	Armagh Lonsdale Road, Ballymena Ballykeel, Derry/Londonderry Brandywell, Kilmakee Leisure Centre	Annual Mean target value	1	Compliant	0.25	Non- compliant at all sites except Kilmakee Leisure Centre	-	-

8.6.1 Noise pollution baseline summary

As a result of the Environmental Noise Directive (2002/49/EC), preliminary noise mapping has been produced for Northern Ireland. The Environmental Noise Regulations (Northern Ireland) 2006 require that noise from various transport and industrial noise sources be mapped every five years. The transport noise sources that are mapped are road traffic, rail traffic and air traffic. Four ‘rounds’²⁸ of noise maps have been completed with the most recent, published in February 2025. Key observations from the noise mapping technical reports are provided below:

Roads: The total geographical extent of areas mapped above 55 decibels (dB) has increased slightly for Belfast, reflecting increases in nighttime traffic flows and the percentage of HGV vehicles during the nighttime period. On the wider main road networks, the extent of areas mapped above 55dB has increased from the Round 2 mapping by up to 4% for the daytime noise indicators, and between 7-10% for the nighttime noise indicators. However, the report notes that making direct comparisons between Round 2 and Round 3 data is difficult, given the overall changes in the extent of the roads which were mapped during Round 3.

Rail: The extent of areas mapped above 55dB has reduced significantly for the daytime noise indicators between Round 2 and Round 3. These changes are evident across the rail network but are particularly noticeable across the Belfast – Carrickfergus Line. This reflects both changes in train stock (i.e. removal of 450 classes and replacement with the quieter 4000 class trains) across the network, and changes in movement profiles. Within Northern Ireland, major railways have a relatively small geographical footprint in terms of noise contours.

²⁸ <https://www.daera-ni.gov.uk/publications/round-4-noise-maps-and-noise-mapping-technical-reports>

Air: A noise model was developed for Belfast International Airport (BIA) in Round 1 as it generated greater than aircraft 50,000 movements per year. Between Round 1 and Round 2, the assessment identified that noise exposure areas from BIA's operations had reduced. The number of modelled movements and aircraft type between civil and military fixed wing aircraft also reduced over the same period. In general, the fleet mix for 2011 comprised of quieter aircraft and aircraft variants. In Round 3 it was confirmed that there had not been any physical changes to airspace or runway operations at BIA since 2011. Belfast City Airport was also included in the analysis in Round 3. Belfast International Airport presented an increase in aircraft movement of 3% compared to Round 2. There is an overall increase in the extent of noise contours compared to Round 2 which reflects changes in aircraft model splits, movements and aircraft type. However, the number of buildings and population exposed to different noise levels had reduced compared to Round 2.

8.6.2 Air Quality and Noise future baseline summary

Improvements to future air quality are dependent, in part, on whether measures are put in place to improve air quality, and whether these are successfully implemented. Cleaner vehicles, including electric vehicles (EVs), have the potential to lead to improvements in air quality over the longer term. Tighter limits, targets and objectives also have the potential to improve air quality over time (e.g. new PM regulations). Restrictions on solid fuels for domestic heating, behavioural change campaigns and some net zero/climate change policies should also lead to long term improved air quality. Work should be undertaken to improve the uptake of public transport and the increased use of alternative fuel vehicles.

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8.7. Indicators

To help monitor the progress of this strategy, when finalised, indicators will be used to show how the strategy is progressing. The final indicators will be informed by the views received following public consultation. The suggested indicators for particulate matter are:

- PM_{2.5} to 10µg/m³ as an annual average, in line with WHO Interim Target 4 (from 25µg/m³ at present); and
- PM₁₀ to 20µg/m³ as an annual average, in line with WHO Interim Target 4 (from 40µg/m³)

The strategy has a focus on particulate matter since it is the pollutant of greatest concern^{xxvi}, shown to have the greatest impacts on human health. The updated 2021 World Health Organization (WHO) Global Air Quality Guidelines (AQGs)^{xxvii} provide recommendations on air quality guideline levels and interim targets for key air pollutants (Interim Target 1, then 2, 3, 4 up to the AQG level, which is the most challenging). While these challenging new levels and targets are not legal obligations, their merit is clear and essential in protecting human health.

Table 5. WHO 2021 air quality guidelines and interim targets

Table 0.1. Recommended AQG levels and interim targets

Pollutant	Averaging time	Interim target				AQG level
		1	2	3	4	
PM_{2.5}, µg/m³	Annual	35	25	15	10	5
	24-hour ^a	75	50	37.5	25	15
PM₁₀, µg/m³	Annual	70	50	30	20	15
	24-hour ^a	150	100	75	50	45
O₃, µg/m³	Peak season ^b	100	70	–	–	60
	8-hour ^a	160	120	–	–	100
NO₂, µg/m³	Annual	40	30	20	–	10
	24-hour ^a	120	50	–	–	25
SO₂, µg/m³	24-hour ^a	125	50	–	–	40
CO, mg/m³	24-hour ^a	7	–	–	–	4

^a 99th percentile (i.e. 3–4 exceedance days per year).

^b Average of daily maximum 8-hour mean O₃ concentration in the six consecutive months with the highest six-month running-average O₃ concentration.

Other important indicators include improved feedback when DAERA run and then repeat a baseline air quality awareness public survey. To measure the improvement in feedback the following indicator will be used:

- 10% increase in average score across all respondents for key questions to the awareness survey; and

Improvement in vehicle emissions will be measured using the following indicator:

- A downward (improving) trend in the Wellbeing Framework NO₂ indicator, down to 10µg/m³.

9. Transboundary Considerations

Air pollution is transboundary, and some pollutants can travel long distances in the air. Ozone (O₃) is an example of a 'transboundary' pollutant: once formed it may persist for several days and be transported over long distances. This means that much of the ozone measured in a particular area may have been generated elsewhere, and so it is more difficult to reduce concentrations by local action.

Particulate matter (PM) varies in size and is made up of many different compounds and substances. In terms of the impact on health the very small particles are of particular importance, and in the UK, there are Air Quality Strategy objectives in place for PM₁₀ (particles that are less than 10 micrometres in diameter) and PM_{2.5} (less than 2.5 micrometres). PM can travel long distances, so emissions in one region can impact another downwind. As such, transboundary transport of PM and its precursors from the continent and further afield, can influence measured PM levels.

Long-range transport of pollutants is also a source of particulate matter in Northern Ireland. Easterly wind flows can result in transboundary transport of PM, and its precursors, from continental Europe, elevating levels in Northern Ireland.

DAERA works closely with the Irish Department of Climate Energy and the Environment (DCEE) and DEFRA to ensure the effects of transboundary air pollution are minimised. This working relationship will ensure there is an awareness of new and emerging policies, best practice and knowledge. During the Screening and Scoping stages for the SEA ER and HRA AA, following the precautionary principle, significant transboundary impacts could not be ruled out at those stages.

In response to the Scoping exercise, Natural England commented that air pollution travels large distances, affects both terrestrial and marine habitats and that any

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changes in policy within any nation can be far-reaching. Natural England further suggested that the site list should include not just sites within Northern Ireland, but transboundary protected sites from all the devolved nations, including England. It was considered that any transboundary impacts resulting from the draft CAS for Northern Ireland, whilst potentially positive, would be considered negligible when compared with other environmental issues impacting these sites more locally.

The Scottish Environmental Protection Agency (SEPA) agreed that the five strategic objectives and 19 actions contained within the draft CAS are intended to have significant and positive environmental effects. SEPA were also content with the proposed scope of the SEA as outlined in the report and with the suggested SEA topics/groupings and advised that in this case SEPA planning would not be providing a detailed assessment of the Environmental Report.

The EPA in Ireland also advised that they would not be making a formal submission in relation to this consultation however, they signposted some useful resources to consider in finalising the strategy including:

- Ireland's Clean Air Strategy (currently under review)
 - Provides a comprehensive national framework for improving air quality across sectors.
 - Focuses on health impacts, integrated policy approaches, and cross-sectoral measures (transport, agriculture, residential heating).
 - Strong emphasis on monitoring, public awareness, and aligning with EU and WHO air quality guidelines.
 -

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- Peace Air Project
 - A cross-border initiative specifically focused on air quality in Ireland and Northern Ireland.
 - Supports enhanced monitoring, modelling, and data sharing across jurisdictions.
 - Promotes coordinated approaches to transboundary air pollution issues and evidence-based policy development.

The SEA in Wales did not respond to emails regarding the Screening and Scoping documents for the SEA & HRA, therefore it is assumed they have no significant concerns they wish to highlight.

10. Assessment of Likely Significant Effects

The aim of the Habitats Directive is to maintain or restore at favourable conservation status the specified habitats and species protected under the Directive. The defined habitats and species of 'Community Interest' are further sub-divided by protection measures that apply to them under Annexes of the Habitats Directive including:

- Annex I: Natural habitat types of community interest whose conservation requires the designation of special areas of conservation;
- Annex II: Animal and plant species of community interest whose conservation requires the designation of special areas of conservation;
- Annex IV: Animal and plant species of community interest in need of strict protection; and

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- Annex V: Animal and plant species of community interest whose taking in the wild and exploitation may be subject to management measures.

10.1 Conservation Objectives

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of natural habitats and species of community interest.

Site specific conservation objectives aim to define favourable conservation condition for these habitats or species at the site level. Maintenance of favourable conservation condition of habitats and species at a site level in turn contributes to maintaining or restoring favourable conservation status of habitats and species at the National Site Network level.

Given the number of European Sites that could potentially be impacted by the strategy, it is not practical to list the Conservation Objectives of each site in the screening report, nor can we identify any specifically effected sites because of the fact that the strategy has no geographically specific actions or policies, therefore significant environmental impacts could not be ruled out at this stage.

11. AA Screening

Under the Habitats Directive, strategies that are directly connected with or necessary to the management of European sites do not require AA. For this exception to apply, management is required to be interpreted narrowly as nature conservation management in the sense of Article 6(1) of the Habitats Directive. This refers to specific measures to address the ecological requirements of annexed habitats and species (and their habitats) present on a site(s). The relationship should be shown to

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be direct and not a by-product of the strategy, even if this might result in positive or beneficial effects for European Sites.

11.1 European Site Screening

For the initial screening of the draft CAS, it was determined that potential impacts on European sites located within Northern Ireland, as well as those within 15 km of the land border and the boundary of Northern Ireland's territorial waters, needed to be considered. European sites are primarily SPAs, SACs, and Ramsar sites (wetlands of international importance). There are 20 Ramsar Sites, 16 SPAs and 58 designated SACs located within Northern Ireland, which all contribute to the National Site Network across the country. Additional protected areas within Northern Ireland include 394 Areas of Special Scientific Interest (ASSIs) and 4 Marine Conservation Zones.²⁹ A significant proportion of Northern Ireland's habitats and species are in an unfavourable condition. Few designated sites have engagement plans, suggesting a potential absence of a coordinated conservation approach for ecological networks. There are a variety of key habitats located within Northern Ireland, including areas of fens, grassland, heathland, peatland, and woodland. In this respect, there is a need to protect habitats in Northern Ireland, particularly the most sensitive ones. European designated conservation sites are afforded protection under the Habitats Regulations.

²⁹ Department of Agriculture, Environment and Rural Affairs (DAERA). (2023). *Northern Ireland Environment Statistics Report 2023*. Available at: [Northern Ireland Environmental Statistics Report 2023 | Department of Agriculture, Environment and Rural Affairs](#).

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11.2 Special Areas of Conservation (SACs)

As mentioned above, Northern Ireland has 58 designated SACs covering a total area of approximately 62 000 hectares. It has been noted that these sites protect a diverse range of habitats and species including:

- Active raised bogs (e.g. Ballynahone Bog, Black Bog, Garry Bog)
- Blanket bogs (e.g. Cuilcagh Mountain, Garron Plateau)
- Coastal and marine habitats (e.g. Bann Estuary, Magilligan)
- Freshwater habitats (e.g. Lough Melvin, Cladagh River)
- Woodland habitats (e.g. Banagher Glen, Breen Wood)
- Montane and upland habitats (e.g. Eastern Mourns, Carn-Glenshane Pass)
- Special Protection Areas (SPAs)

Northern Ireland has 16 SPAs with marine components including Belfast Lough, Carlingford Lough, Killlough Bay, Larne Lough, Lough Foyle, Outer Ards, Rathlin Island and Strangford Lough. These sites protect important bird species and their habitats, including:

- Breeding seabirds
- Overwintering waterfowl
- Migratory species
- Rare and vulnerable bird species.
- Ramsar Sites

Northern Ireland has 20 designated Ramsar sites covering wetlands of international importance. Major sites include:

- Lough Neagh and Lough Beg (501.66 km²)
- Strangford Lough (155.81 km²)
- Upper Lough Erne (58.18 km²)

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- Garron Plateau (46.50 km²)
- Cuilcagh Mountain (27.44 km²)
- Lough Foyle (22.04 km²)
- Derryleckagh (0.59 km²)
- Dundrum Bay (22.04 km²)
- Teal Lough (0.59 km²)
- Magheraveely Marl Loughs (0.59 km²)

11.3. Draft CAS Screening

The draft CAS objectives, targets and actions have been screened using established criteria to identify those likely to affect, or with potential to have a significant effect, on European sites. The screening process determined that:

Objectives, targets and/or actions unlikely to have effects are those:

- Relating to developing our evidence base, improving legislation, working towards zero pollution or delivering change through partners.
- Encouraging awareness and behaviour change.
- Directing development to appropriate locations away from sensitive sites
- Protecting the natural environment and reducing climate change impacts

Objectives, targets and/or actions requiring further assessment are those:

- Enabling development
- Affecting transport and logistics
- With potential for air quality impacts
- Negatively affecting land and water resources.

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A summary of the main potential ecological impacts that have been considered are presented below.

Habitat loss and destruction: Habitat loss or destruction is caused where there is complete removal of a habitat type, for example arising from the development of new infrastructure which alters the existing habitat. The strategy has no geographically specific actions or policies and it is felt unlikely that any elements of the strategy will result in loss or destruction of habitat. Improvements in Air Quality are intended to improve habitats in general however the extent of this will only be identifiable when assessing the impact of more detailed plans, projects and programmes following from implementation of the strategy.

Habitat Degradation: Habitat degradation results in the diminishment of habitat quality and a loss of important habitat functions. It can arise from the introduction of invasive species, contamination from spillages or physical alteration (e.g. arising from poor management during construction and subsequent operation of new infrastructure) or emissions. Such degradation can occur directly, however indirect downstream impacts and effects can also occur, e.g. via watercourses discharging into the coastal and marine environments. Given that there are no geographically specific actions or policies currently within the strategy, the extent of potential habitat degradation both directly and indirectly will only be identifiable as a result of plans, projects and programmes emerging from the strategy.

Habitat/species fragmentation: Habitat fragmentation results from the incremental loss of small patches of habitat within a larger landscape. Fragmentation can occur either through the direct loss of habitat or through the degradation and eventual loss of the habitat over time. Fragmentation can also result from impediments to the natural movements of species. This is relevant where important corridors for

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movement or migration are disrupted. Habitat loss and destruction are discussed above, and the extent of such impacts is likely to be limited for the reasons identified. In relation to fragmentation due to degradation, this impact will need further detailed scrutiny as specific plans, projects and programmes emerge, if any, as a result of the strategy actions.

Disturbance to key species: Disturbance to key species within a European Site may increase where there are increased sources of disturbance (e.g. air or water emissions) however this is not felt likely to occur from potential developments emerging from the actions of the strategy. The actions are geographically non-specific within the strategy and therefore will require scrutiny from plans, projects and programmes emerging from the strategy. Such impacts could result from the upgrading of existing infrastructure or the development of new infrastructure.

Reduction in species densities: Species mortality can result from direct mortality of species, for example as a result of collision. Species mortality can also occur via direct or indirect alteration to breeding/resting habitat during treatment. In addition, species mortality can occur when conditions/habitat underpinning survival of the species are altered e.g. water quality or ecological corridors removed. None of the actions included in the draft CAS are likely to result in reduction in species densities.

Changes in key indicators of conservation value (air quality): In terms of potential for alteration of air quality, the impacts of the draft CAS are intended to improve habitats in general, and it is intended that the actions following from the draft CAS should result in overall improvements to key indicators of conservation value.

Air Quality and Climate Change: The key effects on European sites associated with these are nitrogen/sulphur deposition leading to acidification and eutrophication

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of soils/water, deposition of particulate matter leading to vegetation damage and increased atmospheric CO and CO₂ accelerating climate change.

In-combination Impacts: It is intended that the actions detailed within the draft CAS produce in-combination impacts resulting in overall improvements over time.

During the Screening and Scoping stage for the HRA, based on the above list of potential impacts from activities covered within the scope of the strategy, the potential for likely significant effects on European sites could not be assessed in detail, and therefore, could not be ruled out at those stages.

The assessment incorporates the potential pressures and threats that could negatively impact the various designated sites due to their ecological characteristics and identifies if a potential link or impact pathway to the objectives, targets and actions within the strategy might exist.

The conclusion of the assessment is that none of the objectives, targets and actions within the draft CAS would result in any likely negative significant effects on any European sites in Northern Ireland and the surrounding area. The potential impacts, denoted by the colour amber in Table 6, may require a site-specific assessment to determine their likely impact. This should be carried out at the local planning stage for individual developments.

In response to the HRA Scoping/Test of likely significant effects, NIEA Natural Environment Division agreed with the conclusions within the HRA that further HRA's will be undertaken at project specific level. Provided a robust assessment based on contemporary information is undertaken at that point, any environmental impacts should be avoided or mitigated.

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Table 6: Summary of likely effects across all European sites in Northern Ireland and their relevance to the Clean Air Strategy

Pressure/ Threat	Further Description	Relevance to the draft Clean Air Strategy
Invasive/Alien Species	Introduction of non-native species (e.g., Japanese Knotweed) can disrupt native ecosystems.	No objectives, targets and actions in the Strategy would affect these practices.
Aquatic Farming	Includes aquaculture, fish farming, shellfish harvesting, and seaweed collection. Some practices may release pollutants or alter sensitive habitats.	No objectives, targets and actions in the Strategy would affect these practices.
Loss of Aquatic Habitat	Habitat loss due to development or coastal process changes, especially intertidal zones important for bird foraging.	No objectives, targets and actions in the Strategy would affect these practices.
Decline in Aquatic Habitat Quality	Reduced water quality or spread of invasive species may degrade habitats.	No objectives, targets and actions in the Strategy would affect these practices.
Beach Activities	Activities such as bait digging, beach cleaning, or vehicle use can damage habitats and disturb birds.	No objectives, targets and actions in the Strategy would affect these practices.

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Pressure/ Threat	Further Description	Relevance to the draft Clean Air Strategy
Boating Activity	Recreational and commercial boating may erode banks, disturb birds, or injure marine mammals.	No objectives, targets and actions in the Strategy would affect these practices.
Land Management (e.g. Burning)	Burning may negatively affect bog habitats by reducing vegetation diversity.	No objectives, targets and actions in the Strategy would affect these practices.
Changes in Surrounding Land Use	Agricultural intensification, drainage, or development can harm habitat integrity.	Potential impact; requires site-specific assessment.
Coastal Protection Works	Includes dredging and engineering. May affect sediment dynamics.	No objectives, targets and actions in the Strategy would affect these practices.
Commercial Activities	Activities like fishing, development, and marine traffic may affect designated sites.	No objectives, targets and actions in the Strategy would affect these practices.
Climate Change	Projected to cause hotter summers, warmer winters, and extreme weather.	Strategy directly addresses this issue and is beneficial to European sites.
Enhanced Bird Competition	Shifts in species dominance due to nearby activity (e.g. landfill) may impact site ecology.	No objectives, targets and actions in the Strategy would affect these practices.
Fly-Tipping	Illegal dumping may lead to pollution and harm to wildlife.	No objectives, targets and actions in the Strategy would affect these practices.

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Pressure/ Threat	Further Description	Relevance to the draft Clean Air Strategy
Forestry	Afforestation or clearance may change hydrology or reduce biodiversity in sensitive habitats.	No objectives, targets and actions in the Strategy would affect these practices.
Freshwater Ecology	Alterations such as drainage, siltation, or eutrophication can affect wetland ecosystems.	No objectives, targets and actions in the Strategy would affect these practices.
Functionally Linked Bird Habitat	Includes high tide roosts or adjacent feeding areas essential to SPA species.	No objectives, targets and actions in the Strategy would affect these practices.
Historical Management	Past land use practices may have degraded habitats.	No objectives, targets and actions in the Strategy affect this.
Natural Processes	Includes predation, erosion, vegetation succession, and prey reduction.	No objectives, targets and actions in the Strategy affect this.
Hydrological Changes	Drainage, quarrying, water extraction, and reclamation can alter site hydrology.	No objectives, targets and actions in the Strategy affect this.
Nitrogen Deposition	Excess nitrogen can lead to eutrophication and biodiversity loss.	Potential construction-related emissions require site -specific assessment.
Military Use	UXOs and related activity may harm terrestrial or marine species.	No objectives, targets and actions in the Strategy affect this.

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Pressure/ Threat	Further Description	Relevance to the draft Clean Air Strategy
Peat Cutting	May significantly degrade intact bog surfaces.	No objectives, targets and actions in the Strategy would affect these practices.
Power Cables	Overhead lines pose collision risks to birds; underground cables may disturb habitats during installation.	No objectives, targets and actions in the Strategy would affect these practices.
Recreational and Educational Use	Activities like diving, boating, and tourism may disturb sensitive habitats.	No objectives, targets and actions in the Strategy would affect these practices.
Scientific Research	Surveys and research tools (e.g., acoustic devices) can alter habitats or disturb species.	No objectives, targets and actions in the Strategy would affect these practices.
Terrestrial Farming	Includes fertiliser use, grazing, and supplementary feeding; may lead to water pollution and biodiversity loss.	No objectives, targets and actions in the Strategy would affect these practices.
Water Level Control	Changes in water levels may reduce floodplain habitat.	No objectives, targets and actions in the Strategy affect this.
Renewable Installations (Wet)	Offshore and freshwater renewable developments may disturb habitats during construction or operation.	No objectives, targets and actions in the Strategy affect this.

Pressure/ Threat	Further Description	Relevance to the draft Clean Air Strategy
Wildlife Management	Culling of certain species (e.g., under NIEA license) may affect site dynamics.	No objectives, targets and actions in the Strategy affect this.

11.4 AA Screening Conclusion

On completion of the AA Screening, it was determined that the draft Northern Ireland Clean Air Strategy **should undergo an AA**. The objective of the draft CAS is to **improve NI's environment** in general through improved air quality and by extension also improve the habitats covered by the Habitats Regulations Assessment process.

The draft CAS offers a clear framework to prioritise actions that will maximise environmental and societal benefits and has the potential to significantly reduce negative environmental impacts. The potential for likely significant effects on European sites could not be ruled out at this stage of the process.

12. Assessment of Potential Impact Pathways

Infrastructure development and its impact on biodiversity may be direct (for example, the loss of, or damage to, habitats and species) or indirect (for example, disturbance due to noise and emissions to air associated with construction works). The following potential impact pathways from air quality management activities have been identified:

12.1 Visual and Acoustic Disturbance

Richardson et al. (1995)³⁰ identify four distinct zones of noise influence based on the distance between a sound source and an animal receiver.

Zone of Audibility: This is the area within which an animal can detect a sound.

Zone of Responsiveness: Located within the zone of audibility, this is the region where the animal exhibits behavioural or physiological reactions to the sound.

Zone of Masking: This zone, which can vary widely in size, lies between the zones of audibility and responsiveness. It represents the area where noise interferes with the animal's ability to detect other important sounds, such as communication cues or echolocation.

Zone of Hearing Loss: Closest to the noise source, this area is where sound levels are intense enough to cause tissue damage. Effects may include temporary (TTS) or permanent threshold shifts (PTS), or in severe cases, more extensive injury. While such damaging noise levels are rare during operational activities, they are a potential risk during construction phases.

Operational noise from offshore wind turbines is likely to be audible to both harbour porpoises and harbour seals at around 100 m³¹. However, by 1,000 m, harbour porpoises are unlikely to detect the signal (estimated detection zone: ~20–70 m). Harbour seals, in contrast, may still detect the noise beyond 1,000 m, particularly within the 125–160 Hz frequency range, due to their superior low-frequency hearing

³⁰ Richardson, W. J., Greene, C. R., Jr., Malme, C. I., & Thomson, D. H. (1995). *Marine Mammals and Noise*. Academic Press.

³¹ **Tougaard et al. (2009)**, as cited in the Scottish Government review *Current state of knowledge of effects of offshore renewable energy generation devices on marine mammals*

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and prolonged detection distances (up to several kilometres under some conditions). Construction activities of any kind are likely to cause both visual and noise disturbance, especially if sensitive species inhabit areas near any potential sites, however this would be fully assessed if, and when a development site is identified. The construction and operation of renewable energy installations have the potential to disturb birds, fish, and marine mammals through visual cues and underwater or airborne noise. Development projects can lead to the disturbance of bird species that qualify under SPA or Ramsar designations, whether within designated European sites or in functionally linked areas. Noise and visual disturbance during any construction may trigger behavioural responses in birds, such as nest abandonment or interruption of foraging activities. In addition, post-construction impacts, (such as site use, vehicle traffic, and operational lighting) may also contribute to disturbance.

Generally, birds are most disturbed by stimuli that are irregular, infrequent, unpredictable, and loud, such as sudden noises, movements, or vibrations. In contrast, regular, predictable, and low-level activity is less likely to cause disturbance. The likelihood of disturbance also decreases with greater distance from the source.

A growing body of research is now available on the visual and noise disturbance of waterfowl resulting from construction and related activities. Both visual and auditory stimuli can trigger disturbance responses in waterfowl and waders, potentially impacting their fitness and survival. Noise is a complex form of disturbance that must be assessed using multiple factors. These include its nonlinear nature, the nonadditive effects of multiple noise sources, and the distance between the noise source and the receptor. High levels of noise disturbance are generally defined as sudden noise events exceeding 60 dB or sustained noise levels above 72 dB. In response to such noise levels, birds may exhibit strong behavioural reactions, such

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as abrupt flight or interruption of feeding. These responses can negatively affect survival, particularly when combined with other stressors like low temperatures or limited food availability. Research generally indicates that waterfowl exhibit a flight response to noise levels above 84 dB, while levels below 55 dB have no observable effect on their behaviour³². These two thresholds are therefore considered useful indicators of the upper and lower limits of disturbance. The same studies suggest that birds can habituate to regular noise exposure if levels remain below approximately 70 dB at the location of the bird. Noise levels typically decrease by about 6 dB with each doubling of distance from the source. For example, impact piling is one of the loudest construction activities and can generate noise levels around 110 dB at 0.67 meters. However, this would attenuate to approximately 67–68 dB at 100 meters from the source. Consequently, even without mitigation, the most intense construction noise should fall below disturbance thresholds by 100 meters and certainly by 200 meters from the source.

Visual disturbance is generally considered to have a greater impact than noise, as visual stimuli often provoke disturbance responses at much greater distances. For instance, many bird species exhibit a flight response when approached within 150 meters across open habitats like mudflats. Visual disturbance can be intensified by the presence of workers operating outside of machinery, sudden movements, or the use of large construction equipment. Some species are particularly sensitive to

³² Cutts, N., Phelps, A., & Burdon, D. (2008). *Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance*. Report to Humber Industrial Nature Conservation Association, Waterside, Lincolnshire, UK.

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visual cues. Curlew may take flight at distances of up to 275 meters, redshank at 250 meters, shelduck at 199 meters, and bar-tailed godwit at 163 meters.³³

Therefore, when assessing potential impacts, it is important to consider the specific composition of the bird species present, as this will influence appropriate threshold distances for both visual and acoustic disturbance.

12.2 Loss of Functionally Linked Habitat

While most habitats sites are geographically delineated to include the key features necessary to support their structure, function, and qualifying features, this is not always comprehensive. Many of the qualifying species (such as birds, bats, and amphibians) are highly mobile and not restricted to the boundaries of designated sites. Waders and waterfowl often rely on habitats located outside formal site boundaries. These areas, although not part of the official designation, can be critical to the ecological integrity of the species, providing essential resources such as foraging grounds. As a result, land use plans or developments that may impact these functionally linked habitats must be subject to further assessment, given their role in supporting the designated site's overall conservation objectives.

Due to the highly mobile nature of marine species, functionally linked habitats may lie beyond designated conservation boundaries. For instance, acoustic disturbance has been identified as a significant factor affecting harbour porpoise populations, potentially altering both their overall range and localised habitat use. Various sources contribute to this disturbance, including oil and gas exploration, ship propellers, echosounders in busy shipping routes and near aquaculture operations, the

³³ NatureScot Research Report 1283 – *Disturbance Distances Review: An Updated Literature Review of Disturbance Distances of Selected Bird Species* (2022)

construction and deployment of offshore renewable energy infrastructure, seal-scaring devices at fish farms, and the use of military sonar. These activities can disrupt harbour porpoises in coastal areas, impacting their ability to effectively use available habitats.

12.3 Water Quality

The quality of water entering habitat sites plays a crucial role in shaping their ecological characteristics and the species they support. Poor water quality can lead to a range of adverse environmental effects, including:

Toxic Substances: High concentrations of toxic chemicals and heavy metals can cause immediate mortality in aquatic organisms. Even at lower levels, these substances can impair immune function, increase susceptibility to disease, and alter wildlife behaviour.

Eutrophication: This process, driven by excess nutrient input, promotes excessive plant and algal growth, which can lead to oxygen depletion in the water. Algal blooms—often a result of eutrophication—reduce water clarity and light penetration. The breakdown of organic material associated with these blooms further reduces oxygen levels. In marine environments, nitrogen is typically the limiting nutrient, making nitrogen-rich discharges a key contributor to eutrophication.

Endocrine Disruption: Certain pesticides, industrial chemicals, and components of sewage effluent are believed to interfere with the endocrine systems of aquatic organisms, potentially affecting their reproduction and development.

In terms of environmental impacts, water quality issues associated with development schemes are most likely to occur during the construction phase. Urban development typically increases the extent of impermeable surfaces, leading to greater volumes

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and faster rates of surface water run-off. Construction sites pose numerous risks to water quality, with pollutants such as diesel, oil, solvents, paints, chemicals, construction debris, and dust all potentially entering nearby watercourses.

Earthworks and sediment disturbance are common during construction, increasing the likelihood of fine sediments being washed into surface waters. These sediments elevate turbidity, hinder photosynthesis, and can harm or kill aquatic organisms.

Pollutants like diesel, heavy metals, and other toxic substances may also be transported in surface run-off, posing direct threats to aquatic life through physiological damage or mortality.

The proximity of construction sites to sensitive ecological receptors is a key factor influencing the extent of water quality impacts. Construction sites located near designated European sites are more likely to have significant effects, while impacts typically lessen with distance due to natural dilution and attenuation processes.

Atmospheric pollution is recognised as a pathway which may impact marine receptors such as coastal waters, sediments and intertidal habitats. The deposition of airborne nutrients and/or contaminants may affect marine SAC/SPA features, in particular ammonia, however that is not within the scope of the draft CAS. The actions contained in the draft CAS are intended to improve air quality, however these improvements may not be hugely significant when weighed against other pressures affecting these environments.

12.4 Atmospheric Pollution

The primary air pollutants of concern for European sites are nitrogen oxides (NO_x), ammonia (NH₃), and sulphur dioxide (SO₂).

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Ammonia emissions primarily originate from agricultural activities³⁴, though certain chemical processes and exhausts from specific vehicle types also contribute. Clark et al. (2018) define “critical loads” as the maximum pollutant deposition a region can absorb without long-term ecological harm, and document that excessive atmospheric nitrogen ($\text{NH}_3 + \text{NO}_x$) deposition has surpassed these thresholds across many European ecosystems.³⁵

The draft CAS should have a positive impact in reducing nitrogen oxides (NO_x) and may reduce sulphur dioxide (SO_2) although as SO_2 is declining in Northern Ireland, it is not the focus at this time. Ammonia (NH_3) is outside the scope of this strategy. The strategy should also have a positive impact in reducing particulate matter (PM), a key component of which can be inorganic sulphates and nitrates.

Air quality impacts on European sites must be assessed as an ‘in-combination’ effect, meaning that the cumulative impacts of multiple plans and projects must be considered together. For instance, when evaluating ammonia or nitrogen deposition from an intensive farm or large slurry storage facility, emissions from other nearby operational or approved agricultural developments must also be factored into the assessment.

While nitrogen oxides can be harmful at very high concentrations, their more common impact, along with ammonia, is through increased nitrogen deposition onto soils. Elevated atmospheric nitrogen deposition is known to enhance soil fertility,

³⁴ Franzaring, J., & Kössler, J. (2023). *Review of internationally proposed critical levels for ammonia* (Texte 31/2023). German Environment Agency.

³⁵ Clark, C. M., Phelan, J., Doraiswamy, P., Buckley, J., Cajka, J. C., Dennis, R. L., Lynch, J., Nolte, C. G., & Spero, T. L. (2018). Atmospheric deposition and exceedances of critical loads from 1800–2025 for the conterminous United States. *Ecological Applications*, 28(4), 978–1002.
<https://doi.org/10.1002/eap.1703>

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which may initially seem beneficial, but often results in eutrophication. This process can significantly alter the composition and reduce the quality of semi-natural, nitrogen-sensitive terrestrial and aquatic habitats, leading to long-term ecological degradation³⁶.

Dust and particulate matter can cause direct and indirect harm to nearby habitats. Deposition on vegetation can reduce photosynthetic function and limit food sources for herbivores and pollinators³⁷. Additionally, contaminated dust may infiltrate soils and water bodies, alter soil chemistry and affect aquatic biodiversity. These processes can reduce habitat quality, discourage wildlife use of impacted areas, and contribute to long-term ecological decline, particularly in semi-natural or protected landscapes.

12.5 Soil and Land Pollution

The draft CAS does not explicitly carry out or issue any form of permission or authorisation to develop any sites, let alone developments that may affect designated European sites.

Therefore, this means that likely significant effects cannot be assessed in detail for specific sites, however the general intent of the strategy is that there is **potential to give rise to likely significant positive effects on sites throughout Northern Ireland**.

³⁶ European Environment Agency (2018). *Eutrophication of terrestrial ecosystems due to air pollution*. In *Environmental Indicator Report 2018 — Natural Capital*.

³⁷ Prabhat Kumar Rai, Impacts of particulate matter pollution on plants: Implications for environmental biomonitoring, Ecotoxicology and Environmental Safety, Volume 129, 2016, Pages 120-136, ISSN 0147-6513.

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The potential threats from the draft CAS on European Sites cannot at this stage be confirmed based on the level of detail available, however none of the Strategic Objectives and Actions contained in the draft CAS appear to present any immediate or long-term risk.

13. AA effects of the draft CAS

This AA appraises whether the draft CAS, alone or in combination with other plans or projects, would have an adverse effect on the integrity of any European site considering its conservation objectives. The assessment is proportionate to the nature and scale of the draft strategy and is based on the best available scientific evidence, applying the precautionary principle throughout.

13.1 Effect of the draft CAS Alone

Section 9 of the SEA Environmental Report which is published alongside this HRA, and the consultation documents sets out the likely significant environmental effects that are expected as a result of the draft CAS. The SEA topics identified in schedule 2 of the SEA regulations were grouped together by SEA themes during the SEA Scoping exercise. The assessment takes the form of a broad narrative analysis of how the strategic objectives and actions within the draft CAS may affect each of the themes. Each of these Themes were also assessed in the context of the test of likely significant effects for this HRA. Of most relevance to this HRA were Theme 1, Biodiversity, Flora and Fauna and Theme 2 Water, Marine & Coastal and Soil & Mineral Resources and also Theme 5, Air quality, Climatic Factors and Noise. Annex A provides detail on the likely significant impacts of each action.

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13.2 HRA Findings by SEA Themes

This section sets out the likely significant environmental effects that are expected as a result of the draft CAS. The SEA topics identified in schedule 2 of the SEA regulations were grouped together by SEA themes during the SEA Scoping exercise. The assessment takes the form of a broad narrative analysis of how the strategic objectives and actions within the draft CAS may affect each of the themes. It was considered that Themes 1,2,4 and 5 were of most relevance to the HRA Appropriate Assessment. Many of these findings have already been touched upon in the baseline and future baseline sections.

The interrelationships between environmental topics, including potential cumulative, secondary and synergistic effects arising from the implementation of the plan are also considered where relevant. In response to the Scoping exercise, it was considered that more detail was required regarding marine and coastal receptors, therefore Theme 2 has been expanded to include these considerations in the assessment. Annex A provides detail on the likely significant impacts of each action.

13.3 SEA Theme 1- Biodiversity, Flora and Fauna

The draft CAS broadly supports the integrity of internationally, nationally and locally designated sites and helps protect and enhance habitats and species. Annex B of the draft CAS addresses the impact on ecosystems health from Air pollution:

“Poor air quality is a major contributor to the long-term decline of biodiversity in the UK³⁸ and can be particularly attributed to ammonia (NH₃) and nitrogen oxides (NO_x).

³⁸ DEFRA Air Quality Strategy, Framework for local authority delivery, 2023, accessed 01/05/26, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1180706/Air_Quality_Strategy_Web.pdf

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The evidence in Northern Ireland from the last 50 years shows that the ongoing changes in the way we manage our land for agriculture, and the ongoing effects of climate change are having the biggest impacts on our wildlife³⁹. Thus, the focus of ecosystem protection tends to be on nitrogen deposition, which is made up of NOx from road transport and ammonia mainly from agricultural activities, as well as levels of ammonia in ambient air. These are assessed in terms of damage thresholds: critical loads estimate the amount of nitrogen loading (deposition) beyond which adverse effects are seen on species composition, whilst critical levels represent ammonia concentrations in ambient air, beyond which direct damage to plant tissue occurs.”

The cumulative effects of the actions in the draft CAS should help protect the integrity of the internationally and nationally designated sites within Northern Ireland. None of the actions are likely to result in negative impacts and are intended to contribute to improving the condition of ASSIs within Northern Ireland.

The draft CAS should help relieve pressures from air pollution on locally designated sites for biodiversity and geodiversity in Northern Ireland and enhance the status of National Nature Reserves (NNRs) in Northern Ireland. In doing so, the draft CAS should also help protect and enhance priority habitats, and the habitats of priority species. This will also support the resilience of Northern Ireland’s biodiversity to the potential effects of climate change.

None of the actions in the draft CAS specifically contribute to the creation of coherent and resilient ecological networks. Some may consider this as a missed opportunity, however the Air Quality Expert Group (AQEG) report on the Impacts of Vegetation on

³⁹ State of Nature Partnership NI 2023, accessed 01/05/26, <https://stateofnature.org.uk/countries/northern-ireland/>

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Urban Air Pollution⁴⁰ addresses the research and policy aspects of the interactions between vegetation and air pollutants in urban areas:

“The effects of realistic planting schemes to alleviate air quality problems by enhancing deposition to the surface with vegetation in cities are small. Reductions in concentrations of PM¹⁰ for realistic planting schemes would be expected to be at the scale of a few percent. The work to date both from measurement and modelling shows that it is unlikely that large reductions in concentration (>20%) could be achieved using vegetation to enhance deposition over a substantial area. For nitrogen dioxide (NO²), vegetation is, generally speaking, of little benefit; it is not a very efficient sink. The deposition occurs in daytime, and primarily in the warmer months, when NO² is less of a problem. Vegetation is a very poor sink for nitric oxide (NO) and soil is a source of NO, at least partially offsetting any potential benefit of uptake by vegetation. Locally (tens to hundreds of square metres) tree planting may enhance or reduce dispersion; this redistributes pollution but does not remove it. Where vegetation acts as a barrier close to a source, concentrations immediately behind the barrier owing to that source are reduced typically by a factor of about 2, relative to those which would occur without the barrier, whereas on the source side of the barrier concentrations are increased. Tree planting may also exacerbate the build-up of pollution within street canyons by reducing airflow. The use of trees to improve air quality is not without negative impacts as some tree species are important sources of biogenic volatile organic compounds (BVOCs), notably isoprene. BVOCs can enhance the formation of pollutants including PM and ozone. However, BVOC emissions could be avoided by selecting low emitting

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https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1807251306_180509_Effects_of_vegetation_on_urban_air_pollution_v12_final.pdf

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species. Similarly, the choice of plant species which are known sources of aeroallergens should be avoided....

Recognising that the potential for improving Air Quality using vegetation is modest, an important limitation to mitigation of current Air Quality problems with vegetation is that the most polluted areas of cities are those with very limited space for planting, greatly reducing the potential for mitigation using these methods.”

There may be benefits from hedgerow or tree planting schemes, for example at schools, however this would need to be assessed at a local level.

Good air quality is essential for marine ecosystems. Key activities, such as shipping and fishing, produce emissions including particulate matter and gases. Emissions of sulphur dioxide from the maritime sector in Europe, for example, are projected to surpass total emissions from all land-based sources by 2020, assuming no action is taken.⁴¹ Along the coast, vehicles, power stations, industrial processes, fires and construction activities are also key sources of air pollutants and emissions. The primary focus of the draft CAS is human health and with the exception of vehicles, none of these sources are within the scope of this strategy.

The Northern Ireland Marine Plan⁴² requires public authorities and proposers to consider the impact of proposals on air quality which affects or might affect the marine area. As the impacts of the draft CAS are intended to improve air quality and no negative impacts have been identified, it follows that any potential impacts on the

⁴¹ [Clean Air for Europe \(CAFE\) Programme | EUR-Lex](#)

⁴² [Marine Plan for Northern Ireland | Department of Agriculture, Environment and Rural Affairs](#)

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marine environment, whilst secondary are likely to be very modest, and generally positive.

13.4 SEA Theme 2 – Water, Marine & Coastal and Soil & Mineral Resources

The SEA considers issues in relation to the aquatic environment during all aspects / phases in relation to the implementation of the draft CAS. Impacts considered include those relating to water quality, water quantity and hydromorphology, and also considers both direct and indirect potential impacts.

River Basin Management Plans are the key tools for implementing the Water Framework Directive and to achieving its objectives. DAERA has published the River Basin Management Plan for the 3rd cycle period which runs from 2021-2027. The plan provides an update on the health of Northern Ireland's water environment (the status of water bodies) and sets out our targets (objectives) and actions (programme of measures) on how we want to improve our water environment in the next six years.

The plan covers the North Western, Lough Neagh, Bann and North Eastern river basin districts (RBD) and includes detailed status updates on each RBD. The River Basin Management Plan for the 3rd cycle contains information relating to Plans & Projects (which are key for 3rd cycle RBMP)⁴³. Chapter 4 of the RBMP, "Pressures" does not identify Air Quality as a key pressure acting upon our water environment. The key pressures are excess nutrients and organic pollutants. "These are released into the water environment as a result of land use, mostly related to agricultural and sewage related pressures."

⁴³ <https://www.daera-ni.gov.uk/publications/third-river-basin-management-plan-northern-ireland>

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Any potential impacts to the aquatic environment (including transboundary) resulting from the draft CAS should be very slightly positive as the draft CAS helps tackle nitrogen deposition primarily from vehicles. The draft Northern Ireland Nature Recovery Strategy⁴⁴ also highlights that nutrient pollution, via nutrient run-off from sewage works or farmland, affects marine, freshwater and freshwater-dependent ecosystems. Although air pollution in the form of nitrogen deposition, primarily from the storage and management of animal slurries, affects nutrient-sensitive habitats and species across the terrestrial, freshwater and marine environments, this is not within the scope of the draft CAS. This is dealt with through DAERA's draft Ammonia Strategy and Nutrients Action Programme.

Historic reductions of sulphur emissions have reduced the threat from 'acid rain' however nitrogen deposition may contribute to the occurrence of algal blooms. Whilst none of the actions in the draft CAS specifically support improvements to water quality or minimising the impacts of diffuse run off, through improving air quality there should be secondary contributions to protect and enhance surface water and groundwater resources. This may also help reinforce the ecosystem services which support the regulation of soil quality and availability of high-quality soils resources. There are no specific actions which result in physical alterations to water bodies including those of strategic significance for water supply.

The cumulative effects of the actions in the draft CAS may help manage Northern Ireland's water and soil resources in a sustainable manner although any benefits are likely to be modest compared to other environmental issues affecting these receptors. None of the actions are likely to result in negative impacts to water and soil resources.

⁴⁴ [Draft Nature Recovery Strategy for Northern Ireland to 2032.pdf](#)

13.5 SEA Theme 4 – Landscape and Seascapes

None of the actions in the draft CAS are specifically intended to protect and enhance the character and quality of Northern Ireland's landscapes, townscape, villagescapes, or seascapes, however the cumulative effects of the actions may result in secondary benefits. This, in turn, may support the management objectives of, and protect the special qualities of, the AONBs in Northern Ireland.

In response to the SEA Scoping exercise, DAERA's Water Catchment Unit noted that cross border river basins should be given special attention as ecological functionality cross jurisdictional boundaries. For example, Northern Ireland /Ireland migratory/mobile species such as salmon can be impacted by water quality / water quantity. Any potential impacts to the aquatic environment (including transboundary) resulting from the draft CAS should be positive however the nature of those impacts are likely to be secondary and negligible compared to other issues affecting these receptors.

The SEA also considers the potential for any transboundary impact to the aquatic environment in Ireland. Ireland's EPA has advised that they won't be making a formal submission in relation to this consultation. However, some useful resources to consider in finalising the strategy included Ireland's Clean Air Strategy and the Peace Air Project.

13.6 SEA Theme 5 – Air quality, climatic factors and noise

One of the key goals of the draft CAS is to reduce air pollution to deliver improvements in air quality in Northern Ireland. This section explores this in more detail by assessing each objective and the associated actions. This section also considers implications of climatic factors and noise. Some of the actions individually

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may not be considered likely to have significant environmental effects, however they contribute to the overall positive impacts of the draft CAS. The objectives and actions which may have more direct and significant impacts are addressed below.

Objective 1. Develop our evidence base

The actions which support developing the existing air quality network will provide more scientific air quality data, which will help to strengthen the evidence base and support further policy development. This will be important to inform future decisions and measure success and will not result in any negative environmental impacts.

Objective 2. Improve legislation

Actions which support updating existing legislation to introduce new PM_{2.5} and PM₁₀ limits, targets and objectives, are intended to be introduced, following consultation, which should help deliver WHO interim target 4 for annual average PM₁₀ and PM_{2.5}. Particulate matter in the atmosphere with a diameter of less than or equal to 2.5 microns (PM_{2.5}) arises from both man-made and natural sources. PM_{2.5} is a key pollutant produced from domestic solid fuel burning and road transport. 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. Because of the small size of these particles, they may cross from the lungs into the bloodstream, where they can have more indirect systemic effects, such as increasing the risk of cardiovascular disease and stroke. In addition, they may carry surface-absorbed carcinogenic compounds into the lungs.

Reviewing air quality definitions and considering further options on stove and solid fuel labelling and stove smoke emission rate in smoke control areas (SCAs) has potential to improve air quality by reducing emissions from domestic burning.

Objective 3. Raise Awareness and bring about Behavioural Change

DAERA will run awareness campaigns to inform the public about the risks to their health of air pollution. These campaigns will inform the public of the actions they can take, or alternative decisions they can make, to reduce their personal contribution to air pollution. DAERA will also evaluate the impact of the awareness campaigns, to ensure they are successful. Possible topics may include: 'No idling' at schools, solid fuel burning, wet wood burning, Clean Air Primary Schools Campaign, indoor air quality, Clean Air Night/Day.

Objective 4. Work towards zero pollution

The actions supporting this objective aim to prevent or minimise air pollution at source and, where air pollution has occurred, to remediate where possible through existing regulations. By the end of 2027, DAERA will issue a 'Call for Evidence', to seek views on bringing forward secondary legislation, to restrict or phase out coal and/or manufactured solid fuels, and/or unseasoned wood.

Alongside any proposals to phase out or restrict solid fuel burning, DAERA will work with other government departments to ensure support is in place to deliver a Just Transition to cleaner, decarbonised heating that will positively impact air quality.

By December 2026, DfI will publish local draft Transport Plans covering Belfast and the Northwest, for consultation. These Plans will outline how the transport network could be integrated and re-balanced, improving air quality and facilitating healthy and sustainable transport choices.

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In order to reduce emissions from transport, by 2026, the Driver and Vehicle Agency (DVA) will begin the introduction of a diesel emissions Particulate Number (PN) test on all cars and light goods vehicles registered from 1 January 2013. The planned legislative amendment will also provide for light and heavy vehicles to undergo a PN diesel emissions test during roadside enforcement checks. DVA will report on the outcomes of annual tests that result in a major defect being recorded and where roadside inspections identify emissions defects that result in fines or prohibition notices.

Objective 5. Deliver Change through Partners

DAERA will work with other government departments and delivery partners, to bring about change and improve Northern Ireland's air quality. A Clean Air Forum will be established to create strong working partnerships between DAERA, other NICS Departments, NI District Councils and non-Government Organisations on air pollution matters.

DfI will increase investment in active travel to 10% of the overall transport budget by 2030, primarily through the implementation of the Active Travel Delivery Plan, the Belfast Cycling Network Delivery Plan, the Strategic Plan for Greenways, and continue to promote active travel through ongoing engagement with schools.

By May 2029 DAERA as an observer providing policy advice and NIEA, as an associated partner, will have participated in and delivered the €6.5M PEACEPLUS Clean Air (PEACE-Air) project focussing on solid fuel, transport and ammonia emissions. It will focus on 4 specific work packages (WP):

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WP1: Solid fuel burning.

WP2: Transport-related air pollution.

WP3: Ammonia pollution and impacts on biodiversity and sensitive ecosystems
Speciation of particulate matter.

WP4: Cross-cutting strategies for community engagement, capacity building, and legacy.

By 2032 DAERA will have worked with DEFRA and the other devolved governments, to finalise, agree and implement the UK Air Quality Common Framework following EU Exit.

By 2030 when reviewing policy and technical guidance relating to air quality, net zero and environmental noise, DAERA will ensure improved connectivity between air quality, net zero and noise in its policies. This will include Local Air Quality Management Technical Guidance (TG22)⁴⁵ and Northern Ireland Policy Guidance PGNI (09)⁴⁶.

Following a review of the air quality monitoring network, and engagement with councils on improvement of the network, DAERA will, by 2032 review the Local Air Quality Management (LAQM) process for Northern Ireland.

⁴⁵ DEFRA, Local Air Quality Management Technical Guidance (TG22), August 2022, accessed 30/04/26, <https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf>

⁴⁶ DoE (now DAERA), Local Air Quality Management Policy Guidance – LAQM PGNI (09) June 2010, accessed 30/04/26, <https://laqm.defra.gov.uk/air-quality/guidance/northern-ireland-policy-guidance/>

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Following publication of the revised Local Air Quality Management (LAQM) Policy and Technical Guidance (TG22) by the end of December 2029, DAERA will review the LAQM Grant by the end of December 2031, at the end of the current grant duration. This review will aim to ensure good value for money for DAERA and the district councils, and to optimise the benefit for the public through improved air quality.

Noise

The potential significant effects relating to noise are complex. For example, some renewable energy sources such as wind turbines may result in increased noise, however this would need to be considered in more detail in site specific Environmental Impact Assessments which are beyond the scope of the draft CAS and this report.

Climatic Factors

The relationship between Climatic Factors and Air Quality is complex and multifaceted. A study published in Nature September 2025 “Unravelling the complex impact of climate change on air quality in the world”⁴⁷ systematically reviewed over 10,000 publications to provide a large-scale quantitative assessment of the global research landscape on climate change’s impact on air quality. Particulate matter (PM) and ozone (O₃) are the most frequently studied pollutants, with a notable shift in focus from O₃ to PM in recent years. Temperature, as a primary climatic driver, profoundly influences air pollution by altering emissions, chemical reactions, and dispersion.

⁴⁷ [Unraveling the complex impact of climate change on air quality in the world | npj Clean Air](#)

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The influence of air pollution on climate, with certain pollutants acting as short-lived climate forcers (SLCFs), is a critical field of study extensively detailed in the IPCC Sixth Assessment Report (AR6) ⁴⁸

Air pollutants like methane and black carbon are short-lived climate pollutants that contribute to both climate change and health issues. Climate change can worsen air quality by increasing the frequency and intensity of heatwaves and wildfires, which in turn can elevate levels of air pollutants. Poor air quality can exacerbate the health impacts of climate change, leading to increased respiratory and cardiovascular diseases.

Whilst effective climate change policies can improve air quality, they may also have unintended consequences for certain pollutants. Notably, in the past, diesel engine cars were promoted over petrol cars as helping to mitigate climate change despite having negative impacts on air quality. A study published in 2007; Air Quality Impacts of Climate Mitigation: UK Policy and Passenger Vehicle Choice⁴⁹, advised “Annual reductions of 0.4 megatons (Mt) of CO₂ and 1 million barrels of oil are estimated from switching to diesels. However, diesels emit higher levels of particulate matter estimated to result in 90 deaths annually”.

A 2023 paper; “The impact on passenger car emissions associated with the promotion and demise of diesel fuel” noted “the promotion and growth in the use of

⁴⁸ [Climate Change 2021: The Physical Science Basis | Climate Change 2021: The Physical Science Basis](#)

⁴⁹ <https://pubs.acs.org/esthag/article-abstract/41/2/387/3723386/Air-Quality-Impacts-of-Climate-Mitigation-UK?redirectedFrom=fulltext>

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diesel fuel in passenger cars in the UK and Europe over the past two decades led to considerable adverse air quality impacts in urban areas and more widely.”

A report from the Royal Society ⁵⁰ on the Effects of net-zero policies and climate change on air quality considers how climate change itself is expected to affect air quality in the UK by influencing emissions, atmospheric processing and transport of many pollutants. “Some of these effects are likely to slow or temporarily reverse improvements in air quality. They are also likely to lead to changes in the seasonal and geographical variations in air quality.”

- Moving forward carbon capture and storage (CCS) may involve chemical use with possible emissions, which can be managed through safer materials and treatment technologies.
- While replacing fossil fuels with low carbon and nuclear energy will generally improve air quality, short-term impacts may arise from backup power use and construction, though these can be mitigated.
- In homes, technologies like heat pumps and solar improve air quality, but hydrogen or biogas heating could still produce some emissions unless properly controlled. Indoor air quality depends not only on energy measures but also on behaviour and building materials.
- Expanding biofuels and urban greening could increase natural emissions that contribute to air pollution, but careful selection of low-emission plant species can reduce this.

⁵⁰ [Royal Society: Effects of net-zero policies and climate change on air quality](#)

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- Agricultural changes must avoid shifting pollution from one form to another, such as increasing ammonia emissions. Biomass can lower greenhouse gases but may worsen air pollution, especially when used domestically, so its use should be limited in densely populated areas.

Northern Ireland Environmental Statistics Report 2026⁵¹ notes that 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. Projections suggest that Northern Ireland may face hotter, drier summers and warmer as well as wetter winters as a result of climate change.

In 2023, Northern Ireland's greenhouse gas emissions were estimated to be 18.2 MtCO₂e, a reduction of 31.5 per cent since 1990 baseline levels. The largest sectors in terms of emissions in 2023 were agriculture (30.8 per cent), domestic transport (21.5 per cent) and buildings and product uses (13.8 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.

13.7 Effect of the draft CAS in combination with other plans and projects

Other relevant international and national plans (section 2.3) and projects have been identified to determine if there could be any potential likely significant effects that arise from any of these plans in combination with the draft CAS. These have been

⁵¹ [NI Environmental Statistics Report](#)

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included because they are the major plans that set the parameters for development across Northern Ireland or in bordering parts of Ireland, particularly through the delivery of housing, new infrastructure and employment opportunities. As the draft CAS was deemed to have no likely significant effects on European sites partly due to the lack of spatial specificity resulting in no impact pathways being identified, there is little scope for in combination effects.

DAERA's Marine Conservation response suggested there is potential for in-combination effects on coastal sites particularly in relation to the draft ammonia strategy and river basin management plans. Both of these strategies and plans have considered the environmental issues in some detail in their respective SEA Environmental Reports and SEA. The issues and actions identified in the draft CAS do not appear to have been flagged as significant in these respective reports and whilst the draft CAS may contribute to improvements, this is likely to be secondary and not significant in comparison to the targeted work that DAERA is undertaking to address these issues.

Carbon capture opportunities in the marine environment could contribute to wider climate mitigation objectives (blue carbon / nature-based solutions) but again this is beyond the scope of the draft CAS.

14. Integrity tests and conclusions

The AA applies the integrity test, asking whether, with mitigation in place, the draft CAS would adversely affect the coherent structure and function of any European site, considering its conservation objectives. The assessment is required to reach complete, precise, and definitive findings and conclusions, ensuring there is no reasonable scientific doubt as to the effects of the strategy.

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Based on the evidence, identified in the draft CAS HRA AA or the SEA ER, and with the implementation of all identified mitigation measures at the local planning stages of development and/or land use change, it is concluded beyond reasonable scientific doubt that the draft CAS will not adversely affect the integrity of any European site, either alone or in combination with other plans or strategies.

15. Monitoring and review

The effectiveness of the strategy will be monitored, and the strategy will be reviewed as necessary to ensure continued compliance with conservation objectives and legal requirements. Adaptive management will be employed to address any unforeseen effects or new evidence as it arises.

Ongoing air quality assessment, review, monitoring and management continue as required by the Environment (Northern Ireland) Order 2002 Part III Air Quality, and the Air Quality Standards Regulations (NI) 2010. These will be published in the DAERA Air Pollution in Northern Ireland annual report. Further air quality monitoring trends in Northern Ireland are assessed and reported on via the PfG indicator through the annual Environmental Statistics Report⁵² and EiP indicators through the EiP Annual Progress Report.⁵³ Modelled emission trends for Northern Ireland are also reported on via the National Atmospheric Emissions Inventory.⁵⁴

⁵² <https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report>

⁵³ <https://www.daera-ni.gov.uk/publications/environmental-improvement-plan-northern-ireland>

⁵⁴ <https://naei.energysecurity.gov.uk/reports>

16. Mitigation

The actions in the draft CAS are not site specific and therefore any mitigation measures would need to be considered in more detail where any development occurs as a result of the draft CAS. NIEA's Natural Environment Division agreed with the conclusions within the HRA that further HRAs will be undertaken at project specific level. "Provided a robust assessment based on contemporary information is undertaken at that point, any environmental impacts should be avoided or mitigated."

Any infrastructure resulting from the draft CAS is unlikely to require any significant mitigation measures. There is the potential for infrastructure linked to the draft CAS and climate change initiatives, such as cycle lanes, which would likely require project level mitigation. The draft CAS itself would not necessarily be the appropriate place for this level of mitigation; however, the following mitigation measures could be considered when implementing the strategy objectives, targets and actions, many of which exist within current environmental and planning policy, and would safeguard (at a local level) against the potential for site specific impacts identified in **Error! Reference source not found..**

Mitigation considerations for local, site-specific projects, arising from the delivery of the draft CAS, could include:

Spatial safeguards

- Exclusion zones around all European sites.
- Buffer zones providing additional protection based on site sensitivity.
- Transport route restrictions avoiding sensitive areas where possible.
- Cumulative impact thresholds preventing over-concentration of facilities.

Environmental Protection Policies

- Mandatory environmental impact assessments for significant developments.
- Habitats Regulatory assessment requirement for all projects with potential impacts.
- Air quality monitoring and limits.
- Water quality protection through discharge controls and monitoring to protect water sources.

Best Practice Requirements

- Best available techniques.
- Environmental management systems.
- Monitoring and report requirements for environmental impacts.
- Adaptive management allowing for response to monitoring results..

Project-Level Mitigation

Individual project applications would be assessed locally at the appropriate planning stage.

Design Mitigation

- Optimal facility siting avoiding sensitive locations.
- Technology selection minimising environmental impacts.
- Emission control systems reducing air quality impacts.
- Noise and visual screening reducing disturbance impacts.

Operational Mitigation

- Timing restrictions during sensitive periods (e.g. breeding seasons).
- Transport management using optimal routes and timing.

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Monitoring and Adaptive Management

- Continuous emissions monitoring for air quality impacts.
- Regular water quality monitoring for aquatic impacts.
- Wildlife monitoring for disturbance impacts.
- Adaptive management responses to monitoring results.

17. Conclusions

The draft CAS for Northern Ireland, as assessed, and with consideration of the mitigation measures, **will not adversely affect the integrity of any European site.**

The assessment of actions in the draft CAS through this Habitats Regulation AA is high level, evidence-based and compliant with statutory requirements and is therefore suitable for submission alongside the draft CAS consultation.

The assessment has identified potential impact pathways but concludes that these can be effectively managed through comprehensive policy-level safeguards within environmental and planning policy that supports the strategy; mandatory project-level assessments and mitigation; robust monitoring and adaptive management systems; effective coordination with other plans and projects.

17.1 Compliance with Habitats Regulations

The draft CAS, as assessed, complies with the requirements of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) and will not:

- Adversely affect the integrity of any European site.

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- Interfere with the achievement of site conservation objectives.
- Prevent the maintenance of favourable conservation status.

17.2 Recommendations

To ensure continued compliance with the Habitats Regulations, the following recommendations are made:

- Implement all proposed mitigation measures, at the local level, where applicable for projects developed to deliver the draft CAS.
- Establish a comprehensive monitoring system for any future site-specific environmental impacts as part of the planning stage of future developments and or projects, where applicable.
- Ensure adaptive management responses to monitoring results.
- Coordinate effectively with other plans and projects.
- Review the draft Clean Air Strategy when applicable to incorporate new evidence within the next iteration of the strategy.

Annex A - Draft CAS Actions and Environmental Impacts

Strategic Objective 1 – Develop our evidence base

Actions	How we will do this	Positive Impacts	Negative Impacts	
1.1 Undertake knowledge surveys	The baseline survey was completed in July 2025, and a further survey will be undertaken at the end of the strategy in 2032	Increase public awareness of air quality issues, leading to people taking personal actions to improve air quality: Better public understanding of the data Increased number of subscribers to the Air Aware service Further downloads of the Air NI app	None identified	

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1.2 Review the Northern Ireland air quality monitoring network	DAERA has commissioned an independent air quality expert to review the Northern Ireland air quality monitoring network. By December 2027 DAERA will analyse the findings and prioritise recommendations.	Comprehensive evidence base and a better understanding of data. • Increased geographical coverage of air quality monitoring • Increased number of pollutants monitored • Increased real-time data upon which to issue air quality alerts	None identified	
1.3 Expand and upgrade the NI air quality monitoring network	DAERA will engage with district councils and other relevant authorities regarding locations for additional monitoring sites and monitoring of additional pollutants at existing sites. Potential costs, value for	• Fit for purpose monitoring • More robust and representative data • Increased granularity of data • Value for money • Better public health protection, particularly for the most vulnerable	None identified	

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	money, proportionality and longevity of equipment will be considerations in this expansion and improvement of the monitoring network. DAERA will regularly engage with District Councils. This will include two formal meetings each year, through the Local Air Quality Management (LAQM) regime.			
1.4 Assess the feasibility of establishing ultra-fine particulate	Within one year of publication of the PEACEPLUS Clean Air Project (PEACE-Air) report, which will be delivered by	Better public health protection, particularly for those with respiratory or circulatory disease and the most vulnerable in our community, including the very young and the very old	None identified	

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matter monitoring in Northern Ireland	31 st May 2029, DAERA will consider the report's recommendations regarding ultrafine particulate monitoring in Northern Ireland and determine the need for monitoring.	Reduced air pollution from all known sources		
1.5 Develop an Air Quality Model Application	By the end of 2032, DfI will have developed and added an Air Quality module application to the Department for Infrastructure's bespoke NI Transport Emissions Model (TEM). DfI will engage with	Comprehensive evidence base and a better understanding of data, and improved legislation and: Understanding how DfI's strategic approach to reducing emissions will support air quality objectives	None identified	

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	DAERA on what pollutants will be modelled.	• Prioritisation of interventions to reduce transport emissions		
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Strategic Objective 2 - Improve legislation

Actions	How we will do this	Positive Impacts	Negative Impacts	
2.1 Consult on new PM_{2.5} and PM₁₀ limit values and make relevant legislative changes	DAERA will consult on secondary legislation to bring into operation the following WHO interim target 4 annual averages to be met by 1	• Improved legislation in keeping with World Health Organisation Guidelines and closer alignment with Ireland and other jurisdictions in the UK. • Better public health protection, particularly for	None identified	

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	January 2028 for particulate matter: • PM_{2.5} 10µg/m³ as an annual average in line with WHO Interim Target 4 (from 25µg/m³ at present) • PM₁₀ 20µg/m³ as an annual average in line with WHO Interim Target 4 (from 40µg/m³ at present) • Annual average target value of 8 µg/m³ for PM_{2.5} The intention is that this will be set out in new secondary legislation following consultation which will amend the Air Quality Standards Regulations (Northern Ireland) 2010; and Air	those with respiratory or circulatory disease and the most vulnerable in our community, including the very young and the very old • A potential rise in Local Air Quality Management (LAQM) Air Quality Management Area (AQMA) designations, which will need air quality action plans to be drafted by District Councils and implemented by a range of entities including NI government departments		
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	Quality Regulations (Northern Ireland) 2003.			
2.2 Review and simplify air quality policy monitoring terms for the public	By the end of December 2028, DAERA will undertake a review of the use of technical definitions and terms used within air quality policy and monitoring regimes. This review will aim to simplify these terms and make this information more accessible for the public.	• Improved legislation; a better understanding of data; and increased public awareness and understanding • Simplified legal and technical air quality definitions • Greater public understanding of air pollution which is as easily understood as possible	None identified	
2.3 DAERA will work with the UK Government to analyse the	Within six months of responses being shared by DEFRA, DAERA will analyse the Northern Ireland specific	• Improved legislation; a better understanding of data; increased public	None identified	

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consultation responses to the 2026 UK wide consultation on solid fuel burning	responses to the 2026 UK wide consultation. This consultation gathered views on - new smoke emission rates for appliances in SCAs, health and emissions labelling for stoves and health labelling on the packaging of solid fuels. This analysis will determine further options which could be taken forward in Northern Ireland by DAERA, DoH and DfE, which may require new UK wide legislation and consent from the relevant Department in Northern Ireland.	awareness and understanding. • Better public health protection, particularly for those with respiratory or circulatory disease and the most vulnerable in our community, including the very young and the very old • Reduced air pollution from all known sources	
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Strategic Objective 3 - Raise awareness and bring about Behavioural Change

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Actions	How we will do this	Positive Impacts	Negative Impacts	
3.1 Launch Air Quality Awareness and Behaviour Change Campaigns	DAERA will develop and launch an awareness and behaviour change campaign, for each year for the duration of this Strategy. DAERA will lead these campaigns, assisted by other NICS Departments.	- Increased public awareness of air quality issues, leading to people taking personal actions to improve air quality - A better-informed society which is capable of making healthier lifestyle decisions - Better public health protection, particularly for the most vulnerable in our community - A sense of ownership of the problem by individuals, and positive behaviour change	None identified	

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Strategic Objective 4 – Work towards zero pollution

Actions	How we will do this	Positive Impacts	Negative Impacts	
4.1 Achieve a fair and just transition to phasing out of coal, manufactured solid fuels and unseasoned wood for home heating	By the end of 2027, DAERA will issue a 'Call for Evidence', to seek views on bringing forward secondary legislation, to restrict or phase out coal and/or, manufactured solid fuels, and/or unseasoned wood. Alongside any proposals to phase out or restrict solid fuel burning, DAERA will work with other government departments to ensure support is in place to deliver a Just Transition to cleaner, decarbonised	• More robust and representative data • Increased granularity of data • Better public health protection, particularly for the most vulnerable • Improved awareness of the adverse health impacts of using solid fuels.	None identified	

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	heating that will positively impact air quality.			
4.2 Produce Local Draft Transport Plans	By December 2026, DfI will publish local draft Transport Plans covering Belfast and the Northwest, for consultation. Publication of the final Local Transport Plans by December 2027.	• Reduced air pollution at source • Plans that are used effectively to plan the transport network's development between now and 2035 • Plans that ensure that a strategic approach is being taken, rather than a scheme-by-scheme approach, to re-balancing the network		
4.3 Conduct diesel	By 2026 the Driver and Vehicle Agency (DVA) will begin the introduction of a	• Comprehensive evidence base and a better	None identified	

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particulate filters tests	diesel emissions Particulate Number (PN) test on all cars and light goods vehicles registered from 1 January 2013.	understanding of data, and improved legislation • Establishing a baseline of current pollutant levels • Reduced pollution from vehicles of MOT age • Initially capturing around 65% of the diesel cars and light goods vehicles (370,000) subject to MOT testing in Northern Ireland • increased capture as younger diesel vehicles continue to join the MOT fleet		
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Strategic Outcome 5 – Deliver Change through Partners

Actions	How we will do this	Positive Impacts	Negative Impacts	
5.1 Establish a Northern Ireland Clean Air Forum	A Clean Air Forum will be established within three months of the launch of the strategy.	• Strong working partnership; • An effective forum that acts as a link between neighbouring government jurisdictions, with a focus on enhancing cooperation north-south, east-west air pollution matters;	None identified	

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		Proposals on emerging issues such as indoor air quality		
5.2 Increase investment in Active Travel	DfI will increase investment in active travel to 10% of the overall transport budget by 2030, primarily through the implementation of the Active Travel Delivery Plan, the Belfast Cycling Network Delivery Plan, and the Strategic Plan for Greenways and continue to promote active travel through ongoing engagement with schools.	Strong partnership working to enable and encourage the uptake of active travel through the provision of high-quality infrastructure that can provide an attractive alternative to the private car for shorter journeys	None identified	

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5.3 Deliver a transboundary air pollution collaborative project (PEACEPLUS)	By May 2029 DAERA as an observer providing policy advice and NIEA, as an associated partner, will have participated in and delivered the €6.5M PEACEPLUS Clean Air (PEACE-Air) project focussing on solid fuel, transport and ammonia emissions.	• Strong partnership working; and Comprehensive evidence base and a better understanding of data. • More effective joint strategies and action plans • Uptake of strategies and action plans by organisations • Pilot Actions developed and implemented • Organisations cooperating across borders, including after project completion	None identified	

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	It will focus on 4 specific work packages (WP): WP1: Solid fuel burning WP2: Transport-related air pollution WP3: Ammonia pollution and impacts on biodiversity and sensitive ecosystems Speciation of particulate matter. WP4: Cross-cutting strategies for community engagement, capacity building, and legacy.	• Investment via PEACEPLUS funding • increased and improved monitoring and data		
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5.4 Establish an Air Quality Common Framework	By 2032 DAERA will have worked with DEFRA and the other devolved governments, to finalise, agree and implement the UK Air Quality Common Framework following EU Exit.	• Strong partnership working, and improved legislation. • Better East/West policy alignment • Coordinated approach to East/West transboundary air pollution	None identified	
5.5 Improve policy integration between air quality, noise and net zero	By 2030 when reviewing policy and technical guidance relating to air quality, net zero and environmental noise, DAERA will ensure improved connectivity between air quality, net zero and noise in its policies. This will include	• Strong working partnership. • Improved quality of life • Avoidance of unintended consequences impacts of policies/measures	None identified	

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	Local Air Quality Management Technical Guidance (TG22) and Northern Ireland Policy Guidance PGNI (09).			
5.6 Review the LAQM process and associated guidance	Following a review of the air quality monitoring network and engagement with councils on improvement of the network, DAERA will, by 2032 review the Local Air Quality Management (LAQM) process for Northern Ireland.	• A fit for purpose Local Air Quality Management (LAQM) regime that maximises impact. • More efficient use of resources • Clarity and support for District Councils in their roles as 'relevant authorities' • Up to date guidance to help improve air quality management, monitoring and review	None identified	

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5.7 Review the Local Air Quality Management (LAQM) Grant	Following publication of the revised Local Air Quality Management (LAQM) Policy and Technical Guidance (TG22) by the end of December 2029, DAERA will review the LAQM Grant by the end of December 2031, at the end of the current grant duration.	• Fit for purpose Local Air Quality Management (LAQM) that maximises impact; and strong partnership working. • Clear rates of financial support available to district councils • Improved air quality monitoring, review, assessment and management and effective application of AQMAs • Targeted use of funding to benefit of human health and the environment	None identified	
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- ⁱ [air-pollution-and-mortality-on-the-island-of-ireland-briefing-summary.pdf](#)
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- ^{iv} Draft Ammonia Strategy for Northern Ireland Consultation, accessed 11/11/25, <https://www.daera-ni.gov.uk/consultations/draft-ammonia-strategy-northern-ireland-consultation>
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