Northern Ireland Blue Carbon Action Plan 2025 - 2030



Agriculture, Environment and Rural Affairs

Talmhaíochta, Comhshaoil agus Gnóthaí Tuaithe

Depairtment o' Fairmin, Environment an' Kintra Matthers

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Dial: 18001 028 9052 4528

Post: Marine Conservation DAERA Marine and Fisheries Division Clare House 303 Airport Road West Sydenham Intake BT3 9ED

Front cover image credit: DAERA – Saltmarsh meadow at north Strangford Lough Marine Conservation Zone.

Ministerial Foreword



I am delighted to publish the first ever Northern Ireland Blue Carbon Action Plan. The development of this Action Plan signifies a pivotal moment in our understanding of how marine ecosystems can help contribute to climate change mitigation and adaptation. It is recognised that if these habitats become degraded or damaged their ability to capture and store greenhouse gases declines. This Action Plan outlines the steps required for these special habitats to be protected and managed appropriately.

The Blue Carbon Action Plan leads the way in demonstrating how The Executive's Programme for Government 2024 – 2027 commitment to tackling the twin challenges of climate change and biodiversity loss can be delivered. The Action Plan recognises how blue carbon habitats provide nature-based solutions to climate change and their wider environmental and societal benefits.

I would like to take this opportunity to thank the stakeholders for their contribution to the co-design process through the Biodiversity and Climate Stakeholder Working Group, and for taking the time to respond to the Consultation on the Blue Carbon Action Plan, resulting in an Action Plan that reflects this innovative approach and is truly collaborative.

I would strongly encourage stakeholders to continue to work with my Department in the co-delivery of this Action Plan, which has the potential to bring wide-ranging benefits to our environment and society.

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Introduction

Globally, we are facing twin crises of biodiversity loss and climate change, the latter resulting in increased temperatures, storm events, flooding and droughts, and having significant effects on ecosystems, infrastructures, economies and human populations¹. Without immediate action to address these crises in conjunction, the impacts from biodiversity loss and climate change will accelerate. One such action is the use of nature-based solutions to protect and restore marine ecosystems while mitigating against climate change, through absorption of carbon dioxide.

What is Blue Carbon?

Defining habitats as "blue carbon" is a relatively recent concept, first introduced to highlight that coastal and marine ecosystems also sequester carbon, in addition to terrestrial forests².

There are several definitions of blue carbon. The Northern Ireland Blue Carbon Action Plan (hereafter referred to as "the Action Plan") adopts the following broad definition, which is aligned with the definition from the Scottish Blue Carbon Forum³:

Blue carbon is the term used to describe carbon that is captured and stored by coastal and marine ecosystems, accumulating over long timescales through natural processes.

There is no agreed single definition for blue carbon due to difficulties stemming from:

- Varying sequestration rates between habitats (i.e. the process of capture and addition of carbon to the standing stock)
- Differences in timescales when discussing sequestration and storage, from short-term (days to weeks, or seasonal) to long term (over a year to decades, or geological timescales)

¹ Tackling the Twin Climate Change and Biodiversity Crises - events | IUCN

² Blue Carbon: The Role of Healthy Oceans in Binding Carbon | GRID-Arendal

³ <u>NatureScot Research Report 1326 - Scottish Blue Carbon - a literature review of the current</u> evidence for Scotland's blue carbon habitats | NatureScot

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In recognition of these unresolved variables, the Action Plan has strived to focus not only on the potential of blue carbon habitats as nature-based solutions to climate change, but also on their wider ecosystem services such as providing important habitats for biodiversity and contributing wider environmental and societal benefits.

Blue carbon habitats in temperate coastal and inshore environments include coastal vegetated habitats (saltmarsh and seagrass beds), seabed sediments, and biogenic reefs, but has been as wide-ranging as to include kelp forests, maerl beds, and marine organisms such as phytoplankton which also sequester carbon and turn it into organic matter, with storage spanning short- to long-term timescales⁴.



Common cordgrass (*Spartina anglica*) patches edging dwarf eelgrass (*Zostera noltii*) beds on Lough Foyle. DAERA 2024.

⁴ The United Kingdom's Blue Carbon Inventory

Why has Northern Ireland developed a Blue Carbon Action Plan?

Blue carbon habitats have the potential to be managed to protect and even increase their carbon sequestration. Not only do they act as a nature-based solution to climate change, but they also offer wider high-value ecosystem services such as protection against coastal erosion and flooding, and habitats to support wider biodiversity including nursery grounds for commercially important fish species. They present associated wider societal benefits including opportunities for recreation, improved health, and improved water quality.

When blue carbon habitats become degraded or damaged, their climate change mitigation capacity is reduced, lost or even reversed as stored carbon may be released. Their wider environmental and societal benefits may also be adversely impacted, including their role in climate change adaptation.

The Action Plan will contribute towards a number of targets within the **Kunming-Montreal Global Biodiversity Framework**. While there are several relevant targets, Target 8 in particular seeks to "Minimise the impacts of Climate Change on Biodiversity and Build Resilience...through nature-based solutions and/or ecosystem-based approaches".

The UK is a contracting party to **the OSPAR North-East Atlantic Environment Strategy 2030**. Its Strategic Objective 12 is particularly relevant to the Action Plan, to "Mitigate climate change and ocean acidification by contributing to global efforts, including by safeguarding the marine environment's role as a natural carbon store".

The **Climate Change Act (Northern Ireland) 2022** provides a legal system for reducing greenhouse gas emissions and sets a target of net zero emissions by 2050 and interim targets for 2030 and 2040.

The Act introduces a requirement for the development of Climate Action Plans, which will set out the policies and proposals that Northern Ireland departments will implement to meet the corresponding carbon budget as well as set out how the emissions reduction targets will be achieved. The Act requires that policies and proposals in the Climate Action Plans support, as far as practical, nature-based projects.

The Action Plan delivers actions against several additional high priority, high-level and interlinked policies and strategies relating to climate change and biodiversity on a global, UK, and Northern Ireland level. These are detailed in <u>Annex 1</u>.

Northern Ireland's Existing Blue Carbon Habitats

Given that the definition of habitats as blue carbon is a relatively recent concept, there are habitats and species in the Northern Ireland marine area which have been monitored for many years within existing statutory programmes, even before the development of the Action Plan. These are listed in Table 1 of <u>Annex 2</u>.

Although the Action Plan is focussed on the marine environment, it is of note that the Department has commissioned ongoing research in relation to assessing the carbon sequestration potential of freshwater systems. This separate, but complementary, workstream will also contribute towards climate mitigation.

Northern Ireland's Blue Carbon Potential

In 2021, Ulster Wildlife published a DAERA-commissioned feasibility study on **Blue Carbon Restoration in Northern Ireland**⁵ which used modelling techniques to estimate that coastal blue carbon habitats are present in 658 km² of the Northern Ireland inshore region, with 56% of this habitat occurring within the existing Marine Protected Area (MPA) network. The study also estimated that there was an opportunity to significantly develop blue carbon potential in Northern Ireland waters via protection, restoration, and creation of habitat.

Focussed survey work to ground-truth the extent and condition of Northern Ireland's blue carbon habitats is required to establish an evidence baseline which will shape the co-delivery of the Action Plan and inform those involved in its implementation.

⁵ Blue Carbon Restoration in Northern Ireland - Feasibility Study, 2021

Without the establishment of this baseline, including the identification of gaps, the potential for blue carbon habitat protection, restoration and creation will not be fully realised.

The Mechanism for Protection of Northern Ireland's Blue Carbon Habitats

The Action Plan applies to the Northern Ireland inshore region. There are mechanisms for protecting, conserving and enhancing blue carbon habitats and once adopted, these will be outlined in the Marine Plan for Northern Ireland.

1. Biodiversity Duty

The **Wildlife and Natural Environment Act (Northern Ireland) 2011** (the WANE Act) places a statutory duty on public bodies to conserve and enhance biodiversity. **The Biodiversity Duty** (Section 1 (1)) extends beyond protected sites and requires all public bodies to further the conservation of biodiversity when carrying out their functions. There is a requirement for public bodies to protect and maintain biodiversity, and to look for opportunities to enhance or restore biodiversity.

The Biodiversity Lists under the WANE Act define those Priority Habitats and Species which are of principal importance for the purpose of conserving biodiversity and that public bodies should take steps to further the conservation of; this includes blue carbon features as detailed in Table 1 (<u>Annex 2</u>).

2. Marine Protected Areas

Blue carbon habitats are given additional protection under the **Conservation** (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) (The Habitats Regulations), the Environment (Northern Ireland) Order 2002 and the Marine Act (Northern Ireland) 2013. The sites designated for the protection of these features are collectively referred to as the Northern Ireland Protected Sites network across the terrestrial and marine areas, with marine designations referred to as Marine Protected Areas (MPAs).

At present, blue carbon habitats are afforded direct protection where they are qualifying features within the Northern Ireland Protected Sites network (Areas of Special Scientific Interest (ASSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs), and Marine Conservation Zones (MCZs)), and indirect protection as a Priority Species or Habitat under the WANE Act (see Table 1 in <u>Annex 2</u>). The consideration of additional blue carbon habitats as **MPA features** under the Marine Act will be actioned within the MPA Strategy 2025 –2030.

In January 2023, legislation⁶ was introduced to manage fishing activities in the inshore MPA network, which will help to provide additional protection for the seagrass habitat at Waterfoot MCZ, subtidal seagrass in Skerries and Causeway SAC, and other blue carbon habitats within the network, such as maerl beds in Red Bay SAC and The Maidens SAC (Table 2 in <u>Annex 2</u>).

⁶ <u>The Marine Protected Areas (Prohibited Methods of Fishing) (Amendment) Regulations (Northern</u> <u>Ireland) 2022</u>

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Vision

The vision outlines where we see ourselves within the next few decades. The vision of the Action Plan is:

By 2050, Northern Ireland has protected, well-managed and enhanced blue carbon habitats, providing us with increased nature-based carbon capture and storage alongside wider ecosystem service benefits, which help address the challenges presented by climate change and biodiversity loss for people and nature.

We will achieve the vision by co-delivering aims, objectives and actions with a range of stakeholders and the public. Their adoption will maximise Northern Ireland's blue carbon capacity as a nature-based solution for delivering climate change mitigation and adaptation, while supporting biodiversity recovery and providing wider societal benefits.



Drone image of saltmarsh habitat at Millbay, Carlingford Lough. DAERA, 2023.

Aims

The aims of the Blue Carbon Action Plan are to:

- 1. Establish and maintain a framework that monitors and protects Northern Ireland's existing blue carbon habitats, supporting their active management, restoration and creation;
- 2. Promote blue carbon habitats as a nature-based solution for addressing the challenges presented by climate change and biodiversity loss, while highlighting wider societal benefits; and
- 3. Align the Blue Carbon Action Plan with cross-cutting policies relating to climate change, biodiversity and other environmental obligations, recognising the linkages between marine and terrestrial ecosystems.



Sea spurrey (Spergularia media). DAERA, 2024.

Objectives

Seven key objectives were identified for the Action Plan, falling within six themes:

Governance Theme

1. Establish an inclusive governance structure to oversee the implementation of the Blue Carbon Action Plan.

Prioritisation Theme

2. Identify and agree a mechanism of prioritisation of Northern Ireland's blue carbon habitats for management, restoration and creation.

Evidence Theme

- Continue to collate evidence on Northern Ireland's blue carbon habitats in terms of location, extent and condition, against which monitoring and assessment can be carried out.
- 4. Undertake research projects to contribute to the evidence base for total blue carbon stocks and flows in Northern Ireland's marine environment, in partnership with stakeholders, advancing the inclusion of Northern Ireland's blue carbon contribution to the UK Greenhouse Gas Emissions Inventory and the UK Climate Change Risk Assessments.

Restoration and Creation Theme

 Continue to support blue carbon pilot projects, leading to the initiation of demonstration and larger scale prioritised restoration and creation projects, delivered with stakeholders.

Funding Theme

6. Develop funding to support delivery of the Action Plan, to include exploring opportunities for green finance and other revenue streams.

Communications Theme

7. Promote blue carbon as a nature-based solution for climate action and wider biodiversity, societal and environmental benefits in support of the Northern Ireland Climate Action Plan, accompanied with an effective engagement, outreach and communications framework.



Honeycomb worm (Sabellaria alveolata) reef at Glassdrumman. DAERA, 2024.

Actions

The proposed actions required to deliver against the objectives in the period 2025-2030 are presented in the following tables.

The Action Plan is high-level and therefore has not applied SMART timeframes to objectives, or to all actions. This is partly because of reliance on stakeholders for codelivery, and the availability of funding to support this. The Marine Nature Recovery Group will keep objectives and actions under review, to address this. Actions within the Governance Objective aim to address allocation of delivery partners, clarifying timeframes and identifying cross-linkages, and is detailed further in <u>Annex 3</u>.



Cattle graze near saltmarsh opposite Portstewart Golf Club. DAERA, 2024.

Actions Tables

Governance Theme

Objective	Action	Action			
	No.				
	1.1	Within six months of publication, convene the Marine Nature Recovery			
		working Group, and publish terms of reference and governance structure.			
	1.2	By 2026 explore the creation of a North-South technical working group to			
 Establish an inclusive governance structure to oversee the implementation of the Blue Carbon Action Plan. 		share information and ensure a joined-up approach to meeting targets.			
		Progress as required.			
	1.3	By 2026, update Actions Tables to detail Lead/ Partners against actions,			
		and to clarify dependencies (see <u>Annex 3</u>).			
	1.4	The Department will publish a report in December 2030 reviewing the			
		progress of the Action Plan and recommending future actions.			

Prioritisation Theme

Objective	Action	Action		
	No.			
 Identify and agree a mechanism of prioritisation of Northern Ireland's blue carbon habitats for management, 	2.1	Within 6 months of publication, agree prioritisation criteria and a mechanism for bespoke Northern Ireland application. Prioritisation includes a cost- benefit exercise to consider all of the services provided by the habitat/ecosystem.		
restoration and creation.	2.2	Apply prioritisation criteria to blue carbon habitats to develop business cases for management, restoration and creation projects.		

Evidence Theme

Objective	Action	Action		
	No.			
 Continue to collate evidence on Northern Ireland's blue carbon habitats in terms of location, extent and condition, against which monitoring and assessment can be carried out. 	3.1	By 2026 consolidate best available evidence on the location and spatial extent of Blue Carbon habitats in the Northern Ireland marine area, and make accessible with appropriate metadata. <u>Collate data on condition, pressures and threats where available.</u> DAERA will continue to implement monitoring and assessment options for blue carbon habitats as part of its annual MPA monitoring programme, building on existing assessments completed in previous monitoring programmes. Provide an annual update on monitoring programme, aligning with the annual publication of the Northern Ireland Environmental Statistics Report.		
	3.3	By 2026, as Actions 3.1 and 3.2 have progressed, a gaps analysis report will be published to highlight evidence needs and research priorities.		
4. Undertake research projects to contribute to the evidence base for total blue carbon stocks and flows in Northern Ireland's marine environment, in partnership with stakeholders, advancing the inclusion of Northern Ireland's blue carbon contribution to the UK Greenhouse Gas Emissions	4.1	Complete a literature review to look at marine management interventions globally, and evaluate their application within Northern Ireland (including e.g. restoration projects; best practice globally, regionally, nationally).		
	4.2	The Marine Nature Recovery Working Group will review recommendations of the literature review from Action 4.1 and use these to inform which research projects to progress and the potential delivery partners.		
	4.3	Contribute evidence to UK GHGEI inventory tiered-emissions factors, which will incorporate Northern Ireland's marine & coastal habitats.		

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Inventory and the UK Climate Change Risk	
Assessments.	

Restoration and Creation Theme

Objective	Action	Action
	No.	
 Continue to support blue carbon pilot projects, leading to the initiation of demonstration and larger scale prioritised restoration and creation projects, delivered with stakeholders. 	5.1	Apply prioritisation criteria from Action 2.1 in the selection and commissioning of restoration and creation projects.
	5.2	Contribute to new Global Biodiversity Framework target (By 2030 at least 30% of degraded habitats are under effective restoration) when considering monitoring to demonstrate positive change from degraded to restored.
	0.0	 Northern Ireland framework for: Native oysters Saltmarsh Seagrass and
		- Other habitats that don't have handbooks and keep these up to date as new evidence arises.

Funding Theme

Objective	Action	Action
	No.	
 Develop funding to support delivery of the Action Plan, to include exploring opportunities for green finance and other revenue streams. 	6.1	Create an accessible record of current and future funding options, and ascertain which projects are eligible to apply.
	6.2	On an ongoing basis, explore non-financial sources of assistance e.g. private sector access to resources/equipment (e.g. drones, novel equipment etc.).
	6.3	Marine Nature Recovery Working Group to identify additional Government funding, to approach potential funders, and pitch for blue carbon project funding. Advantages, highlighting nature-based solutions to climate change and biodiversity, and disadvantages of not progressing actions must be outlined. Marine Nature Recovery Working Group to consider ethical investment options e.g. carbon credits.
	6.4	Collate demonstration project applications in line with agreed priorities of Objective 2.

Communications Theme

Objective	Action	Action
	No.	
7. Promote blue carbon as a nature-based solution for climate action and wider biodiversity, societal and environmental benefits in support of the Northern Ireland Climate Action Plan, accompanied with an effective engagement, outreach and communications framework.	7.1	Use the Inter-Departmental Marine Coordination Group, the Coastal Forum and other inter-Departmental forums as necessary to disseminate information on the Action Plan's progress. Develop a Communications Framework linking with existing communications groups where appropriate and develop an integrated Community Engagement Framework to maximise the social, economic, health and other benefits that blue carbon can bring to communities. Develop an Education, Outreach and Skills Retention and Enhancement Eramework

Co-Delivery of the Blue Carbon Action Plan

Governance

Governance has been discussed with stakeholders during the Action Plan's development and it is a shared aspiration that this be accountable and inclusive, utilising existing arrangements and linkages to achieve efficiency and avoid replication.

The establishment of a governance structure to effectively deliver the outcomes of the Action Plan within six months of its publication is a key objective. The intention is to convene the Marine Nature Recovery Group from Spring 2025 and complete a draft Terms of Reference by Summer 2025.

Evaluating Progress

The Action Plan is presented at a high level and therefore a balance has been sought between outlining actions which are logical and comprehensive, and retaining the ability to be adaptable and flexible as actions progress, evidence grows, and priorities change.

Inherent Review through the Action Plan

Action 3.2 seeks to produce an annual report which will provide the Marine Nature Recovery Working Group with regular opportunity to review progress.

Strategic Review aligned with wider Recovery Efforts

 The Northern Ireland Environmental Improvement Plan Strategic Environmental Outcome 3 – Thriving, resilient & connected nature and wildlife

There are several Actions and Targets within "11. Protecting Nature at Sea" against which this Action Plan will deliver. Four of the five headline targets set a "By 2030" deadline:

- By 2030: 30% of seas protected, ensuring an ecologically coherent & well managed MPA network.
- By 2030: 85% of designated features in the MPA network to be in favourable condition, with 10% of the remainder in recovering condition.
- By 2030: Key marine priority habitats and species are in recovery
- By 2030: Nature-based solutions to coastal erosion, where appropriate, will be implemented in collaboration with the Coastal Forum and new policy development.

Action 1.4 will publish a report in December 2030 reviewing the progress of the Action Plan. This report will inform the development of actions that must be undertaken beyond 2030.

 The Department is committed to reporting environmental status under several statutory obligations, summarised in Figure 1 below. Review and evaluation of the progress of the Action Plan will, where possible, complement these existing reporting obligations.

Some of the most relevant requirements to blue carbon features listed as Priority Habitats/ Species at present (see Table 1 in <u>Annex 2</u>) include reporting to the Habitats Regulations and for the Marine Act on the status of the Northern Ireland MPA Network, and Water Framework Regulations. A timeframe of reviewing and reporting in 2030 aligns with these obligations.

 Reporting under other priority work areas, such as Northern Ireland Climate Action Plans and the EIP, may be incorporated into the progress review of the Action Plan once these requirements are established.

	International			Unit	ed King	dom	Northern Ireland
	Convention on Biological Diversity	OSPAR Convention	Bern Convention	Habitats Regulations	Marine Strategy	Water Framework Regulations	Marine Act
Reporting	Intervals	Every		E	Every 6 y	years	
cycle frequency	determined by Conference of the Parties (COPs)	10 years	0005	2025	2005		0000
Next due	2026	2025	2025	2025	2025	2029	2030

Figure 1: DAERA Environmental Status Reporting Cycle.



Seagrass (Zostera) at Killough. DAERA, 2024.

Annex 1: Wider Strategic and Policy Context

The Action Plan delivers actions against several high priority, high-level and interlinked policies and strategies relating to climate change and biodiversity on a global, UK, and Northern Ireland level.

Global

The Paris Agreement – a legally binding international treaty on climate change. Its headline goal is to reduce global greenhouse gas emissions, and to limit global temperature increase. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris in December 2015, entering into force in November 2016. Further details and resources can be found on the UNCCC website <u>here</u>.

Kunming-Montreal Global Biodiversity Framework – UN Convention on Biological Diversity – supports the achievement of the Sustainable Development Goals and builds on the Convention's previous Strategic Plans, setting out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the Framework's key elements are 4 goals for 2050 and 23 targets for 2030. The Framework recognises climate change as one of five direct drivers with the largest global impact which has caused change in nature. Other well-known targets include the conservation of 30% of terrestrial and marine habitats by 2030 (known as 30x30). The 190 countries who adopted the framework at COP15 in 2022 are committed to these ambitious targets. Further details are available here.

OSPAR North-East Atlantic Environment Strategy 2030 – details how contracting parties will implement the OSPAR Convention until 2030. It contains strategic and operational objectives to address biodiversity loss, pollution and climate change. Strategic Objective 12 is most relevant to the Action Plan, to "Mitigate climate change and ocean acidification by contributing to global efforts, including by safeguarding the marine environment's role as a natural carbon store". Further details are available <u>here</u>.

UK

The Marine Strategy – The Marine Strategy Regulations 2010 – requires action to be taken to achieve or maintain Good Environmental Status (GES) in our seas, in a coordinated approach across all four UK Governments, to achieve the UK vision of a clean, healthy, safe, productive and biologically diverse marine environment. More information can be found <u>here</u>. Within the updated UK Marine Strategy Part Three, DAERA has stated its commitment to the development of an action plan to protect and restore blue carbon habitats.

UK Joint Fisheries Statement (JFS) – recognises the value of both climate resilient ecosystems and blue carbon habitats. The JFS sets out the ambition of the UK to continue delivering sustainable management of fisheries, recognising that a healthy and resilient marine environment is the foundation for a prosperous seafood sector and thriving coastal communities. The JFS also recognises the importance of protecting and restoring blue carbon habitats to support resilience to climate change. More can be read <u>here</u>.

Northern Ireland

Climate Change Act (Northern Ireland) 2022 – sets national targets for 2030, 2040 and 2050 for the reduction of greenhouse gas emissions, as well as provision for a system of carbon budgeting, and details on reporting duties. It requires biodiversity impact to be considered in setting the carbon budget, and where practicable, plans and policies to achieve the budget should use nature-based solutions that enhance biodiversity; and illustrate responsibility to protect or restore ecosystems to aid carbon mitigation efforts. The Act can be found <u>here</u>.

The draft Green Growth Strategy – is the Northern Ireland Executive's multidecade strategy, balancing climate, environment and the economy in Northern Ireland. It sets out the long-term vision and framework for addressing climate change in an ambitious and sustainable way. It can be found <u>here</u>. Environmental Improvement Plan for Northern Ireland (EIP) – Northern Ireland's first Environmental Improvement Plan forms the basis for a coherent and effective set of interventions that collectively can deliver real improvements in the quality of the environment. The preparation and publication of an EIP is a statutory duty placed upon the Department by Schedule 2 of the Environment Act 2021, which came into force in July 2022. Further details and links can be found on the DAERA website here.

The draft Nature Recovery Strategy – has strong linkages to the development of the Blue Carbon Action Plan. Protecting, restoring and, where possible, creating marine habitats, and maintaining these as healthy functioning ecosystems for the long-term, is a principal goal of this Action Plan. It is essential that a balance is struck, ensuring the right measure is carried out in the most appropriate place so that carbon mitigation efforts do not undermine biodiversity, rather complement and enhance it.

Marine Plan for Northern Ireland – will inform and guide the regulation, management, use and protection of our marine area. It is a single document made up of two plans, one for the inshore region and one for the offshore region. Further details and links to the most recent draft, and 2018 consultation responses, can be found <u>here</u>.

Offshore Renewable Energy Action Plan (OREAP) – The Energy Strategy for Northern Ireland, led by the Department for the Economy, established a renewable electricity consumption target of 70% by 2030 that was then increased to 80% by 2030 by the Climate Change (Northern Ireland) Act 2022. The Energy Strategy also established a commitment to diversify the renewables generation technology mix, with an initial focus on offshore wind and marine renewables. Links to the 2021 consultation document can be found <u>here</u>.

Annex 2: Blue Carbon Habitats Protected in the Northern Ireland marine area

Table 1: Blue carbon habitats protected, directly or indirectly, within the Northern Ireland marine area.

Priority Species/ Habitat (WANE Act)	SACs and SPAs (Habitats Regulations)	MCZs (Marine Act)	ASSIs (Environment Order)	Protected Sites where the habitat is protected
Coastal saltmarsh	Direct Annex I habitat	N/A	Notified feature	Bann Estuary SAC/ASSI
	protection	(currently afforded	- Coastal	Murlough SAC/ASSI
	- Atlantic salt meadows	protection through	saltmarsh	North Antrim Coast SAC
	[Glauco-	Habitats Regulations and		Strangford Lough SAC/ASSI
	Puccinellietalia	Environment Order)		Lough Foyle ASSI
	maritimae]			Giant's Causeway and
	- Salicornia and other			Dunseverick ASSI
	annuals colonising			Larne Lough ASSI
	mud and sand			Outer Ards ASSI
				St John's Point ASSI
				Carlingford Lough ASSI

This table covers the Northern Ireland Protected Sites network and the Northern Ireland inshore region.

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Blue Mussel Beds	Indirect Annex I habitat	None at present	Indirect protection	Strangford Lough ASSI/SAC
	protection	- Proposed MCZ	- Intertidal rock	
	- Reef	habitat Sublittoral		
		(subtidal) biogenic		
		reefs		
Intertidal mudflats	Direct Annex I habitat	N/A	Notified feature	Ballymacormick Point ASSI
	protection	(currently afforded	- Intertidal	Carlingford Lough ASSI
	- Mudflats and	protection through	mudflats	Killough Bay & Strand Lough
	sandflats not covered	Habitats Regulations and		ASSI
	by seawater all of the	Environment Order)		Outer Ards ASSI
	time			Tyrella & Minerstown ASSI
				Murlough SAC/ASSI
				Strangford Lough SAC/ASSI
Maerl	Direct Annex I habitat	N/A	N/A	Red Bay SAC
	protection	(currently afforded	(ASSIs only extend	Rathlin Island SAC
	- Sandbanks which are	protection through	down to Mean Low	
	slightly covered by	Habitats Regulations)	Water Mark	
	sea water all the time		(MLWM) and maerl	
			is a subtidal feature)	

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Horse mussel beds	Direct Annex I habitat	N/A	N/A	Strangford Lough SAC
	protection	(currently afforded	(ASSIs only extend	
	- Reef	protection through	down to MLWM and	
		Habitats Regulations)	Modiolus is a	
			subtidal feature)	
Sabellaria alveolata	N/A	N/A	Notified feature	Tyrella and Minerstown ASSI
reefs			- Intertidal	
			mudflats and	
			sandflats	
Seagrass beds	Direct Annex I habitat	Seagrass beds (Zostera	Notified feature	Skerries & Causeway SAC
	protection	<i>marina</i>) on Subtidal	- Intertidal	Rathlin Island SAC
	- Sandbanks which are	(sublittoral) sand	Mudflats (sub-	Strangford Lough SAC/ASSI
	slightly covered by		component)	Waterfoot MCZ
	sea water all the time			Lough Foyle ASSI
	(sub-component)			Carlingford Lough ASSI
	- Mudflats and			
	sandflats not covered			
	by seawater at low			
	tide (sub-component)			
Mud habitats in deep	Direct Annex I habitat	N/A	N/A	Strangford Lough SAC
water	protection			

	Larga Challaw Inlata	(aurrantly offerded	(ACCIe entre extend	
	- Large Shallow Inlets	(currently anorded	(ASSIS only extend	
	and Bays	protection through	down to MLWM and	
	- Coastal lagoons	Habitats Regulations)	mud habitat in deep	
			water is a subtidal	
			feature)	
Native Oyster beds*	Not currently protected -	Not currently protected -	Not currently	N/A
(not currently a NI	Annex I Reef (should be	Sublittoral (subtidal sand)	protected - Intertidal	
Priority habitat)	included here as a sub-	(proposed MCZ habitat)	sand and mud	
	component of this feature			
	but as no sites exist with			
	extensive beds this is not			
	a qualifying feature of any			
	SAC as yet)			

*The Department intends to review the marine Northern Ireland Priority Habitats list in 2025 to capture any missing features which are on MPA Feature lists. The same exercise was completed for Northern Ireland Priority Species in 2023.

MPA	MPA Management measure	Feature(s) protected – relevant to blue
		carbon habitats
Skerries and	Demersal – mobile gear prohibited throughout designated feature extent	- Reef
Causeway	Static – prohibited on seagrass feature, and managed pot fishery	- Sandbanks
SAC	throughout SAC	
Rathlin SAC	Demersal – mobile gear prohibited throughout SAC	- Sandbanks which are slightly covered
	Static – managed pot fishery throughout SAC	by sea water all the time
		- Reefs
Red Bay	Demersal – mobile gear prohibited throughout SAC	- Sandbanks which are slightly covered
SAC	Static – prohibited throughout, excluding a specified area adjacent to the	by sea water all the time (maerl)
	shore where maerl habitat is not present	
Waterfoot	Demersal and Static – prohibited use throughout entire site	- Subtidal seagrass Zostera beds
MCZ		
The Maidens	Demersal – prohibited use throughout entire site	- Reefs
SAC		- Sandbanks which are slightly covered
		by sea water all the time
Outer Belfast	Demersal – prohibited use throughout entire site	- Subtidal sand
Lough MCZ		
Strangford	Demersal – mobile gear prohibited throughout entirety of SAC, and	- Mudflats and sandflats not covered by
Lough SAC	outside of SAC where Priority Features are present	seawater at low tide

Table 2: Fisheries Management Measures in place for 8 of the 9 MPAs providing indirect protection to blue carbon habitats.

	Static – managed pot fishery	- Subtidal Biogenic Reef (Horse
		mussel, Modiolus modiolus)
Murlough	Demersal – mobile gear prohibition extended throughout entirety of SAC	- Mudflats and sandflats not covered by
SAC		seawater at low tide
		- Sandbanks which are slightly covered
		by sea water all the time
Carlingford	Demersal – mobile gear prohibition extended throughout entirety of MCZ	Subtidal (sublittoral) mud
Lough MCZ		- Philine aperta and Virgularia mirabilis in
		soft stable infralittoral mud

Annex 3: Clarifying Leads, Dependencies and Delivery Timeframes

Table 3: Suggested updated Actions Table for discussion among the Marine Nature Recovery Working Group.

Objective	Action	Action	Lead/ Partner	Dependency
	No.			(Action No.)
	1.1	Within six months of publication, convene	DAERA	None
		the Marine Nature Recovery Working	All stakeholders via Marine	
		Group, and publish terms of reference and	Nature Recovery Working	
		governance structure.	Group	
1. Establish an inclusive governance	1.2	By 2026 explore the creation of a North-	DAERA	None
structure within the first six months of		South technical working group to share	All stakeholders via Marine	
the Blue Carbon Action Plan being		information and ensure a joined-up	Nature Recovery Working	
published and implement to deliver for		approach to meeting targets. Progress as	Group	
climate action, biodiversity and		required.		
societal benefits.	1.3	By 2026, update Actions Tables to detail	DAERA	None
		Lead/ Partners against actions, and to	All stakeholders via Marine	
		clarify dependencies.	Nature Recovery Working	
			Group	
	1.4	The Department will publish a report in	DAERA	None
		December 2030 reviewing the progress of		
		the Action Plan.		

2025	2026	2027	2028	2029	2030 -
Dbjective 1 - Governar Establish an inclusive go within the first six month Action Plan being publis	nce overnance structure s of the Blue Carbon hed and implement	,			
to deliver for climate act societal benefits.	ion, biodiversity and				
1.1					
1.2					
1.3					
					1.4
Objective 2 - Prioritisal Identify and agree a med prioritisation of Northern carbon habitats for mana and creation.	tion chanism of Ireland's blue agement, restoration				
2.1					
2.2			4		
monitoring and assessm 3.1	ient can be carried ou	it.			
-		3	.2		
3.3				1	
Undertake research proj environment, in partners and UK CCRAs. 4.1 4.2	ects to contribute to t hip with stakeholders	the evidence base for advancing the inclus	total blue carbon stock: ion of Northern Ireland	s and flows in Northern 's blue carbon contribu	I Ireland's marine tion to the UK GHGEI
4.3					
Objective 5 - Restoration Continue to promote blu creation projects, deliver	on and Creation e carbon pilot project red with stakeholders	s, leading to the initiat	ion of demonstration ar	nd larger scale prioritis	ed restoration and
1	1	0.1, 0		1	1
Objective 6 - Funding					
Develop lunding to supp	ont delivery of the Act	uon Plan, to Include e		or green linance and of	ner revenue streams.
i i i		0.1, 0.2	, 0.3, 0.4	1	
Objective 7 - Commun Promote blue carbon as support of the Northern framework.	ications a nature-based solut Ireland Climate Actior	ion for climate action and the section of the secti	and wider biodiversity, s with an effective engage	societal and environme ement, outreach and c	ental benefits in ommunications
		7.1.7	.2.7.3		
1	:	, 1	1	1	1
1				8	6 i

Figure 2: Indicative timeline of the Action Plan's delivery.

Annex 4: Glossary

Areas of Special Scientific Interest (ASSIs) – are declared under The Environment (Northern Ireland) Order 2002 for their species, habitat and/or geological features.

Biodiversity – is the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they form part; this includes diversity within species, between species and of ecosystems.

Biogenic Reefs – are the physical structures formed by animals or living organisms and UK examples include Native Oyster beds, Horse mussel beds, Blue Mussel beds, Honeycomb (*Sabellaria*) worms and cold-water corals.

Carbon Sequestration – is the conversion of carbon dioxide to organic carbon through capture in living material and subsequent burial in sediments, which is stored over long timescales. Long term stores of inorganic carbon may also be considered sequestered.

The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) – transpose the requirements of the EU Habitats and Birds Directives, enabling the designation of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), forming a national site network of protected nature conservation areas. SACs and SPAs comprise part of the Marine Protected Areas (MPA) network. The Regulations can be found here.

Ecological coherence – refers to the representation and replication of biodiversity features, and the linkages between those features. It also refers to the resilience of the network as a whole, and how well the range and geographic variation of the biodiversity features are covered within the network.

Ecosystem services – provide benefits to people from the resources and processes supplied by natural ecosystems.

The Environment (Northern Ireland) Order 2002 – places obligations on organisations and individuals to protect and manage the environment. It provides the mechanism for the declaration of Areas of Special Scientific Interest (ASSIs), which comprise part of the MPA network. More details can be found <u>here</u>.

Marine Conservation Zone (MCZ) – are designated under section 13 of the Marine Act (Northern Ireland) 2013 in the Northern Ireland inshore region and in section 116 of the Marine and Coastal Access Act 2009 in the Northern Ireland offshore region. MCZs are designated to safeguard vulnerable or unique marine species and habitats of national importance.

The Marine Act (Northern Ireland) 2013 – legislation which provides for marine plans and MCZ in the Northern Ireland inshore region. The Act can be found <u>here</u>.

Marine Protected Area (MPAs) – describe a geographic area of the marine environment which has been designated for specific conservation objections in relation to the features present. The ultimate aim of these sites is for long-term management to achieve sustainable use, both for marine ecosystems and associated stakeholders.

MPA Network – describes a network of designated sites in the marine area, often interconnected by type (ASSIs, SACs, SPAs, MCZs), legislative drivers and devolved areas.

Nature-based Solution – is the term used to describe actions to protect, sustainably manage, and restore natural and modified ecosystems which play a role in preventing biodiversity loss. Such solutions benefit people and nature at the same by supporting adaptation, resilience, and mitigation against climate change.

Net zero – is a target by which the Northern Ireland departments must ensure the net Northern Ireland emissions account for the year 2050 is at least 100% lower than the current baseline. This baseline is the aggregate amount of net Northern Ireland emissions of each greenhouse gas in the year specified in relation to that gas (1990 for Carbon dioxide, Methane and Nitrous oxide; 1995 for Hydrofluorocarbons, Perfluorocarbons, Sulphur hexafluoride and Nitrogen trifluoride). **OSPAR** – refers to the **Oslo - Paris Convention for the Protection of the Marine Environment of the North-East Atlantic**. It is an agreement by relevant governments and the European Community to co-operate to protect the marine environment of the North-East Atlantic.

Ramsar sites are wetlands of international importance designated under the *Ramsar Convention* and are classified as MPAs.

Restoration – is the process of improving or returning a marine ecosystem or habitat to a healthier and more natural state after it has been damaged or degraded by human activities or environment factors.

Special Areas of Conservation (SACs) – are designated under the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) for the conservation of natural habitats and of wild flora and fauna.

Special Protected Areas (SPAs) – are designated under the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) to select sites for bird species included in Annex 1 of the Habitats Directive, and also for regularly occurring migratory species.

Sustainable Development – as per the Brundtland Report where the term was first used, is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The Report can be read in full <u>here</u>.

The Northern Ireland Protected Sites network – refers to marine and terrestrial protected sites (Areas of Special Scientific Interest (ASSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites, and Marine Conservation Zones (MCZs)), as per the Northern Ireland Environmental Statistics Report. Within this Action Plan, reference is made to the "Northern Ireland Protected Sites network" because the saltmarsh blue carbon habitat is a coastal feature which has historically been monitored and managed by the Department's Terrestrial teams. It

falls outside of the current MPA network which incorporates "fully marine" features, however this will be considered within the MPA Strategy 2024–2030.

For further information:

Marine Conservation DAERA Marine and Fisheries Division Clare House 303 Airport Road West Sydenham Intake BT3 9ED

Email: MarineConservation@daera-ni.gov.uk

www.daera-ni.gov.uk



Agriculture, Environment and Rural Affairs

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