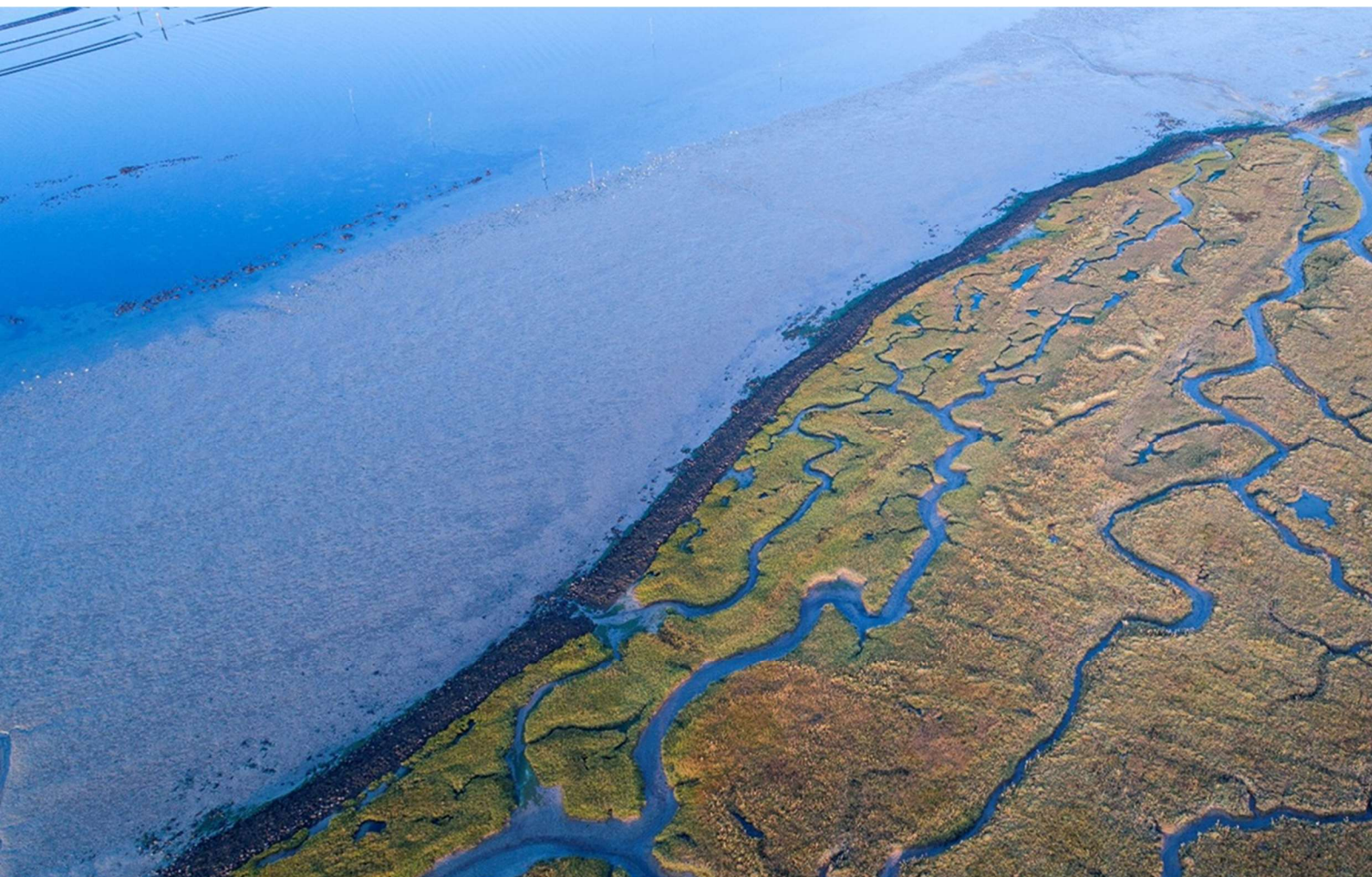




National efforts for nature regeneration

OSPAR Task - S6.O1.Tx

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Executive Summary

The North Sea is an intensively used marine region where large-scale nature regeneration is essential to halt biodiversity loss and strengthen ecosystem resilience. Appointed by the Dutch *Nature Regeneration North Sea* programme (NN), Ecoshape carried out OSPAR Task S6.O1.Tx: *Collation of information regarding national efforts to implement nature regeneration measures in coastal and marine systems*. The objective of this task is to strengthen collaboration and accelerate marine nature regeneration efforts across OSPAR countries.

This report provides a structured overview of national efforts aimed at restoring and regenerating marine and coastal ecosystems within the OSPAR region. It identifies current restoration projects and programmes, barriers, and enabling factors, with the aim of supporting knowledge exchange, cooperation, and future upscaling of restoration and regeneration initiatives.

The assessment is based on a combination of survey responses from OSPAR countries, complemented with literature review. Several methodological constraints exist with this approach, as survey respondents might not be aware of all projects and search terms might not capture all programmes. Hence the overview provided is not exhaustive of every possible project in all OSPAR countries but one can deduce the key species and habitats countries work on.

The inventory of projects shows a wide diversity of nature regeneration initiatives, ranging from habitat restoration and species recovery to knowledge development, stakeholder engagement and climate adaptation. Frequently targeted features include key habitats such as oyster (reefs) and seagrass meadows, as well as a range of marine species groups. This reflects a broad but convergent focus on restoring ecosystem structure and functioning across countries.

The analysis identifies several recurring barriers to implementation and upscaling. These include difficulties in quantifying ecological benefits, limited knowledge of restoration processes, and gaps in strategic policy guidance. At the same time, enabling factors are consistently observed, particularly the availability of dedicated long-term funding programmes (including monitoring phase), strong stakeholder involvement, and long-term commitment through institutional or academic partnerships, as well as political backing.

Throughout the project, several trends and next steps were identified to support OSPAR in strengthening collaboration and translating insights into action. These suggestions emphasise addressing disparities in data availability and comparability, alongside efforts to harmonise terminology and monitoring practices to improve clarity and comparability. In order to put these considerations and practical recommendations into practice, the following steps were proposed:

- Include facilitating targeted discussions to map initiatives (OSPAR, GNSBI, NORA, etc.);
- Strengthening data and knowledge sharing through harmonized data collection and dissemination and iterative improvement of existing outputs such as this report;
- Efforts to align terminology, building on existing initiatives, could be supported through workshops and clear follow-up guidance.

Finally, collaboration can be further enabled by:

- developing and maintaining overviews of expertise and overview of institutions and governance framework in the different participating countries;
- creating concise country profiles, target species and habitat;
- actively matching countries based on shared interests, expertise, and restoration priorities.

Thereby supporting more effective and targeted international collaboration while recognising differences in national contexts.

1 Introduction

The North Sea is an intensively used marine region, supporting critical ecological functions while accommodating a wide range of human activities, including fisheries, shipping, offshore energy production, recreation, and coastal development. Decades of cumulative pressures have resulted in the degradation of marine and coastal ecosystems, with consequences for biodiversity, ecosystem resilience, and the delivery of ecosystem services. Against this background, there is growing recognition that nature-based solutions (NbS) and active ecosystem regeneration are essential to halt biodiversity loss, restore ecosystem functioning, and increase resilience to climate change.

At the regional level, these ambitions are firmly embedded in the work of the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, which provides the overarching policy framework for cooperation between Contracting Parties in the North-East Atlantic, including the Greater North Sea¹. Under the North-East Atlantic Environment Strategy (NEAES) 2030, OSPAR has committed to restoring degraded marine ecosystems, safeguarding ecosystem functions, and enhancing the role of the marine environment as a natural carbon store². In particular, Strategic Objectives S6 (restoration of degraded habitats) and S12 (climate mitigation through natural carbon sequestration) explicitly recognise the role of NbS in achieving healthy, resilient seas³.

In parallel, the Netherlands has launched the Nature Regeneration North Sea programme (*Natuurversterking Noordzee*, NN), a long-term policy and implementation initiative aimed at strengthening marine nature through restoration, protection, and integration of ecological objectives within offshore activities⁴. The programme seeks to accelerate ecosystem recovery through 5 action lines (1. Experiment and learn, 2. Upscaling, 3. Monitoring, 4. International collaboration, and 5. Knowledge dissemination). As such, NN complements and operationalises OSPAR ambitions at the national level while creating opportunities for cross-border alignment and mutual learning among North Sea countries through its participation in Greater North Sea Basin Initiative (GNSBI).

Ecoshape was appointed by NN (Nature Regeneration North Sea programme), part of the Dutch Ministry of Agriculture, Fisheries, Food Security and Nature, to perform OSPAR task - S6.O1.Tx *Collation of information regarding national efforts to implement nature regeneration in coastal and marine systems*. This report is developed at the intersection of OSPAR and NN efforts. The core objective is to enhance understanding of current national efforts to implement NbS across the OSPAR maritime area and to identify opportunities for collaboration, upscaling, and knowledge exchange. Building on existing OSPAR methodologies and reporting practices, the report synthesises information gathered from Contracting Parties on NbS initiatives, marine restoration approaches, enabling conditions, and implementation barriers.

1.1 Goal

The goal of this task is to collect data across the OSPAR countries on their national efforts to implement nature regeneration activities in the coastal and marine system with particular emphasis on restoration and regeneration measures that contribute to biodiversity recovery, ecosystem resilience, and climate mitigation. For the purpose of this study, NbS are understood as actions that work with natural processes to protect, sustainably manage, and restore ecosystems, delivering ecological benefits alongside social, economic, and climate-related co-benefits.

¹ www.ospar.org/convention

² www.ospar.org/convention/strategy

³ Document shared by NN with consultants: S6.O1Tx_collation of information regarding national efforts to implement NbS in coastal and marine systems

⁴ Website: *Natuurversterking Noordzee*

In line with the objectives of OSPAR task S6.O1.TX, the report focuses on:

- The main ecosystem features (species and habitats) being protected, restored, regenerated, or enhanced;
- The types of measures applied, including passive restoration (e.g. pressure reduction, spatial protection) and active restoration/ regeneration (e.g. habitat creation, species reintroduction);
- Monitoring approaches used to assess restoration/regeneration success;
- Restoration and regeneration costs;
- Barriers and enabling factors influencing implementation;
- Opportunities to facilitate further uptake and scaling of nature regeneration at national and regional levels.

This data can be used to leverage collaboration and lessons learned across borders for nature regeneration efforts in coastal and marine systems, as well as provide an incentive for future knowledge creation among OSPAR countries. A glossary has been added to the annexes reflecting on the used terms, such as passive and active restoration (Annex A). This is not to distract from ongoing discussions (such as within the GNSBI nature track) or choose a definition for OSPAR, it is meant to facilitate the reader in this report⁵.

1.2 Scope

The geographic scope of the report covers the OSPAR maritime area. All OSPAR Contracting Parties are included in the information-gathering exercise, recognising that nature regeneration efforts implemented outside the North Sea may still generate relevant transferable knowledge, methodologies, and governance approaches⁶. In alignment with the client, the term NbS was changed in the survey to nature regeneration and restoration to increase the bandwidth of responses to the survey and the wording of NN. This change in terminology has been formalized as part of the NEAES implementation plan, during the (CoG(1)) meeting by the Contracting Parties.

The report is structured as follows:

- Executive summary – Concise summary of the approach and findings;
- Chapter 1 – Introduction, including the objective of the report as well as scope;
- Chapter 2 – Methodology, delineating the approach applied in this project, and limitations;
- Chapter 3 – Literature and survey results per OSPAR country;
- Chapter 4 – Analysis, highlighting similarities and main opportunities for nature regeneration within OSPAR;
- Chapter 5 – Conclusion, summarized findings and opportunities for further investigation.

⁵ [Item - Workshop to Identify Indicators to track nature restoration across the Greater North Sea Basin \(WKRestore_GNS\) - International Council for the Exploration of the Sea - Figshare](#)

⁶ Contracting Parties: Belgium, Denmark, Germany, Finland, France, Iceland, Ireland, Luxembourg, Norway, Portugal, Spain, UK, Sweden, Switzerland

2 Methodology

As outlined in chapter 1, the information is gathered from a desk study and a survey shared with all OSPAR countries⁷. The results are then analysed and consolidated into this comprehensive report. In this chapter, these stages are elaborated in more detail.

2.1 Desk study

A targeted desk study was conducted to compile baseline information on nature regeneration and ecosystem restoration in coastal and marine systems for all OSPAR Contracting Parties. Sources included:

- Relevant national strategies, programmes, and publicly available project documentation⁸;
- Open-access scientific and policy literature on NbS in marine contexts;
- Documents or references received via the questionnaire.

The desk study informed both the refinement of the survey for OSPAR Contracting Parties and the analysis of this report through documents or references received via the questionnaire.

2.2 Survey

The objective of the survey is to get a better understanding of past and ongoing nature regeneration efforts in marine and coastal ecosystems within OSPAR countries. An introduction text and cover letter was shared with the survey recipients to ensure that all participants have the same understanding of what nature regeneration is, see Annex B for the introduction text and survey and Annex C for the cover letter. The definition used for nature regeneration reflects the following: measures for the benefit of the natural environment, as well as incorporating natural elements in hard infrastructure through nature-enhancing measures, such as reef elements, fish hotels, and in general NbS elements.

The survey consists of two parts: a general and project-specific part. For the project-specific part, the set of questions must be answered for every project and programme with a marine or coastal nature regeneration component. Cross-border or international projects within the EU can qualify as well. Below you find an overview of the questionnaire outline:

- **General:**
 - To take note of existing national or regional policies or programmes to stimulate nature regeneration efforts in marine or coastal ecosystems;
 - To understand the main enabling factors and barriers to implementing nature regeneration efforts in marine or coastal ecosystems for the specific country;
- **Project/programme specific:**
 - Basic information:
 - Name project;
 - Government body leading the project / programme;
 - Which partners;
 - Status and timeline;
 - Project/Programme goals and methods:
 - Main objectives;
 - Potential co-benefits (like carbon capture, coastal protection,...);
 - Key measures taken to achieve the project objectives (e.g., creating habitat, artificial reefs, sand nourishment, revegetation, dike reinforcement);

⁷ Information for those who currently do not have a point of contact within OSPAR ICG-POSH and/ or the overarching Biodiversity Committee (Finland, Switzerland, and Luxembourg) was gathered via desk research.

⁸ A threshold was introduced, if a country had more than 10 project/programmes; than projects/programmes older than 10 years were not included into the list to ensure relevance.

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- Main natural features and extra steps taken to protect and restore them. The focus lies on habitat/species, e.g., seagrass/salt marsh/oyster, reefs/other;
- Is the project connected to academic research;
- Monitoring restoration rate / evaluation of success of the project;
- Project costs:
 - Can costs of project implementation and maintenance be shared, and if not, how will they be determined;
- Legal requirements:
 - From which regulatory agencies were permits or licenses required, and if so, what kind of permit / license was required;
- Barriers and enabling factors for this project specifically:
 - To understand the main enabling factors and barriers to implement nature regeneration efforts in marine or coastal ecosystems for the specific project.

Together with NN and with the OSPAR Commission Secretariat, the survey for the OSPAR countries was refined for clarity and relevance and finalized. The survey was sent to all OSPAR countries via the OSPAR Commission Secretariat. The survey was sent with a cover email, both in MS Forms and in Word. MS Forms was used to facilitate transparency and registration of responses. A Word document was also shared with the recipients to provide different options for responding to the survey.

No additional follow-up questions were asked, nor were interviews conducted with individual OSPAR countries regarding their survey responses. The following OSPAR countries have received a survey: Belgium, Denmark, Germany, Finland, France, Ireland, Iceland, Luxembourg, Norway, Portugal, Spain, the United Kingdom, Sweden, and Switzerland. Both Luxembourg and Switzerland are part of OSPAR, but do not border the sea. For these countries, a note was included in the cover letter⁹.

2.3 Analysis

The results of the desk study and survey provide an overview of the national efforts on nature regeneration per country; see chapter 3. In the analysis (chapter 4), the findings are synthesized along the following aspects in alignment with Task S6.O1.Tx:

- Features (species, habitat) being restored and their expected benefits;
- Identification of key barriers to the implementation of nature regeneration;
- Identification of potential actions to improve implementation.

In the conclusion (chapter 5), the key findings of the analysis are highlighted to provide OSPAR and its Contracting Parties with an overview of national nature regeneration efforts as well as potential next steps. This knowledge can serve as a catalyst for future knowledge creation and collaboration among OSPAR countries.

2.4 Methodological limitations

The approach deployed for this study is in alignment with the OSPAR Task S6.O1.Tx. Nonetheless, this approach does have various limitations impacting the results. Below two limitations are outlined:

⁹ * Luxembourg, Switzerland and Finland are part of OSPAR, but do not border the OSPAR Maritime Area directly. If you are from one of those Contracting Parties, we would like to ask you to answer the survey with projects/programmes that your country participates in that contribute to or influence nature regeneration in the North Sea.*

Responses received:

Not all Contracting Parties responded to the survey hence limiting the amount of information received. The following Contracting Parties responded to the questionnaire: Belgium, Germany, Denmark, France, Iceland, Ireland, Norway, Spain, Sweden, and UK (England, Scotland). No responses were received from: Finland, Luxembourg, Portugal, and Switzerland. This is also due to the fact that Finland, Switzerland and Luxembourg are not represented in ICG-POSH and/or the overarching Biodiversity Committee. In addition, the depth and detail of the survey responses received varies among countries. While some countries shared various projects and programmes, others only disclosed general barriers and enablers to nature regeneration in their country. To compensate for this knowledge gap, a desk study was conducted. While the desk study might not be up to date with the most recent work being executed; it does provide insights into the focus species and habitats countries work on.

Approach:

In addition, it should be noted that both the survey responses and the literature review are subject to inherent biases:

- **Terminology:** For the literature review, multiple search engines were used and a defined set of key terms was applied, including nature restoration, NbS, nature regeneration, and coastal and marine. While these terms may be commonly used in certain contexts, they may be less prevalent in others, potentially resulting in a limited scope of identified sources.
- **Language:** Most searches were conducted in English, and not all countries translate or publish their policy documents and project outcomes in English. More projects and programmes could exist, which were not identified due to language barriers.
- **Knowledge:** Survey respondents may not have comprehensive knowledge of all existing projects and programmes within their respective countries. Or respondents come from a specific field or background influencing their response.
- **Availability:** Not all relevant information might be publicly available nor up to date, which could lead to gaps in actuality and relevance.

Consequently, the analysis is based on the information obtained through the survey and the available literature and while this results in ample information; it cannot be guaranteed that all relevant projects/programmes were identified.

3 Literature and survey results

The desk study compiled baseline information on nature regeneration and ecosystem restoration in marine and coastal systems in the OSPAR countries, drawing on national strategies, policy documents, publicly available project documentation, open access scientific and policy literature, and references provided through the survey. In parallel, the survey captured information on past, ongoing, and planned nature regeneration initiatives. Together, the desk study and survey results provide a consolidated overview of national efforts across the OSPAR-countries. In chapter 3 this overview is summarized per country in table format. In Annex D, a written summary is included from all identified projects and programmes identified. Separately from this report, an excel 'Project overview OSPAR.xlsx' with more detailed project descriptions is built to provide a structured overview of all projects and programmes captured. In this excel the direct links to the websites of the identified projects have been included. The results from Chapter 3 form the basis for the subsequent analysis presented in chapter 4. First the international policies, laws and funding programmes that provide the common framework are summarized in paragraph 3.1.

3.1 International policies, laws and funding programmes

Marine and coastal nature restoration in the OSPAR countries is shaped by a layered governance framework, consisting of international conventions, European legislation and associated policy instruments. While these frameworks set binding objectives and strategic directions, their implementation is partly facilitated through targeted funding programmes such as LIFE, HORIZON and Interreg. Tabel 1 presents an overview of the most relevant international and European policies, legal instruments and funding programmes related to nature restoration in marine and coastal ecosystems. These provide the common framework that underpins national programmes and projects and guides the development of restoration projects across all OSPAR countries.

Table 1: Overview of the international and European policies, laws and fundings relevant for nature restoration.

Name	Type	Summary
International level		
UN Convention on the Law of the Sea (UNCLOS)	International convention	The United Nations Convention on the Law of the Sea (UNCLOS) is a legally binding global treaty that defines maritime zones, regulates ocean uses, and establishes states' rights and obligations to use, manage and protect the marine environment. This obligation underpins later biodiversity agreements (e.g. OSPAR, BBNJ, CBD as summarized below).
OSPAR Convention	International convention	Framework for protection and restoration of the marine environment of the North-East Atlantic, adopted in 1992 and in force since 1998. It merges the 1972 Oslo and 1974 Paris Conventions.
Biodiversity Beyond National Jurisdiction (BBNJ) Agreement ("High Seas Treaty")	International convention	While UNCLOS already contained a general obligation for States to protect the marine environment, it did not provide concrete tools for biodiversity conservation in areas beyond national jurisdiction. In particular, there was no comprehensive framework for: establishing marine protected areas (MPAs) on the high seas,

Name	Type	Summary
		- conducting environmental impact assessments (EIAs) for activities in international waters, - managing and regulating marine genetic resources, or ensuring fair and equitable benefit-sharing. The BBNJ Agreement was negotiated to fill these governance gaps and to make the environmental obligations under UNCLOS operational and enforceable on the high seas. The BBNJ Agreement is a legally binding United Nations treaty, adopted in 2023 and entered into force on 17 January 2026.
Convention on Biological Diversity (CBD)	International convention	The Convention on Biological Diversity (CBD) is a legally binding international treaty adopted at the 1992 Earth Summit in Rio de Janeiro under the auspices of the United Nations. It entered into force in 1993 and provides the global framework for biodiversity conservation, sustainable use, and ecosystem restoration across terrestrial, freshwater and marine environments.
Barcelona Convention	International convention	Regional framework for protection and restoration of Mediterranean marine and coastal ecosystems, including active habitat and species restoration.
Ramsar Convention on Wetlands	International convention	Wetlands convention that includes coastal wetlands within its scope. The Ramsar Convention (adopted 1971 in Ramsar, Iran) is an international treaty that promotes the conservation and wise use of wetlands. It works through three pillars: wise use of all wetlands, designation and management of Wetlands of International Importance (Ramsar Sites), and international cooperation.
Helsinki Convention (Baltic Sea)	International convention	Legally binding agreement to protect the Baltic Sea from pollution and conserve biodiversity, originally signed in 1974 by all Baltic Sea coastal countries and amended when necessary, as for example on 1 July 2014. The agreement is implemented via HELCOM.
HELCOM Baltic Sea Action Plan (BSAP)	Policy framework	Regional action plan with concrete measures to achieve good ecological status of the Baltic Sea by 2030. The updated BSAP is divided in four segments with specific goals: - Biodiversity, with its goal of a “Baltic Sea ecosystem is healthy and resilient”, - Eutrophication, with its goal of a “Baltic Sea unaffected by eutrophication” - Hazardous substances and litter, with its goal of a “Baltic Sea unaffected by hazardous substances and litter”, and - Sea-based activities, with its goal of “Environmentally sustainable sea-based activities”
European level		

Name	Type	Summary
Habitats Directive (92/43/EEC) & Birds Directive (2009/147/EC)	EU Directives	Forms the legal basis for the Natura-2000 network. Require Member States to maintain or restore habitats and species to a favourable conservation status, including marine habitats such as reefs, sandbanks and seagrass meadows.
Marine Strategy Framework Directive (MSFD, 2008/56/EC)	EU Directive	Aims to achieve Good Environmental Status of marine waters. Explicitly allows and, where necessary, requires measures for the restoration of marine ecosystems, including seabed integrity and marine biodiversity.
Water Framework Directive	EU Directive	Applies to coastal waters and estuaries (up to one nautical mile offshore). Requires good ecological status and supports restoration of transitional waters, estuaries and coastal habitats.
EU Biodiversity Strategy 2030 & EU Nature Restoration Law	EU Strategy / Regulation	Sets ambitious targets for large-scale ecosystem restoration, including marine and coastal ecosystems. The Nature Restoration Law will make restoration legally binding.
EU Common Fisheries Policy	Policy	Conservation and sustainable exploitation of marine biological resources; fisheries management and supporting measures.
LIFE Programme	EU funding programme	EU funding instrument for pilot and upscaling projects on nature restoration. For example in Spain is this programme used extensively for marine restoration projects (e.g. LIFE INTEMARES and LIFE ECOREST).
European Maritime, Fisheries and Aquaculture Fund (EMFAF)	EU funding programme	The European Maritime, Fisheries and Aquaculture Fund (EMFAF) runs from 2021 to 2027 and supports the EU common fisheries policy (CFP), the EU maritime policy and the EU agenda for international ocean governance.

3.2 Belgium

3.2.1 Policies, laws and funding programmes

Marine and coastal nature protection and restoration in Belgium is governed by a combination of National laws, European regulations and international treaties and conventions. Projects are implemented in practice through EU funding programmes such as LIFE (EU), but also government–science–industry consortia with national funds and monetary / in-kind contribution from partners. In Table 2 an overview is provided of these policies and laws on a national level. The international policies, laws and funding programmes are listed in paragraph 3.1.

Table 2: Overview of the policies laws and funding programmes related to nature restoration that apply to Belgium on a national level.

Name	Type	Summary
Marine Environment Act	National law	At the national level, the Marine Environment Act of 11 December 2022 protects the marine environment of the Belgian North Sea. This law provides for marine spatial planning within Belgian jurisdiction and forms the legal framework for the conservation,

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Name	Type	Summary
		restoration and development of nature in our North Sea.
Law on the exploration and exploitation of non-living resources of the territorial sea and continental shelf of 13 June 1969	National law	This law states that an environmental permit is required for sand extraction in our North Sea
Belgian Maritime Code of 8 May 2019	National law	This law focuses, among other things, on preventing pollution caused by ships
Belgian Marine Strategy (MSFD implementation; 2024 revision published in 2025)	National framework	The Marine Strategy Framework Directive (2008/56/EC) requires EU Member States to develop a strategy for the protection, preservation and restoration of the marine environment. The directive was transposed into a Royal Decree on 23 June 2010 and is included in the policy of the Marine Environment Department.
Marine Spatial Plan (MSP) for Belgian sea areas (2026–2034; preceded by MSP 2020–2026)	policy framework	Strategic, legally binding zoning and policy tool to balance uses of the Belgian North Sea while respecting the environment.
European Nature Restoration Regulation (2024/1991) (applies in Belgium; national plan due 2026)	EU law	This law aims to restore 20 percent of the EU's land and sea area by 2030, and all damaged nature by 2050, transforming it into resilient ecosystems. For the Belgian part of the North Sea, the focus is mainly on reintroducing historical oyster reefs and restoring gravel beds and biogenic reefs. Possible restoration measures include the designation of marine reserves and nature-inclusive construction of offshore infrastructure.

3.2.2 Projects and Programmes

The table below provides an overview of the main programmes and projects in Belgium that are related to nature restoration in marine and coastal ecosystems. It includes both large, overarching programmes and more targeted projects addressing habitat restoration, species recovery, NbS and ecosystem-based management. After the table, each individual project is discussed in more detail.

Table 3: Overview of the ongoing and finished programmes and projects related to nature restoration in Belgium.

Project / programme name	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
BELREEFS	Development of self sustaining reef of flat oyster in offshore conditions	2024	2027	co-financing federal government and LIFE4B: 1,2 million	Active	Oyster (reefs)		Pilot	Survey
LIFE Flandre	Restore and manage cross-border coastal dune habitats and strengthen Natura 2000 coherence along the France–Belgium coast.	2013	2020	EU life programme. Total budget ca. 4 million, where 2 million is EU contribution	Active		Dunes and salt marshes	Implementation	Literature
Coastbusters	The Coastbusters project aims to test the capacity and added value of biological “biobuilder” species for coastal defence by developing nature-based solutions for the Belgian North Sea.	2017	2030	Unknown	Active		Coasts	Research (2017-2020), Pilot (2020-2023), Upscaling (until 2030)	Literature
Reefcovery	The Reefcovery project aims to develop and test methods for restoring oyster reefs in the North Sea and integrating them into marine infrastructure through nature-inclusive design.	2024	2028	Unknown	Active	Oyster (reefs)		Research / Pilot	Literature
Blue Connect	The project will test methods for oyster settlement, transport, storage, and large-scale installation of reef materials at sea.	2024	2028	Horizon Europe-financing. For the Belgium part, the budget is estimated to be roughly the same as the Belreefs project. Total Blue connect budget is €8,469,860	Mixed approach	oyster-reefs		Research / Pilot / Upscaling	Literature

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				EU contribution: €8,375,060					
Elasmon	The ELASMON project aims to improve monitoring and protection of sharks and rays in the Belgian part of the North Sea.	2024	2027	Financed by EFMZVA (European Maritime Fisheries and Aquaculture Fund). Budget and funding unknown	passive (development of monitoring strategies)	sharks and rays		Research	Literature
LIFE Dunias	Restore dune ecosystems along the Belgian coast by removing invasive non-native plant species and enabling native vegetation recovery.	2021	2026	ca. 7 million euros. For 60% funded by the EU life programme	mixed: active (removal of invasive plants), passive (natural recovery)		Dunes	Implementation	Literature
Nature 2000 Seabird conservation areas	Protection and habitat management (precursor / enabling condition for restoration)			Unknown	Passive	Great crested grebe, Red-throated diver, Common scoter, Little gull, Lesser black-backed gull, Great black-backed gull, Sandwich tern, Common tern, Little tern			Literature

3.2.3 Barriers and Enabling factors

Based on the survey results and interview the key barriers and enabling factors affecting marine restoration efforts in Belgian waters are:

- Major barriers include:
 - the high intensity of human activities, such as shipping and fishing, which complicate spatial decisions, as well as ecological pressures stemming from pollution and climate change that cause habitat loss;
 - implementing offshore restoration measures is logistically complex and sensitive to the conditions of marine organisms;
 - financial constraints and conflicting regulations (common fisheries policies vs nature directives) further hinder progress;
 - latent business cases through high risks associated with long-term investments and uncertain revenues;
- Major enabling factors are:
 - a robust legal and policy framework, including the Marine Environment Act and Marine Spatial Plan, which integrate conservation objectives;
 - protected-area designations like Natura 2000 facilitate prioritization of restoration activities;
 - funding and partnership mechanisms, such as EU LIFE support and collaborative efforts between government, science, and industry (e.g., BELREEFS), enhance restoration efforts;
 - building on previous knowledge eg NORA guidelines;
 - decreased licensing burdens;
 - "learning by doing" approach through pilot projects also contribute positively to marine restoration initiatives.

3.3 Denmark

3.3.1 Policies, laws and funding programmes

Marine and coastal nature restoration in Denmark is governed by a multi-level governance framework at international, EU and national levels. International overarching goals for biodiversity and ecosystem restoration are set, which are translated into binding obligations and funding through EU legislation. Denmark implements these through national environmental laws, spatial planning frameworks and dedicated funding programmes, guiding restoration of marine and coastal ecosystems and linking it increasingly to spatial planning, climate adaptation and offshore renewable energy development; see for Table 4 an overview of the policies, laws, and funding programmes. The international policies, laws and funding programmes are listed in paragraph 3.1.

Table 4 Overview of the policies, laws and funding programmes related to nature restoration that apply to Denmark on a national level.

Name	Type	Summary
Danish Environmental Objectives Act (Miljømålsloven)	National law	Translates EU conservation obligations into binding national objectives and plans. It determines where restoration is required and which ecological objectives must be met. Implements the EU Birds and Habitats Directives and the Water Framework Directive and establishes binding national objectives and plans for Natura 2000 marine and coastal sites.
Danish Nature Protection Act (Naturbeskyttelsesloven)	National law	Core national law determining what activities are permitted, restricted or prohibited. It also protects

National efforts for nature regeneration

Name	Type	Summary
		habitat types and species, regulates land use and enables conservation and restoration measures. Complements Miljømålsloven by providing legal instruments to obtain the goals that are set in Miljømålsloven.
Danish Environmental Protection Act (Miljøbeskyttelsesloven)	National law	Prevents and controls pollution affecting water, soil, air, ecosystems and health. The law e.g. regulates nutrient and pollutant discharge, controls emissions, arranges permits, and monitoring obligations. This law implements multiple EU directives (e.g. Industrial Emissions, Urban Waste Water).
Danish Planning Act (Planloven)	National law	National spatial planning law, determines where and whether development may take place. Hereby it gives public authorities the legal basis to e.g. allocate land uses and zones.
Environmental Assessment Act (Miljøvurderingsloven)	National law	Requires environmental impact assessments and sets rules for (methods of) assessments. This law determines whether plans are acceptable, ensuring that developments do not undermine environmental objectives or protected natural assets, e.g. Natura 2000.
Danish Coastal Protection Act (Kystbeskyttelsesloven)	National law	Regulates coastal protection and climate adaptation measures, such as erosion control, coastal protection, flood defence and flood infrastructure. This law works by setting rules for physical interventions along the coast, permitting coastal protection measures, etc.
Danish National Biodiversity Strategy and Action Plan (NBSAP, 2024)	National strategic policy framework	The NBSAP is Denmark's national biodiversity strategy and action plan. It is aimed at halting and reversing biodiversity loss, contributing to nature restoration and protection. It sets out national priorities, targets and actions for biodiversity on land, at sea and in freshwater, in response to global and EU commitments. It is developed under the Convention on Biological Diversity (CBD) and aligns Denmark with the Kunming–Montreal Global Biodiversity Framework (GBF).
Danish Marine Nature Restoration Fund (Havnaturfonden)	National funding programme	Established in 2024 as Denmark's largest initiative to date (approx. 67 million euro from 2024-2030) to restore marine ecosystems and strengthen biodiversity in Danish waters. The fund runs large-scale marine restoration projects, focusing on monitoring, co-existence and knowledge building between offshore renewable energy and marine nature, digital infrastructure for marine data sharing and ecosystem analysis for a better marine spatial planning taking marine biodiversity into consideration. The fund operates under the Danish Environmental Protection Agency and collaborates with experts, civil society, and the private sector to ensure effective and lasting marine conservation.

National efforts for nature regeneration

Name	Type	Summary
		Partners are the Danish Ministries of Environment and Gender Equality and Climate, Energy and Utilities

3.3.2 Projects and programmes

Denmark has a variety of programmes that could be divided into eelgrass restoration, reef restoration, integral regional projects (often involving eelgrass and reef restoration) and other projects; see Table 5 for an overview of ongoing and finished programmes and projects.

Table 5 Overview of the ongoing and finished programmes and projects related to nature restoration in Denmark

Project / programme name	Objective	Start date	End date	Budget funding	& Active / passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/survey
Denmark Plants Eelgrass (Danmark Planter Ålegræs)	Restore eelgrass nationwide to enhance biodiversity, stabilise sediments and improve water quality	2024	2026	Total budget: 1.338.100 EUR (10 million DKK), Funded by the Nordea Foundation and Think Tank Hav	Active	Eelgrass		Implementation	Literature
TRANSPLANT (eelgrass restoration in Horsens Fjord & Lunkebugten)	Restore eelgrass meadows through transplantation techniques and optimisation of site selection	2017	unknown	Budget and funders unknown.	Active	Eelgrass		Implementation	Literature
Novagrass (eelgrass restoration)	Develop and test innovative seed-based eelgrass restoration methods at scale	2013	2018	Budget and funders unknown.	Active	Eelgrass		Pilot, research	Literature
BioReef – restoring biogenic reefs (flat oyster & horse mussel)	Restore biogenic reefs by re-establishing flat oyster and horse mussel populations.	2022	2027	Budget unknown Funded by Ørsted	Active	European flat oysters and horse mussel	Biogenic reefs	Implementation and upscaling	Literature
3D-printed reefs at Anholt Offshore Wind Farm (Kattegat)	Create artificial reef habitats to enhance biodiversity and provide habitat for cod and benthos.	2022	2024	Budget unknown Supported by PensionDanmark and PKA A/S. Possibly, Ørsted has funded as well.	Active	cod	3D reefs	Implementation	Literature

National efforts for nature regeneration

Project / programme name	Objective	Start date	End date	Budget funding &	Active / passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
Restoring Life in Køge Bugt (Køge Bay Marine Park) - Foreningen Køge Bugt Stenrev	Restore seabed habitats through construction of stone reefs and eelgrass recovery.	2020	2028	Total: 1.875.000eur (DKK 14 million) Funded by Nordea-Fonden, Dissemination Stone Reefs Strandgreven, Klintekongen, VELUX, and municipalities	Active	eelgrass	Stone reef	Implementation	Literature
Belt in Balance (Bælt i Balance) – Nature Park Lillebælt	Combine marine restoration, research and public engagement to improve coastal ecosystem health	2020	2026	Total project budget amounts to 4.725.000eur (35.3 million DKK), funded by Nordea-Fonden, VELUX FONDEN, Friluftsrådet, and the three municipalities.	Active	eelgrass	Stone reefs, biogenic reefs	Implementation, research	Literature
Sund Vejle Fjord (A Healthy Vejle Fjord) & Sund Vejle Fjord 2.0	Revitalise fjord ecosystems through large-scale habitat restoration and nutrient reduction	2020	2029	Approximately 3.250.000eur (DKK 25 million) Financial support: VELUX FONDEN and Vejle Municipality	Active and passive	Eelgrass, blue mussel	stone reefs	Implementation	Literature
The Odense Fjord Initiative	chieve good ecological status by improving habitats and addressing environmental pressures in the fjord	2022	2027	At least DKK 500,000 Funded by the Municipality of North Funen	Active	Sand caps, eelgrass	Stone reefs,	Implementation and research	Literature

National efforts for nature regeneration

Project / programme name	Objective	Start date	End date	Budget funding &	Active / passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
Excavation at Gyldensteen Coastal Lagoon	Restore a coastal lagoon by breaching dikes and re-establishing natural marine conditions	2011	2014	Budget and funders unknown	Active and passive	eelgrass	Coastal lagoon, sand placement, stone reef,	Implementation	Literature
Roskilde fjord	Restore biodiversity by constructing stone reefs as fish habitat	2020	2022/2023	Budget unknown Funded by the government	Active	Cod, sea trout, benthos		Implementation	Literature
Serejo bay	Restore marine ecosystems through multi-habitat measures including eelgrass, reefs, fish and mussel recovery.	2025	Unknown	Budget and funders unknown	Active	Eelgrass, cod, blue mussel	stone reefs,	implementation, upscaling	Literature
Coastal helper project (Kysthjælper project)	Enable community-driven marine restoration through volunteer-led habitat creation and knowledge sharing.	2021	2025	Budget unknown Funded by VELUX FOUNDATION	Active	Eelgrass, mussel	stone reefs,	Implementation	Literature
Coastal helper - Limfjord east (Aalborg)	Demonstrate and upscale small-scale stone reef restoration through pilot projects and guidelines	2021	2025	16.730eur (125.000 DKK) yearly Funded by Aalborg Municipality	Active		Stone reef	Pilot, implementation, upscaling	Literature
COASTal LIFE – Restoration of coastal habitat zones	Restore and expand coastal habitats to improve conservation status and biodiversity in Natura 2000 sites	2022	2030	Total eligible budget €13,212,122 (EU contribution €7,927,273) Financial support by the LIFE programme (EU)	Active and passive	Pied avocet, little tern, common tern, Arctic tern, sandwich tern, dunlin, common goldeneye, pale-bellied brent goose and red-breasted merganser, eelgrass	biogenic reefs, salt meadows, islets, stone reefs, lagoons, ponds in the outer coastal zone, oyster, mussel beds	Implementation	Literature

National efforts for nature regeneration

Project / programme name	Objective	Start date	End date	Budget funding	& Active / passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
Havnaturfonden	und and implement large-scale marine restoration to strengthen biodiversity and ecosystem knowledge	2024	2030	Total budget of the fund: 66,9 million euro (Total budget of the fund: DKK 500 million)	Depending on the project	Depending on the project		Depending on the project	Survey
Better BirdLIFE	Improve habitats and conservation status of coastal bird species in the Baltic region	2018	2027	8.4 million euro Funded by the LIFE Programme, by the 9 project partners and by the three private, Danish foundations 15. Juni Fonden, AP Møller Fonden and Aage V. Jensen Naturfond.	Active and passive	Spotted Crane, Corncrake, Dunlin, Short-eared Owl, Eider Duck, Mountain duck, Mergus serrator, Greater scaup		Implementation	Literature
Passive nature restoration of marine habitats (PReMaH)	Assess natural recovery of marine habitats after establishing protected areas without active intervention	2025	2036	Budget unknown. Funded by Green Programme: Green Transition for Fisheries and Aquaculture (pursuant to the research reserve in the Finance Act for 2024 section 24.63.10.85)	Passive	Variety of fish and mammals.	Greater scaup	Research	Literature
LIFE Wadden Sea Birds	Restore and improve habitats to increase populations of				Mixed (active: intrdouce sotrmwater	Pied avocet, Ruff, Common tern, Arctic tern, Little tern, Short-eared		Implementation	Literature

National efforts for nature regeneration

Project / programme name	Objective	Start date	End date	Budget funding	& Active / passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
	coastal and migratory bird species				storage, increase number of birds & passive: maintain conservation status)	owl, Black-tailed godwit, Bluethroat, Dunlin, Kentish plover, Widgeon, Pintail, Shoveler, Redshank, Curlew, Lapwing, Oystercatcher			
BlueBioClimate – Climate-adapted biodiversity management in marine systems		2023	2026	Total budget: €5,236,017 EU-Contribution: €2,737,167	Detailed explanation of project provided in the overview of Sweden.				

3.3.3 Barriers and enabling factors (based on literature study and survey)

Based on the survey and literature research the key barriers and enabling factors affecting marine restoration efforts in Denmark are:

- Major barriers:
 - High intensity of human activities, such as shipping, fishing, stone fishing/excavation and nutrient run-off from agricultural land (based on literature).
 - The labour-intensity of manual restoration efforts of e.g. eelgrass planting. Danish projects often work with volunteers (based on literature).
 - Denmark is characterised by extensive (inland) shallow coastal waters, sheltered fjords, and semi-enclosed seas, conditions that may not be directly comparable to exposed open-coast environments. This may be a barrier in implementing best practices (based on literature).
 - Lack of knowledge, experience and competence (based on survey).
 - Funding streams (based on survey).
- Major enabling factors are:
 - Hands-on approach: Denmark has a lot of experience with the restoration of eelgrass, construction of stone reefs, and development of biogenic reefs (e.g. mussel reefs), (based on literature).
 - Integrated approach: Nature restoration projects are frequently combined with other domains such as offshore wind development, citizen science, scientific research partnerships, tourism, and nature parks. Also multiple stakeholders are often involved in different parts and stages of projects (e.g. funding, managing or implementation of the project), (based on literature).
 - Involvement of local partners, particularly in monitoring results and progress. Restoration projects actively involve local authorities, coastal communities (volunteers), and civil society (based on literature).
 - Feasibility studies to determine the most suitable locations for restoration projects. Also determining a baseline and subsequent monitoring is mostly well-documented by scientific partners (based on literature).
 - Willingness to share knowledge and best practices (based on literature).
 - Awareness of positive impact and proof of concept (based on survey)
 - Funding was mentioned as enabler (based on the survey).

3.4 Germany

3.4.1 Policies, laws and funding programmes

Germany navigates international commitments, European Union legislation (e.g., nature restoration regulation), and national laws and funding instruments for nature restoration in marine and coastal ecosystems. Complementing these regulatory frameworks, Germany has established dedicated national funding programmes that support the protection and active restoration of marine and coastal habitats, including measures linked to offshore energy development. Together, these instruments provide the legal, policy, and financial foundation for nature restoration efforts in German marine and coastal waters; see Table 6 for an overview of these instruments. It is important to note that due to Germany's administrative set-up laws and regulations at state level (Bundesländer) play an important role and determine implementation as well. For this project, all analysis were conducted through the same approach, hence no policies and regulations were captured on Bundesländer level. However, in a further analysis this could be included to understand the differences between Bundesländer.

National efforts for nature regeneration

Table 6: Overview of the policies laws and funding programmes related to nature restoration that apply to Germany on a national level.

Name	Type	Summary
Federal Nature Conservation Act (Bundesnaturschutzgesetz)	National law	Central national law governing nature conservation in Germany, including coastal and marine ecosystems. Implements EU nature directives and provides the legal basis for habitat protection, restoration measures, and designation of protected areas.
Federal Nature Conservation Fund (Bundesnaturschutzfonds)¹⁰	Funding programme	National funding instrument bundling several conservation programmes (including Blue Belt Programme and largescale nature conservation). Supports restoration and strengthening of biodiversity, including coastal and marine habitats.
Marine Nature Conservation Fund (Meeresnaturschutzfonds – DBU)¹¹	Funding programme	Dedicated funding programme providing long-term financing for protection and restoration of marine species and habitats in the North and Baltic Seas. Funded through compensation payments under the Offshore Wind Energy Act and linked to environmentally compatible offshore wind development.
Offshore Wind Energy Act (Windenergie-auf-See-Gesetz) – compensation mechanisms¹²	National law	Regulates offshore wind development and requires compensation payments that are used, among others, to finance marine nature conservation and restoration measures through programmes such as the Marine Nature Conservation Fund. The funding instrument is active from 2025 onwards and is designed to provide continuous annual support (around €10 million per year is stated in DBU materials).
National Strategy on Biological Diversity (Nationale Strategie zur Biologischen Vielfalt (NBS2000))¹³	Policy framework	The National Strategy on Biological Diversity sets explicit targets for the restoration, maintenance, and enhancement of biodiversity in marine and coastal ecosystems, with particular emphasis on seagrass beds, salt marshes, mudflats, and other vital habitats (Actions: 10.1 Zustand der Biodiversität an Küsten und in Meeren, 10.2. Wiederherstellung von Lebensräumen an Küsten und im Meer, 10.3 Naturverträgliche Nutzung der Meere) ¹⁴ .
Federal Programm on Biological Diversity (Bundesprogramm Biologische Vielfalt)¹⁵	Funding programme	Supports the conservation, restoration and sustainable development of biodiversity in Germany through grant-based funding for projects of national relevance that contribute to the implementation of the National Strategy on Biological Diversity (NBS). The programme funds innovative and representative measures that go beyond existing legal requirements, including

¹⁰ [Bundesnaturschutzfonds | BfN](#)

¹¹ [Marine Nature Conservation Fund - DBU](#)

¹² [WindSeeG - nichtamtliches Inhaltsverzeichnis](#)

¹³ [BMUKN: Nationale Strategie zur Biologischen Vielfalt](#)

¹⁴ [Nationale Strategie zur Biologischen Vielfalt | BfN](#)

¹⁵ [BMUKN: Bundesprogramm Biologische Vielfalt | Förderprogramm](#)

National efforts for nature regeneration

Name	Type	Summary
		projects focused on ecosystem services, habitat restoration and marine and coastal biodiversity. The funding instrument has been in place since 2011, is administered by the Federal Ministry for the Environment (BMUV) in cooperation with the Federal Agency for Nature Conservation (BfN), and operates on a continuous basis with rolling calls for proposals.
Federal Action Plan on Nature-based Solution for Climate and Biodiversity (Aktionsprogramm Natürlicher Klimaschutz)¹⁶	Policy framework	The Action Programme for Natural Climate Protection (ANK) aims to protect, strengthen and restore ecosystems in Germany, including marine and coastal environments, so that they can remain effective contributors to climate mitigation and adaptation. (more information below)
National Water Strategy (Nationale Wasserstrategie)	Policy framework	The National Water Strategy (Nationale Wasserstrategie) integrates efforts across riverine, estuarine, and coastal zones. This strategy mentions one action focused on the marine ecosystem, which is that marine areas should be protected (North and Baltic Seas) more intensively from pollutants entering from land, as action 63 ¹⁷ .

3.4.2 Projects and Programmes

Germany has a range of projects contributing to nature regeneration in the coastal and marine environment mainly focused on carbon sink opportunities; see Table Table 7 for an overview.

While it was not possible to find for every project restoration costs, Germany provided indications of oyster restoration costs:

- Estimation of costs for contracts for European Oyster reef restoration: 150.000 €/ha;
- Costs for first pilot reef in Borkum Reergound MPA in research project: 570.000 €/ha (AWI), estimation

¹⁶ [BMUKN: Aktionsprogramm Natürlicher Klimaschutz | Publication](#)

¹⁷ [Nationale Wasserstrategie | Umweltbundesamt](#)

National efforts for nature regeneration

Table 7 Overview of the ongoing and finished programmes and projects related to nature restoration in Germany

Project / programme name	Objective	Start date	End date	Budget funding	& Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
Better Bird LIFE	Improve habitats and conservation status of coastal bird species.	2018	2027	€ 8,4 M Funded by LIFE Programme	active	Common Tern, Arctic Tern, Little Tern, Sandwich Tern, Avocet, Ruff, Golden Plover,		implementation	Literature
ZOBLUC – “Zostera marina as a Blue Carbon Sink in the Baltic Sea” (ANK – Seas & Coasts)	Quantify and protect blue carbon storage in eelgrass meadows to support restoration and management.	2025	2030	€4,817,709.48 (funded under ANK – Seas & Coasts)	mixed (active: pilot planting/seeding of seagrass and passive: mapping and research to identify next steps)	seagrass (meadows)		research, pilot	Survey
EKOWA – “Carbon Sequestration Potentials in the Wadden Sea” (ANK – Seas & Coasts)	Assess carbon sequestration potential of coastal habitats to inform management of the Wadden Sea.	2025	2028	€1,012,143.58 (funded under ANK – Seas & Coasts)	passive (collecting data to enable informed restoration)	seagrass (meadows),	Saltmarsh, tidal flats	research	Survey
DBU doctoral scholarship – “Sustainable Restoration of Seagrass Meadows” (Jana Willim / GEOMAR)	Develop climate-resilient seagrass restoration strategies under changing conditions.	2023	2026	DBU doctoral scholarship funding	Not applicable	seagrass (meadows)		research	Survey
Reallabor Eckernförder Bucht 2030 (Living Lab Eckernförde Bay)	Co-develop solutions to improve ecological status through stakeholder	2021	2022	Funding: DBU (German Federal Environmental Foundation). (Exact budget: not available)	passive (stakeholder engagement to reduce nutrient input)	bladderwrack (seaweed)	coastal	pilot	Survey

National efforts for nature regeneration

Project / programme name	Objective	Start date	End date	Budget funding	&	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
	collaboration and nutrient reduction.									
Restoration of European oyster (<i>Ostrea edulis</i>) stocks in the German North Sea	Restore self-sustaining oyster reefs to enhance biodiversity and ecosystem functioning	2016 2025	2025 2030	German Federal Agency for Nature Conservation (BfN)		active (reintroduction of oyster reefs)	oyster (reefs)		research, pilot, upscaling	Literature
SKATE	Assess and develop methods to restore and enhance populations of threatened skate species in the German North Sea	2024	2025	159,894.00 EUR Funded by BfN		active	thornback ray; starry ray		pilot	Survey
SKATE II	Build on pilot work to test and advance approaches for recovery of endangered skate populations.	planned		1,730,419.00 EUR Funded by BfN		active	thornback ray		implementation	Survey
BeFisch	Improve fish population management and ecosystem conditions through targeted measures and collaboration.	2025	2030	1,580,006.00EUR Funded by BfN		passive	Houting; Alis shad, Angel shark		preparatory work / knowledge gaps	Survey

National efforts for nature regeneration

Project / programme name	Objective	Start date	End date	Budget funding	& Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
RESTORE III	Advance restoration approaches for marine habitats and species through applied research and pilot actions.	2025	2034	15,986,266.00 EUR Funded by BfN	active	European Oyster, European lobster, thornback rays, macroalgae		upscaling	Survey
HANS AWZ	Improve nature-compatible planning and management in the German offshore (EEZ) to balance biodiversity and economic use.	2025	2028	Funded by BfN	passive	20 fish and benthic species		preparatory work / knowledge gaps	Survey
WILD	Promote restoration and recovery of marine biodiversity through research and conservation actions.	2026	2029	Funded by DBU	active			preparatory work / knowledge gaps	Survey
WeserLachs	Restore migratory fish populations by coordinating habitat restoration, stakeholder action and monitoring in the Weser catchment.	2025	2027	Funded by DBU	active	salmon, sea trout		pilot	Survey
BOTTELNECK	Identify and address ecological bottlenecks limiting species	2026	2030	1,990,000.00 EUR Funded by BfN					Survey

National efforts for nature regeneration

Project / programme name	Objective	Start date	End date	Budget funding	& Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
	recovery in aquatic systems.								
HISTOMAR	Reconstruct historical marine ecosystems to inform restoration and management strategies.	2024	2027	Funded by BfN	passive	Sharks, rays		preparatory work / knowledge gaps	Survey
APStör	Restore European sturgeon populations through breeding, reintroduction and habitat improvement.	2025	2028	334,578.00 EUR Funded by BfN	passive	European Sturgeon		management	Survey
Reintroduction of the Houting into German North Sea waters	Reintroduce houting populations to restore their ecological role in coastal ecosystems.		2025	Funded by BfN		housing		management	Survey
SeaStore: Diversity Enhancement Through Seagrass Restoration	Develop a scientific basis and methods for large-scale restoration of seagrass meadows.	2020	2023	Funded under the Strategy for Research on Sustainability (FONA ³) of the Federal Ministry of Education and Research (BMBF)	active		seagrass	pilot	Survey
SeaStore 2	Scale up and refine seagrass restoration approaches to support wider	2024	2027	Funded under the Strategy for Research on Sustainability (FONA ³) of the	active		seagrass	upscaling	Survey

National efforts for nature regeneration

Project / programme name	Objective	Start date	End date	Budget funding &	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
	ecosystem recovery.			Federal Ministry of Education and Research (BMBF)					
MV Seagrass for climate	Restore seagrass meadows to enhance biodiversity and carbon sequestration.	2025	2033	12,276,965.00 Funded by ANK	active		seagrass	pilot/ implementation/ upscaling	Survey
LIFE Wadden Sea Birds	Restore and improve habitats to increase populations of coastal bird species	2020	2026	Total Eligible Budget: 9,289,740 € EU Contribution: 5,573,843 € Funded by grant from the 15 June FUnde	Active & passive	Pied avocet, Ruff, Common tern, Arctic tern, Little tern, Short-eared owl, Black-tailed godwit, Bluethroat, Dunlin, Kentish plover, Widgeon, Pintail, Shoveler, Redshank, Curlew, Lapwing, Oystercatcher		Implementation	Literature

3.4.3 Barriers and enabling factors

Based on the survey responses from Germany the following barriers and enablers were identified to the implementation and upscaling of nature regeneration in marine and coastal ecosystems:

- Lack of knowledge and data gaps/monitoring challenges leading to scientific and technical uncertainties;
- Conflicts with resource user groups;
- Limited financial support;
- Complex governance structures;
- Marine spatial conflicts.

Enabling factors shared in the survey responses are:

- National policy framework for nature restoration and political commitment;
- Established Marine Protected Area (MPA);
- Availability of public funding;
- Advanced scientific research capacities.

3.5 Finland

3.5.1 Policies, laws, and funding programmes

Marine and coastal ecosystem restoration in Finland is shaped by a combination of EU environmental directives and national legislation on water management and nature conservation. The implementation of these objectives is supported by national and EU-funded programmes, such as the AHTI Programme and the EU LIFE programme, which translate policy goals into concrete restoration actions. Table 8 presents an overview of these national policies, laws, and strategies.

Table 8: Overview of the policies and laws related to nature restoration that apply to Finland on a national level.

Name	Type	Summary
Nature Conservation Act¹⁸	National law	Protects and restores biodiversity by implementing EU nature directives and international commitments. It also establishes Natura 2000 areas and regulates the protection of landscapes and public participation in conservation planning.
Water Act¹⁹	National law	Regulates water use and management, including construction, water abstraction, and hydromorphological alterations, while safeguarding ecological status of aquatic systems. It ensures that activities affecting waters require permits and consider environmental impacts, supporting sustainable water management and restoration.
Environmental Protection Act²⁰	National law	Establishes a legal framework to prevent pollution, safeguard ecosystems, and regulate activities that may harm water, air, and soil quality. It supports nature regeneration by requiring permits, monitoring, and mitigation measures for activities affecting aquatic and coastal environments, thereby promoting sustainable use and restoration of natural resources.

¹⁸ [Nature Conservation Legislation - Ministry of the Environment](#)

¹⁹ [Water Act | Regulation No 587/2011 | Translations | Finlex](#)

²⁰ [Microsoft Word - VN0037770 LAKI YM 527 2014 YSL seurattu 905 2020 EN FINLEX.docx](#)

National efforts for nature regeneration

Name	Type	Summary
Act on the Organisation of River Basin Management and Marine Strategy²¹	National law	Establishes the legal framework for the organisation of river basin management and the development and implementation of Finland's Marine Strategy. It aims to protect, improve, and restore waters and the Baltic Sea, ensuring that their status does not deteriorate and reaches at least 'good' ecological status through coordinated, ecosystem-based management
Maritime Spatial Plan for Finland 2030²²	Policy framework	Provides detailed insights into Maritime Spatial Planning (MSP). It consists of five parts, the legislative framework for MSP, potential and alternative scenarios for the future of marine areas up to 2050, a vision for the sustainable use of marine areas in 2050, sector-specific roadmaps for 2030, three maritime spatial plans in three planning areas, as well as impact assessment.
Finnish Marine Strategy²³	Strategy	Provides a comprehensive framework for managing and protecting marine ecosystems in line with the EU Marine Strategy Framework Directive. It combines environmental assessments, targets, monitoring systems, and a programme of measures to reduce human pressures (such as nutrient loading, hazardous substances, and habitat degradation) and to restore and maintain the ecological status of the Baltic Sea.
Finland's Coastal Strategy²⁴	Strategy	Finland's Coastal Strategy promotes the sustainable use of coastal areas by addressing biodiversity loss, climate change, and pollution through integrated and ecosystem-based approaches. It identifies the opportunities and operational models for interaction and cooperation among coastal stakeholders. The aim is for stakeholders to recognise their opportunities within the strategy to work together. It builds on EU and national frameworks (e.g., MSP Directive and Maritime Spatial Plan) and fosters stakeholder cooperation to maintain the coast's ecological and regenerative capacity.
Maritime Policy Action Plan²⁵	Policy framework	Finland's Maritime Policy Action Plan translates national and EU maritime objectives into concrete measures, focusing on marine protection, sustainable blue economy development, and coordinated governance. It results into concrete actions (44 measures) to be implemented across different sectors.

²¹ [Act on the Organisation of River Basin Management and the Marine | 1299/2004 | Translations | Finlex](#)

²² [Maritime spatial plan for Finland 2030 | Research and Innovation](#)

²³ [Towards a good state of the Baltic Sea : Programme of Measures of Finland's Marine Strategy 2022 – 2027 in a nutshell - Doria](#)

²⁴ [Finland's Coastal Strategy | Maritime Spatial Plan MSP](#)

²⁵ [Maritime Policy Action Plan](#)

Name	Type	Summary
Ahti Programme²⁶	Policy programme	Programme to achieve good ecological status of Finland's waters and the Baltic Sea by implementing marine and river basin management plans and reducing pollution pressures. It promotes the implementation of the Finnish Marine Strategy and focuses on curbing nutrient loading (especially from agriculture), improving soil and nutrient cycles, and restoring aquatic ecosystems through targeted measures and cooperation.
Archipelago Sea Programme²⁷	Policy programme	Targeted programme aimed at reducing nutrient loading in the Archipelago Sea catchment area, with the goal of improving water quality and removing the area from HELCOM's pollution hotspot list.

3.5.2 Projects and programmes

The overview table below summarises key programmes and projects in Finland that contribute to nature restoration in marine and coastal environments. The initiatives listed range from long-standing national programmes that guide marine conservation and management, to more focused projects that implement concrete restoration and NbS in specific coastal and marine habitats. Together, they reflect Finland's integrated approach to addressing biodiversity loss and environmental pressures in the Baltic Sea and adjacent coastal areas. The sections that follow provide a concise description of each programme and project, outlining their objectives, actions, results and responsible organisations.

²⁶ [Ahti - Finnish Water and Marine Protection Programme - Maritime Forum](#)

²⁷ [Archipelago sea programme for agriculture - Maa- ja metsätalousministeriö](#)

National efforts for nature regeneration

Table 9: Overview of the ongoing and finished programmes and projects related to nature restoration in Finland.

Project / programme name	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
Helmi Habitats Programme	Halt biodiversity loss by protecting, restoring and managing valuable habitats at scale	2021	2030	Total budget: ~€755.000.000 of which ~€423.000.000 from METSO	Active		Multiple habitats, including aquatic bird habitats, wetlands and coastal and aquatic environments.	Implementation	Literature
LIFE-IP BIODIVERSEA	Strengthen marine biodiversity protection through improved planning, restoration and management practices	2021	2029	Total budget: €19.882.019, EU contribution: €11,929,211 Financiers are EU, LIFE Programme, Ministry of the Environment	Active		Marine and coastal habitats and associated species	Implementation	Literature
Sea Too		2025	2029	Not available, financed by BaltCF	Detailed information can be found in the overview of Sweden, Table 26.				
PROTECT BALTIC	Enhance marine protection and restoration through improved spatial planning and management frameworks	2023	2028	Total budget: €8.481.917, funded by the EU	Active and passive		Baltic Sea marine and coastal ecosystems	Implementation	Literature

National efforts for nature regeneration

NURSECOAST-II	Reduce nutrient pollution in coastal waters through innovative wastewater treatment solutions.	2023	2026	Total budget: €4.420.000 total of which €3.540.000 is funded by ERDF (European Regional Development Fund)	Active		Coastal and marine ecosystems of the Baltic Sea	Pilot	Literature
Re:Fish	Reduce marine litter impacts by retrieving and managing abandoned fishing gear	2023	2026	Total budget: €1.787.923 Financiers: EU, Interreg, Interreg Central Baltic Programme, Helsinki-Uusimaa Regional Council	Active and passive		Coastal Baltic Sea	Implementation	Literature
Baltic Seagrass	Restore eelgrass meadows to enhance biodiversity and ecosystem functioning.	2023	2026	Total budget: €200.000	Active	Eelgrass		Upscaling and implementation	Literature
RANKKU and RANKKU2	Improve coastal water quality and biodiversity through restoration and nutrient reduction measures.	2021	ongoing	Not available	Active		Coastal ecosystems in Western Uusimaa	Implementation	Literature
CoastNet LIFE	Restore and connect coastal habitats to improve ecological	2018	2025	Total budget: €8.681.176 of which European commissions covered 60% (€5,208,706)	Active		Coastal and archipelagic habitats	Implementation	Literature

National efforts for nature regeneration

	quality and biodiversity								
VELMU	Improve knowledge of marine biodiversity to support conservation and spatial planning.	2004	2025	Total budget: €20.000.000	Passive	Benthic habitats, and the vascular plants, macroalgae, invertebrates and fish species living in these habitats		Research	Literature

3.5.3 Barriers and enabling factors

Based on a literature analysis the key barriers and enablers to the implementation of nature regeneration measures in Finland are:

- Barriers:
 - Governance complexity: nature restoration is embedded across multiple laws and policy frameworks, which complicates coordination and implementation.
 - There seem to be some knowledge gaps and monitoring limitations that hinder targeted and efficient restoration planning, particularly in marine environments, including for example limited ecological data, insufficient understanding of ecosystem responses to restoration, and challenges in assessing long-term impacts. Monitoring programmes (such as VELMU) have been created to fill these gaps.
- Enablers:
 - Large-scale, well-funded programmes such as Helmi or LIFE-IP BIODIVERSEA help enable coordinated and long-term restoration efforts
 - There are dedicated national programmes that translate policy into action (such as the AHTI Programme or the Archipelago Sea Programme).

3.6 France

3.6.1 Policies, laws and funding programmes

France's marine and coastal nature regeneration landscape is embedded in a comprehensive, multi-level governance framework shaped by both national legislation and European Union directives, and is implemented in practice through funding programmes which are mostly EU funded (LIFE programme, Interreg programme, EMFF (European Maritime and Fisheries Fund), but also nationally through the OFB (French Biodiversity agency). In the table below an overview is provided of these policies, laws on a national level.

Table 10: Overview of the policies and laws related to nature restoration that apply to France on a national level.

Name	Type	Summary
Code de l'environnement	National law	France's primary national law that governs protection of France's environment and natural resources. It aims at preserving natural resources, protecting ecosystems, and ensuring compliance with international environmental obligations.
National Strategy for the Sea and the Coast (SNML) 2024 - 2030	National framework	The SNML is a comprehensive framework with the objective to promote sustainable development, management, and preservation of France's marine and coastal environments while balancing economic activities and ecological conservation
Maritime façade strategic planning: Document stratégique de façade (DSF) 'Manche Est - mer du Nord' (Second cycle 2025 - 2031)	Policy framework	The DSF is the façade-level maritime planning instrument that translates national orientations to the specific economic, social and ecological context of a maritime façade.

3.6.2 Projects and Programmes

France has a number of overseas territories with unique coastal and marine ecosystems which are very different to the ones we find in the North Sea. However, the focus in this document is on mainland France (and Corsica), to target similarities and opportunities for collaboration with other OSPAR countries.

National efforts for nature regeneration

The table below provides an overview of the main programmes and projects in France that are related to nature restoration in marine and coastal ecosystems. It includes both large, overarching programmes and more targeted projects addressing habitat restoration, species recovery, NbS and ecosystem-based management. After the table, each individual project is discussed in more detail.

National efforts for nature regeneration

Table 11: Overview of the ongoing and finished programmes and projects related to nature restoration in France.

Project or programme name	Objective	Start date	End date	Budget & funding	Active/passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
LIFE Integrated Project Marha (Marine Habitats)	The project aimed to restore and maintain favourable conservation status of natural marine habitats in mainland France, explicitly supporting implementation of the Habitats Directive within marine Natura 2000 sites.	2018	2025	European Union LIFE programme, French national funding. Own budget: 22,3 million euros; Extra financing: 50 million euros;	active and passive	Seagrass	Coastal lagoons, Sandbanks, Reefs, Estuaries, Mudflats and sandflats, Shallow bays and inlets	research, pilot	Literature
PACCo (Promoting Adaptation to Changing Coasts) - Saône Valley pilot (Normandy)	Cross-border project to restore coastal wetlands and improve flood management and carbon storage; includes a French pilot in the Saône Valley, Normandy, and UK pilot in the Otter Estuary in Devon (UK).	not available	not available	EU Interreg France–Channel–England (FCE) programme. 27 million euros	active and passive		coastal wetlands, saltmarsh, mudflats, estuarine floodplains	pilot	Literature
Le Havre - Port 2000 environmental restoration measures (Seine estuary)	The Port 2000 works provided the opportunity to contribute to the environmental restoration of the Seine Estuary	1996	2003	Le havre port - 46 million euros	Active		mudflats, estuarine	Implementation	Literature
Accelerating the Restoration of Seagrass Meadows in the Mediterranean area through Innovative	Restore and conserve seagrass meadows in the Mediterranean region. This goal is pursued by developing and implementing innovative restoration protocols and integrating ecosystem service values into financial and policy frameworks.	2024	2026	EU Interreg. Total budget: 3 million euros Total EU funding: 2,4 million euros	Passive	seagrass		Pilot	Literature

National efforts for nature regeneration

Project or programme name	Objective	Start date	End date	Budget & funding	Active/passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
ecosystem-service based Solutions Repair 2.0	The primary goal of REPAIR 2.0 is to develop scalable, non-destructive, and ecologically sound techniques for restoring <i>Posidonia oceanica</i> meadows.	2024	2026	Unknown	Active	seagrass		Pilot	Literature
Arachon Bay	The project is exploring a new restoration approach focusing on hydrodynamics. It aims at reducing hydrodynamics, then increasing sediment deposition, reducing bottom shear stress, and reducing water turbidity for succession of seagrass to happen	1989	Unknown	Unknown	Active and Passive	seagrass		Research / Pilot	Literature
Reeforest	Reeforest project aims to consolidate, improve and finalise the restoration methodology for the flat oyster on various Natura 2000 sites in France	2022	2024	Unknown	Active and Passive	Flat oyster		Research, pilot	Literature
LIFE Espèces Marines Mobiles	National LIFE project aiming to restore/maintain favourable conservation for “marine mobile species”;	2024	2030	The project has a total budget of €21.8 million,	Passive	Black-tailed godwit, Eurasian oystercatcher, Black-legged kittiwake, Atlantic puffin, Razorbill, Balearic		Pilot	Literature

National efforts for nature regeneration

Project or programme name	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
						shearwater, Yelkouan shearwater, Roseate tern, Northern gannet, Kentish plover, Common guillemot, Common tern, Angelshark, White skate, Spurdog, Thresher shark, Blue shark			

3.6.3 Barriers and Enabling factors

- Based on the survey results, the factors that determine regeneration measures are:
- strong and incentive-based environmental protection regulations;
 - funding sources for monitoring and control;
 - lessons learned from other projects regarding the ecological benefits of this restoration.

The main obstacles cited by the survey are lack of knowledge, and conflicts over regulations due to the many activities impacted by the lifting of pressures to do passive restoration.

Based on the literature results one of the most cited constraints to nature restoration in marine and coastal regions is the lack of knowledge (as also mentioned in the survey), which is closely linked to incomplete understanding of ecosystem pressures and the current condition of habitats within marine Natura 2000 networks, especially during early implementation stages. Political will and financial resources are also frequently limited, resulting in insufficient momentum and funding for large-scale restoration efforts. Regulatory frameworks can be complex or fragmented, further complicating coordinated action. Monitoring and evaluation of restoration outcomes pose additional challenges, as current practices are often heterogeneous, short-term, and seldom based on robust indicators that reflect both ecological and social complexity; this hampers comparability between projects and the accumulation of solid evidence on restoration effectiveness.

Regarding opportunities found in the literature results, are the national integrated policy framework SNML 2024–2030 which aims to harmonize public policies for sea and coastal management while supporting biodiversity protection objectives. At the façade level, maritime planning initiatives such as the DSF ‘Manche Est mer du Nord’ set out strategic orientations to achieve and maintain good ecological status, balancing environmental objectives with sustainable use. EU and national programmes, notably the LIFE Integrated Project Marha, provide vital support through coordinated partnerships, technical reference frameworks, and targeted training for Natura 2000 at sea actors. Knowledge-sharing platforms like LITTOREX are being developed to structure and disseminate restoration return-of-experience (REX), facilitating the transfer of lessons learned across projects and regions. These infrastructures help bridge knowledge gaps and foster best practice exchange among practitioners.

3.7 Iceland

3.7.1 Policies, laws, and funding programmes

Marine and coastal ecosystem restoration and regeneration in Iceland is governed primarily by national legislation on nature conservation, environmental protection, and marine resource management, alongside international commitments under the EEA Agreement and global biodiversity frameworks.

Despite this framework, dedicated policies and operational programmes for marine and coastal restoration remain limited, and implementation has lagged behind terrestrial ecosystem efforts. Under the National Biodiversity Strategy Policy (2025) and its forthcoming Action Plan (2026–2030), aligned with the Global Biodiversity Framework, targeted implementation programmes for marine and coastal ecosystems are expected to be initiated and further operationalized to enhance the restoration of degraded marine and coastal areas. In the table below an overview is provided of these policies, laws on a national level. The international policies, laws and funding programmes are listed in paragraph 3.1.

Table 12: Overview of the policies and laws related to nature restoration that apply to Iceland on a national level.

Project / programme name	Type	Summary
National Biodiversity Strategy Policy (2025) (GBF-aligned)	Policy	Sets Iceland’s overarching strategic framework for biodiversity conservation and restoration, aligned with the Global Biodiversity Framework. Defines

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		national priorities, targets, and policy directions, including increased attention to marine and coastal ecosystems.
National Biodiversity Strategy Action Plan (2026–2030) (GBF-aligned)	Policy	Operationalises the Biodiversity Strategy through time-bound actions and measures, including the development of programmes for restoration, monitoring, and improved governance of terrestrial and marine ecosystems.

3.7.2 Projects and Programmes

The table below provides an overview of the main programmes and projects in Iceland that are related to nature restoration in marine and coastal ecosystems. After the table, each individual project is discussed in more detail.

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Table 13: Overview of the ongoing and finished programmes and projects related to nature restoration in Iceland.

Project or programme name	Objective	Start date	End date	Budget & funding	Active/passive	Species focus	Habitat focus	Type (Pilot, research, etc.)	Literature /survey
REDRESS (Restoration of Deep-Sea Habitats to Rebuild European Seas)	Advance restoration of degraded deep-sea ecosystems by testing techniques, prioritising sites and developing scalable solutions.	2024	2028	€8.85 million	Active		cold-water coral reefs, coral gardens, sponge fields, sea pens, cold seeps	Pilot	Survey
BioProtect Project	Develop ecosystem-based solutions to improve protection and restoration of marine biodiversity across European sea basins.	2024	2028	€8.47 million	Passive	Oyster	Subtidal and intertidal oyster reef habitat restoration	Research	Literature

3.7.3 Barriers and Enabling factors

Based on a literature analysis the key barriers and enablers to the implementation of nature regeneration measures in Iceland are:

- Barriers:
 - persistent data gaps, limited mapping of degraded habitats, and insufficient resources for data collection and monitoring.
 - In addition, the absence of dedicated policies and operational programmes, combined with unclear roles and responsibilities within existing governance structures, constrains effective implementation. At the same time, international commitments, particularly the Global Biodiversity Framework (GBF), act as important enabling factors by providing overarching targets and a strategic reference for national policy development. The forthcoming National Biodiversity Strategy and its Action Plan are expected to further strengthen this enabling environment by clarifying priorities, improving coordination, and supporting the development of targeted restoration actions.
- Enablers:
 - While permitting requirements for reef deployment are still under consideration, enabling factors include existing baseline data and prior research experience.
 - In addition to restoration objectives, the project contributes to knowledge development and the testing of techniques with potential applicability in other marine areas.

3.8 Ireland

3.8.1 Policies, laws, and funding programmes

NBS and ecosystem restoration in Ireland are primarily driven by a combination of EU environmental directives, national biodiversity policy, and targeted funding programmes. While the legal framework, anchored in instruments such as the Habitats Directive and national conservation law, establishes binding obligations for habitat protection and restoration, the operationalisation of NbS is most clearly articulated in strategic policy and funding mechanisms.

In particular, Ireland's 4th National Biodiversity Action Plan and EU co-financed programmes such as the LIFE Programme and the European Maritime Fisheries and Aquaculture Fund (EMFAF) provide the strongest basis for implementing restoration and nature-based approaches across terrestrial, freshwater, and marine ecosystems. Together, these instruments form the core enabling framework for scaling NbS in Ireland, although delivery remains dependent on project-based funding and cross-sectoral coordination. In the table below an overview is provided of these policies, laws on a national level. The international policies, laws and funding programmes are listed in paragraph 3.1.

Table 14: Overview of the policies and laws related to nature restoration that apply to Ireland on a national level.

Name	Type	Summary
Ireland's 4th National Biodiversity Action Plan	Policy	strategy for halting biodiversity loss and restoring ecosystems across all environments, including specific actions on peatlands, wetlands, rivers, and coastal systems.
Climate Action Plan 2024	Policy	National climate roadmap including land-use measures such as peatland restoration, afforestation, and coastal resilience.
Coastal Change Management Strategy Report	National framework	The purpose of the Group was to scope out an approach for the development of an integrated whole of Government strategy for managing coastal change. The Report sets out the Group's initial findings and recommendations to enable the State to assess risks and develop appropriate responses.

3.8.2 Projects and Programmes

The table below provides an overview of the main programmes and projects in Ireland that are related to nature restoration in marine and coastal ecosystems.

Table 15: Overview of the ongoing and finished programmes and projects related to nature restoration in Ireland.

Project / programme name	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Literature /survey
Restoration of Native Oysters in Ireland	Restore native oyster populations and reef habitats in Natura 2000 sites through targeted restoration actions	2018	Ongoing (major phase 2022–2025 under EMFF/EMFAF successor work)	~€596,550 (core Marine Institute project phase)		Shellfish		Literature
Native Oyster Reef Restoration Ireland (NORRI)	Rebuild native oyster reefs through community-led restoration and pilot site development.	2020	ongoing	Not publicly consolidated (pilot-scale; multiple funding streams)	Active	Native flat oyster		Literature
Oisre Conamara	Map and restore native oyster habitats while assessing biodiversity and ecosystem interactions	2021	ongoing	Not publicly specified (research + PhD-level funded project)	Active	Native oyster		Literature
UCD–Codling Wind Park biodiversity	Explore restoration of oyster reefs and seagrass	not available	not available	Not publicly specified		Native oyster reefs	Seagrass beds	Literature

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Project / programme name	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Literature /survey
research project (Dublin Bay)	while testing nature-based solutions for habitat enhancement							
LIFE Insular – Sand Dune Restoration (Ireland–Spain)	Restore and manage coastal dune ecosystems to improve biodiversity and resilience	2021	2026	Not publicly specified	Active		Atlantic and Mediterranean coastal dune systems Embryonic dunes, mobile dunes, fixed dunes, and associated dune vegetation	Literature
Celtic Seas Partnership (CSP) – stakeholder-driven integrated management (LIFE11 ENV/UK/000392)	Enable stakeholder-driven, integrated management of marine ecosystems	2013	2016	Not publicly specified	Passive		Marine ecosystems of the Celtic Seas region, including protected habitats and marine biodiversity	Literature
Galway Bay Oyster Restoration Project	Restore native oyster habitats through research-driven reef restoration and management	2017	ongoing	Not publicly specified	Active		Oyster reefs	Survey
CLIMAREST (Ireland seagrass component)	Develop and test scalable seagrass restoration methods and tools for	2022	2025	~€15–20 million (EU multi-country programme)	Active		Seagrass	Survey

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Project / programme name	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Literature /survey
	ecosystem recovery							
LIFE on Machair	Improve conservation status of Machair habitats and associated species through restoration and management measures	2022	2028	Not publicly specified	Active		Dunes, wetland, peatland, heathland	Survey
Blueprint for Atlantic-Arctic Agora	Develop collaborative tools and approaches to support marine and coastal ecosystem restoration	2022	2026	Not publicly specified	Active		Wetland and saltmarsh	Survey

3.8.3 Barriers and Enabling factors

Based on the survey the key barriers and enablers to the implementation of nature regeneration measures in Ireland are:

- Barriers:
 - Funding:
 - Especially for upscaling;
 - Time bound – project based funding means future resourcing needs to be secured to continue work.
 - Knowledge gaps;
 - Absence of long-term strategy
 - Cost benefit analysis;
 - reversal of existing pressures on biodiversity remains a challenge;
 - Monitoring.
- Enabling:
 - Increasing levels of interest;
 - Dedicated funding for Research and Innovation;
 - Multi-actor approach: Committed individuals and strong working relationships across stakeholders and communities;
 - Public support.

3.9 Luxembourg

3.9.1 Policies, laws and funding programmes

Luxembourg does not have marine habitats. Marine and coastal nature protection and restoration in Luxembourg is therefore not embedded in national laws / frameworks. However, as the country is part of the Rhine and Meuse river basin, its actions can still be relevant to North Sea nature regeneration through downstream linkages. In the table below an overview is provided of these policies, laws and funding programmes on a national level. The international policies, laws and funding programmes are in paragraph 3.1.

Table 16: Overview of the policies laws and funding programmes related to nature restoration that apply to Luxembourg on a national level.

Name	Type	Summary
National Plan for the Protection of Nature(PNPN3)²⁸	National framework	The PNPN3 determines the actions to be implemented and the quantifiable measures to be taken by 2030, based on the structure and content of the EU's biodiversity strategy for 2030. The PNPN3 is structured according to the following four pillars: protection (targets the network of protection zones); restoration (of the most degraded habitats and ecosystems and on the reactivation of the ecosystem systems provided); transformative change (cooperation between actors); international commitment (biodiversity at the international level).
The environmental Protection law	National law	The Environmental Protection Law is one of the foundational legal instruments for environmental governance in Luxembourg. It sets out the framework for protecting the environment and maintaining ecological balance. ²⁹

²⁸ <https://www.chronicle.lu/category/environment/44211-new-nature-protection-plan-to-focus-on-protection-restoration-transformative-change-international-commitment>

²⁹ <https://lawgratis.com/blog-detail/environmental-laws-at-luxembourg>

Name	Type	Summary
The Law on Water Protection	National law	Objective: The Water Protection Law regulates the protection, management, and use of water resources in Luxembourg. The law ensures the quality and availability of water, both for human consumption and ecological purposes.
The Nature and Biodiversity Conservation Law	National law	The Nature and Biodiversity Conservation Law aims to protect Luxembourg's natural heritage, including its flora, fauna, and ecosystems.
Convention on the Protection of the Rhine	Convention	International river-basin cooperation for the Rhine involving Luxembourg; the Convention text recognises that restoration of the Rhine is necessary to conserve and improve the North Sea ecosystem ³⁰ .
Blue Natural Capital Financing Facility (BNCFF)	Funding programme	The BNCFF, funded by the Government of the Grand Duchy of Luxembourg and supported by the UBS Optimus Foundation, enables impactful investments that advance sustainable blue natural capital initiatives worldwide ³¹ . The funding programme focuses on continents other than Europe.

3.9.2 Projects and Programmes

No programmes or projects were found with a direct link to nature restoration or regeneration in marine or coastal ecosystems in European waters. It should be noted that Luxembourg has no marine habitats. However, through its membership of the International Commission for the Protection of the Rhine (ICPR), and through aligning its environmental legislation with EU directives and regulations for the Meuse river basin district, it aims to improve ecological status of the Rhine and Meuse water bodies. Focusing primarily on freshwater and catchment management, it can still be relevant to North Sea nature regeneration through downstream linkages, as Rhine and Meuse river basin restoration is explicitly recognised as necessary to conserve and improve the North Sea ecosystem.

3.10 Netherlands

3.10.1 Policies, laws and funding programmes

Marine and coastal nature protection and restoration in the Netherlands is governed by a combination of National laws, European regulations and international treaties and conventions. Projects are implemented in practice through national and provincial government funding, but also government–science–industry consortia with national funds and monetary / in-kind contribution from partners. In the table below an overview is provided of these policies and laws on a national level. The international policies, laws and funding programmes are listed in paragraph 3.1.

Table 17: Overview of the policies laws and funding programmes related to nature restoration that apply to the Netherlands on a national level.

Name	Type	Summary
National Water Programme 2022–2027 (Nationaal Water Programma, NWP)	Policy framework	Sets the national water policy and implementation in Dutch state waters; includes the Programme North Sea 2022–2027 as a statutory appendix

³⁰ <https://www.iksr.org/en/icpr>

³¹ <https://www.bluenaturalcapital.org/bncff>

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Name	Type	Summary
Programme North Sea 2022–2027 (Programma Noordzee, PNZ)	Policy framework	For the North Sea, the central government establishes the frameworks for spatial use through the North Sea Programme. The programme combines, among other things, the additional wind energy target for the North Sea with nature development (increasing biodiversity), sustainable fisheries, and space for shipping. Under the Marine Strategy Framework Directive, measures are being taken to improve the environmental status of the North Sea.
The North Sea Agreement (Noordzeeakkoord)	National framework	Agreement between Dutch government and stakeholders through to 2030, including commitments on ecosystem recovery, monitoring/research and a transition fund.
Environment and Planning Act (Omgevingswet)	National law	permitting framework relevant to marine nature enhancement – Provides the main permitting framework for activities in the physical environment (incl. North Sea), integrating habitat/species protection and water quality requirements.

3.10.2 Projects and Programmes

The table below provides an overview of the main programmes and projects in the Netherlands that are related to nature restoration in marine and coastal ecosystems. It includes both large, overarching programmes and more targeted projects addressing habitat restoration, species recovery, NbS and ecosystem-based management.

National efforts for nature regeneration

Table 18: Overview of the ongoing and finished programmes and projects related to nature restoration in the Netherlands.

Project or programme name	Objective	Start date	End date	Budget and funding	Active/passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/survey
Natuurversterking Noordzee (NN)	Public-private programme to upscale marine nature restoration	2025	2030	150 million euro	Active & passive	Birds, fish, benthos		Pilot, upscaling	Survey
De Rijke Noordzee	Nature enhancement in offshore wind farms through pilots	2018	Ongoing	>8,5 million euro	Active	Reefs species (oysters), fish		Pilot, implementation, upscaling	Survey
Borssele III & IV / Blauwwind trial	Testing offshore oyster reef restoration at turbine foundations	2020	Unknown	Unknown	Active	Oysters (reefs)		Pilot	Survey
Ecowende (Windpark Hollandse Kust West)	First large-scale integration of NbS in OWF design	2022	2026	Unknown	Active	Fish	Reef habitat	Implementation, upscaling	Survey
Wadden Sea: seagrass restoration project	Reintroducing eelgrass through seeding and experimentation	2022	2027	Unknown	Active	Eelgrass		Research, pilot, upscaling	Survey
Kierbesluit – fish migration and estuarine restoration measures	Opening sluices to allow fish migration	2024	2030	Unknown	Passive (enabling)	Salmon, eel	Estuarine	Implementation	Survey
Shellfish reef restoration pilots: Voordelta (Haringvliet Dream Fund context)	Testing shellfish reef restoration techniques	2015-2016	Unknown	Unknown	Active	Shellfish, oysters, mussels		Pilot	Survey

National efforts for nature regeneration

Project or programme name	Objective	Start date	End date	Budget and funding	Active/passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/survey
LIFE Dutch Dune revival	Dune restoration through hydrological and vegetation interventions	2010	2016	Total Eligible Budget: 6,700,899 € EU Contribution: 3,350,449 €	Active & passive		Coastal dunes, dune grasslands	Implementation	Survey
Uitvoeringsprogramma Waddengebied	Programme bundling restoration and development initiatives	2021	2026		Active & passive	seagrass	Saltmarshes, reefs	All phases	Survey
PAGW	Large-scale programme for system restoration	2018	2050	>€ 1bn programme scale	Active & passive		Rivers, estuarine	Implementation, upscaling	Survey
Sand Engine	maintain and reinforce the coastline by creating a large sand peninsula that is redistributed by natural processes over time.	2011	2041	70 million €	Active & passive	Benthic speices		Implementation	Literature

3.10.3 Barriers and Enabling factors

Based on an interview with NN programme director Jeroen Vis and literature research the key barriers and enabling factors affecting marine restoration efforts in Dutch waters are:

- Major barriers include:
 - Collaboration on nature regeneration is hindered by a complex international stakeholder landscape with many actors and governance layers, combined with jurisdictional fragmentation between national (up to 12 nautical miles) and EU levels beyond, resulting in lengthy coordination processes and slow decision-making, particularly for offshore activities.
 - Nature regeneration measures are constrained by intense spatial competition and overlapping claims from multiple North Sea functions and users (e.g. offshore energy, shipping, fisheries, defence, mining and mineral extraction, recreation and nature), limiting available space and complicating spatial planning.
 - Nature regeneration is not yet consistently embedded as the default (“go-to”) solution in policies and legislation, as political willingness remains limited and measures are often treated as optional or guided by non-binding frameworks rather than enforceable regulation.
 - Implementation is slowed by complex and fragmented permitting procedures, stringent precautionary requirements (e.g. demonstrating no significant adverse effects), and additional legal complexity for innovative measures, particularly across different regulatory regimes (national vs EU).
 - Uncertainty about the effectiveness of measures, long timescales before ecological benefits materialise, ongoing debate on appropriate reference conditions and system boundaries, and the high cost and complexity of (long-term) monitoring all impede scaling and decision-making.
- Major enabling factors are:
 - In the long term, national and international collaboration is considered important for making a real difference regarding nature enhancement in maritime and coastal regions. The enabling factor is that urgency calls us to the table;
 - Stakeholder accords and long-term agendas (e.g., North Sea Agreement) that align nature, fisheries and energy transitions and include dedicated funding for monitoring/research and nature recovery;
 - Having the department of fisheries and nature within the same ministry has advantages. Fishing and nature areas are located close to each other and there is much interaction. Therefore collaboration and coordination is required;
 - Dedicated public–private programmes (e.g., Natuurversterking Noordzee) with an explicit learning-by-doing and scaling approach, supported by funding and programme-level monitoring;
 - Experience with long-term and systemic monitoring
 - Platforms in which governmental coordination with stakeholders is formalized (Noordzeeoverleg, focused on consensus and gebiedspaspoorten focused on multi-use of windfarms)

3.11 Norway

3.11.1 Policies, laws and funding programmes

Marine and coastal nature restoration in Norway is guided by a comprehensive framework of legal, policy and strategic instruments that together support an ecosystem-based approach to marine management. This framework emphasises the sustainable use of marine resources while ensuring the conservation and restoration of ecosystems. Targeted plans and strategies further address specific ecological challenges and support knowledge-based, long-term environmental sustainability. In Table 19 an overview is provided of these policies, laws and funding programmes on a national level.

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Table 19: Overview of the policies laws and funding programmes related to nature restoration that apply to Norway on a national level.

Name	Type	Summary
The Nature Diversity Act³²	National Law	The Nature Diversity Act is Norway's primary framework law for the conservation and sustainable use of biological, geological and landscape diversity, applying to land territory and territorial waters. The Act establishes legally binding principles for ecosystem-based decision-making and provides the legal basis for designating and managing protected areas, including marine protected areas (MPAs).
Ocean Protection Act³³	National Law	The Ocean Protection Act (Act relating to the protection of marine nature beyond territorial waters) provides a legal tool to establish marine protected areas in Norway's economic zone and on the continental shelf. It aims for long-term, effective and representative protection of marine areas as part of an integrated ecosystem-based management regime, and explicitly links to the guiding principles of the Nature Diversity Act.
Marine Resources Act³⁴	National Law	The Marine Resources Act establishes the legal framework for the sustainable management and use of Norway's wild marine resources, aiming to ensure long-term ecosystem health and value creation. It enables measures such as fisheries regulation and area-based protection to safeguard marine biodiversity and support ecosystem-based management.
Norway's integrated ocean management plans³⁵	White paper	Newest of a sequence of parliamentary White Papers. It consolidates Norway's integrated, ecosystem-based ocean management plans, aiming to balance sustainable use, value creation and food security with the conservation of marine ecosystems. The White Paper reinforces the role of marine protected areas, ecosystem resilience and cumulative impact management across the Barents Sea, Norwegian Sea and the North Sea and Skagerrak.
Meld. St. 35 (2023–2024)³⁶	White paper	In this White Paper, the government presents Norway's new National Biodiversity Strategy and Action Plan (NBSAP). Through the action plan, Norway is following up on the global targets for biodiversity set out in the global Kunming-Montreal Biodiversity Framework (the KMGBF) agreed upon in Montreal in December 2022.
Osfjordplanen - Comprehensive action plan for a clean and rich Oslofjord with an active outdoor life³⁷	Plan/strategy	The action plan outlines the Norwegian government's main priorities for the Oslo Fjord, initially up to 2026. The goal is to ensure that the fjord is clean, ecologically rich, and accessible to everyone.

³² [Nature Diversity Act - regjeringen.no](https://www.regjeringen.no)

³³ [Act relating to the protection of marine nature beyond territorial waters \(Ocean Protection Act\) - Lovdata](#)

³⁴ [Marine Resources Act - regjeringen.no](https://www.regjeringen.no)

³⁵ [Meld. St. 20 \(ENG\) \(2019–2020\)](#)

³⁶ [Meld. St. 35 \(2023–2024\) - regjeringen.no](https://www.regjeringen.no)

³⁷ [Helhetlig tiltaksplan for en ren og rik Oslofjord med et aktivt friluftsliv - regjeringen.no](#)

Name	Type	Summary
Restoring Norway's underwater forests³⁸	Strategy	The strategy report presents a knowledge-based strategy to restore degraded kelp ecosystems in Norway by addressing sea urchin overgrazing, highlighting the ecological, climate, and socioeconomic benefits of kelp forests and providing guidance for policymakers and practitioners on how to enable large-scale restoration.
Miljødirektoratet - Grant Scheme for Restoration Measures in the Oslofjord³⁹	Funding programme	This grant scheme by the Norwegian Environment Agency supports a wide range of marine restoration and environmental improvement measures in the Oslofjord, including habitat restoration, litter removal and monitoring activities. As a funding instrument, it enables multiple stakeholders to implement projects that collectively contribute to addressing long-term ecological degradation of the fjord.
Grant schemes managed by the Ministry of Climate and Environment⁴⁰	Grant schemes	Overview of Norwegian environmental funding schemes managed by the Ministry of Climate and Environment and the Norwegian Environment Agency. The schemes support nature restoration, biodiversity conservation, water quality improvement, protected area management, marine litter measures and other climate and environmental initiatives.
Invasive American Mink (Neovison vison): Status, ecology and control strategies⁴¹	Action plan	Governmental assessment and management framework addressing the impacts of invasive American mink on Norwegian biodiversity, including coastal and island ecosystems. The report supports management and control measures aimed at protecting vulnerable sea bird populations.

3.11.2 Projects and programmes

The table below provides an overview of the main programmes and projects in Norway that are related to nature restoration in marine and coastal ecosystems. It includes both large, overarching programmes and more targeted projects addressing habitat restoration, species recovery and reintroduction and ecosystem accounting.

³⁸ [Microsoft Word - Restoring Norway's Underwater Forests_UN.docx](#)

³⁹ [Tilskudd til restaureringstiltak for Oslofjorden - regjeringen.no](#)

⁴⁰ [Grant schemes managed by the Ministry of Climate and Environment - regjeringen.no](#)

⁴¹ [dn-utredning-6-2011_net.pdf](#)

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Table 20: Overview of the ongoing and finished programmes and projects related to nature restoration in Norway.

Project or programme name	Objective	Start date	End date	Budget & funding	Active / passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/survey
Cleanup Norway in Time (Rydd i Tide)	Remove marine litter to improve coastal environmental quality and reduce pollution	2020	2028	Budget invested: ~€45.700.000	Active		Coastal area	Implementation	Literature
BlueRewilding – Reestablishing Atlantic wolffish populations	Reintroduce wolffish to restore kelp ecosystems through natural predator–prey dynamics	2025	2027	Not available, funded by Restorae and Trefadder/Vår Energy	Active	Kelp and Atlantic wolffish		Early implementation	Literature/survey
NORSE – Biodiversity in northern European seagrass meadows	Improve understanding of biodiversity drivers in eelgrass meadows to inform management and restoration	2024	2027	Not available, funded by Research Council of Norway	Passive	Eelgrass meadows		Implementation	Literature
Redd Oslofjorden	Improve ecological condition of the Oslofjord through restoration measures, awareness and stakeholder collaboration	Unavailable	Ongoing	Not available, funded by Eckboes legat, AKO Foundation and Oslofjordens Friluftsråd's own funds.	Passive		Ecosystems in the Oslofjord	Implementation	Literature/survey
Tangible – Kelp Forest Restoration	Demonstrate scalable kelp forest restoration through removal of sea urchins	2025	Ongoing	Not available, source of funding is Samfunnsløftet – Sparebank1 Nord-Norge	Active	Kelp forests		Pilot	Literature
OceanGreen	Restore kelp forests while developing sustainable sea urchin harvesting and reuse approaches	2024	2026	Not available, partly funded (~€4.300.000) from the Norwegian	Active	Kelp forests and sea urchins		Implementation	Literature

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Project or programme name	Objective	Start date	End date	Budget & funding	Active / passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/survey
				government Green Platform grant					
BlueBioClimate – Climate-adapted biodiversity management in marine systems		2023	2026	Total budget: €5,236,017 EU-Contribution: €2,737,167	Detailed explanation of project provided in the overview of Sweden.				
Can marine biological concrete promote marine life in offshore wind farms?	Test eco-engineered concrete to enhance marine biodiversity on artificial structures	2024	2025	Total budget: > €30.000, funded by Regional Forskningsfond Agder	Active		Marine ecosystems	Pilot	Literature
MAREA – MARine Ecosystem Accounting	Develop ecosystem accounting tools to support integrated coastal planning and management	2021	2025	Total budget: ~€1.200.000	Active		Ecosystems in the Oslofjord	Research (testing a framework)	Literature
Oslo Municipality (Zostera marina) Restoration / Reintroduction Pilot	Restore eelgrass meadows to enhance biodiversity and ecosystem services	2021	Not available	Not available	Passive:	Eelgrass meadows		Upscaling from earlier pilot projects	Literature/survey
Green gravel kelp forest restoration field testing (Lillehaven)	Test 'green gravel' techniques for scalable kelp forest restoration	2019	2020	Total budget: ~€57.300	Active	Kelp forests		Research	Literature
NIVA kelp restoration pilot (cages)	Assess kelp recovery potential by reducing sea urchin grazing pressure	2018	2019	Total budget: > €35.000	Active			Pilot	Literature

3.11.3 Barriers and Enabling factors

Based on the survey responses from Norway the following barriers and enablers were identified to the implementation and upscaling of nature regeneration in marine and coastal ecosystems:

- Barriers:
 - Long-term financing: Usually, grants for projects are provided every year through the grant schemes, and therefore only last 1 year. This makes funding nature regeneration projects difficult, since one of the requirements is that the effects of the project should have some longevity. This creates difficulty since nature regeneration projects often work over longer timescales and no long-term monitoring data can be collected to show the effects or impacts of a project. It could therefore be useful to have more long-term funding.
 - Lack of knowledge: There is a lack of knowledge of marine areas. Most of the methods used in Norway are in the pilot stage and a lot of projects are not very successful. Especially in active restoration this lack of knowledge forms problems, since this kind of restoration is challenging and uncertain. In addition, little to no monitoring of the methods exist and therefore it is hard to understand whether these methods work and what long-term positive and negative impacts are.
 - Difficult rules and regulations: Obtaining permits can form a difficult task for nature regeneration projects. Finding the right place to go can be difficult and time-consuming. An example of this is nature regeneration with kelp production on ropes. This does not fall under the Nature Act, but instead under aquaculture regulations.
- Enablers:
 - Public and political enthusiasm: In Norway there is a lot of public and political enthusiasm for nature regeneration projects. It is a topic that is on many people's and politicians' minds.

3.12 Portugal

3.12.1 Policies, laws and funding programmes

Marine and coastal nature restoration in Portugal is governed by a combination of EU environmental directives, national biodiversity and marine protection laws, and is implemented in practice through funding programmes such as LIFE (EU). In the table below an overview of these policies, laws and funding programmes on a national level is given. The international policies, laws and funding programmes are in paragraph 3.1.

Table 21: Overview of the policies laws and funding programmes related to nature restoration that apply to Portugal on a national level.

Name	Type	Summary
Decree-Law No. 108/2010 (transposition of MSFD in Portugal)⁴²	Law	Transposes the MSFD into Portuguese law and establishes the national framework for marine strategies, including assessment, GES determination, environmental targets and programmes of measures; provides the legal basis for many marine restoration and pressure-reduction actions in national waters.
Decree-Law 142/2008⁴³	Law	Establishes Portugal's core legal framework for nature conservation and biodiversity, defining the system of classified and protected areas (including Natura 2000) and setting the rules for their

⁴² [Implementation - DGRM](#)

⁴³ [Decree-Law No. 142/2008 establishing the legal regime for the preservation of Wildlife and Biodiversity. | UNEP Law and Environment Assistance Platform](#)

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Name	Type	Summary
		classification, management, and use, with the aim of safeguarding biodiversity, ecosystem services, and ecological connectivity.
Decree-Law 159/2012⁴⁴	Law	Regulates the preparation and implementation of Coastal Zone Management Plans (POOC) in Portugal, defining land- and sea-based protection zones, rules for coastal use, and sanctions for illegal access, circulation, or occupation of restricted coastal areas, with the aim of protecting coastal ecosystems, managing risk, and ensuring safe and sustainable use of the coastline
Decree-Law 38/2015⁴⁵	Law	Establishes Portugal's marine spatial planning framework, setting the rules for planning, allocating, and licensing uses of the national maritime space to balance economic activities with environmental protection and sustainable management of marine resources.
National Strategy for the Sea 2021–2030 (Estratégia Nacional para o Mar 2021–2030)⁴⁶	Strategy	Sets Portugal's long-term ocean policy, including objectives for marine biodiversity, MPAs, blue economy and climate adaptation; provides strategic guidance for restoration initiatives.
National Nature Restoration Plan (Plano Nacional de Restauro da Natureza)⁴⁷	Plan/Strategy	Portugal's National Nature Restoration Plan is the country's response to the EU Nature Restoration Regulation and aims to restore at least 20% of terrestrial and marine areas by 2030 and all degraded ecosystems by 2050.
Environmental Fund (Fundo Ambiental)^{48 49}	Funding programme	Central national environmental funding instrument that supports biodiversity, climate and coastal projects, including nature-based coastal protection and marine restoration; also finances specific programmes such as Blue Forest.

⁴⁴ [Decree-Law No. 159/2012, of 24 July](#)

⁴⁵ [Decreto-Lei n.º 38/2015, de 12 de março | DR](#)

⁴⁶ [DGPM | ENM 2021-2030](#)

⁴⁷ [Governo lança Grupo de Trabalho para elaboração do Plano Nacional de Restauro da Natureza - XXIV Governo Constitucional](#)

⁴⁸ [Fundo Ambiental, Ministério do Ambiente](#)

⁴⁹ [Environmental Fund | Portuguese Environment Agency](#)

3.12.2 Project and programmes

In the table below an overview of the main programmes and projects in Portugal that are related to nature restoration in marine and coastal ecosystems is presented.

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Table 22: Overview of the ongoing and finished programmes and projects related to nature restoration in Portugal.

Project / programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
LIFE RESTORESEAGRASS	Restore and expand seagrass meadows to enhance biodiversity and climate resilience	2024	2031	Total Budget: €7,842,217 EU contribution: €5,881,663	Active		Seagrass meadows	Pilot, implementation, upscaling	Literature
RePor – Restoration of Portugal's Oyster Reefs	Restore native oyster reefs to improve biodiversity and ecosystem functions	2024	2026	Total funding: € 597,856 EU contribution: € 418,499	Active		Oyster reefs	Pilot, implementation	Literature
LIFE SeaGrassRIAwild	Restore seagrass meadows to improve habitat quality, biodiversity and carbon storage	2023	2030	Total Budget: €3,426,796 EU contribution: €2,570,096	Active		Seagrass meadows	Research, upscaling	Literature
Gulbenkian Blue Carbon	Support research and restoration to enhance blue carbon storage in coastal ecosystems	2022	2023	'Unknown', funded by the Calouste Gulbenkian Foundation	Active	Seagrass, macroalgae	saltmarshes	Upscaling	Literature
LIFE21-NAT-PT-Zimbral	Restore and conserve dune habitats to strengthen ecological resilience	2022	2028	Total funding: € 3,110,066 EU contribution: € 2,083,744	Active		Dune juniper habitats	Research, implementation, upscaling	Literature
LIFE Ilhas Barreira	Restore and protect barrier island ecosystems to improve habitat resilience and biodiversity	2019	2025	Total funding: € 2,242,586 EU contribution: € 1,681,939	Active		Dune, lagoon, and island ecosystems in the Ria Formosa	Implementation	Literature
LIFE ADAPTA BLUES	Demonstrate estuarine restoration as a nature-based	2019	2024	Total funding: € 2,006,391	Active		Estuareis	Pilot	Literature

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Project / programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
	solution for climate adaptation			EU contribution: € 1,103,515					
LIFE AGUEDA	Restore riverine and estuarine habitats to improve ecological connectivity and fish migration	2017	2025	Total funding: € 3,316,654 EU contribution: € 1,989,992	Active		Riverine and estuarine habitats	Implementation	Literature
LIFE Berlengas	Restore island ecosystems by removing invasive species and improving habitat conditions	2014	2019	Total funding: € 1,380,729 EU contribution: € 690,365	Active	Seabird Populations: Cory's shearwater, Band-rumped / Madeiran storm petrel, European shag / cormorant, Common guillemot Yellow-legged gull Lesser black-backed gull. Endemic plant species: Berlengas thrift, Berlengas rupturewort, Berlengas fleabane. Invasive species: Hottentot fig, Black rat, Rabbit.		Implementation	Literature
LIFE MarPro	Improve conservation and management of marine species and habitats in Natura 2000 areas	2011	2017	Total funding: € 2,773,032 EU contribution: € 1,386,516	Passive	Harbour porpoise, Common bottlenose dolphin, Balearic shearwater		Implementation	Literature

3.12.3 Barriers and Enabling factors

Based on a literature analysis the key barriers and enablers to the implementation of nature regeneration measures in Portugal are:

- Barriers:
 - Limited amount of nature regeneration projects or programmes.
 - Projects are largely dependent on EU funding programmes.
- Enablers:
 - Creating knowledge by various pilot trials and research on regeneration efforts that could potentially contribute to other regeneration projects.
 - Broad range of focus habitats and species, including cetacean, seabird, and invasive species.

3.13 Spain

3.13.1 Policies, laws and funding programmes

Marine and coastal nature restoration in Spain is governed by a combination of EU environmental directives, national biodiversity and marine protection laws, and is implemented in practice through funding programmes such as LIFE (EU) and PLEAMAR. In the table below an overview is provided of these policies, laws and funding programmes on a national level. The international policies, laws and funding programmes are in paragraph 3.1.

Table 23: Overview of the policies laws and funding programmes related to nature restoration that apply to Spain on a national level.

Name	Type	Summary
Law 42/2007 – Natural Heritage and Biodiversity	National law	Spain's core nature conservation law. Establishes Natura 2000, species and habitat protection, and explicitly enables active restoration measures where ecosystems have been degraded.
Law 41/2010 – Marine Environment Protection	National law	Transposes the MSFD into Spanish law. Provides the legal framework for marine strategies and restoration measures in offshore marine ecosystems beyond the coastal zone.
Coastal Law (Ley de Costas, Law 22/1988, amendments)	National law	Regulates the public coastal domain, including beaches, dunes, estuaries and coastal wetlands. Supports protection of natural coastal dynamics and enables coastal and estuarine ecosystem restoration, including nature-based coastal protection.
Spanish Marine Strategies (per marine region)	Policy framework	Regional implementation of the MSFD (Atlantic, Cantabrian, Mediterranean). Include pressure assessments and programmes of measures, which may explicitly include ecosystem restoration actions.
State Strategic Plan for Natural Heritage and Biodiversity	Strategy	Long-term biodiversity strategy focusing on restoration, ecological connectivity and ecosystem services, including marine and coastal ecosystems.
National Ecosystem Restoration Plan	Policy programme	National programme (under development/implementation) aimed at large-scale ecosystem restoration, including wetlands, estuaries

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		and marine-coastal systems, aligned with EU restoration objectives.
PLEAMAR Programme	National funding programme	Implemented by Fundación Biodiversidad (MITECO), co-financed through the European Maritime, Fisheries and Aquaculture Fund. Supports marine ecosystem restoration, sustainable fisheries and aquaculture, applied research and governance.

3.13.2 Projects and Programmes

The table below provides an overview of the main programmes and projects in Spain that are related to nature restoration in marine and coastal ecosystems. It includes both large, overarching programmes and more targeted projects addressing habitat restoration, species recovery, nature-based solutions and ecosystem-based management.

Table 24: Overview of the ongoing and finished programmes and projects related to nature restoration in Spain.

Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
Bahía de Santander 2030	Restore and protect marine ecosystems while reducing pollution and improving biodiversity	2022	2030	Not available, financed by the 'Fundacion Banco Santander'	Active		riparian, coastal	implementation	Literature
MARVIVA	Develop biodegradable structures to restore seagrass meadows and their biodiversity	2025	2028	Total budget: €380.994	Active		Seagrass meadows	Research, pilot	Literature
DUNE	Improve conservation and connectivity of coastal dune ecosystems and their ecosystem services.	2025	2028	Total budget: €391.568	active		Coastal dunes, sandy habitats, cliffs	Research	Literature
National Nature Restoration Plan	Establish national targets and measures to restore degraded ecosystems at large scale	2024	2027	2025–2027 period: €27.8 billion per year to fund biodiversity (MFF + Member States' contributions). Analysis of the MAPs: 34% of biodiversity expenditure: €9.4 billion per year for restoration until 2027. Funding requirements for all ecosystems: €11.8–13.1 billion per year.	Active, passive		All major terrestrial, freshwater and marine habitats in Spain	implementation	Literature
Interreg Euro-MED Programme	Support cross-border cooperation for climate	2021	2027	Total budget: €294.000.000			Mediterranean ecosystems	Upscaling	Literature

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Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
	resilience and sustainable ecosystem management								
LIFE ECOREST	Restore degraded deep marine habitats through active, fisheries-involved interventions	2021	2026	Total budget: € €3.638.829	Active	corals, black corals, gorgonians, sea pens and other	Deep-sea benthic ecosystems	Implementation	Literature
NATURPORTS	Apply nature-based solutions to restore biodiversity and ecological function in port environments	2024	2026	Total budget: €833.946	Active		Port ecosystems (artificial/modified marine habitats)	Pilot, implementation	Literature
Urban Klima 2050	Implement climate adaptation measures to improve resilience of coastal and urban ecosystems	2019	2026	Total budget: €19.800.000	Active		Coastal zones, urban ecosystems, port areas	Implementation	Literature
CABALGA	Restore benthic communities through collaborative conservation and sustainable fisheries practices	2024	2026	Total budget: €509.087	Active			Implementation	Literature
REST-COAST	Demonstrate large-scale restoration of coastal ecosystems through river-to-sea connectivity	2021	2026	Total budget: €18.482.592 EU-contribution: €17.823.755	Active		Wetlands, dunes, beaches, seagrass meadows	implementation	Literature
LIFE Adapta Blues	Restore estuarine ecosystems as a nature-based solution to climate change impacts	2020	2025	Total budget: €2.200.000	Active		Estuarine ecosystems (Oyambre, Santander Bay, Santoña Marshes)	Pilot	Literature

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Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
ThinkInAzul	Strengthen research and innovation to protect marine ecosystems and support sustainable blue economy sectors	2022	2025	Total budget: €50.000.000	Passive		Marine ecosystems (broad scope: fisheries, aquaculture systems, coastal seas)	Research	Literature
Ocean Governance	Strengthen governance and cooperation for effective marine protected area management	2021	2025	not available (website is currently down)	Passive		Marine Protected Areas (global)		Literature
LIFE IP INTERMARES	Improve integrated management and conservation of marine Natura 2000 sites	2017	2024	Total budget: €49.800.000	Active			implementation	Literature
LIFE Pinnarca	Restore and conserve endangered fan mussel populations through coordinated actions	2021	2024	Total budget: €2.249.332 EU-contribution: €1.347.894	Active			Research	Literature
Interreg Med Programme: MPA Networks	Strengthen capacity and effectiveness of marine protected area networks	2019	2022	Total budget: €2.664.000 EU-contribution: €2.264.400	Passive			Capacity building	Literature
GOTARES	Assess and restore threatened gorgonian reef ecosystems	2021	2022	Total budget: €151,588.89 Amount from the Biodiversity Foundation: €75.580	Active	Eunicell a singularis	Gorgonian forests	Pilot	Literature
Interreg Med Programme: MPA-Engage	Support climate adaptation and resilience of marine protected areas	2019	2022	Total budget: €2.664.000 EU-contribution: €2.264.400	Passive		Marine Protected Areas	Capacity building	Literature
LIFE Blue Natura and “Marismas de Bahía de Cádiz”	Restore salt marsh ecosystems while enhancing blue carbon storage	2015	2021	Total budget: €2.513.792; funded by the Life European Project and CEPESA.	Active			implementation	Literature

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Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
				Bahía de Cádiz Marshes Project: €345.042					
Ecomarinos	Reduce marine litter and engage stakeholders in coastal ecosystem protection	not available	2017	not available	Active		Marine litter-affected coastal ecosystems (Galicia, Natura 2000 areas)	implementation	Literature

3.13.3 Barriers and Enabling factors

Based on the survey responses from Spain the following barriers and enablers were identified to the implementation and upscaling of nature regeneration in marine and coastal ecosystems:

- Barriers: No barriers were mentioned in the survey;
- Enablers: Overall, the most common enabling factors across the projects are the availability of dedicated funding sources, particularly national funding through the Biodiversity Foundation/ Fundación Biodiversidad (implementation of the PLEAMAR programme) and European funding via the LIFE Programme. For the CABALGA project, funding was provided through the European Maritime, Fisheries and Aquaculture Fund (EMFAF; FEMPA in Spain). In the case of LIFE Blue Natura, the project was primarily funded by the European LIFE Programme and co-financed by CEPESA.

3.14 Sweden

3.14.1 Policies, laws and funding programmes

Marine and coastal nature restoration in Sweden is embedded in a multilevel governance framework comprising international commitments, European Union legislation and national laws, policies and funding programmes. International and EU-derived frameworks define the overarching goals and standards for ecosystem restoration, while national legislation and strategies translate these into spatial planning, site protection and concrete restoration measures.

In the table below an overview of the national policy frameworks, legal instruments and funding programmes currently in force that are relevant to marine and coastal nature restoration in Sweden is given. International and EU-level instruments are addressed separately in section 3.1.

Table 25: Overview of the policies, laws and funding programmes related to nature restoration that apply to Sweden on a national level.

Name	Type	Summary
Appropriation 1:11 ⁵⁰	Appropriation	A formal allocation of approximately 52 million euros of Swedish public money to varying nature regeneration initiatives in aquatic environments.
Swedish Environmental Code (Miljöbalken) ⁵¹	National law	Sweden's overarching environmental law governing sustainable land and water use, habitat protection, environmental impact assessments, and permitting for restoration activities.
Environmental Quality Objective: "A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos" ⁵²	National policy framework	One of Sweden's 16 environmental quality objectives. Sets national targets for improving marine and coastal ecosystem health, reducing pollution, and restoring habitats.
LONA – Local Nature Conservation Initiative ⁵³	National funding programme	Provides co-funding to municipalities for habitat restoration, wetland creation, coastal nature management, and biodiversity projects.
LOVA – Local Water Management Grants ⁵⁴	National funding programme	Provides grants for improving aquatic environments, reducing eutrophication, restoring wetlands, and supporting coastal water quality projects.

⁵⁰ Survey; [About the appropriation 1:11 - Grants, grants and calls - Swedish Agency for Marine and Water Management](#)

⁵¹ https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/miljobalk-1998808_sfs-1998-808

⁵² [A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos](#)

⁵³ <https://www.naturvardsverket.se/lona>

⁵⁴ [Apply for a grant for local water conservation projects \(LOVA\) | County Administrative Board](#)

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SwAM Aquatic & Marine Restoration Grants⁵⁵	National funding programme	Grants for restoration of rivers, wetlands, fish habitats, eelgrass meadows, and marine environments. Supports both planning and implementation.
National Restoration Plan (Naturvårdsverket & SwAM)⁵⁶	National strategy	Sweden's developing national plan for implementing the EU Nature Restoration Regulation, including targets for wetlands, forests, rivers, and marine/coastal ecosystems.

3.14.2 Projects and Programmes

The table below provides an overview of the main programmes and projects in the Sweden that are related to nature restoration in marine and coastal ecosystems. It includes both large, overarching programmes and more targeted projects addressing habitat restoration, species recovery, NbS and ecosystem-based management.

⁵⁵ <https://www.havochvatten.se>

⁵⁶ [Förslag till nationell restaureringsplan och författningsändringar till följd av EU-förordning om restaurering av natur](#)

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Table 26: Overview of the ongoing and finished programmes and projects related to nature restoration in Sweden.

Project or programme name	Objective	Start date	End date	Budget & funding	Active/passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/survey
Sea Too (Finland, Sweden, and Estonia)	Restore degraded underwater habitats to halt biodiversity loss and strengthen ecosystem resilience	2025	2029	Not available, financed by 'BaltCF	Active		Eelgrass meadows, seagrass meadows, bladderwrack beds, and stone reefs,	upscaling	Literature
Improve Aquatic LIFE	Improve conservation status of aquatic habitats and species from source to sea.	2024	2031	Total budget: €34,028,559 EU-Contribution: €20,417,135	Passive	The pearl mussel, the thick-shelled mussel, salmon, sea lamprey			survey
The Baltic Catchment Officer Project (BaltCOP) (Estonia, Latvia, and Sweden)	Reduce nutrient loads by strengthening catchment-based water management.	2024	2027	Total budget: €2,336,088 EU-Contribution: €1,868,870	active		wetlands	implementation	Literature
LIFECAPeable	Demonstrate nature-based coastal protection using vegetation on dunes and dikes.	2023	2028	Total budget: €4,002,340 EU-Contribution: €2,398,208	Active		Dune and dike structures	Implementation	Literature
WWF project Återskapa Östersjöns livskraft (eng. Reviving the Baltic Sea's Vitality)	Restore coastal habitats to improve biodiversity and ecosystem resilience.	2023	2024	Not available	Active		Coastal wetlands, spawning and nursery habitats	Implementation	Literature
MANABAS Coast	Mainstream nature-based solutions for coastal erosion and flood risk management.	2022	2027	Approximately €0.5 million	Active		Coastal systems	Research	Literature

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LIFE Lophelia	Develop scalable artificial reef methods to restore cold-water coral habitats.	2019	2025	Total budget: € 3,126,528 EU-Contribution: €1,842,941	Active		Lophelia pertusa reefs	Implementation	Survey
LIFE Coast Adapt	Demonstrate nature-based coastal protection using vegetation on dunes and dikes.	2018	2023	Total budget: €3,720,984 EU-Contribution: €2,232,578	Active		Coastal systems	Implementation	Literature
Management and restoration of eelgrass meadows	Develop and apply methods to restore eelgrass ecosystems.	2018	2023	Not available, financed by the European Fisheries Fund (EHFF), and the Swedish Agency for Marine and Water Management (SwAM)	Active	Eelgrass		Research/Pilot	Literature
Eelgrass restoration in the Baltic Sea	Test eelgrass restoration feasibility to enhance biodiversity and ecosystem services.	2016	2018	Total budget unknown: Grant by SwAM: € 295,680	Active	Eelgrass		Research/Pilot	Literature
ZORRO – Interdisciplinary research on management and restoration of eelgrass meadows in Sweden	Improve management and restoration of eelgrass meadows through interdisciplinary research.	2011	Ongoing	Not available, financed by national research councils, government agencies and the EU.	Active	Eelgrass		Research	Survey
Baltic Blue Growth	Scale up mussel farming to reduce eutrophication and support the blue bioeconomy.	2016	2019	Total budget: €4,650,000 EU-Contribution: €3,570,000	Active	(blue) mussel		Upscaling	Literature
Resilient Sea	Restore coastal habitats and fish nursery areas to improve biodiversity and water quality.	2026	2029	Total budget: €640,606 EU-Contribution: €512,484	Active	perch, pike, three-spined stickleback		Implementation, upscaling	Literature
SeaMoreEco (previously SeaRECON)	Develop integrated approaches for monitoring, conserving	2023	2025	Total budget: €3,062,493 EU-Contribution: €1,990,499	Active		Shallow coastal habitats, underwater	Research	Literature

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	and restoring marine habitats.						vegetation, invasive species		
HIDDEN – Habitat Investigation in Diverse and Dynamic Estuarine Networks	Investigate how environmental factors shape biodiversity and ecosystem functioning in estuaries.	2026	2028	Total budget: €2,493,978 EU-Contribution: €1,621,088	Active		Estuarine habitats and connectivity	Research	Literature
BlueBioClimate (Interreg)	Develop tools for climate-adapted management of marine biodiversity.	2023	2026	Total budget: €5,236,017 EU-Contribution: €2,737,167	Active		Marine biodiversity (incl. eelgrass, coastal habitats)	Implementation	Literature
FORCE – Facilitating the recovery of the oceans in a changing climate	Identify effective strategies to enhance resilience and recovery of marine ecosystems.	2023	2027	Not available	Active		Marine ecosystems	Research	Literature

3.14.3 Barriers and Enabling factors

Based on the survey responses from Sweden the following barriers and enablers were identified to the implementation and upscaling of nature regeneration in marine and coastal ecosystems:

- Barriers:
 - Lack of knowledge of habitats as well as suitable methods for restoration (for most habitats);
- Enablers:
 - Long term financing;
 - Available personal resources with knowledge of restoration;
 - Monitoring of results to secure the long-term success of projects and knowledge.

3.15 Switzerland

3.15.1 Policies, laws, and funding programmes

Switzerland does not have marine or coastal habitats. Marine and coastal nature protection and restoration are therefore not addressed directly in Swiss national laws or policy frameworks. However, Switzerland is relevant to North Sea nature regeneration through its position as upstream water user. Switzerland is especially closely tight to the Rhine basin, which drains approximately two-thirds of Swiss territory and discharges into the North Sea.

Through national water protection and biodiversity legislation and its active participation in international river-basin governance, Switzerland contributes to improving water quality, ecological continuity and habitat conditions in the Rhine catchment. These measures support downstream marine ecosystems by reducing nutrient and pollutant loads and by restoring riverine and floodplain habitats that are explicitly recognised as essential for the protection and recovery of the North Sea ecosystem. Table 27 provides an overview of the national-level policies, laws and funding programmes in Switzerland that are relevant in this context. International policies, laws and funding programmes are addressed in paragraph 3.1.

Table 27: Overview of the policies, laws and funding programmes related to nature restoration that apply to Switzerland on a national level.

Name	Type	Summary
Swiss Biodiversity Strategy (SBS) ⁵⁷	Policy	The Swiss Biodiversity Strategy, adopted by the Federal Council in 2012, defines the national vision and strategic objectives for conserving and enhancing biodiversity, ecosystems and ecosystem services in Switzerland. It sets overarching goals aligned with international commitments under the Convention on Biological Diversity and provides the policy framework for restoration and conservation at national level, with validity extended to 2030.
Swiss Biodiversity Strategy Action Plan (AP SBS I & II) ⁵⁸	Policy	The Action Plan operationalises the Swiss Biodiversity Strategy through concrete measures, pilot projects and programme agreements with cantons and sectors such as agriculture and forestry. Phase I (2017–2024) focused on immediate and pilot measures and increasing biodiversity-related funding, while Phase II (2025–2030) aims to address identified shortcomings and improve effectiveness and efficiency of restoration and conservation actions nationwide.

⁵⁷ [Swiss Biodiversity Strategy and Action Plan](#)

⁵⁸ [Swiss Biodiversity Strategy and Action Plan](#)

Federal Act on the Protection of Nature and Cultural Heritage (NCHA) ⁵⁹	Law	The Federal Act on the Protection of Nature and Cultural Heritage is a cornerstone of Swiss environmental legislation. It provides the legal basis for protecting native species, habitats, landscapes and natural features of national importance, and enables the Confederation and cantons to implement conservation and restoration measures for biodiversity and ecosystems.
National Research Programme “Promoting Biodiversity and Sustainable Ecosystem Services for Switzerland” (NRP 82) ⁶⁰	Fund	NRP 82 is a federally mandated national research funding programme implemented by the Swiss National Science Foundation. It supports transdisciplinary research projects that develop practical solutions for the conservation, sustainable use and restoration of biodiversity and ecosystem services in Switzerland, thereby contributing evidence and innovation to national restoration policy and practice.

3.15.2 Projects and Programmes

No programmes or projects were identified that focus directly on nature restoration or regeneration in marine or coastal ecosystems, as Switzerland has no marine environments. Nevertheless, Switzerland plays an important role in international river-basin initiatives, most notably through its membership of the International Commission for the Protection of the Rhine (ICPR). National and transboundary measures aimed at improving river morphology, restoring floodplains, enhancing fish migration and reducing pollution within the Rhine catchment contribute indirectly to North Sea nature regeneration via downstream linkages. Restoration of the Rhine river system is explicitly recognised within international frameworks as necessary to conserve and improve the ecological status of the North Sea.

3.16 United Kingdom (UK – England, Northern Ireland, Scotland, and Wales)

3.16.1 Policies, laws and funding programmes

Marine and coastal nature restoration in Great Britain is embedded in a multilevel governance framework comprising international conventions, (some) retained European Union legislation, and national laws, policies and funding programmes. Together, these instruments define objectives for marine environmental protection and recovery, establish legal obligations, and provide financial mechanisms to support implementation. International and EU derived frameworks set overarching goals and standards (located in paragraph 3.1.), while national legislation and strategies translate these into spatial planning, site protection and restoration measures. Table 28 presents an overview of the national policy frameworks, legal instruments and funding programmes relevant to marine and coastal nature restoration in Great Britain.

Table 28: Overview of the policies, laws and funding programmes related to nature restoration that apply to the UK on a national level.

Name	Type	Summary
Marine and Coastal Access Act (2009)	National law	The principal UK legal framework for marine management, establishing marine planning, marine licensing, and the designation and protection of Marine Conservation Zones and other MPAs, with the explicit objective of conserving and enabling recovery of marine ecosystems.

⁵⁹ [Swiss Federal Law on Nature and Heritage Protection | EU Tourism Platform](#)

⁶⁰ [NRP 82](#)

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Name	Type	Summary
Environment Act (2021)	National law	Introduces a system of legally binding environmental targets for the UK, including targets for marine biodiversity and the condition of Marine Protected Areas, forming a statutory basis for long-term nature recovery.
UK Marine Strategy (Marine Strategy Regulations 2010)	National law / policy framework	These are the national regulations that give legal effect in the United Kingdom to the Marine Strategy Framework Directive (MSFD) (EU directive). This framework includes assessment and a of measures (2025) (including restoration) to achieve or maintain a Good Environmental Status (GES) in UK seas.
UK Marine Policy Statement	Policy framework	A UK-wide policy document adopted under the Marine and Coastal Access Act 2009 that sets high-level objectives and principles for sustainable development and protection of the marine environment, guiding marine plans and decisions across UK waters.
Environmental Improvement Plan (2023)	Policy framework	Sets out how statutory environmental targets will be achieved, including improvement of MPA condition and restoration of marine habitats. The Environmental Improvement Plan (2023) is a statutory strategic policy framework, required under the Environment Act 2021, setting out how England will deliver its long-term environmental targets.
UK Marine Plans (England, Scotland, Wales, Northern Ireland)	Spatial policy plans	Guide for offshore development and conservation. They provide a plan-led framework to balance economic activities (such as offshore energy, fisheries and shipping) with marine environmental protection and recovery. Supports protection and recovery of marine ecosystems, including restoration where appropriate. UK Marine Plans are statutory marine spatial plans adopted under the Marine and Coastal Access Act 2009, forming a legally binding framework for decision-making in the marine environment.
Environmental Targets (Marine Protected Areas) Regulations 2023	Secondary legislation	Sets legally binding targets for the condition of protected features within the UK MPA network, including the requirement for a majority of features to be in favourable or recovering condition by 2042. These regulations set a legally binding national biodiversity target under the Environment Act 2021
Marine Conservation Zones (MCZs)	Policy instrument	National network of Marine Protected Areas (MPAs). Site-specific management can include active habitat restoration where features are degraded. MCZs are a type of Marine Protected Area designated under the Marine and Coastal Access Act 2009.
Scottish Marine Nature Conservation Strategy	Strategy	Explicitly targets marine ecosystem restoration, including seabed habitats, seagrass and saltmarsh in Scottish waters.
Seascape Recovery Programme	Funding programme	The programme, led by the UK Department for Environment, Food & Rural Affairs (Defra), specifically aims at large-scale marine ecosystem restoration (e.g. seabed habitats, saltmarsh, seagrass). The programme promotes an ecosystem-based, collaborative approach, bringing together authorities, NGOs, researchers and local stakeholders to deliver long-term marine

Name	Type	Summary
		ecosystem recovery and resilience. The funding programme started in 2023 (initial funding rounds).
Nature for Climate Fund (small coastal & marine component)	Funding programme	Supports nature-based solutions in coastal and intertidal zones, including saltmarsh and seagrass restoration. The primary objective is to reduce greenhouse gas emissions and increase carbon sequestration. This is a public investment programme with only a small coastal and marine restoration part. The financial source is Defra. The programme ended in 2025.
Marine Recovery Fund (MRF)	Funding programme	Enable offshore wind developers to pool contributions into a government-managed fund to deliver strategic environmental compensation for unavoidable adverse effects on MPAs. The start of the funding programme was 2025 and is currently ongoing.
The Fisheries and Seafood Scheme - Marine Environment Measures	Funding programme	The Fisheries and Seafood Scheme – Marine Environment Measures is a UK government grant funding programme that finances projects aimed at protecting and restoring the marine environment, supporting delivery of the UK Marine Strategy and Good Environmental Status objectives. The financial source is Defra. The final funding year was 2024/2025.
Blue Recovery Fund (BRF)	Funding programme	The Blue Recovery Fund is a publicly funded marine and coastal nature-recovery programme under Defra stewardship, focused on restoring blue ecosystems such as saltmarsh, seagrass, kelp and associated coastal habitats. It is not compensatory (unlike the Marine Recovery Fund) and is biodiversity-led rather than climate-first. The funding programme started in 2023 and is ongoing.

3.16.2 Projects and Programmes

The table below provides an overview of the main programmes and projects in the UK that are related to nature restoration in marine and coastal ecosystems. It includes both large, overarching programmes and more targeted projects addressing habitat restoration, species recovery, NbS and ecosystem-based management. The table below shows an overview of projects/programmes across the UK, in the excel overview an additional filter has been added to distinguish between Scotland, England, Northern Ireland, and Wales.

England's current flagship programme is ReMeMaRe (Restoring Meadows, Marsh and Reef)⁶¹. The programme focuses on three habitats: seagrass meadows, saltmarshes, and native oyster reefs. With 14 ongoing projects and over 70 in the pipeline, the programme seeks roughly 50 M£ funding to realize the pipeline projects. While other ongoing and finalized projects are shown below to provide an overview of England's bandwidth in restoration as well as lessons learned from previous restoration approaches, ReMeMaRe is the key ongoing programme.

⁶¹ [Restoring Meadow, Marsh and Reef \(ReMeMaRe\) | Estuarine & Coastal Sciences Association](#)

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Table 29: Overview of the ongoing and finished programmes and projects related to nature restoration in the UK.

Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
England									
Tern restoration	Reverse the decline of tern populations through habitat protection, restoration and improved management	2014	2019	EU LIFE+ Nature Programme (50%)	active	little tern		implement ation, upscaling	Survey
Restoring Meadows, Marsh and Reef (ReMeMaRe) initiative	Coordinate large-scale restoration of seagrass, saltmarsh and oyster habitats	2019	2043	Over £50million – Funded by a combination of government grants, private sector investment, and partnership resources.	active	native oysters	Saltmarshes, seagrass meadows	implement ation, upscaling	Survey
Habitat Compensation and Restoration Programme (HCRP) (formerly Regional Habitat Compensation Programme (RHCP))	Deliver habitat creation and restoration to compensate for coastal habitat loss.	20-year planning horizon of Shoreline Management Plans (SMPs), which began around 2005. ongoing		active		intertidal mudflats, saltmarsh, coastal grazing marsh, saline lagoons	impleme ntation		
The Coastal & Estuary programme of the Tees River Trust	Restore estuarine habitats and key species to improve ecosystem functioning	2022	ongoing	charity, income in 2025 was £2 million in that year	active	Mussel, oyster, seagrass		pilot, upscaling	Literature
Operation Oyster	Collect data on native oysters to support restoration planning and management.	2021	ongoing	not available	passive	oyster (reefs, beds)		research	Literature
Wild Oyster Project: Tyne &	Restore native oyster populations using	2020	Ongoing	£1,1800,000 initial funding	active	oyster (reefs)		pilot, upscaling	Literature

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Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
Wear and Conwy Bay	nursery-based reintroduction.								
Saving ESTER (Fal Fishery Cooperative CIC)	Restore native oyster populations while supporting sustainable fisheries and community engagement.	2020	ongoing	Crowdfunding campaigns: approximately £11,000 - 2022: £100,000 from the Carbon Innovation Fund	active	oyster (reefs, beds)		research, pilot	Literature
Essex Native Oyster Restoration Initiative (ENORI)	Rebuild self-sustaining native oyster populations and habitats in marine conservation zones.	2011	ongoing	not available; among other things funding from National Lottery Heritage Fund	Active & passive	oyster (reefs)		upscaling	Literature
The Solent Oyster Restoration Project	Restore oyster reefs to improve biodiversity and ecosystem services.	2015	ongoing	published budget of £2million from the Blue Marine Foundation	active	oyster (reefs)		Implement ation, upscaling	Literature
Solent Seascape Project	Restore and connect coastal habitats at seascape scale to enhance ecosystem resilience.	2022	2027		Active & passive	seagrass (meadows), oyster (reefs), saltmarsh, little tern		implement ation, upscaling	Literature
Transforming the Thames programme	Restore and reconnect coastal habitats to improve biodiversity and resilience.	2023	2030	£4 million grant from the Endangered Landscape and Seascape Programme (ELSP)	active	seagrass (meadows), saltmarsh, oyster (reefs), saline lagoons, little tern, ringed plover		pilot, upscaling	Literature
Wilder Humber	Restore estuarine habitats including seagrass, oysters and	2023	2028	Investment of more than £2.5 million	active	seagrass (meadows), saltmarsh,	sand dunes	pilot	Literature

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Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
	saltmarsh to enhance ecosystems.					oyster (reefs),			
LIFE WADER (Water and Disturbance Environmental Restoration)	Restore river-to-coast habitats and reduce pressures to improve ecological resilience.	2021	2026	Total Eligible Budget: €6,826,710 EU LIFE Contribution: €4,096,027	Active	ringed plovers	dunes, river systems, estuarine, intertidal zones	pilot	Literature
Restoration of Seagrass for Ocean Wealth (ReSOW UK)	Develop evidence and tools to support large-scale seagrass restoration.	2022	2024	not available; funded by multiple grants	passive	seagrass (meadows), Atlantic cod		research	Literature
LIFE on the Edge	Restore coastal habitats and improve resilience for bird species.	2020	2024	Total budget: €4,035,459 EU LIFE contribution: €2,421,275	active	Sandwich tern, Common tern, Little tern, Avocet, Redshank, ringed plover, oystercatcher, gull species	intertidal flats	pilot	Literature
LIFE Celtic Seas Partnership	Enable stakeholder-led, integrated marine management	2013	2017	Total Eligible Budget: €3,947,093 EU Contribution: €1,973,546	passive		coastal, pelagic, and benthic systems	pilot	Literature
Wallasea Island Wild Coast Project	Create coastal wetlands to enhance biodiversity and reduce flood risk.	2006	2015	~£70 million pounds	Active & passive	avocets, plovers, brent geese	saltmarsh, mudflats, coastal lagoons, grazing marsh, wet	Implementation	Literature

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Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
							grassland		
Stearth Marshes (Somerset) - Restoring Saltmarshes for Climate Resilience	Restore saltmarsh through managed realignment for climate resilience and biodiversity.	2012	2014	£21M Funded by: Wildfowl & wetlands Trust	Active & passive	wading birds, wildfowl, fish (sea bass, eels), otters	saltmarsh, mudflats, coastal lagoons, wet grasslands,	implementation	Literature
Stronger shores	Test nature-based solutions for coastal protection and ecosystem enhancement	2021	2027	~£6.9 million Funded by DEFRA	active	seagrass (meadows), kelp (forests), oyster (reefs)		pilot/research	Literature
Our Future Coast - the flood hub	Develop and test nature-based coastal adaptation to flooding and erosion.	2021	2027	~£6 million Funded by DEFRA	Active & passive		saltmarsh, sand dunes	pilot/research	Literature
Solway Coast and Marine Project Landscape Connections (SCAMP)	A long-term coastal and marine restoration project aiming to restore biodiversity and resilience across the Solway Firth through community-driven actions.	2017	2027	See for more information Scotland					
Northern Ireland									
Native Oysters Ulster Wildlife - Northern Ireland	Restore native oyster populations and support reef recovery through nurseries and deployment	2022	2027	Funded by DAERA through the Environment Fund, supported by a generous donation from Wilson Resources Ltd	active	Oysters (reefs)		pilot, upscaling	Survey
LIFE Recreation ReMEDIES	Restore seagrass while reducing human	2019	2024	Total Eligible Budget: €2,911,930 EU LIFE Contribution: €1,747,157	Active & passive	seagrass (meadows),	maerl beds	pilot	Literature

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Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
	pressures on marine habitats.					seahorses, jellyfish			
Scotland									
Restoration Forth	Restore seagrass and oyster habitats to enhance biodiversity and community engagement.	2022	ongoing	not available	active	seagrass (meadows), oyster (reefs), eelgrass		pilot, upscaling, research	Literature
Dornoch Environmental Enhancement Project (DEEP)	Reintroduce native oysters to rebuild reef habitats and ecosystem functions.	2014	2030	£6.4 million, invested by Glenmorangie	active	oyster (reefs)		research, pilot, upscaling	Literature
Seawilding	Restore seagrass and oyster habitats through community-led restoration.	2020	ongoing	charity funded by multiple organisations: - 2020: £216,400 from National Lottery Heritage Fund - £200,946 from the Nature restoration Fund - 2022: £15,000 from highlands & Islands Environment Foundation - Crowdfunder campaign by BA better World Community Fund - £41,000 pounds	active	Seagrass, oyster		pilot	Literature
Green Shores	Restore saltmarsh habitats to enhance coastal resilience and biodiversity.	2022	2027	The project is co-funded by a number of funders and total costs are unknown. The NRF contribution to Phase 1 was approximately £350,000.	active	saltmarshes		Implement ation	Literature
Solway Coast and Marine Project Landscape Connections (SCAMP)	A long-term coastal and marine restoration project aiming to restore biodiversity and resilience across the Solway Firth through community-driven actions.	2017	2017	£1.5 M Funded by National Lottery Heritage Fund	Active & passive	saltmarsh, seagrass beds, coastal woodland, sand dunes	oyster,	Research, implement ation, upscaling	survey

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Project/ programme	Objective	Start date	End date	Budget & funding	Active/ passive	Species focus	Habitat focus	Type (pilot, research, etc.)	Literature/ survey
Wales									
Natur am Byth! - Project Môr	Restore marine habitats and species to improve biodiversity and ecosystem condition.	2022	2027	The total Natur am Byth programme has a value of £8 million over 4 years launched in 2023 (from different funds) - the part of project Mor is funded primarily by the National Lottery Heritage Fund	active	oyster (reef)		pilot	Literature
The Wales Native Oyster Restoration Project (WNORP)	Assess and pilot restoration of native oyster populations.	2019	2023	Funded by European Maritime and Fisheries Fund but no budget specified	active	oyster	intertidal zones	research, pilot	Literature

3.16.3 Barriers and Enabling factors

This section summarises the key barriers and enabling factors for nature restoration identified through the UK (England and Scotland) survey responses.

General Barriers and Enablers

- **Barriers**
 - A primary constraint is the lack of adequate and long-term funding, particularly for early project development, research activities and sustained implementation and monitoring;
 - Closely linked to the bullet above is the absence of standardised methodologies and sufficient data proving success, which increases uncertainty and risk, especially for private investors considering long-term engagement;
 - Respondents highlighted incomplete scientific evidence on the full range of benefits and ecosystem services provided by coastal and marine habitats. This knowledge gap limits the ability to quantify benefits and to justify investment. Hence, while funding might be available it is challenging to access without sufficient data to back up the proposed outcomes;
 - permitting and licensing process is reported as time-consuming, complex and costly. This challenge is exacerbated by the number of authorities with responsibilities, complicating permitting. Furthermore, laws meant to protect the environment historically have led to challenges enabling restoration in the same locations;
 - Other mentioned barriers include land-based environmental problems (such as poor water quality), which can undermine marine restoration efforts;
 - Lastly, respondents noted challenges in identifying clear priorities and opportunities for restoration, navigating a complex regulatory environment, and addressing supply-chain limitations, such as availability of suitable materials or biological resources.
- **Overarching Enabling Factors**
 - A key enabler in England is the ReMeMaRe programme, which supports restoration by developing practical tools such as restoration potential maps and feasibility studies. ReMeMaRe also facilitates knowledge exchange through structured learning activities, including regular partnership calls and an annual restoration conference, and is helping to develop an investable pipeline exceeding £50 million;
 - Policy and regulatory developments were also identified as important enablers, particularly where they actively reduce barriers or create positive incentives for restoration, such as Marine Net Gain policies and Environmental Improvement Plan (EIP) targets (both related to the Environment Act 2021);
 - Unlocking finance is closely linked to improved scientific evidence, which provides assurance to funders and confidence in project outcomes. In this context, the potential development of ecosystem service markets, such as carbon and future nutrient markets, was highlighted as a major opportunity. Experience from peatland restoration, where restoration efforts accelerated following the launch of a carbon code, was cited as a relevant example;
 - Additional enabling factors include the availability of adequate restoration materials (such as seeds, plants or shellfish spat), training and skills development for practitioners, and systematic learning from experiences elsewhere, supported by active knowledge sharing.

Project-Specific Barriers and Enablers

Seawilding

For the Seawilding project, a key barrier identified is that seagrass restoration remains a relatively new form of nature restoration in the Scotland. As a result, techniques and methodologies are still being

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tested and refined, and lessons continue to be learned through implementation. Early project phases relied on seed-based restoration approaches, which proved less successful than anticipated, leading to a shift towards transplanting seagrass shoots.

An important enabling factor for Seawilding is its role as a pioneer in demonstrating successful seagrass restoration in Scottish waters. The project actively shares its experience and lessons learned with the wider restoration community, for example through participation in international knowledge-exchange events such as the Seagrass Symposium in Cardiff. This leadership role helps reduce uncertainty for future projects and contributes to broader methodological development.

Green Shores

For the Green Shores project, several barriers were identified. As a relatively new restoration technique for saltmarshes (wave-attenuating structures such as fencing and coir rolls, combined with active revegetation) success rates are not guaranteed, particularly under challenging environmental conditions such as storms or prolonged drought. The project is labour-intensive and heavily reliant on volunteers and experienced staff, which can be difficult to sustain under short-term funding arrangements. In addition, the high costs of restoration combined with difficulty in quantifying benefits present challenges for scaling up. Further barriers include the absence of clear and strategic policies on fringe saltmarsh restoration and limited knowledge regarding suitable restoration locations.

Key enabling factors for Green Shores include NRF (Nature restoration fund) funding, which has made pilot implementation possible, and strong local stakeholder engagement, generating interest and support for experimentation. The involvement of permanent project staff, particularly university-based researchers, contributes to long-term stewardship and continuity. Support from landowners has also been crucial. Importantly, the lessons learned through Green Shores are expected to enable and inform similar projects in other locations, helping to reduce future uncertainty.

4 Analysis

The analysis synthesises findings from the desk study and questionnaire to develop a structured overview of national nature regeneration efforts per country, in line with OSPAR Task S6.O1.Tx. The results are examined across the following aspects, in alignment with the anticipated outputs defined for the OSPAR Task S6.O1.Tx:

- A regional understanding of nature regeneration measures which are currently being implemented;
- Features (species, habitat) being restored and their expected benefits;
- Identification of key barriers to the implementation of nature regeneration;
- Identification of potential actions to improve implementation.

An overview of past and present nature restoration measures is located in Chapter 3 with detailed project descriptions in the excel 'Project overview OSPAR.xlsx'. Below an overview of the remaining anticipated output can be found.

4.1 Features being restored

The projects/programmes identified provide a bandwidth of targeted nature restoration initiatives from knowledge development on nature regeneration, stakeholder engagement (across different sectors agriculture, fisheries, nature, recreation, etc.), awareness campaigns, and climate adaptation. This section details which features are most frequently explicitly mentioned as focus in the project/programme descriptions. This section, therefore, offers insights in the current trends on nature regeneration within OSPAR countries, as well as an overview of potential collaboration opportunities.

4.1.1 Species

Table 30 provides an overview of the (groups of) species (flora and fauna) most frequently mentioned in projects and programmes identified through the desk study and shared in surveys. Many projects and programmes focus on a wide variety of species; however, these were most frequently mentioned as focus species.

Table 30 Overview of species most mentioned in identified projects/programmes.

Species / species group	Countries	Number of countries
Eelgrass / seagrass	Belgium, Denmark, England (UK), Finland, France, Germany, Ireland, Netherlands, Norway, Portugal, Scotland (UK), Spain, Sweden	13
European flat oyster / native oyster	Belgium, Denmark, England (UK), France, Germany, Iceland, Ireland, Netherlands, Northern Ireland (UK), Portugal, Scotland (UK), Wales (UK)	12
Terns and coastal birds	Belgium, Denmark, England (UK), France, Germany, Ireland, Norway, Sweden	8
Macroalgae / seaweed / kelp	Belgium, England (UK), Finland, Germany, Norway, Portugal	6
Blue mussel / mussel	Belgium, Denmark, England (UK), Netherlands, Sweden	5
Sharks and rays	Belgium, France, Germany	3
Cod	Denmark, England (UK)	2
Sea trout	Denmark, Germany	2

4.1.2 Habitats

Table 31 provides an overview of the habitats most frequently mentioned in projects and programmes identified through the desk study and shared in surveys. Many projects and programmes focus on a wide variety of habitats; however these were most frequently mentioned as focus species.

Table 31 Overview of habitats most mentioned in identified projects/programmes.

Habitat / habitat type	Countries	Number of countries
Seagrass beds / eelgrass meadows	Finland, France, Ireland, Norway, Denmark, Spain, Sweden, Netherlands, Scotland (UK), England (UK), Portugal, Germany	12
Oyster reefs / biogenic reefs	Belgium, France, Denmark, Iceland, Ireland, Netherlands, Portugal, Germany, England (UK), Scotland (UK), Northern Ireland (UK)	11
Dunes / coastal dune systems	Belgium, England (UK), Ireland, Netherlands, Portugal, Spain, Sweden	7
Estuaries / estuarine habitats	England (UK), France, Netherlands, Portugal, Spain, Sweden	6
Wetlands	England (UK), Finland, France, Ireland, Spain, Sweden	6
Marine / coastal ecosystems (broad)	Finland, Ireland, Norway, Spain, Sweden	5
Coastal lagoons	Denmark, England (UK), France, Portugal	4
Islets / islands	Denmark, Portugal	2
Stone reefs	Denmark, Sweden	2

Note that seagrass and eelgrass could be viewed both as a focus specie, as well as a habitat.

4.1.3 Other topics

In addition, a variety of topics stood out as topics of interest that were linked to nature regeneration projects/programmes. Table 32Fout! Verwijzingsbron niet gevonden. provides an overview of these topics.

Table 32 Overview of other measures beyond nature restoration projects/programmes.

Other measures	Countries with nature restoration projects/programmes focussed on other measures
Removal/control of exotic species	Portugal, Spain, UK
Removal/control of native species	Denmark (crab removal), Norway (sea urchin removal)
Carbon sinks	Germany, Portugal, Spain
Reestablishing predator populations	Norway (Atlantic wolffish)
NbS alternatives for a more sustainable and resilient coast	Belgium, Spain, Netherlands, France (especially overseas areas), Sweden
Reduce nutrient pollution	Finland (alternative wastewater treatment approaches)
Marine litter	Finland, Germany, Norway, Spain

4.2 Expected benefits of nature restoration/regeneration

Based on the survey responses, the benefits of these projects extend well beyond nature regeneration. Respondents highlighted strong gains in knowledge development and transfer, including the generation of new techniques that can be applied in other locations, cost reduction in nature regeneration, material development for artificial reef construction (Sweden) and the active sharing of lessons learned across projects and networks (Belgium, Germany, UK). Public awareness and education are strengthened through community engagement, stakeholder involvement, and outreach activities, increasing societal understanding of marine and coastal ecosystems (UK, Spain). The projects also deliver socio-economic

co-benefits, such as supporting local economies through fisheries and tourism, regenerating deprived coastal areas, and reducing long-term costs related to coastal protection (Spain). In addition, survey respondents emphasised benefits related to policy and management objectives, including support for marine protected area (MPA) conservation goals (UK), improved water quality (Germany), carbon capture (Germany, UK), eutrophication abatement, and enhanced coastal protection (Germany).

4.3 Key implementation barriers

Based on the survey responses received, the key barriers to implementing nature regeneration in marine and coastal ecosystems are outlined in Table 33:

Table 33 Overview of key implementation barriers both on national/regional level and project/programme level.

Barrier	Country
Financial and economic barriers: - Latent business case (high risks long term – unknown or only long-term revenues) (Belgium) - Funding streams (Denmark) - Limited financial support, funding gaps and long-term financing issues (Germany) - Funding (Cost-benefit analysis & scaling) (Ireland) - Funding is annual and therefore does not provide sufficient funding for monitoring (Norway) - Availability of funding throughout the project cycle (UK - England) - Funding and finance (particularly development, research and long term funding) (UK – Scotland)	Belgium, Denmark, Germany, Ireland, Norway, UK/Scotland/England
Regulatory and policy barriers - Conflicts over regulations due to the many activities impacted by the lifting of pressures to do passive restoration. (France) - Lack of dedicated policies & regulatory frameworks (Iceland) - Legislative changes fall within Dutch jurisdiction only up to 12 nautical miles offshore. Beyond this limit, they fall under EU legislation. Thus, for activities further offshore, international coordination is required and an EU procedure must be initiated. This causes lengthy trajectories with extensive coordination processes. (Netherlands). - Small marine area & permitting/licensing process – reported to be time consuming, lengthy, & expensive (Licensing system was set up to prevent damaging activities – not to enable restoration) (UK - England) - Opportunities and priorities (knowing and understanding what and where these are) and regulatory environment (complex and issues navigating this and timescales/costs involved) (UK – Scotland)	France, Iceland, Netherlands, UK/Scotland/England
Governance, roles and responsibilities - Complex responsibilities (Germany) - Roles and responsibilities for coastal & marine ecosystem restoration remain unclear within existing policy structures (Iceland) - Conflicting uses of the same space, and many government layers involved in space at sea (e.g. offshore wind, mining and mineral extraction, Defence, Fisheries and Nature, local to national government parties) (Netherlands) - Responsibilities differ: Nature regeneration falls under the climate and environmental ministry, while fisheries and kelp, which are recognized as aquaculture fall under the ministry of fisheries and	Germany, Iceland, Netherlands, Norway UK/England

Barrier	Country
economic development, making permitting and stakeholder alignment challenging (Norway) Environmental issues stemming from the land (i.e. WQ) – preventing coastal/marine restoration (UK - England)	
Knowledge, evidence and data gaps - Lack of knowledge/experience/competencies (Denmark) - Lack of knowledge (France) - Lack of knowledge: Scientific & technical uncertainties, data gaps, and monitoring challenges (Germany) - Lack of knowledge: Ecological data gaps in marine environments (Finland) - Data gaps: Limited mapping of degraded habitats & insufficient resources for data generation (Iceland) - Knowledge gaps: scaling and monitoring (Ireland) - Discussion on possible reference situations of a natural system, including the issue of system exchange outside the area of interest of a particular nature restoration project; expensive and complex monitoring; possibly also long-term monitoring of effects (Netherlands). - Lack of knowledge on successful restoration methods, due to a lack of monitoring data (Norway) - Incomplete evidence/science around the benefits/ecosystem services provided by coastal habitat & unknown what & where opportunities & priorities are (UK - England) - Evidence and monitoring (links back to funding) (UK – Scotland) - Lack of knowledge of the habitats and methods for restoration (Sweden)	Denmark, Finland, France, Germany, Iceland, Ireland, Netherlands, Norway, UK/England/Scotland, Sweden
Societal and stakeholder-related barriers: - Conflicting regulation: Common Fisheries Policy versus nature directives (Belgium) - Conflicts with resource groups, conflicts with economic use (marine spatial conflicts) (Germany) - Conflicting uses of the same space, many different users at sea (e.g. fisheries, transport, nature, recreation, water safety) (Netherlands) - Competing priorities (UK - England)	Belgium, Germany, UK, Netherlands
Technical, logistical and environmental constraints Logistics (Supply chains) & lack of standardized methodologies (increasing risk for investors) (UK/England/ Scotland)	UK/England/Scotland

Together, these survey-based insights show that barriers to nature regeneration are systemic and interlinked, spanning finance, regulation, governance, knowledge, and societal acceptance, rather than being limited to project-level implementation challenges alone.

4.4 Enablers to improve implementation

Based on the survey responses received, the key enablers for implementing nature regeneration in marine and coastal ecosystems are outlined in Table 34.

* Disclaimer: Within the survey, there is room for interpretation in the enabling factors, e.g. listing an enabler as a wish rather than something a country has experience with. This incongruence should be taken into account.

Table 34 Overview of key enablers both on national/regional level and project/programme level.

Enabler	Country
Enabling policy and regulatory frameworks: - Decreased licensing burden for nature restoration (Wet Marien Milieu) (Belgium) - Strong & incentive-based environmental protection regulations (France) - National policy framework and political commitment (Germany) - Dedicated national programmes that translate policy into action (Finland) - International commitments, particularly the Global Biodiversity Framework, provide the overarching targets and measures that serve as guiding reference points for national action. (Iceland) - Stimulating regulations, e.g., getting licenses, consents, e.g., Marine Net Gain, EIP targets Unlocking finance – through science & evidence to provide assurance to funders, and confidence in project returns. Markets – creation of carbon markets (& nutrient markets in the future) unlocking access to private finance. E.g. Peatland saw a significant increase in restoration efforts after the peatland carbon code was launched. (UK - Scotland)	Belgium, Finland, France, Germany, Iceland, UK/Scotland
Funding availability and financial mechanisms - Funding (Denmark) - Funding sources for monitoring & control (France) - Availability of public funding (Germany) - Funding for Research & Innovation (Ireland) - Funding sources (Biodiversity Fund) (Spain) - Long-term financing (Sweden) - Funding streams of sufficient size & duration to support restoration projects, investable pipeline policy (UK - Scotland)	Denmark, France, Germany, Ireland, Spain, Sweden, UK - Scotland
Knowledge, science and evidence base - Awareness of positive impacts (Denmark) - Advanced scientific and research capacities (Germany) - Increasing levels of interests (Ireland) - Experience with long-term and systemic monitoring (Netherlands) - Long-term research projects to enable knowledge gathering (Norway) - Monitoring results to secure long-term success of projects & knowledge (Sweden) - Spatially visualizing present interdisciplinary knowledge and information through restoration potential maps (UK - England)	Denmark, Germany, Ireland, Netherlands, Norway, Sweden, UK-England
Learning by doing and pilot projects - Learning by doing (pilots execution) (Belgium) - Proof of concept (Denmark) - Lessons learned from other projects, such as ecological benefits of restoration (France) - Lessons learned from other projects (UK - Scotland)	Belgium, Denmark, France, UK
Collaboration and partnerships - Collaboration between government, science, and industry (Belgium) - Marine protected areas network (Germany) - Public support (Ireland) - Platforms in which governmental coordination with stakeholders is formalized (Noordzeeoverleg, focused on consensus and	Belgium, Germany, Ireland, Netherlands, Norway, UK - England

Enabler	Country
gebiedspaspoorten focused on multi-use of windfarms) (Netherlands) - Public awareness and political support (Norway) - The ReMeMaRe initiative leveraged partnerships for knowledge exchange (e.g. regular partnership calls, annual restoration conference) (UK - England)	
Institutional capacity, skills and supply chains - Availability of person resources with knowledge of restoration (Sweden) - Adequate material to undertake restoration, e.g., seeds or plans, spat/oyster & training/skills of practitioners (UK - Scotland)	Sweden, UK - Scotland

Key in all suggestions and responses received is the longevity of investment and political commitment leading to enabling regulatory environment to ensure tangible action.

4.5 Suggested next steps

Throughout the project, several trends and potential next steps were noted by the project team. The points below are intended as constructive advice to support OSPAR in facilitating collaboration, as well as practical next steps that could help translate these insights into action. These suggestions are offered as potential enablers and should be considered in light of existing initiatives and varying national contexts.

Advice to OSPAR (guiding considerations):

- **Align national and international priorities:** Greater impact may be achieved by identifying and strengthening overlap between national priorities and international commitments (e.g. OSPAR, GNSBI, NORA, etc.). This is particularly relevant given current capacity and budget constraints faced by several countries. Throughout the project various contacts indicated the multitude of initiatives, each of them with a different focus, which makes it challenging to channel capacities.
- **Acknowledge and address data disparities:** Differences in data availability and comparability across countries can limit joint progress. Project specific data might be available; however, the data can hardly be extrapolated to national coverage, which makes it challenging to identify appropriate locations for joint or large scale restoration. Recognising these constraints and working towards pragmatic approaches that accommodate varying levels of data maturity may improve inclusivity in international projects. GNSBI currently works on understanding these data gaps.
- **Promote shared understanding of terminology and monitoring:** Diverging definitions (e.g., nature enhancement, passive or active restoration, etc.) and monitoring approaches can hinder alignment. Continued efforts to harmonise terminology and indicators (e.g. building on existing ICES work such as WKRestore GNS workshop outcomes) may support clearer communication and comparability.
- **Focus on incremental and distributed contributions:** Structuring collaboration around smaller, clearly defined contributions may increase participation. Distributing tasks across countries based on expertise can lower entry barriers and enhance ownership.
- **Improve transparency of governance structures:** A clearer overview of how countries organise responsibilities for nature restoration (e.g. relevant ministries, governance structures, and approaches to international agreements) may facilitate mutual understanding and more effective cooperation.
- **Leverage national strengths and interests:** Insight into each country's expertise, experience, and ambitions can help identify suitable roles in collaborative efforts and support targeted knowledge exchange.

Proposed next steps for OSPAR (concrete next steps): The following next steps aim to operationalise the above considerations in a tangible and pragmatic manner:

- **Coordination and alignment:**
 - Develop a consolidated overview of national priorities:
 - Compile inputs from countries on their national priority species, habitats, and restoration goals;
 - Map these against OSPAR and other international frameworks (e.g. Natura 2000, EU policies);
 - Facilitate a focused discussion on alignment national and regional:
 - Mapping the various initiatives, the key stakeholders, the focus or objective of the initiative, and how it supports OSPAR's overarching objectives. This mapping exercise could facilitate alignment among initiatives and help countries identify the initiatives they are best equipped or interested in supporting;
 - Organise a dedicated session to explore how international collaboration can better support national priorities and identify concrete opportunities for overlap in implementation;
- **Data and knowledge sharing:**
 - Under NEAES 2030 OSPAR Contracting Parties expressed their commitment to achieve the United Nations Sustainable Development Goals under Agenda 2030. As this report provides an overview of past and ongoing projects and programmes it can function as a stepping stone in drafting the mid-term status report for NEAES. Therefore, sharing this report with those working on the mid-term report can boost the integration of national effort in the report and facilitate efficient writing.
 - Share the developed report and excel of projects with all Contracting Parties within OSPAR. Where possible assess whether the information can be shared broader, with representatives from different initiatives, such as GNSBI and NORA. This report's results might also function as input or basis for Benthic RAP Thema 3 Action 3.1 (*Addressing the common information and knowledge gaps relating to the implementation of successful restoration actions*) and 3.2 (*Understanding of restoration terms and concepts to facilitate cooperation and collaboration*). By sharing this report widely, it can be improved iteratively and enable first knowledge sharing among different staff members working on marine restoration. Also, those working on the strategic objectives might benefit from receiving this report, e.g., S12 *Climate mitigation through natural carbon sequestration*, as various projects relate to NbS and blue carbon.
 - Commission or designate a scientific partner to propose a framework for working with differing data availability. Include guidance on minimum data requirements and options for harmonisation. One could build, e.g., on existing ICES work such as WKRestore GNS workshop outcomes. During this workshop, it was highlighted that a number of indicators are currently used to assess the state of habitats and species in the GNSBI area to meet OSPAR, Marine Strategy, and Water Framework Directive commitments.
 - Maintain and update shared knowledge bases. This report or the excel could function as basis for knowledge sharing and a simple overview of past and ongoing projects. However, these types of databases to some extent already exist with various focus topics, e.g., [RESTORE](#) (although more focused on rivers), [View the OMReg Map - ABPmer](#) (focused on UK, Denmark, Netherlands, Germany, Belgium, France), etc. Therefore, it is important to assess with the OSPAR contracting parties, which method works best; building on existing viewers with different focus topics or maintaining the excel as a living document.
 - If the excel is the preferred option, it would be important to set up an annual process for countries to:
 - Update overviews of national projects and programmes.

- Update tables of target species and habitats;
- **Terminology and monitoring:**
 - Organise a terminology alignment workshop. Build on existing ICES initiatives. It could be interesting to assess whether as part of OSPAR Task 6 O1 T1; *best practice Nature-Based Solutions / active nature restoration data amongst the 16 OSPAR countries*, this could be further delineated. Part of this task is organizing a workshop; therefore, contracting parties already gather and the moment could potentially be utilized for this;
 - Ensure follow-up and dissemination. Summarise agreed terminology and circulate clear guidance to participating countries;
- **Collaboration enablement:**
 - Compile and regularly update a list of experts and institutions per country, including areas of specialisation (ensure this remains a 'living' resource);
 - Create country profiles: Request each country to provide a short overview including:
 - Governance structure for nature restoration;
 - Approach to international agreements;
 - Key ministries and organisations involved;
 - Match countries based on expertise and needs: Use collected input to connect countries interested in similar species, habitats, or restoration approaches.

Figure 1 is a key insight gained throughout the work conducted. It seems that various implementation projects are stuck in a vicious cycle. Due to a lack of funding insufficient data can be gathered, which in turn makes it challenging to demonstrate the socio-economic benefits of restoration to financiers. This gap of knowledge hinders or limits funding. The steps are intended to support OSPAR and its Contracting Parties with tangible ideas to build on the knowledge gathered on past and ongoing marine and coastal nature regeneration efforts and identify ideas to break free from this cycle. Thereby, strengthening collaboration and recognising the diversity in national contexts and capacities.

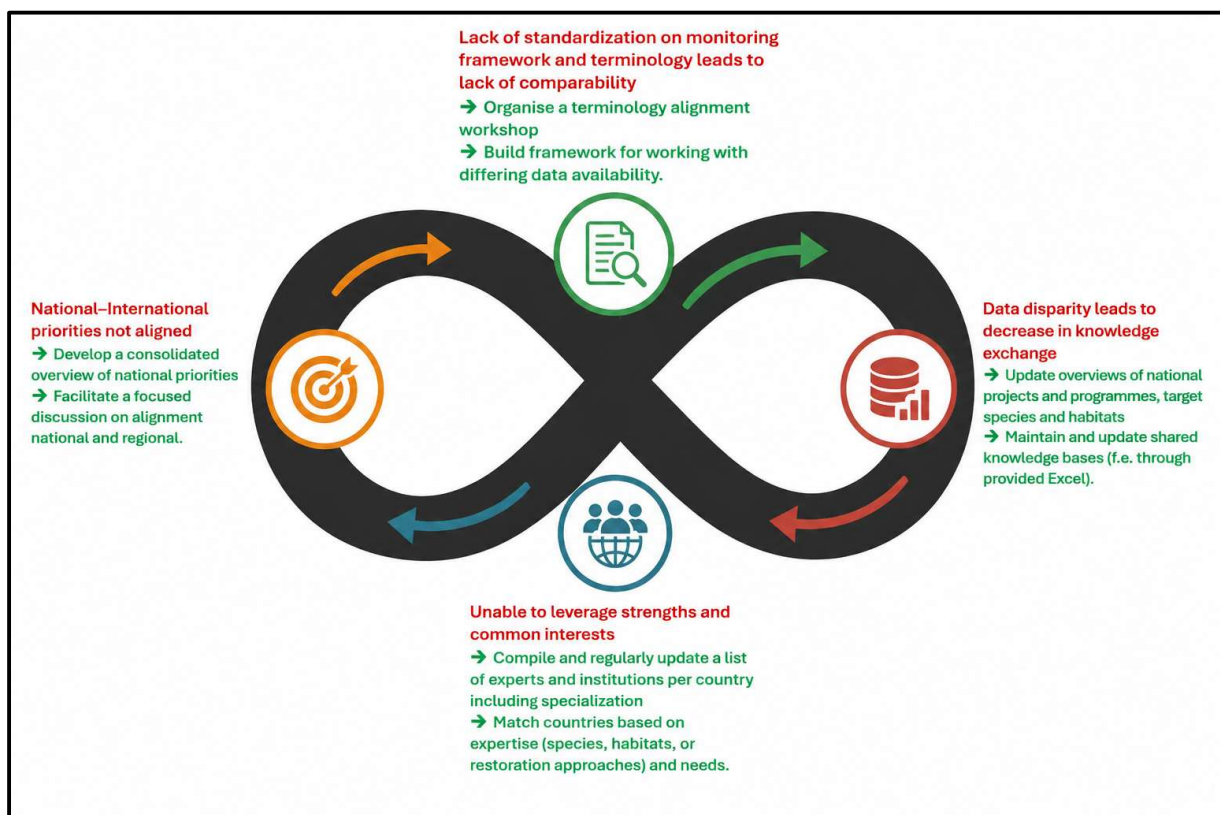


Figure 1: Vicious circle of barriers (red) with stepping stones (green) to break out

5 Conclusion

Nature regeneration efforts in the researched projects and programmes across OSPAR countries focus on the following species of flora and fauna and habitats:

- Fauna species: Sharks, sand mason worm, mussel, cod fish, sea trout, various species of (migratory) birds, rays, oysters;
- Flora species: Eelgrass, kelp, and seaweed. Countries might focus on different species of the same flora or fauna;
- Habitats: (stone) reefs, dunes, cold coral, benthic ecosystems, seagrass, salt marshes, tidal flats/sandbanks, coral, wetlands.

Other topics include removal of exotic species, carbon sinks, reestablishing predator populations, NbS alternatives for a more sustainable resilient coast, reducing of nutrient pollution and marine litter.

It should be noted that various barriers may be overarching and systemic issues to which the obvious solutions may be difficult to overcome directly. Especially long-term and predictable funding was mentioned as a main constraint, restricting scaling and long-term monitoring, hampering the collection of evidence to convince investors. Lengthy and sometimes expensive procedures in permitting and regulations across various government entities halter implementation and upscaling. Additionally, conflicting interests in marine activities cause lengthy procedures (fisheries and nature). Decreasing licensing burdens, stimulating regulations and strong and incentive-based environmental protection regulations, e.g. in the form of international or political commitments, were mentioned as enablers. Effective regulatory frameworks or policies could also help direct funding streams.

Lack of evidence and data gaps, e.g. in habitat mapping, could result in insufficient insight into restoration effectiveness, site suitability and long-term ecological outcomes, causing difficulty in showing proof of concept. Additionally, discussions on possible reference situations of a natural system makes measuring success and reporting on targets difficult. This might affect future funding streams. While many projects adopt a 'learning by doing' approach, monitoring and evaluation are not yet consistently standardised or comparable across countries. Advancing coordinated monitoring frameworks, shared indicators and open data sharing practices will be essential for upscaling of successful approaches, to support adaptive management, and build confidence among policymakers, investors and stakeholders.

Throughout the project, several trends and potential next steps were identified by the project team, resulting in a set of guiding considerations and practical recommendations intended to support OSPAR in facilitating collaboration and translating insights into next steps. These suggestions emphasise addressing disparities in data availability and comparability, alongside efforts to harmonise terminology and monitoring practices to improve clarity and comparability. In order to put these considerations and practical recommendations into practice, the following steps were proposed:

- Include facilitating targeted discussions to map initiatives;
- Strengthening data and knowledge sharing through dissemination and iterative improvement of existing outputs such as this report;
- Efforts to align terminology, building on existing initiatives, could be supported through workshops and clear follow-up guidance.

Finally, collaboration can be further enabled by:

- developing and maintaining overviews of experts and institutions;
- creating concise country profiles on governance and approaches;
- actively matching countries based on shared interests, expertise, and restoration priorities.

Thereby supporting more effective and targeted international collaboration while recognising differences in national contexts.

Annex A: Glossary

The glossary below is not meant to distract from ongoing discussions within OSPAR and GNSBI on terms nor provide a definite definition, but to support the reader in understanding how the terms were used in this report.

Active restoration

The intentional implementation of measures to accelerate ecosystem recovery, such as planting vegetation, reintroducing species, stabilising substrates, or constructing habitat structures. It involves direct human intervention to restore ecological functions and conditions.

Benthos

The community of organisms that live on, in, or near the bottom of a body of water (oceans, seas, lakes, rivers, and streams). The organisms are called benthic organisms.

Nature enhancement

Actions that improve the quality, functionality, or biodiversity value of existing ecosystems without necessarily restoring a previously degraded state. Enhancements typically strengthen ecosystem resilience, habitat complexity, or ecological performance.

Nature inclusive

An approach to planning, design, and development that integrates ecological considerations from the outset, ensuring that human activities, infrastructure, and land use actively support biodiversity and ecosystem functioning.

Nature regeneration

The process of enabling ecosystems to recover, rebuild, or evolve towards a healthier and more functional state. Regeneration may include both passive and active measures and emphasises long-term ecological renewal.

Nature restoration

The process of returning degraded, damaged, or destroyed ecosystems to a more natural, functional, and biodiverse condition. Restoration can involve both passive recovery and active interventions to re-establish ecological processes.

Nature-based Solutions (NbS)

Actions that protect, sustainably manage, or restore natural or modified ecosystems to address societal challenges, such as climate adaptation, water management, or biodiversity loss, while providing co-benefits for people and nature.

Passive restoration

Ecosystem recovery that occurs primarily through the removal of pressures or disturbances (e.g., stopping harmful activities), allowing natural processes to drive regeneration without direct human intervention.

Annex B: Survey on nature regeneration efforts

Survey:

Introduction text within survey:

The objective of this survey is to get a better understanding of past, ongoing, and planned nature regeneration efforts in marine and coastal ecosystems within OSPAR countries. Nature regeneration entails both nature restoration measures for the benefit of the natural environment, as well as incorporating natural elements in hard infrastructure through nature enhancing measures, such as reef elements and fish hotels and in general Nature-based Solutions. Below a series of questions centre around general enabling and limiting factors to nature regeneration implementation and specific project questions.

The results of this survey allow for nature regeneration experts to share lessons learned (successful projects and enabling aspects) and to identify challenges in nature regeneration implementation and upscaling. This knowledge can provide an impulse for knowledge creation and collaboration among OSPAR countries in the future.

General		
1.	Your name, organisation and email address.	
2.	Affiliated OSPAR Country	
3.	Which national or regional policies or programmes exist to stimulate nature regeneration in marine or coastal ecosystems in your country?	
4.	What are the main barriers to implementing nature regeneration efforts in marine or coastal ecosystems in your country, based on your experience? (e.g., lack of knowledge, latent business case, limited interest, public perception, conflicting regulations)?	
5.	What are enabling factors for implementing nature regeneration efforts in your country, based on your experience? (e.g., stimulating regulations, abundance of knowledge, funding streams, lessons learned from other projects)?	
Project Specific	This section contains questions on projects and programmes with a marine or coastal nature regeneration component in your country. <i>*Cross-border or international projects within the EU can qualify as well.</i>	
6.	Basic information on the project	
a.	Name of the project/programme	
b.	Who is leading the project/programme (e.g., specific ministry or department within the government)?	
c.	Which partners are involved (academic, local authorities, state agencies, private parties, NGOs, etc.)? If possible, briefly explain the role of these organizations.	

National efforts for nature regeneration

	Please include details of the collaboration, network or alliance involved in the project (if any).	
d.	What is the status and timeline of the project (ongoing, in planning, finished, etc.)	
e.	If available, please provide a link to your project or project outcomes (research papers, publicly available documents, etc.).	
7.	Project goals and methods	
a.	What is/are the main objective(s) of the project?	
b.	Does your project provide any potential co-benefits (other than its main goal, e.g. carbon capture, community participation, coastal protection, cost reduction, knowledge development, and eutrophication abatement)?	
c.	What are the key measures taken to achieve the project objectives (e.g., creating habitat, artificial reefs, sand nourishment, revegetation, dike reinforcement)?	
d.	What is/are the main natural feature(s) your project is protecting or restoring? (habitat/species, e.g. seagrass/salt marsh/oyster, reefs/other)? And do you take extra steps to protect, restore these natural features?	
e.	If the project is connected to academic research, can you please provide a short description of what is being researched (measured, assessed, analyzed) and how (e.g. carbon sequestration, community participation, stakeholder engagement, biodiversity gain, etc.)?	
f.	Please provide details of how restoration rates are monitored or how the success of the project is evaluated.	
8.	Project costs	
a.	Can you provide details of the costs of restoration (per km ²) within your project or maintenance of existing ecosystem?	
b.	If costs have not been calculated, do you expect to determine them at the end of the project? And how do you plan on doing this?	
9.	Legal requirements	
a.	Did your project require a permit or license from a regulatory agency? If so, what kind of permit or license was required?	
b.	Which regulatory agency was involved?	
10.	Barriers and enabling factors for this project specifically	
a.	What are the main barriers to the implementation of the regeneration measure in this project? Based on your experience, e.g., lack of knowledge, latent business case, limited interest, public perception, conflicting regulations?	
b.	What are enabling factors for the implementation of nature regeneration/Nature-Based Solution efforts in this project (e.g., stimulating regulations, abundance	

National efforts for nature regeneration

	of knowledge, funding streams, lessons learned from other projects?	
11.	Finalization	
a.	Do you have any other comments or suggestions?	
b.	Thank you for filling in this survey	

Annex C: Cover letter to questionnaire

Dear OSPAR-contact,

We reach out to you on behalf of the Dutch government and in fulfilment of the OSPAR task S6.O1.Tx *collation of information regarding national efforts to implement nature regeneration measures in coastal and marine systems*. The information is gathered via a MS Forms survey (see below) and will be translated a tangible overview of ongoing efforts and can be used to leverage collaboration and lessons learned across borders for nature regeneration efforts in coastal and marine systems. This knowledge can provide an incentive for future knowledge creation and collaboration among OSPAR countries.

Objective

The Nature Regeneration North Sea programme is an implementation programme run by the Dutch Ministry of Agriculture, Fisheries, Food Security, and Nature. The programme is responsible for:

- the OSPAR task S6.O1.Tx and
- interested in the identification of collaboration opportunities focused on nature regeneration (nature restoration and nature enhancing measures) between the programme Nature regeneration North Sea and other countries bordering the North Sea.

In this respect, we are conducting a survey among all OSPAR countries on nature regeneration.

The survey first focuses on general enabling and limiting factors for the implementation of nature regeneration and then proceeds to specific national project/programmes questions. If you are working on or are familiar with several projects, please feel free to fill out the forms for those you deem most relevant with regards to size and impact on nature regeneration. Both governmental and non-governmental initiatives can be shared.

* Luxembourg, Switzerland and Finland are part of OSPAR, but do not border the OSPAR Maritime Area directly. If you are from one of those Contracting Parties, we would like to ask you to answer the survey with projects/programmes that your country participates in that contribute to or influence nature regeneration in the North Sea.*

The link to the survey (Microsoft Forms) can be found here:

Please find a word version of the questionnaire attached to this email for your information. This may help direct the questionnaire to a colleague if appropriate.

Please complete the survey by 1 May 2026.

Your contact information will be used to reach out to you only for the duration of this project, such as to share the final results and address follow-up questions.

Please do not hesitate to contact us if you have any questions or doubts.

All the best,

Name on behalf of the Netherlands (task lead S6.O1.Tx)

Annex D: Project descriptions

See excel shared for project and programme overview. The excel includes per project programme, detailed descriptions, start and end dates, measures, species and habitat focus, active or passive, phase of the project (pilot, research, implementation, and upscaling, funding, restoration costs if available, key stakeholders, and links to the project/ programme website.