Department
for Environment
Food & Rural Affairs

Marine Strategy Part Three:

UK Programme of Measures

September 2021

We are the Department for Environment, Food and Rural Affairs. We're responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.

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Department of Agriculture, Environment and Rural Affairs
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The Scottish Government
Riaghaltas na h-Alba

Contents

Consultation on UK Marine Strategy Part Three

Topic of this consultation

The UK Marine Strategy Regulations 2010 require the UK to take the necessary measures to achieve or maintain Good Environmental Status (GES) through the development of a UK Marine Strategy. This consultation sets out our proposals for updating the UK Marine Strategy Part Three, published in 2015. It shows the programme of measures the UK intends to use to achieve or maintain GES for UK seas over the next 6 years.

Scope of this consultation

This consultation covers the updated UK Marine Strategy Part Three.

Geographical scope

The proposals apply to the marine waters over which the UK claims jurisdiction, including territorial waters in Scotland, Wales, and Northern Ireland. The monitoring programme for British Gibraltar Territorial Waters is being prepared separately.

Who this consultation is of relevance to?

This consultation has particular relevance to:

- groups or individuals who use the sea for whatever purpose, or have an interest in it.
- business users of the sea and those businesses that have an impact on the sea.
- national and local interest groups such as environmental and recreational non-governmental organisations and industry federations; and
- the OSPAR Commission and its contracting parties.
- Body responsible for the consultation
- This consultation is being carried out by the Marine Strategy Regulations Implementation team in Defra's Marine and Fisheries Directorate on behalf of the UK government and the Devolved Administrations.

Duration

The Consultation runs for 12 weeks: Starts **06 September 2021** and ends on **29 November 2021.**

Enquiries - During the consultation, if you have any enquiries or wish to receive hard copies of the documents, please contact: marine.strategy@defra.gov.uk

Further information on the implementation of the Marine Strategy Regulations 2010 can be found in the UK Marine Strategies Part One, Part Two and Part Three which are all published on GOV.UK

Consultation questions

Particular questions which we invite those responding to the Consultation to address are set out below.

How to respond

Written responses can be submitted online via the citizen space consultation hub at Defra https://consult.defra.gov.uk/

Or send to

Email: marine.strategy@defra.gov.uk

Post: Marine Strategy Team. Defra. Seacole Building. 2 Marsham Street. Westminster. London. SW1P 4DF.

Responses must be submitted by **29 November 2021**.

After the consultation

At the end of the consultation period we will summarise the responses and place this summary on the UK government website.

Copies of responses will be made available to the public on request. If you do not want your response – including your name, contact details and any other personal information – to be publicly available, please say so clearly in writing when you send your response to the consultation. Please note, if your computer automatically includes a confidentiality disclaimer, this will not count as a confidentiality request.

Compliance with consultation principles

This consultation is in line with the government's Consultation Principles which can be found on the UK government website.

Consultation questions

This consultation seeks views on the programme of measures proposed for assessing the status of the UK seas up to 2027. Set out below are six questions on the updated UK Marine Strategy Part Three. Questions should be responded to on a descriptor basis. We are not seeking comments on the assessment of UK seas and targets set out in the UK Marine Strategy Part One or monitoring programme set out in the UK Marine Strategy Part Two.

1) Are the proposed measures sufficient to achieve and maintain Good Environmental Status (GES)?

2) If not, what measures are needed? Please provide details and evidence to show how these would contribute towards the achievement or maintenance the environmental targets as set out in 2019 update to the UK Marine Strategy Part One.

3) Are there any additional existing or planned measures not identified that might also contribute to the achievement of the relevant environmental targets and the achievement or maintenance of GES?

4) Are there any measures proposed that you think are not justified or that will not contribute towards the achievement or maintenance the environmental targets set out in the UK Marine Strategy Part One?

5) Are there any significant human activity-related pressures and associated impacts that are not addressed by the proposed measures?

6) Do you agree with the justifications provided for the use of exceptions under Regulation 15?

Publication of this programme of measures completes the second cycle of the UK Marine Strategy. This provides an opportunity to look afresh at how we currently are delivering the strategy, to learn from our experience, to build on and improve the delivery of a UK Marine Strategy for the future, and to support the delivery of good environmental status. We are keen to understand where improvements can be made to enhance and streamline the existing delivery programme and improve implementation of the next cycle and would welcome your views to the following questions.

i. *What, if any, improvements do you think could be made to the process and structure of the existing delivery programme in order to enhance and streamline it?*
ii. *What, if any, improvements do you think could be made to the scope of the existing delivery programme to increase its effectiveness, coherence and relevance across the UK regulatory landscape?"*

Introduction

The UK Marine Strategy, made up of Parts One, Two and Three (the Strategy), sets out a comprehensive framework for assessing, monitoring and taking action across our seas to achieve the UK's shared vision for clean, healthy, safe, productive and biologically diverse seas.

This consultation document for the updated UK Marine Strategy Part Three details the Programme of Measures the UK will use until 2027 to support progress towards Good Environmental Status (GES), the next evaluation of which will be in the 2024 assessment. A number of the measures referred to in this consultation document are still in the process of being developed so it should be seen as a snapshot in time. Further updates on these measures will be provided in the final published Part Three.

The requirement to assess, monitor and put in place measures to achieve or maintain GES for UK seas is enshrined in UK legislation and demonstrates the combined commitments of the four UK Administrations to work together to monitor and protect what are some of the most biologically diverse and productive seas in Europe.

Section 1: Context

1.1 – The UK Marine Strategy

1.1.1. Overview

An overview, description of Good Environmental Status (GES) and the geographical extent of the UK Marine Strategy can all be found here: Introduction-to-uk-marine-strategy.

1.2 Our approach

1.2.1 Summary

The purpose of the UK Marine Strategy Part Three is to put in place interventions that will help move the marine environment towards the revised objectives and targets set out in the updated UK Marine Strategy Part One, and to help move us in the direction of achieving GES by 2024.

We will continue to collaborate at a UK, regional sea (OSPAR Convention) and international level to implement the UK Marine Strategy. We will take into account the

extent that we have achieved GES, with effort and resources being focused on measures for those descriptors and ecosystem components where GES has not been achieved.

When considering the measures that are required for each ecosystem element or descriptor how they act together on the whole ecosystem has also been considered in line with the ecosystem approach. This aims to avoid silo thinking and to ensure that there are not gaps where pressures are not sufficiently covered under the individual ecosystem elements.

Where a Descriptor is in, or has largely reached GES (D5, D7 and D9) and where there are no exceptions to consider, the approach is to maintain the existing measures and continue with the monitoring programmes (UK Marine Strategy Part Two) to ensure that the GES status is maintained. As there are no new measures to consider only brief summaries are included for these descriptors and the ongoing measures are set out in Annex 3 for reference.

1.2.2 Coordination across the UK

The development of the UK Marine Strategy Part Three is a collaborative effort across all the Administrations within the UK. It has been developed with input from scientific experts and policy-makers across the Administrations at a scale appropriate for the particular descriptor or ecosystem component. Where possible measures have been implemented at the UK scale. However, due to the nature of devolution, and the differing pressures faced across the UK marine environment, this is not always appropriate. Some measures are coordinated across the UK but are implemented at the devolved level, whereas others are implemented specifically for one or more administration.

1.2.3 International collaboration

The ecosystems of the Greater North Sea and the Celtic Seas, and their various uses, extend beyond the boundaries of the UK. Similarly, some of the habitats and species, particularly mobile species such as cetaceans, fish and seabirds, range over wide areas of the North East Atlantic. For this reason it is important that we coordinate the development of our UK Marine Strategy Part Three with our close neighbours, particularly those within our marine regions (in the Greater North Sea this is France, Belgium, the Netherlands, Germany, Denmark, Sweden and Norway and in the Celtic Seas this is Ireland and France).

Our main forum for regional cooperation is through the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR). Where possible we have used the OSPAR working structures to coordinate the development of our programme of measures with these other counties to ensure that they are coherent and can address broad scale pressures. In addition, there is good coordination between the UK and the Republic of Ireland through the British Irish Council. A number of additional mechanisms

are also in place to ensure good cooperation and coordination between the Republic of Ireland and Northern Ireland.

1.2.4 Adapting to changing priorities and drivers

The UK Marine Strategy is an adaptive management programme which evolves over time. This updated Part Three provides a snapshot of the programme of measures we currently have in place to address the key drivers that impact our seas and ability to achieve GES. As we travel through this next six-year cycle we will need to take account of changing pressures and a number of international developments.

These include the outcomes of the Convention on Biological Diversity (CBD) Conference of Parties (COP) 15; the United Nations Framework Convention on Climate Change (UNFCCC) COP 26; the OSPAR Convention Ministerial Meeting, and the G7 Summit, as well as the UN Decades of Ecosystem Restoration and Ocean Science for Sustainable Development all of which start or occur in 2021. This will be a pivotal year to drive action to protect and restore our seas and for the UK to advocate for high global ocean ambition.

The UK government, as UNFCCC COP26 President, is placing 'Nature' at the heart of COP26 through the Nature Campaign and the supporting 'Leaders' Pledge for Nature'. We are advocating for initiatives that increase ambition and drive a step-change in Nature-based Solutions (NbS) that support climate change adaptation, resilience, and mitigation, and protect and restore vital ecosystems and biodiversity. The International Union for Conservation of Nature defines NbS as "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits". Many of the UK Marine Strategy's Programme of Measures are marine NbS. Implementation of the UK Marine Strategy therefore helps ensure that we are matching our international ambition on marine nature-based solutions with domestic action.

The new post-2020 global biodiversity framework to be agreed under the CBD will include new goals and targets. The UK Marine Strategy will be crucial for delivering against the UK's commitments under the framework. Similarly, the UK Marine Strategy will be central to the UK's contribution to the new OSPAR North East Atlantic Environment Strategy that will set the level of ambition for our regional cooperation over the next decade.

It is clear that over the six-year cycle there will be changes to the drivers that affect the marine environment, ranging from the way in which we use the ocean to the pace of climate change.

Both the changing international framework and the changing drivers underline the importance of the adaptive nature of the UK Marine Strategy, which will allow us to evolve our approaches as the implications of these changes become clearer. This will feed through and support our ongoing domestic marine environment policy development and

planning for the sustainable management of our seas and contribute towards achieving the UK vision for 'clean, healthy, safe, productive and biologically diverse ocean and seas'.

1.3 Cost of the programme of measures

The Marine Strategy Regulations 2010 set a requirement to consider the social and economic impacts of proposed new measures when developing the UK Marine Strategy Part Three. As a result, a review was undertaken to collate the socio-economic assessments for those new measures which had already been assessed and identify those measures which would be subject to assessment in the future.

Section 2: Cross cutting measures

A number of the measures have an impact on more than one of the ecosystem elements or descriptors. These are mostly well-established mechanisms or legislation. We have provided an overview where there has been an update to these cross-cutting measures below. A full description of each can be found in 2015 Programme of Measures and progress updates since 2015 can be found in Annex 4.

2.1 - Marine planning and marine licensing

Marine planning

The UK marine planning system will make a positive contribution towards the achievement of GES across a number of descriptors. The specific contribution made by marine plans will reflect the particular issues raised during development of the plan and where the evidence base changes or improves. Updates on Marine Plans can be found in Annex 4.

Marine licensing

Marine plans set the direction for the licensing process. Public authorities must take any authorisation or enforcement decisions in accordance with the UK Marine Policy Statement 2011 and marine plans unless relevant considerations indicate otherwise.

The following are the Acts under which marine licensing is enabled:

Marine and Coastal Access Act 2009, Part 4; Wales Act 2017 (Section 46) – Marine Licensing; and Marine (Scotland) Act 2010

Marine licensing is applied nationally by the following organisations: England – Marine Management Organisation (MMO); Northern Ireland – DAERA; Scotland – Marine Scotland; Wales – Natural Resources Wales. An established marine licensing system is in place with low incidences of enforcement action for works proceeding without a licence or

for non-compliance with conditions. Licence application evaluations are undertaken (including consideration of Environmental Impact Assessments (EIA) and Habitats Regulations Assessments (HRA)) to protect the environment, human health and to prevent interference with legitimate uses of the sea (and other matters). These measures indirectly contribute to GES.

2.2 - Environmental impact assessment/strategic environmental assessment/habitats regulations assessment/marine conservation zone assessment

Domestic legislation requiring these assessments continues to apply, as set out on p.19 2015 Programme of Measures.

2.3 - Fisheries Act 2020

The Fisheries Act 2020, alongside appropriately amended existing EU law retained under the European Union (Withdrawal) Act 2018, provides a comprehensive regulatory framework to manage commercial fishing activity. It will enable the four fisheries administrations to put in place management measures specifically tailored for the individual needs of their industry and marine environment. Policies flowing from the Act, including those required to achieve, or contribute to the achievement of, the eight fisheries objectives in the Act will make a positive contribution to the achievement of the GES targets proposed for cetaceans, seals, birds, fish, commercial fish, food webs and benthic and pelagic habitats. The Act sets out objectives which all UK Fisheries Administrations are committed to supporting and delivering. Fisheries management is a devolved responsibility with each Fisheries Administration responsible for developing and implementing the measures needed to manage fishing activity in their waters. Whilst a pan-UK approach may be desirable, in some cases the differences in terms of the fleets and waters in each Administration will result a need for divergence between the Administrations in their policies. For more detail see 2.3 - Fisheries Act 2020.

The Act created powers for the UK to operate as an independent coastal state and manage its fish stocks sustainably outside the EU, its implementation will play a critical role in supporting the achievement and maintenance of GES. The legislation helps ensure that fish stocks, and the marine environment, are better protected for future generations with new powers to set UK fishing opportunities, new measures for all Administrations, as well as a set of UK-wide fisheries objectives. In achieving, or contributing to the achievement of, the fisheries objectives in the Fisheries Act, management measures will make a positive contribution to the achievement of the GES targets proposed for cetaceans, seals, birds, fish, commercial fish, food webs and benthic and pelagic habitats. The Act created powers for the UK to operate as an independent coastal state and manage its fish stocks sustainably outside the EU, its implementation will play a critical role in supporting the achievement and maintenance of GES. The legislation helps ensure

that fish stocks, and the marine environment, are better protected for future generations with new powers to set UK fishing opportunities, and new measures for all Administrations, as well as a set of UK-wide fisheries objectives.

Fisheries management in the UK is largely devolved The Act requires the UK government and the Devolved Administrations to publish a Joint Fisheries Statement (JFS), setting out legally binding policies to achieve, or contribute to the achievement, of the objectives set out in the Act. The Fisheries Administrations will have regard to the Marine Strategy Regulations 2010 and manage fisheries in a manner that contributes towards achieving and maintaining GES. Six out of the eight fisheries objectives relate to environmental stewardship, and the ecosystem objective refers directly to fisheries management taking an 'ecosystem-based approach'. This is defined as ensuring that the collective pressure of human activities is kept within levels compatible with the achievement of good environmental status and does not compromise the capacity of marine ecosystems to respond to human-induced changes. The JFS must also address the climate change objective which requires that the adverse effects of fish and aquaculture activities on climate change are minimised and fish and aquaculture activities adapt to climate change.

A UK Fisheries Framework is in development, of which the Act is part. This will operate alongside the wider marine management framework that already exists, including the UK Marine Strategy, Marine Policy Statement and Marine Plans. The Fisheries Framework is different in structure to other Common Frameworks, reflecting the dynamic nature of fisheries management, the history of collaborative working between the Fisheries Administrations, and the extent of devolved competence in fisheries matters. The main framework components are the Fisheries Act 2020, the JFS and Fisheries Management Plans (FMPs) and a Memorandum of Understanding between all four Administrations on ways of working. The JFS and FMPs will set out the policies to achieve, or contribute to the achievement of, the fisheries objectives, and will contribute to the achievement of GES. The Fisheries Act 2020 provides for the development of FMPs by the relevant fisheries policy authority or authorities to manage fishing activity in order to achieve, or contribute to achieving, the fisheries objectives.

2.4 - River Basin Management Plans (RBMPs)

There are strong links between the various RBMPs across the UK and the UK Marine Strategy. They have comparable objectives, with the Marine Strategy focussed on the achievement of GES in marine waters, and RBMPs aiming to achieve Good Ecological and Good Chemical Status in river basins and coastal waters. Whilst these are not exactly equivalent there are some significant areas of overlap, particularly in relation to chemical quality, the effects of nutrient enrichment (eutrophication) and some aspects of ecological quality and hydromorphological quality. RBMPs also follow a six-year cycle and were assessed in 2015 and will be again in 2021, although there may be a delay in England due to the Covid-19 pandemic. Progress updates can be found in Annex 4.

2.5 - Marine Protected Areas (MPAs)

The UK's network of MPAs, as well as Other Effective area-based Conservations Measures (OECMs), form an integral component of the proposed programme of measures for achieving GES – particularly under Descriptor 1 (biodiversity) and Descriptor 6 (seafloor integrity).

The Marine and Coastal Access Act 2009, the Marine (Scotland) Act 2010 and the Marine Act (Northern Ireland) 2013 (the Marine Acts) provide for the establishment of a network of MPAs that:

- Contributes to the conservation or improvement of the marine environment in the UK marine area
- Is representative of the range of features present in the UK marine area
- Reflects the fact that the conservation of a feature may require the designation of more than one site

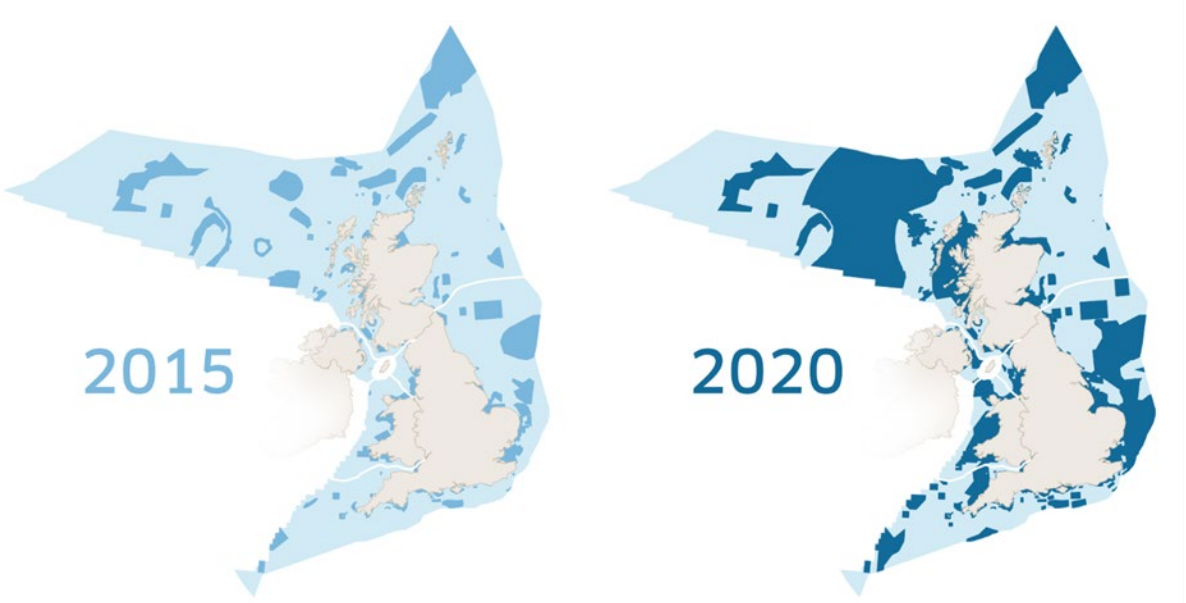


Figure 1 - The image shows that spatial coverage of the UK MPA network has increased between 2015 and 2020.

As the implementation of management measures progresses this will contribute to achieving or maintaining GES for a number of descriptors, particularly Descriptor 1 (biodiversity) and Descriptor 6 (seafloor integrity). Additional details and progress updates on Marine Protected Areas since 2015 can be found in Annex 4.

2.6 - Habitats regulations

The Habitats Regulations continue to apply. See p.125-126 2015 Programme of Measures.

2.7 - National biodiversity strategies

Each Administration adopted a National Biodiversity Strategy and Action Plan (NBSAPs) to implement the CBD Aichi targets which were adopted in 2010. The implementation of these strategies also help contribute towards achieving GES. The CBD is currently negotiating an updated post 2020 global biodiversity framework, which should have been adopted in 2020 but has been delayed by Covid-19. 2021-2030 is also the UN Decade of Ecosystem Restoration and will see a focus on restoring degraded habitats. Following the adoption of these new global goals and targets each administration will adopt new biodiversity strategies to implement them nationally up to 2030, in line with section 1.3.

2.8 - Climate change mitigation and adaptation

The UK Marine Strategy Part One identified climate change as one of the key pressures affecting the marine environment. Climate change, combined with other pressures such as pollution and overexploitation, is having a catastrophic impact on ocean health, and its ability to continue to provide functions critical to all life. Carbon dioxide and heat in the atmosphere are absorbed by the ocean thereby causing warming, acidification, deoxygenation, and rising sea levels which all affect marine ecosystems, economies, and societies.

Working at the international level is critical to achieving and sustaining a number of the GES targets and the UK is firmly committed to addressing the causes and impacts of climate change and meeting the goals of the Paris Agreement through the UNFCCC. The UK is leading by example and has communicated the actions we will take as a party to the Paris Agreement. An Adaptation Communication has been submitted in conjunction with the UK's enhanced Nationally Determined Contribution (NDC) and the UK's Climate Finance communication under Article 9.5 of the Paris Agreement. This Communication sets out the action we are taking to prepare for current and future climate risks across the whole of government, society, and the economy.

Each administration has also individually taken a range of actions to begin to mitigate climate change and adapt to its impacts:

England

The Climate Change Act 2008 sets England's approach to tackling and responding to climate change. The Act originally committed England to cut its emissions by at least 80% below the 1990 baseline level by 2050. On 27 June 2019, this target was amended, committing to a legally binding target of net zero emissions by 2050. The Climate Change Act 2008 also introduced 'carbon budgets' which cap emissions over successive 5-year periods and must be set 12 years in advance.

In responding to climate change, the Climate Change Act 2008 requires a Climate Change Risk Assessment (CCRA) to be produced every five years. The CCRA assesses current and future risks to and opportunities for the UK from climate change. In addition, the Climate Change Act 2008 requires the UK government to produce a National Adaptation Programme (NAP) to respond to the risk assessment. The second NAP was published in July 2018 and outlined our commitment to address marine climate risks by introducing a Sustainable Fisheries policy. The third NAP is due to be published in 2023. Further information on how the UK government is supporting fisheries and wider marine ecosystems in England to adapt to the risks a future climate brings can be found in the UK government response to the CCC's Progress report to Parliament (2020). The next CCC adaptation Progress report to Parliament is due this summer (2021). Finally, the Climate Change Act 2008 gives powers to government to require certain organisations to report on how they are adapting to climate change through the Adaptation Reporting Power.

Whilst reducing emissions to net-zero will be key to help reduce the pressure from climate change on the marine environment, we must also prepare for the climate change effects which are already locked in. We are already seeing impacts from climate change across the UK. This includes risks such as sea level rise to coastal habitats and communities; and changing climactic conditions such as ocean acidification and rising water temperature to marine ecosystems, habitats and species. We must adapt to these changes and support our marine environment's resilience to these changes.

The third CCRA Evidence Report, produced by the independent Adaptation Committee of the Committee on Climate Change (CCC), was published in June 2021, and will be followed by the Government CCRA in 2022. The third CCRA will offer greater detail and more up to date knowledge of the risks that the UK faces from climate change and will support further prioritisation of risk to direct adaptation action better.

Northern Ireland

While the UK Climate Change Act 2008 extends to Northern Ireland, it doesn't set a specific greenhouse gas emissions reduction target for Northern Ireland and there is currently no specific Northern Ireland climate change legislation. The 'New Decade, New Approach' agreement contains a commitment that 'The Executive will introduce legislation and targets for reducing carbon emissions in line with the Paris Climate Change Accord.' The agreement further states that 'The Executive should bring forward a Climate Change Act to give environmental targets a strong legal underpinning.' As a result of this, work is ongoing with the aim to bring forward a Climate Change Act for Northern Ireland within the lifetime of the current Assembly mandate (March 2022).

Under Section 60 of the UK Climate Change Act 2008, Northern Ireland (NI) Departments must lay an Adaptation Programme before the NI Assembly which addresses the climate change risks and opportunities identified in the most recent UK CCRA.

DAERA, as lead department, published Northern Ireland's second Climate Change Adaptation Programme (NICCAP2) in September 2019 and it covers the period 2019-

2024. The programme is a cross-departmental response to the risks identified in the 2017 UKCCRA and focuses on five key priority areas requiring urgent adaptation action over the next five years.

Northern Ireland contributes towards the UK carbon budgets set out in the CCA. The NI Programme for Government contains a Greenhouse Gas population indicator that is used to measure progress on Outcome 2 'We live and work sustainably, protecting our environment'. A new Programme for Government is being developed and it is anticipated that it will bring a new focus to areas such as climate change.

An inventory of Northern Ireland's greenhouse gas emissions is published annually. The most recent report, Northern Ireland Greenhouse Gas Emissions 2018, was published in June 2020.

Scotland

The Climate Change (Scotland) Act 2009 set in legislation Scotland's approach to tackling and responding to climate change. This Act was amended in 2019 by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, which set a target for Scotland of net-zero greenhouse gas emissions by 2045. There are interim targets for reductions of at least 56% by 2020, 75% by 2030, 90% by 2040, and annual targets for other years.

A pathway to achieving these targets is set out through Scotland's strategic Climate Change Plan, which is updated every 5 years. The most recent update to the Plan was published in December 2020, reflecting the increased target ambition in the 2019 Act as part of a green recovery from COVID-19.

Reports on progress to the statutory targets for greenhouse gas emissions are published annually. The most recent report (for emissions during 2018) was published in June 2020 and shows that emissions had reduced 50% from the 1990 baseline period.

The Climate Change (Scotland) Act 2009 places a duty on Ministers to lay a programme for climate change adaptation before the Scottish Parliament in response to each UKCCRA. Climate Ready Scotland: Scotland's Climate Change Adaptation Programme 2019-2024 (SCCAP2) was published in September 2019 and has 7 high-level outcomes, including on marine and coastal specific goals. The Scottish Government also supports a delivery programme called Adaptation Scotland, which focuses on capacity building in public bodies, communities and companies.

The Scottish Government is also seeking to better understand the role of blue carbon to help mitigate and adapt to climate change. As a result, the Scottish Blue Carbon Forum was initiated as research programme to better inform future policy and management decisions built on sound science. The Forum focuses on understanding the ability of various marine and intertidal habitats to trap and store carbon alongside building an evidence base on the effects that human activities may have on these habitats.

Wales

The Climate Change Act (2008) places specific requirements upon Welsh Ministers under Section 80 to produce a report outlining Welsh Government objectives, actions, and future priorities regarding climate change. Additionally, in Wales, two key pieces of legislation guide Welsh Government policy development with respect to climate change – the Environment (Wales) Act 2016 and the Well-being of Future Generations (Wales) Act 2015.

Part 1 of the Environment (Wales) Act 2016 outlines a requirement to maintain and enhance the resilience of ecosystems, so they provide benefits to our well-being, including the ability to adapt to climate change.

The Well-being of Future Generations (Wales) Act 2015 aims to improve the social, economic, environmental and cultural well-being of Wales, protecting Wales' assets for future generations, through 7 goals.

Accompanying this are two plans produced by Welsh Government covering adaptation and mitigation. Prosperity for All: A Low Carbon Wales is Wales' first statutory climate mitigation plan, published in 2019, which sets out 100 policies and proposals for further emission reductions. Also published in 2019 was Wales' second climate change adaptation plan, Prosperity for All: A Climate Conscious Wales, which outlines how Wales will adapt and respond to risks and issues associated to climate change over the next 5 years.

2.9 - Administration specific measures

England

The Environment Bill, as a manifesto commitment, sets a new and ambitious domestic framework for environmental governance. It will give the Secretary of State a power to set long-term, legally binding environmental targets of at least 15 years in duration, on any aspect of the natural environment, or people's enjoyment of it, in England.

It will specifically require the government to set at least one long-term target each in four priority areas:

- Air quality
- Water
- Biodiversity
- Resource efficiency and waste reduction

Any marine related targets in the Environment Bill will complement the existing suite of targets set at a UK level under the Marine Strategy Regulations 2010, for example a potential MPA target is being developed.

The Environment Bill creates a new statutory cycle of monitoring, planning, and reporting, including a long-term Environmental Improvement Plan. The 25 Year Environment Plan will be the first such Environmental Improvement Plan. Interim targets will be set out in the Environmental Improvement Plan, which will be reviewed at least every five years. The government will have to report annually on what it has done to implement the Environmental Improvement Plan and on whether the natural environment (or particular aspects of it) has improved.

The Bill will also enable a new public body to be established, in England, with the principal objective of contributing to environmental protection and the improvement of the natural environment. It will provide the necessary legal authority to implement long-term environmental governance. The Office for Environmental Protection (OEP) will provide scrutiny and advice on the implementation of environmental law. It will also monitor and report on progress against Environmental Improvement Plans and targets. The OEP can receive and investigate complaints on alleged serious breaches of environmental law by public authorities. It can also take legal action if necessary, as a last resort. The Northern Ireland Assembly has granted its consent for the provisions in the Bill that would establish the Office for Environmental Protection to extend to Northern Ireland devolved matters. Commencement of these provisions is subject to the further approval of the Assembly after the Bill receives Royal Assent.

Northern Ireland

DAERA is currently developing Northern Ireland's first overarching Environment Strategy with a view to seeking Executive endorsement. The Strategy, which will form part of the Executive's multi decade Green Growth Framework, will provide the focus for improving our natural environment for decades to come. It is intended that the Environment Strategy will be adopted as Northern Ireland's first Environmental Improvement Plan (EIP) under the UK Environment Bill. It is proposed to publish a final consultation version later in 2021.

Scotland

The Scottish Government has committed to introducing a Natural Environment Bill in 2023/24. It will put in place key legislative changes to restore and protect nature, including for HPMAs in inshore waters, and will contain targets based on an overarching goal of preventing any further extinctions of wildlife and halting declines by 2030.

Wales

The approach taken in the **Environment (Wales) Act 2016** is compatible with the UK Marine Strategy. However, the role of the ecosystem approach for the sustainable management of natural resources is wider and applies across terrestrial, coastal and marine. It makes explicit the link between the status of natural systems and ecosystem services that support human well-being. It applies sustainable development to the

management of natural resources in looking at the need to sustain resilient ecological systems, human communities, and economic infrastructure concurrently.

Key features of the Act are:

- Legislation to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way - sets out principles for the sustainable management of natural resources (SMNR), climate change targets, charges for carrier bags, shellfisheries licensing, flood and coastal erosion.
- Determines how specific measures are framed and implemented in Wales (e.g. SMNR principles), which may differ in terminology and form from other DAs. The Environment (Wales) Act came into force in 2016 and provides the legislation needed to plan and manage Wales' natural resources in a more coordinated and sustainable way.
- The State of Natural Resources (SoNaRR), first produced in 2016 and again in 2020 provides an assessment of natural resources in Wales and the extent to which they are being sustainably managed.
- The Welsh Government Natural Resources Policy set out key challenges and opportunities for the sustainable management of Wales' natural resources.
- To accompany this, NRW produce 7 Area Statements focusing on the unique challenges and issues faced by those individual localities and their natural resources.
- Section 6 of the Environment (Wales) Act 2016 places a duty on all public authorities in Wales to maintain and enhance biodiversity in the exercise of their duties. Every 3 years, each public authority must submit a report setting out its contribution to the Section 6 biodiversity duty. This reporting outlines specific achievements to date covering different areas of biodiversity in Wales.

Well-being of Future Generations (Wales) Act 2015 - This requires public bodies in Wales to think about the long-term impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change to improve social, cultural, environmental and economic well-being in Wales. Determines how specific measures are framed and implemented in Wales, which may differ in terminology and form from other DAs (e.g. through application of the seven wellbeing goals and five ways of working.

2.10 - Cross-cutting Research, monitoring and surveys activities that can reduce the uncertainty of whether measures are achieving GES.

For a number of ecosystem elements or descriptors access to additional data would help reduce the uncertainty as to whether the measures we have outlined in the programme of measure will achieve GES. Whilst not measures some of the research, monitoring or surveys currently ongoing will specifically address any uncertainty about whether the measures adopted will achieve GES. In addition, information created by industry as part of EIA and SEA processes is not being fully accessed; this is because project appraisal for

Marine Licencing is currently inaccessible for Marine Strategy purposes. The Marine Strategy Monitoring and Reporting Group is looking at ways to improve access to this data and will aim to report recommendations in 2022. The aim is to combine industry data with other datasets to assess the effectiveness of measures. **Actions to reduce uncertainty for each Descriptor are set out in Annex 2.**

Section 3: Programme of Measures used to achieve or maintain GES

How to understand the ecosystem elements / descriptors sections

Overview

The updated UK Marine Strategy Part One assessment that was published in 2019 provided the status of the descriptor or ecosystem component in 2018 and the relevant high-level objective, criteria and targets. It should be noted that in some instances more up to date assessment data is now available but in order to ensure consistency in reporting across this cycle of the UK Marine Strategy the data from Part One has been referred to here. Details can be found here: summary-of-progress-towards-good-environmental-status.

Measures developed or proposed as part of the 2021 Programme of Measures

This section outlines the measures that have been developed over the current cycle of the UK Marine Strategy or are proposed as completely new measures in 2021 the UK Marine Strategy Part Three. These include both measures that we have introduced since 2015 and those that we plan to take in the coming years for which funding has already been committed.

Existing measures which continue to be relevant to achieving GES

This section outlines those measures that were included in 2015 Programme of Measures as part of the last UK Marine Strategy cycle, which remain in place and continue to contribute to the achievement or maintenance of GES. Where updates or additions to these pre-existing measures have been made since 2015 these are included in Annex 4.

Exceptions

Under Regulation 15(2) of the Marine Strategy Regulations 2010 an exception may be applied for a number of reasons. This section will state whether an exception is being applied for that descriptor and, if so, set out the reasons why.

3.1 – Cetaceans (D1, D4)

3.1.1 – Overview

Environmental status in 2018

The extent to which GES has been achieved for cetaceans remains uncertain. The status of coastal bottlenose dolphin and minke whale is consistent with the achievement of GES in the Greater North Sea, but unknown/uncertain elsewhere. It is unknown if GES has been achieved for other species.

Image: situation = uncertain/unknown.

3.1.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

UK Dolphin and Porpoise Conservation Strategy - The public consultation on the UK Dolphin and Porpoise Conservation Strategy closed on the 14 June 2021. It aims to ensure effective management to achieve and/or maintain favourable conservation status for nine of the most commonly found species of dolphin, porpoise and minke whales in UK waters. These species have been selected because they occur predictably in UK waters and have similar characteristics and conservation needs. The Strategy seeks a joined-up approach to management, with both site and wider measures working together to conserve dolphin, porpoise and minke whale populations. It proposes a series of high-level actions to deliver these outcomes, which have been developed following assessment of the pressures each species is known to be most vulnerable to. The Strategy comprises of three main documents, a high-level strategy, a technical report, and an action plan.

UK Bycatch Mitigation Initiative - The UK is working to combine the cetacean and seabird bycatch plans into one UK Bycatch Mitigation Initiative (BMI) which will contribute to the delivery of the UK Dolphin and Porpoise Conservation Strategy and the Seabird Strategies for each administration. The BMI seeks to provide a roadmap for the next five years, outlining actions to be undertaken to help secure our objective under the Fisheries Act 2020 – to avoid or reduce bycatch in UK fisheries. This BMI will describe a coordinated stakeholder-led approach to implementing practical and effective methods to better monitor and mitigate cetacean bycatch in our fisheries. The current aim is for publication of the BMI by the end of 2021. The BMI will also expand on projects such as Clean Catch UK

to improve monitoring and mitigation of bycatch of sensitive species in UK fisheries. Clean Catch UK is currently improving monitoring and undertaking studies for a range of mitigation measures in different fisheries along Cornwall's south coast.

Fisheries Act 2020 - Through this Act appropriate fisheries management measures will make a positive contribution to the achievement of the GES targets proposed for Descriptor 1 (biodiversity), Descriptor 4 (food webs). The Act includes incidental bycatch in the ecosystem objective with the aim that incidental catches of sensitive species are minimised and, where possible, eliminated. See section 2.3 Fisheries Act 2020 for more detail.

The Marine Protected Area Management and Monitoring (MarPAMM) project– This project is mapping important areas for cetaceans and will provide interpretation to inform management measures. Four regional management plans, encompassing a number of protected coastal marine environments and species across the waters of Western Scotland, Northern Ireland and Ireland will be prepared. Recommendations for management are intended for release in 2022.

Wild Seas Wales - A consortium group brought together in 2016 to identify ways for local authorities and other partners to work more closely to deliver marine conservation priorities in Wales and to develop a 'voluntary code of conduct' covering much of the Welsh coastline.

Offshore Wind Enabling Actions Programme (OWEA) – Defra's OWEA programme includes a major project on underwater noise that will bring together a wide range of decision makers and stakeholders to identify and solve key barriers that are preventing better noise management. The project will aim to increase knowledge of noise in the marine environment, building on the Statutory Nature Conservation Bodies' noise guidance for harbour porpoise Special Areas of Conservations and will support the full implementation of the noise guidance. The project will undertake a programme of research to determine the effectiveness of the SNCB noise thresholds in harbour porpoise SACs and determine if further interventions are necessary to reduce and control underwater noise.

3.1.3 - Existing measures adopted in the 2015 Programme of Measures

Habitats Regulations (see Annex 1 for full list). Presently within the UK ten SACs list cetacean species as a qualifying feature. Six SACs were designated for the harbour porpoise in both inshore and offshore waters across the UK over the course of 2018 and 2019, these contribute to a network for this species. In addition, the UK also has three SACs where bottlenose dolphin is a qualifying feature. The JNCC website lists all SACs for harbour porpoise and bottlenose dolphin.

Guidance for assessing the significance of noise disturbance to manage underwater noise have been introduced in the harbour porpoise SACs in England, Wales, and Northern

Ireland marine waters, comprised of guidance and noise disturbance thresholds over time and space.

Marine (Scotland) Act 2010 -. In 2020 the Scottish Government designated two sites for minke whales, Sea of the Hebrides and Southern Trench, and one for Risso's dolphin, North East Lewis.

Wildlife and Countryside Act 1981 - Measure ongoing. See p.47 2015 Programme of Measures

International measures to protect cetaceans

International Whaling Commission (IWC): The Whaling Industry Regulation Act 1934, as amended by the Fisheries Act 1981 Measure ongoing. See p.48 2015 Programme of Measures.

Convention on the International Trade of Endangered Species (CITES) Measure ongoing. See p.49 2015 Programme of Measures.

ASCOBANS (Agreement of the Conservation of Small Cetaceans of the Baltic, North-East Atlantic, Irish and North Seas) (Daughter Agreement Under the Convention on Migratory Species) -. Measure ongoing and in 2019 a Species Action Plan for North-east Atlantic common dolphin (Delphinus delphis) was introduced.

Measures to protect cetaceans from bycatch

South West Territorial Waters (Prohibition of Pair Trawling) Order 2004 Measure ongoing. See p.50 2015 Programme of Measures.

Guidance on bycatch mitigation - Measure ongoing. See p.50 2015 Programme of Measures.

Voluntary Codes and Strandings

Guidance and codes of conduct in relation to Protected Species - Since 2015 new guidance is also in place in the UK for marine users who are planning to carry out activities in the marine environment which have the potential to kill, injure or disturb a marine European Protected Species (i.e. any cetacean species). The guidance provides advice on interpreting regulations protecting cetaceans from the point of view of whether an activity will cause or has caused death, injury or disturbance to a marine European Protected Species. It is also used by regulators, nature conservation agencies, enforcement authorities and competent authorities.

The Joint Nature Conservation Committee (JNCC), Natural England and Natural Resources Wales have good practice guidelines and protocols in place for offshore industries and specific activities (pile driving, seismic surveys and use of explosives) to minimise the risk of injury and reduce disturbance to cetaceans.

There are also specific good practice guidelines in place in Scotland which were revised in 2020 - 'The protection of Marine European Protected Species from injury and disturbance'.

Codes of conduct are also in place primarily to reduce potential from recreational sea users. NatureScot published the Scottish Marine Wildlife Watching Code in 2017, which offers practical guidance to all those who watch marine wildlife around Scotland. Similar codes are in place in Wales, both regionally (e.g. Ceredigion, Pembrokeshire, Gwynedd Marine codes) and nationally (e.g. Wild Seas Wales)

The UK Cetacean Strandings Investigation Programme (CSIP) - This coordinates the investigation of all whales, dolphins and porpoises, marine turtles and basking sharks that strand around the UK coastline. As well as documenting each individual stranding, the programme also retrieves a proportion for investigation at post-mortem to allow us to establish a cause of death. The programme undertakes surveillance on the incidence of disease in stranded cetaceans in order to identify any substantial new threats to their conservation status and their response to specific conservation measures. The results from the post-mortems can also help to identify other causes of death, and can provide information on contaminants, fisheries bycatch, reproductive patterns, and diet.

Scottish Marine Animal Stranding Scheme (SMASS) - The projects aims to provide a systematic and coordinated approach to the surveillance of Scotland's marine species by collating, analysing and reporting data of all cetaceans, seals, marine turtles and basking sharks that strand on the Scottish coastline. The project undertakes post-mortem examinations to establish cause of death as well as providing insights into wider metrics such as age structure, sex, body condition, cause of death, pollutant levels, diet, and pathology of the stranded population. This information can provide essential baseline data to help detect any future outbreaks of disease, unusual mortality events, anthropogenic stressors, and other health issues. It also enables assessment of pressures and threats, possible population dynamics, and responses to environmental stressors as well as specific conservation measures.

3.1.4 – Exceptions

No exception is being applied for this descriptor.

3.2 - Seals (D1, D4)

3.1.1 – Overview

Environmental status of Seals in 2018

The UK has achieved its aim of GES for grey seals in the Greater North Sea and Celtic Seas. There was a significant increase in the abundance of harbour seals in West Scotland where the majority of harbour seals are located, but their status in other parts of the Celtic Seas is uncertain. Harbour seals in the Greater North Sea have not yet achieved GES.

Image: situation = achieving aim.

3.2.2 - Measures adopted or proposed as part of the 2021 Programme of Measures

Fisheries Act 2020 – The Fisheries Act 2020, alongside amended EU law retained under the European Union (Withdrawal) Act 2018, provides a comprehensive regulatory framework to manage certain fishing activities in the UK. The Act sets out objectives which all UK Fisheries Administrations are committed to supporting and delivering. Fisheries management is a devolved responsibility with each Fisheries Administration responsible for developing and implementing the measures needed to manage fishing activity in their waters. Whilst a pan-UK approach may be desirable, in some cases the differences in terms of the fleets and waters in each Administration will result a need for divergence between the Administrations in their policies. For more detail see 2.3 - Fisheries Act 2020.

Through the Fisheries Act 2020, appropriate fisheries management measures will make a positive contribution to the achievement of the GES targets proposed for Descriptor 1 (biodiversity), Descriptor 4 (food webs). The Act created powers for the UK to operate as an independent coastal state and manage its fish stocks sustainably outside the EU, its implementation will play a critical role in supporting the achievement and maintenance of GES. The Act includes incidental bycatch in the ecosystem objective with the aim that incidental catches of sensitive species are minimised and, where possible, eliminated.

The Marine Protected Area Management and Monitoring (MarPAMM) project – Project mapping areas important for seals and cetaceans. For more details see 3.1 - Cetaceans.

Wild Seas Wales - A consortium group brought together in 2016 to identify ways for local authorities and other partners to work more closely to deliver marine conservation priorities in Wales and to develop a 'voluntary code of conduct' covering much of the Welsh coastline.

3.2.3 - Existing measures adopted in the 2015 Programme of Measures

Habitats Regulations (see Annex 1 for full list) - Measure ongoing. See p.19 2015 Programme of Measures

Wildlife and Countryside Act 1981 and equivalent legislation in the Devolved Administrations (see Annex 1 for full list) - Measure ongoing. See p.30 2015 Programme of Measures

Conservation of Seals Act 1970 (England and Wales) - Amendments to the Conservation of Seals Act 1970 (made by Schedule 9 of the Fisheries Act 2020) provide new protection to wild seal populations within England and Wales from intentional and unlawful acts of being injured, killed or taken, and in turn greatly restricts the circumstances in which any intentional killing of a wild seal can be lawfully permitted (e.g. animal welfare exemptions to euthanise a wild seal if found to suffer from unrecoverable injury, pain or disease). Seals were previously allowed to be intentionally injured or killed during interaction with commercial fisheries via the use of firearms under the Conservation of Seals Act 1970.

Given the distribution of seal populations in England, these amendments have the net effect of providing year-round protection for harbour seals and grey seals in England. There are also a few well-established grey seal colonies in Wales which are also protected by the Act.

The Wildlife (Northern Ireland) Order 1985 (as amended) - amendments to the Order by the Fisheries Act 2020 removed a previous exemption that permitted any action necessary (including killing) to prevent serious damage to fisheries etc.

Marine (Scotland) Act 2010 -. The Act has been amended by The Animals and Wildlife (Penalties, Protection and Powers) (Scotland) Act 2020 to increase the penalties associated with the offence of killing, injuring and taking a seal, and to remove two licensing grounds for which licences can be granted authorising the taking or killing of seals. (See also Descriptor 11 – Underwater Noise.)

The Protection of Seals (Designation of Haul-Out Sites) (Scotland) Amendment Order 2017– This formally designated the Ythan Estuary as a haul-out site for grey seals. This brings the total number of designated haul out sites in Scotland, where seals are protected from intentional or reckless harassment, to 195 sites. More information can be found on the Scottish Government website.

Special Committee on Seals (SCOS) - Measure ongoing. See p.51 2015 Programme of Measures

Voluntary Codes - Codes of conduct produced by voluntary organisations and local government are also in place across the UK where seals are a known feature. These offer practical guidance to all those who watch marine wildlife and aim to minimise the risk to marine wildlife from encounters with people.

Scottish Marine Wildlife Watching Code - NatureScot developed the code as part of its duties under the Nature Conservation (Scotland) Act 2001. The code was revised in 2017.

The WiSe Scheme - The WiSe Scheme seeks to minimise unintentional disturbance to marine wildlife by delivering training/accreditation to wildlife watching operators, and offering advice and guidance. WiSe has developed Codes of Conduct to promote safe and sustainable watching for basking sharks, whales, dolphins, seals, and seabirds.

Give Seals Space campaign – Launched in April 2021, Give Seals Space is a joint campaign from the Seal Alliance and Defra aimed at raising public awareness of the need to protect seals and to help reduce the impact that human disturbance can have on them.

Seal Rehabilitation - In Northern Ireland funding is provided to support seal rescue and rehabilitation. Priority is given to seal pups believed to have been impacted by human activity (e.g. disturbance).

3.2.4 – Exceptions

No exception is being applied for this descriptor.

3.3 – Birds (D1, D4)

3.3.1 – Overview

Environmental status of seabirds in 2018

The UK has achieved its aim of GES for non-breeding waterbirds in the Greater North Sea but not in the Celtic Seas. Breeding seabirds have not achieved GES.

Image: situation = not achieving.

3.3.2 - Measures adopted or proposed as part of the 2021 Programme of Measures

Broad frameworks are being introduced which will result in additional measures to support the achievement of GES for birds. These include:

Conservation Regulations (see Annex 1 for full list**) -** Measures ongoing. See p. 86-87 2015 Programme of Measures.

The English Seabird Conservation Strategy – Defra is developing a comprehensive, evidence-based strategy based on a method devised by Natural England, which Defra intends to publish in 2022. The strategy will outline actions based on the vulnerability of different species and the pressures they face. It will focus on updating existing evidence to gain a comprehensive picture of the direct and indirect pressures on seabird populations. It includes expert and stakeholder engagement from the outset.

The Northern Ireland Seabird Conservation Strategy - DAERA is currently developing a Seabird Conservation Strategy in collaboration with key stakeholders which will focus on the actions required to address the decline in seabird populations in the Northern Ireland inshore area. The Strategy, which DAERA aim to have in place in 2023, will identify the current status, pressures and vulnerabilities faced by each species as well as key evidence gaps, including measures required to address these. Global and national biodiversity targets will be taken into consideration in the development of objectives. Work is also underway to map the potential sandeel habitat within the NI inshore region.

The Scottish Seabird Conservation Strategy - The Scottish Seabird Conservation Strategy aims to maximise the conservation prospects of seabirds in Scotland. The Strategy focuses on 21 species that are most at risk, however proposed actions to benefit these species have wider benefits to other species too. The strategy comprises of three main documents, a high-level strategy, a technical report and the proposed actions. There are also species accounts for each of the 21 species noted in the Strategy. The actions have been drafted to consider the pressures that the 21 species are most vulnerable to and once implemented a working group will develop the actions in more detail as research progresses and there is a clear route to mitigate issues. The Strategy will be ready for public consultation in 2021 with implementation aimed to start in 2022.

The Welsh Seabird Conservation Strategy – A seabird conservation strategy for Wales is currently being developed in collaboration with Natural Resources Wales. This strategy aims to recognise the strengths and successes of seabird populations in Wales, as well as identify the pressures and threats these populations face. The three-part strategy will focus on evidence-based, deliverable actions that will help to conserve seabirds in Wales and increase public awareness of their importance. The strategy will benefit from stakeholder involvement throughout its development.

Fisheries Act 2020 - The Fisheries Act 2020 alongside appropriately amended existing EU law retained under the European Union (Withdrawal) Act 2018 provides a comprehensive regulatory framework to manage commercial fishing activity. Fisheries management is a devolved responsibility with each Administration responsible for implementing the measures needed to manage fishing activity in their waters. It is expected that the implementation of the Fisheries Act 2020 will help appropriately manage the fishing impacts on both target and non-target species and sensitive species. This is expected to lead to an improvement in the status of all stocks and therefore lead to greater prey availability for seabird species.

In addition to these broader frameworks, a range of specific policies and programmes will support achievement of GES for birds.

Species on the Edge Programme – This is a partnership set up to identify what actions are urgently needed for priority coastal and island species to save them from extinction, help them build resilience within their populations and to address the pressures that have pushed them to the edge. The programme has a terrestrial and freshwater focus but

includes a project led by RSPB called ‘Terning the Tide’ which will work to enhance the conservation prospects of a range of tern species across Scotland that are threatened by disturbance and reduced breeding success. By creating suitable breeding habitat, engaging with local communities and visitors, and providing advice to landowners, the project will promote the importance of these fragile colonies and help to protect the birds that live within them.

The Marine Protected Areas Management and Monitoring (MarPAMM) – This is an Interreg VA Programme funded project that aims to deliver four new cross-disciplinary models to support the conservation of marine habitats and species through integrated elements. This includes a seabird model designed to quantify and help manage protected seabird species within the Interreg VA region’s SPAs. Evidence generated from these models will be used to develop six marine management plans. These plans will be developed alongside existing data and models produced by sister Interreg VA projects (COMPASS and Sea Monitor). Two of these plans will be produced for Scotland, one plan in Northern Ireland and there will be two cross-border plans with Northern Ireland and Ireland.

UK Bycatch Mitigation Initiative - The UK is working to combine the cetacean and seabird bycatch plans into one UK Bycatch Mitigation Initiative (BMI). This will translate the FAO and EU Seabird Bycatch Plans of Action into a UK relevant action plan outlining measures and actions necessary to ensure seabird bycatch in UK waters is not having a detrimental impact on seabird populations. As part of this process, we are working with a wide group of stakeholders including environmental groups and the fishing industry. A draft version of the BMI has now been prepared and publication is expected in 2021.

Biosecurity - Measure ongoing. See p.87 2015 Programme of Measures

The Offshore Wind Enabling Actions Programme (OWEA) - This is a two year programme, designed to increase understanding of the environmental impacts of offshore wind and find strategic solutions to manage, mitigate and, where necessary, effectively compensate for impacts in order to reduce barriers to the expansion of offshore wind in English waters.

The programme consists of four main projects; reducing the impact of underwater noise; delivering marine net-gain through offshore wind; using ‘Big Data’ to improve consenting and monitoring as well as derogation procedures and specific impacts on seabirds and seabed habitats, with the overall aim of reducing environmental pressures on species and habitats and facilitating faster and easier consenting. The programme will include projects to improve the collection and analysis of seabird impact and monitoring data, as well as research on effective mitigation methods. Project details are still being formalised, but the programme is likely to look at measures to improve prey availability for seabird populations displaced by offshore wind developments and enhanced mitigation measures to reduce collision risk and disturbance. Through joined up working with The Crown Estate’s Offshore Wind Evidence and Change (OWEC) programme, a UK-wide, publicly available

register of key evidence gaps and ongoing research projects is also being developed that will help prioritise future research funding, disseminate new evidence and foster research collaboration.

Proposed "North Atlantic Current and Evlanov Seamount" OSPAR High Seas MPA - The OSPAR Convention, to which the UK is a contracting party, is currently developing a proposal for a seabird MPA situated around the Evlanov seamount which has been identified by tracking data as a key foraging site for seabirds. Whilst this MPA is outside the area of UK Marine Strategy, if designated, it will have a beneficial impact on number of UK seabirds, including black legged kittiwakes and fulmars, by protecting a key foraging grounds. The UK is supportive of this designation and a final decision on designation of the site is expected to be made at the OSPAR Ministerial meeting in October 2021.

Wild Seas Wales - A consortium group brought together in 2016 to identify ways for local authorities and other partners to work more closely to deliver marine conservation priorities in Wales and to develop a 'voluntary code of conduct' covering much of the Welsh coastline. More information is available on the Wild Seas Wales website.

Climate change measures - Each UK administration has individually taken a range of actions to tackle climate change and adapt to its impacts. This action will help safeguard seabird populations from unmitigated elements of climate change that impact their prey and habitat. Further information on these actions are detailed in 2.8 - Climate Change Mitigation and Adaptation.

3.3.3 - Existing measures adopted in the 2015 Programme of Measures

MPA network

MPAs including features designated under national and international legislation could have beneficial effects on bird populations, particularly in terms of maintaining good foraging conditions and by managing disturbance impacts from tourism/recreational activities (both voluntary and regulatory measures to manage access/activity levels). MPAs are designated and managed though a number of regulations as set out below.

Conservation Regulations (see Annex 1 for full list) - Measures ongoing. See p.86-87 2015 Programme of Measures.

Marine and Coastal Access Act 2009, Marine (Scotland) Act 2010 and Marine Act (Northern Ireland) 2013 – A progress update can be found in Annex 4.

Fisheries measures that will protect birds

Across the Devolved Administrations, there are a number of relevant byelaws or equivalent statutory controls which have been updated since 2015. In Scotland as part of our Future Fisheries Management Strategy we will consider additional protections for spawning and juvenile congregation areas and restricting fishing activity or prohibiting

fishing for species which are integral components of the marine food web, such as sandeels. As well as this, in Northern Ireland the Rathlin Island (Prohibited Methods of Fishing) Regulations (Northern Ireland) 2016 prohibits the use of mobile gear within the designated boundary and provides protection for designated features within the Rathlin Island SAC and SPA.

Measures to protect seabirds from NIS

Protection of bird island colonies from the invasion by non-indigenous predatory mammals (e.g. black/brown rat, fox, American mink) - An audit of the biosecurity measures in place on each of the UKs 41 seabird island special protection areas (SPAs) has been conducted. The results showed that many of our most important seabird islands have no protection against the threat of invasion by non-native mammalian predators. Community events are being held on 10 of the inhabited SPAs to engage residents on biosecurity planning. Rat management trap trials (Handa Island) are being conducted and dog detection work commissioned. We have put in place good working practices with regard to quarantine measures at a number of locations and biosecurity checks are regularly conducted across all sites. There have also been several ad hoc eradications of rats and some localised control of American mink. Each island however requires specific measures that are appropriate to the island concerned, the invasive species and the bird species concerned.

Measures to protect seabirds from human activities

Licences to shoot birds - Defra has completed its review of 'general licenses' for shooting wild birds. Herring gulls and lesser black-backed gulls were taken off the licensable category 'general licence to kill' in 2019. In April 2020 NatureScot removed three gull species from licences in changes made to their general licensing procedure. These were: great black-backed, lesser black-backed and herring gulls. Greater black-backed were removed from all categories of general licensing, the other two species were removed from the GL03 licences for public health.

International measures to protect seabirds

OSPAR Recommendations 2011/4-6 - In 2019 the UK reported to the OSPAR Commission on the implementation of Recommendations on furthering the protection and conservation of the black-legged kittiwake, roseate tern and Balearic shearwater, which are considered to be Threatened and Declining Species in the North East Atlantic. Implementation includes measures on the protection of breeding sites and adjacent offshore areas for kittiwake and roseate tern, which contain 57% and 94% respectively of the GB breeding populations. The UK also contributes to collaborative actions as set out in the recommendations for these species.

Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) - As a party to AEWA the UK will continue to work with 118 countries from Europe, parts of Asia and Canada, the Middle East and Africa. AEWA provides for co-ordinated and

concerted actions to be taken by the Range States throughout the migration systems of 255 waterbird species, as described in a comprehensive Action Plan. This detailed plan addresses such key issues as species and habitat conservation, management of human activities, research and monitoring, education and information, and implementation. In 2018 AEWA parties agreed to address a number of priorities for the conservation of seabirds also, including climate change, bycatch, hunting, invasive species predation and site protection. A UK Implementation Plan has been published, highlighting existing and proposed UK activity that will contribute to the aims of the Agreement. The UK also participates in a number of international species conservation initiatives, including flyway management plans and European Union Species Action Plans.

3.3.4 – Exceptions

An exception is being applied for this descriptor for the following reasons:

(a) action or inaction for which the United Kingdom is not responsible

(e) natural conditions which do not allow timely improvement in the status of the marine waters concerned

The UK Marine Strategy Part One (updated in 2019) sets out that milder winters have affected where waterbirds forage and that the lower availability of small fish has affected breeding seabirds. Both impacts are partly driven by climate change and are likely to be affecting population size and condition. The UK is taking strong action to tackle climate change domestically and internationally, including through legislation that commits us to a legally binding target of net zero emissions by 2050 (2045 in Scotland).

The time lag, however, between mitigation action and positive impacts on natural conditions, mean that climate change still negatively impacts seabirds and waterbirds. While the environmental effects of climate change, such as warming sea temperatures, can be reduced, this cannot be achieved without a global effort. However, it is possible for the UK to take action that will reduce the impacts of the changing environment on marine birds. We can address some of the impacts of climate change on seabirds directly and we can increase the resilience of seabirds to climate change by reducing the cumulative impacts of other pressures. In doing so we can aid the adaptation of marine bird populations in the UK to an inevitably changing climate.

Nevertheless, in the face of global prevailing conditions, these efforts may not prove enough for us to achieve GES as currently defined in the targets in the UK Marine Strategy Part One. The United Kingdom is therefore applying an exception for birds (D1, D4) under Regulation 15(2)(a)(“action or inaction for which the United Kingdom is not responsible”) and Regulation 14(2)(e)(“natural conditions which do not allow timely improvement in the status of the marine waters concerned”) of the Marine Strategy Regulations 2010.

3.4 – Fish (D1, D4)

3.4.1 – Overview

Environmental status of fish in 2018

Demersal fish communities are recovering from over-exploitation in the past, but GES has not yet been achieved in either the Greater North Sea or the Celtic Seas. A partial assessment of pelagic shelf fish did not provide a clear result.

Image: situation = partial recovery.

3.4.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

Fisheries Act 2020 - The UK became an independent coastal state on 1 January 2021 assuming full responsibility for managing commercial fisheries in our waters. We have introduced a new legal framework that has resulted in substantial change in the regulatory measures now available to manage fishing activity to deliver the targets. This section now covers the new framework alongside existing measures not affected by the regulatory change.

The Fisheries Act 2020, alongside amended EU law retained under the European Union (Withdrawal) Act 2018, provides a comprehensive regulatory framework to manage certain fishing activities in the UK. The Act sets out objectives which all UK Fisheries Administrations are committed to supporting and delivering. Fisheries management is a devolved responsibility with each Fisheries Administration responsible for developing and implementing the measures needed to manage fishing activity in their waters. Whilst a pan-UK approach may be desirable, in some cases the differences in terms of the fleets and waters in each Administration will result a need for divergence between the Administrations in their policies. For more detail see 2.3 - Fisheries Act 2020.

The measures for the targets proposed under Descriptor 3 (commercial fish) will play a central role in supporting the achievement of the biodiversity targets for fish. It is expected that the implementation of the Fisheries Act 2020 will lead to an improvement in the management and resilience of commercial stocks and contribute to the achievement of the targets for fish under Descriptors 1 and 4. Fisheries management measures seeking to reduce bycatch on non-target species including sensitive species will help to achieve the bycatch and ecosystem fisheries objectives. Recovery of commercial stocks should also lead to an improvement in food web function.

Broadly, implementing measures which contribute to the achievement of the ‘sustainability objective’; the ‘bycatch objective’, the ‘ecosystem objective’ and the ‘climate change objective’ will contribute to delivering the biodiversity fish targets for GES.

Fisheries Management Plans (FMPs) are a new provision under the Fisheries Act 2020 that will support the UK recover fish stocks to sustainable levels. The plans will directly contribute to the achievement of the fisheries objectives. The plans should set out policies designed to restore one or more fish stocks to or maintain them at sustainable levels. Each FMP will set out the policies necessary to manage fish stocks within sustainable levels. Each FMP will set out the stock of sea fish, type of fishing and geographic area it covers and how its effectiveness will be monitored.

Reducing unwanted catches - The bycatch objective in Section 1 of the Fisheries Act 2020 underlines our commitment to address the root cause of discarding unwanted fish by focussing on avoiding or reducing unwanted bycatch. The Joint Fisheries Statement will also set out policies of the UK government and the Administrations to achieve or contribute to achieving this objective.

The UK Administrations are considering a number of other measures to avoid or reduce unwanted catches and wasteful discards and implement the Fisheries Act 2020, including:

- Remote Electronic Monitoring (REM) on vessels where appropriate – not only in the UK fleet but also other vessels accessing UK waters – to promote compliance at sea. Another benefit of REM will be improved data gathering which will strengthen our scientific evidence base (section 2.5).
- Adaptive management measures to promote selective gears and avoid high risk areas, e.g. real time closures.
- Enhanced scientific observer schemes to improve data collection.

We will learn lessons from the implementation of the EU landing obligation to make sure that approaches to avoiding or reducing unwanted catches are practical and effective. Future policies on avoiding or reducing unwanted catches will be developed by the UK Administrations in collaboration with industry and wider stakeholders.

In Scotland, the Future Fisheries Management Strategy confirms that the Scottish Government will address the challenges with unwanted catch and discards in the Scottish Future Catching Policy. This will take a co-management approach to developing appropriate technical and spatial measures for individual fleet segments, rather than taking a one-size-fits-all approach. It will be underpinned by the appropriate and proportionate roll out of REM.

Marine Protected Areas - The Fisheries Act 2020 gives a power to the Marine Management Organisation (MMO) and the Devolved Administrations to make byelaws or orders, respectively, to manage fishing activity in the offshore zone. The new power will allow management measures to control fishing activity to protect and/or recover features in MPAs. The power also can be applied to the wider marine environment beyond MPAs. The MMO have recently consulted on proposed byelaws to manage fishing activity in the Dogger Bank SAC; the proposed byelaw will apply to vessels from the UK and other countries. For more detail see 2.5 - Marine Protected Areas (MPAs).

The Benyon Review into Highly Protected Marine Areas - The UK government published its response to the Benyon Review, which covered English waters, on World Ocean Day, Tuesday 8th June 2021 Highly Protected Marine Areas are areas of the sea that allow the protection and recovery of marine ecosystems. The purpose of HPMAs is biodiversity recovery. HPMAs have a critical role in ocean recovery and will contribute to the government's vision for 'clean, healthy, safe, productive and biologically diverse ocean and seas'. HPMAs can act as a nature-based solution to improve the state of our seas, address biodiversity loss, and ensure a more climate resilient marine ecosystem which will contribute to GES. Defra will work with its ALBs and stakeholders to identify a list of potential pilot sites within English inshore and offshore waters. We will work with our SNCBs (Natural England and JNCC) and Cefas to agree ecological criteria to support site identification; invite stakeholders to suggest sites in English waters that meet these criteria for consideration; We aim to consult on the shortlisted sites, and designate a number of HPMAs in 2022.

Designation of HPMAs in Scottish seas - The Scottish Government has committed to designating 10% of Scottish seas as HPMAs by 2026 for inshore waters and, subject to the legislative framework being put in place , the same date for offshore waters. This will provide protection from all extractive, destructive or depositional activities including all fisheries, aquaculture and other infrastructure developments, while allowing other activities, such as tourism or recreational water activities, at non-damaging levels.

Aquaculture Reform in Scotland – The Scottish Government has also committed to reforming the regulatory and planning framework for aquaculture in Scottish waters. We will begin an immediate programme of work to better protect wildlife and the environment, including a consultation on a spatially adaptive sea lice risk assessment framework for fish farms by the end of 2021, and strengthened controls on sea lice, wrasse and fish escapes in the course of 2021/22.

Ban on the import and export of detached shark fins - As set out in the recently published Action Plan for Animal Welfare we will be bringing in legislation to ban the import and export of detached shark fins. Through this, our aim is to deliver effective shark conservation benefits globally, as well as demonstrate leadership in shark conservation issues and signal our strong opposition to any ongoing finning practices.

We will continue to press for stronger international controls within the Regional Fisheries Management Organisations and the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

3.4.3 - Existing measures adopted in the 2015 Programme of Measures

The main measures to address the above targets are taken through:

Retained EU law - Changes made under the European Union (Withdrawal) Act 2018 make the regulations operable as retained EU law in the UK's legislation. To note, the following list is not the complete list of retained EU law that has some effect on fisheries:

i. EU Common Fisheries Policy (CFP; 1380/2013): This contains legal requirements relating to fishing sustainably. The Fisheries Act 2020 amends this regulation in retained EU law to replace the Article 2(2) objectives with the new fisheries objectives in Section 1 of the Act. Schedule 11 of the Act removed Article 2 and the MSY target.
ii. Deep sea fisheries, which have significant implications for sensitive species, are subject to an EU access regime (EU 2016/2336) intended to limit their impacts.
iii. Under retained EU law (Article 15 of the CFP Regulation 1380/2013) the landing obligation will continue to apply in UK waters until it is replaced. Discard exemptions allow a certain level of discarding, in certain fisheries, to address the risk of choke and support fishermen to comply with the landing obligation. The majority of the exemptions in the EU 2020 version of the North Sea and North Western Waters discard plans will also continue to apply in UK waters under retained EU law, subject to changes through Schedule 11 to the Fisheries Act 2020 and other secondary legislation. These include operability changes, as well as changes to ensure the exemptions are scientifically justified and support fishermen to address the risk of choke.

Inshore waters - There are byelaws and fishing orders applying to fisheries operating within the UK's 12 nautical mile limits. Some of these measures are intended to help support a healthy marine trophic structure. For example, local minimum conservation reference sizes (MCRSs) which enhance or strengthen UK wide-applied MCRSs add an additional level of protection for sensitive species.

In Northern Ireland there are fisheries regulations made under the Fisheries Act (Northern Ireland) 1966 for the purpose of management, conservation, protection improvement or increase of sea-fisheries in Northern Ireland inshore waters. These include closures, minimum landing size and gear restrictions. The Northern Ireland Inshore Fisheries Partnership provides an opportunity for stakeholders to participate in the development and implementation of these management measures.

Inshore Fisheries and Conservation Authorities (IFCAs) are responsible for a range of byelaws around England that implement measures such as minimum landing sizes and closures of spawning and nursery grounds. Full lists of byelaws and regulations applying to inshore waters are available through the websites of the fisheries authorities in each IFCA district.

In Scotland, a network of Regional Inshore Fisheries Groups (RIFGs) are responsible for developing local management plans for fisheries in their respective areas. These non-statutory bodies aim to improve management of Scotland's inshore fisheries out to 12 nautical miles, and input into wider marine management developments.

In Wales, the Wales Marine Fisheries Advisory Group advise the Welsh Government on the management of Welsh fisheries out to 12 nautical miles. Welsh Ministers use fishery orders under section 189 of the Marine and Coastal Access Act 2009. These orders put in

place measures to help control shell-fishing including setting of minimum sizes, authorisation for fixed engines and other various technical measures. Details for orders in the north and south of Wales can be found online.

Reducing unwanted catches

The UK Administrations will continue to develop policies to avoid or reduce unwanted catches which result in wasteful discarding of fish in line with the bycatch objective in the Fisheries Act 2020. These policies will be tailored to our marine environment and our fishing industries. As is set out in the by-catch objective, the Administrations remain fully committed to ending the wasteful catching and discarding of unwanted fish and will continue working with the fishing sector to address this issue.

The UK Administrations are already undertaking a range of initiatives that have the objective of reducing fishing mortality to allow for the recovery of fish stocks through avoiding or reducing unwanted catches. For example, the introduction of highly selective gears into fisheries that have habitually had high discard rates are reducing unwanted catches, such as the small-mesh Nephrops fisheries. A real time closure system is also in place across the UK that can put in place fishing restrictions to reduce impact on unwanted catches or sensitive species, including:

- real time closures
- live closed areas
- commercial impact zones
- juvenile real time closures
- seasonal closed areas

Further details for England, Scotland and Wales can be found online.

In Northern Ireland seas, closed areas are statutory and incorporated within the retained EU Technical Conservation Regulations. These closures reduce the fishing effort in areas where juvenile fish are concentrated or where there is enhanced pressure on sensitive fish species.

In response to challenging scientific data on the state of the North Sea cod stock, the UK has introduced a national cod avoidance plan, which puts in place technical and spatial management measures in order to reduce fishing pressure on cod. These measures apply to all fishing vessels fishing in UK waters. The plan has been developed in partnership with fisheries stakeholders and introduces a combination of measures, including closures to protect spawning fish, real time closures, real time reporting, and improved gear selectivity in fish areas.

We want the approach to reducing unwanted catches to be flexible and workable to meet local and regional circumstances by using selective gear types for the specific types of fishing activity. Looking forward, the provisions to publish Fisheries Management Plans set out in the Fisheries Act 2020 may be a further mechanism to deliver the bycatch objective

and ecosystem objectives that seek to avoid or reduce bycatch and ensure that incidental catches of sensitive species are minimised and where possible eliminated.

Marine Protected Areas

Conservation Regulations; Marine and Coastal Access Act 2009; Marine (Scotland) Act 2010 and Marine Act (Northern Ireland) 2013 - Measure ongoing. See p.77 2015 Programme of Measures.

Wildlife and Countryside Act 1981 and equivalent legislation in the Devolved Administrations (F1 - F4) - Measure ongoing. See p.86 2015 Programme of Measures.

Environment Act (Wales) 2016 – For more details see 2.9 Administration Specific Measures.

Species Specific Measures

ELASMOBRANCHS

Shark Action Plans - The UK Shark, Skate and Ray Conservation Plan is a key document which outlines the UK's position and overarching goals for the conservation and management of elasmobranchs and is implemented through relevant domestic and international measures e.g. Food and Agriculture Organisation of the United Nations (FAO) Shark Plan of Action. The conservation plan objectives are to ensure that all catches are sustainable, that depleted stocks recover, and that appropriate action is taken for those species most at need of additional protection.

These action plans also support the recommendations for the elasmobranch species that are included on the OSPAR List of Threatened and/or Declining Species. These include porbeagle, common skate, spotted ray, thornback ray, and spurdog.

Council Regulation (EC) No 1185/2003 on the removal of fins of sharks on board vessels - Measure ongoing. See p.31 2015 Programme of Measures.

The Convention on Migratory Species (CMS) Shark Memorandum of Understanding (MoU) - Measure ongoing. See p.31 2015 Programme of Measures.

There is also regional legislation in place across the Devolved Administrations aimed at the conservation of elasmobranchs. Measure ongoing. See p.31-32 2015 Programme of Measures.

DIADROMOUS SPECIES

Diadromous fish are included under the Fisheries Act 2020 in their marine phase. However, specific targets for diadromous species that are part of UK freshwater policy objectives will contribute towards GES and are therefore set out below.

The Habitats and River Basin Management Plans - Measure ongoing. See p.78 2015 Programme of Measures.

The EU Eel Regulation (1100/2007) - Measure ongoing. See p.32 2015 Programme of Measures.

The UK authorities will adapt the regulations as new and improved management measures are developed.

The North Atlantic Salmon Conservation Organisation (NASCO) - The UK acceded to NASCO in November 2020 and will now operate as a Party in its own right, to engage with international partners on the conservation of the species, and the controls on exploitation by other nations. We will continue to monitor and record Atlantic salmon stocks across the UK, at the devolved level, feeding into ICES annual stock assessments of the species. The NASCO UK Implementation Plan applies to the management of Atlantic salmon stocks. Key measures include 'catch and release' for recreational anglers and no commercial fishing until affected salmon in rivers meet the required conservation management targets. There are three plans covering the UK:

- England and Wales
- Northern Ireland
- Scotland

Measures implemented at the Devolved Administration level for salmon:

England and Wales - See p.33 2015 Programme of Measures.

Northern Ireland - For salmon, fish can only be taken by recreational anglers or commercial fishermen from waters that meet their management targets. A legislative framework is in place to support this. Where management targets have not been set the precautionary principle is applied and it is compulsory catch and release. Conservation limits and management targets have been set for all major salmon rivers in Northern Ireland (for which DAERA is the lead Department) as set out in the NASCO UK (NI) 2019 – 24 Implementation plan.

Northern Ireland also has a voluntary catch and release policy. Measure ongoing. See p.34 2015 Programme of Measures.

Scotland - Scotland hosts the majority of the UK's Atlantic salmon rivers and 17 rivers have been classified as SACs for this species.

It is now illegal to kill any Atlantic salmon (which are principally 'spring salmon') caught from January to 1 April under The Conservation of Salmon (Annual Close Times and Catch and Release) (Scotland) Regulations 2014. In addition to this, The Conservation of Salmon (Scotland) Regulations 2016 outlined for the first time in Scotland a system whereby the killing of Atlantic salmon in inland waters is managed on an annual basis by categorising the conservation status of their stocks.

Under the current Programme for Government Scottish Ministers committed to the development of a Wild Salmon Strategy which recognises that the decline in wild Atlantic salmon is due to a range of complex factors and these have been identified as 12 high level groups of pressures on this species. Work to complete the Wild Salmon Strategy is currently underway and it is due to report in 2021. Local management is carried out by a network of 41 District Salmon Fisheries Boards and 25 Fisheries Trusts.

Measures implemented at the Devolved Administration level for eel -

Triennial reporting on eels and their status will continue, eel escapement targets will continue to be a key metric in our monitoring and management approach. An improving eel population in our waters would indicate improving GES, but is very much dependent on the migratory cycle of the eel and key factors such as anthropogenic impacts, climate change, predation and barriers to migration, and to the successful measures of other countries for this international panmictic stock. The triennial progress reports for Eel Management Plans are proposed as assessments of the effectiveness of the measure. The entry of Partially Effective reflects that some Eel Management Units meet their eel escapement targets while others do not. The measures need longer to take effect because of the long generation time of the eel, and because the panmictic nature of the shared international stock means that the effectiveness of measures in other countries impacts on the UK status and vice versa.

England and Wales - Key European eel stock management measures in England and Wales include management of commercial and recreational fishing (through 'authorisation' of commercial eel fisheries and continuing the ban on retention of recreational catch), reduction of eel mortality caused by turbines and pumps through improved screening of water intakes (e.g. through the Eels (England and Wales) Regulations 2009) and improvement and increasing of eel habitat.

Northern Ireland - There are 3 Eel Management Plans, one of which is cross border (with Ireland) and assessments are made of escapement of silver eels against specific targets annually.

- Neagh / Bann River Basin District
- Eastern River Basin District
- North Western International River Basin District

Scotland -The Scottish Government's Eel Management Plan will help Scotland achieve the objective of the council regulation to protect and ensure the sustainable exploitation of the European eel. As part of the management arrangements, Scotland's legislative framework prohibits fishing by any method for European eels without a licence from Scottish Ministers.

3.4.4 - Exceptions

An exception is applied for this descriptor under:

(a) action or inaction for which the United Kingdom is not responsible.

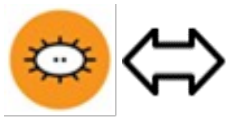
(e) natural conditions which do not allow timely improvement in the status of the marine waters concerned.

There is strong confidence that the new legal framework under the Fisheries Act 2020, together with retained EU law, will allow the UK to bring forward fisheries management measures to lead to healthy fish populations, protection for sensitive fish species and avoidance or reductions in unwanted catches. Whilst the UK will seek to set harvest rates within sustainable limits to restore fish populations, the Total Allowable Catches for many stocks will be subject to international negotiations with the EU and other coastal states. Therefore, the UK will not be able to unilaterally achieve the targets without international cooperation. Furthermore, it will take time for all fish stocks to respond to the changes in their exploitation rate and for their biomass to increase to the desired levels. Certainty is also affected by biological and climatic conditions, which are beyond the control of fisheries managers. Given the need for international agreement and the slow response times of some populations to measures, Regulation 15(2)(a) & (e) will be relevant.

3.5 – Pelagic Habitats (D1, D4)

3.5.1 – Overview

Environmental status of Pelagic Habitats in 2018



Prevailing environmental conditions are likely to be driving the observed changes in plankton communities, but human activities cannot be ruled out and it is uncertain whether GES has been achieved.

Image: situation = uncertain.

3.5.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

Measures taken forward under other descriptors will support the achievement of GES for pelagic habitats. However, further research and monitoring is needed to reduce uncertainty around achievement of GES.

The progress we have made across other ecosystem components will in some cases, also contribute to GES targets for Pelagic Habitats. In particular, progress made towards establishing a coherent and representative network of MPAs is expected to contribute towards the stabilisation of marine biodiversity, maintenance of food web functioning and restoration of species and habitats in the long term.

The commitment the UK has made to a legally binding target of net zero emissions by 2050 and the measures and actions that each administration has taken to tackle climate change and adapt to its impacts are to be noted here.

Also relevant is the progress made over the last six years on measures relating to contributing to the achievement of Descriptor 3 (Commercial fish), as well the progress made in measures to reduce eutrophication in UK waters relating to Descriptor 5 (Eutrophication), see these sections for further details. In particular the Joint Fisheries Statement, under the Fisheries Act 2020, will set out policies to achieve, or contribute to the achievement of, the fisheries objectives, including protecting the wider environment. Fisheries Management Plans will set out policies and measures to restore to, or maintain fish stocks at sustainable levels.

3.5.3 - Existing measures adopted in the 2015 Programme of Measures

The main existing measures to address the above targets have already been outlined elsewhere in the Strategy and under Commercial Fisheries and Eutrophication. These include:

- Measures under Descriptor 3 particularly retained EU regulations (as amended) under the European Union (Withdrawal) Act 2018 to maintain spawning stock biomass of forage fish species.
- Measures under Descriptor 5 aimed at reducing nutrient levels and eutrophication effects.

Additionally, the measures which have been outlined previously for climate change mitigation and adaptation will also contribute to addressing the High-Level Objective for this descriptor. For more details see 2.8 Climate Change Mitigation and Adaptation.

3.5.4 - Exceptions

No exception is being applied for this descriptor.

3.6 – Benthic Habitats (D1, D6)

3.6.1 – Overview

Environmental status of Benthic Habitats in 2018

The achievement of GES is uncertain for intertidal and soft sediment habitats. The levels of physical damage to soft sediment habitats are considered to be consistent with the achievement of GES in UK waters to the west of the Celtic Seas, but not in the Celtic Seas or in the Greater North Sea.

Image: situation = uncertain.

3.6.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

Fisheries Measures

The last assessment in 2019 identified that the main pressure affecting benthic habitats and preventing GES being achieved comes from fishing gear interacting with the seafloor. The UK is now an independent coastal state able to manage fishing activity in its waters outside the EU Common Fisheries Policy. The Fisheries Act 2020, underpinned by a commitment to sustainability, will play a critical role in managing fishing activity to contribute to the achievement of GES for benthic habitats. In addition, we aim to work closely with stakeholders to identify and collaboratively develop solutions to the impact of fisheries on benthic habitats.

In offshore waters, it has been difficult to bring forward management measures for our offshore MPAs due to the need to have agreement of EU Member States with a fishing interest in our sites. Now we are outside of the Common Fisheries Policy, the UK Administrations have the power to make independent decisions and introduce MPA management measures without needing to secure EU agreement.

Fisheries Act 2020 - In 2020 the Fisheries Act 2020 was enacted to enable the UK to manage fishing activity such that it operates in a sustainable way. Thie Act, alongside appropriately amended existing EU law retained under the European Union (Withdrawal) Act 2018, provides a comprehensive regulatory framework to manage fishing activity to deliver our fisheries objectives. Of the eight objectives in the Act six relate to sustainable fishing and environmental protection. The ‘ecosystem objective’ in particular explicitly seeks an ‘ecosystem-based’ approach’ to the management of fish and aquaculture activities making clear links to the UK Marine Strategy. It is key objective that will drive policy making to reduce the impact of fishing on the seabed and contribute to achieving GES for benthic habitats. For more detail see 2.3 - Fisheries Act 2020.

The Fisheries Act requires the Fisheries Policy Authorities (FPAs) to publish a Joint Fisheries Statement (JFS) and Fisheries Management Plans (FMPs), alongside the FPAsagreeing a Memorandum of Understanding on ways of working. The JFS and FMPs will set out the policies and measures to achieve the fisheries objectives, and through the ecosystem objective,will contribute to the achievement of GES. Fisheries Management Plans will, where appropriate, include measures to mitigate the impact of fishing activity on the wider environment, including the seabed.

For more detail see 2.3 Fisheries Act 2020.

Working Group on Managing the Effects of Fishing on Seafloor Integrity – A working group is being established, with the aim of identifying and implementing measures that can reduce the impact of fishing activity on the seabed. Its members will be drawn from regulators, managers, scientists and key stakeholders from across relevant industry groups and eNGOs. It will focus on practical actions to reduce pressure on those habitat types most at risk and/or most extensively impacted. The group will identify opportunities alongside seeking to leverage funding to support projects to deliver practical solutions. The group will convene from summer 2021 where a Terms of Reference will be agreed setting out the objectives of the group.

Administration specific measures

In **England**, the MMO has developed an ambitious programme for assessing sites and implementing byelaws, where necessary, to manage fishing activity in all English offshore MPAs. Draft management measures for the first four sites include proposals to ban bottom-towed fishing. For Dogger Bank and South Dorset, a full site closure is proposed, whereas for Inner Dowsing, Race Bank and North Ridge and the Canyons a zoned closure over the sensitive features has been proposed. The aim is for the byelaws for these sites to be in place by September 2021. The full byelaw programme for all offshore MPAs is expected to be complete by the end of 2024.

We are also undertaking a coordinated response to the practical restoration of inshore benthic habitats where intervention is one of the primary mechanisms to achieve recovery and to contribute towards achieving GES. ReMeMaRe (Restoring Meadow, Marsh and Reef) is a cross-government initiative to restore priority benthic habitats (saltmarsh, seagrass, and oysters) in inshore waters that have suffered from significant historical losses. The initiative is focussing on a coordinated response with government bodies across England in partnership with eNGOs and industry to provide restoration guidance, prioritise and promote restoration sites, explore collaborative funding opportunities, projects and programmes, streamline regulation and highlight research needs to support increased restoration activity in estuaries and coastal waters.

Recently the government also published Benyon Review, which the government will use to identify HPMAs with ecological value, including areas in English waters with potential to recover, and blue carbon habitats. Social and economic criteria will then be used to help us understand and minimise the impacts on sea users and decide which sites to consult on. Defra will set out how we will work with stakeholders, the governance and management of sites and how we will monitor and evaluate sites. HPMAs can act as a nature-based solution to improve the state of English seas, address biodiversity loss, and ensure a more climate resilient marine ecosystem which will deliver benefits for GES.

The LIFE Recreation ReMEDIES project (Reducing and Mitigating Erosion and Disturbance Impacts affecting the Seabed) is a four-year project (2019 to 2023) that will improve the condition of four marine habitats of European importance. The project will focus on five key SACs in England, from Essex in the east to the Isles of Scilly in the west.

It aim is to demonstrate habitat restoration and management techniques including seagrass restoration and aims to protect and improve the condition of key intertidal and subtidal habitats, raise awareness and actively inspire better care of the habitats by key users, and monitor, record and evaluate the project to maximise public benefits, conservation impact and repeatability across Europe.

UK government Environment Bill - This will give the UK government the power to set long-term, legally binding environmental targets for England. Under the Biodiversity theme it is planned to set a target on the condition of MPAs which will be brought forward by October 2022. Additionally, some clauses of the Bill may be applicable to Northern Ireland.

England Biodiversity Net Gain - Following a transition period of two-years after the Environment Bill is enacted, there will be a mandatory requirement for development activity that is consented through the Town & Country Planning Act to deliver biodiversity net gains. This requirement extends to mean low water and encompasses benthic habitats in the intertidal and will be subject to some exemptions which will be set out in forthcoming regulations. The requirement is to deliver a 10% 'gain' in biodiversity value, over and above the original value of biodiversity on the development site before any impact occurred. This gain may be delivered either on the site of the impact, through environmental enhancements or habitat creation projects, or by undertaking biodiversity projects at other locations. It is expected that over time net gain will contribute to enhancing intertidal benthic habitats. A metric is being developed to calculate what actions might be required in order to deliver a net gain and this will act to incentivise delivery of local, regional, or national strategic goals.

Offshore Wind Enabling Actions Programme (OWEA) - Defra's Offshore Wind Enabling Actions Programme (OWEA) includes projects to improve understanding of the impact of offshore wind infrastructure on benthic habitats as well as research on effective mitigation and, where necessary, compensatory measures. Recent research projects include reviews of mitigation, compensatory measures, and the potential impacts of floating wind technologies as well as studies to map anthropogenic hard protection on the seabed and to identify the specific impacts of cable protection methods. Defra also contributes to cross-government projects to support the sustainable expansion of offshore wind such as the Offshore Transmission Network Review project, which aims to improve the coordination of grid connection infrastructure for future offshore wind developments and has the potential to significantly reduce future benthic impacts.

The net gain workstream in OWEA is considering how net gain might be delivered in the marine area beyond the mean low water mark (planning policy on biodiversity net gain applies to the mean low water mark). This will support the UK government's commitment to embed a principle of environmental net gain for development under the 25 Year Environment Plan.

In **Northern Ireland**, fisheries management measures are in place for Strangford Lough and Rathlin SACs, this includes a prohibition of bottom trawling which protects benthic habitats. DAERA has conducted a public consultation fisheries management measures for

the remaining MPAs in the Northern Ireland inshore region with an aim of having the fisheries management measures in place for all MPAs by 2022.

In **Scotland** Fisheries management measures are being developed for the remaining 18 inshore MPAs where they are not already in place, with the aim of having all measures in place by March 2024 at the latest. In addition to protection for benthic features inside of MPAs, and in line with the General Policy 9 of Scotland's Marine Plan on natural heritage, the Scottish Government is also developing fisheries management measures outside of MPAs for the 11 benthic priority marine features most impacted by seabed abrasion. These will provide additional protection for the most sensitive features and are also due to be implemented by March 2024. For offshore MPAs in Scottish waters an ambitious programme has been set out to put in place all required fisheries management in all offshore sites by 2024 using the new powers granted under the Fisheries Act 2020.

Designation of HPMAs in Scottish seas - The Scottish Government has committed to designating 10% of Scottish seas as HPMAs by 2026 for inshore waters and, subject to the legislative framework being put in place , the same date for offshore waters, see section 3.4.2

Additionally the cap which will be placed in inshore fishing in Scottish waters will contribute to achieving GES for benthic habitats – see section 3.8.2 for details.

In order to improve the status of subtidal and intertidal habitats guidance for restoration projects is being developed to engage with stakeholders, guide project development, streamline regulation and address issues around biosecurity and non-indigenous species.

Environment (Wales) Act 2016 - This sets out the requirement for the 'sustainable management of natural resources' together with new ways of working to achieve this. Section 7 of the Environment (Wales) Act requires biodiversity lists to be produced. The lists include identified species of 'critical importance' for the purpose of maintaining and enhancing biodiversity (in particular supporting the benthic habitat) in Wales. For more detail see 2.9 Administration Specific Measures.

3.6.3 - Existing measures adopted in the 2015 Programme of Measures

Cross cutting measures that protect benthic habitats

Habitats Regulations (see Annex 1 for full list) - For more details see 2.6 The Habitats Regulations. Measure ongoing. See p.125-126 2015 Programme of Measures.

Wildlife and Countryside Act 1981 (as amended) and equivalent legislation in the Devolved Administrations (see Annex 1 for full list) - Measure ongoing. See p.76 2015 Programme of Measures.

Marine and Coastal Access Act 2009, Marine (Scotland) Act 2010 and Marine Act (Northern Ireland) 2013 - Measure ongoing. See p.77 2015 Programme of Measures.

Measures to protect benthic habitats from developments

Marine Licensing and Marine Spatial Planning Legislation, Environmental Impact Assessment Regulations and Strategic Environmental Assessment Regulations - For more detail see 2.2 Environmental Impact Assessment/Strategic Environmental Assessment/Habitats Regulations Assessment.

Electricity Act 1989 - Measure ongoing. See p.78 2015 Programme of Measures.

Measures to protect benthic habitats from fisheries

Scallop Fishing Legislation (see annex for full list) Measure ongoing. See p.77 2015 Programme of Measures.

International measures to protect benthic habitats

OSPAR recommendations - OSPAR contracting parties have prepared a series of recommendations for programmes and measures to protect OSPAR listed habitats which are being implemented by contracting parties individually and collectively in relevant waters of the North-East Atlantic. These programmes and measures include recommendations to:

- investigate the distribution of habitats through seabed surveys and monitoring
- report data on habitat distribution to the OSPAR habitat mapping database
- consider whether sites justify selection as MPAs
- develop and implement an appropriate monitoring and assessment strategy addressing the distribution, extent and condition of the habitat
- draw relevant issues to the attention of authorities competent for fisheries management such as requests for fisheries closures to minimise the impacts of human activities

Measures that have been implemented were reported by OSPAR contracting parties in the first compliance report against species and habitat recommendations in 2019. Quality status reports are due in 2023.

OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations - This bans the dumping, and leaving wholly or partly in place, of disused offshore installations within the OSPAR maritime area with a few exceptions, such as concrete gravity structures. This means that all other platforms must be removed and decommissioned at the end of their lives minimising and reducing physical loss of the seabed. Whilst the Decision prohibits the leaving of structures bar few exceptions, there is new information becoming available on the benefits of some of these structures. We have had SNCB's express concerns on the damage of the removal of the habitats the structures provide – particularly in the southern North Sea.

Vulnerable Marine Ecosystems (VMEs) under UN General Assembly Resolution 61/10 - The UK recognises the importance of Vulnerable Marine Ecosystems (VMEs) and the interaction with fisheries. The UK submits new data on VMEs to ICES, which provides annual advice to NEAFC (North-East Atlantic Fisheries Commission) and the EU on the location of VMEs and proposed areas for VME closures in the NEAFC Regulatory Area. The UK has had a number of VMEs designated for protection within VME closures and MPAs. The designation process includes appropriate protection from bottom fishing activity delivered via NEAFC and the Fisheries Act 2020. Furthermore, the Deep-sea Access Regulation ((EU) 2016/2336) was retained in UK law under the European Union (Withdrawal) Act 2018. The regulation bans bottom trawling in waters deeper than 800m and requires establishment of closures to bottom fishing in waters 400-800 m depth, within the existing fishing footprint, where VMEs are known to occur or are likely to occur. The UK has been supporting, via ICES, the identification of areas where VMEs occur or are likely to occur.

3.6.4 - Exceptions

An exception is to be applied for this descriptor under:

e) natural conditions which do not allow timely improvement in the status of the marine waters concerned

Measures coming into force over the next few years such as the Environment Bill, the new powers under the Fisheries Act 2020 and the third cycle of RBMPs, are expected to contribute significantly to the achievement of GES alongside existing measures, such as the MPA network. However, an exception is requested as there is insufficient time for these measures to have the desired effect of recovery on benthic habitats to achieve GES by 2024. This is partly due to the measures having not come into force yet and the lag time that is needed for benthic habitats to recover, which can be up to a decade or more.

3.7 – Non-Indigenous species (NIS) (D2)

3.7.1 – Overview

Environmental status of NIS in 2018

The UK has not yet achieved its aim of GES for NIS. Our ability to detect new NIS has improved but there has been no significant change in the number of new records of NIS made between 2003 and 2014.

Image: situation = no significant change.

3.7.1 – Measures adopted or proposed as part of the 2021 Programme of Measures

Invasive species action plans - contingency plans for species that have yet to arrive in GB waters are in preparation by the GB Non-Native Species Secretariat.

Didemnum vexillum Action Plan - The British and Irish Council Administrations have produced an Action Plan specific to D. vexillum, which was signed off by Ministers in November 2020. In November 2020 an inception meeting was convened to address one of the objectives of this plan, Biosecurity in Aquaculture and well attended by members of the BIC Administrations and statutory organisations. The Terms of Reference were agreed in principle, specifically that this work stream should focus on shellfish aquaculture initially, acknowledging that the finfish aquaculture sector is better resourced and more resilient to the risks of invasive non-native species. The objective of the Working Group is to achieve a voluntary biosecurity cross-jurisdictional standard whereby spread of marine INNS and particularly D. vexillum is better controlled/contained and introductions avoided by better managing this known pathway.

Pathway Action Plans (PAP) - These aim to prevent or manage the risk posed by particular pathways using measures such as raising public awareness, minimizing the contamination of goods, commodities, vehicles and equipment by invasive non-native species, and ensuring appropriate border checks. On the UK NNSS website there is a draft Angling PAP and a draft Recreational Boating PAP currently awaiting stakeholder consultation.

Good practice management: Pacific oyster (Crassostrea gigas) (2018) - Produced as part of the Rapid Life Project this guidance on management measures aims to prevent the spread of the Pacific oyster.

Great Britain Shellfish Biosecurity Measures Plan (2019) - All Aquaculture Production Businesses are now required to create a biosecurity measures plan in order to adhere to their licensing conditions. Plans include a section on 'identification of biosecurity risks and limitation measures', which may include introduction of non-native or invasive species as a risk, with for example, examination of new stock for presence of additional species included as a mitigation.

The American lobster Retain and Report campaign - This campaign was launched for the American lobster in 2020 in England and Scotland with plans to launch similar campaigns in Northern Ireland and Wales in the near future.

3.7.3 - Existing measures adopted in the 2015 Programme of Measures

Overarching measures

Scottish Code of Practice for Non-native Species - Measure ongoing. See p.87 2015 Programme of Measures.

Scottish Species Control Agreements and Species Control Orders - Measure ongoing. See p.87 2015 Programme of Measures.

England and Wales Species Control Agreements and Species Control Orders - The Wildlife and Countryside Act 1981 s14(4A) provides for species control agreements and species control orders to tackle invasive NIS in England and Wales. Species control agreements are voluntarily entered into by the owner of a premises where there is an invasive NIS or an animal which is not normally present in Great Britain, and the relevant environmental authority. The agreement will set out a plan to control or eradicate a species. Species control orders are to be used in exceptional circumstances where a voluntary approach cannot be agreed with the premises' owner, or if the environment authority considers that the making of an order is urgently necessary. The orders would compel landowners to take action on invasive NIS and/or animals which are not normally present in Great Britain, or permit others to enter the land and carry out those operations. The scope of these powers extend to species which are listed on the Union list, are invasive non-native species of animal or plant, or a species of an animal which is no longer present in Great Britain. Both Species control agreements and species control orders will be guided by the Code of Practice for Species Control Provisions.

NIS plans

Invasive Species Action Plans and Biosecurity Plans - There are a number of species action and biosecurity plans across the UK designed to control NIS. These include:

United Kingdom

- Marine Operator Biosecurity Toolkits (2019)

England

- North Western IFCA Biosecurity Plan (2014-2019)
- Marine Biosecurity Plan: Tamar Estuaries (2018)
- Crouch Harbour Biofouling and Marine Biosecurity guidelines (2020)

Northern Ireland

- Common slipper limpet (Crepidula fornicata) mussel export monitoring

Scotland

- Shetland Biosecurity Plan (2015)
- Firth of Clyde Forum Biosecurity Plan (2016)
- Loch Creran Community Biosecurity Plan (2016)

- Loch Fyne Community Biosecurity Plan (2020)

Wales

- Wales Priority Marine Species (2018)

Measures to address the aquaculture and fisheries pathways

Alien and Locally Absent Species in Aquaculture Regulations (see annex for full list) - Measure ongoing. See p.88 2015 Programme of Measures.

The Molluscan Shellfish (Control of Deposit) Order (Northern Ireland) 1972, The Lobsters (Control of Deposit) Order 1981, The Lobsters (Prohibition of Introduction) Order (Northern Ireland) 1982 - Measure ongoing. See p.88 2015 Programme of Measures.

Northern Ireland has specific Regulations prohibiting the import of live American Lobster (Homarus americanus) due to the risk of the disease Gaffkaemia.

Marine Aquaculture Code of Practice (2009) – This draft was created through the Invasive Species Ireland project to provide guidelines with the aim of reducing NIS contamination in the aquaculture sector and is relevant to Northern Ireland

Fish movements - UK legalisation that restricts the movement of aquatic animals is in place to control the spread of disease. These biosecurity measures also help limit the spread of NIS. Legislation includes:

- The Aquatic Animal Health (England and Wales) Regulations 2009; The Aquatic Animal Health (Northern Ireland) Regulations 2009; The Aquatic Animal Health (Scotland) Regulations 2009.
- Fisheries Act (Northern Ireland) 1966: It is a condition of fish culture licences granted under section 11 of this Act that live shellfish shall not be moved from or to the licensed shellfish site without the prior written approval of DAERA.
- Aquaculture and Fish Health Inspectorate (DAERA) – Conducts checks during all live fish/shellfish import/export inspections. DAERA plan to develop biosecurity best practice guidance for static gear fishing in MPAs.

Measures to address the commercial shipping pathway

Ballast Water Management Convention. The Ballast Water Management Convention entered into force in September 2017 and aims to regulate discharges of ballast water and reduce the risk of introducing NIS from ships' ballast water. The UK expects to accede to the Ballast Water Management Convention and introduce domestic legislation in 2022.

General guidance on the voluntary interim application of the D1 ballast water exchange standard by ships operating between the Mediterranean Sea and the North East Atlantic and/or the Baltic Sea - These interim guidelines to safeguard the marine environment from invasive species introduced through ballast water discharge

recommend that ships exchange all their ballast tanks at least 200 nautical miles from the nearest land in water at least 200 metres deep, subject to safety considerations. Ships should also keep a record of all ballast water operations. These safeguards are voluntary. The guidelines were produced by the OSPAR Commission and will remain until the D2 requirements of the Ballast Water Management Convention come into effect in September 2024.

OSPAR/HELCOM approach for the granting of exemptions to the Ballast Water Convention - Prior to the entry into force of the IMO Ballast Water Management Convention, OSPAR worked with HELCOM to adopt the Joint Harmonised Procedure for the Contracting Parties of HELCOM and OSPAR on the granting of exemptions under the International Convention for the Control and Management of Ships' Ballast Water and Sediments, Regulation A-4 (OSPAR Agreement 2015-01). The UK has adopted this approach and where an exemption to the Convention is requested, this approach will be followed. Measure ongoing. See p.94 2015 Programme of Measures.

Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species - These voluntary guidelines were produced by the International Maritime Organization (IMO). Measure ongoing. See p.89 2015 Programme of Measures.

Additionally, marine licensing in England makes links to best practice guidance on how to avoid and minimise biofouling, such as through hull cleaning. In some instances, hull cleaning will require a marine licence under section 66 of the Marine and Coastal Access Act 2009 (depositing substances into the marine area) depending on how it is performed. More heavily fouled vessels are recommended to be removed from the water for cleaning.

Measures to address the recreational pathways

Biosecurity for Anglers guidance (2012) – This was published as part of the Check, Clean, Dry campaign and provides advice to anglers to reduce the risk of spreading NIS.

The Green Blue initiative – Measure ongoing. See p.90 2015 Programme of Measures.

Invasive Species Ireland Guidance – The Invasive Species Ireland website has various guidance for watercraft users, marina operators and divers and is relevant to Northern Ireland. Measure ongoing. See p.94 2015 Programme of Measures.

Guidance for minimizing the transfer of invasive aquatic species as biofouling (hull fouling) for recreational craft (2012) - Measure ongoing. See p.90 2015 Programme of Measures.

Biosecurity for Boat Users guidance (2012) - Developed by the Environment Agency to avoid the spread of killer shrimp (Dikerogammarus villosus) but the principles apply to a range of marine NIS.

Measures to address the natural dispersal pathway

IPIECA - The global oil and gas industry association for environmental and social issues has produced guidance for the prevention and management of alien invasive species in the oil and gas industry. Measure ongoing. See p.90 2015 Programme of Measures.

Cross Cutting Measures

NIS Legislation (see Annex 1 for full list) - There is specific legislation across the UK which restricts the release of NIS and bans the release of any non-indigenous animals and the planting of any non-indigenous plant in the wild. This includes unintentional actions such as allowing an animal to escape, bringing in 'hitchhiker' organisms and causing a plant to grow. It also prohibits the sale or advertising for sale of listed NIS.

There are an additional range of legislation and initiatives across the UK which also contribute towards reducing the introduction and spread and mitigating the impacts of NIS, including the Habitats Regulations and Biodiversity Strategies (see the 'General Measures' section for more information).

UK Marine Plans and Marine Licensing - The various marine plans across the UK require authorities to consider the risk posed by the introduction and/or spread of NIS as a result of proposed operations. In marine licensing, license conditions can be added to help reduce NIS introduction and/or spread. For more detail see 2.1 Marine Planning and Marine Licensing.

Retained EU law on invasive non-native species – The provisions of EU Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (IAS) have been retained in UK law following Brexit. In England and Wales this has been done through The Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2019 (as amended by the Animal Welfare and Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2020) and in Scotland through the Invasive Non-native Species (EU Exit) (Scotland) (Amendment etc.) Regulations 2020. In Northern Ireland the EU IAS regulations will continue to directly apply due to the Northern Ireland Protocol. The regulations require 3 types of interventions: prevention; early warning and rapid response; and management. Border controls should be put in place to prevent the introduction of species on the Union list into the UK, and restrictions in place on their keeping, using, moving, breeding and selling; carrying out assessment of the pathways of introduction and spread of species on the Union list and identify the priority pathways of introduction; establish surveillance systems for species on the Union list; and have in place effective management measures for species on the Union list.

Non-native species risk assessments - these are commissioned and submitted to peer review by the Non-Native Risk Analysis Panel (NNRAP) of the United Kingdom Non-Native Species Secretariat (UK NNSS) on behalf of the UK NNS Programme Board using the UK NNS Risk Analysis Scheme, with completed risk assessment made available for public viewing online.

Invasive species action plans - these are developed by the UK NNSS under the recently revised and adopted UK Invasive NNS Strategy, and adopted by the UK NNS Programme Board.

River Basin Management Plans (RBMPs) - Measures for the control of NIS will be implemented in the third cycle of RBMPs. To avoid deterioration, the key measures at the catchment scale are to:

- slow the spread of high impact invasive NIS by adopting good biosecurity practice and by promoting campaigns such as 'Check, Clean, Dry'
- contain, eradicate and control high impact invasive NIS as a contribution to national invasive species action plans
- promote local action groups to engage the support of the third sector in controlling invasive NIS and in promoting key messages

Whilst these are primarily focused on other environments they are also applicable in marine environment and can play a role in contributing to achievement of GES. For more detail see 2.4 River Basin Management Plans.

The Northern Ireland Significant Water Management Issues report section 3.7 has a list of actions DAERA has taken using its statutory powers to prevent the introduction of NIS.

Further measures

The Great Britain Non-native Species Strategy (2015) - This Strategy aims to address invasive non-native species (INNS) issues in Great Britain (GB), maintaining the approach of the 2008 Strategy and the 2003 policy review. The Strategy covers the terrestrial, freshwater and marine environments and also species native to one part of a country that become invasive in areas outside their natural range

An Invasive Alien Species Strategy for Northern Ireland (2013) - A Progress report (2017) and implementation plan (2018) have been published.

Invasive Species Ireland Project - This project, which is relevant to Northern Ireland, has produced a number of outputs to date, including a list of NIS which pose the biggest threat to biodiversity, management plans for the highest risk species, an early warning alert system for new species, contingency plans for high risk species which may arrive, best practice guidance and codes of practice for key sectors.

Scottish Code for Conservation Translocations (2014) - The Scottish Code for Conservation Translocations and Best Practice Guidelines for Conservation Translocations in Scotland give guidance on when conservation translocations may be appropriate and the types of situation in which they may cause problems to wildlife, people, and the environment. The Code takes account of the risks from NIS during translocations and provides biosecurity guidance.

3.7.4 - Exceptions

An exception is being applied for this descriptor under:

(a) action or inaction for which the United Kingdom is not responsible
(e) natural conditions which do not allow timely improvement in the status of the marine waters concerned

The pressure of introductions of non-indigenous species to the UK's waters is beyond our control given the transboundary aspects of introductions, such as through ships in the Greater North Sea and Celtic Seas that do not apply the Ballast Water Convention. This updated UK Marine Strategy Part Three outlines how we are working to accede the Ballast Water Management Convention with our own vessels and ports and the measures we use to address the introduction of non-indigenous species from domestic sources. Once established, marine non-indigenous species are often very challenging to remove in a cost-effective manner and within the timeframes set out by our previous targets. Additionally, UK seas are subject to transboundary ingress of non-indigenous species due to climate change.

3.8 – Commercial Fish (D3)

3.8.1 – Overview

Environmental status of Commercial Fish in 2018

The UK has achieved its aim of GES for some commercially exploited fish. In 2015, 53% of marine fish (quota) stocks were fished below maximum sustainable yield (MSY). Most national shellfish stocks have either not yet achieved GES or their status is uncertain.

Image: situation = achieved.

3.8.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

Fisheries Act 2020 – The Fisheries Act 2020, alongside amended EU law retained under the European Union (Withdrawal) Act 2018, provides a comprehensive regulatory framework to manage certain fishing activities in the UK. The Act sets out objectives which all UK Fisheries Administrations are committed to supporting and delivering. Fisheries management is a devolved responsibility with each Fisheries Administration responsible for developing and implementing the measures needed to manage fishing activity in their waters. Whilst a pan-UK approach may be desirable, in some cases the differences in

terms of the fleets and waters in each Administration will result a need for divergence between the Administrations in their policies. For more detail see 2.3 - Fisheries Act 2020.

Fisheries Management Plans (FMPs) – FMPs are a new provision under the Fisheries Act 2020. The plans will directly contribute to the fisheries objectives and help implement the policies set in the Joint Fisheries Statement. The FMPs should set out policies designed to restore one or more fish stocks or maintain them at sustainable levels. Each FMP will set out the fisheries conservation measures necessary to manage fish stocks and/or fisheries within sustainable levels. Each FMP will also set out the geographic area it covers and how its effectiveness will be monitored.

The UK recognises that the CFP approach of setting a single target date for achieving MSY is not the best way to achieve sustainable fisheries because there may be variations across stocks or geographic area. Instead, appropriate policies can be set out through the FMPs, allowing the targets to be tailored to the needs of specific stocks or area of sea to achieve sustainable fisheries at the fastest rate possible. It will also allow us to reduce the impact of fishing on the wider environment.

UK as an independent coastal state

The UK is now an independent coastal State responsible for meeting obligations under international agreements, including the UN Convention on the Law of the Sea (UNCLOS). Consequently, the UK is now responsible for managing its fisheries resources in accordance with UNCLOS, including negotiating with other coastal states and the EU on their access to fisheries resources in UK waters.

Coastal states engage in annual negotiations, both bilaterally and in multilateral fora, in advance of each fishing year to determine access arrangements and total allowable catch for stocks for the coming fishing year. The UK is engaging in such negotiations as an independent coastal State for 2021 and beyond.

The UK has signed fisheries framework agreements with both Norway and the Faroe Islands. These framework agreements provide the legal framework for annual negotiations on fishing opportunities and access. In addition, the UK has signed Memoranda of Understandings with both Iceland and Greenland on enhancing cooperation within fisheries.

The UK has joined five Regional Fisheries Management Organisations (RFMOs) as an independent contracting party: North-East Atlantic Fisheries Commission (NEAFC), Northwest Atlantic Fisheries Organization (NAFO), International Commission for the Conservation of Atlantic Tunas (ICCAT), Indian Ocean Tuna Commission (IOTC) and North Atlantic Salmon Conservation Organization (NASCO). The UK will play a proactive role within RFMOs and other multilateral negotiations, working with other States to manage shared fisheries sustainably and collectively enjoy the socioeconomic and environmental benefits that result.

Agreeing Total Allowable Catches (TACs) and setting quotas - The UK will seek to agree TACs within sustainable limits for stocks shared with other coastal States and the EU. In setting TACs, we will take into consideration the scientific advice from independent fisheries scientists who assess the health of the stocks. The UK will negotiate its share of the TACs to set agreed fishing opportunities, following consultation with the other UK Administrations. Now that s23 of the Fisheries Act 2020 is in force, the UK share of the TAC will be set out in the Secretary of State Determination which will be a published notice rather than implemented through regulations. The determination of TAC will be laid before the Houses of Parliament.

Cap on Inshore Fishing in Scottish Waters –The Scottish Government has committed to applying a cap to fishing activity in inshore waters (up to three nautical miles) which will limit activity to current levels and set a ceiling from which activities that disrupt the seabed can be reduced in the light of evidence as it becomes available. This limit will be kept under review pending fuller consideration and gathering of evidence to underpin any further actions required to protect inshore marine habitats. This measure will also contribute to achieving GES for benthic habitats.

Future Fisheries Management (Northern Ireland) - DAERA will continue to provide the Northern Ireland input to the Joint Fisheries Statement, which will outline the policies for achieving or contributing to the fisheries objectives contained in the Fisheries Act 2020, which applies UK wide.

In parallel, DAERA will complete a policy review of the Fisheries Act (Northern Ireland) 1966; and ensure that the fisheries policies developed remain aligned with those same fisheries objectives. The intention is to have the review completed by March 2022. It will be for the Northern Ireland Executive to agree whether a Northern Ireland Fisheries Bill should be introduced to the Assembly in the next mandate.

The Northern Ireland Protocol is a key component of the Withdrawal Agreement negotiated between the UK and EU. The Protocol binds Northern Ireland to a number of EU regulations, including those for the marketing standards for certain fish products. The relevant regulations are listed in paragraph 46 (fisheries and aquaculture) of Annex 2 to the Protocol and adherence to these regulations ensures Northern Ireland will be able to access the EU single market and free movement is maintained on the Island of Ireland.

Future Fisheries Management (Wales) **-** Developing a Future Fisheries Policy for Wales is a key priority. The Welsh Government is building on the views provided through the 'Brexit and our Seas' consultation, and continues to work in collaboration with stakeholders to deliver its Future Fisheries Policy. Leaving the EU and by default the (CFP) provides an opportunity to consider an integrated fisheries policy which meets the needs of Welsh fishers and coastal communities, as well as contributing to the achievement of the fisheries objectives, through policies in the Joint Fisheries Statement. At the centre of developing future fisheries policy is the recognition of the need to extract

more benefit for coastal communities from this public resource while ensuring fish stocks can continue to provide benefits for future generations.

Future Fisheries Management (Scotland) **-** The Scottish Government has published the Future Fisheries: Management Strategy 2020 - 2030 which sets out the Scottish Government's approach to delivering responsible and sustainable fisheries management in Scotland. The Strategy confirms a co-management approach to fisheries management using established groups to take a joined up and strategic approach to managing fisheries in Scottish waters. These co-management groups include representatives from the fishing industry and environmental groups. Under Scotland's Future Catching Policy there will be a specific process to develop technical and spatial rules in partnership to manage our fisheries, reduce or avoid unwanted catch and fish at sustainable levels.

Future initiatives to help limit fishing mortality of wild-capture shellfish species (England) **-** Sustainable management of wild-capture shellfish fisheries is focussed on England's key commercial and vulnerable species. These include brown crabs, European lobster, king scallops, queen scallops, whelks, and cuttlefish. Future work will ensure existing and planned management measures are effective at restoring and maintaining healthy shellfish stocks, and improve scientific evidence to robustly assess whether key species are being fished sustainably.

The key work areas and measures to ensuring the long-term sustainability of [English] shellfisheries can be grouped as follows:

Review and strengthen current management measures - to prevent further increases in effort elicited on shellfish stocks and to ensure current management measures are fit for purpose in maintaining healthy shellfish stocks, marine environment, and fishing fleets.

Fleet structure/permitting - Current licensing schemes for shellfish, which require commercial vessels to hold a permit or entitlement to fish for certain crab, lobster and scallop species, prevent increases to the overall capacity of the fleets as there are no plans to issue additional permits entitlements. However, new and/or additional vessels can join the fleet by acquiring unused permits which can lead to increased exploitation rates on stocks.

- Further analysis will determine whether action to suspend unused permits/ entitlements is warranted to prevent increases in vessel numbers fishing for certain species. When considering action, the needs of the different sectors must be considered.

- Review methods under the existing legislative framework to introduce new permits for certain shellfish species such as whelks and queen scallops to prevent increases in exploitation of stocks. This review will build on previous work - e.g. developing measures for the Irish Sea queen scallop fishery, and consider local measures e.g. IFCA byelaws, that already require permits to be held for vessels targeting particular shellfish species within IFCA districts.

- **Review of the EU Western Waters Effort Regime (EC Regulation 1954/2003)**: The EU Western Waters Efforts Regime covering areas VI and VII was adopted into UK law via the European Union (Withdrawal) Act 2018 from 1 January 2021. Powers in place under the Fisheries Act 2020 will enable changes or the removal of WW provisions in the future where required. The current effort limits are not based on scientific evidence but rather historical activity. A review of the Western Waters (WW) Effort Regime will be carried out, in collaboration with UK fishery managers, scientists and industry, to determine whether an alternative, effort-based approach should be developed for shellfisheries or whether a move away from effort to a catch limit-based system is required to more effectively manage fishery exploitation levels for all vessels.

There are currently various management measures in place for UK shellfish fisheries that are applied via UK domestic legislation. Alongside building the evidence base and developing plans for future management of shellfish, current measures need to be tested for efficacy in protecting stocks, including juveniles, and the environment. Planned actions include:

- Map out current [English] shellfish legislation, its purpose and effectiveness to inform discussions with scientists, fishery managers and industry around potential improvements and opportunities for harmonisation.
- Ensure effective monitoring processes are in place to evaluate the impact of existing measures on stock status and fishery exploitation levels.

Joint management of shared shellfish stocks - The UK is bound by obligations under the United Nations Convention on the Law of the Sea (UNCLOS) to develop and implement joint management with other coastal states and EU for shared shellfish stocks.

The first step in this process will be to clarify what constitutes a ‘shared stock’ by reviewing the formal UNCLOS definition and how it applies to different shellfish species. Work will then be required to determine the extent to which wild-capture shellfish stocks could be considered a shared resource, which will likely apply to some scallop and crab stocks in UK waters which go beyond the UK EEZ/ median line.

Once the extent of shared stocks in UK waters is clear, a review of the existing management for those stocks (within and outside of UK waters) will be completed and proposals for joint management options will then be developed via discussion between fishery managers, scientists and industry, prior to discussions with the EU.

Improve data collection and scientific evidence base for wild-capture shellfisheries - Further data are required to ensure that management measures are based on robust evidence and are effective at ensuring stocks are fished sustainably.

Non-quota shellfish stocks, whilst largely data poor, have differing levels and quality of data available. A lack of data prevents robust, effective management being applied to

many non-quota shellfisheries and so risks the future sustainability of these important stocks.

Work is already underway to develop new data collection methods and stock assessment approaches, including exploring opportunities for the fishing sector to play a greater role in research and the provision of data.

Stock assessments

Irish Sea fisheries have undergone considerable change in recent years following the decline of commercially important finfish stocks and their slow response to management measures invoked through recovery plans. A series of workshops since 2015 (ICES WKIrish) have been carried out aiming to incorporate ecosystem information into the single-species stock assessment process for the Irish Sea. Outputs from these workshops offer an approach to refine fishery management to changes in the environment and its effects on stock productivity.

New stock assessments have been developed for King scallop stocks for selected waters around the English Coast by the Centre for Environment, Fisheries and Aquaculture Science (Cefas) as part of a collaborative project with the UK fishing industry, Defra, and Seafish[1]. The stocks are internationally exploited primarily by the UK and France using towed dredges. These fisheries are not governed by EU or national TACs and the stocks have not been subject to routine monitoring or formal assessment prior to 2017.

Measures introduced since 2015:

- The Edible Crabs (Undersized) Order (Northern Ireland) 2020
- The Edible Crabs (Conservation) Regulations (Northern Ireland) 2020
- Northern Ireland Inshore Fisheries Strategy
- The Marking of Creels (Scotland) Order 2020
- The Lobsters and Crawfish (Prohibition of Fishing and Landing) (Amendment) (England) Order 2017
- The Whelk Fishing (Wales) Order 2019
- The Specified Crustaceans (Prohibition on Fishing, Landing, Sale and Carriage) (Wales) Order 2015
- The Sea Fishing (Penalty Notices) (Wales) Order 2019

[1] Lawler and Nawri 2020 & Lawler et al. 2019

3.8.3 - Existing measures adopted in the 2015 Programme of Measures

The Fisheries Act 2020, alongside amended EU law retained under the European Union (Withdrawal) Act 2018, provides a comprehensive regulatory framework to manage certain fishing activities in the UK. For more detail see 2.3 - Fisheries Act 2020.

Retained EU law

EU Common Fisheries Policy (CFP); (Regulation 1380/2013) - This contains legal requirements relating to fishing sustainably. The Fisheries Act 2020 revokes Article 2 of the CFP regulation, including the MSY target, , and creates new objectives at section 1 of the Act.

EU multi-annual plans (MAP) (Regulations 2018/973 & 2019/472) - the multi-annual plans contain specific conservation objectives and measures based on the ecosystem approach in order to address the specific problems of mixed fisheries in relation to the maintaining exploitation within sustainable limits for specified stocks. The Fisheries Act 2020 updates the multi-annual plans so that they continue to apply after the Transition Period and are consistent with provisions in the Fisheries Act 2020. The North Sea MAP was initiated in August 2016 and published in July 2018, while the Western Waters MAP was initiated in March 2018.

Deep sea Fisheries (Regulation 2016/2336) - Deep sea fisheries are subject to a system of fishing authorisation to protect and assess vulnerable marine ecosystems and species in the deep sea. Regulation 2016/2336 is part of retained EU law.

Technical measures

The EU developed technical measures as tools to support the implementation of the CFP. The latest Technical Conservation Measures Regulation (EU) 2019/1241 (the Tech Con Regulation) was published in June 2019 and now forms part of retained EU law in UK legislation.

The Tech Con Regulation established baseline standards for each sea basin. Standards should consist of baseline mesh sizes for towed gear and static nets, minimum conservation reference sizes, closed or restricted areas, as well as nature conservation measures to mitigate against catches of sensitive species in certain areas.

The measures set out in 2019/1241 will continue to apply in UK waters until amended by the UK authorities under the powers conferred by the Fisheries Act 2020, apart from in Northern Ireland where the EU Tech Con Regulation will continue to apply. Any future technical measures will apply to all vessels licensed to fish in UK waters.

North Sea Cod TAC - In response to challenging scientific data on the state of the North Sea cod stock, the UK has introduced a national cod avoidance plan, which puts in place

technical and spatial management measures in order to reduce fishing pressure on cod. These measures apply to all fishing vessels fishing in UK waters.

The plan has been developed in partnership with fisheries stakeholders and introduces a combination of measures, including closures to protect spawning fish, real time closures, real time reporting, and improved gear selectivity in fished areas.

Reducing catches of unwanted fish (EU landing obligation) - The bycatch objective in Section 1(6) of the Fisheries Act 2020 underlines our commitment to address the root cause of discarding fish. The Joint Fisheries Statement will set out the policies all UK Administrations will implement to deliver this objective.

The EU landing obligation has been phased in on an annual basis since 2015, with full implementation coming into force on 1 January 2019, and is part of EU retained law and will continue to be in force in the UK until it is replaced. Now that the UK is no longer bound by the CFP we can design new catching objectives and policies which are tailored to our marine environment and our fishing industry. The UK remains fully committed to ending the wasteful catching and discarding of unwanted fish and will continue to work in close collaboration with all stakeholders to find solutions to these challenges domestically.

The UK Administrations are considering a number of other measures to avoid or reduce unwanted catches and wasteful discards and implement the Fisheries Act 2020, including:

- Remote Electronic Monitoring (REM) on vessels where appropriate – not only in the UK fleet but also other vessels accessing UK waters – to promote compliance at sea. Another benefit of REM will be improved data gathering which will strengthen our scientific evidence base (section 2.5).
- Adaptive management measures to promote selective gears and avoid high risk areas, e.g. real time closures.
- Enhanced scientific observer schemes to improve data collection.
- All Administrations will be considering what future catching policies are best suited to their individual needs. In England, we will be consulting on options in due course. In Scotland, the challenges with the landing obligation will be addressed through the introduction of a Future Catching Policy, which will take a co-management approach to reducing unwanted catch through the technical and spatial measures. These measures will also take a fleet segment approach to discarding, making full use of a range of exemptions whilst also seeking to streamline and simplify the process. The proportionate use of REM will also be considered as a way of increasing confidence and accountability and also boosting knowledge and data.

Measures to help limit fishing mortality of wild-capture shellfish species

There are a range of measures implemented across the UK to protect spawning stocks of shellfish species. The different ways in which this is achieved are exemplified by the measures detailed below**:**

EC Regulation 2019/1241 on technical conservational measures for managing fish stocks - The Tech Con Regulations, which form part of retained EU law from 01 January 2021, prescribe technical measures for the protection of juveniles. Measures include setting the Mean Landing Size (MLS) for some shellfish species (including crabs, lobsters and scallops), restricting the proportion of the crab landings with detached claws and only allowing lobsters to be landed whole.

The Undersized Edible Crabs Order 2000 - The size limits required by the above EU regulation are superseded by stronger UK legislation in the Western Channel (VIIe) and part of the Celtic Sea (VIIf) for edible crabs, stipulating a higher MLS for male crabs (160 mm) to allow more spawning opportunities.

Sea Fisheries (Shellfish) Act 1967 - This prohibits the landing of soft-shelled and berried (egg-bearing) crabs in England, Scotland and Wales. Shellfish Orders (Regulating, Several or Hybrid) can also be introduced under this Act which may grant exclusive fishing or management rights to a grantee such as an IFCA, within a designated area. There are Shellfish Orders currently implemented that include managing the exploitation of shellfish species other than crabs, lobsters and scallops.

Specific legislation across the UK is in place to protect breeding lobsters from being fished. The relevant items of legislation are:

- for England, the Lobsters and Crawfish (Prohibition of Fishing and Landing) (Amendment) (England) Order 2017.
- for Northern Ireland, the Lobsters and Crawfish (Prohibition of Fishing and Landing) Order 2000.
- for Scotland, the Lobsters and Crawfish (Prohibition of Fishing and Landing) (Scotland) Order 1999 (Scottish Statutory Instrument No.88); and
- for Wales, the Lobsters and Crawfish (Prohibition of Fishing and Landing) (Wales) Order 2002.

Scallop Fishing: Specific legislation across the UK puts in place technical, temporal and spatial restrictions to manage commercial scallop dredging within specified areas. See p.77 2015 Programme of Measures

EU Western Waters Effort Regime (EC Regulation 1954/2003 & 1415/2004) - The EU Western Waters Efforts Regime was introduced in 2004 and limits effort (days fishing vessels spend at sea) on edible and spider crab and king and queen scallop stocks in specified sea areas for vessels equal to and over 15 metres in length. The Western Waters effort regime is the primary means by which UK shellfisheries are managed. It is now part of retained EU law until such time that the UK Fisheries Authorities bring forward replacement measures using the powers conferred by the Fisheries Act 2020.

Local management measures

England: Inshore Fisheries and Conservation Authorities (IFCAs) - The IFCAs are statutory bodies that manage districts that cover part of the English coast out to six nautical miles and their inland boundaries that align with those of its constituent local authorities. IFCAs also manage sea fisheries resources in estuaries that fall within their districts. The 10 IFCAs have byelaws to limit fishing effort on inshore shellfish stocks within their districts. These byelaws include measures to restrict the fishing of shellfish through a system of permits, maximum vessel length allowed, fishery closures (e.g. temporary, seasonal), restrictions on certain fishing methods and pot limitations. Details of byelaws for each IFCA can be found on their website.

There are a number of existing collaborative groups consisting of government, industry and scientist representatives which provide the opportunity for joint discussion and development of management measures, including Fishery Management Plans, and improved evidence/ data collection to underpin decisions. These include the Scallop Industry Consultation Group, the Shellfish Industry Advisory Group and the Inshore Working Group.

Scotland: Regional Inshore Fisheries Groups (RIFGs) - Scottish RIFGs are responsible for developing local management plans for fisheries in their areas. RIFGs are non-statutory bodies that aim to improve the management of Scotland's inshore fisheries out to 12 nautical miles, and to give commercial inshore fishermen a strong voice in wider marine management developments. Marine Scotland can introduce measures developed through the RIFG network through statutory instruments, such as the Outer Hebrides (Landing of Crabs and Lobsters) Order 2015. RIFGs will have a key role in the development of future regional marine plans and will be the mechanism for fisheries input into Marine Planning Partnerships.

Wales - The Wales Marine Fisheries Advisory Group advise the Welsh Government on the management of Welsh fisheries out to 12 nautical miles. Details for orders in the north and south of Wales can be found online. Measure ongoing. See p.107 2015 Programme of Measures.

Northern Ireland: Inshore Fisheries Partnership Group (IFPG) - As part of its Inshore Fisheries Strategy "Towards a Sustainable Future" DAERA established the Inshore Fisheries Partnership Group. This group involves DAERA and inshore fisheries stakeholders working collaboratively to develop inshore fisheries policy. A key outworking of this group was the consultation on conservation measures for the brown crab fishery in Northern Ireland and the subsequent regulations on an increase on minimum landing size and a prohibition on landing berried brown crabs which were introduced in August 2020.

Inshore Fishing (Scotland) Act 1984 - Measure ongoing. See p.108 2015 Programme of Measures.

Shetland Islands Regulated Fishery (Scotland) Order 2012 - Measure ongoing. See p.108 2015 Programme of Measures.

3.8.4 - Exceptions

An exception is being applied for this descriptor under:

(a) action or inaction for which the United Kingdom is not responsible
(e) natural conditions which do not allow timely improvement in the status of the marine waters concerned

D3 Fish

There has been an extensive body of work conducted in the Irish Sea which demonstrates, through the use of recently developed ecosystem models, that historical environmental change has suppressed the productivity of commercial finfish and subsequent recovery of some stocks despite marked reductions in fishing effort. This highlights the need to incorporate environmental information into the assessment of fish stocks.

There is strong confidence that the new legal framework under the Fisheries Act 2020 together with retained EU law will allow the UK Administrations to deliver fisheries management measures that will lead to healthy fish populations and reductions in unwanted catches. Whilst the UK will seek to set harvest rates within sustainable limits to restore fish populations, the Total Allowable Catches (TACs) for many stocks will be subject to international negotiations with the EU and other coastal states. Therefore, the UK will not be able to unilaterally achieve the targets without international cooperation. Furthermore, it will take time for all fish stocks to respond to the changes in the exploitation rate and for their biomass to increase to the desired levels. Certainty is also affected by biological and climatic conditions, which are beyond the control of fisheries managers. Given the need for international agreement and the slow response times of populations to the measures, Regulation 15(2) Parts (a) & (e) will be relevant. These exceptions are therefore to the deadline by which GES must be achieved and not to the full achievement of GES at a future point in time.

D3 shellfish

Crabs and lobsters: As with commercial finfish stocks, the classification of ‘safe biological limits’ and the age/size distribution of a ‘healthy stock’ is linked to the concept of fishing at or below MSY levels. However, our understanding of the underlying biology of shellfish populations mean present challenges to the application of MSY principles, including determining sustainable reference points. Research and monitoring programmes are on-going to tackle these challenges.

It is expected that the measures identified above will help ensure that crab and lobster stocks achieve GES. However, the effectiveness of management measures on species such as lobster will take a long time to evaluate due to biological traits (i.e. slow growth rate means that it takes several years between an individual hatching from an egg and it appearing in the fishery) and may not emerge until after 2024.

Scallops

There are currently insufficient data to undertake comprehensive stock assessments of scallops across the UK and sustainable reference points have yet to be agreed. It is difficult to determine whether all stocks are fished at sustainable levels and if additional measures are required to ensure they achieve GES by 2024.

Monitoring programmes are in place and the UK Administrations are taking forward further initiatives to improve our understanding of stock status and identify appropriate management measures. However, as with crab and lobster the effectiveness of management measures will take time to evaluate due to biological traits and may not emerge until after 2024.

Marine Strategy Regulation 15(2) (e) will be relevant for shellfish. This category of exceptions covers cases where, because of natural conditions, such as slow recovery of ecosystems, measures taken will only meet environmental targets and reach GES after 2024. This exception is therefore an exception to the deadline by which GES must be achieved and not to the full achievement of GES at a future point in time.

3.9 - Food webs (D4)

3.9.1 – Overview

Environmental status in 2018

The extent to which GES has been achieved is uncertain: plankton communities are changing; some fish communities are recovering, but others are not; breeding seabird populations are in decline; grey seal numbers are increasing and trends in cetacean populations are unclear. It is known that components of the marine food web are changing, but it is not clear how they are affecting each other.

Image: situation = uncertain.

3.9.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

The main measures to address the targets set in the UK Marine Strategy Part One (2019) have already been outlined elsewhere in the strategy, particularly under Commercial Fisheries and Eutrophication sections although all measures contribute to the high-level objective for Food Web to a greater or lesser degree. These include measures under the Fisheries Act 2020 to achieve its objectives and maintain the reproductive capacity of all stocks and the ecosystems they live in. It is expected that the implementation of the Fisheries Act 2020 will manage fishing impacts on both target and non-target species and

allow food web structure to recover. This is expected to lead to an improvement in the management and resilience of stocks and contribute to the achievement of the targets for fish under Descriptors 1 and 4.

3.9.3 - Existing measures adopted in the 2015 Programme of Measures

The High-Level Objective for food webs is also addressed by measures under cetaceans, seals, birds, fish, and benthic and pelagic habitats. However, in particular the following measures apply:

Marine Protected Areas - MPAs that include features designated under national and international legislation will make a significant contribution to achieving GES targets for benthic habitats as the network will contribute to the conservation or improvement of the marine environment in the UK marine area. The features that are protected by the sites comprised in the network represent the range of features present in the UK marine area; and the designation of sites comprised in the network reflects the fact that the conservation of a feature may require the designation of more than one site. For more details see 2.5 - Marine Protected Areas (MPAs).

Fisheries Measures - The Fisheries Act 2020 alongside amended EU law retained under the European Union (Withdrawal) Act 2018 provides a comprehensive regulatory framework to manage commercial fishing activity in the UK. It includes an ecosystem objective that fish and aquaculture activities are managed using an ecosystem-based approach so as to ensure that their negative impacts on marine ecosystems are minimised and, where possible, reversed. For more details see 2.3 - Fisheries Act 2020.

Marine Plans – All Administrations have adopted or are in the process of adopting marine plans. These plans provide a framework for managing marine human activities sustainably and therefore relevant to achieving the targets under the food webs descriptor. For more details see 2.1 Marine Planning and Marine Licensing.

Climate Change - the measures which have been outlined previously for climate change adaptation and mitigation will also contribute to addressing the High-Level Objective for this descriptor. For more details see 2.8 Climate Change Mitigation and Adaptation.

The progress we have made across all other ecosystem components and descriptors (e.g. cetaceans, seals, birds, fish, pelagic habitats, commercial fish, eutrophication, contaminants) all contributes to food webs. Further details of this progress can be found in each of these ecosystem component chapters and in Annex 4.

3.9.4 - Exceptions

No exception is being applied for this descriptor.

3.10 Eutrophication (D5)

Environmental status of contaminants in 2018 - The UK has largely achieved its aim of GES for eutrophication. A small number of eutrophication problems remain in coastal and estuarine waters, representing 0.03% of the total UK Exclusive Economic Zone, and 0.41% of estuarine and coastal waters. We propose to maintain GES by continued use of existing measures set out the 2015 programme of measures. Details can be found in Annex 3.

3.11 Hydrographical conditions (D7)

Environmental status of contaminants in 2018 - The UK continues to achieve its aim of GES for hydrographical conditions. We propose to maintain GES by continued use of existing measures set out the 2015 programme of measures. Details can be found in Annex 3.

3.12 – Contaminants (D8)

3.12.1 – Overview

Environmental status of contaminants in 2018

The UK has largely achieved its aim of GES for contaminants. Concentration of hazardous substances and their biological effects are generally meeting agreed target thresholds. Highly persistent legacy chemicals are the cause of the few failures, mainly in coastal waters close to polluted sources.

Image: situation = achieved.

3.12.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

The Minamata Convention on Mercury -. The convention imposes restrictions on the production, trade in, and use of mercury and mercury-added products and the disposal of mercury wastes worldwide. It addresses the whole life-cycle of mercury with the objective to protect human health and the environment from anthropogenic emissions of mercury and mercury compounds. This was ratified through the adoption of Regulation (EU) 2017/852 on mercury which is enforced through the Control of Mercury (Enforcement) Regulations 2017. Regulation (EU) 2017/852 remains applicable in the UK as retained EU law. Northern Ireland is required to comply with it in its original form as it is listed in the Northern Ireland Protocol whereas in Great Britain it is applied as directed by the Control of Mercury (Amendment) (EU Exit) Regulations 2020 which amend how parts of (EU)

2017/852 and the enforcement regulations are applied in Great Britain. The Control of Mercury (Enforcement) Regulations 2017 go further than (EU) 2017/852 in a number of areas, including restrictions of the use of dental amalgam and export of mercury. These restrictions help limit the build-up of mercury in the food chain.

The UK government is committed to being part of international efforts to limit mercury emissions and releases on a global scale:

- The single largest industrial use of mercury in England was a chlor-alkali plant using 'mercury cell' technology. This was required to cease by December 2017 and was replaced by a membrane process which does not involve the use of mercury.
- Dental amalgam is an important source of mercury. High performance filters, known as amalgam separators, to prevent water contamination by dental clinics became compulsory in January 2019.

OSPAR / NORMAN[2] work on contaminants of emerging concern (CECs) - The UK is a Contracting Party to OSPAR and is represented on OSPAR's HASEC (Hazardous Substances and Eutrophication Committee). OSPAR is an Associate Membership of the NORMAN network, providing access to developing work on CECs, and environmental impacts across the OSPAR region. A number of key UK scientific and regulatory bodies are already members of NORMAN.

OSPAR List of Substances of Possible Concern (LSPC) and List of Chemicals for Priority Action (LCPA) - In light of developments in the chemicals sector in the European Community, and other international agreements including the regulation on registration, evaluation and authorisation of chemicals (REACH), Stockholm Protocol (United Nations) and the International Maritime Organisation, OSPAR is undertaking a full review of the two Lists (LCPA and LSPC) to filter and rationalise them. New Lists are expected to be published in 2022/23.

25 Year Environment Plan (2018) - For England the 25 Year Environment Plan includes managing exposure to chemicals (including developing a Chemicals Strategy), to ensure that that chemicals are safely used and managed, and that the levels of harmful chemicals entering the environment are significantly reduced. This includes seeking to eliminate the use of Polychlorinated Biphenyls (PCBs) by 2025, in line with our commitments under the Stockholm Convention and substantially increasing the amount of POPs material being destroyed or irreversibly transformed by 2030, to make sure there are negligible emissions to the environment. The 25 Year Environment Plan also sets out a commitment to reducing land-based emissions of mercury to air and water by 50% by 2030. Measures relating to the protection of the marine and coastal environment will be included in the

[2] Network of reference laboratories, research centres and related organisations for monitoring of emerging environmental substances.

forthcoming draft Environment Strategy for NI which is due to be published for consultation in early summer 2021.

Metal Mine Remediation Programme - Capital funding of £5 million for current financial year has been awarded and a subsequent bid for funding has been made up to 2026. This funding covers the metal mine remediation programme in Wales, focusing on the most polluting abandoned mines to tackle water pollution issues. Abandoned Metal Mines are one of the principal causes of failures of Water standards in Wales. Discharges from underground workings and leaching of metals from spoil heaps present significant sources of water pollution, causing iron, zinc, lead, and cadmium failures. There are 1,300 abandoned metal mines in Wales that have been estimated to impact over 600 km of river reaches.

3.12.3 - Existing measures adopted in the 2015 Programme of Measures

River Basin Management Plans (RBMPs) - These outline the objectives for water bodies and identify measures required to achieve good chemical status. The types of measures include:

- environmental permitting of various activities, which sets maximum allowable limits of chemicals in discharges and emissions for various activities
- statutory codes of practice on the application and use of chemicals (e.g. good agricultural practice on agri-chemicals), which specify how various operations should be carried out to prevent chemicals entering surface waters
- catchment action plans and safeguard zones for specific groups of chemicals to protect drinking water sources
- pollution prevention advice and local campaigns, which provide targeted advice and enforcement in high risk areas on all rural diffuse pollution issues, in order to prevent chemicals from entering surface waters
- environmental quality standards for pollutants

For more details see 2.4 River Basin Management Plans (RBMPs).

Environmental Permitting Regime - This sets emissions and discharge limits for hazardous chemicals (e.g. heavy metals and polycyclic aromatic hydrocarbons (PAHs)) discharged and emitted from industrial installations, in line with the best available abatement technologies.

Biocides Regulations - These ensure that only approved biocidal products are available for use and prevents those legacy products with persistent bioaccumulative toxic (PBT) properties from being used. Since 1 January 2021, the UK has an independent regulatory framework for biocidal products which reflects current EU Regulations.

Measures to control contaminants from shipping

The Merchant Shipping (Prevention of Pollution from Noxious Liquid Substances in Bulk) Regulations 2018 and The Merchant Shipping (Prevention of Oil Pollution) Regulations 2019 - These measures incorporate international standards for ship-source pollution. They provide a framework for managing and preventing discharges by ships of oil and chemicals into the sea and set out enforcement powers and penalties for illegal discharges of oil, oily mixtures and noxious liquid substances into UK controlled waters. The organisation responsible for implementation of these regulations is the Maritime & Coastguard Agency.

The Merchant Shipping (Ship to Ship Transfers) Regulations 2020 - These prohibit the ship to ship transfer of oil cargo in UK waters unless they are carried out within harbour authority waters (and authorised by the harbour authority) or within the permit area within UK Waters. The transfer of bunkers fuels between vessels is prohibited anywhere within UK Waters, unless they are carried out within harbour authority waters (and authorised by the harbour authority), or following exceptional approval by the MCA. Outside of UK territorial waters, but within UK controlled waters (also known as the UK Exclusive Economic Zone or UK EEZ), the ship to ship transfer of both oil cargos and bunkers is permitted, though there is a requirement to notify the MCA 48 hours in advance of transfer operations involving a ship or ships of 150GT or more.

In addition to these 2020 Regulations and MARPOL Annex I (where applicable), when developing operational procedures for cargo transfer operations, owners and operators are advised to take account of the latest edition of the Ship to Ship Transfer Guide (for Petroleum, Chemicals and Liquified Gases) produced jointly by the International Chamber of Shipping (ICS) and the Oil Companies' International Marine Forum (OCIMF), and also the Manual on Oil Pollution (Section 1), produced by the International Maritime Organization (IMO).

Bonn Agreement - The Bonn Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil and Other Harmful Substances is the mechanism by which the United Kingdom cooperates with other countries within the North and Celtic Seas in combating oil pollution in the Greater North Sea and its approaches from maritime disasters and chronic oil pollution from ships and offshore installations. It also coordinates aerial surveillance as an aid to detecting and combating pollution at sea. The following actions are undertaken by the agreement: prevention of illegal and accidental pollution by collaboration and collective enforcement of maritime pollution rules and standards; promotion and coordination of the compliance monitoring of IMO MARPOL Annexes; promotion and establishment of efficient emergency preparedness; and organisation of optimum response capacities.

Measures to control contaminants from dredging

The Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010 - Measure ongoing. See p.133 2015 Programme of Measures.

OSPAR Guidelines for Dredged Materials - Relevant authorities will continue to take these guidelines into consideration. Measure ongoing. See p.133 2015 Programme of Measures.

Chemical Regulation

UK Registration, Evaluation, Authorisation and Restriction of Chemicals (UK REACH) – Implemented by the REACH etc. (Amendment etc.) (EU Exit) Regulations 2020, the UK REACH regulatory regime aims to provide a high level of protection of human health and the environment from the supply and use of chemicals. Anyone making, importing, using, selling or distributing chemicals in Great Britain and the EU needs to follow UK REACH. Under the terms of the Northern Ireland Protocol, EU REACH applies in Northern Ireland.

OSPAR HMCS - The Offshore Chemical Regulations 2002 (as amended) implement the provisions of OSPAR Decision 2000/2 for a Harmonised Mandatory Control System (OSPAR HMCS) for the use and discharge of offshore chemicals used in the offshore oil and gas industry. OSPAR HMCS promotes the shift towards the use of less hazardous or preferably non-hazardous substances to reduce the overall environmental impact resulting from the use and discharge of offshore chemicals

International Source Control Legislation, e.g. Persistent Organic Pollutants (POPs) under Stockholm Convention - Measure ongoing. See p.133 2015 Programme of Measures. Retained EU legislation, which allows the UK to continue to implement these obligations, came into force on 1 January 2021.

Measures to reduce marine litter - The measures outlined under 3.14 – Marine Litter will help reduce the amount of litter entering the marine environment and mitigate the risk of this as a potential source of contaminants in the marine environment.

3.12.4 - Exceptions

An exception is to be applied for this descriptor under:

> (e) natural conditions which do not allow timely improvement in the status of the marine waters concerned.

In the updated UK Marine Strategy Part One in 2019 we stated that whilst there is already a high degree of compliance for many of the contaminants assessed, it is unlikely that GES would be fully achieved due to the highly persistent nature of the Persistent, Bioaccumulative and Toxic legacy chemicals (for which most uses have been banned for many years). Projections by ICES show that it may be many decades before some of these chemicals fully degrade from marine sediments in the sea. We therefore believe that an exception under the regulation 15(2)(e) is justified.

3.13 Contaminants in Seafood (D9)

The UK has achieved its aim of GES for contaminants in seafood. There is a high level of compliance with agreed safety levels. We propose to maintain GES by continued use of existing measures set out the 2015 programme of measures. Details can be found in Annex 3.

3.14 – Marine litter (D10)

3.14.1 – Overview

Environmental status of Marine Litter in 2018

The UK has not yet achieved its aim of GES for litter. Beach litter levels in the Celtic Seas have remained largely stable since the assessment in 2012, whilst beach litter levels in the Greater North Sea have slightly increased.

Image: situation = not achieved but stable

3.14.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

Proposed measures below may be subject to the UK Internal Market Act 2020, which may affect their overall effectiveness in supporting the achievement of GES.

Cross cutting measures to promote action across communities and businesses to reduce and clean up litter.

England: work internationally with the relevant organisations (IMO, UNEP, FAO) and Commonwealth Countries to develop marine litter action plans and measures worldwide, which are listed in the G20 Osaka Blue Ocean Vision.

Northern Ireland: A review of the effectiveness of the current Northern Ireland Marine Litter Strategy, and development of a refreshed strategy, is expected in 2021. This is likely to include measures on riverine litter and microplastics.

Scotland: The refreshed Marine Litter Strategy is expected in 2021 with an increased focus on marine litter removal, in particular supporting measures to remove riverine litter.

Wales: A new Litter & fly-tipping Prevention Plan for Wales - this will focus on a number of key themes including waste prevention, enforcement and education. Details of the outcome from the consultation on Circular Economy Strategy for Wales have now been published.

Measures to reduce the sources of terrestrial general litter

MICROPLASTICS

Plastic Pellet Loss Reduction – British-Irish Council Commitment: Administrations are supporting the reduction of pellet loss in their Administrations using the learnings from a supply-chain approach currently being tested in Scotland. As part of this work an internationally recognised pellet handling Publicly Available Specification with the British Standards Institution was published in July 2021 and it is expected that this will be endorsed by the British-Irish Council. Administrations continue to support the plastic industry's voluntary pellet loss reduction scheme of Operation Clean Sweep©.

Artificial Pitch Infill - Scotland is expecting to introduce a Code of Practice for sports facilities using plastic crumb on their all-weather sports pitches.

MACROPLASTICS

The UK government and the governments of Wales, Scotland, and Northern Ireland intend to introduce extended producer responsibility for packaging and jointly consulted on proposals to introduce extended producer responsibility on a phased basis from 2023. The responses to the consultation are being considered currently and a government response will be published in due course. Packaging comprises about 26% of household waste and up to around 50% of street litter.

Last May the Scottish Parliament passed legislation to establish a deposit return scheme (DRS) for single-use drinks containers in Scotland from 1 July 2022; the Scottish Government is currently reviewing the impact of COVID-19 on this date. Governments of England, Wales and Northern Ireland also plan to bring in a DRS for drinks containers, and the second consultation for introducing the scheme proposed that it would go live in late 2024 at the earliest.

The objective of these schemes are to make it easier for consumers to recycle, reduce packaging waste, boost recycling rates from 60 to 78% for all packaging by 2030, encourage reuse, tackle littering and provide higher quality streams of recycled material.

Measures to address terrestrial sources of single-use plastic product litter

Microbeads Regulations (see annex for full list) **-** Legislation to ban the manufacture and sale of rinse-off personal care products containing plastic microbeads has been introduced by each administration across the UK.

Common beach litter product bans

England: A ban on supplying plastic straws, stirrers and plastic-stemmed cotton buds came into force in England in 2020 through The Environmental Protection (Plastic Straws, Cotton Buds and Stirrers) (England) Regulations 2020.

Northern Ireland: DAERA is currently funding a multi-year Tackling Plastic project that is targeted at different sectors, including schools, businesses, government and the wider public with education programmes, toolkits and social media messaging with a view to changing behaviours on plastics to both reduce plastic use where possible and to ensure when plastic is used it is disposed of responsibly. Significant elements of the Single Use Plastics Directive are contained within the Northern Ireland Protocol and once transposed would help to reduce the amount of plastic products that are found in marine litter.

Scotland: A ban on the manufacture and sale of plastic-stemmed cotton buds came into force in 2019 through The Environmental Protection (Cotton Buds) (Scotland) Regulations 2019.

Wales - In 2020 a consultation was published proposing to ban nine of the most commonly found single use plastic items found as beach litter. An implementation date has not yet been set.

England: The Environment Bill will allow the government to place charges on the use of single use plastics, introduce Extended Producer Responsibility schemes and introduce a deposit return scheme on drinks containers, subject to consultation.

Scotland: Going forward the Scottish Government intends to align with the EU Single Use Plastic Directive 2020. A summary of public consultation responses to the proposal to ban nine of the most commonly found single use plastic items found as beach litter was published in March 2021. It is the intention that legislation will be introduced in 2021.

Taxation used to help address terrestrial litter sources

Plastic packaging tax - From April 2022, a new tax will be applied on businesses that produce or import plastic packaging with insufficient recycled content. The consultation and the results from the call for evidence are published

Enforcement and penalties of terrestrial littering

Northern Ireland: A review on the use of littering and dog fouling fixed penalty notices throughout Northern Ireland will be completed by early 2021. The findings will be made public in the draft Environment Strategy, which is due to be consulted upon in 2021. This consultation will consider options for tackling litter and dog fouling offences in the future.

Measures to address marine sources of litter

British-Irish Council Commitment - All Administrations are working together to improve marine litter education materials for professional fishers. In addition, Administrations have committed to working with the fishing industry to develop solutions for the collection and recycling of end of life fishing gear.

England: Will work towards a public consultation on an Extended Producer Responsibility Scheme for fishing and aquaculture gear.

Scotland: Will work towards the introduction of an Extended Producer Responsibility Scheme for fishing and aquaculture gear by December 2024.

Measures to remove litter from the marine environment

Northern Ireland: Will be introducing an exemption from marine licensing for diving activity to remove marine litter, expected in 2021. The new Marine Litter Strategy is expected to increase focus on riverine litter measures.

Scotland: Intends to increase riverine litter removal, supporting the introduction of removal technologies where suitable. Evidence gathering is underway to support capital expenditure.

3.14.3 - Existing measures adopted in the 2015 Programme of Measures

The main existing measures to address the above targets are taken through:

Cross cutting measures to promote action across communities and businesses to reduce and clean up litter

OSPAR Regional Action Plan on Marine Litter (RAP) - The current RAP was agreed in 2014 and runs until the end of 2021 - it is currently being reviewed by the OSPAR Commission with a new RAP planned to be adopted in 2022. The UK will continue to implement the updated RAP, where relevant to our marine environments once it is agreed. Individual timescales will be developed for each action.

The Waste Prevention Programmes for England, Wales, Scotland and Northern Ireland, Scotland's Zero Waste Plan (of which Scotland's Marine Litter Strategy is a key part), Keep Britain Tidy, Keep Wales Tidy, Keep Northern Ireland Beautiful, Keep Scotland Beautiful and their schemes such as the 'Love Where You Live' campaign in Northern Ireland, the Litter Prevention Commitment in England and Towards a Litter Free Scotland - Measures ongoing. See p.145 2015 Programme of Measures

England: The Waste Prevention Programme for England was published in 2013 and was reviewed by WRAP in July 2020.

The Litter Strategy for England, 2017 . The strategy makes reference to ongoing work in England and the UK to tackle marine litter, such as the Fishing for Litter and monitoring programmes carried out by Marine Conservation Society.

25 Year Environment Plan (England) - sets out the UK government's plan to improve the environment within a generation, including the approach to tackling marine pollution of all kinds and in particular material that came originally from land.

Northern Ireland: The Northern Ireland Waste Prevention Programme was reviewed in 2019 and an interim revised programme with 22 actions was published July 2020 to

provide a short extension to the programme pending the introduction of a new Circular Economy Waste Package (CEWP).

Legislation transposing the Circular Economy Waste Package (CEWP), The Waste (Circular Economy) (Amendment) Regulations (Northern Ireland) 2020, came into effect in Northern Ireland on 18 December 2020. The legislation includes requirements for measures to ensure better compliance with the waste hierarchy, a widening of the scope of waste streams that must be separately collected and incrementally increasing recycling targets. It also defines specific recycling targets for packaging, requires specific measures for littering and sets minimum requirements for all extended producer responsibility schemes.

Scotland: The Zero Waste Plan (2010), Marine Litter Strategy (2014) and Making Things Last Strategy (2016).

Wales: Wales Waste Prevention Programme – 2013-2050.

Environmental Protection Act 1990 (as amended) (England, Wales and Scotland), Litter (Northern Ireland) Order 1994 (as amended), Clean Neighbourhoods and Environment Act 2005 (England and Wales), Code of Practice on Litter and Refuse (England) 2007, Clean Neighbourhoods and Environment Act (Northern Ireland) 2011, Code of Practice on Litter and Refuse (Scotland) 2006 - Measure ongoing. See p.145 2015 Programme of Measures.

- **England:** Litter and refuse: code of practice (updated 2019)
- **Northern Ireland:** Guidance to district councils: litter (updated 2012)
- **Scotland:** Code of Practice on Litter and Refuse (2018)
- **Wales:** The Welsh Government Code of Practice for Litter and Refuse is under review and is expected to be published 2021.

Marine Litter Strategies

Some Administrations have marine litter specific strategies to reduce marine litter from both land and sea sources, and support debris removal.

- **England:** The Resources and Waste Strategy for England, published in 2018, contains commitments towards reducing marine plastic pollution through circular economy policy measures and international cooperation.
- **Northern Ireland:** Northern Ireland Marine Litter Strategy, was published in 2013 and an update is expected to take place during 2021.
- **Scotland:** The Marine Litter Strategy for Scotland was published in 2014 and a revised strategy is expected in 2021.
- **Wales:** The Wales Clean Seas Partnership developed the Marine Litter Action Plan for Wales collaboratively with Welsh Government in 2020.

Measures to reduce the sources of terrestrial general litter

Environmental Permitting (England and Wales) Regulations 2010, Waste (England and Wales) Regulations 2011, Waste Regulations (Northern Ireland) 2011, Waste (Scotland) Regulations 2012, Producer Responsibility Regulations - Measure ongoing. See p.146 2015 Programme of Measures

Producer Responsibility Obligations (Packaging Waste) Regulations 2007 and Producer Responsibility Obligations (Packaging Waste) Regulations (Northern Ireland) 2007 - The packaging producer responsibility obligations are in the process of being reformed, there was a public consultation in 2019 and another in March 2021. A review of The Packaging (Essential Requirements) Regulations 2015 is due to be completed in 2021. A new Extended Producer Responsibility Scheme for packaging is planned for implementation in 2023.

Litter, marine litter and plastic pollution education - All Administrations deliver Eco-schools programmes through their various delivery partners. Each of them include modules on the importance and harm of litter in relation to terrestrial and marine environment health.

Industry Code of Practice on Sky Lanterns (2014), DCLG byelaw provision covering the release of sky lanterns on council owned land, local authority bans on the use of sky lanterns and guidance from Zero Waste Scotland and Keep Northern Ireland Beautiful on the release of balloons and sky lanterns - Measure ongoing. See p.156-157 2015 Programme of Measures.

National Fly-tipping Prevention Group - This group is chaired by Defra and includes representatives of the Devolved Administrations, local authorities, the Environment Agency, the waste industry, Keep Britain Tidy, and landowners. Measure ongoing. See p.147 2015 Programme of Measures.

UK: The Fly-tipping Partnership Framework, published in 2014, outlines best practice for the prevention, reporting, investigation and clearance of fly-tipping

- **Northern Ireland:** The draft Northern Ireland Fly tipping protocol is a partnership between local authorities and the Northern Ireland Environment Agency (NIEA) who both share responsibility for tackling hazardous and non-hazardous waste.
- **Scotland:** Fly-tipping is included in the National Litter Strategy, Towards a Litter-free Scotland, published in 2014. In addition, fly-tipping is targeted in the Rural Crime Strategy, 2019-2022.
- **Wales:** The fly-tipping strategy, A Fly-Tipping Free Wales, was published 2015, however is now being reviewed as included as new measure (see below).

Measures to address terrestrial sources of single-use plastic product litter

Single Use Carrier Bags Charge legislation (see annex for full list) **-** These introduced a 5p charge on single use carrier bags across the UK. In Northern Ireland, Scotland, and Wales this applies to all retailers; in England, charging is obligatory for large businesses and voluntary for smaller ones.

- **England:** In 2015 introduced regulations to impose an obligatory charge for carrier bags for large businesses and voluntary for smaller ones. This will be extended to all businesses in 2021 and the charge will increase from 5p to 10p
- **Northern Ireland:** From 2015, the levy charge was extended to carrier bags of any material with a 5p levy.
- **Scotland:** the carrier bag minimum charge increased from 5p to 10p in April 2021.
- **Wales:** In 2019 the efficacy of the bag charge was reviewed to inform future actions regarding changes in levies or charging scope.

Taxation used to help address terrestrial litter sources

Landfill Tax - Measure ongoing. See p.147 2015 Programme of Measures.

Updated Enforcement and Penalties for terrestrial littering

- **England:** The Littering From Vehicles Outside London (Keepers: Civil Penalties) Regulations 2018 - From April 2018, district councils in England (outside London) have powers to hold the keeper of a vehicle responsible for littering offences committed from it. Councils can issue the keeper with a civil penalty of between £65 and £150. The Environmental Offences (Fixed Penalties) (England) Regulations 2017 - From April 1st 2018 the maximum fixed penalty that local authorities can issue was increased from £80 to £150. From April 2019 the minimum fixed penalty increased from £50 to £65.
- **Northern Ireland:** The Clean Neighbourhoods and Environment Act (Northern Ireland) 2011 and The Environmental Offences (Fixed Penalties) (Miscellaneous Provisions) Regulations (Northern Ireland) 2012 enable district councils to issue fixed penalty notices of between £50 & £80 for littering offences. For cases dealt with by the courts, a fine of up to £2,500 for littering offences can be imposed.
- **Scotland:** Environmental Protection Act 1990 - Fixed penalty notices of £80 can be issued for littering, or following prosecution a fine can be charged of up to £2,500. Regulatory Reform (Scotland) Act 2014 - A fly-tipping fixed penalty notice of £200 can be issued, or on prosecution an individual can be sentenced to imprisonment and risk a fine of up to £40,000
- **Wales:** Under The Environmental Offences (Fixed Penalties) (Miscellaneous Provisions) (Wales) Regulations 2008 enforcement agencies can issue Fixed Penalty Notices of between £75 - £150.

Measures to address litter from wastewater treatment works and urban drainage

Applicable regulations covering each UK administration for Urban Waste Water Treatment, Bathing waters and River Basin Management Plans - These drive measures to reduce intermittent discharges from sewage treatment works and sewerage systems. Measure ongoing. See p.148 2015 Programme of Measures.

Measures to address marine sources of litter

Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries (CCRF) - This provides a framework for national and international efforts to ensure sustainable exploitation of aquatic living resources in harmony with the environment. It includes retrieval of lost or abandoned fishing and aquaculture gear (and fragments of gear) and banning of dumping. Whilst the code is voluntary the UK's Seafish organisation and the Marine Stewardship Council (which certifies sustainable seafood) are signed up to it.

Responsible Fishing Vessel Standard – This is a scheme, developed by Seafish and Global Seafood Assurances, which promotes responsible waste management to help prevent marine litter. This replaced the Responsible Fishing Scheme.

Ongoing Shipping Regulations with Amendments - The Merchant Shipping (Prevention of Pollution by Garbage from Ships) Regulations 2020; The Merchant Shipping and Fishing Vessels (Port Waste Reception Facilities) 2003 (as amended); IMO Action Plan for Marine Litter from Ships 2018 - These measures incorporate international standards to prohibit the discharge of garbage (including fishing gear) into the sea from ships and ensuring adequate port waste reception facilities. They provide a framework to prevent the discharges of garbage in UK controlled waters and for ships to deliver their waste ashore to port waste reception facilities.

London Convention 1972 (Convention on the Prevention of Maritime Pollution by Dumping of Wastes and Other Matter) and 1996 Protocol; and OSPAR Convention 1999 - Measure ongoing. See p.149 2015 Programme of Measures.

Measures to remove litter from the marine environment

UK-wide clean-up campaigns supported by all Administrations:

Great British Spring Clean

Great British Beach Clean

Beach clean schemes - A number of third sector organisations carry out regular beach clean-ups and many volunteers 'adopt' sections of coast, removing litter from our coastal environments. These measures have a localised impact in removing litter, and may help to tackle the sources of litter through awareness raising. In many cases these organisation also run citizen science projects collecting data which is used nationally and internationally

to inform litter reduction policies. Main Delivery partners – Marine Conservation Society, Keep Northern Ireland Beautiful, Keep Scotland Beautiful, Keep Wales Tidy, National Parks

Fishing For Litter (FFL) scheme - As defined by the OSPAR Recommendation 2016/1 – passively caught waste is landed by commercial fishers ashore and disposal is arranged for free by Kommunenes Internasjonale Miljøorganisasjon (KIMO), under the Fishing for Litter Scheme. The scheme provides fishing boats with large bags to collect passively caught waste during fishing operations and, when full, these bags are deposited on the quayside and collected for disposal. This scheme improves marine litter awareness within the industry, removes litter from the seabed which would otherwise remain and potentially reduces entanglement incidences during fishing activities.

Marine Licensing regulations – The regulations listed below allow for waste removal by divers without holding a marine licence:

- **England:** Marine Licensing (Exempted Activities) (Amendment) Order 2019, removed the requirement for divers to have a marine licence to remove ghost fishing gear.
- **Northern Ireland:** Activities related to the recovery of waste are currently being consulted on to add this exemption under The Marine Licensing (Exempted Activities) Order (Northern Ireland) 2011.
- **Scotland:** Activities relating to the recovery of waste are exempt under The Marine Licensing (Exempted Activities) (Scottish Inshore Region) Order 2011.

3.14.4 - Exceptions

An exception is being applied for this descriptor under:

(e) natural conditions which do not allow timely improvement in the status of the marine waters concerned

Levels of marine litter assessed in Part 1 of the UK Marine Strategy do not meet the definition for GES, however in this programme of measures we propose to introduce a suite of measures which will tackle many of the commonly found macro plastics at source. Whilst this is ambitious, we expect to begin to see a reduction in these items during this cycle of the marine strategy allowing us to reach GES in the longer term. As it will take time for the effects of these measures to be seen in the marine environment we are applying an exception under Regulation 15 (2) (e) “natural conditions which do not allow timely improvement in the status of the marine waters concerned”.

3.15 – Underwater noise (D11)

3.15.1 – Overview

Environmental status of Underwater Noise in 2018

The achievement of GES for underwater noise in the UK is uncertain. Research and monitoring programmes established since 2012 have provided an improved understanding of the impacts of sound on marine ecosystems.

Image: situation = uncertain.

3.15.2 – Measures adopted or proposed as part of the 2021 Programme of Measures

Since the publication of the UK Programme of Measures in 2015, good progress has been made with a number of research programmes underway that are helping to establish baseline data, inform the development of thresholds and improve confidence in monitoring programmes and status assessments. The UK Marine Noise Registry (MNR) is now in operation and being used to assess levels and patterns of impulsive noise to determine risk and inform management measures.

In Part One of the Marine Strategy as part of the going forward section we agreed to explore the feasibility of developing a marine noise management strategy with relevant competent authorities, scientists and stakeholders. Given the transboundary nature of underwater noise we have been pursuing this approach through the OSPAR Convention, which is currently negotiating the next North East Atlantic Environment Strategy for the period 2021-2030. The Strategy includes draft text on development of measures on underwater noise at the regional scale and if this is agreed, we will take forward this action thorough that route. If it is not agreed, we will look to take this forward at the national level.

On 2 June 2020, the Statutory Nature Conservation Bodies' *Guidance for assessing the significance of noise disturbance against Conservation Objectives of harbour porpoise Special Areas of Conservation for England and Northern Ireland* was published. This publication, which contains noise disturbance thresholds, represents a significant milestone in managing underwater noise and protecting our marine environment. Government departments are working together to further consider how underwater noise can be monitored and managed more strategically to reduce harm and enable the sustainable and responsible growth of the offshore wind sector.

Defra has established a dedicated underwater noise project, as part of its Offshore Wind Enabling Actions (OWEA) Programme, to increase knowledge of impulsive noise in the marine environment. This builds on the Statutory Nature Conservation Bodies' (SNCB) noise guidance and support implementation of the noise guidance across English waters.

The project resources and facilitates a Strategic Advice Group comprised of policy makers, Regulators, industry, SNCBs, The Crown Estate, environmental NGOs and scientific experts, which will review evidence and facilitate the implementation of the noise guidance.

Offshore Wind Enabling Actions Programme (OWEA) – Defra's OWEA programme includes a major project on underwater noise that will bring together a wide range of decision makers and stakeholders to identify and solve key barriers that are preventing better noise management. The project will aim to increase knowledge of noise in the marine environment, building on the Statutory Nature Conservation Bodies' noise guidance for harbour porpoise SACs and will support the full implementation of the noise guidance. The project will undertake a programme of research to determine the effectiveness of the SNCB noise thresholds in harbour porpoise SACs and determine if further interventions are necessary to reduce and control underwater noise.

Animals and Wildlife (Penalties, Protections and Powers) (Scotland) Act 2020 – The Act places a duty on Scottish Ministers to lay a report before the Scottish Parliament on the use of acoustic deterrent devices at fish farms. The report, which was published on 1 March 2021, included information on the use made of acoustic deterrent devices on Scottish fish farms, any known impacts on marine mammals, consideration of whether their use is sufficiently monitored and whether existing provision on protection of animals and wildlife in relation to their use is sufficient. The report identifies a number of conclusions and the Scottish Government will work with the aquaculture sector and relevant stakeholders to take these forward.

3.15.3 - Existing measures adopted in the 2015 Programme of Measures

Regulations for the protection of marine species from underwater noise, throughout their range and marine licensing - UK regulations on habitat and species protection apply to most activities creating sounds exceeding levels determined for impulsive noise, such as pile driving and geophysical surveys. Such activities are licensed or notified and conducted under strict conditions, including the requirement to implement noise mitigation measures. Licences are issued by a range of bodies including the MMO, UK government Department for Business, Energy and Industrial Strategy (BEIS), Marine Scotland, DAERA and Natural Resources Wales (NRW).

Marine licensing, as introduced by part 4 of the Marine and Coastal Access Act 2009 and part 4 of the Marine (Scotland) Act 2010, require that potential impacts associated with a development are considered by regulators before licences are granted and this can include the assessment of potential impacts of underwater noise, as part of the process of an Environmental Impact Assessment. Mitigation measures may include: real-time enforcement of mitigation zone by Marine Mammal Observers, timing restrictions on noisy activities during periods when marine species may be at their most vulnerable (e.g. fish spawning seasons); use of noise abatement technologies to reduce source levels or the

use of alternative less noisy designs. Strategic Environmental Assessments are also carried out for public plans or programmes.

Guidance and codes of conduct

Guidance is also in place in the UK for marine users who are planning to carry out activities in the marine environment which have the potential to kill, injure or disturb a marine European Protected Species (EPS, all cetacean species included). Whilst this guidance does not contain specific thresholds it does provide a useful resource for marine users, regulators, advisers and enforcement authorities when considering whether an offence of deliberate disturbance or injury/killing a cetacean EPS is likely to or has occurred as a result of an activity. Similar guidance is available for Scottish inshore waters which was updated in July 2020. The Joint Nature Conservation Committee (JNCC), Natural England (NE) and Natural Resources Wales (NRW) have good practice guidelines and protocols in place for offshore industries and specific activities (pile driving, seismic surveys and use of explosives) to minimise the risk of injury and reduce disturbance to cetaceans.

The Wildlife Safe (WiSE) Scheme promotes responsible wild-life watching, through training, accreditation and raising awareness and is aimed primarily at wildlife cruise operators, dive and service boats and yacht skippers. Noise disturbance by boats can cause stress and harm to marine wildlife, affecting their ability to feed, breed or nurture their young. Codes of conduct are also in place. For example, Nature Scot has produced a Wildlife Watching Code to reduce disturbance. This code, published in 2006 and updated in 2017, offers practical guidance to all those who watch marine wildlife around Scotland and aims to minimise the risk to marine wildlife from encounters with people. A similar code is also in place in the Cardigan Bay SAC. Guidance in relation to Marine Wildlife Disturbance is also available in Northern Ireland.

Protection from underwater noise in Special Areas of Conservation (SAC) - Harbour porpoise, bottlenose dolphin and grey and harbour seals have extra protection from noise disturbance in SACs, designated to “avoid the deterioration of their habitats as well as significant disturbance of the species for which those areas have been designated’. This includes conducting a Habitats Regulations Assessment for any plans or projects that have the potential to cause a significant effect on the sites either in isolation or in combination with other plans and projects, and to begin to identify appropriate mitigation strategies.

In June 2020, JNCC together with Natural England (NE) and DAERA published advice to competent authorities on what could constitute Significant Disturbance within harbour porpoise SACs in England, Wales and Northern Ireland marine areas. In addition, guidance is provided on a noise management approach to keep underwater noise within levels that do not affect a site’s integrity. In order to aid the guidance implementation, the Southern North Sea Regulators working group was formed in 2019. DEFRA have been working with BEIS and the MMO and other regulators with responsibilities in the Southern

North Sea SAC to facilitate better information sharing. This group has published a Southern North Sea Activity Tracker, which records the status of regulated activities within the SAC. This information can be used in EIAs and the development of Site Integrity Plans, which will contain suitable measures to prevent the exceedance of the spatial and temporal noise limits advised in the SNCB Guidance.

International Maritime Organisation (IMO) Guidelines - Non-mandatory technical guidelines known as the 'Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life' Measure ongoing. See p.162 2015 Programme of Measures.

3.15.4 – Exceptions

No exception is being applied for this descriptor.

Annex 1 - Specific legislation implementing regulations

Alien and Locally Absent Species in Aquaculture Regulations

The regulations below implemented Council Regulation 708/2007 in domestic law:

- The Alien and Locally Absent Species in Aquaculture (England and Wales) Regulations 2011 (as amended)
- The Alien and Locally Absent Species in Aquaculture Regulations (Northern Ireland) 2012 (as amended)
- The Alien and Locally Absent Species in Aquaculture (Scotland) Regulations 2015 (as amended)

Conservation Regulations

- The Wildlife & Countryside Act 1981 (as amended) and The Conservation (Natural Habitats, & c.) Regulations 1994 (as amended) in England, Scotland, and Wales
- The Wildlife (Northern Ireland) Order 1985; The Nature Conservation and Amenity Lands (Northern Ireland) Order 1985; The Conservation (Natural Habitats, &c.) (Northern Ireland) Regulations 1995 (as amended) in Northern Ireland
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area and The Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales

Habitats Regulations

- The Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales
- The Conservation (Natural Habitats, &c.) (Northern Ireland) Regulations 1995 (as amended) in Northern Ireland
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) in Scotland
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended).

NIS Legislation

- The Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2019
- The Wildlife and Countryside Act 1981 (as amended) in England, Scotland, and Wales
- Invasive Alien Species (Enforcement and Permitting) Order 2019 in England and Wales
- The Wildlife and Natural Environment (Scotland) Act 2011 in Scotland
- The Wildlife (Northern Ireland) Order 1985 (as amended) in Northern Ireland

Nitrates Regulations

- The Nitrate Pollution Prevention Regulations 2015 (as amended) in England
- The Nutrient Action Programme Regulations (Northern Ireland) 2019 (as amended) in Northern Ireland
- The Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008 (as amended) in Scotland
- The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021

Microbeads Regulations

- The Environmental Protection (Microbeads) (England) Regulations 2017
- The Environmental Protection (Microbeads) Regulations (Northern Ireland) 2019
- The Environmental Protection (Microbeads) (Scotland) Regulations 2018
- The Environmental Protection (Microbeads) (Wales) Regulations 2018

Scallop Fishing Legislation

- The Scallop Fishing (England) Order 2012 in England
- The Fisheries Act (Northern Ireland) 1966; The Scallop (Irish Sea) (Prohibition of Fishing) Variation Order 1986; The Inshore Fishing (Daily Close Time for Scallops) Regulations (Northern Ireland) 2000; The Inshore Fishing (Prohibition of Fishing and Fishing Methods) (Amendment) Regulations (Northern Ireland) 2003; The Conservation of Scallops Regulations (Northern Ireland) 2008; Strangford Lough (Sea Fishing Exclusion Zones) Regulations (Northern Ireland) 2012; The Rathlin Island (Prohibited Methods of Fishing) Regulations (Northern Ireland) 2016 in Northern Ireland
- The Prohibition of Fishing for Scallops (Scotland) Order 2003 and The Regulation of Scallop Fishing (Scotland) Order 2017 in Scotland

- The Prohibition of Fishing for Scallops (Wales) Order 2009 and the Scallop Fishing (Wales) (No 2) Order 2010

Single Use Carrier Bags Charge legislation

- The Single Use Carrier Bags Charges (England) Order 2015
- The Single Use Carrier Bags Charge Regulations (Northern Ireland) 2013
- The Single Use Carrier Bags Charge (Scotland) Regulations 2014
- The Single Use Carrier Bags Charge (Wales) Regulations 2010

Urban Wastewater Treatment Regulations

The regulations listed below are those that previously primarily transposed the Urban Waste Water Treatment Directive (92/43/EEC) into domestic UK law:

- The Urban Waste Water Treatment (England and Wales) Regulations 1994 (as amended) In England and Wales
- The Urban Waste Water Treatment Regulations (Northern Ireland) 2007 in Northern Ireland
- The Urban Waste Water Treatment (Scotland) Regulations 1994 (as amended) in Scotland

Wildlife and Countryside Act 1981 – related devolved administration legislation

- The Countryside and Rights of Way Act 2000 and The Natural Environment and Rural Communities Act 2006 in England and Wales
- The Wildlife (Northern Ireland) Order 1985 (as amended); The Nature Conservation and Amenity Lands (Northern Ireland) Order 1995 and The Environment (Northern Ireland) Order 2002 in Northern Ireland
- The Nature Conservation (Scotland) Act 2004 and The Wildlife and Natural Environment (Scotland) Act 2011 in Scotland

Annex 2 – Actions to reduce uncertainty

Actions to reduce uncertainty on whether the measures in place are sufficient to achieve GES

For a number of ecosystem elements or descriptors access to additional data would help reduce the uncertainty as to whether the measures we have outlined in the programme of measure will achieve GES. Whilst not strictly measures some of the research, monitoring or surveys currently ongoing which will specifically address any uncertainty about whether the measures adopted will achieve GES.

Cetaceans (D1 and 4)

The extent to which GES has been achieved for cetaceans remains uncertain. There are still insufficient data for most species to assess trends in the Greater North Sea or more widely at the North East Atlantic scale. For most species, abundance has been estimated only once prior to this assessment. Bycatch in fisheries is an ongoing pressure, with harbour porpoise bycatch likely exceeding the precautionary threshold in the Celtic Seas.

Continuation of / expansion of SCANs

SCANS-III was a large-scale ship and aerial survey to study the distribution and abundance of cetaceans in European Atlantic waters. The survey was conducted predominantly during July 2016, when three ships and seven aircraft surveyed along predetermined transects for whales, dolphins and porpoises. As results continue to emerge, information from the survey will enable the conservation status of several species of cetacean to be assessed at a biologically appropriate spatial scale. We will continue to support future SCANS surveys in order to help assess the effectiveness of measures.

A number of the research projects outlined under Descriptor 11 will contribute to providing a better understanding of some of the pressures faced by cetaceans in UK waters. These projects include: The Collaborative Oceanography and Monitoring for Protected Areas and Species (COMPASS); The Marine Protected Area Management and Monitoring (MarPAMM) Programme; The East Coast Marine Mammal Acoustic Study (ECOMMAS); Joint Monitoring Programme for Ambient Noise in the North Sea project (JOMOPANS); Joint Framework for Ocean Noise in the Atlantic Seas (JONAS); Joint Cetacean Data Programme, Scottish Marine Energy Research (ScotMER).

Additionally, the Strategic Environmental Assessment (SEA) will help us to indirectly achieve GES. The SEA process aims to help inform ministerial decisions through consideration of the environmental implications of the outcome of a proposed plan/programme. This process will examine potential effects on biodiversity, population,

human health, fauna, flora, soil, water, air, and climatic factors, through which measures can be developed to prevent and reduce any adverse effects on the environment through the implementation of a plan or programme. This will indirectly feed into achieving GES by off-setting and preventing negative and adverse impact on the marine environment and ecosystems.

Seals (D1, D4)

The status of harbour seals in the Celtic Seas is uncertain. Reasons for their decline are unclear but could include naturally occurring pressures such as interactions with grey seals (predation and competition), predation by killer whales, and exposure to toxins from harmful algae.

Research is ongoing in Scotland to investigate possible causes of local declines in harbour seal populations along the Scottish coast in the Greater North Sea. The work has concluded that direct human-induced effects (e.g., industry, fishing, pollution) are not likely to be the primary cause of the decline, although other factors are still under investigation.

Work is ongoing to improve methods and estimates of grey seal population size. Trends in grey seal populations are assessed from pup counts collected during the autumn breeding season and annual ground count surveys are conducted along the east coast of England and at less frequent intervals in the South-west of England and Wales. Results from these monitoring surveys contribute to pup production estimates using state-of-the art methods. Efforts have increased in England and Wales to survey grey seals that pup in caves to get more complete counts and thus improve abundance estimates.

English east coast populations of harbour seals are surveyed annually when individuals are hauled out during the August moult. Additionally, annual aerial surveys of the east Anglian population are conducted during the breeding season to assess pup production. The ratio of pups to moult counts here can be used as an index of the population's productivity overall. These activities lead to better understanding of population trends and consequently our assessments of status. They also serve to monitor phocine distemper outbreaks and subsequent recoveries of populations.

Additionally, a number of the research projects outlined under Descriptor 11 (Underwater Noise) will contribute to providing a better understanding of some of the pressures faced by seals in UK waters. These projects include: research undertaken as part of the Underwater Noise project within Defra's Offshore Wind Enabling Actions Programme (OWEAP); The Collaborative Oceanography and Monitoring for Protected Areas and Species (COMPASS); MarPAMM; The East Coast Marine Mammal Acoustic Study (ECOMMAS)**;** Joint Monitoring Programme for Ambient Noise in the North Sea project (JOMOPANS); Joint Framework for Ocean Noise in the Atlantic Seas (JONAS); and Scottish Marine Energy Research (ScotMER).

Additionally, the Strategic Environmental Assessment (SEA) will help us to indirectly achieve GES. The SEA process aims to help inform ministerial decisions through consideration of the environmental implications of the outcome of a proposed plan/programme. This process will examine potential effects on biodiversity, population, human health, fauna, flora, soil, water, air, and climatic factors, through which measures can be developed to prevent and reduce any adverse effects on the environment through the implementation of a plan or programme. This will indirectly feed into achieving GES by off-setting and preventing negative and adverse impact on the marine environment and ecosystems.

Birds (D1, D4)

Many marine bird species migrate huge distances as part of their annual cycles. Species that breed in the UK during spring and summer, may spend other times of year outside the UK and its waters. Recent tracking of individual birds has shown that some seabird species will venture into other territorial waters on a single foraging trip whilst rearing young at colonies along the UK coast. Conversely, species that spend the winter around the coast of the UK or within its offshore waters, may have migrated from breeding grounds further north, as far as the Arctic or from the east in continental Europe.

When birds travel outside UK waters, they may be impacted by pressures that are beyond our control and may not be experienced in the UK e.g. hunting. These impacts could potentially affect the achievement of GES for UK seabirds and waterbird populations. We aim to reduce this risk by working with neighbouring states within Europe and the northeast Atlantic to protect marine birds and to monitor and assess the state of their populations. We will continue to work collaboratively through the OSPAR Convention and ICES and will maintain a close partnership with parties of the Convention on Arctic Flora and Fauna (CAFF).

Seabird Strategies – UK Administrations have committed to seabird conservation strategies. These will update information concerning the pressures affecting seabirds, provide an update on their vulnerabilities and recommend discrete species action plans. If followed, these plans will improve the environmental status of UK seabirds.

The Scottish Marine Energy Research (ScotMER) programme – This has been established by Marine Scotland to improve understanding and assess the environmental and socio-economic implications of offshore renewable developments. The Ornithology Specialist Receptor Group is concerned with evidence gaps related to bird impact assessment methods and key biological parameters used in techniques and tools used to predict impacts during the application process. A number of key research projects which have recently or are about to deliver are listed below. These will improve the understanding of the effects of collision risk and / or displacement on seabirds to help inform assessment processes and post consent monitoring requirements for further planning.

- Seabird Survey Designs for the East Coast of Scotland
- Production of a Cumulative Effects Framework for key ecological receptors
- Finding out the Fate of Displaced Birds
- Strategic review of the migratory routes and further development of stochastic Collision Risk Modelling tool
- Seabird behaviour at sea: Improving estimation of collision risk parameters
- Study to examine the impact of climate change on seabird species and integration into PVA

Additionally, the Strategic Environmental Assessment (SEA) will help us to indirectly achieve GES. The SEA process aims to help inform ministerial decisions through consideration of the environmental implications of the outcome of a proposed plan/programme. This process will examine potential effects on biodiversity, population, human health, fauna, flora, soil, water, air, and climatic factors, through which measures can be developed to prevent and reduce any adverse effects on the environment through the implementation of a plan or programme. This will indirectly feed into achieving GES by off-setting and preventing negative and adverse impact on the marine environment and ecosystems.

Fish (D1, D4)

Since 2015 we have supported studies to help the fishing industry avoid by-catch, including through the Spurdog By-catch Avoidance Programme (Project MB0142) and other scientific research[3].

To help us reduce the number of unknowns in our assessments of fish communities , methods for estimating fishing mortality rates and exploitation status of non-target fish species have been developed and implemented including data-limited empirical-based assessments[4], multi-species models[5] and methods to combine models[6].

In addition, research has been undertaken to help us understand how fish communities are impacted by changing fishing pressures and climate change[7], and ecosystem modelling studies have suggested that measures to reduce discarding in fisheries is key to improving the status of sensitive species[8]. Although fishing at MSY levels should allow the

[3] For example Silva and Ellis 2019
[4] Walker et al. 2019
[5] Thorpe and De Oliveira 2019; Heath et al. 2020
[6] Spence et al. 2018
[7] For example Thompson et al. 2020
[8] Mackinson et al. 2018

proportion of large demersal fish to each GES[9], climate change may serve to reduce the size of key species[10].

Pelagic (D1 and 4)

Recent studies by the Pelagic Habitats Expert Group (PHEG) into both phytoplankton and zooplankton have shown significant changes in lifeforms implying community changes. In some places, these are associated with changes in nutrients (phytoplankton in some inshore waters, and offshore in the southern North Sea), while more widespread changes in phytoplankton and zooplankton are associated with climate change drivers. The effects of these changes may propagate to higher trophic levels, and studies of impacts throughout the food web will indicate if measures are more appropriately targeted at other ecosystem components (e.g. bird, fish, mammals). Nevertheless, it is important to understand change in pelagic habitats not only because of their impact on biodiversity but also to enable planning for changes in the delivery of ecosystem services. For example, changes in the trophic pathways between pelagic production and fish will likely impact on Maximum Sustainable Yields (MSY) in fisheries.

Since there are multiple drivers of change in pelagic habitats, further investigations of correlation and causation are needed to aid precision targeting of appropriate measures. Investigations will need to derive high resolution datasets for both direct human pressures (including disturbance, fishing and aquaculture as well as river basin nutrient loads) and physico-chemical changes in the sea (e.g. temperature, transparency, acidification, and circulation pattern, changes). Additionally, data need to be gathered on presence of NIS otherwise measuring impact from NIS or conversely, reduction of this pressure will not be possible. It seems that reductions in nutrient loads have indeed led to improvements in the balance of planktonic lifeforms in the southern North Sea; further evidence in support of this observation will encourage continued investment in load reduction.

To sustain these investigations and reduce uncertainty in cost-effective measures to achieve GES, long-term and consistent support is required for both monitoring programmes and scientific expert involvement in data analysis and interpretation. The PHEG co-ordinates these activities in the UK and communicates with those working on this topic in other European countries through the Intersessional Correspondence Group on the Coordination of Biodiversity Assessment and Monitoring (COBAM) within the OSPAR Commission.

[9] Spiers et al. 2016; Thorpe et al. 2016
[10] Queirós et al. 2018

Benthic habitats (D1, D6)

Access to data - Benthic data collected by industry as part of EIA and SEA processes or as project appraisal for Marine Licencing are currently inaccessible for Marine Strategy assessment purposes. The Marine Strategy Monitoring and Reporting Group is looking at ways to improve access to this data and will aim to report recommendations in 2022. The aim is to combine industry data with other datasets to assess the effectiveness of measures. This work will build on our experiences of acquiring industry data through DASSH, that ensures data is compliant with UK and global standards and follows best practice, as well as evaluating innovative data portals such as the OneBenthic Dashboard.

In England, Defra's OWEA Programme includes projects to better understand the impact of offshore wind infrastructure on benthic habitats as well as research on effective mitigation methods. Project details are still being formalised but two stand-alone projects within the programme – the Big Data and Marine Net Gain projects – are expected to include benefits for benthic protection and recovery.

Additionally, England is developing proposals for a Natural Capital Ecosystem Assessment Programme that will provide new evidence on the state of benthic habitats from 2022 onwards. Part of the focus will be on improving seabed habitat maps to support seabed management and understanding the condition of those habitats to enable evaluation of the application of current and future measures.

Vessel Monitoring Systems - England is to introduce a Statutory Instrument mandating inshore vessel monitoring systems (I-VMS) on all licensed fishing boats under 12 metres in length, regardless of nationality, operating in English waters. When implemented this will provide a comprehensive view of fleet activity when combined with existing requirements for all 12m and over vessels to have a VMS system and will ensure that all commercial fishing vessel activity in England can be fully monitored. Rollout of VMS devices to the English under 12 metre fleet is expect to begin in early 2022. England has also introduced electronic catch reporting across the under-10-metre fishing fleet. This combined with existing catch reporting for larger vessels and with VMS data for the entire fleet will enable better fisheries control effect, more targeted enforcement and provide evidence of sustainable fisheries practice as well as evidence for future fisheries management measures.

Northern Ireland has consulted on VMS as part of fisheries management measures for MPAs. DAERA will hold a public consultation later in 2021 on VMS for all under 12m vessels operating in Northern Ireland waters.

Scotland is currently implementing a modernisation programme for the inshore fleet. The programme is tailoring the deployment of vessel tracking and Remote Electronic Monitoring (REM) solutions to each fleet segment, ensuring that they are both appropriate and proportionate. The scallop dredge fleet have been prioritised, although the whole fleet are within scope of the programme, regardless of vessel size, to help improve fisheries

management and monitor activity in MPAs more closely, whilst also aiding interaction and planning within our shared marine waters.

In Wales, the Welsh Government is in the process of introducing legislation to make it a statutory requirement to have a functioning Vessel Monitoring Systems (VMS) on all licensed British fishing boats under 12 metres in length operating in Welsh waters and all Welsh fishing boats wherever they are operating (including outside of Welsh waters). The Welsh Government has introduced an electronic catch reporting system for the under 10 metre fleet which will provide information on what is being caught. This system combined with VMS will give a more complete picture of current fishing levels in Wales and will assist with ascertaining whether they are sustainable.

Welsh Government has commissioned Natural Resources Wales (NRW) to assess the potential impact of specific fishing gears on SAC features based on scientific evidence. These assessments will be used to determine what, if any, management interventions are required to protect SAC features in the Welsh zone.

Welsh Marine Evidence Strategy (2019) - Published by the Welsh Government and Natural Resources Wales (NRW) this strategy provides an overview of the high-level marine evidence priorities in Wales and a framework through which we will meet those evidence challenges. This includes evidence priorities relating to benthic biodiversity. This Strategy supports the delivery of marine evidence to implement, monitor and evaluate the marine policies and plans of the Welsh Government and NRW, which look to restore and conserve marine biodiversity, promote sustainable marine use, protect our coastlines and enhance our coastal communities.

Non-indigenous species (NIS) (D2)

The UK currently collates and assesses data collected through a wide variety of projects, including ground fish surveys, the Continuous Plankton Recorder, and MPA monitoring. This provides information on NIS presence and distribution across diverse habitats and clades. To develop our understanding of NIS introduction, spread and impact, a number of research and development projects are underway. These includes exploring cost-effective and integrative methods of monitoring at high risk sites (e.g. ports and marinas) and modelling population dynamics of known invasive species to improve our understanding life cycles, habitat suitability and spread, so we can continue to refine and improve our measures to mitigate this.

Commercial fish (D3)

Studies to help the fishing industry avoid by-catch have been supported, including the Spurdog By-catch Avoidance Programme (Project MB0142) and scientific research[11].

A new research programme "Sustainable Management of UK Marine Resources programme" has been launched with UKRI (led by NERC and ESRC) to improve understanding of societal perspectives and behaviours concerning the marine environment, and integrate this into systems-based approaches that support the development and analysis of interventions and inform effective decision-making for marine management and policy development

To secure the future of UK seafood a new Seafood Innovation fund has been set up to provide a long-term vision for the industry in order to improve sustainability, productivity, collaboration management and risk reduction.

In order to reduce the number of unknowns in the assessments, methods for estimating fishing mortality rates and exploitation status of target and non-target fish species have been developed including data-limited empirical-based assessments[12], multi-species models[13] and methods to combine models[14].

Fisheries Management Plans under the Fisheries Act 2020 will directly contribute to the fisheries objectives and help implement the policies set in the Joint Fisheries Statement. The FMPs should set out policies designed to restore one or more fish stocks or maintain them at sustainable levels. Each FMP will set out the fisheries conservation measures necessary to manage fish stocks and/or fisheries within sustainable levels. Each FMP will also set out the geographic area it covers and how its effectiveness will be monitored.

Scotland: Scottish Government supports the proportionate use of Remote Electronic Monitoring (REM) as part of an effective control and enforcement system. Scottish Government will begin with the rollout of REM to the pelagic fleet and will extend to parts of the mobile fleet as appropriate and following a risk-based approach. This will include consideration of REM for higher risk vessels operating in sensitive areas. Scottish Government will also consider the use of reference fleets.

Wales: Welsh Government currently have research projects supporting Whelk, and Skates and Rays fisheries. The research on Whelk fisheries in Wales will support the proposed legislation on the management of Whelk fisheries, which has recently been consulted on.

[11] For example Silva and Ellis 2019
[12] Walker et al 2019
[13] Thorpe and De Oliveira 2019
[14] Spence et al 2018

Accompanying this, is a detailed stock assessment of Skates and Rays in Wales. The anticipated data could support new management measures for this fishery in Wales.

Food webs (D4)

Marine food webs are complex and we still do not fully understand the relationships and links between the various ecosystem components. The components of the food web are clearly changing, but it is unclear how these changes are affecting each other. Currently, aspects of fish populations are used to assess the status of food webs, but more work is needed to develop our understanding of this descriptor. It is unknown what the full extent of changes in predator-prey interactions will be, or how climatically driven changes in the plankton will affect the rest of the food web.

To get a more robust assessment of whether marine food webs are adversely affected by human activities, it will be necessary to address a number of knowledge gaps and to develop suitable indicators than can provide a more robust assessment. This includes consideration of representative species composition indicators including those for bird and marine mammal species, and biomass of predatory feeding guilds for fish, birds and marine mammals and relate these to plankton biomass and dynamics.

Further evidence for food webs will be delivered largely by existing or expanded monitoring programmes. Such as;

i) Fisheries surveys

ii) Plankton surveys

iii) Remote sensing of chlorophyll and primary production

iv) Seal Population Monitoring (SPM)

v) Seabird Monitoring Programme (SMP)

vi) Seabirds at Sea Monitoring Programme (SSMP)

vii) Small Cetaceans in European Atlantic waters and the North Sea (SCANS) surveys

viii) Northern Ireland oceanography and inshore programme

ix) Northern Ireland ecosystem functioning monitoring programme

As our monitoring improves for ecosystem components including plankton, birds and mammals, the relationships between trophic levels will become clearer. By developing refined ecosystem models, we will be able to evaluate food web status under different environmental and management scenarios.

Further details can be found in the other descriptors and Parts One and Two of the Marine Strategy.

Eutrophication (D5)

Research on N:P ratios - Investigation into near shore coastal waters have shown changes in phytoplankton communities and size profile. This correlates strongly with changes in nutrient ratios over the decades where phosphorus has been reduced at a faster rate than nitrogen. Further investigations are required to identify if additional measures are needed.

Hydrographical conditions (D7)

We will continue to assess significant infrastructure developments and their potential impacts on hydrographical conditions. Marine Plans enhance the regulatory framework for the licensing and consents process in conjunction with other relevant plans, including those relating to freshwater environments. We will continue to work with OSPAR in relation to cumulative effects, and to identify future potential developments likely to be of relevance to this Descriptor. This is particularly important in light of the anticipated increased pressure on the marine environment resulting from larger developments such as offshore wind energy generation and the need to plan for this in a way that enhances and protects the environment. We will use the results of on-going monitoring as well as improved understanding of cumulative effects to inform the review of marine plans and inform future marine licensing decisions at a strategic level.

Contaminants (D8)

The UK regulatory agencies and other stakeholders (e.g. UK water industry's Chemicals Investigation Programme) monitor for emerging contaminants to identify and consider the risk that they may pose the freshwater and marine environment and link with wider European networks to improve the assessment.

Contaminants in seafood (D9)

New European Food Safety Authority opinions have been published for dioxins and perfluorinated alkyl substances and further opinions are expected for brominated flame retardants. Following a thorough evaluation of all of these opinions by the UK Committee on Toxicity of the food safety implications arising from these opinions, new or revised regulatory limits may become applicable to fish and shellfish, possibly accompanied by revised precautionary advice to consumers. In this event, the implications for meeting the GES criteria for D9 will be reviewed and the need for additional monitoring will be considered.

Marine litter (D10)

Microplastic Research – Administrations and research partners are undertaking and funding various research projects to better understand the sources, distribution and impact of microplastics in our marine environments. A 3-year project investigating tyre particle concentrations and their subsequent transport in the marine environment has been funded by the UK's Natural Environment Research Council.

Fishing Gear Waste Management Research – Evidence gathering to support the British-Irish Council commitment to work with industry to develop solutions to improve the collection and recycling of end of life fishing gear. Each administration is undertaking 'inventory' work to better understand the material and value flow of plastics in the fishing gear supply chain, and current disposal options. Where appropriate, aquaculture is also being included in these studies.

Riverine Litter Removal Technologies – a study is underway to compile and compare technologies in use globally to capture marine litter in riverine systems.

Recreational Vessel Disposal Study – In response to the increasing levels of recreational vessel abandonment resulting in marine debris, a study is planned to better understand the quantity of recreational vessels requiring disposal and available disposal options, with a view to improving future disposal options.

Research and Innovation Framework – The UK has announced that it will contribute £25 million towards a Marine Plastics Research and Innovation Framework. This will include both Government-funded activity and support from businesses. The Framework will provide a platform for bringing together governments, industry, researchers and practitioners from across the Commonwealth to work together to tackle the issue of marine plastics. Activities will include new jointly funded interdisciplinary research and innovation programmes developed through the Framework.

Underwater noise (D11)

The UK Marine Noise Registry (MNR) – This has been operational since 2015 and has been used to log impulsive sound events from various activities in the Greater North Sea and the Celtic Seas. It records spatial and temporal data on noise-generating activities, obtained mainly through the existing licensing processes. This noise registry is hosted and managed by JNCC on behalf of Defra and the Devolved Administrations. These data are used to assess levels and patterns of noise in order to determine whether these could potentially compromise the achievement of GES. The data are also stored by the OSPAR Regional Noise Registry and have been used as part of the OSPAR Intermediate Assessment 2017. The data will also be used as part of a common regional indicator on the risks of disturbance from impulsive noise currently under development through OSPAR. The registry aids with the establishment for impulsive sound in UK seas, aiding

with improving status assessments and the establishments of patterns and trends to improve risk mapping.

The Collaborative Oceanography and Monitoring for Protected Areas and Species (COMPASS) project - This has piloted ten passive acoustic monitoring stations in the cross-border waters of Scotland, Northern Ireland, and the Republic of Ireland since 2018. The project helps to build an understanding of how cetaceans use an area of sea while simultaneously measuring the acoustic environment that they are exposed to. It is anticipated that at least two of these stations (located within the Skerries & Causeway SAC & the North Channel SAC) will continue as part of a long-term ambient noise monitoring programme in NI waters.

The Marine Protected Area Management and Monitoring (MarPAMM) – This project has piloted six passive acoustic monitoring stations in the cross-border waters of Scotland and Northern Ireland since 2019. Ambient noise is being coordinated alongside COMPASS, following the same methods. The project aims to develop tools for monitoring and managing a series of protected and coastal marine areas in the study area. It will produce a number of regional models including ones for; sea birds, protected seabed-dwelling species and habitats, seal foraging, coastal processes, and underwater noise. These data and models will help to improve status assessments and inform the development of appropriate, risk-based, management measures.

Both COMPASS and MarPAMM are collaborating with the JONAS project to coordinate direct measurement and modelling of ambient noise and the application of these outputs for MPA management.

The Joint Framework for Ocean Noise in the Atlantic Seas (JONAS) project - This is an Interreg Atlantic Area-funded research project that brings together partners from Ireland, the UK, France, Portugal, and Spain to address the transboundary issue of underwater noise. The project investigates cumulative noise impacts, developing noise maps and large-scale noise risk mapping, as well as tools and methodologies to improve confidence in noise status assessments. Marine activities such as shipping, offshore surveys, and construction produce continuous and impulsive noise that can adversely affect marine species. JONAS is addressing the risks of these acoustic pressures on marine biodiversity by improving ocean noise monitoring and risk prediction. Through research and outputs, JONAS aims to support better planning, decision-making and the development of measures.

The East Coast Marine Mammal Acoustic Study (ECOMMAS) project – This uses acoustic recorders, known as C-PODs, at 30 locations off the east coast of Scotland, to detect echolocation clicks. At ten of these locations, a broadband acoustic recorder has also been deployed, to record ambient noise levels, as well as other animal vocalisations. The project began in 2013 and is ongoing. The broadband acoustic data is used in UK Marine Strategy monitoring to help us understand the distribution of the pressure from ambient underwater noise and will help inform future measures if needed.

The Joint Monitoring Programme for Ambient Noise in the North Sea project (JOMOPANS) - The aim of this is to develop a framework for a fully operational joint monitoring programme for ambient sound in the North Sea. Outputs will be tools for managers, planners, and other stakeholders, to facilitate the assessment of effects of ambient noise the environmental status of the North Sea. JOMOPANS adopts an innovative combination of computational modelling and state-of-the-art measurements at sea to implement a joint monitoring programme for ambient noise in the North Sea. It studies the effectiveness of various options for reducing these environmental effects through coordinated control measures for the entire North Sea Region. The project will produce the tools necessary for managers, planners, and other stakeholders to incorporate the effects of ambient noise in their assessment of the environmental status of the North Sea. Additionally, the program enables the development of measures to improve the environment.

The Scottish Marine Energy Research (ScotMER) programme – This has been established by Marine Scotland to improve understanding and assess the environmental and socio-economic implications of offshore renewable developments. The Marine Mammals Specialist Receptor Group is concerned with evidence gaps related to marine mammal ecology and the potential impacts of offshore renewables on marine mammals. A number of key research projects which have recently or are about to deliver are listed below. These will improve the understanding of the effects of impulsive underwater noise on marine mammals and inform the development of future measures:

- Further development of the marine mammal Dynamic Energy Budgets models
- Production of a Cumulative Effects Framework for key ecological receptors
- Review of Noise Modelling Approaches to Inform Marine Mammal Pile Driving Noise Impact Assessments
- Examining the potential of using dynamic energy budgets in assessments for marine mammals
- Up to date regional baselines for marine mammal knowledge across North Sea and Atlantic areas of Scottish waters
- Improvements to modelling population consequences of disturbance for marine mammals (iPCoD)

A number of other research programme have or are providing additional knowledge that will support the development of future measures:

- UK Offshore Energy Strategic Environmental Assessment programme
- The Crown Estate's Offshore Wind Evidence and Change (OWEC) Programme's four core themes; spatial coordination and co-location, improving the understanding of environmental impacts and benefits, investigating the derogation process, and investigating delivery of net environmental gains.
- A programme of research designed to assess the effectiveness of noise thresholds in harbour porpoise SACs

- A 2019 workshop and programme of research designed to identify and test noise abatement technologies associated with the underwater noise pollution from pile driving and the removal of unexploded ordnance in UK waters
- Offshore Renewables Joint Industry Programme projects on noise

Annex 3 – Descriptors achieving GES

Descriptors at Good Environmental Status

Descriptors that are in or have largely reached GES (D5, D7 and D9) and where there are no exceptions to consider the approach is to maintain the existing measures and continue with the monitoring programmes (UK Marine Strategy Part Two) to ensure that the GES status continues. There are no new measures to consider for these descriptors, this annex sets out the ongoing measures.

Eutrophication (D5)

Environmental status of eutrophication in 2018

The UK has largely achieved its aim of GES for eutrophication. A small number of eutrophication problems remain in coastal and estuarine waters, representing 0.03% of the total UK Exclusive Economic Zone, and 0.41% of estuarine and coastal waters.

High level objective for GES from the updated Marine Strategy Part One

Human-induced eutrophication is minimised in UK marine waters.

Criteria and targets for measuring progress towards GES from 2018 to 2024

- **Nutrient concentrations:** Nutrient concentrations are below the levels which could lead to harmful eutrophication effects.
- **Chlorophyll a concentrations:** Chlorophyll a concentrations are below levels which could lead to harmful eutrophication effects.
- **Dissolved Oxygen content:** Dissolved oxygen content in coastal waters are above levels which could lead to harmful eutrophication effects.

Operational targets relating to the programme of measures

We will work with other countries to further refine the OSPAR Common Procedure and develop threshold values which take account of regional or sub-regional specificities if this proves to be necessary. We will work with other countries to develop remote sensing

Pressures addressed by measures for eutrophication

The measures for eutrophication outlined in this section address the pressure from the input of nutrients and input of organic material.

Measures adopted or proposed as part of the 2021 Programme of Measures

The control of Nitrogen Oxides (NOx) emissions from ships through the Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2008 (as amended): This measure, which requires engines installed on a ship to meet the specified NOx emission standard, is primarily designed to improve air quality. It will also contribute to the reduction of NOx inputs to both UK waters and the waters of other countries. The organisations responsible for implementation of these regulations are Department for Transport (DfT) and MCA.

On 1st January 2021, Baltic and North Seas became NOx Emission Control Areas under IMO MARPOL Annex VI. Engines installed on ships constructed on or after that date which operate in these areas must meet IMO NOx emission Tier III standards. DFT has led the transposition of MARPOL Annex VI requirements into UK legislation by amending Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2008. Draft regulations were published in May 2021 and will be laid before Parliament in July 2021.

Scottish Nitrogen Balance Sheet - The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 requires the establishment of a national Nitrogen Balance Sheet for Scotland (SNBS), via regulations, by March 2022. The SNBS will provide a method for quantifying baseline “nitrogen use efficiency” across all sectors of the Scottish economy and environment - including freshwater and coastal waters, as well as soils and the atmosphere.

Scotland is currently consulting on a range of proposed updates to controls over the storage and application of organic materials under the Water Environment (Controlled Activities) (Scotland) Regulations 2011. The key aims are to consolidate existing controls for the storage of slurry and silage; to introduce controls over the storage of materials associated with energy production; and to propose new requirements regarding more targeted and efficient application of slurry and liquid digestate.

The National Emissions Ceilings Regulations 2018 - Reduced emissions of nitrogen oxides and ammonia ensuring compliance with our obligations under the Convention on Long Range Transboundary Air Pollution which sets emission ceilings on forms of nitrogen. This measure also contributes to the reduction of possible transboundary impacts of nutrients to the waters of other countries.

The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 - These introduce mandatory measures to address nitrate pollution across the whole of Wales. The regulations replace the Nitrate Pollution Prevention (Wales) Regulations 2013 which applied in designated Nitrate Vulnerable Zones only, covering 2.4% of Wales.

The Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018 - Commonly known as the Farming Rules for Water these came into

force in April 2018 and provide a baseline of good practice measures across England that will reduce nutrient losses to water. They embed in law various recommended good practices such as nutrient planning, and soil and manure management. They provide a step-by-step checklist aimed at ensuring that fertilisers are spread to meet crop and soil needs. Other rules safeguard water quality by requiring farmers to judge when it is best to apply fertilisers, where to store manures and how to avoid pollution from soil erosion.

Burry Inlet and Loughor Estuary - The Burry Inlet and Loughor Estuary is a Site of Special Scientific Interest in Carmarthen, Wales. Cockle beds in the inlet have been recording high mortality levels since the early 2000s. Combined sewer overflows (CSOs) are the main cause of nutrient pollution and eutrophication of shellfish waters in the area. Dwr Cymru Welsh Water has been investing in a multimillion pound scheme on a combination of new sustainable urban drainage techniques called RainScape and are developing an additional form of secondary treatment which will increase the volume of flow treated at the existing works to provide the planned reductions in CSO discharges. This will further protect the area against flooding whilst also further improving the quality of the local shellfish waters.

Living With Water Programme (LWWP) – This will deliver a Strategic Drainage Infrastructure Plan for Belfast which will provide environmental enhancement through an integrated approach to drainage and wastewater management. The **Shared Waters Enhancement & Loughs Legacy (SWELL)** project represents a major cross-border programme of work aimed at improving water quality in the shared waters between Northern Ireland and Ireland through enhanced wastewater treatment. The four-year SWELL project involves the construction of new wastewater treatment works as well as upgrades to sewerage networks on both sides of the border, and catchment studies and ecosystem modelling within the Carlingford Lough drainage basin and the Lough Foyle drainage basin to address wastewater pollution.

Regulatory framework for Finfish Aquaculture - In June 2019 SEPA published a strengthened regulatory framework for Scotland which includes requirements to protect the marine environment from nutrients discharged from aquaculture. The framework will ensure that fish farm developments are better matched to the capacity of the sea to disperse and assimilate their waste discharges.

Future environmental land management schemes: Sustainable Farming Incentive, Local Nature Recovery scheme and Landscape Recovery scheme - These schemes will operate together and pay for sustainable farming practices, such as more efficient fertiliser and organic manure use, improve environmental outcomes, and reduce carbon emissions. They will create habitats for nature recovery and make landscape-scale changes such as establishing new woodland and restoring peatland and saltmarsh, providing key means to deliver against the 25 Year Environment Plan goals and carbon net zero targets. The piloting and implementation of the three future schemes will be funded by gradual reductions in the Basic Payment Scheme from 2021 to 2027. This

brings a new era for farming by using public money to reward farmers and land managers for delivering environmentally sustainable actions.

Existing measures adopted in the 2015 Programme of Measures

The main existing measures to address the above targets are taken through:

River Basin Management Plans (RBMPs) - These include measures to achieve the objectives for specific water bodies, particularly where nitrogen thresholds have resulted in the classification of 'moderate status' and an additional assessment of the biological quality indicates that measures to tackle eutrophication are necessary. The particular river basin districts concerned are indicated in the RBMPs and associated documents. The national measures below will address most of the small number of areas identified as eutrophic. However other localised measures may also be proposed that will be set out in the RBMPs. Particular types of measure which have been included in the RBMPs include reduced use of fertilisers, better fertiliser and manure management and farm management practices to reduce nutrient run-off. There are also more general measures to tackle diffuse agricultural pollution including codes of good agricultural practice, agri-environment measures, and Catchment Sensitive Farming (CSF).

Some of the measures proposed in the RBMPs are voluntary. However, these have been developed following extensive consultation through the draft RBMPs, the liaison panels and location specific workshops, and are considered to be deliverable and achievable within the next cycle and will complement the suite of measures that are in place. For more detail see 2.4 River Basin Management Plans.

The Water Environment (Controlled Activities)(Scotland) Regulations - In Scotland specific legislative measures were introduced to protect and improve the water environment and which contain general binding rules to mitigate diffuse pollution. The priority catchment initiative continues to support land managers to achieve and maintain compliance with regulatory standards (e.g. General Binding Rules) to minimise soil and nutrient loss to the water environment in 47 catchments across Scotland.

Measures to address the agriculture pathway

Rural Development Programmes – Measures are in place across the UK to work with farmers to secure good practice and improve environmental protection measures, including the Rural Development Programmes (RDPs) in England, Wales, Scotland, and Northern Ireland. These programmes, which contribute to reducing nitrates from entering rivers and coastal areas, are contributing to a significant reduction of diffuse pollution from agriculture. There are different RDPs in place across the Administrations:

- **England:** Since 2015 England have launched options under the Countryside Stewardship scheme to promote the active management of diffuse pollution and

prevent run off including the provision of specialist advice on measures that individual farms can undertake. As the UK has now left the EU, these capital grants continue from 2021 under domestic funding.

- **Northern Ireland:** The Environmental Farming Scheme (EFS) is DAERA's agri-environment scheme funded under the Rural Development Programme 2014 - 2020. EFS has been designed to address specific environmental needs, primarily relating to biodiversity and water. EFS has incorporated options to protect water quality by fencing of waterways and creating riparian buffer zones.
- **Scotland:** Scotland has taken an active role in ensuring the water around Scotland contributes to sustainable economic growth. The SRDP has contributed through LEADER and Agri-Environment Climate Scheme (AECS) by providing support for investment in coastal embankment breaching, lowering or removal and support for the conservation of coastal heaths and coastal floodplains. With the 2014-2020 programme now complete, Scotland continues to support the SRDP domestically while piloting new approaches through NatureScot between 2021 and 2024. Existing contracts will continue to run for their five-year lifespan, ensuring some ongoing benefit in the above areas. AECS was reopened in January 2021 to support delivery of a wide range of environmental measures, including a focus on slurry stores, and conversion to and maintenance of organic farmland. The future direction of Scottish rural support policy, post-CAP, will ensure that the agricultural sector is supported to play its part in reducing emissions and biodiversity loss while farming sustainably and profitably in future.
- **Wales:** The current RDP was due to finish in 2020, however, the programme will continue until December 2023 to ensure the existing commitments will be delivered in accordance with the EU withdrawal agreement. In parallel, a domestic rural support scheme is in development in Wales based on retained EU Law. Future plans include the introduction of an Agriculture (Wales) Bill under which new sustainable land management schemes will be developed.

Nitrates Regulations (see Annex 1 for full list) **-** These aim to protect water quality across the UK from agricultural sources polluting ground and surface waters and by promoting more sustainable farming practices. Nitrate levels in the water environment are required to be monitored and Nitrate Vulnerable Zones (NVZs) can be established accordingly for areas of land that drain to water bodies that are either polluted or at risk of pollution from nitrates. In designated NVZs farmers are required to comply with specific measures, such as having adequate storage for organic manure or setting temporal limits on spreading material to land, in order to reduce the amount of nitrate leaching and run-off to water bodies.

- **England:** At present, 55% of England is designated as NVZ.
- **Northern Ireland:** A "total territory" approach has been applied to Northern Ireland where a Nutrient Action Programme (NAP) applies to all farms across Northern Ireland.
- **Scotland:** Currently there are five NVZs in Scotland.

Urban Waste Water Treatment (UWWT) Regulations (see Annex 1 for full list) **-** These regulations require that the trophic or nutrient status of all coastal, estuarine and fresh water bodies are reviewed and that waters are identified as sensitive areas on the basis of certain criteria and scientific evidence. For those waters that have been identified as sensitive areas, qualifying wastewater treatment works discharging either directly or indirectly into the sensitive area must put in place more stringent processes for the treatment of urban wastewater.

Progress update:

- **England**: With effect from May 2019 Defra identified 20 new freshwater river bodies in England that are sensitive to the risks of algal blooms resulting in reduced oxygen levels and aquatic life (eutrophication). Once designated as sensitive, water companies are required to put in place additional treatment at qualifying sewage treatment works within 7 years to reduce nutrient (phosphorus) discharge into the environment. These are just part of a large programme of further sewage treatment work phosphorous reduction measures proposed for PR19 (2020-27). These measures are mainly targeted at progress towards the water industry's fair share of good ecological status for phosphorous and will improve some 5,500 km of river in England at a capital cost of around £1.65 billion. Under this programme, around 900 sewages treatments works serving 15 million population equivalent will have new/tighter phosphorous reduction treatment by 2027.
- **Scotland:** A review of designated sensitive areas was carried out by SEPA in 2019. The review presented no new candidate sites for Sensitive Areas (Eutrophic) designation. However, it recommended 1 river site for de-designation, hence the number of nutrient sensitive areas in Scotland was reduce from 197 to 196 (170 river, 25 loch, and 1 transitional waterbodies). A map of the areas is available here.

Measures to address the emissions pathway

Environmental Permitting Regime - Reduced emissions of nutrients to the atmosphere through the setting of appropriate emission limits through the Environmental Permitting Regime which sets emission limits for nitrogen in line with the best available abatement technologies. This measure is also aimed at reducing any possible contribution to transboundary impacts of nutrients to the waters of other countries.

The control of Nitrogen Oxides (NOx) emissions from ships through the Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2008 (as amended) - This measure, which requires engines installed on a ship to meet the specified NOx emission standard, is primarily designed to improve air quality. It will also contribute to the reduction of NOx inputs to both UK waters and the waters of other countries. The organisations responsible for implementation of these regulations are Department for Transport and Maritime and Coastguard Agency.

Exceptions

No exception is being applied for this descriptor.

Hydrographical conditions (D7)

Overview

Environmental status of hydrographical conditions in 2018

The UK continues to achieve its aim of GES for hydrographical conditions.

Existing measures adopted in the 2015 Programme of Measures

For responsible authorities see 2.1 Marine planning and marine licensing.

Marine licensing (HC1, HC2)- Measure ongoing. See p.124 2015 Programme of Measures.

Planning Act 2008; Planning Act (Northern Ireland) 2011; Planning etc. (Scotland) Act 2006; National Policy Statements (England and Wales) and the National Planning Framework (Scotland) - Measure ongoing. See p.124-125 2015 Programme of Measures.

Marine planning, as provided for in the Marine and Coastal Access Act 2009, Marine (Scotland) Act 2010 and Marine Act (Northern Ireland) 2013 (HC1, HC2) - Measure ongoing. See p.125 2015 Programme of Measures.

The Coastal Concordat (HC1, HC2) - this sets out the processes for coastal development in England. This framework is used to better coordinate and achieve more efficient regulation of costal developments given the overlap between local planning authorities (LPAs) and marine licencing in intertidal areas. There are currently 20 LPAs who are adopters of the coastal concordat, and Defra will continue to engage with and encourage other LPAs to sign up to the concordat.

The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended), The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 and terrestrial planning (HC1, HC2)- A developer wishing to apply for a marine licence for a new EIA development at sea must provide the relevant marine licensing authority with an assessment of the potential environmental impacts of the new development. This system plays a role in identifying where developments are likely to have an impact at scales relevant to this Descriptor. Terrestrial planning extends to the low

water mark, and land-based developments can have a direct impact upon the marine area (e.g. development along the coast can require extensive sea defences).

Habitats Regulations (see Annex 1 for full list) (HC1)- Measure ongoing. See p.125 2015 Programme of Measures.

For more detail see 2.6 Habitats Regulations.

River Basin Management Plans (RBMPs) (HC1)- These have an important role in marine planning in inshore areas, defining good ecological status and ensuring best practice so that new developments such as flood defence schemes and maintenance regimes are designed to minimise any impacts on, and maximise any benefits to improve, water quality and hydromorphology. For more details see 2.4 River Basin Management Plans.

Shoreline Management Plans (SMPs) (HC1) - These cover the entire shoreline of England and Wales providing large-scale assessment of the risks associated with coastal processes and identifying the most sustainable approach to managing the flood and coastal erosion risks to the coastline. The complete list of SMPs for England and Wales can be found online.

Exceptions

No exception is being applied for this descriptor.

Contaminants in seafood (D9)

Overview

Environmental status of contaminants in seafood in 2018

The UK has achieved its aim of GES for contaminants in seafood. There is a high level of compliance with agreed safety levels.

High level objective for GES from the updated Marine Strategy Part One

Concentrations of specified contaminants in fish and other seafood caught or harvested for human consumption in UK seas do not exceed agreed safety levels set in Regulation (EC) No 1881/2006.

Measures adopted or proposed as part of the 2021 Programme of Measures

As we continue to meet GES for this descriptor no additional measures were considered necessary over the previous six-year cycle. Background contamination in the marine environment is relatively stable and we anticipate that measures to reduce emissions through D8 activities should lead to a gradual lowering of contaminant levels in seafood. Nevertheless, we will continue to be vigilant with regard to emerging risks including those identified from D8 activities and/or from other information sources and will carry out investigations as necessary to ensure that appropriate risk management measures are in place to protect seafood consumers.

Existing measures adopted in the 2015 Programme of Measures

Legislation on contaminants in food - Since 1 January 2021, UK law has been based on retained EU law under the European Union (Withdrawal) Act 2018. Limits for certain environmental contaminants in food, including seafood, are in line with Regulation 1881/2006 (as amended). Under retained EU Regulation 178/2002, which establishes the general principles of food law, action to protect public health can also be taken for unregulated contaminants on the basis of a risk assessment indicating a significant health concern. Retained EU Regulation 2017/625 includes specific rules for official controls of products of animal origin, including fish and shellfish, and Article 9 of the same regulation stipulates that official controls should be carried out on a risk basis.

Exceptions

No exception is being applied for this descriptor.

Annex 4 – Progress since 2015

We have provided an overview where there has been an update to cross-cutting measures or measures for a specific descriptor below, including an update on progress made over the current cycle of the UK Marine Strategy. A full description of each can be found in 2015 Programme of Measures.

Marine planning and marine licensing

Marine planning - updates

Since 2015 Marine plans are being developed and applied nationally:

- **England – Marine Management Organisation:** all marine plans are now in place. Marine plans were adopted for East in 2014, South in 2018 and North East, North West, South East and South West in June 2021. The documents for each plan area demonstrate where each marine plan's objectives and policies contribute either directly or indirectly across all of the 11 GES descriptors. Under the Marine and Coastal Access Act 2009 the marine plan authority is required to keep the effects and effectiveness of marine plans under review and to report on this at least every three years (from date of adoption). The effectiveness of the East Plans has been reported twice, once in 2017 and again in 2020, with the South Plans undergoing their first report in 2021.

- **Northern Ireland – Department of Agriculture, Environment and Rural Affairs (DAERA):** Draft national marine plan for Northern Ireland was issued for public consultation in 2018. There is a requirement to keep under review the effects, and effectiveness, of the plan's policies towards securing objectives and responses are being considered. Work is underway to shape a new iteration of the Marine Plan for Northern Ireland.

- **Scotland – Scottish Government:** National Marine Plan for Scotland adopted in 2015 and last reviewed in 2021. The Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010 provide the legislative basis for it. Regional plans are also being developed in some of Scotland's 11 marine regions. Scotland's National Marine Plan has adopted the 11 GES Descriptors as strategic objectives, ensuring that these underpin the planning process.

- **Wales – Welsh Government:** Welsh National Marine Plan (WNMP) adopted in 2019. Contains a framework of policies to guide marine decision making and supporting Wales-specific legislative requirements relating to sustainable development and the sustainable management of natural resources. Includes policies helping to support the achievement of GES, including policies relating to

hydrographical conditions, the resilience of marine ecosystems and cumulative effects. A Monitoring and Reporting Framework sets out the approach to monitoring the effectiveness of WNMP policies.

River Basin Management Plans (RBMPs)

Progress update –

Results from RBMPs which support the objectives of the UK Marine Strategy provide a mixed picture:

- **England:** surface water ecological status has remained at the same level, compared to the last assessment in 2016. 16% of water bodies (14% of rivers) meet the criteria for good ecological status, with 45% of coastal water bodies meeting the criteria.
- **Northern Ireland:** In 2015 nine (36%) of Northern Ireland's transitional and coastal waters were at good status or better. By 2018 this had increased to 10 water bodies (40%).
- **Scotland:** In Scotland, since 2015, there has been a 6.5% increase in coastal waterbodies at good or better ecological status and also a slight improvement in transitional waters (intertidal areas). The Scottish Environment Protection Agency's (SEPA) most recent 2018 classification indicates that 87.5% of transitional waterbodies and 99.5% of coastal waterbodies (up to 3 nautical miles) are at good or better ecological status.
- **Wales**: improvements have been seen in all river basin districts since 2015. Data from 2018 shows that in Wales 42% of all surface water bodies are now at good or better ecological status compared to 37% in 2015. That figure includes both freshwater and marine (transitional plus coastal) water bodies, with 35% of marine water bodies currently at good or better ecological status.

Additionally, in England, there have been significant improvements to the way chemical status is assessed, looking at new substances, new standards, and improved techniques and methods. These improvements and more rigorous standards mean that no surface water bodies have met the criteria for achieving good chemical status (compared to 97% pass in 2016). This is mainly because targeted biota sampling was used to assess the presence of more persistent chemical substances and more accurately reflecting the extent of these chemicals in the environment. There is little underlying change in chemical status for other chemicals.

In Wales, this process is not suitable for modelling the whole of Wales because of a lack of suitable sample sites. Welsh Government are considering a more suitable classification method for Wales to assess chemical status.

UK Administrations are currently preparing updated RBMPs to cover the third six-year cycle from 2021 to 2027. In England, the EA are reviewing RBMPs in 2021, although there may be a delay in due to the Covid-19 pandemic. The EA are also leading on the cross-border Severn RBMP. SEPA is currently preparing to consult on the proposed RBMPs that cover

third six-year cycle from 2021 to 2027. NRW consulted on the Western Wales and Dee third cycle RBMPs in the first half of 2021.

The plans set objectives for all rivers, lakes, wetlands, estuaries, coastal and ground waters in each river basin district and cover the period 2021-27. They are integrated at catchment scale, ensuring a connection across the wider environment for people and wildlife, from source to sea.

Marine Protected Areas (MPAs)

Progress update – Over the current cycle of the UK Marine Strategy, the UK has continued to establish and expand its network of MPAs with 358 MPAs throughout UK waters (excluding Overseas Territories). Overall, the spatial coverage of the UK MPA network has more than doubled since 2013, changing from 16.4% total UK coverage to 38% Figure 3). A breakdown of the features protected per site can be found on the JNCC website.

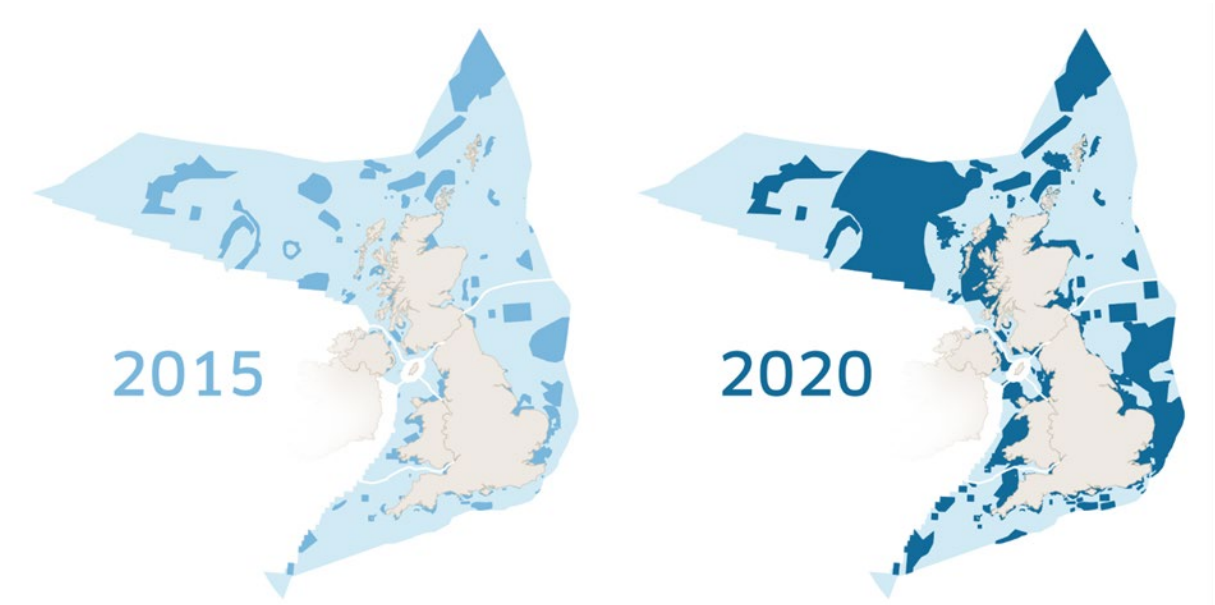


Figure 2 - The image shows that spatial coverage of the UK MPA network has increased between 2015 and 2020.

- **England:** Since the 2015 report in England, a second tranche of 23 Marine Conservation Zones (MCZs) were designated under the UK Marine & Coastal Access Act 2009 in 2016; building on the first tranche of 27 MCZs which were designated in 2013. A third and final tranche of 41 additional MCZs and the inclusion of 12 designated features to existing MCZs were designated in 2019. In addition, the MMO has developed an ambitious programme for assessing sites and implementing byelaws, where necessary, to manage fishing activity in all English offshore MPA, the programme is intended to complete by the end of 2024. All English offshore sites have been prioritised based upon an assessment of their vulnerability and feature sensitivity to fishing activity. Draft management measures

for the first four sites include proposals to ban bottom-towed fishing and the aim is for the byelaws for these initial sites to be in place by September 2021.

- **Northern Ireland:** DAERA designated four MCZs in 2016 to complement their existing MPA network and the North Channel SAC was designated for Harbour porpoise in 2019. DAERA consulted on proposals for two marine SPAs in 2016 and these are being progressed towards formal classification. There are currently 48 MPAs, occupying 38% of the Northern Ireland inshore region and a network assessment concluded that the suite of MPAs in the Northern Ireland inshore region was very close to reaching the objective of delivering an ecologically coherent network in Northern Ireland.
- **Scotland:** Scottish Ministers designated the West of Scotland deep-sea marine reserve in 2020. This MPA is the largest in Europe and contributes to the conservation of vulnerable deep-water environments to the west of Scotland such as cold-water coral reefs and deep-water fish species, including leafscale gulper shark and Portuguese dogfish. Four additional MPAs providing protection for species such as minke whale, Risso's dolphin and basking shark were adopted in December 2020 along with 12 SPAs for seabirds and waterfowl. Plans are also now also in place to take forward fisheries management measures for offshore sites now that our relationship with the EU has been settled.
- **Wales:** Work is well underway to identify MCZs that complement the existing suite of European Marine Sites. Priorities for MCZ designation in Wales are based on 'shortfalls' for habitats and species that characterise Wales' marine environment based on analysis undertaken by JNCC. In 2019, three harbour porpoise SACs either wholly or partially within Welsh waters were designated. Wales also has an MPA Network Management Framework which sets out the structure for improving the management of MPAs in Wales for the period 2018 – 2023. This is supported by an annual Action Plan, which sets out the priority network-level actions to improve MPA management and, therefore, improve or maintain the condition of the features of the MPA network in Wales. Together, the Framework and Action Plan provide a steer for Management Authorities to guide delivery of the long-term vision for the management of the network. Elements of the Framework and Action Plan, including NRW's MPA Condition Improvement Project, will contribute to the achievement of the targets for seals, cetaceans and birds in the Welsh component of the Celtic Seas sub-region.

These additional designations contribute significantly to the UK network of MPAs and already take us past the joint aim of 30% spatial coverage by 2030.

In addition, through the respective UK Marine Acts, each country within the UK is required to lay a report before their respective parliament to assess the degree to which a representative network of MPAs has been established that contributes to the conservation or improvement of the marine environment

The focus across the UK since the last reports on MPA implementation in 2018 has been on the implementation of additional MPA designations to achieve a representative and

ecologically coherent network. With the exception of the on-going Welsh MPA Network Completion project, designation work within the UK is now largely complete and the focus moving forward across all Administrations is on the implementation of appropriate management measures to achieve the conservation objectives set for the individual sites that make up the network and on the continued implementation of cost-effective marine environmental monitoring strategies.

As the implementation of management measures progresses this will contribute to achieving or maintaining GES for a number of descriptors, particularly Descriptor 1 (biodiversity) and Descriptor 6 (seafloor integrity).

Birds (D1, D4)

MPA network

MPAs including features designated under national and international legislation could have beneficial effects on bird populations, particularly in terms of maintaining good foraging conditions and by managing disturbance impacts from tourism/recreational activities (both voluntary and regulatory measures to manage access/activity levels). MPAs are designated and managed though a number of regulations as set out below.

Conservation Regulations (see Annex 1 for full list**) -** Measures ongoing. See p.86-87 2015 Programme of Measures

Progress update - Since 2015 29 SPAs have been classified or extended in the marine environment: 13 in waters around England, 11 in waters around Wales, 10 in waters around Scotland, and two joint sites (one occurring in waters around England and Scotland and another in waters around England and Wales). This brings the current number of SPAs with marine components in UK waters to 123. A further three have been proposed - two in waters around Northern Ireland and one in waters around Scotland. Furthermore, additional marine species and seabird assemblages have also been added to a number of existing SPAs.

Conservation objectives for these sites are being developed and have been published for some sites.

Marine and Coastal Access Act 2009, Marine (Scotland) Act 2010 and Marine Act (Northern Ireland) 2013 - Progress update - In Northern Ireland the Rathlin MCZ was designated in 2016 for black guillemot. The MCZ subsumes Rathlin Island SPA and SAC, and extends beyond these boundaries. DAERA has consulted on proposed fisheries measures for a number of MPAs (including Rathlin MCZ) within the Northern Ireland inshore area. These proposed measures may have an indirect benefit to bird features as the primary aim is to reduce adverse impacts to the designated (benthic) habitats.

In Scotland black guillemot have been listed as a feature across six MPAs.

Benthic habitats (D1, D6)

Progress update on cross cutting measures that protect benthic habitats

England: In May 2019, Defra announced the designation of a third tranche of national MPAs to complete the MPA network in Secretary of State waters. This tranche included 41 new sites and additional benthic features being added to already designated sites. In English inshore waters, over 90 MPAs are now protected from bottom towed fishing gears. Some of the sites with permanent closure to bottom towed fishing include Poole Harbour, The Needles, Bembridge, Lyme Bay and Torbay.

Northern Ireland: Four MCZs were designated in December 2016 which increased protection for benthic habitats. A network assessment (2018) concluded that the suite of MPAs in the Northern Ireland inshore region was very close to reaching the objective of delivering an ecologically coherent network in Northern Ireland.

Scotland: In December 2020, the Scottish Government announced the designation of four additional national MPAs that included additional MPA network representation for benthic features in territorial waters such as burrowed mud. This is in addition to the designation of a deep-sea marine reserve for a range of threatened as well as representative deep-sea bed habitat types that covers most of the deep-sea to the west of Scotland in September 2020.

Wales: progress is being made with the identification of national MPAs to address gaps in the representation and replication of benthic habitat types within the network of existing MPAs. Work is underway to identify a number of MCZs in Welsh waters to address these gaps. A Task and Finish Group has been established to inform this process.

River basin management plans (RBMPs) - These include measures and delivery mechanisms which contribute to or will contribute towards the achievement of GES in estuarine and coastal waters. Benthic invertebrates, seagrass and saltmarsh are key biological elements that are part of the GES assessment that drive measures where elements are at less than good status. For more detail see 2.4 River Basin Management Plans.

Food webs (D4)

The progress we have made across all other ecosystem components and descriptors (e.g. cetaceans, seals, birds, fish, pelagic habitats, commercial fish, eutrophication, contaminants) all contributes to food webs. Further details of this progress can be found in each of these ecosystem component chapters. This includes:

- The percentage of commercial fish (quota) stocks fished at maximum sustainable yield has increased by a further 5% between 2015 and 2018, and a continued recovery is evident (a further increase of 2%) in the percentage of quota stocks with biomass at levels that maintain full reproductive capacity.

- The progress we have made towards establishing a coherent and representative network of MPAs is expected to contribute towards the stabilisation of marine biodiversity, maintenance of food web functioning and restoration of species and habitats in the long term.

- The closure of sandeel fishing off North-East England and East Scotland since 2000, and voluntary bans on sandeel fishing around Shetland as direct measures for seabird conservation; and

- The UK's commitment to a legally binding target of net zero emissions by 2050 (2045 in Scotland).