Department for Environment, Food & Rural Affairs

Llywodraeth Cymru
Welsh Government

Proposed Celtic Sea and Western Channel Demersal Fisheries Management Plan

Strategic Environmental Assessment Environmental Report

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Contents

Non-technical Summary

The draft Celtic Sea and Western Channel Demersal Fisheries Management Plan (hereafter draft CSWCD FMP or this FMP) has been prepared to meet the requirements of the Fisheries Act 2020. The plan covers 40 demersal species including cod, plaice, Nephrops, anglerfish, skates and rays and sharks. It sets out the policies and proposed actions that Defra and Welsh Government will use to manage the CSWCD fishing activities, so stocks are harvested within sustainable levels. Alongside these actions, the draft CSWCD FMP also sets out management to help support wider social, economic and environmental aspects of the fishery.

This environmental report (ER) has been produced in accordance with the Environmental Assessment of Plans and Programmes Regulations 2004 (SEA Regulations 2004). The following issues (from Schedule 2, paragraph 6 of the SEA Regulations 2004) were scoped into the assessment:

- biodiversity
- fauna
- flora
- geology and sediments (soil)
- water
- climatic factors
- cultural heritage
- landscape and seascape

This assessment focuses on how the policies and actions in draft CSWCD FMP are likely to give rise to both significant positive and negative environmental effects. The findings of this assessment have been used to inform the development of the FMP.

This assessment was conducted against a baseline of existing evidence on the state of the marine environment set out in updated UK Marine Strategy (UK MS) Part 1, published in 2019. Additional sources of evidence were used to establish the status of the environment in relation to issues not covered by the UK MS, such as climatic factors and cultural heritage. The historical impact of fishing activity on the marine environment has been considered part of the baseline. Our assessment used the best available evidence to reach a suitable judgement on the environmental effects of the draft CSWCD FMP.

This report sets out those plans, programmes and environmental protection objectives, both international and domestic that Defra and Welsh Government consider relevant to the draft CSWCD FMP.

This report considers and acknowledges the existing environmental effects of the CSWCD fisheries using demersal trawls, including beam trawls, otter trawls and

bottom pair trawls, as well as static nets and drift nets, on those issues scoped into this assessment, in relation to Marine Protected Areas (MPAs), the UK MS descriptors and the wider environment. The potential positive and negative environmental effects of the draft CSWCD FMP's policies and proposed actions alone and in-combination have also been assessed.

It is concluded within this Strategic Environmental Assessment (SEA) that current evidence shows the CSWCD fisheries have an impact on the marine environment primarily through seabed disturbance and bycatch risks. There are some impacts through reductions in prey for designated species and marine foodwebs, primarily through reductions in juvenile gadoids.

The impact of the CSWCD fisheries fishing in MPAs is managed by Inshore Fisheries and Conservation Authorities (IFCAs) in the 0-6 nautical miles limit of English waters in close collaboration with Natural England. Management of English MPAs beyond the 6 nautical mile limit is in development, led by the MMO, with management in place for the highest risk gear-feature interactions. The MMO also works in close collaboration with Natural England in the 6-12 nautical mile area, and with the JNCC on the offshore aspect of the MPA byelaw programme, which is beyond the 12 nautical miles. Welsh MPAs are managed by the Welsh Government in close collaboration NRW and the Joint Nature Conservation Committee (JNCC). The Marine Protected Area Management Steering Group provides strategic coordination for the management of all MPAs in Welsh seas. Further work is required to reduce the impact of the CSWCD fisheries on habitats beyond MPAs to ensure Good Environmental Status (GES) targets for seabed integrity (D6) are achieved. The contribution of the CSWCD fisheries to climate change related issues and its interactions with cultural heritage, through structural damage for example, were also identified as potential impacts.

The draft CSWCD FMP has considered these impacts and sets out proposals to monitor, and, where required, introduce mitigation to address these impacts. The assessment of likely negative effects identified a low risk of significant adverse effects on the environment from implementing individual policies and actions. The policies and actions, will, where appropriate, be developed to avoid any potential negative effects identified by the assessment progress. The environmental effects of implementing the draft CSWCD FMP policies and actions will also be monitored to identify unforeseen adverse effects at an early stage, so appropriate remedial action can be undertaken.

This assessment recommends the draft CSWCD FMP should consider the following additional points:

1. Future iterations of the FMP should consider how to develop the cultural heritage of each fishery and how fisheries management can contribute to

reducing potential negative interactions with submerged prehistoric landscapes or seascapes.

2. Future iterations of the FMP should consider how fisheries management can contribute to reducing potential negative interactions with submerged prehistoric landscapes or seascapes.

1. Introduction

Fisheries Management Plans – context and background

Marine fish stocks are a public resource, a valuable natural asset, and important components of marine ecosystems. Managing fishing activity so that we harvest our stocks within sustainable limits will ensure our fishing communities, the seafood supply chain and wider society continue to benefit from our natural assets, now and into the future.

The Fisheries Act 2020 requires the fisheries policy authorities[1] in the UK to publish Fisheries Management Plans (FMPs) as set out in the Joint Fisheries Statement (JFS), to manage fishing activity so the harvesting of fish stocks remains within sustainable levels.

Sustainable fisheries protect stocks and the wider environment whilst delivering social and economic benefits for present and future generations. Delivering sustainable fisheries will involve balancing the environmental, social, and economic aspects of fisheries. Both the short-term and the long-term impacts of decisions to manage fishing activity to protect stocks, the marine environment and on the fishing industry will be considered. Any short-term decisions to favour social or economic benefit should not significantly compromise the long-term health of the stocks and marine environment that underpin these societal and cultural benefits of fishing. These decisions should recognise the cultural importance of fishing through maintaining and, where possible, strengthening coastal communities and livelihoods alongside the requirement for fish stocks to reach and maintain sustainable levels.

UK fisheries policy authorities identified 43 FMPs in the JFS. A timetable for the preparation and publication of the FMPs can be found in Annex A of the JFS and summarised on Gov.UK: please read the List of FMPs.

All FMPs must contain the information set out in Section 6 of the Fisheries Act 2020. In summary, an FMP must specify the relevant authority; stock or stocks, type of fishing and geographical area to which the plan relates; the status of the stocks; policies and actions to harvest within sustainable limits; and the indicators to be used to monitor the effectiveness of the plan.

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1 **Fisheries policy authorities**: As defined by section 52 of the Fisheries Act 2020, “fisheries policy authorities” means (a) the Secretary of State, (b) the Scottish Ministers, (c) the Welsh Ministers, and (d) the Northern Ireland department.

FMPs must specify whether there is sufficient evidence to assess a stock's Maximum Sustainable Yield (MSY). Where there is insufficient evidence, the FMP must specify policies for maintaining or increasing levels of the stock, and the steps (if any) that the relevant authority or authorities propose to take to obtain the scientific evidence necessary to enable an assessment of a stock's MSY. If no steps are proposed, the FMP will explain the reasons for that, and how the precautionary approach to fisheries management will be applied so fish are harvested within sustainable limits.

Through managing fishing activity within sustainable limits, FMPs will contribute to the fisheries objectives set out in section 1 of the Fisheries Act 2020. The scope of a FMP may be extended to consider wider fisheries management issues related to environmental, social or economic matters. How FMPs consider wider fisheries management issues will be determined at the individual FMP level, appropriate to the stock(s), fishery and geographic area within the remit of the FMP.

The Fisheries Act 2020 required FMPs to report their effectiveness every three years and be reviewed at least every six years. FMPs will evolve as our understanding and evidence base develops through their implementation. Some FMPs will progressively address a wider range of fisheries management issues as they evolve through an iterative approach over time.

FMPs will contain a range of policies and fisheries management measures / interventions whose detail will vary depending on the evidence available to support their implementation. Some policies and actions may only indicate future action and will develop over time as the plan's evidence progresses through each iteration.

FMPs will adopt an ecosystem-based approach to fisheries management to help deliver environmental, social, and economic benefits beyond those accrued from just achieving the sustainable harvesting of stocks.

The policies and actions proposed by an FMP will apply to all vessels (UK and non-UK vessels) fishing in the area covered by the plan.

Delivering Sustainable Management of Fisheries and FMPs

Fisheries rely on the ecosystems in which they operate to support healthy stocks. These ecosystems can be compromised by human-induced pressures, including pollution, marine litter and unsustainable exploitation of marine resources. This pressure includes the impact of fish population levels on the processes and functioning of the wider ecosystem - for example, the removal of prey species impacts the status of top predators.

Long-term, sustainable, and profitable fisheries require active management to avoid, reduce or mitigate any adverse impacts of fishing activity on ecosystem functioning, ecosystem resilience, or environmental threats such as climate change.

Available fishery data and advice will help determine the targets and catch limits applied to each stock. Where possible, these limits would include the MSY for data-rich stocks where biomass fluctuations can be tracked. Alternative proxies for harvest limits, the precautionary approach, or a combination of both are required for more data-limited stocks, where it is only possible to detect biomass fluctuations.

Not all stocks currently have sufficient evidence to establish MSY, reference points and limits. It is not scientifically feasible or economically viable to collect such evidence for some species. In these cases, FMPs must include the steps, or reasons for not taking steps, national fisheries authorities will take to ensure stocks are harvested within sustainable limits.

FMPs will recognise the importance of the sustainable use and conservation of our marine natural assets and the ecosystem services they provide when setting out policies to manage fishing activity. FMPs will make use of the best available scientific advice, be subject to scientific evaluation, and consider the environmental risks associated with the fishing activity. The plans will use a risk-based approach to identifying appropriate and proportionate mitigation for its environmental impact.

FMPs will contribute to achieving Good Environmental Status (GES) under the UK Marine Strategy (UK MS). In addition to improving or maintaining the status of commercial stocks, plans can include actions focused on reducing the risks and/or pressures from fishing activity to other ecosystem components that may prevent achieving GES.

Managing fishing activity within sustainable limits through FMPs will directly contribute to securing the continued availability of seafood products as an important food source within the UK food supply chain.

Scope of the FMP

This draft CSWCD FMP applies to the following 40 demersal species fisheries in English and Welsh waters:

Gadoids

- pollack (Pollachius pollachius)
- cod (Gadus morhua)
- whiting (Merlangius merlangus)
- haddock (Melanogrammus aeglefinus)
- saithe (Pollachius virens)

- roundnose grenadier (Coryphaenoides rupestris)
- blue ling (Molva dypterygia)

Flatfish

- sole (Solea solea)
- plaice (Pleuronectes platessa)
- megrim (Lepidorhombus whiffiagonis)
- four-spot megrim (Lepidorhombus boscii)

Nephrops

- Nephrops (Nephrops norvegicus)

Anglerfish

- white anglerfish (Lophius piscatorius) (hereafter referred to as “anglerfish”)
- black-bellied anglerfish (Lophius budegassa) (hereafter referred to as “monkfish”)

Elasmobranchs

- skates and rays (ordered by weight of landings)
    - blonde ray (Raja brachyura)
    - thornback ray (Raja clavata)
    - cuckoo ray (Leucoraja naevus)
    - spotted ray (Raja montagui)
    - small-eyed ray (Raja microocellata)
    - sandy ray (Leucoraja circularis)
    - undulate ray (Raja undulata)
    - shagreen ray (Leucoraja fullonica)
    - longnose skate (Dipturus oxyrinchus)
    - Species with annual landings below 10 tonnes: blue skate (Dipturus batis); sailray (Rajella lintea); starry ray (Amblyraja radiata); common stingray (Dasyatis pastinaca); mediterranean starry ray (Raja asterias); round ray (Rajella fyllae); white skate (Rostoraja alba); marbled electric ray (Torpedo marmorata) and other species not defined
- deep water sharks (and other species not defined)
    - birdbeak dogfish (Deania calcea)
    - black dogfish (Centroscyllium fabricii)
    - bluntnose sixgill shark (Hexanchus griseus)
    - deep water catsharks (Apristurus spp.)
    - frilled shark (Chlamydoselachus anguineus)
    - great lanternshark (Etmopterus princeps)
    - Greenland shark (Somniosus microcephalus)

- gulper shark (Centrophorus granulosus)
- longnose velvet dogfish (Centroscymnus crepidater)
- Iceland catshark (Apristurus laurussonii)
- kitefin shark (Dalatias licha)
- knifetooth dogfish (Scymnodon ringens)
- leafscale gulper shark (Centrophorus squamosus)
- mouse catshark (Galeus murinus)
- Portuguese dogfish (Centroscymnus coelolepis)
- sailfin roughshark (Oxynotus paradoxus)
- velvet belly lanternshark (Etmopterus spinax)

Spariforms

- red seabream (Pagellus bogaraveo)

The CSWCD fisheries covered by this FMP occur in International Council for the Exploration of the Sea (ICES) divisions 7e, 7f, 7g, and 7h. The draft CSWCD FMP applies to English and Welsh waters[2], covering inshore and offshore areas where fishing activity for CSWCD fisheries takes place.

Celtic Sea and Western Channel Demersal Policy Goals and Actions

The vision of the draft CSWCD FMP is to introduce long term sustainable management for the CSWCD fisheries in the English and Welsh waters. The management of these fisheries in English and Welsh waters will aim to achieve environmental sustainability, by working towards an ecosystem-based approach to fisheries management, to ensure the wider effects of fishing activities on the marine environment are considered and minimised. The draft CSWCD FMP will consider the social and economic potential of the fisheries and aim to contribute to social and economic sustainability within fishing communities. Full rationales, as well as detailed short, medium and long-term actions of the FMP policy goals can be found in the CSWCD FMP.

- policy goal 1: Development of multi-year recovery plans for FMP gadoid stocks
- policy goal 2: Harvest flatfish stocks sustainably, with biomasses maintained above the level capable of producing MSY
- policy goal 3: Harvest nephrops stocks sustainably and manage nephrops bycatch

[2] English waters refer to the English inshore and English offshore regions as set out in Section 322 of the Marine and Coastal Access Act 2009.

- policy goal 4: Harvest anglerfish (lophiforms) stocks sustainably, with biomasses maintained above the level capable of producing MSY
- policy goal 5: Manage elasmobranch fisheries sustainably and manage bycatch
- policy goal 6: Build an evidence base for red seabream
- policy goal 7: Explore the potential to reform existing management and approaches to join up and better align management of FMP stocks
- policy goal 8: Build towards an ecosystem-based management of fisheries
- policy goal 9: Support sector adaptation, resilience and engagement
- policy goal 10: Reduce the contribution of fishing to climate change and supporting the fishing industry to adapt to the impacts of climate change

2. Approach to Strategic Environmental Assessment

Screening

SEA Regulations 2004 requires that qualifying public plans, programmes, and strategies undergo screening for SEA during their preparation and prior to adoption. Fisheries Management Plans are plans that fall within the definition in regulation 2.

Defra and Welsh Government considers that Regulation 3(2)(b) of the SEA Regulations 2004 applies to the draft CSWCD FMP as the plan relates to England and Wales.

In accordance with the SEA Regulations 2004 Defra and Welsh Government carried out a screening exercise which determined that the proposed policies in the draft CSWCD FMP may have likely significant effect (either positive or negative) on a Special Area of Conservation, Special Protection Area (European site or a European marine site) and they are not directly connected with or necessary to the management of such sites. Therefore, Defra and Welsh Government have carried out an SEA of the draft CSWCD FMP.

The screening exercise used Defra's Magic Map Application to identify whether the geographical scope of the FMP overlaps with any Marine Conservation Zones (MCZs), Special Areas of Conservation (SACs) or Special Protection Areas (SPAs). Table 3, page 35 of The updated UK Marine Strategy Part 1 sets out the pressures on the marine environment resulting from anthropogenic activity, which includes fishing. This information was used to identify whether fishing activity for the CSWCD fisheries has the potential to impact these sites and interest features. For example, CSWCD fisheries using demersal trawls have the potential to result in the extraction

of, or mortality/injury to, wild species and cause physical disturbance of benthic habitats.

The screening concluded that the proposed polices in the draft CSWCD FMP have the potential to affect multiple MCZs, SACs or SPAs and the wider marine environment.

Based on the outcome of the screening, Defra and Welsh Government concluded the FMP, falls within the description of a plan in regulation 5(3) of the SEA Regulations 2004, and so as a result of regulation 5(1) must be subject to SEA in accordance with Part 3 of the SEA Regulations 2004 during its preparation and prior to its adoption (publication).

Completing this SEA does not remove any other statutory obligation on competent authorities to assess the possible environment impact of a policy or measure ahead of its implementation.

Scoping Process

Defra and Welsh Government carried out a scoping exercise to identify the scope and level of detail of the assessment that will be documented in the Environmental Report. Regulation 12(5) requires that when deciding on the scope and level of detail of the information in the Environmental Report, the responsible authorities must seek the views of the Consultation Bodies.

A Scoping Report identifying the scope and level of detail of the assessment of the draft CSWCD FMP was provided to the following Consultation Bodies:

- Historic England
- Natural England
- Environment Agency
- Cadw (Welsh Historic Monuments)
- Natural Resources Wales (NRW)
- Joint Nature Conservation Committee (JNCC)

See Appendix F for Consultation Body responses on the Scoping Report and how consideration was given to the points raised in each response.

Regulation 12(3) of the SEA Regulations 2004 requires that the Environmental Report shall include the information referred to in Schedule 2, in so far as it is reasonably required.

Environmental report section and the corresponding paragraph of Schedule 2 of the SEA Regulations 2004

Sections: 1 and 4

- paragraph 1: An outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes

Section: 3 and 7

- paragraph 2: The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme

Section: 3

- paragraph 3: The environmental characteristics of areas likely to be significantly affected

Section: 3

- paragraph 4: Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, [such as a European site (within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2017)]

Section: 4

- paragraph 5: The environmental protection objectives, established at international, community or national level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation

Section: 5

- paragraph 6: The likely significant effects on the environment, including short, medium and long term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues such as– (a) biodiversity; (b) population; (c) human health; (d) fauna; (e) flora; (f) soil; (g) water; (h) air; (i) climatic factors; (j) material assets; (k) cultural heritage, including architectural and archaeological heritage; (l) landscape; and (m) the inter-relationship between the issues referred to in sub-paragraphs (a) to (l)

Section: 6 and 7

- paragraph 7: The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme

Section: 6

- paragraph 8: An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information

Sections: 7

- paragraph 9: A description of the measures envisaged concerning monitoring in accordance with regulation 17

Non-technical summary

- paragraph 10: A non-technical summary of the information provided under paragraphs 1 to 9

Scope of the Assessment

Schedule 2 paragraph 6 to the SEA Regulations 2004 lists the issues that must be considered for an assessment of likely significant effect in relation to the FMP. Based on its initial evaluation of likely significant effects and taking into account the results of the scoping consultation carried out (see scoping above and Appendix F), the following conclusions were reached regarding the content of the Environmental Report.

Defra and Welsh Government proposes that the Environmental Report will address the effects on the following issues:

- biodiversity, fauna and flora: including the following sub-sections: cetaceans, seals, birds, fish, benthic habitats, commercially exploited fish and shellfish, food webs.
- geology and sediments: including the following sub-section: benthic habitats.
- water: including the following sub-sections: marine litter, underwater noise and visual disturbance
- climatic factors: including the following sub-sections: vessel emission, blue carbon
- cultural heritage: including the following sub-section: interactions between fishing gear and marine heritage assets
- landscape / seascape: including the following sub-sections: interaction between fishing gear and seabed formations (including abrasion, penetration, smothering and siltation), benthic habitats.

Defra and Welsh Government scoped the following issues out of the assessment, and therefore they will not be covered in the Environmental Report:

- population (human)
- human health
- air
- material assets

Fishing activity being managed through the FMP has the potential to have some level of interaction with all the issues from Schedule 2 paragraph 6, however the scoping exercise considered and scoped in those environmental issues that would be significantly affected by the draft CSWCD FMP. Issues such as population, human health, air and material assets were scoped out of this assessment as it was considered that they would not be significantly affected by the FMP. We provide the justification behind this decision and additional rationale behind why sub-sections were considered below.

To link the issues (from Schedule 2 paragraph 6) that will be addressed by this Environmental Report with the environmental baseline (see section 3), we have attributed a UK MS descriptor of GES to the appropriate corresponding issue(s); see Appendix A for the list of the 11 UK MS descriptors. Achieving GES is about protecting the natural marine environment, preventing its deterioration and restoring it where practical, while allowing sustainable use of marine resources.

Assessing the status of these descriptors identifies where improvements are required to achieve GES. Knowing the current status will help direct efforts to reduce the impacts of certain human activities. The UK Marine Strategy assessment tool provides further information.

Under the UK MS, Descriptor 1 – Biodiversity has been split into the following sub-sections, cetaceans, seals, birds, fish, benthic habitats. These sub-sections are all relevant to the biodiversity issue from Schedule 2 paragraph 6 and therefore have been included in this assessment.

Marine litter and underwater noise have been included as the most relevant sub-sections assessed by UK MS under the Water issue heading. Fishing activity was considered not to contribute on Eutrophication, Changes in Hydrographical Conditions and Contaminants; therefore, these sub-sections have not been included.

Climatic factors are not considered under the UK MS assessment process; therefore, no predetermined sub-sections are available. Vessel emissions and blue carbon were identified as the two most relevant issues related to fishing activity that are associated with climate change.

Cultural heritage is also not considered under the UK MS assessment process; therefore, no predetermined sub-sections are available. The interaction between fishing gear and marine heritage assets was identified as the most relevant impact related to fishing activity that is associated this issue heading.

Landscapes / seascapes are not considered under the UK MS; therefore, no predetermined sub-sections are available. The interaction between fishing gear and seabed formations was identified as the most relevant impact related to fishing activity that is associated this issue heading. The assessment of benthic habitats will also be relevant when considering the impact of the CSWCD fisheries fishing on seabed formations and submerged prehistoric land surfaces (often comprising of organic deposits and other former terrestrial fine-grained deposits). Where specific impacts are known they will also be considered.

Results of the scoping exercise to determine those environmental issues likely to be significantly affected by the Celtic Sea and Western Channel Demersal and thus scoped into the SEA[3]

Environmental issues (UK Marine Strategy Regulations 2010) likely to be significantly affected by the FMP.

It should be noted that these assessments are not specific to the FMP species fisheries, but rather gear types also associated with these fisheries.

- **biodiversity, fauna and flora (UK MS descriptors D1, D3, D4, D6)** - Fishing activity for Celtic Sea and Western Channel Demersal species has the potential to cause physical disturbance to seabed or extraction of/the mortality of/injury to/disturbance to both target and non-target wild species. This issue is within the scope of this SEA.
    - there is a moderate risk to D1, D4 cetaceans, D1, D4 seals and D1, D4 seabirds through bycatch in demersal trawls
    - there is a high risk to D1, D5 seabirds through bycatch in drift nets
    - there is a moderate risk to D1, D4 cetaceans and D1, D4 seals through bycatch in drift nets
    - there is a moderate risk to D1, D4 seals through bycatch in static nets
    - there is a high risk to D1, D4 cetaceans and D1, D4 seabirds through bycatch in static nets
    - there is a moderate risk to D1, D4 mobile species (primarily harbour porpoise) from reductions in availability of cod and whiting as prey. These species are forage fish as juveniles, and targeted as adults, while bycatch of juveniles is also possible

- **geology and sediments (soil) (UK MS descriptor D6)** - Fishing activity for Celtic Sea and Western Channel Demersal species has the potential to result

3 Where relevant, the relationship between the issue and the UK MS descriptor of GES is shown as 'D#' where # represents the number of the descriptor, as shown in Appendix A.

in physical disturbance to the seabed and substrates, particularly as the main gear types for these FMP species are beam and otter trawls. This issue is within the scope of this SEA.
    - Preliminary assessments found that there is a low risk of static nets and drift nets on the descriptor and therefore no action is necessary for this FMP in this regard.
    - There is a high risk of demersal trawls to seafloor integrity.
- **water (UK MS descriptors D10, D11)** - Fishing activity has the potential to input litter (solid waste matter, including micro-sized litter) and anthropogenic sound into the marine environment. The FMP aims to make fishing practices more environmentally sustainable so there is scope to reduce the impact of fisheries on water quality. This issue is within the scope of this SEA
    - there is a moderate risk of demersal trawls, static nets and drift nets on water quality through marine litter
- **climatic factors** - The FMP will make an appropriate contribution to the climate change objective of the Fisheries Act 2020, seeking to ensure it develops relevant policies to both mitigate impact on and adapt to climate change. For example, by reducing the carbon footprint of the fishery, and seeking a positive impact on blue carbon habitats. This issue is within the scope of this SEA
- **cultural heritage** - Fishing activity for CSWCD fisheries has the potential to interact with marine heritage assets. While the FMP is not intended to focus on mitigating the impacts of fishing on the marine historic environment, there is potential for fisheries management to have a positive effect on safeguarding cultural heritage features. This issue is within the scope of this SEA
- **landscape seascape** - CSWCD fisheries, particularly demersal towed gear, has the potential to affect seascape features through physical disturbance of the seabed. This issue is within the scope of this SEA

Environmental issues not likely to be significantly affected by the FMP

- **population (human)** - The FMP is not likely to result in significant increases or decreases in human population numbers, or changes to in-migration or out-migration
- **human health** - The FMP would not result in any significant human health issues. Whilst fishing remains a dangerous vocation and the FMP will promote safe operations, the regulation of the safety of fishing operations falls elsewhere. This issue is beyond the scope of this SEA
- **air** - The FMP is unlikely to result in significant additional vessel emissions and associated air pollution. Reducing vessel emissions from a carbon footprint perspective will be considered by the Climatic factors issue. This issue is beyond the scope of this SEA
- **material assets** - The FMP will not intrinsically impact material assets related to; ports and shipping; fisheries and aquaculture; leisure or recreation;

tourism; marine manufacturing; defence; aggregate extraction; energy generation and infrastructure development; seabed assets. This issue is beyond the scope of this SEA

Assessment Methodology

This SEA reflects the geographical scope (section 1) and type of fishing covered by the FMP. It considers the goals of the draft CSWCD FMP and the actions (section 1) it sets out to achieve these goals.

The assessment reviewed existing evidence on the current state of the marine environment, which included the impact of fishing within the baseline state (section 3).

It assessed the nature and extent of likely effects of the draft CSWCD FMP (including its policies and actions) on those environmental issues scoped into the assessment and where applicable their associated UK MS descriptors identified in the above section.

As the FMP is a strategic programme of work, the SEA will consider the potential positive and negative environmental effects of management options in the context of the UK MS descriptors. This SEA will also consider the in-combination effects and interactions of this FMP with other plans and projects, including Marine Plans and other FMPs.

More detailed fisheries MPA assessments which consider current activity are already in progress or have been completed. These assessments may be used to inform the FMP actions as they are delivered, and include:

- Defra's Revised Approach to Article 6 of the Habitats Directive focusing on the fisheries management programme (IFCA 0-6 nautical miles, MMO 6-12 nautical miles)
- the Marine Management Organisation's (MMO) ongoing Fishery Assessment programme (outside 12 nautical miles) within English waters
- the Assessing Welsh Fishing Activities Project (AWFA) in Wales

Future delivery of the goals, actions and measures specified in the FMP programme may give rise to management changes such as new legislation to regulate CSWCD fisheries. Such changes may have the potential to impact MPAs and their features and will be subject to more detailed assessment before being implemented.

Nevertheless, it is acknowledged within this ER that the likely significant effects associated with fishing activity being managed through the draft CSWCD FMP and sets out in broad terms how the FMP will seek to avoid, reduce, or at least mitigate significant negative effects.

During the development of the draft CSWCD FMP, advice from Statutory Nature Conservation Bodies (SNCBs) (Natural England, the JNCC and Natural Resources Wales) on the impacts of fishing activity in relation to MPAs and UK MS descriptors was considered. This ER reviews how this advice has been reflected in the FMP, and how the proposed policies and actions could change the baseline.

It is important to note the draft CSWCD FMP contains a range of policies and fisheries management measures that vary in their stage of development depending upon the evidence available to support their implementation. The level of detail possible for our environmental assessment depends upon the stage of development of the policies and actions of the FMP at the present time.

This assessment acknowledges the draft CSWCD FMP sets out goals to develop the evidence base around the CSWCD fisheries. Our assessment used the best available evidence at the present time to reach a judgement on the environmental effects of the draft CSWCD FMP.

The detail of the environmental assessment is covered in section 5.

3. Environmental Baseline

Summary of the Current State of the UK Marine Environment

Section 3 provides a summary of the current state of the UK marine environment for each of the environmental issues screened into this SEA, and where applicable their associated UK MS descriptors. The SEA has been conducted against the environmental baseline set out in these sources of existing information. We acknowledge that there are some uncertainties and evidence gaps in the environmental baseline. However, we consider that this environmental baseline provides a comprehensive level of information to undertake an effective assessment and provide informed evidence-based recommendations. Where required, further detailed assessments using additional evidence will be completed ahead of the implementation of FMP actions.

It is likely that, without the FMP, those issues which are contributing to the current state of the marine environment will likely continue to have an influence. The FMP seeks to promote the management of the CSWCD fisheries in a more coherent and coordinated manner that considers wider environmental issues. The FMP has the potential to improve the current state of the environment as set out below, both where no improvement has been observed, and where positive trends have been identified. Section 6 considers how the implementation of the FMP's proposed policies and actions could change the baseline.

Biodiversity, Flora, Fauna and Geodiversity[4] (Geology and sediments[5])

The primary source of information on the current state of the UK marine environment came from the UK Marine Strategy descriptor status assessments: The updated UK Marine Strategy Part 1, published in 2019. The impact of fishing has been considered as part of the assessment on the UK Marine Strategy descriptors, therefore information on the impact of fishing activity on the marine environment has been included in the sections below as part of the baseline. For further information on the baseline related to UK Marine Strategy descriptors see Appendix B.

D1 and D4 – Cetaceans

Cetaceans (whales and dolphins) are an important marine ecosystem component that contributes to overall levels of biodiversity (D1). In addition, as top predators, the abundance of cetaceans can also provide some understanding on how the food web is functioning (D4).

The current status of cetaceans for both the North Sea and Celtic Sea is mixed. While there are some aspects that are in line with the achievement of GES, much of the picture is unclear. The impact of various net fisheries is leading to bycatch that, in places, might be impacting long term population viability of harbour porpoise.

Other than for a limited number of coastal bottlenose dolphin populations, it is unclear whether the abundance and range of most cetacean species can be considered in line with GES. Fisheries and the removal of prey species is one of several activities/ pressures that have the potential to result in changes in cetacean abundance and distribution. For more information, read UK MS Cetaceans assessment.

D1 and D4 – Seals

Seals are an important marine ecosystem component that contributes to overall levels of biodiversity (D1). In addition, as top predators, seal productivity can also provide some understanding and insight as to how the food web is functioning (D4).

Grey seals populations and productivity continues to increase, and targets are being met. Bycatch (largely in tangle/ trammel nets) is occurring but not at levels that threaten population viability. For harbour seals, the status is not in line with GES

4 Geodiversity is defined as the natural range of rocks, minerals, fossils, landforms, topography, sediments and soils together with the natural processes which form and alter them

5 Geodiversity (Geology and sediments) issue has been combined with the Biodiversity, Flora, and Fauna section as benthic habitats is relevant to these issues

where population declines have occurred in some areas. The cause is unknown. It is not thought to be linked to bycatch as occurrences are rare and there is no indication that it is linked to other pressures associated with fishing. For more information, read UK MS seal biodiversity assessment.

D1 and D4 – Birds

Seabirds are well monitored species that are an important marine ecosystem component that contributes to overall biodiversity (D1). In addition, as top predators, the abundance of birds can also provide some understanding and insight as to how the wider food web is functioning (D4).

Seabird populations are currently below the level that is considered to meet GES and the situation is deteriorating. Some declines in breeding success have been linked to prey availability caused by climate change and/ or past and present fisheries. Invasive predatory mammals are also known to impact breeding success on island colonies. The impact of bycatch will be included in future assessments and current evidence suggests that some longline and static net fisheries could be having possible population level impacts on certain species. For more information, read UK MS marine bird biodiversity assessment.

D1 and D4 – Fish and D3 – Commercially exploited fish and shellfish

Fish are an important ecosystem component that contributes to overall levels of biodiversity (D1). In addition, fish of different species have a significant role in marine food webs (D4), acting as both predators and prey. Some fish species are commercially exploited, and only a proportion of these have managed quotas. Over exploitation can lead to a decline in stocks (D3) which can reduce both future commercial opportunities and have wider ecological impacts.

The current status of fish communities in the UK is primarily shaped by historical over-exploitation by fisheries, while ongoing over-exploitation continues to be a notable contributing factor. Improved fisheries management since the 1990s has resulted in more stocks being fished at or below MSY levels so, although the target is not yet met, there is a positive trend. Improved fisheries management has also resulted in some positive trends in fish communities beyond the targeted stocks. For more information, read, UK MS fish biodiversity assessment and UK MS commercial fish and shellfish assessment.

D1 & D6 – Benthic Habitats

Benthic habitats are an important ecosystem component that contributes to overall levels of biodiversity (D1). It is also important to ensure the structure and function of the benthic ecosystems is adequately safeguarded by considering seafloor integrity (D6).

There is widespread disturbance of seabed habitats by demersal towed gear and other marine activities, and this is preventing the achievement of GES. Other impacts from non-fisheries activities may also be having an influence, but to a much lesser degree. For more information, read UK MS benthic biodiversity and seafloor habitats assessment.

D4 – Food webs

Food webs (D4) are the network of predator-prey relationships that occur in the marine environment, from phytoplankton to top predators such as birds or seals. Fish communities are a key component of food webs. Knowledge of food webs allow understanding of how changes at one trophic level can impact those above and below it.

Historic fishing activity has contributed to the current environmental baseline, and has had a large impact on fish community structure which is a key component of marine food webs. With improved fisheries management focusing on stocks, some recovery is occurring. However, the management of fish stocks solely to safeguard future fisheries will not necessarily lead to all food web targets being met. Changes in plankton are likely driven by prevailing environmental conditions, but other impacts cannot be ruled out. For more information, read UK MS food webs assessment.

Water Quality

D10 – Marine Litter

Marine litter, including from fishing activities, is a significant pressure on marine ecosystems and water quality. 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. Waste fishing material is a component of beach litter. Both floating litter and seafloor litter remain an issue, with plastic the predominant material. Achieving GES for marine litter requires improved waste management practices, the reduction of lost or discarded fishing gear, and increased awareness and monitoring of the issue. For more information, read UK MS litter assessment.

D11 – Underwater noise

Underwater noise from fisheries, while not the primary source, can still contribute to the overall noise pollution in the marine environment. Fishing vessels will contribute to underwater noise through sonar, engine noise, gear interacting with seabed and deploying and retrieving gear.

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. However, achieving GES for underwater noise will require better understanding and monitoring of the issue, as well as the development and implementation of strategies to manage noise pollution from various sources. For more information, read UK MS underwater noise assessment.

Climatic Factors

Climate change impacts are not part of the UK MS, therefore evidence from other sources were used to provide baseline information in relation to this issue. Statistics from the Department for Energy Security and Net Zero (DESNZ), Department for Transport (DFT) and Engelhard et al (2022) report on Carbon emissions in UK fisheries, were used to identify the contribution UK fishing fleets have to the total carbon emissions at sea each year.

Vessel Emissions

For 2019, estimated emissions by the UK fishing fleet (802 kt CO_2e) would have represented 0.18% of the UK's total territorial emissions (455 Mt CO_2e)[6], or 0.66% of the UK's domestic transport emissions (122 Mt CO_2e)[7]. To put this into context, estimated emissions by the UK fishing fleet would have been equivalent to 1.7% of total agricultural emissions in 2019 (46.3 Mt CO_2e).

Between 2019 and 2023, demersal trawls were the predominant gear type used in the Celtic Sea and western Channel, accounting for over 60% of total landings of FMP species by weight. These trawls were especially dominant in the capture of gadoids, nephrops, anglerfish, and skate and ray species. Beam trawls, primarily used for pleuronectiforms, contributed nearly 31% of landings, while drift and fixed nets made up just over 6%. The majority of these catches were made by vessels between 18–40 meters in length, which are typically larger and fuel-intensive, contributing disproportionately to greenhouse gas emissions.

The widespread use of mobile benthic gear, such as demersal and beam trawls, not only drives increased emissions through fuel consumption but also disturbs the seabed, potentially releasing significant amounts of stored blue carbon. This dual impact—direct emissions from larger vessels and indirect emissions from seabed disruption—highlights the environmental cost of current fishing practices. Notably, while demersal trawl landings have declined by around 14,000 tonnes since 2013,

6 BEIS (Department for Business, Energy & Industrial Strategy) (2021b) 2019 UK Greenhouse Gas Emissions: Final Figures – Statistical Summary.

7 DfT (Department for Transport) (2021) Statistical Release: Transport and Environment Statistics 2021 Annual Report, 11 May 2021.

they still represent the majority of landings, underscoring the need to consider their environmental impacts.

The latest Cefas report on carbon emissions from the UK fishing fleet estimates that all UK vessels collectively emitted 702 kilotonnes of CO_2 equivalent (kt CO2e). The UK fishing fleet segment using demersal trawls and seines, which comprises of 402 vessels produced approximately 30% (249kt CO2e) of the total carbon emissions at sea each year across the UK's fishing fleets. Drift and fixed net fisheries (237 vessels) produced <2% (13kt CO2e), and beam trawls (73 vessels) produced approximately 13% (107kt CO2e). Whilst passive gears are generally less emission-intensive than mobile gears, quantification of carbon emissions across the fishing fleet supply chain (for example, preharvest through to postharvest) is required to truly understand the fisheries carbon footprint.

Blue Carbon

Certain marine habitats including seagrass, kelp and muddy sediments are able to capture and store carbon and therefore these are known as blue carbon habitats. Currently there is no comprehensive assessment of the impact of the CSWCD fisheries on organic carbon stocks. A new cross-Administration UK Blue Carbon Evidence Partnership has been formed to improve the evidence base on blue carbon habitats in UK waters, advancing our commitment to protecting and restoring blue carbon habitats as a nature-based solution. Through the partnership, announced at Conference of the Parties 26 (COP26), UK Governments will work together to address key research questions related to blue carbon.

Climate change impacts on the FMP's target species stocks and fisheries

The climate change objective in The Fisheries Act ensures that future fisheries management policy can, where appropriate, adapt to any future impacts of climate change on the UK fishing industry to support climate adaptive fisheries management. Evidence will be collected modelling the potential movement of fish stocks and the impacts this will have on regional fisheries. As stocks move into and out of UK waters, assessments of stock levels will be conducted to adapt allocation of fishing opportunities. Further research will be required to predict the scale of impacts to the environment and over what timeframe this will be applicable to the Celtic Sea and western Channel. Likely future climate impacts in the Celtic Sea and western Channel stocks and fisheries are built on in more detail in the FMP Evidence Statement.

The impacts of climate change are already apparent in the marine environment. We are already seeing warm water species increasing in abundance in UK waters while some cold-water species have decreased, with these trends expected to continue in the future. For species such as haddock, it is likely that habitat suitability for the species will change, resulting in less favourable conditions for the species to live in

UK waters in the longer term. The impacts in terms of biomass are not well understood and are also dependent on other broader factors.

Townhill et al. (2023) used multiple ecological niche models in order to project the future suitability of habitats for 49 commercial fish species.[8] The models used data from 1997 to 2016 and projected forward to 2060 under three climate scenarios: RCP 4.5 (medium emissions, high mitigation), RCP 8.5 (high emissions, low mitigation) and SRES A1B (medium emissions, older IPCC scenario).

Each ecological niche model estimated changes in habitat suitability and latitudinal shifts for species within the UK exclusive economic zone (EEZ). The models indicate that northwest European waters are likely to become less suitable for the more traditional commercial fish species, such as cod, haddock and saithe. Decreases in habitat suitability for these key commercial demersal stocks will have significant implications on fishing communities in the UK and the value they currently bring. In the UK, key species targeted by recreational fishers—such as Atlantic cod, whiting, thornback ray and common skate—have already shown declines in abundance due to warming seas. As cold-adapted species continue to shift northward in response to climate change, their availability around the UK is expected to decrease, potentially reducing catch opportunities for recreational anglers (Townhill et al., 2019).

Cod has been widely identified as highly vulnerable to climate change, with multiple studies documenting significant impacts, and a northward shift in North Sea Stocks (Engelhard, Righton, and Pinnegar, 2014). Looking further ahead, projections suggest that cod populations in the Celtic and Irish Seas could collapse by the year 2100 (Drinkwater, 2005). Among the FMP species in Townhill et al. (2023) projections, all models consistently projected a decline in habitat suitability for Atlantic cod, particularly under the high-emissions RCP 8.5 and the medium-emissions SRES A1B scenarios. Cod is strongly expected to shift northward, with its suitable habitat retreating from UK waters. Currently, the most suitable habitats for cod are located in the northern North Sea and around Scotland, extending toward Scandinavia. By 2060, these areas are expected to see a substantial reduction in suitability within the UK EEZ as species distributions shift further north. These trends indicate that both recreational anglers and commercial fishers in Britain may find it increasingly difficult to catch cod locally as climate change continues to alter marine ecosystems.

Saithe, like cod and haddock, is also projected to lose suitable habitat and shift northward, with the most pronounced declines occurring under RCP 8.5. Megrim is similarly projected to experience a decline in habitat suitability, especially under

8 MaxEnt, BIOCLIM, Generalized Linear Models (GLMs), Random Forest, and Support Vector Machines (SVMs)

higher emissions scenarios. Starry ray, blue skate, and lesser spotted dogfish are also expected to face reductions in suitable habitat ass the UK EEZ.

Among the FMP species included in the study, sole is the only one projected to significantly gain habitat suitability across the climate scenarios, particularly in the southern and eastern parts of the UK EEZ. The most significant gains for sole occurred under RCP 8.5. Thornback ray and spotted ray are projected to experience more moderate increases in habitat suitability under all three climate scenarios. Whiting and pollack showed mixed results across the models—some indicating gains, other losses—highlighting a high degree of uncertainty in their projections. Projections for Norway lobster are less certain due to limitations in survey data and model performance. As a result, changes in habitat suitability for Norway lobster should be interpreted with caution.

Across all 49 species studied, RCP 4.5 generally projected the smallest changes in both habitat suitability and latitudinal shifts. In contrast, RCP 8.5 and SRES A1B scenarios forecasted more dramatic changes, including greater northward shifts and more pronounced gains or losses in habitat suitability. Among the FMP species, spotted ray and European plaice are projected to undergo the greatest northward shifts by 2060. When considering all species collectively, suitable habitat is projected to increase in the central and northern North Sea and to the north of Scotland. Conversely, a decline in habitat suitability is expected in the English Channel, the southern North Sea, and the Irish Sea (see Evidence Statement for more information).

FMPs set out our approach to increasing or maintaining sustainability of fish stocks and as additional evidence is developed, this will help fisheries managers to respond to changes in the status of stocks. As additional research and evidence on climate change becomes available, UK administrations will work with the fishing industry to help them adapt to the impacts that climate change will have on commercially important species and will contribute to the collective efforts to mitigate the impacts fishing has on climate change.

The expected changes in species distribution will have consequences for commercial fisheries, and are likely to affect fishing behaviours, fishing quotas and will require adaptive management. While there is a level of uncertainty in future projections and it is currently proving difficult to produce a robust forecast, the evidence base has made significant progress in the last decade with much greater

focus on climate change impacts, adaptation[9] and mitigation[10] both from policy and industry.

Cultural Heritage

The definition of the 'marine and aquatic environment' in the Fisheries Act 2020 (section 52) includes features of 'archaeological or historic interest in marine or coastal areas. These features should be regarded as part of the wider marine environment.

Cultural heritage impacts are not part of the UK MS, therefore evidence from other sources were used to provide baseline information in relation to this issue.

The Fishing and the Historic Environment report produced by Historic England was used as the primary source of information on the interactions between commercial fishing and the marine historic environment in English and Welsh waters.

The report identifies that positive and negative interactions can arise when archaeological material present on the foreshore and seabed, is encountered during commercial fishing.

The following interactions between fishing gear and marine heritage assets can occur[11]:

- demersal trawl and dredge gears are widely used and are most likely to interact with marine heritage assets. Direct interactions with heavy bottom gears, are likely to be significant. However, some archaeological resources may not be discovered without interactions with fishing gear and therefore, significance of the interaction with findspots[12] is moderate because of both positive and negative impacts
- interactions with demersal seine netting may have a low to moderate significance resulting from limited interaction with the seabed by the ropes used to haul the seine net

9Adaptation means "The adjustment in economic, social or natural systems in response to actual or expected climatic change, to limit harmful consequences and exploit beneficial opportunities." (insert source)

10Mitigation means "Reducing greenhouse gas emissions in order to slow or stop global climate change"

11 Information derived from Fishing and the Historic Environment, page 44.

12 Findspots: The place where one or more artefacts have been found. May prove to be associated with a site, other finds, natural features etc., or isolated (no apparent relationship).

- interactions with static / passive demersal nets and long lines may have a low to moderate significance resulting from a higher likelihood of entanglement and snagging, and anchoring impacts

The report identifies several potential and evidenced interactions between commercial fishing and marine heritage assets. However, given the anecdotal nature of many of these interactions a comprehensive assessment of the extent of interactions and their impacts, is currently not available for English and Welsh waters.

Landscape and Seascape

There is no legal definition for seascape in the UK, but the European Landscape Convention (ELC) defines landscape as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" and includes land, inland water and marine areas. In the context of the UK Marine Policy Statement (MPS) a seascape has been set out to mean, landscapes with views of the coast or seas, and coasts and the adjacent marine environment (including the underwater environment) with cultural, historical and archaeological links with each other.

The 'value' of many of the UK's seascapes is reflected in the range of designations which relate in whole or in part to the scenic character of a particular area (e.g. Area of Outstanding Natural Beauty, Heritage Coast, National Scenic Area), however the ELC and MPS (and most recently seascape assessments covering the English Marine Plan regions) define landscape and how they are to be considered in more general terms, acknowledging the value of all landscapes whether or not they are subject to designation[13].

The seascape constitutes of a suite of different characteristics that include natural factors, cultural and social factors, and cultural associations. Under these character headings exists a number of subheadings that include Geology, Seabed, Tides and Coastal processes (natural factors); Surface water features, Sunken and Buried Features, and Use of Coast and Sea (cultural and social factors); Media, People, Writers (cultural associations)[14].

Fishing and commercial fishing vessels are considered as seascape features and activities. Fishing ports and related fishing infrastructure are considered as

13 UK Offshore Energy Strategic Environmental Assessment – scoping.

14 Figure 1, Page 9. seascape-character-assessment.pdf

landscape features[15]. Fishing therefore is an important component of the overall landscape and seascape character.

Fishing activity using demersal towed gear has been identified to damage submerged peaty deposits known as moorlog[16]. However, a comprehensive assessment of the extent of interactions and their impacts, is currently not available for English and Welsh waters. Conserving moorlog, as potential blue carbon habitats might contribute to climate change mitigation and adaptation.

Existing Environmental Effects of the CSWCD fisheries

FMPs are subject to legal and environmental obligations arising from legislation such as Habitats Regulations, UK Marine Strategy, and the UK Marine Policy Statement, the Environment Act 2021, Marine and Coastal Access Act 2009, and the Environmental Principles Policy Statement. These policies and regulations are aimed at ensuring the health of our seas for future generations, and our ambitions to restore biodiversity and address climate change.

The vision for this FMP is to enhance long-term sustainable management for the species fished by all methods, and by all-sized vessels from all nations operating in English and Welsh waters of the Celtic Sea and Western Channel, ensuring that the stocks can be assessed and fished at levels capable of producing MSY. The management of these fisheries aims to achieve environmental sustainability, by working towards an ecosystem-based approach to fisheries management, which ensures the wider effects of fishing activities on the marine environment are considered and minimised. To deliver this, an evidence-based approach will be used for the introduction of any management measures. When sufficient evidence is not available, the precautionary approach will be applied.

Advice provided by the SNCBs, comprising of Natural England, the Joint Nature Conservation Committee (JNCC) and Natural Resources Wales (NRW), used the range of current monitoring and evidence programmes to gather data to inform about the risks of fishing activity to both MPAs and GES descriptors relevant to this FMP.

The Natural England and JNCC advice covers English waters within the FMP area, whereas the advice from NRW covers Welsh territorial waters within the FMP area, from the coast to 12 nm. The SNCB advice by Natural England and the JNCC

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15 Figure 2, Page 10. seascape-character-assessment.pdf

16 Ward, Ingrid, and Piers Larcombe. "Determining the preservation rating of submerged archaeology in the post-glacial southern North Sea: a first-order geomorphological approach." Environmental Archaeology 13.1 (2008): 59-83.

assessed the following gear types: demersal trawls (including beam, otter trawls and bottom pair trawls), static nets, and drift nets.[17] NRW considered pressures from commercial fishing using demersal trawls (otter and beam) and demersal fixed nets (gill, trammel, and entangling). Demersal pair trawling and demersal longlining were not considered as part of the NRW advice, as these are either prohibited or does not occur within Welsh territorial waters, respectively.

The advice is given separately for risks to MPA features and UKMS descriptors, as although the underlying impact pathways are very similar and some species are both MPA features and are part of UKMS indicators, there are also important differences. The UKMS covers a much broader range of species than those protected by MPA designations, especially for cetaceans and fish.

As described in Section 2, this Environmental Report focuses on assessing how the policies and actions in the draft CSWCD FMP are likely to give rise to both significant positive and negative environmental effects. More detailed fisheries assessments which consider current activity are already in progress or have been completed. These assessments may be used to inform the FMP actions as they are delivered, and include:

- Defra's Revised Approach to Article 6 of the Habitats Directive, focusing on the fisheries management programme (IFCA 0-6 nautical miles, MMO 6-12 nautical miles)
- the Marine Management Organisation's (MMO) ongoing Fishery Assessment Programme (12-200 nautical miles) within English waters
- the Assessing Welsh Fishing Activities Project (AWFA) in Wales

This ER acknowledges the potential significant effects associated with fishing activity being managed through the draft CSWCD FMP and sets out in broad terms how the FMP will seek to avoid, reduce, or at least mitigate significant negative effects.

Biodiversity, Flora, Fauna and Geodiversity, Water quality

Environmental Effects Associated with MPAs

Advice provided to Defra and Welsh Government by our SNCBs gives more detail on the risks associated with CSWCD fisheries in relation to the designated features of MPAs in English and Welsh waters.

Whilst existing MPA site management considers fishing activity that occurs within the site's boundaries, there remains the potential for fishing activity outside MPAs to

17 At times, evidence may be pooled into 'demersal trawls,' 'static nets' and 'drift nets' where data does not allow for more specific advice.

have impacts on the features protected within the MPA. These impacts can occur when either the pressure exerted by the fishery impacts protected features beyond the spatial footprint of a particular fishing activity or when the feature of an MPA is mobile and travels outside the site.

Advice for English MPA designated features

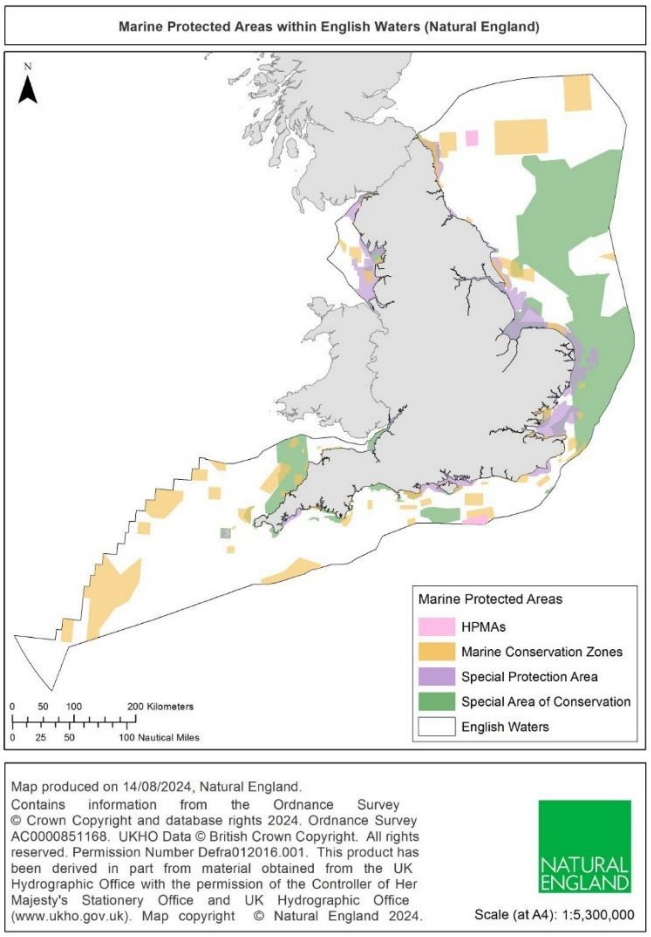

Figure 1. England's MPA network. Locations of marine protected areas within English waters. The map includes marine conservation zones, special areas of conservation, special protection areas and highly protected marine areas.

In England, assessments of the impact of CSWCD fisheries activities inside MPAs are undertaken by the IFCAs within 6 nautical miles, and the MMO outside 6 nautical miles. Figure 1 shows the distribution of English MPAs relevant to the draft CSWCD FMP. Stakeholders have worked closely with regulators to help develop measures to mitigate impacts within MPAs. Appropriate management is, or will be, in place to ensure any fishing within MPAs is compatible with the MPA's conservation objectives. Current management measures already in place related to the use of bottom towed gear is detailed on the MMO and Association of IFCAs websites.

Within the boundaries of English MPAs, the MMO and IFCAs assess human activities that could affect the designated features of MPAs and introduce management measures as needed. Therefore, existing assessment and management pathways are already being undertaken through separate work to mitigate risks from fishing activities within MPA boundaries. No specific additional action is suggested for the FMP within these areas.

Although MPAs typically include a buffer zone to protect the area from the external effects of potentially damaging marine activities, these impact pathways remain complex and require further assessment. Therefore, this advice focuses on risks to MPA features from fishing activities occurring outside site boundaries that may impact MPA designated features, such as marine mammals (harbour porpoise, grey seal and common seal), seabirds, fish, and the seafloor. This can occur through the following pathways:

- the pressures exerted by fishing activity can impact protected features beyond its spatial footprint
- when the feature of an MPA is mobile and travels outside the site
- when the designated feature of an MPA is part of much wider geographical population (as in the case of harbour porpoises)

The following risk levels[18] have been identified from the primary impacts of FMP fisheries using demersal trawls, static nets and drift nets occurring outside of site boundaries on English MPA features.

- there is a moderate risk of bycatch of marine mammals, seabirds and fish that are designated features of MPAs in demersal trawls
- there is a high risk of bycatch of marine mammals, seabirds and fish that are designated features of MPAs in static nets

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18 Risk ratings were assigned as follows:

Low Risk MPAs: Although there might be a theoretical pathway, evidence of an actual occurrence is either absent or suggests minimal impacts at the relevant scales for the considered FMP.

Moderate Risk MPAs: Interactions deemed as moderate risk typically have an evidenced impact or expert judgment indicates a genuine risk. However, the overall impact level might be ambiguous, possibly due to limited spatial overlap between gears and protected features, significant impact fluctuations over space and time, or differences between fisheries in the FMP and those from which the evidence base was derived.

High Risk MPAs: Interactions identified as high risk are those where available evidence or expert opinion suggests a scale that is concerning relative to MPA conservation objectives. The fishing activities managed by the FMP may significantly contribute to these risks.

- there is a high risk of bycatch of seabirds and fish that are designated features of MPAs in drift nets
- there is a moderate risk of bycatch of marine mammals that are designated features of MPAs in drift nets
- there is a moderate risk to designated mobile species of MPAs (primarily harbour porpoise) from reductions in the availability of cod and whiting as prey

Advice for Welsh MPA designated features

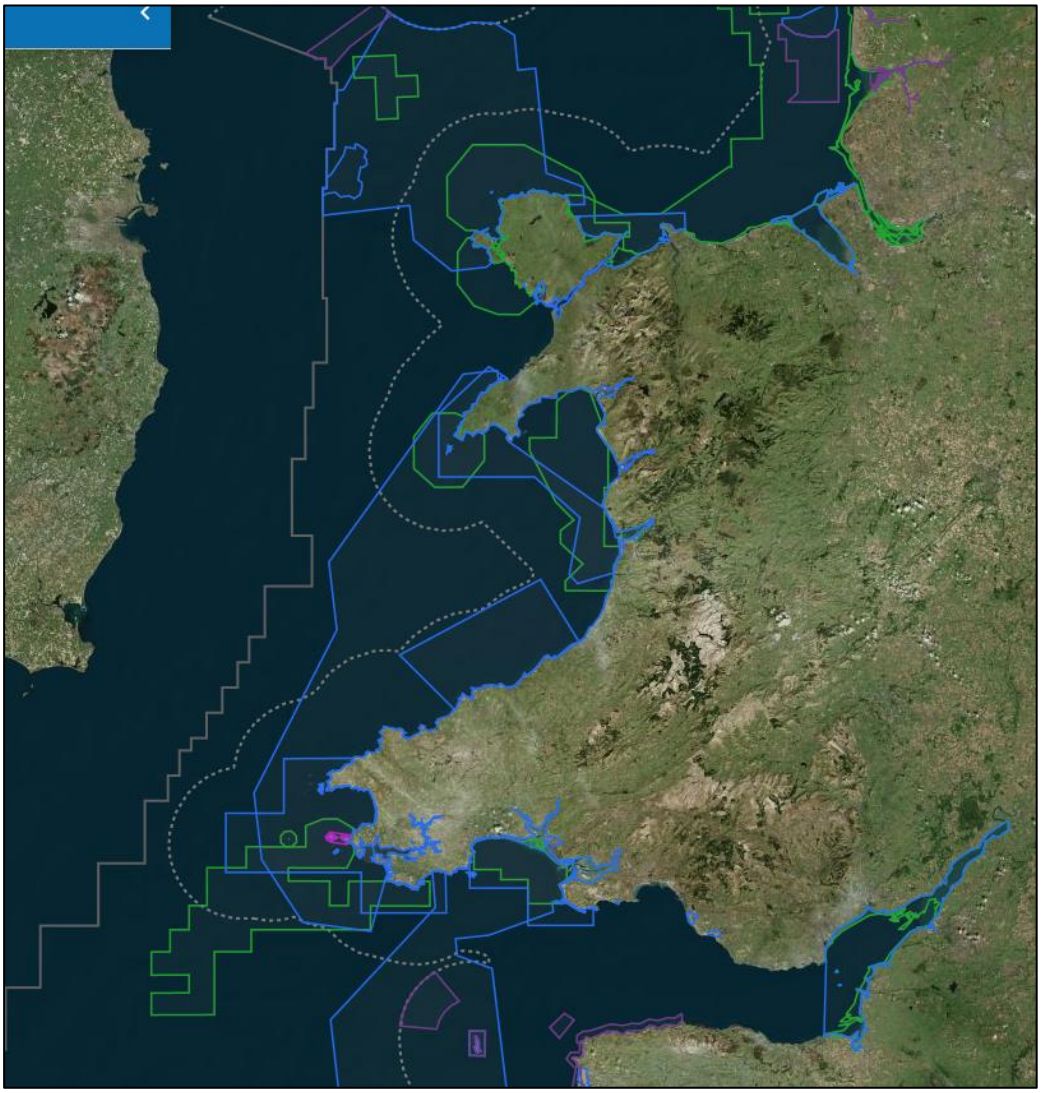

Figure 2. Welsh MPA network showing Special Areas of Conservation (SACs) in blue, Special Protection Areas (SPAs) in green and Marine Conservation Zones in pink. The solid line showing the UK EEZ median line and the dashed line showing inshore Welsh waters out to 12 nm.

Figure 2 description: Locations of marine protected areas within Welsh waters. The map includes marine conservation zones, special areas of conservation and special protection areas.

Welsh MPAs are managed by the Welsh Government in close collaboration with NRW and the JNCC. The Marine Protected Area Management Steering Group provides strategic coordination for the management of all MPAs in Welsh seas. This includes past work through NRW to assess the impact of Welsh fishing activities in MPAs across different designated features.

As Welsh Government do not have ongoing fisheries assessment and management programmes similar to the 2012 Revised Approach and 2020 MMO's Fisheries Assessments, NRW considered risks from fisheries activities occurring both inside and outside MPA boundaries on Welsh MPA designated features. NRW advise considers the risks associated with the main FMP gear types interacting with either "habitat features" (which includes low mobility species) and "species features". Depending on the feature and gear type, indirect or direct pressures were assessed using the Marine Evidence-based Sensitivity Assessment (MarESA) methodology and may include the following[19]:

- removal of non-target species (birds, mammals, mammal prey and fish)
- removal of target species
- disturbance of mobile species (visual disturbance; above water noise)
- impacts on habitats (abrasion; penetration; removal of fish; seabed change; smothering)

Considering these interactions, NRW has identified the following high and medium risk levels associated with each gear type. Due to the high-level nature of this advice, it has not been possible to disaggregate all the habitat features, nor assess the impacts against the against the conservation objectives of individual MPAs. Interactions have been assessed by the AWFA Project, with all assessments completed and provided to Welsh Government.

Demersal trawls

- there is a high risk inside MPAs from abrasion and penetration to high and medium MarESA sensitivity habitats
- there is a high risk inside MPAs from seabed habitat change to habitats such as biogenic reefs
- there is a medium risk inside MPAs from smothering of high MarESA sensitivity habitats
- there is a medium risk inside and outside MPAs from harbour porpoise bycatch

19 A MarESA (Marine Evidence-based Sensitivity Assessment) sensitivity habitat refers to a marine habitat, or a species within a habitat, whose sensitivity to various pressures (like pollution or physical disturbance) has been assessed using a standardised methodology by the Marine Life Information Network.

Demersal fixed nets

- there is a high risk inside MPAs from abrasion and penetration to high MarESA sensitivity habitats
- there is a high risk inside and outside MPAs from harbour porpoise bycatch

Demersal drift nets

- there is a high risk inside and outside MPAs from harbour porpoise bycatch

All gear types.

- there is a high risk inside and outside MPAs from cod and whiting bycatch affecting harbour porpoise prey availability
- there is a high risk inside and outside MPAs from lamprey bycatch when they are attached to their host species
- there is a medium risk inside and outside MPAs to the Severn Estuary SAC from targeting and bycatch of the estuaries feature's fish assemblage
- there is a medium risk inside and outside MPAs from diving seabird bycatch
- there is a medium risk inside and outside MPAs from salmon and shad bycatch
- there is a medium risk inside the Carmarthen Bay SPA for the common scoter feature from visual and above water noise (non-physical disturbance) from fishing vessels

When aggregating all gear types associated with medium or high-risk levels together, the following risk levels have been identified:

- there is a high risk inside and outside MPAs from cod and whiting bycatch affecting harbour porpoise prey availability
- there is a high risk inside and outside MPAs from lamprey bycatch when they are attached to their host species
- there is a medium risk inside and outside MPAs to the Severn Estuary SAC from targeting and bycatch of the estuaries feature's fish assemblage
- there is a medium risk inside and outside MPAs from diving seabird bycatch
- there is a medium risk inside and outside MPAs from salmon and shad bycatch
- there is a medium risk inside the Carmarthen Bay SPA for the common scoter feature from visual and above water noise disturbance from fishing vessels

Environmental effects associated with UK MS Descriptors

Advice provided to Defra and Welsh Government by the SNCBs gives more detail on the key risks to UK MS descriptors arising from the CSWCD fisheries and their likely impact on achieving GES (See appendix A).

The SNCBs and NRW have identified the following risk levels[20] from the primary impacts of FMP fisheries using demersal trawls, static nets and drift nets interacting with UK MS descriptors.

- there is a high risk to D1, D4 cetaceans and D1, D4 seabirds through bycatch from static nets
- there is a moderate risk to D1, D4 seals through bycatch from static nets
- there is a high risk to D1, D4 seabirds through bycatch from driftnets
- there is a moderate risk to D1, D4 cetaceans and D1, D4 seals through bycatch from driftnets
- there is a moderate risk to D1, D4 cetaceans, D1, D4 seals, D1, D4 seabirds through bycatch from demersal trawls
- there is a high risk to D1, D6 seafloor integrity from demersal trawls
- there is a moderate risk to D1, D4 cetaceans, D1, D4 seals, D1, D4 seabirds through reductions in prey
- there is a moderate risk to D10 marine litter from demersal trawls including (beam trawls, otter trawls, pair bottom trawls) static nets and drift nets

The studies used to assess each risk have already been introduced in the prior "Environmental Effects Associated with MPAs" section.

UK MS D1, D4 biological diversity of marine mammals

The bycatch risk arising from this FMP to D1, D4 cetaceans from demersal trawls and drift nets is considered to be moderate due to the current levels of sampling of bycatch and the remaining evidence gaps and confidence in existing evidence. Due to the episodic nature of bycatch incidences and the relatively low sampling effort, risk will vary greatly over space and time. Strategic actions to improve the evidence base (and determine any need for mitigation) is required.

The bycatch risk arising from this FMP to D1, D4 cetaceans from static nets is considered high due to the high levels of recorded bycatch. The Bycatch Mitigation Initiative delineates the approach by which the UK government and devolved

20 Risk ratings were assigned as follows:

GES rapid risk assessment categories: Low risk means some risk does exist, but the impact may not be of a scale to impact upon GES descriptors. Moderate risk means there is clear link between the fishing activity and the GES indicator, but other activities also significantly contribute to the current indicator status, r where high-risk activity only makes up a small proportion of the fishery. High risk means the link between fishing activity within the FMP and the failure to meet the GES indicator is recognised. 'Risk unclear' is used where the situation is complex, and more work is required to understand the true nature of risk.

governments intend to minimise, and if feasible, eradicate the bycatch of sensitive marine species, including cetaceans.

A more targeted approach to evidence collection, such as enhancing reporting requirements particularly for static gear fleets and deploying remote electronic monitoring, is pivotal. Given the likely occurrence of bycatch across varied target fisheries and gears, a comprehensive strategy is imperative for better evidence collection and discerning potential mitigation actions. Initiatives such as Clean Catch UK II should help to provide a co-ordinated response for FMPs.

Building the evidence base through self-reporting of bycatch events may help support future iterations of this assessment. However, the implementation of Remote Electronic Monitoring (REM), prioritised by risk (e.g. French et al., 2022) would significantly improve knowledge of, and ability to mitigate, cetacean bycatch.

Further studies are needed to elucidate the impact of prey depletion on cetacean populations related to targeted and bycatch removal of cod and whiting by fisheries scoped into the draft CSWCD FMP.

UK MS Descriptor D1, D4 biological diversity of seals

The risk arising from the Celtic Sea & Western Channel Demersal FMP to D1, D4 seals from demersal trawls and drift nets is considered to be moderate due to the current level of sampling of bycatch and confidence in existing evidence. Although the available data shows concerning numbers of seal bycatch in static netting, it is not thought that these levels currently pose a threat to UK seal GES targets. Therefore, the risk is considered to be moderate as it is not currently thought that these levels of bycatch threaten UK seal GES targets.

There is a moderate risk to D1, D4 seals from reductions in prey. Further studies are needed to elucidate the impact of prey depletion on seal populations related to targeted and bycatch removal of cod and whiting by fisheries scoped into the draft CSWCD FMP.

UK MS Descriptor D1, D4 biological diversity of seabirds

To better understand the GES risks, additional monitoring of seabirds bycatch is required to fill the significant data gaps that currently exist. Changes could be built into existing programmes, such as the UK Bycatch Monitoring Programme (BMP) and additional data collection may be possible through the appropriate use of REM or self-reporting apps. Ensuring a clear process exists for IFCAs and/or the MMO to highlight known hotspots for bird bycatch to national monitoring programmes may also be of benefit. A better understanding of the spatial scale of the fishery (e.g., through iVMS) will also greatly facilitate appraisal of the risk (and hence the development of appropriate mitigation or management). Natural England’s

recommendations in the English Seabird Conservation and Recovery Plan (ESCaRP, Natural England 2022) suggests the following:

- in collaboration with stakeholders, identify possible pilot area(s) for more focussed development of mitigation trials and monitoring
- development of best practice mitigation. This should build on the consideration of static net mitigation measures as part of the UK Bycatch Mitigation Initiative
- trials of potential mitigation. Consideration should be given to trialling modified gear (including gear switching for gill nets) and fishing practices, such as high contrast netting, net illumination and coloured floats as well as net attendance, night setting and reducing soak times (some of which Defra are already progressing)
- development of measures to reduce and remove abandoned, lost and discarded fishing gear in the marine environment (see advice for D10 marine litter

Whilst significant uncertainties remain, preliminary estimates suggest that seabird bycatch in nets is likely to be occurring at a scale that could threaten GES targets for D1, D4 birds.

The risk arising from this FMP to D1, D4 seabirds through the reduction in available prey is considered to be moderate. Due to the complexities of ecosystem interactions and links between pelagic forage fish and seabird abundance, an ecosystem-based approach to fisheries management is recommended.

UK MS Descriptor D1, D4 biological diversity of fish

All fishing gear types employed in the CSWCD fisheries have the potential to pose a bycatch risk to non-target fish species. There is no detailed advice provided on this descriptor for the draft CSWCD FMP. This is because the indicator comprises over 100 sensitive species, and further collaborative work is first needed between Defra, Cefas, and other relevant bodies to determine how best to evaluate risks and provide actionable advice at the fishery management level. Given the complexity of interactions between multiple species, fleets, and fishing methods, strategic solutions may be most effective for achieving GES.

UK MS Descriptor D4 foodwebs

No comprehensive advice was provided for the remaining UK MS Descriptor D4 foodwebs targets (i.e. those not included by considerations of cetaceans, seals and seabirds) for this FMP, as substantial further work is required to determine appropriate actions at the fishery level. The current indicators focus on size and trophic structure of ecological communities, involving complex interactions between multiple stocks and fisheries. It will be imperative to improve ecosystem models and

our understanding of how fishing mortality impacts food web dynamics to enable us to provide robust advice and recommendations to include in an FMP. Isolated changes within individual fisheries are unlikely to contribute meaningfully to achieving GES this descriptor. As the FMP adopts recommendations to help achieve sustainability and precautionary objectives under the Fisheries Act 2020, this may also result indirectly improve the likelihood of achieving GES for D4.

UK MS Descriptor D1, D6 seafloor integrity

All mobile demersal gears pose a risk to this descriptor. SNCBs focussed on the 'Extent of Physical damage' indicator as it is most closely tied to fisheries pressure. This indicator is shared with OSPAR and is commonly known as 'BH3a', which is the primary indicator used to assess the level of disturbance from fishing on benthic habitats. The target determines that the level of exposure to pressure (measured on the spatial scale of OSPAR sub-regions) should not result in more than moderate impact/vulnerability of the habitat (dependent on the sensitivity of the habitat to this pressure). The calculations for the BH3a indicator are complex, but essentially fishing effort data is aggregated so that the relative impact of different mobile benthic gears cannot be readily assessed within it. To be able to provide advice, which is meaningful at the scale of an FMP, the way BH3a is currently aggregated and presented needs to be addressed. Natural England is currently working on dis-aggregating the BH3a indicator as a first step in developing specific FMP-relevant advice.

Collaborative working between Defra, ALBs and regulators to provide more detailed advice on contributions of different mobile demersal gears within the geographic context of FMPs is required. Detailed consideration of mitigation options should draw on a wide range of stakeholder expertise. The UK Marine Strategy Part 3 (Programme of Measures) suggests the establishment of a Benthic Impact Working Group, which could be a pragmatic option for delivering future advice, including identifying, developing, and trialling possible mitigation or management options, in partnership. A strategy guiding where reductions in pressures need to occur across the fleet and to make decisions accounting for the trade-offs between industry sectors is recommended. It might be difficult to do this at the individual FMP level, and thus actions may be necessary at a programme level.

It is not currently thought that fisheries are contributing significantly to the failure of other indicators for this descriptor (e.g., the 'physical loss of predicted habitats'), however if evidence were to emerge in the future, then further assessment may be required. The risk to achieving GES for benthic integrity from this FMP is thought to be high for demersal trawls and low for all other gear types in this FMP.

UK MS Descriptor D10 marine litter

Demersal Trawls: Enhanced estimations of abandoned, lost or discarded fishing gear rates across all gear types are necessary to better understand the scale of the issue. Current gear-specific evaluations exhibit limited reliability due to the limited number of studies and their limited sample sizes. When nets and ropes made of polyethylene, polypropylene, and nylon are lost or discarded at sea, they contribute to persistent marine litter. Yet, Marine Conservation Society beach litter data indicate that fishing-related waste constitutes less than 10% of the total. As such, measures focusing solely on fishing litter might not suffice to achieve GES. Potential mitigation strategies under D10 could encompass the enhancement of onshore fishing waste disposal infrastructure.

Static nets: Gillnet and trammel net discards in the UK were estimated at 500 and 845 m of net per vessel per year respectively (French et al., 2022). The gear type group “set and fixed gillnet, trammel net” ranked the highest gear-specific relative risk score from abandoned, lost, or otherwise discarded fishing gear globally (Gilman et al., 2021). Monofilament nets have been found to persist for many years with modern plastic material lasting for up to 600 years (Brown and Price, 2005). Discarded static nets pose a risk of entangling fish and other protected species, continuing to trap even after being abandoned. Risk for this descriptor and gear type is considered moderate with the lack of a national programme to prevent net litter.

Gear specific estimates of rates of abandoned, lost, and discarded gear have low certainty due to a small number of studies and low sample sizes. Risks are highest in static gear fisheries (French et al., 2022) where significant quantities of gear are deployed into the marine environment. Mobile gears pose a lower risk but may be a source of plastic ropes and netting which contribute to non-biodegradable marine litter when lost, abandoned, or discarded at sea. Abandoned, lost, or discarded fishing gear (ALDFG) is associated with entanglements and ghost fishing. However, fishing litter is likely to be a relatively small component of overall marine litter, therefore fishing measures alone are unlikely to contribute significantly to the achievement of GES. Some gear loss is driven by the spatial conflict between mobile and static fleet sectors, where competition for space leads to interaction between mobile and static fishing gears. FMPs may consider ways in which to mitigate this conflict, if identified, and any associated gear losses. There is a moderate risk of marine litter impacts from all assessed gear types, but more robust estimates of ALDFG in the fishery are required.

Climatic Factors

Vessels fishing within CSWCD fisheries contribute to the total carbon emissions at sea each year by the UK’s fishing fleets. While the estimated emissions by the UK fishing fleet represents a small proportion of the overall emissions in the UK,

decarbonising the fleet and moving towards net zero will help reduce the contribution of fisheries activities to climate change.

No conclusive evidence is currently available on the impact of fishing activity for the CSWCD fisheries on organic carbon stocks. However, the impact of demersal towed gear in CSWCD fisheries on blue carbon is of concern. Improved recording of the intensity of the CSWCD fisheries on the seabed more broadly will help any future assessment of any effects on organic carbon stocks when the evidence base on blue carbon habitats in UK waters improves.

Cultural Heritage

Fishing activity can have both positive and negative effects on marine heritage assets. The positive effects relate to the discovery of marine heritage assets during fishing activity, with both past and future discoveries or findspots often reliant on fishing gear interactions. Negative effects can be caused by physical disturbance to cultural heritage on and within the seabed. Specific effects include: impeded access and interpretation of assets by fishing gear (e.g. nets, lines and ropes) collecting around physical structures; direct damage of assets by gear, usually towed gear, causing irreparable alteration to physical structures; burial of archaeological material by sediment during fishing practices; removal of the archaeological material from the seabed during fishing practices; and transferal of archaeological material from its original place on the seabed during fishing practices. Avoiding negative interactions with marine heritage assets will help conserve them for their enjoyment by future generations.

Towed benthic gear has been identified to cause damage to marine heritage assets. Historic England have evidence of two recent examples of damage from fishing activity to designated heritage assets – the Klein Hollandia (aka Eastbourne Wreck, LEN 1464317) and the Rooswijk (LEN 1000085).

The marine historic environment also plays an important role in providing ecosystem services in relation to nature conservation, sea angling, recreational diving and commercial fishing. Marine heritage assets, particularly ship and plane wrecks can provide habitats for marine life, with fish often aggregating around them for refuge or to feed. Avoiding negative interactions with marine heritage assets that act as habitats can positively contribute to the conservation of the wider marine environment.

Landscape and Seascape

Fishing activity above the surface is considered a feature of the marine seascape, therefore the presence of the CSWCD fishing vessels is not considered to have a negative effect on this aspect of the seascape character.

Fishing activity using demersal towed gear has the potential to cause physical disturbance of the seabed and therefore could impact deposits associated with prehistoric landscapes that are now submerged by sea-level rise. These former landscapes, referred to as moorlog, are often represented by peaty and other fine-grained deposits. Examples of these prehistoric landscapes and deposits can be found in the Dogger Bank region[21].

The impact of demersal towed gear on the seabed is also considered as part of the GES Descriptor D6 – Seabed Integrity.

4. Relevant Plans, Programmes and Environmental Protection Objectives

The draft CSWCD FMP has broad application since it covers an activity that occurs across English and Welsh waters. Consequently, the plan will interact with a range of established national legislation, plans and programmes, and international agreements and declarations signed by the UK.

The draft CSWCD FMP applies to English and Welsh waters, therefore, when preparing FMPs, the relevant fisheries policy authorities are required to have regard to this existing regulatory structure.

The sections below set out those plans, programmes, and environmental protection objectives that Defra and Welsh Government considers relevant to the implementation of the draft CSWCD FMP. This FMP could interact with other relevant plans and projects. Any cumulative impacts will also be considered in any future assessments ahead of implementing measures.

International

The draft CSWCD FMP has had regard to the commitments the UK has made under the following international agreements and declarations during its preparation:

- Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR): is the legal framework for international cooperation to protect the marine environment of the North-East Atlantic, of which the UK is a party.
    - the OSPAR Quality Status Report is a key resource when looking at the environmental impact of fisheries in the North East Atlantic

21 Coles, Bryony J. "Doggerland: a speculative survey." *Proceedings of the Prehistoric Society*. Vol. 64. Cambridge University Press, 1998.

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): is a global agreement that regulates international trade in wildlife to ensure it does not threaten the survival of species, of which the UK is a party, of which the UK is a party.

- Convention on the Conservation of Migratory Species of Wild Animals (CMS): An international treaty aimed at conserving migratory species across their entire range, of which the UK is a party.
- Council of Europe Landscape Convention: promotes the protection, management, and planning of European landscapes to enhance their quality and ensure sustainable development.

- European Convention on the Protection of the Archaeological Heritage: aims to safeguard the archaeological heritage as a source of European collective memory and a resource for historical and scientific study.

- NEAFC – Northeast Atlantic Fisheries Commission: A regional fisheries management organization responsible for the conservation and management of fishery resources in the North-East Atlantic, of which the UK is a Contracting Party. NEAFC manages many of the species also covered within the remit of this FMP.

- Ramsar Convention: An international treaty for the conservation and sustainable use of wetlands, of which the UK is a party.

- UN Convention on Biological Diversity (CBD): An international legal instrument for the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of benefits arising from genetic resources. Particularly relevant is Target 10 (including the sustainable management of fisheries and aquaculture) of the Kunming-Montreal Global Biodiversity Framework.

- UN Convention on the Law of the Sea (UNCLOS): An international treaty that establishes a legal framework for all marine and maritime activities.
- UN Fish Stocks Agreement 1995: The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA) is an international agreement that regulates key fisheries that, because of their transboundary nature, require international cooperation for their conservation and management.
- UN Sustainable Development Goals: The UK has committed to working towards the 17 SDGs by 2030. Relevant goals include SDG 14 protecting life

in the oceans, as well as SDG 8 decent work and economic growth, SDG 12 sustainable consumption and production and SDG 13 climate action.

- 2003 UNESCO Convention for Safeguarding of the Intangible Cultural Heritage: fishing is a rich source of intangible cultural heritage that could actively contribute to delivering FMPs, as well as FMPs having a role in safeguarding the intangible heritage of each fishery.

The draft CSWCD FMP has had regard to the commitments the UK has made under the following bilateral agreements and declarations during its preparation:

- Trade and Cooperation Agreement (TCA) between the EU and the UK: sets out the conditions in which EU and UK vessels can access each other's waters.

- UK-Faroe Islands Framework Agreement: sets conditions for the exchange of fishing quotas and includes provisions for control and enforcement to ensure sustainable fisheries management across UK and Faroese waters.

- UK-Norway Framework Agreement: sets conditions for the exchange of fishing quotas and includes provisions for control and enforcement to ensure sustainable fisheries management across UK and Norwegian waters, negotiated on an annual basis.

Domestic

The draft CSWCD FMP has had regard to the following national legislation, plans and programmes during its preparation:

Marine Protected Areas

FMPs are required by law to consider the implications of the fishing activity they manage for designated sites, primarily Marine Protected Areas (MPAs). Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are protected under the Conservation of Habitats and Species Regulations 2017 and Conservation of Offshore Marine Habitats and Species 2017, known as the Habitats Regulations. Marine Conservation Zones (MCZs) are protected by the Marine and Coastal Access Act 2009. The MPA network covers 38% of UK waters, with 377 designated MPAs. Relevant or public authorities (including fisheries regulators) assess human activities that could interact with the designated features of MPAs, seek the advice of the SNCBs and introduce management where required. When implementing any actions arising from the FMP that overlap with SACs, SPAs or MCZs or their designated features, an assessment will be undertaken prior to implementation, to assess the likely effects of the action on the conservation objectives of the site.

Marine regulators also have responsibilities relating to Sites of Special Scientific Interest (SSSIs) under the Wildlife & Countryside Act 1981 and Natural Environment & Rural Communities Act 2006. Ramsar sites (wetlands of international importance), designated under the Ramsar Convention, are often underpinned by SSSIs but are afforded the same protection at a policy level as SACs and SPAs. Appendix C lists the different types of MPA and relevant designations in the UK.

The Welsh Assessing Welsh Fishing Activities programme is also undertaking structured evaluations of fishing activity interactions with features protected within Welsh MPAs. Welsh Government are delivering the work through NRW, its statutory nature conservation advisor. To date, the work has delivered evaluations for a variety of gears including towed dredges, entangling nets, trammel nets, gill nets, demersal trawls, pots and traps, beach seines, drift nets, and longlines. Management of MPAs in Welsh waters is set out in the Marine Protected Area network management framework for Wales 2018.

Highly Protected Marine Areas

Highly Protected Marine Areas (HPMAs) are areas of the sea (including the shoreline) that allow the protection and full recovery of marine ecosystems. By setting aside some areas of sea with high levels of protection, HPMAs will allow nature to fully recover to a more natural state, allowing the ecosystem to thrive.

HPMAs will protect all species and habitats and associated ecosystem processes within the site boundary, including the seabed and water column. For large HPMAs, resultant displacement may lead to the intensification of fisheries pressure that will require assessing and potentially addressing if unduly exacerbating existing pressures.

The first three HPMA designations in English waters came into force on 5 July 2023.

The three sites are:

- Allonby Bay
- Northeast of Farnes Deep
- Dolphin Head

Any actions arising from the FMP that overlap with HPMAs will comply with the conservation objectives for designated features.

UK Fisheries Legislation (including retained EU legislation)

Since the UK's exit from the European Union, the foundation of UK fisheries legislation has been established through several key pieces of legislation. The

Fisheries Act 2020 has replaced the Common Fisheries Policy, granting the UK full control over its fishing waters and enabling the regulation of access and the promotion of sustainable fishing practices.

The UK has retained certain EU laws, including Council Regulation (EC) No 1224/2009, which establishes a system for control, inspection, and enforcement to ensure compliance with fisheries rules, and Regulation (EU) 2019/1241 of the European Parliament and of the Council, which sets out rules for the conservation of fisheries resources and the protection of marine ecosystems through technical measures.

Commission Regulation (EC) No 494/2002 (recovery of hake) establishes additional technical measures to aid the recovery of hake stocks in specified ICES sub-areas and divisions. It applies to vessels operation in ICES sub-areas 5 and 6 and ICES divisions 7 b, c, f, g, h, j, k and ICES divisions VIII a, b, d, e. It is worth noting that while Hake is not a species within this FMP, it is a large mixed fishery that will have implications on its species.

Furthermore, Regulation (EU) 2016/2336 of the European Parliament and of the Council establishes specific conditions for fishing for deep-sea stocks in the north-east Atlantic and provisions for fishing in international waters of the north-east Atlantic.

The draft CSWCD FMP will comply with these legislative frameworks to ensure effective management and conservation of the FMP's species populations and fisheries.

EU Western Waters Multi-Annual Plan - Regulation (EU) 2019/472 of the European Parliament and of the Council:

The regulation establishes a multiannual plan for certain fish stocks in specified areas of the Western Waters and adjacent waters, including the following FMP species: roundnose grenadier, cod, megrims, anglerfish, haddock, whiting, blue ling, Norway lobster, red seabream, plaice; pollack and common sole.

Conservation of Habitats and Species Regulations 2017 and Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

The Conservation of Habitats and Species Regulations 2017 include provisions for: protecting sites that are internationally important for threatened habitats and species (European marine sites) and provide a legal framework for species requiring protection (European protected species). The Conservation of Habitats and Species

(Amendment) (EU Exit) Regulations 2019 sets out changes to made to the 2017 Regulations to ensure the regulations operate effectively in English and Welsh waters. The draft CSWCD FMP will support the protection of protected sites and species.

The Conservation of Offshore Marine Habitats and Species Regulations 2017

The Conservation of Offshore Marine Habitats and Species Regulations 2017 include provisions for the designation and protection of areas that host important habitats and species in the offshore marine area. The draft CSWCD FMP will support the protection of offshore marine habitats and species.

Marine Strategy Regulations 2010 – UK wide

The Marine Strategy Regulations 2010 requires Administrations in the UK to take action to achieve or maintain GES in UK waters. The UK MS is a key pillar of marine policy in the UK. There is a clear link between the UK MS and the 'ecosystem objective' of the Fisheries Act 2020 – sections 1(4) and 1(10).

The Marine strategy part one: UK initial assessment and good environmental status outlines an initial assessment of our seas and characteristics, targets and indicators of GES in UK seas.

The Marine strategy part two: UK marine monitoring programmes outlines the monitoring programmes for measuring progress towards GES in UK seas.

The UK Marine Strategy Part Three: Programme of Measures identifies FMPs as a tool to support the delivery of GES for commercial fisheries (Descriptor 3). It also recognises FMPs could, where appropriate include 'measures to mitigate the impact of fishing activity on the wider environment, including the seabed' to support the delivery of GES for other descriptors.

Marine Plans – UK wide

The Marine and Coastal Access Act 2009 (MCAA) makes provision for the UK Marine Policy Statement (MPS), published 2011, and requires (together with the Marine Act (Northern Ireland) 2013, The Marine (Scotland) Act 2010) the production of marine plans where the MPS is in place. The MPS provides the framework for marine plans around the UK and sets the high-level policy context for marine planning, including setting high-level marine objectives. Under MCAA s.58, decisions relating to the marine area should be taken in line with the Marine Plan. The draft CSWCD FMP considers the relationship between marine spatial planning and fishing

activity being managed through FMPs, and how these policies can work in a joined-up way to ensure more effective use of the marine space and resources.

The following legislation have been identified as relevant to this FMP:

- UK Marine Policy Statement (MPS): the framework for preparing Marine Plans and taking decisions affecting the marine environment
- Marine Plans – (Southwest Marine Plan): provides a policy framework which will be used to help inform decision-making on what activities take place in the marine environment and how the marine environment is developed, protected and improved in the next 20 years. UK Marine Policy Statement (MPS): the framework for preparing Marine Plans and taking decisions affecting the marine environment

Further information on the marine plans is provided in Appendix D.

The Environment Act 2021 – UK Wide

The Environment Act 2021 sets out England's commitment to protect and enhance our environment for future generations. The act seeks to improve air and water quality, protect wildlife, increase recycling and reduce plastic waste. A central pillar is an obligation for policy makers to have due regard to five environmental principles (integration principle, prevention principle, rectification at source principle, polluter pays principle, precautionary principle) during the development of policy. Policies developed through the draft CSWCD FMP will have due regard to these principles. Further details of the environmental principles can be found at Environmental Principles Gov.uk page.

The Environment Act 2021 also requires the government to publish an Environmental Improvement Plan (EIP) 2025 - GOV.UK for England. The EIP published in 2023 and updated in 2025, builds on the 25 Year Environment Plan by setting out how the government in England will work with landowners, communities and businesses to deliver goals for improving the environment. FMP policy supports the EIP by enabling the development of fisheries management tools that will contribute to securing clean, healthy, productive and biologically diverse oceans and seas. Through implementing a sustainable domestic fisheries policy, the draft CSWCD FMP will deliver measures to secure healthy stocks that will be fished in an environmentally sustainable manner.

The Environment Act 2021 also makes provision for legally binding targets of which the targets for biodiversity and Marine Protected Areas will relate to FMPs. In addition, public authorities who operate in England must consider what actions they can take to conserve and enhance biodiversity in England. This obligation is the

strengthened 'biodiversity duty' that the Environment Act 2021 introduced. The draft CSWCD FMP will comply with the biodiversity duty.

The Environmental Targets (Biodiversity) Regulations 2023 - England

The Environmental Targets (Biodiversity) Regulations 2023 set long-term targets in respect of three matters within the priority area of biodiversity under section 1 of the Environment Act 2021 (c.30). These Regulations also set a target in relation to the abundance of species in accordance with section 3 of the Environment Act 2021. The Regulations specify the standard to be achieved in respect of each target and the date by which it must be achieved. The draft CSWCD FMP will support achieving the targets set out in the regulations as appropriate.

The Environmental Targets (Marine Protected Areas) Regulations 2022 – England

The Environmental Targets (Marine Protected Areas) Regulations 2022 set a long-term environmental target under section 1 of the Environment Act 2021 (c.30). The target set by regulation 3 is in respect of the condition of protected features in marine protected areas. These Regulations specify the standard to be achieved in respect of the target and the date by which it must be achieved. The draft CSWCD FMP will support achieving the targets set out in the regulations.

Climate Change Act 2008 – UK Wide

The Climate Change Act 2008 is the basis for the UK's approach to tackling and responding to climate change. It requires that emissions of carbon dioxide and other greenhouse gases are reduced and that climate change risks are adapted to. The Act also establishes the framework to deliver on these requirements. The draft CSWCD FMP will support policies to meet targets to achieve net zero by 2050 as set out in the legislation.

Marine wildlife bycatch mitigation initiative – UK Wide

The Marine wildlife bycatch mitigation initiative outlines how the UK will achieve its ambitions to minimise and, where possible, eliminate the bycatch of sensitive marine species. This initiative brings together, and builds on, existing work such as the UK Bycatch Monitoring Programme and Clean Catch UK, recognising that further actions need to be taken if we are to achieve our objectives. The draft CSWCD FMP will support this initiative by contributing to mitigating the negative impacts of fishing activity as appropriate.

Water Environment Regulations (Water Framework Directive)

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (referred to as the WFD Regulations) provide a framework for assessing and managing the water environment, which includes estuaries and coastal waters in England. The draft CSWCD FMP will support achieving the targets for water quality set out in the regulations.

River Basin Management Plans (RBMPs) produced under the Water Environment Regulations provide the overarching framework for to help protect and improve our water environment. RBMPs extend out to 1 nautical mile from the baseline into the marine environment and seek to maintain or restore Good Ecological Status[22]. The draft CSWCD FMP will support the objectives in the relevant RBMPs to meet Good Ecological Status.

Well-being of Future Generations (Wales) Act 2015

All activities undertaken as part of the development of the draft CSWCD FMP will be in line with the Well-being of Future Generations (Wales) Act 2015. Welsh Ministers, as a public body, have a duty to work to improve the social, economic, environmental, and cultural well-being of Wales, by taking action in accordance with the sustainable development principle.

Wales has a legal framework that provides for the sustainable management of natural resources and requires public bodies to carry out sustainable development to meet well-being goals. This framework includes some of, but is not limited to, the five environmental principles such as integration, precautionary and prevention. These are defined in the Well-being of Future Generations (Wales) Act 2015 with accompanying statutory guidance and the Environment (Wales) Act 2016.

Environment (Wales) Act 2016

All activities undertaken as part of the development of the draft CSWCD FMP will be in line with the Environment (Wales) Act 2016. Welsh Ministers, as a public body, have a duty to work to improve the social, economic, environmental, and cultural well-being of Wales, by taking action in accordance with the sustainable development principle.

[22] Good ecological status (GES) is a metric for assessing the health of the water environment. It is assigned using various water flow, habitat and biological quality tests. Failure to meet any one individual test means that the whole water body fails to achieve good ecological status. Source: Department for Environment, Food and Rural Affairs (DEFRA) (WQR0028)

Section 6 of the Environment (Wales) Act 2016 requires that public authorities must seek to maintain and enhance biodiversity [of the Section 7 habitats and species] so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems. The draft CSWCD FMP will support the requirements of the Act.

Welsh National Marine Plan 2019

Welsh National Marine plan 2019 provides a statutory policy framework to help guide the development of the Welsh Marine area includes cross-cutting socio-economic environmental policies under specific areas of the Marine and Coastal Access Act.

Assessing Welsh Fishing Activities (AWFA)-Evaluation of fishing activity interactions with features of Welsh Marine Protected Areas (MPAs).

Assessing Welsh Fishing Activities (AWFA)-Welsh Government are working in partnership with NRW, its statutory nature conservation advisor, to undertake a structured evaluation of fishing activity interactions with features of Welsh MPAs.

Other Localised Plans

Explore Marine Plans (EMP) is an online interactive tool developed by the Marine Management Organisation (MMO) to allow a user find and view spatial marine activity data for the English marine area, information on marine planning licences relating to a specific area, and marine plan policy information.

The draft CSWCD FMP will use this tool to identify where the plan could interact with other relevant marine activities, plans or projects. Any necessary adaptations would be built into the plan's ongoing implementation and contribute to future revisions of the FMP.

Trawling prohibitions (England)

- The Prohibition of Fishing with Multiple Trawls Order 2003
- The South-west Territorial Waters (Prohibition of Pair Trawling) Order 2004

IFCA byelaws and voluntary guidelines (England)

The following IFCA byelaws and voluntary guidelines may impact CSWCD fisheries within their inshore remits (0-6 nautical miles):

- Cornwall IFCA

    - Closed Areas (European Marine Sites) No.2
    - The Manacles Marine Conservation Zone Byelaws (2017)
    - River and Estuarine Fishing Nets Byelaw (2017)
    - Whitsand and Looe Bay Marine Conservation Zone (Fishing Restrictions) Byelaw 2018
    - Sea Fisheries Regulation Act 1966 - Specified Fish Sizes
    - Sea Fisheries Regulation Act 1966 – Trawling in Parts of the District
    - Sea Fisheries Regulation Act 1966 - Trawling
    - Ex-Devon SFC Byelaws relevant to Cornwall IFCA District east of Rame Head (includes part of Tamar River and all of the Lynher River)
- Devon and Severn IFCA
    - Netting Permit Byelaw 2016
    - Mobile Fishing Permit Byelaw
    - Size of Fishing Vessels Byelaw (2022)
    - Temporary Closure of Shellfish Beds
    - Lundy “No Take Zone”
- Southern IFCA
    - Bottom Towed Fishing Gear Byelaw (2016)
    - Net Fishing Byelaw
    - Fishing Under Mechanical Power - Closed Area
    - Prohibition of Gathering (Sea Fisheries Resources) in Seagrass Beds Byelaw
    - Minimum Conservation Reference Size
- Isles of Scilly IFCA
    - Fishing Gear Permit Byelaw
    - Recreational Fixed Gear Permit Byelaw (2020)

Welsh Orders

The following Orders byelaws and voluntary guidelines directly apply CSWCD fisheries within Welsh waters:

- The Prohibition of Fishing with Multiple Trawls (Wales) Order 2003
- The Sea Fish (Specified Sea Areas) (Prohibition of Fishing Method) (Wales) Order 2012

Other FMPs

Defra, as well as our delivery partners, considered the interaction between the current tranches of published plans whilst drafting the FMP. We will review interactions again as the final versions are prepared and adjust the FMP as appropriate. While all plans should be considered in harmony, the following FMPs have been identified as being *most* relevant to the draft CSWCD FMP:

- **Celtic Sea and Western Channel pelagic FMP:** Relevant to this FMP due to the direct spatial overlap of the two FMPs.
- **Channel demersal non-quota species FMP:** Relevant to this FMP due to the spatial overlap of ICES 7d and 7e.
- **Irish Sea Demersal FMP:** Relevant to this FMP due to the overlap in species such as haddock, plaice, and sole. Furthermore, the Irish Sea Demersal FMP lies adjacent (ICES 7a) to this FMP. The distribution of many species managed under this plan extends into the Irish Sea. Additionally, the multiple ICES Total Allowable Catch (TAC) group the Bristol Channel, Celtic Sea and Irish Sea under one TAC.
- **North Sea Cod FMP**: Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for cod with those implemented in the North Sea.
- **North Sea Whiting FMP:** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for Whiting with those implemented in the North Sea.
- **Northern Shelf Hake FMP**: Whilst hake is not a species within draft CSWCD FMP, it is part of a large mixed fishery that will have implications on the Celtic Sea and Western Channel demersal FMP species.
- **Southern North Sea and Eastern Channel mixed flatfish fisheries management plan (FMP):** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for Sole and Plaice with those implemented in the Southern North Sea and Eastern Channel.
- **Southern North Sea and Channel skate and ray fisheries management plan (FMP):** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for multiple overlapping skate and ray species with those implemented in the Southern North Sea and Channel.
- **North Sea and west coast of Scotland haddock FMP:** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for haddock.
- **West coast of Scotland whiting FMP:** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for whiting.
- **West coast of Scotland nephrops FMP**: Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for nephrops.
- **North Sea nephrops FMP:** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for nephrops.
- **North Sea and west coast of Scotland megrim FMP:** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for megrim.

- **North Sea and west coast of Scotland monk/anglerfish FMP:** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for monkfish and anglerfish.
- **North Sea and west coast of Scotland saithe FMP:** Despite differences in spatial remit, the draft CSWCD FMP can look to harmonise appropriate measures for saithe. Other relevant plans, programmes and environmental objectives, including those at local level
- **Defra flyseining consultation in 2022:** A consultation by Defra to gather evidence and manage the impact of flyseining on demersal non-quota fish stocks in English waters.
- **Ongoing Remote Electronic Monitoring (REM) consultations**: Defra continues to work to expand the REM programme to five priority fisheries over the next five years, refining its approach with each phase. Once fully implemented, REM systems will be mandatory for vessels in these fisheries, including non-UK vessels.

5. Assessment of Environmental Effects

The environmental baseline information (section 3) shows that the marine environment is subject to a range of pressures from human activities. Fishing-related activities form only part of the contribution of these pressures to the current state of our marine environment.

The present assessment acknowledges the evidence that shows those pressures that are largely derived from fishing activity and can impact the marine environment directly. Fishing can also contribute to other environmental effects when considered in-combination with other processes and activities.

Section 5 assesses the environmental effects of the policies and actions of the draft CSWCD FMP in relation to the environmental issues screened into this ER, and where applicable their associated UK MS descriptors.

Overview of the Potential Positive and Negative Environmental Effects of the Policy Goals, Actions and Measures of the Celtic Sea and Western Channel Demersal FMP

The potential positive and negative environmental effects of implementing goals (considering the actions that sit under them) and measures of the draft CSWCD FMP have been identified in below.

Policy Goal 1: Development of multi-year recovery plans for FMP gadoid stocks

Positive Effects: This policy aims to restore the spawning stock biomass of vulnerable gadoid species - pollack, haddock, cod, and whiting - to sustainable levels. These levels are defined as being above the biological limit reference point (B_{lim}), which represents the minimum biomass capable of producing maximum sustainable yield (MSY). According to the latest ICES advice, these stocks are either below B_{lim} or showing declining trends due to ongoing or historic overfishing. The policy's ambition to rebuild biomass will benefit both stock health and the wider marine ecosystem.

ICES advises a limited TAC for these species (due UK-EU negotiation on management and TAC setting), the UK currently maintains a bycatch-only fishery to prevent significant chokes in mixed fisheries. The FMP ambition is a joint request from the UK and the EU to ICES for the development of a rebuilding plan for the stock. The plan should establish catch limits for other stocks in the mixed fishery to reduce pressure on the three key stocks below F_{MSY} and outline technical measures to either optimise catches of alternative stocks or further ease pressure on the targeted ones. Strengthening mixed and multispecies management whilst limiting pressure could lead to stock benefits, as well as wider environmental benefits to associated fisheries.

To aid recovery, the FMP will consider increasing minimum conservation reference sizes (MCRS) for pollack in line with scientific advice, allowing more juvenile fish to reach maturity and increase spawning potential. It will also aim to introduce measures to explore compatible minimum mesh sizes to reduce juvenile bycatch and will take an evidence-based approach to introducing closed areas in support of protecting essential habitats, spawning and nursery areas. These tools would help safeguard critical life stages, alleviate fishing pressure on key habitats, and aims to improve recruitment.

For roundnose grenadier, saithe and blue ling, the FMP proposes no additional stock specific management. Instead, the FMP will seek to improve data gathered on these stocks with the potential to support their inclusion in future ICES stock assessments. This should help inform appropriate future TACs setting enabling sustainable exploitation of the stock.

Negative Effects: While the ambition to recover depleted fish stocks is inherently positive, potential negative effects to pursuing this policy could result from the lost investment of resources should these stocks not be recoverable owing to wider environmental factors. This could come at the expense of resources invested into sustainably fishing and managing effort on other species or at the cost of management, investment and funding which contributes to improving the wider marine environment.

The FMP does not strictly follow ICES's zero catch recommendation, maintaining the current bycatch-only approach while developing a recovery plan. A key

concern is that even limited bycatch quotas may be insufficient for recovery, especially as fishing pressure remains above F_{msy} and biomass levels are below or approaching B_{lim} for the depleted gadoid stocks. While zero catch is the best available scientific advice, implementing it would significantly increase choke risks in mixed fisheries, where gadoids are caught alongside other species and cannot be easily avoided. Further strengthening mixed and multispecies management could be detrimental to the stock and other stocks, should catch allocation remain too high, in order to enable other fisheries, as has been the status quo with management thus far.

The FMP seeks to explore measures such as an increasing MCRS and mesh sizes. While taking an evidence-based approach, this still may have unintended effects, such as higher discard rates of juvenile or bycaught gadoids, or increased effort on other stocks from a loss of fisher income.

While the goal is to protect juvenile fish and allow them to reach maturity, the effectiveness of this measure depends heavily on post-release survival. This is particularly concerning for gadoids caught in mobile demersal towed gear, which often causes high injury or stress-related mortality. If gear specifications are adjusted in line with an increased MCRS, allowing more smaller individuals to escape while still in the water, survival rate may be increased. However, this is significantly decreased once the net is hauled and sorted on the vessel. As a result, combining higher MCRS with low bycatch quotas may also lead to the retention of mature fish within quota limits and the discarding of injured or dead juveniles. Furthermore, improvements to selectivity measures, while potentially positive to the stock, are an enabler for reducing choke risk, enabling fishers to exert greater pressure on other stocks or the environment.

In terms of a recreational bag limit on pollack, a downside could also be the discarding of undersized fish or even smaller fish that meet the MCRS size, if recreational anglers can only retain a limited number of their “best catches”.

Another potential downside of technical measures like move-on rules or spatial-temporal closures is the risk of spatial squeeze. Prohibiting fishing in one area can displace effort to other areas, potentially increasing pressure on other species and habitats elsewhere. Identifying essential fish habitats and nursery grounds must be done carefully, with consideration for seasonal fishing patterns and alignment with other species’ closed seasons. For example, combined spatial and temporal closures to known pollack spawning and nursery grounds for recreational and commercial fishers could be aligned with bass seasonal measures. Additionally, requiring vessels to frequently relocate may increase fuel use and operational costs - particularly impacting smaller boats economically - and contribute to higher emissions.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4); Landscape and Seascape; Climatic Factors; Cultural Heritage.

Policy Goal 2: Harvest flatfish stocks sustainably, with biomasses maintained above the level capable of producing MSY

Positive Effects: Specific actions are aimed at the restoration of plaice to biomass levels capable of producing MSY and the long-term management of sole stocks to bring and/or maintain fishing effort below F_{msy}. The sole stock in ICES divisions 7f and 7g (sol.27.7fg) is currently fished above F_{msy}, although the stock biomass currently remains above the MSY $B_{trigger}$, B_{pa} and B_{lim} points. Despite biomass levels of this stock currently being in a good state, fishing above F_{msy} increases the risk of stock depletion. To ensure that spawning stock biomass remains above levels capable of producing MSY in the long-term, the FMP will look to manage fishing pressure to below F_{msy}. The third sole stock (sol.27.7hjk) is currently a category 5 stock under precautionary advice from ICES. For which the FMP aims to strengthen data gathering in aid of future stock assessment.

The FMP recommends actions to manage landings to below F_{msy}, in order to maintain ple.7e and ple.7hjk stocks above $I_{trigger}$ and recover ple.7fg biomass to above $I_{trigger}$. Actions towards restoring and/or maintaining flatfish stocks at sustainable levels will not only positively benefit marine ecosystems, but also the long-term economic viability of these fisheries.

Furthermore, the FMP proposes exploring the separation of the megrim TAC into two distinct quotas: one for megrim and one for four-spot megrim. Megrim is an ICES Category 1 assessed stock, currently fished at levels below F_{msy}, with biomass above B_{lim}. In contrast, four-spot megrim is limited data. Ecological research indicates some spatial segregation between the two species, particularly in terms of depth preference within the FMP area, which may justify species-specific management (Sánchez and et al, 1998). Given the data limitations, ICES advises that four-spot megrim be managed under the precautionary approach. A combined TAC could risk unsustainable catches of four-spot megrim, considering the set quota is based on the current stock status of megrim. Developing identification guides to support accurate, species-specific reporting would enhance data quality and strengthen future stock assessments which may lead to improvements in stock health.

Negative Effects: Plaice are often caught as part of a mixed fishery with sole and anglerfishes, with particularly high discard rates, therefore any measures targeting the recovery of plaice can pose a choke risk on healthy sole/anglerfish stocks. The added choke risk may exacerbate discards of plaice, result in non-compliance with recovery measures, and displace pressure on to other areas or stocks. Further research into current plaice fishery interactions may help inform strategies to reduce discards and bycatch – mitigating some potential negative

impacts. Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Landscape and Seascape.

Policy Goal 3: Harvest nephrops stocks sustainably and manage nephrops bycatch

Positive Effects: A key focus of this policy is to contribute to the sustainable management of nephrops within the FMP area: nep.fu.2021, nep.fu.22 and nep.27.7outFU. The three Functional Units (FU) within the FMP are currently managed by a single TAC covers all of ICES Subarea 7. However, ICES assessments show that the three stocks are exhibiting different pressures and biomass levels.

While the Nephrops Functional Unit (nep.fu.22), assessed at MSY, is currently fished below F_{msy} levels, its current biomass remains below its MSY $B_{trigger}$ level.[23] The actions within the FMP aim to restore this stock back to sustainable levels. Nephrops (nep.fu.2021), assessed at MSY, is currently fished below F_{msy}, with biomass levels above MSY $B_{trigger}$.[24] In line with Section 6(3)(a) of the Fisheries Act, the aim is to maintain the spawning stock biomass at this level, through exploring functional unit management and development of harvest control rules. As

Nephrops (nep.27.7outFU) is a category 5 stock, there is not enough evidence for an accurate assessment of its delineation, current stock biomass nor fishing pressure. Of note, catches of Nephrops reported from the nep.27.7outFU stock are caught surrounding the nep.fu.2021 and nep.fu.22 stock boundaries. It is plausible that these are either misreporting of Nephrops caught from these stocks or the stock boundaries require evaluation. The FMP will aim to evaluate and build evidence on this.

ICES recommends that management should be implemented at the FU level to avoid local over-exploitation and to ensure that fishing opportunities are in line with the scale of the resource for each of the stocks. The FMP therefore looks to explore options around FU management, as an alternative to the current ICES area level TAC management approach.

Unlike the broader ICES area TACs, FU management uses ecological and spatial data to divide Nephrops into multiple distinct stocks within an ICES area, as unlike more migratory fish stock, Nephrops stocks tend to be each associated with discrete patches of mud and sediment. An FU management approach

23 ICES Advice 2024 – nep.fu.22

24 ICES Advice 2022 – nep.fu.2021

therefore offers several benefits for Nephrops stocks and the wider marine environment. It addresses the mismatch between ICES areas and FU boundaries, as single ICES area may contain multiple FUs, or a single FU may span across several ICES areas. Therefore, FU-level management supports more accurate monitoring and sustainable exploitation of discrete Nephrops populations. It aligns more closely with the best available scientific advice and better reflects the ecological characteristics of Nephrops, which live in localised, burrowing populations that are not evenly distributed across wider ICES areas. Developing tailored management frameworks for individual FUs, with agreed responses to changes in stock status, would enable more responsive and adaptive management. For example, if stock biomass falls below reference points such as MSY $B_{trigger}$ or another predetermine harvest control rule, management measures could be adjusted swiftly.

This policy also aims to reduce unwanted bycatch and discarding in the Nephrops fishery, in part by considering the increase in the minimum catch composition of which constitutes a 'targeted' Nephrops fishery. This could contribute to the recovery of depleted cod, haddock, whiting and plaice stocks, benefitting the wider ecosystem. Taking the experiences gained in the North Sea Nephrops discard reduction scheme and working collaboratively with industry to define the challenges in improving gear selectivity will also provide wider environmental benefits.

Negative Effects: From an environmental standpoint, the FU approach to Nephrops management is positive. Although Nephrops stocks are similar in their characteristics, vessels that target them vary in size, gear, power, and capacity. Many FUs are exploited by both local fleets, which are likely to be more restricted in which fisheries they can access, and transient / nomadic vessels able to move between different FUs. Setting TACs at FU level would also remove flexibility from the nomadic fleet by taking away their ability to move between FUs; increased dependence of these vessels on a single ground could increase the risk of localised stock depletion or collapse.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Geology/sediments (UK MS - D6); Landscape and Seascape.

Policy Goal 4: Harvest anglerfish (lophiforms) stocks sustainably, with biomasses maintained above the level capable of producing MSY

Positive Effects: Anglerfishes (mon.27.78abd and ank.27.78abd) are both ICES MSY assessed stocks currently fished below F_{MSY}, with biomass levels above

MSY $B_{trigger}$.[25,26] Therefore, the actions for this policy goal are to promote fishing opportunities for anglerfish, in line with best available scientific advice to maintain sustainable stock levels. Currently, commercial landings of anglerfish are recorded under a joint species landing code (anglerfishes nei) and managed as a combined species TAC encompassing both monkfish and anglerfish. By improving species-specific recording and considering the separation of the monkfish and anglerfish group TAC, the overexploitation of either species can be hindered and any stock trends closely monitored. Both species are opportunistic piscivorous top predators, with a study in the Celtic Sea suggesting a degree of dietary trophic segregation within the same area (Issac et al., 2017). Therefore, monitoring the two species separately, will not only contribute towards maintaining sustainable levels of these stocks, but preserve their trophic role within the wider ecosystem.

Negative Effects: No negative environmental impacts are identified within the actions of this policy goal. However, if fisheries opportunities for both anglerfish species are promoted, fishing pressure on the stock would increase, potentially leading to negative environmental impacts if not managed sustainably. The FMP would need to ensure that fisheries opportunities are managed in line with the MSY approach, keeping stocks at sustainable biomass levels.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6).

Policy Goal 5: Manage elasmobranch fisheries sustainably and manage bycatch

Positive Effects: By ensuring that these stocks are fished within sustainable limits, this will have indirect benefits for the wider environment via improvements to food webs and biodiversity. Restoring or maintaining stocks above MSY should reduce uncertainty and inherent risks associated with setting sustainable catch limits.

Evidence gathered on alternative approaches to the current group TAC management will inform approaches to mitigate the risk of individual stock overexploitation under the current combined TAC system. Improvements to the stock assessment data and process will reduce uncertainty and inherent risks associated with setting sustainable catch limits.

Introducing a MCRS may promote fish growth to the age of maturity beneficial to the recruitment of the stock. This may support local biodiversity and food webs by

25 ICES Advice 2021 – mon.27.78abd

26 ICES Advice 2022 – ank.27.78abd

promoting ecosystem functions and recovery through increasing juvenile population size.

Introducing a MaxCRS may promote recruitment, giving the most opportunity to reproduce to a brood stock comprising the largest and most fecund individuals. This may support local biodiversity and food webs by promoting ecosystem functions and recovery through increasing population size.

Following voluntary guidelines should reduce the pressure on stocks from the commercial and recreational fishers. Furthermore, education building on species ID and measures should contribute to improved and more reliable evidence gathering of FMP species. Improved education should contribute to increasing compliance with the measures introduced through the FMP.

Seasonal and spatial closures would be designed to protect essential skate and ray habitats. In addition to the positive species effects, this may have indirect positive impacts on the wider marine environment by promoting ecosystem recovery. Protections for fish habitats that are important to key life stages of skates and rays, should support the sustainability of the stock by improving recruitment success. It is also likely to have a wider positive effect on biodiversity, food webs and seabed integrity.

Relevant SEA Issues: Biodiversity, fauna, flora (UK Marine Strategy D1, D3, D4 and D6), Water (UK Marine Strategy descriptor D10, D11)

Negative Effects: Levels of realised fishing effort may fluctuate in response to changes in catch limits. Reducing opportunities could also result in fishers switching to areas and species not within the scope of this FMP, thus increasing pressure on the environment elsewhere.

If evidence gathered supports introduction of species specific TACs as an alternative approach, it may introduce choke points in the fishery, potentially leading to increased discards, non-compliance and misreporting. Choke points may lead to increased effort and impact on other species in the fishery, either through avoidance of catching the choke species or making up financial shortfall.

Bring in an MCRS could lead to further discards of under MCRS fish and an increase in effort to fill any financial shortfall. A standardised MCRS may not benefit larger and later maturing skates and rays, as significantly as it will benefit the smaller FMP species.

There could also be wider ecosystem effects if MCRS is the only management measure used. For example, if a MCRS led to greater discarding of smaller fish or subsequent increased effort on other fisheries this could impact on the overall ecosystem.

A MaxCRS may have a financial impact on commercial fisheries as larger fish more valuable – this in turn may lead to increased fishing effort or exploitation of permitted sizes to make up financial shortfalls. A MaxCRS may lead to an increase in by-catch, discards, misreporting and non-compliance. Mesh sizes intended on only catching larger skates and rays may be reduced to allow fishers to target the permitted landing size. Reducing mesh sizes may have sustainability impacts on other species. It could lead to an increase in effort and exploitation of the harvestable size of skates and rays to fill any financial shortfall. This may in turn negate the positive effects of having a protected brood stock if very few individuals grow to this size. There could also be indirect wider ecosystem effects through changes to gears in order to avoid catching individuals over the maxCRS. i.e. reducing net mesh sizes.

Voluntary guidelines may not be followed which could lead to potential negative environmental consequences.

Spatial and temporal closures may lead to spatial changes in fishing effort of fishing pressure to other places within the FMP area or beyond.

Relevant SEA Issues: Biodiversity, fauna, flora (UK Marine Strategy - D1, D3, D4, D6) Water (UK Marine Strategy descriptors D10, D11).

Policy Goal 6: build an evidence base for red seabream

Positive Effects: This policy goal is primarily around building the evidence base to progress our understanding of red seabream stocks in the FMP area. Landings and stock size of red seabream showed a severe decline in the 1970s and 1980s and the stock is currently considered seriously depleted. Catches have stabilised at historical low levels since then but show further decrease since 2014. ICES currently advise a precautionary approach, as on MSY assessment is not possible until the stock is restored. Strengthening the evidence base for red seabream would support the stock's potential recovery in the long-term and management at sustainable levels, benefiting not only the species itself but also the wider ecosystem it interacts with.

Negative Effects: No negative impacts have been identified within this policy. In the absence of comprehensive stock understanding, the precautionary approach will be followed.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6).

Policy Goal 7: Explore the potential to reform existing management and approaches to join up and better align management of FMP stocks

Positive Effects: Fisheries in the Celtic Sea and western Channel are mixed, and existing management complex. The ambition of this goal is to put in place the

steps to take a more holistic approach to fisheries management for the next iteration. The FMP will seek to support the integration with other areas of applicable Governmental policy such as the exploration of mixed-fisheries approaches and ecosystem-based fisheries management, the evaluation of the Technical Conservation measures, delivery of Remote Electronic Monitoring (REM), the alignment with catch accounting and the Discards reduction scheme, as well as support the Quota Application Mechanism (QAM).

By advancing mixed and multi-species management, the plan promotes a more holistic understanding of ecosystem dynamics, rather than the previous single-species approach. In the short-term, the use of mortality maps and high-resolution fisheries data will help identify spatial patterns in catch composition, enabling more precise and ecologically appropriate management of mixed fisheries. This approach reduces the risk of overexploitation of vulnerable species and supports the maintenance of balanced marine ecosystems. By maintaining healthy prey populations, this also supports the foraging needs of marine predators such as cetaceans, seals, and seabirds, which rely on abundant and accessible prey for survival and reproduction.

In the medium to long-term, a key progression from mixed species management will be identifying Harvest Control Strategies that better reflect the multi-species nature of the fisheries and preserve trophic relationships e.g. incorporating multispecies reference points alongside single-species MSY and/or exploring the potential application of ecological and predator reference points. This shift from single-species to ecosystem-based management will help ensure that fishing opportunities for certain stocks consider the impacts on other stocks which they are often caught with in the same fishing operations – particularly if the bycatch are recovery stocks. Such considerations will also ensure that predators have sufficient prey available, contributing to healthy, resilient foodwebs and ecosystems.

Improving selectivity through technical and spatial measures, such as increasing mesh sizes in demersal trawls from 80mm to 100mm, directly contributes to reducing bycatch and discards of juvenile and non-target species. This allows more individuals to reach maturity and reproduce, supporting the long-term sustainability of fish populations. Gear innovations and selectivity improvements further enhance this effect by minimising the capture of sensitive or recovering species, thereby reducing fishing pressure on already stressed stocks. Improved gear selectivity and reduced unwanted catch may contribute to increase juvenile prey populations, an important food source for marine predators.

The phased rollout of mandatory REM across gillnets and demersal trawls between 2028 and 2032 will significantly strengthen fisheries data. By providing continuous, verifiable data on catch and discards, REM will improve compliance

with conservation measures, enhance the accuracy of stock assessments, and enable more responsive management. This facilitates the identification and mitigation of environmental impacts, particularly on sensitive species and habitats. Pilot programmes focused on recovery species and unwanted bycatch of endangered, threatened and protected species will generate critical data to refine conservation strategies and reduce unintended ecological harm. Integrating REM with broader evidence-gathering initiatives will create a comprehensive monitoring framework that supports adaptive, ecosystem-based management.

Catch accounting improvements, especially those aligned with discard reduction initiatives, will enhance the accuracy of stock assessments and ensure that fishing mortality is properly accounted for. Accurate discard estimates also support compliance with conservation objectives and reduce wasteful practices that can degrade marine ecosystems. Reducing wasteful discards also helps stabilise prey populations, which are critical for sustaining marine predators and maintaining ecosystem balance.

Finally, the development of an early warning system for stock decline introduces a proactive mechanism for environmental protection, with the intent that earlier indicators of stock decline can be predicted, and if necessary, acted on through an agreed suite of measures. By identifying signs of stock deterioration before critical thresholds are reached, the proposal of developing a system to enable timely management interventions that can prevent ecological collapse. This tool can function to prioritise strengthening the evidence base on declining stocks, and directly introduce more precautionary harvest control rules and technical measures designed to maintain stock biomass above precautionary levels will help safeguard ecosystem health and resilience, ensuring that marine biodiversity is preserved and that fisheries remain ecologically viable in the long term. This action was requested for and widely supported by the fisheries sector during engagement. Successful implementation will likely secure a greater degree of fisher ‘buy-in’, translating to greater compliance and in turn positive environmental effect for depleted stocks.

Negative Effects: Choke risks from mixed and multi-species management, particularly when aligning with MSY and multispecies reference points, may inadvertently increase the risk of “choke” species - stocks with low quotas that limit the ability to fish for other, more abundant species caught in the same operations. This could lead to early fishery closures or increased discarding (even under REM), potentially undermining both conservation goals and stock recovery efforts.

Furthermore, while REM is intended to improve compliance and reduce discards, it may also lead to unintended behavioural changes. Fishers might avoid areas

with high bycatch risk altogether, potentially underutilising healthy stocks or shifting effort to less suitable grounds.

A key concern raised from commercial stakeholders was that current government policy on REM is not aligned with the realities of modern fisheries operations. This disconnect is particularly evident in the handling of discards of certain bycatch species, which are often caught above the de minimis threshold and are extremely difficult to avoid. Without clear policy guidance on how to manage these unavoidable discards, fishers are left uncertain about compliance expectations. This policy gap could lead to unintended environmental consequences, such as increased unreported discarding or misreporting, undermining the accuracy of catch data and the effectiveness of stock assessments. Moreover, if REM implementation is perceived as punitive rather than supportive, it may discourage industry cooperation and foster fear of fishery closures, potentially stalling progress on sustainable management impacting on environmental benefits.

As REM becomes mandatory, there may be a lag in enforcement capacity or technological reliability. Inconsistent implementation or technical failures could result in gaps in monitoring, allowing harmful practices to persist undetected. Moreover, smaller or inshore vessels fall out of the scope of the REM programme, potentially leading to uneven environmental oversight – with specific implications for monitoring impacts of <12m gillnets.

Another potential risk is that while early warning system is designed to detect stock decline, it may not capture broader ecosystem changes or cumulative impacts from multiple stressors (e.g., climate change, pollution). If management responses are too narrowly focused on individual stocks, broader ecosystem degradation could go unaddressed.

Efforts to harmonise technical conservation measures across regions may risk overlooking local ecological differences. For example, standardising mesh sizes without accounting for species composition, habitat types, or fishing practices in specific areas could reduce the effectiveness of conservation measures.

Increasing mesh sizes, whilst intended to improve selectivity and reduce juvenile bycatch, will exert greater pressure on mature individuals; creating a directional selection pressure leading to an evolutionary shift favouring smaller fish. As a consequence, leading to life-history traits displaying reduced growth rates, smaller adult body sizes, lower egg carrying capacity and earlier reproductive maturity. Such impacts will negatively impact the trophic structure of the species and drive broader ecosystem changes in prey populations and food availability.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Landscape and Seascape; Climatic Factors.

Policy Goal 8: Build towards an ecosystem-based management of fisheries

Positive Effects: The aim of this policy is to minimise the impact of Celtic Sea demersal fisheries on the marine ecosystem by taking appropriate measures to: 1) reduce benthic impact and 2) reduce incidents of bycatch of sensitive marine species; 3) maintain prey availability for across food webs which support the needs of cetaceans, seals and seabirds, and 4) to build toward ecosystem-based approaches to fisheries management.

The continuation and expansion of bycatch mitigation programmes, such as the UK Bycatch Mitigation Initiative and Clean Catch UK, will enhance our understanding of bycatch risk, frequency, and spatial distribution in Celtic Sea and Western Channel demersal fisheries. By quantifying and mapping the mortality estimates for sensitive bycatch species, as well as trialling mitigation tools like acoustic deterrents and gear modifications, these programmes can help reduce unintended captures and support the recovery of vulnerable populations. As outlined in other policy goals, the rollout of REM across key demersal fleets further, particularly through the increase monitoring of bycatch mitigation measures in gillnets, would strengthen this effort by providing further data on fishing activity and bycatch, as well as accountability in reporting and implementing best practices.

The FMP's ecosystem-based approach will deepen the integration of ecological evidence into fisheries management. For example, identifying and mitigating pressures on Essential Fish Habitats, such as critical spawning and nursery grounds, not only strengthens the year-class replenishment of fish stocks, but also increases resilience to fishing pressures and prey availability for other species. By identifying ecosystem-based reference points that may be affected by single-stock advice or current TACs, and setting actions to keep them above critical thresholds, long-term stock advice can better reflect broader ecological dynamics, including predator-prey relationships, benthic disturbance, and climate change impacts.

Promoting innovation in alternative gear types, such as those that reduce contact with the seafloor, can help preserve the carbon sink potential of marine sediments, contributing to wider climate change policies. It would also help reduce the disturbance of vital geochemical processes carried out by benthic species, on which wider ecosystems rely on.

Negative Effects: If mitigation tools like acoustic deterrents or gear modifications are not properly tested across different ecological contexts, they could have unintended effects, such as displacing sensitive species into other areas or altering predator-prey dynamics.

Efforts to implement ecosystem-based approach and integrate broader ecological evidence into stock assessments could also introduce complexity and uncertainty into decision-making. Ecosystem models require large volumes of high-quality data and assumptions about species interactions, climate impacts, and ecosystem functions. If these models are incomplete or misinterpreted, they could lead to inappropriate management decisions, such as setting overly conservative or overly liberal catch limits that either underutilise healthy stocks or fail to protect vulnerable ones. Furthermore, it may also delay necessary decisions. Additionally, the harmonisation of spatial and temporal closures, while intended to reduce spatial squeeze, could inadvertently concentrate effort in ecologically sensitive areas if not carefully planned.

Finally, the emphasis on gear innovation and alternative fishing methods to reduce benthic impacts may not always yield net environmental benefits. New gear types may have unknown ecological trade-offs, such as increased energy use, habitat disruption in different areas, or unintended bycatch of other species. Without robust trials and adaptive management, these innovations could shift rather than solve environmental pressures.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Landscape and Seascape; Climatic Factors.

Policy Goal 9: Supporting sector adaptation, resilience and engagement

Positive Effects: The actions proposed under this policy goal can contribute to more environmentally sustainable fisheries by integrating social and economic aspects into ecological decision-making. By identifying vulnerabilities across different fleet segments and assessing their reliance on Celtic Sea and Western Channel demersal fisheries, measures can be tailored to reduce environmental pressure while also aiming to avoid disproportionately impacting specific groups.

Developing social and economic indicators alongside ecological ones also supports a more holistic, ecosystem-based management framework. When communities are engaged and their needs understood, they are more likely to support and comply with conservation measures, leading to better environmental outcomes. Furthermore, establishing mechanisms for stakeholder participation in decision-making fosters shared responsibility and encourages the adoption of sustainable practices. Over the medium to long term, agile and collaborative management approaches can adapt more effectively to emerging environmental challenges, such as climate change or shifting species distributions, ensuring that fisheries remain resilient and ecologically balanced.

Negative Effects: Despite these benefits, there are potential negative environmental risks if the social and economic focus is not carefully balanced with ecological priorities. For example, efforts to optimise direct and indirect

benefits from fisheries could lead to increased fishing pressure if not aligned with stock health and ecosystem limits – such as the MSY approach, where possible, or precautionary approach. Without strong environmental principles, attempts to maximise economic returns will compromise recovery efforts for vulnerable species or habitats.

Additionally, if stakeholder engagement processes prioritise short-term economic concerns over long-term ecological sustainability, there is a risk that environmental objectives will fail to be achieved. Finally, if monitoring and assessment frameworks focus too heavily on social indicators without integrating robust ecological metrics, it may become difficult to detect or respond to environmental decline in a timely manner.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Landscape and Seascape; Cultural Heritage.

Policy Goal 10: Reduce the contribution of fishing to climate change and supporting the fishing industry to adapt to the impacts of climate change

Positive Effects: The proposed actions aim to: 1) quantify the contribution of FMP fisheries to climate change, 2) reduce the climate footprint of demersal fisheries in the Celtic Sea and Western Channel and 3) understand the impact of climate change on Celtic Sea and Western Channel demersal stocks.

By aligning fisheries with broader climate change research and CO_2 reduction strategies, the FMP encourages the development of more energy-efficient fleets and fishing practices. Improvements in engine design, gear modifications to reduce drag, and better planning of fishing events can lower fuel consumption and greenhouse gas emissions, contributing to national (Climate Change Act 2008 and UK Maritime Decarbonisation Strategy) and international climate targets (Paris Agreement 2016). Within the broader context of global greenhouse gas reduction efforts (across the UK and globally), lowering emissions from FMP demersal fisheries could have a positive impact on the marine environment. This would positively contribute to the reduction in carbon concentrations within marine ecosystems and limiting the increase in sea surface temperatures.

Already by mid-century, many fish stocks are projected to shift their distribution toward more poleward waters due to the temperature and other ecological limits in which they can successfully reproduce and survive (Townhill et al., 2022). These shifts can trigger cascading effects throughout marine ecosystems, altering trophic compositions and predator-prey dynamics.

Actions within the FMP that expand evidence on climate-related impacts to fish stocks, including integrating longer-term climate projections into future iterations of the FMP, can help identify species and ecosystems most vulnerable to

warming seas, enabling more targeted, precautionary and adaptive management strategies to enhance stock resilience to multiple pressures.

Negative Effects: There are potential unintended environmental consequences if these actions are not carefully managed. Efforts to adapt fisheries to climate change, such as shifting focus to species expected to thrive under warming conditions, could inadvertently increase pressure on emerging stocks before their ecological roles are fully understood in their newer geographic distribution. Prioritising adaptation over mitigation actions may not prevent disruptions to predator-prey relationships, as species historically found in the FMP area shift northwards and are replaced by species historically found in more southern waters. Understanding the projected changes in ecosystem composition is essential to avoid overexploitation of newly arriving species as these fill the gaps left behind. Similarly, restructuring fisheries around future climate-driven ecosystems could result in neglect of current conservation needs.

Technological upgrades aimed at reducing emissions, such as new engines or gear types, may also have trade-offs. For instance, gear designed to reduce drag might alter fishing patterns or increase efficiency in ways that unintentionally raise catch rates or expand fishing into previously less-impacted habitats. Furthermore, if climate adaptation strategies prioritise economic resilience over ecological integrity, there is a risk that environmental objectives could be neglected.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Geology/sediments (UK MS - D6); Landscape and Seascape; Climatic Factors.

Overview of Potential Positive Environmental Effects of the FMP

Biodiversity, Flora, Fauna, Geology and Sediments, Water quality, Climatic factors, Cultural heritage, Landscape and Seascape

The overarching aim of the draft CSWCD FMP is to deliver long-term sustainable management of CSWCD fisheries in the ICES areas 7e, 7f, 7g and 7h in English and Welsh waters over the long-term.

Securing the long-term sustainable harvesting of the FMP's target species stocks across English and Welsh waters, with the long-term aim of fishing within sustainable limits (MSY, appropriate proxies or the introduction of other harvest control strategies, supported by an ecosystem-based approach to fisheries management) could positively contribute to the GES of MS D1 Biological diversity, D3 Commercially exploited fish and D4 Food webs, by:

- helping reduce the risk of overexploitation of the FMP's target species stocks

- reducing fishing-related mortality which may help the FMP's target species populations become more resilient to environmental change
- helping control species removal from food webs to contribute to the GES of Marine Strategy D1 Biological diversity and D4 Food webs

Policy Goals 1-6 of this FMP aim to restore species group stocks that are currently at overfished biomass levels to sustainable levels, maintain stocks that are already fished at sustainable levels, and gather evidence on data-limited stocks to assess their biomass levels, adjusting fishing pressure where appropriate.

The draft CSWCD FMP acknowledges the high occurrence of bycatch in its highly mixed fisheries, particularly of recovery commercial fish species that have low or bycatch only quotas in operations that target other species at more favourable biomass levels. Policy goals 1-6, which includes actions specific to certain species groups, as well as policy goals 7 and 8 propose the exploration of both multi-species and ecosystem-based approached to fisheries. Current approaches towards quota allocation and management follows single-species advice, which does not fully consider the implications on other species that are usually caught together. A more combined approach could in turn benefit wider marine ecosystem function and biodiversity, particularly in highly mixed fisheries operations.

Policy Goal 7 further focuses on creating a holistic and integrated approach to Celtic Sea management, bringing together multiple existing and proposed workstreams to achieve more effective outcomes with available resources. These the discard reduction scheme, catch accounting and REM. The roll-out of REM across all priority fleets will underpin most policy goals, in terms of increasing robust data gathering, assessment of fisheries impacts and transparency across fleets. REM will contribute to achieving the GES of MS descriptors D1 and D4, by not only strengthening data on mixed fisheries interactions, but also on the bycatch of non-target sensitive species, such as marine mammals, seabirds and other fish.

The draft CSWCD FMP includes policies seeking to better assess bycatch associated with the fishery, which should allow the introduction of measures to reduce bycatch of non-target and endangered, threatened and protected species over the long-term if required. This is important to steps taken in promoting stock health in the FMP recovery species, whereby the approach outlined in the FMP will explore measures which can reduce unwanted bycatch. The FMP includes a short-term action to introduce greater monitoring and evaluation of mitigation measures for protected species bycatch in gillnetters to more accurately assess and address the high bycatch risk for netting.

The draft CSWCD FMP recognises the impact of demersal towed gear on achieving UK Marine Strategy Descriptor D6 – Seafloor integrity. As these gears are predominant in Celtic Sea demersal fisheries and yield high landings and economic

benefits, the FMP prioritises assessing and addressing their impacts. This includes identifying essential fish habitats, nursery and spawning grounds, and supporting academia and industry in exploring lower-impact, innovative gear modifications.

To reduce benthic impacts around England, the FMP promotes a partnership approach aligned with the UK Marine Strategy Programme of Measures (POM), including the creation of a cross-UK benthic impacts working group. It also aims to improve regional understanding of benthic disturbance by enhancing the accuracy of fisheries spatial data, either through increased ping frequency or the use of geo-cached data for more granular insights.

The draft CSWCD FMP also acknowledges the potential impact to the marine environment by fishing related marine litter. Actions identified to ensure progress towards GES for D10 Marine Litter are primarily engagement with collaborative initiatives, which is in line with statutory nature conservation bodies advice.

The draft CSWCD FMP Policy Goal 10 supports policy development to quantify and reduce the contribution of fisheries activities to climate change, contributing to achieving the climate change objective in Fisheries Act 2020 and the Climate Change Act 2008. Such policies will help join up with wider governmental initiatives in achieving progress towards net zero.

The draft CSWCD FMP will contribute to building an improved understanding of how climate change is influencing the FMP's target species stocks range and the physical and biological characteristics of the FMP's target species. The FMP will go further to evaluate the impact and species sensitivities to climate change, and product long term projects for the stocks to account for future climate impacts. Identify where climate change mitigation and adaptation measures can be implemented to reduce impacts on the fisheries. Evidence will be gathered to build resilience in the environment and fishery CSWCD fisheries adapt to climate driven changes in the distribution of stocks, contributing to the climate objective in the Fisheries Act 2020.

The draft CSWCD FMP acknowledges the climate change impacts on the FMP's target species stocks and fisheries and signposts to existing national programmes to that collect data on the effects of climate change. In addition, the FMP sets out policies to address existing evidence gaps related to climate changes on the FMP's target species and how it proposes to move towards climate adaptive management.

While the FMP is not intended to focus on mitigating the impacts of fishing on marine heritage assets, or submerged prehistoric landscapes or seascapes, fisheries management could contribute to safeguarding these assets and their locations. In addition, there is the potential for positive interactions to arise between fishing and cultural heritage and submerged prehistoric landscapes or seascapes. A degree of fishing disturbance can lead to some heritage assets being revealed and investigated, thereby improving the knowledge base.

Fisheries management that reduces adverse effects on habitats and seabed features, for example through gear design and spatial closures, could indirectly help to conserve both known and unknown marine heritage assets and submerged prehistoric landscapes or seascapes. However, further consideration of mitigating any impacts on these features may need to be considered.

Managing stocks so they are harvested in a sustainable way can have environmental, social and economic benefits. Ensuring a fishery is environmentally, socially and economically sustainable over the long term could help promote the cultural importance of fishing and preserve the cultural heritage of fishing itself including wrecks of fishing vessels, historic harbours and infrastructure, and fishing communities.

Overview of Potential Negative Environmental Effects of the FMP

Biodiversity, Flora, Fauna, Geology and Sediments, Water quality, Climatic factors, Cultural heritage, Landscape and Seascape

Acknowledging that the proposed policies and actions are at the beginning stages of development, the assessment of likely negative effects identified a low risk of significant adverse effects on biodiversity, flora, fauna, water quality, cultural heritage, and landscape and seascape from implementing individual policies and actions. However, there remains uncertainty. In particular, we do not yet know the potential environmental effects of implementing the combination of actions set out in the draft CSWCD FMP.

Nevertheless, the fisheries objectives which will guide our actions should deliver improved environmental protection, so although it is difficult at this stage to anticipate all the potential significant negative effects on the environment in the short term, the overall ambition is to have a positive effect on the environment over the long term through the implementation of the ecosystem-based approach to fisheries management. MPAs will continue to be assessed through a separate suite of work, to ensure that its designated features protected from fishing pressure.

There is the potential for factors such as the spatial footprint, intensity, type of gear and fishing methods of CSWCD fisheries to alter through publishing the FMP and implementing its policies and actions. We recognise that management interventions brought in through FMPs may solve one issue, but unintended and unpredictable issues could arise because of the measures being implemented. For example, it is acknowledged that some of the proposed precautionary management measures and actions to support the FMP goals may, through interventions intended to have a positive effect, lead to displacement of fishing activity to other locations or into

fisheries. This may result in negative environmental effects that fall outside the scope (area or species) of this FMP. Where an FMP cannot solve an issue, it may be appropriate for other FMPs to consider this issue. Alternatively, if areas beyond English and Welsh waters are affected, it may be appropriate for this issue to be considered through wider UK or international fisheries management fora.

This section has identified potential negative effects that could arise from the implementation of the FMP's policies and actions. Due to the policies and actions being at an early stage of development it is difficult to systematically set out their magnitude and significance, without further detail on the nature, timing, duration, scale or location of the proposed actions. Changes to fishing activity resulting from the implementation of the FMP goals and actions should be monitored as part of the process of evaluating the effectiveness of FMPs. Tools such as iVMS, VMS and REM will greatly improve, our ability to monitor spatial and temporal changes in fishing effort. Such monitoring would help identify any unintended consequences on the environment and indicate whether the implementation of these actions could lead to any significant environmental effects if unmanaged. Mitigating action could then be considered where any significant negative effects are identified, that are related to those issues scoped into this assessment.

In-combination Effects

The draft CSWCD FMP could potentially have positive (or negative) in-combination effects with other programmes to deliver sustainable fisheries (see section 4). Whilst these other programmes focus on different topics, there are common themes that positively link them together. For example, FMPs and the Marine Plans share the common principles of managing marine resources sustainably and reducing the impact of anthropogenic pressure on the marine environment. Having due regard to the Environmental Principles during the development of policy will further ensure that the environment will be appropriately considered throughout the FMP process. More broadly, we anticipate the cumulative positive effect of these programmes will result in helping to meet sustainability objectives and achieving long-term improvements to the marine environment.

Undertaking the in-combination assessment at this stage in the production cycle of the FMP proved difficult due to the policies and actions being at an early stage of development. The assessment of the likely negative effects of the individual policies and actions in section 5 identified a low risk of significant adverse effects on the environment and therefore no amendments are needed ahead of publishing the FMP. When considering the combined effect of other potential policies, we are not aware at this stage that any other regimes/activities are going to change that position.

The FMP could facilitate the in-combination assessment with Marine Plans in this ER, by providing more specific detail on how the FMP could positively or negatively interact with them. However, a Marine Plan assessment will be undertaken on the finalised FMP goals prior to publication, to assess how they will interact with Marine Plan policies. The assessment will identify whether an FMP policy will be compliant, potentially conflict, or not be compliant with Marine Plan policies. The interaction between FMPs and Marine Plans will be further considered when monitoring the effectiveness of plans. Any necessary adaptations, to ensure FMPs and Marine Plans interact positively, would be built into the FMP's ongoing implementation and adjusted in future revisions of the FMP as required.

Marine Plans set out priorities and directions for future development within the plan area, inform sustainable use of marine resources and help marine users understand the best locations for their activities. Marine Plans consider all marine activities, resources and ecosystems and therefore assessing FMP policies against Marine Plan policies represents the most efficient way of determining how FMP policies will broadly interact with other marine activities, ensuring compliance with Section 58 of the Marine and Coastal Access Act 2009.

Before there are any changes to fisheries management as a result of the draft CSWCD FMP, where necessary, all new measures will be subject to Habitats Regulations assessments and Marine Conservation Zone assessments. Such assessments will consider the potential in-combination effects with other plans and projects that are occurring or will occur within in an MPA. These assessments will also identify where any specific interactions exist.

The combined effect of implementing the polices and actions of all FMPs will be considered through the mandatory FMP monitoring process once the plan is published and could form part of the longer-term JFS or FMP review cycles (see section 8).

Conclusions

CSWCD fisheries are an ongoing activity that poses some risks to the quality status of the marine environment. The draft CSWCD FMP focuses on achieving the sustainable harvesting of the FMP's species stocks and therefore will reduce the risks to the future status of the FMP's species stocks in the long-term giving positive benefits to the environment.

Nevertheless, we acknowledge that fishing for the FMP's species within sustainable limits may not remove all the associated negative effects of that fishing on the wider marine environment.

The Fisheries Objectives (in the Fisheries Act 2020) require FMPs to integrate environmental, social and economic aspects of a fishery when introducing

interventions to control fishing activity within sustainable levels. Achieving the balance between these three elements will be a central component of making a positive contribution to the sustainability objective.

The draft CSWCD FMP takes a precautionary approach to fisheries management and adopts a balanced and proportionate approach towards delivering the fisheries objectives. The draft CSWCD FMP may result in positive and negative effects on the environment in the short term, with the overall ambition to have a positive effect on the environment over the long term through the implementation of the ecosystem-based approach to fisheries management.

The draft CSWCD FMP outlines how it will address the overexploitation of fish stocks, seabed disturbance, bycatch of sensitive non-target species within mixed fisheries, and broader impacts on the marine environment.

The draft CSWCD FMP does not specifically consider the impacts of fishing on marine heritage assets. However, fisheries management aimed at reducing wider environmental effects could indirectly help to conserve both known and unknown marine heritage assets. This iteration of the FMP focuses on setting out actions to achieve sustainable harvesting of the FMP's target species stocks but there is scope for future iterations of the FMP to address this wider issue.

The draft CSWCD FMP does not specifically consider the impacts of fishing on submerged prehistoric landscapes or seascapes. However, fisheries management aimed at reducing the impact on seabed integrity could indirectly help to conserve submerged prehistoric landscapes or seascapes. This iteration of the FMP focuses on setting out actions to achieve sustainable harvesting of the FMP's target species stocks but there is scope for future iterations of the FMP to address this wider issue.

6. Proposed Measures to Reduce Significant Negative Effects

Existing Negative Effects of CSWCD fisheries

This ER has acknowledged the existing negative environmental effects associated with the fishing activity which will be managed through the FMP. The actions proposed by the FMP to reduce negative effects are set out below.

The Celtic Sea and Western Channel are key areas for demersal fishing, hosting a high concentration of commercially valuable fishing activities. The FMP has a broad scope, covering a wide range of species and stocks, including gadoids, flatfish, anglerfish, nephrops, seabream, skates, rays, and deepwater sharks. Due to the scale of operations for some of these species, the associated fisheries have

significant environmental impacts. These include the overexploitation of certain stocks - particularly cod, haddock, whiting, and pollack - the degradation of seafloor integrity from demersal towed gear, the bycatch of non-target species (including UK Marine Strategy species and Marine Protected Area designated features), and the contribution of vessel emissions to climate change.

Biodiversity, Flora, Fauna, Geology and Sediments (soil), Water quality

Measures currently being implemented to manage CSWCD fisheries (set out in the draft CSWCD FMP - Current fishery management) include fishing activity and effort limits, technical measures and protection of juvenile and spawning the FMP's target species through MCRS. These measures will be part of the overall management strategy and will make a contribution to the conservation of stocks and the wider environment.

The draft CSWCD FMP has also considered advice from SNCBs with respect to the impacts from the CSWCD fishing activity on MPA features and the wider marine environment in relation to UK MS descriptors. The draft CSWCD FMP has set out the following proposed measures to reduce those known negative effects below.

Impacts within MPAs

The detailed risks that specific gear types and fishing activities pose on MPA-designated features are covered in the “Existing Environmental Effects of the CSWCD fisheries” section of this Environmental Report. The MPA network (see Appendix C) is protected through the existing MPA management process by managing human activities such as fishing to avoid likely significant effects on the environment. In English waters, these activities are mainly controlled through the powers vested in the IFCAs (0-6nm) and the MMO (beyond 6nm) to make byelaws. Welsh MPAs are managed by the Welsh Government in close collaboration with NRW and the JNCC. The Marine Protected Area Management Steering Group provides strategic coordination for the management of all MPAs in Welsh seas. IFCAs, the MMO and Welsh Government were involved in the development of the FMP to ensure measures proposed through the FMP are compatible with existing MPA management. Before Defra and Welsh Government implement any new management interventions proposed in draft CSWCD FMP, those interventions will be screened for likely significant effects on any SAC or SPA that overlap with the geographical scope of the measure and, where necessary, a further appropriate assessment completed in accordance with the Conservation of Habitats and Species Regulations 2017 or the Conservation of Offshore Habitats and Species Regulations 2017. In accordance with the Marine and Coastal Access Act 2009, a Marine Conservation Zone (MCZ) assessments will also be completed before any new

management measure is implemented to ensure that the measure will not hinder the conservation objectives for which a MCZ has been designated.

The points above will make sure the impacts of CSWCD fisheries activity and the FMP's policies and actions do not prevent our ability to meet the conservation objectives for MPA features, thereby enabling us to achieve the legally binding target for MPA condition set out in the Environmental Targets (Marine Protected Areas) Regulations 2022.

UK MS Descriptors Impacts

Commercially exploited fish and shellfish: There are 37 stocks in the scope of this FMP. Maximum Sustainable Yield (MSY) reference points can be determined for stocks classified as ICES data categories 1 or 2; MSY proxies can be established for stocks at ICES data category 3. Twelve stocks are considered data category 1 and two stocks are considered data category 2. Six stocks have been assessed by ICES and are considered data category 3, with MSY proxies in place. Eleven stocks have not been assessed against MSY by ICES and are considered data category five, and six stocks are considered data Category 6; more evidence gathering is required to improve data for these species in order to progress them toward an MSY or MSY proxy assessment.

Multiple FMP stocks currently have spawning stock biomass levels below the level considered to be capable of supporting MSY, leading to depleted stocks or sub-optimal levels of harvest. These include pollack (pol.27.67), cod (cod.27.e–k), whiting (whg.27.7b-ce-k), plaice (ple.7e and ple.7fg) and Nephrops Functional Unit (nep.fu.22). The haddock stock had.27.7b-k currently remains above B_{lim} but below $B_{trigger}$ and continues to show a decreasing trend in biomass levels. It is therefore also considered a stock that requires targeted actions to support its recovery. The four gadoid species, cod, haddock, pollack, and whiting, are severely depleted due to decades of overfishing, as well as shifts in their distribution northwards caused by rising sea surface temperatures.

ICES currently advises zero catch for cod, haddock, and whiting, although recent guidance has moved away from zero catch for pollack. In the UK, these stocks are managed as bycatch-only fisheries, with TACs beyond ICES advice due to the risks that chokes may pose if these species also had a zero-bycatch quota. An international plan of action is critical for the recovery of these valuable stocks, not only because of their commercial importance, but also due to their role in the broader marine ecosystem. The FMP proposes two plans for recovering gadoids stocks, one focussing on cod, whiting and haddock, commonly caught together in mixed fisheries, and another, separate plan for pollack, due to its biological distinctness from the other species. The aim is to restore gadoid biomass levels in the Celtic Sea and Western Channel to levels capable of producing MSY, which is above B_{lim}. Actions within and beyond such action plans include ICES assessments of species

recoverability, the implementation of harvest control rules that account for mixed fisheries and ensuring that TACs set for healthy stocks consider the potential bycatch of recovering stocks with which they are often caught. Additionally, measures such as increasing the MCRS, introducing recreational bag limits, adjusting minimum mesh sizes, and applying "move-on"[27] rules will be explored. The rollout of REM across these priority fisheries will also be pursued to strengthen data collection and reporting. For pollack specifically, some short-term actions within the FMP aim to protect spawning and nursery habitats. This includes considering combined spatial and temporal closures of known pollack spawning and nursery grounds for both recreational and commercial fishers.

Of the flatfish species included in the scope of the FMP, the plaice stocks ple.7e and ple.7fg currently have biomass levels below those considered capable of producing MSY. Sole and plaice are commonly caught together in the mixed fisheries covered by the FMP. Typically, plaice are taken as bycatch in beam trawls targeting sole and anglerfish. The FMP's long-term management strategy will consider how to balance sustainable sole landings with the need to restore plaice stocks. Proposed actions include evaluating the effectiveness of existing MCRS and plaice recovery boxes, conducting further research into sole and plaice fishery interactions to better manage discards and bycatch, rolling out REM, and protecting essential flatfish habitats such as spawning and nursery areas, with a particular focus on areas that support plaice stock recovery. The FMP also aims to support the ICES benchmark process for the plaice stock in 7fg, with the goal of upgrading it to a Category 1 stock.

Of the three Nephrops stocks included in the FMP, the Functional Unit (nep.fu.22), assessed at MSY, is currently fished below F_{msy} levels, its current biomass remains below its MSY $B_{trigger}$ level.[38] This suggests that the FMP will need to consider policies aimed at contributing towards its recovery. ICES recommends that management of Nephrops should be at a function unit level, with a framework that allows for agreed prior responses to any changes in stock status. The functional unit approach will be explored through the FMPs, as multiple functional units my exists within or across ICES areas. Some actions proposed by the FMO is the development of an appropriate harvest strategy that is specific to each functional unit and applying lessons learned from discard reduction scheme in the North Sea Nephrops fishery.

The FMP will also aim to develop and, in the long term, integrate an ecosystem-based approach to fisheries management. This approach supports the recovery of overfished stocks while maintaining the biomass levels of stocks currently considered to be at sustainable levels. Key elements include research into Essential Fish Habitats, the identification of ecosystem reference points that may be affected

[27] "move-on rules" require fishing vessels to relocate from an area where they encounter sensitive habitats, Vulnerable Marine Ecosystems (VMEs), or protected species.

by current single-species MSY advice, and the development of ecosystem-based Management Strategy Evaluations (MSEs) to inform management decisions through ICES processes. Additionally, the FMP will consider the ecological impacts of prey removal, particularly of key species and functional units such as juvenile gadoids, on other marine species.

The detailed risks that specific gear types and fishing activities pose on UKMS descriptors are covered in the “Existing Environmental Effects of the CSWCD fisheries” section of this Environmental Report.

Policy Goal 8 of the draft CSWCD FMP – building towards and ecosystem-based approach to fisheries management – acknowledges and looks to address these risks. Current English and Welsh SNCB assessments identify demersal trawls (including beam trawls, otter trawls and bottom pair trawls), static nets, and drift nets as being the most relevant gear types for consideration.

Bycatch: Reducing bycatch of sensitive and/or non-target species is complex and requires solutions that are tailored to the different fisheries. To assist in the understanding and mitigations of the bycatch risks highlighted in the SNCB advice the following steps will be taken:

The draft CSWCD FMP links specific data collection initiatives to wider bycatch monitoring and mitigation programmes such as Clean Catch UK, which has the potential to appropriately mitigate risks associated with highly mobile MPA features. Furthermore, the FMP proposes to enhance the monitoring and evaluation of mitigation measures for the bycatch of protected species in gillnet fisheries and those targeting recovering stocks. It proposes increased support for collaboration between academia and industry to develop alternative and innovative gear types or fishing methods that reduce both the bycatch of sensitive species and benthic disturbance. More broadly, the FMP seeks to gather evidence to support the integration of ecosystem-based management into stock assessments and subsequent fisheries advice. This includes assessing the impacts of current and alternative management scenarios on the productivity, resistance, and resilience of target species, bycatch species, and key structural and functional components of the demersal ecosystems in the Celtic Sea and Western Channel.

Further data would help establish the locations and scale of bycatch. Additional data through REM, self-reporting and encouraging participation in existing observer programmes, will increase our understanding and thereby allow better decision-making regarding mitigations on what and where mitigation may be required. Improving reporting pathways (for both fishermen and fisheries managers) and bycatch monitoring programmes will help improve understanding and our ability to determine whether any mitigatory action is necessary.

Litter: The FMP will collate, and review evidence generated by the existing national policy and monitoring schemes before the next iteration of this FMP. We will encourage the participation in initiatives which will assist in recording gear losses to better understand the levels of risk and establish baselines. In future iterations the FMP will consider the evidence collated and assess the scale of the impact generated by CSWCD fisheries.

Seabed Integrity: On a national level, the UK is committed to reducing the impact of fishing gear on the seabed and is taking a multi-faceted approach to assess where measures can be best placed to mitigate impacts. In the update to the UK Marine Strategy Part One (2019), Government made a commitment to assess the feasibility of setting up a partnership working group with key stakeholders to identify solutions for potential fishing impacts on seabed integrity. We are currently considering how this could work in practice.

Collaborative working between Defra and Welsh Government, ALBs and regulators to provide more detailed advice on contributions of different mobile demersal gears within the geographic context of FMPs is required. To address risks to seafloor integrity from bottom-contact and towed fishing gear, the FMP aims to improve understanding of benthic disturbance by enhancing the precision of fisheries spatial data. This could involve increasing the frequency of vessel tracking pings or using geo-referenced data to generate more detailed spatial insights. The FMP also supports the implementation of the UK Marine Strategy Programme of Measures (PoM), including the establishment of a cross-UK working group focused on benthic impacts. In parallel, it encourages collaboration between academia and industry to research and develop alternative gear technologies and fishing practices that reduce benthic impacts.

In addition, the FMP recognises the importance of evaluating the cumulative effects of broader marine spatial policies on benthic habitats. An assessment would help determine whether coordinated, cross-sectoral measures are needed to mitigate future impacts. Overall, these actions aim to support a more ecosystem-sensitive approach to fisheries management, ensuring that seafloor habitats are protected while maintaining sustainable fishing practices.

Climate Change

Vessel Emissions

Goal 10 of the draft CSWCD FMP looks to reduce the contribution of fishing to climate change and supporting the fishing industry to adapt to the impacts of climate change. This includes actions around how to best maintain collaboration and involvement across government, industry, and academic sectors in initiatives to reduce environmental impacts of Celtic Sea and Western Channel demersal

fisheries (including CO_2 emissions). Whilst this includes collecting data on the impacts of climate change on these fisheries, the Evidence Statement also identified an evidence gap in understanding the fleet emissions on an FMP level. Opportunities for greening English fisheries must be done as part of wider UK net-zero commitments, as in many cases commercial and recreational vessels that target or catch seabream as bycatch, are also engaged in other fisheries.

When new evidence around climate change impacts is developed that require any adaptation of the fishery, this will be integrated into the FMP. In the meantime, there are existing government schemes which are open to support the fishing sector in the transition to Net Zero and support businesses to adapt. Defra and Welsh Government are currently in the process of investigating existing carbon mitigating solutions and is collaborating across government and with stakeholders to support the development of pathways to Net Zero.

Blue Carbon

Healthy coastal and marine environments can provide nature-based solutions to help tackle climate change. For example, certain marine habitats that are home to these FMP's target species, such as muddy sediments, can store carbon and therefore these are known as blue carbon habitats. If left undisturbed, these habitats can contribute to GHG emission reductions. Habitat disturbance through fishing practices may affect seabed carbon dynamics. Evidence is beginning to suggest that overfishing reduces the carbon storage potential of the ocean not only through removal of biomass, but by reducing the mean size of individuals in the population, the quantity of faecal pellets excreted and the number of large carcasses sinking to the seabed. Evidence is emerging that indicates that fisheries management could play a positive role in the marine carbon cycle through preserving the largest fish within populations, maintaining sustainable stocks beyond MSY limits, and adopting Ecosystem Based Fisheries Management. Defra and Welsh Government continue to develop an evidence base on blue cardon habitats in the UK, further evidence is required to understand the trade-offs and wider consequences of decisions. The Blue Carbon Evidence Partnership is working to increase the blue cardon carbon evidence base, and as further research develops in this area, it will be considered for future iterations of the FMP.

Climate Change Impacts on the CSWCD Species Stocks and Fisheries

Over the next three to five years, the draft CSWCD FMP will work to understand and address impacts of changing climate conditions as highlighted in the climate change committee’s climate risk independent assessment, through mechanisms such as the Marine Climate Change Impacts Partnership. Another component of the FMP will be to support the industry's adaptation to the impacts of climate change in addition to encouraging industry participation in initiatives to reduce CO2 emissions. Future

iterations of the FMP will be adapted as research into climate change develops and new methods to address climatic challenges arise.

Cultural Heritage

The draft CSWCD FMP does not explicitly consider the potential impacts of CSWCD fisheries activity on marine cultural heritage.

Historic England have developed a range of options designed to manage negative interactions between commercial fishing and the historic marine environment. Defra and Welsh Government should work with agencies such as Historic England to consider how measures that could protect the marine historic environment could be incorporated into fisheries management for future iterations. Considering appropriate measures to reduce negative interactions with marine heritage assets could strengthen the positive interactions between FMPs and cultural heritage and has the potential for the FMP to contribute to having a positive effect on the current baseline. In addition, by working with Historic England to better understand the extent of prehistoric deposits like moorlog and how they are changing, efforts to conserve them from the impacts of fishing them might contribute to climate change mitigation and adaptation.

Landscapes and Seascapes

The draft CSWCD FMP does not explicitly consider the potential impacts of CSWCD fisheries activity on submerged prehistoric landscapes or seascapes. The FMP has considered the impact of CSWCD fisheries activity on seabed integrity which may could indirectly help to conserve submerged prehistoric landscapes or seascapes.

Defra and Welsh Government should work with agencies such as Natural England, JNCC, NRW and Historic England to consider how measures that could protect the marine historic environment could be incorporated into fisheries management for future iterations. Considering appropriate measures to reduce negative interactions with submerged prehistoric landscapes or seascapes could strengthen the positive interactions between the FMP and the wider marine environment that fishing for the species where CSWCD fisheries operates in. This has the potential for the FMP to contribute to having a positive effect on the current baseline.

Effects identified by this assessment

The assessment of the likely negative effects of the individual policies and actions in section 5 identified a low risk of significant adverse effects on the environment from implementing individual policies and actions. Therefore, no changes to the proposed goals, policies and actions are needed ahead of publishing the FMP. Where

appropriate, the policies and actions will be developed and implemented to mitigate any potential negative effects identified by the current assessment.

The likely negative effects will also be considered when developing monitoring activities as part of the implementation process (see section 8), to ensure that any negative effects of the of the FMP's policies and actions individually or combined can be further reduced. Given the uncertainty as to the negative effects of implementing the individual policies and actions, monitoring changes to fishing activity resulting from the implementation of the FMP will help identify any unintended consequences on the environment that could subsequently lead to significant negative environmental effects. Where likely unintended environmental consequences are identified, appropriate changes to management or mitigation can be implemented to reduce to any negative environmental effects developing.

General

The UK is committed to using marine resources sustainably and reducing the impact of fishing on the marine environment to comply with its international and domestic obligations. The draft CSWCD FMP seeks to support these commitments by providing the tools (FMP policies and actions) to deliver the sustainable harvesting of the FMP's target species stocks.

The range of environmental issues identified through this assessment have been considered by the draft CSWCD FMP. The FMP acknowledges that the evidence base is not sufficiently comprehensive at present to fully address many of the issues and therefore proposes a multi-step, iterative approach to deliver long-term sustainability through improving the evidence base. The FMP should remain flexible to adapt its policies and actions as new evidence on potential impacts of CSWCD fisheries emerge, particularly in relation to climate change.

This ER considers that the FMP has proposed all necessary actions to address existing issues and has appropriately considered how it will address potential issues arising from the implementation of the FMP's policies and actions. This ER has therefore not proposed any mitigations in addition to those already set out in the FMP.

7. Reasonable Alternatives

Regulation 12(2)(b) of the SEA Regulations 2004 requires the fisheries policy authorities to consider reasonable alternatives to the draft CSWCD FMP. A reasonable alternative has been defined as 'an activity that could feasibly attain or

approximate the FMP's goals at a lower environmental cost or decreased level of environmental degradation'[28].

Section 2 of the Fisheries Act 2020 requires the fisheries policy authorities to publish a JFS setting out how they will use FMPs to achieve, or contribute to achieving, the fisheries objectives. The JFS lists the planned FMPs, including the draft CSWCD FMP. This listing creates a legal requirement to prepare and publish the draft CSWCD FMP and does not allow for a reasonable alternative to producing an FMP unless a 'relevant change of circumstances', as set out in section 7 (7)[29] of the Fisheries Act applies; we are not aware of any information that would invoke these circumstances.

The draft CSWCD FMP, alongside the other 43 FMPs was agreed by the fisheries policy authorities through the JFS publication process. Engagement across administrations took place via the processes outlined in the Fisheries Framework. Regular scrutiny of the emerging list of FMPs was built into every step of the JFS policy formation, and through this process credible alternatives to managing stocks without an FMP were considered. The list of FMPs, which included an FMP for CSWCD FMP, was part of the public consultation on the Joint Fisheries Statement in early 2022. There were no comments on the inclusion of an FMP for CSWCD.

CSWCD fisheries are an ongoing activity and management already exists. Continuing with the current approach without strengthened or new management alongside further evidence collection was judged to increase the likelihood of stocks being overexploited with insufficient protection for the wider marine environment. Therefore, additional and/or amended management was required. The draft CSWCD FMP seeks to promote the management of the fishery in a more coherent and coordinated manner that considers wider environmental issues. On that basis, the FMP will likely deliver greater environmental gain and will have a more significant positive impact on improving the current environmental baseline, compared to a 'business as usual' approach that only continues with existing fisheries management.

The draft CSWCD FMP policies and actions were developed to specifically address those fisheries management issues identified within the CSWCD fisheries. The interventions adopt a precautionary approach as required by the Fisheries Act 2020 and are intended to safeguard stocks and the fishery in the short term whilst more information is gathered to inform evidence-based adaptive management in the future.

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28 Reasonable alternatives definition

29 Fisheries Act 2020 (legislation.gov.uk)

A range of environmental issues (e.g., through SNCB advice, evidence relating to climatic change impacts) have been considered during the development of the current proposed policies and actions to ensure they have minimal negative environmental effects and where applicable maximum positive environmental gain. Stakeholder input, including that from the environmental sector has been considered during the development of polices and actions. These processes have been employed to ensure the most appropriate actions have been proposed for this stage in the life cycle of the FMP. An assessment of the potential alternatives to the proposed draft CSWCD FMP goals (considering the actions that sit under them) and measures is provided below.

Assessment of alternatives to the proposed draft CSWCD FMP's policy goals and measures.

Policy Goal 1: Development of multi-year recovery plans for FMP gadoid stocks

Alternatives: The aim of this policy is to support the recovery of depleted gadoid stocks in the Celtic Sea and Western Channel to biomass levels capable of producing MSY, with a particular focus on cod, haddock, pollack, and whiting. ICES currently advises zero catch for cod, haddock, and whiting, while recent guidance for pollack has shifted away from zero catch. Although the FMP includes measures for evidence collection and consideration of mixed fisheries, it maintains a bycatch-only approach for these stocks. While implementing zero catch, including zero bycatch quotas, could reduce pressure on these species, the FMP does not propose this route due to the risk of choke effects in these highly mixed fisheries, where prohibiting all bycatch of recovering species would likely result in significant discards. Instead, the FMP focuses on minimising bycatch through gear modifications, gathering evidence on post-release survival, identifying and protecting nursery and spawning grounds to support year-class replenishment, and developing more agile responses to harvest control rules. It will also assess the effectiveness of recovery boxes, such as those used for cod, and make adjustments as needed. While bycatch quotas will not be eliminated, the FMP will consider whether stricter limits are necessary to achieve the policy's objectives. No alternative strategies are currently proposed beyond this approach.

Pollack has been prioritised for immediate to short-term action in response to ongoing concerns about the stock and the future of the fishery. ICES recently revised its advice from zero catch to a total catch recommendation of 3,310 tonnes for 2026. Fishing pressure has recently fallen below F_{msy}, likely as a result of the zero-catch advice issued in recent years. However, despite this reduction, pollack's spawning-stock biomass remains below MSY $B_{trigger}$ and sits between

B_{pa} and B_{lim}, which is why it continues to be treated as a recovery stock within this FMP.

The plan maintains a bycatch-only approach for pollack to support the continued rebuilding of biomass levels, rather than reintroducing a directed fishery. While the FMP outlines evidence-gathering actions to assess the impact of under-10m vessels and reduce discards in mixed fisheries, it also proposes immediate precautionary measures. For the commercial fishery these include protecting spawning and nursery areas through spatial and temporal closures, increasing the pollack MCRS, implementing a recreational bag limit, and promoting best practice guidelines for post-release survival. For the recreational sector these include voluntary catch limits, the Pollack Pact, and the science gathered through FISP. MCRS adjustments will be informed by L_{50} maturity studies and tested with stakeholders during consultations. More broadly, and not limited to pollack, an alternative could be the potential introduction of recreational fishing licences, as seen in other countries. Although, for now, this has not been deemed a necessary action.

Furthermore, some stakeholders have called for an accelerated rollout of REM across commercial fleets, ahead of the current Defra timeline. However, the FMP proposes following the existing timeline to allow for behavioural adaptation among vessel crews and the development of the systems in place that will not only record data but allow for responsive management decisions. As an alternative, the FMP may explore incentive schemes to encourage earlier voluntary uptake of REM. Further research and collaboration with the EU are needed to better understand the recovery potential of pollack and other gadoid species. No reasonable alternatives are available beyond this approach.

Policy Goal 2: Harvest flatfish stocks sustainably, with biomasses maintained above the level capable of producing MSY

Alternatives: This policy aims to contribute to the long-term sustainable management of flatfish stocks under the FMP, with targeted actions to restore plaice to biomass levels capable of producing MSY, while ensuring that the currently healthy sole fishery remains unaffected. Stakeholders expressed strong support for increasing mesh sizes, stating that larger mesh sizes enhance the sustainability and resilience of both fish populations and the fishing industry. Transitioning to larger mesh sizes offers multiple benefits, including allowing juvenile and non-target species to escape, and improving economic returns by targeting mature, larger fish. Although not explicitly addressed under Policy Goal 2, Policy Goal 7, focused on Celtic Sea management reform, proposes standardising mesh sizes from 80mm to 100mm, which could benefit both sole and plaice stocks.

The policy also includes a review of existing measures, such as MCRS and recovery zones, and seeks a deeper understanding of the interactions between sole and plaice fisheries, which are often caught together. The FMP aims to manage discards, bycatch, and cross-stock impacts between these fisheries. In terms of stock recovery of plaice, an approach similar to that in the US was proposed by some stakeholders, which was that if a stock falls below 5% of its unfished biomass, the fishery should be closed to allow for recovery. It should be highlighted that the aim in the first instance is that appropriate implemented management measures will prevent stock falling below this level. The flatfish multi-year harvest strategies and recovery plans proposed by the FMP will explore more concrete approaches.

Currently, few actions are proposed for megrim, as the stock is performing well. However, further evidence will be collected on four-spot megrim, including the potential separation of the combined TAC for megrim and four-spot megrim into two distinct quotas. The direction of future measures will be guided by this evidence, and no reasonable alternatives are available beyond this approach.

Policy Goal 3: Harvest nephrops stocks sustainably and manage Nephrops bycatch

Alternatives: This policy aims to support the sustainable management and exploitation of the three Nephrops stocks within the FMP area. Currently, Nephrops are managed at the ICES area level; however, the FMP explores the potential transition to FU management. This shift is being considered because Nephrops are often distributed in distinct functional units that do not align neatly with ICES area boundaries, unlike many other species. Some FUs span multiple ICES areas, while some ICES areas contain several FUs. As a result, applying a single management approach across an entire ICES area may not be appropriate for all FUs within it. Moreover, setting a single TAC for an ICES area can lead to uneven fishing pressure, overexploiting some FUs while underutilising others. Managing FUs that straddle ICES boundaries is also challenging when different TACs or management approaches apply across those areas. In response, the FMP supports ICES's recommendation to consider a transition to FU-based management, which would allow for more tailored and responsive strategies based on the specific dynamics of each Nephrops population. Additional actions include improving understanding of the nep.27.out FU, which refers to Nephrops catches not currently assigned to a defined FU, and reducing discards in the Nephrops fishery. This includes clarifying the minimum catch composition required to classify a haul as a targeted Nephrops fishery, as opposed to a mixed fishery, given the high levels of bycatch often involved. At present, no reasonable alternatives are available beyond this policy goal.

Policy Goal 4: Harvest anglerfish (lophiforms) stocks sustainably, with biomasses maintained above the level capable of producing MSY

Alternatives: The aim of this policy goal FMP anglerfish fisheries in UK waters will continue to be managed sustainably, to help ensure that stock biomasses are maintained above levels capable of producing MSY. Anglerfishes (mon.27.78abd and ank.27.78abd) are both ICES MSY assessed stocks currently fished below F_{MSY}, with biomass levels above MSY $B_{trigger}$.[41,42] Therefore, the actions for this policy goal are to promote fishing opportunities for anglerfish, in line with best available scientific advice to maintain sustainable stock levels. No reasonable alternatives are available beyond this approach for these stocks at this time.

Policy Goal 5: Manage elasmobranch fisheries at sustainably and manage bycatch

Alternatives: The FMP proposes implementation of measures consistent with the published Southern North Sea and English Channel Skates and Rays FMP. This includes consistent measures aimed at ensuring sustainable harvest and improving on the evidence available to move toward category 3 ICES assessments or better for these stocks and enabling the establishment of MSY or a proxy for MSY during the first iteration the FMP will continue with existing management on deep water sharks. Noting that these are prohibited landing species, therefore no further or reasonable alternatives are available for this first iteration.

Policy Goal 6: Build an evidence base for red seabream

Alternatives: The aim of this policy is to improve evidence of the state of red seabream stocks, with the intent of supporting potential stock assessments in future. As this is solely an evidence-gathering policy goal, no negative environmental impacts have been identified and therefore no reasonable alternatives are available.

Policy Goal 7: Explore the potential to reform existing management and approaches to join up and better align management of FMP stocks

Alternatives: The actions under this policy goal aim to reform current management approaches to better align with the stocks covered by the FMP. This involves shifting from a traditional single-species management mindset toward a more integrated, multi-species approach. It also seeks to address the currently fragmented and complex management landscape in the Celtic Sea and western Channel. The policy goal itself already represents an “alternative approach” to the status quo. Therefore, the other alternative would be to continue with the existing management and quota allocation practices in the Celtic Sea. However, the FMP advocates for a more coordinated approach across fisheries,

one that considers mixed-fisheries interactions, establishes harvest control rules and systems that enable quicker reactions to stock changes, addresses discards and bycatch more effectively, and improves data coverage and compliance through the rollout of REM. As such, no reasonable alternatives are available. If implemented, the actions outlined in this policy goal are already considered an improvement over current practices and are intended to deliver more coherent, sustainable, and evidence-based fisheries management.

Policy Goal 8: Build towards an ecosystem-based management of fisheries

Alternatives: The aim of this policy is to minimise the impact of demersal fisheries under the FMP on the marine ecosystem by implementing appropriate measures to reduce benthic disturbance from fishing gear, lower the incidence of bycatch of sensitive marine species, and promote ecosystem-based approaches to fisheries management.

Rather than establishing new programmes or workstreams to research, trial, and mitigate bycatch of non-target species in Celtic Sea and western Channel demersal fisheries, the FMP will seek to align with and contribute to existing initiatives, such as Clean Catch UK and the Bycatch Mitigation Programme. This approach is intended to leverage existing processes, avoid fragmented efforts, and streamline resources more effectively. The FMP also encourages the adoption of an ecosystem-based approach to fisheries management. This includes incorporating stakeholder perspectives into its development and considering the broader impacts of fisheries, not only on target stocks, but also on the wider biotic and abiotic marine environment. Improved data and information are needed to understand the nature and extent of bycatch in detail, as effective mitigation measures cannot be designed without this knowledge.

Regarding multi-species or ecosystem-based fisheries advice, the FMP does not propose replacing the current ICES single-species advisory framework. Instead, it aims to complement it by promoting ecosystem tools and models that provide a more holistic understanding of fisheries impacts. As such, no reasonable alternatives are available. The focus remains on enhancing existing efforts and integrating ecosystem considerations into fisheries management.

Policy Goal 9: Support sector adaptation, resilience and engagement

Alternatives: The aim of this policy goal is to support the sustainable development of both commercial and recreational fisheries in the Celtic Sea and western Channel, ensuring that coastal communities can benefit from the opportunities created through the FMP. This includes a broad range of actions, from helping fleets adapt to necessary interventions, to ensuring the long-term sustainability of key stocks.

Proposed actions under this policy include supporting stakeholders in navigating zero-catch advice for gadoid species and managing low bycatch quotas, as well as implementing changes to current sole fishery operations to aid the recovery of plaice stocks. Due to the combined impacts of climate change and historical overfishing, gadoid stocks in the FMP area have significantly declined. Depending on the pace and extent of their recovery through FMP measures, the plan will need to assess whether to support stakeholders in re-engaging with these fisheries, should they become viable again, or to encourage sustainable diversification toward other species with healthier stock levels.

In some cases, increasing social and economic interest in a fishery, such as the proposed expansion of anglerfish fisheries, may lead to increased fishing effort. The FMP will need to monitor trends in currently healthy stocks closely to ensure that development remains sustainable and to avoid repeating the decline seen in gadoid fisheries. Consistent monitoring and adaptive management will be essential to respond effectively to changes in stock status. Additionally, the feasibility and cost implications of accessing grants and implementing mandatory Defra programmes, such as the early or on-schedule rollout of REM, should be carefully assessed to ensure they do not place an undue burden on fishers.

Therefore, no reasonable alternatives to this policy goal are available at this stage. Rather, the focus will be on collaboratively determining how these approaches are implemented, in close consultation with stakeholders.

Policy Goal 10: Reduce the contribution of fishing to climate change and supporting the fishing industry to adapt to the impacts of climate change

Alternatives: The actions outlined in this policy goal are considered essential not only for meeting the climate change objectives of the Fisheries Act but also for contributing to the broader UK Maritime Decarbonisation Strategy. In line with the UK Government’s climate and net zero commitments, the FMP will explore how it can support these wider goals, particularly by aligning research and funding opportunities to reduce carbon emissions across the fisheries sector. Additionally, as climate change continues to affect stock distribution, it is crucial to understand how these shifts will reshape the fisheries landscape in the coming years. This knowledge will be key to enabling adaptive management and identifying new opportunities. The environmental impacts of carbon-reducing actions are expected to be positive, and gaining a deeper understanding of changes in stock dynamics and distribution will support smarter, evidence-based decisions for long-term sustainability.

As such, no reasonable alternative approaches to this policy goal are available. Instead, the focus will be on how best to implement these actions in collaboration with stakeholders.

Conclusions

The policies and actions set out in the FMP are therefore considered to be the most appropriate for this stage in the FMP's development. The draft CSWCD FMP will develop through future iterations as the evidence base improves. Policies and actions will be adapted to ensure the most appropriate and effective management interventions are used to address contemporary issues. Where appropriate, additional measures will be developed as options for more targeted management become available to tackle a wider range of fisheries management issues over the longer-term.

The public will be consulted on the draft CSWCD FMP, alongside the consultation of this ER. These consultations will provide stakeholders with the opportunity to review proposed actions and present alternatives if available.

8. Monitoring and Review

Monitoring

Regulation 17 of the SEA Regulations 2004 requires Defra and Welsh Government to monitor the significant environmental effects of the implementation of draft CSWCD FMP policies and actions to identify unforeseen adverse effects at an early stage, ensuring appropriate remedial action can be undertaken. Paragraph 9 of Schedule 2 to the 2004 Regulations requires the Environmental Report to include a description of the measures envisaged concerning monitoring in accordance with regulation 17.

The types of relevant monitoring already undertaken or proposed by the FMP fall into two types:

- monitoring the effectiveness of FMP goals and actions
- environmental impacts monitoring

Monitoring effectiveness of the FMP

Section 6 of the Fisheries Act 2020 requires the FMP to identify appropriate monitoring against specified indicators to assess the effectiveness of the draft CSWCD FMP. Delivery of the actions for this FMP will be monitored.

There is sufficient evidence to determine MSY and to assess the sustainability of the gadoid stocks (pollack, cod, whiting and haddock), the flatfish stocks (sol.27.7e, sol.27.7fg and megrim), both anglerfish (white anglerfish and black-bellied anglerfish – noting the combined reporting) and four ray species.

Restoration of fishing the following stocks to sustainable levels will indicate the effectiveness of this plan: pollack (pol.27.67), cod (cod.27.e–k), haddock (had.27.7b-k). whiting (whg.27.7b-ce-k), plaice (ple.7e and ple.7fg) and nephrops in Functional Unit 22 (nep.fu.22).

Maintenance of spawning stock biomass for sustainably fished stocks will indicate the effectiveness of this plan: anglerfishes (mon.27.78abd and ank.27.78abd), blue ling (bli.27.5b671), cuckoo ray (rjn.27.678abd), megrim (meg.27.7b-k8abd), Nephrops in Functional Unit 20 and 21 (nep.fu.2021), plaice (ple.7hjk), and small-eyed ray (rje.27.7fg).

Reduction of fishing mortality and maintenance of spawning stock biomass will indicate the effectiveness of this plan: sole (sol.27.7e and sol.27.7fg), undulate ray (rju.27.7de), thornback ray (rjc.27.7afg) and spotted ray (rjm.27.7ae-h).

Progressing toward an MSY assessments for the following stocks will be an indicator of the effectiveness of this plan: sole (sol.27.7h-k), blonde ray (rjh.27.7afg and rjh.27.7e), thornback ray (rjc.27.7e) and small eyed ray (rje.27.7de).

Improving the evidence base for the following stocks will be an indicator of the effectiveness of this plan: roundnose grenadier (rng.27.5b6712b), saithe (pok.27.7-10), four-spot megrim (lbd.27.7b-k8abd), Nephrops in ICES Subarea 7, outside the functional units (nep.27.7outFU), sandy ray (rji.27.67), shagreen ray (rjf.27.67), blue skate (rjb.67a-ce-k), white skate (rja.27.nea), common skate complex (rjb.27.67), kitefin shark (sck.27.nea), leafscale gulper shark (gug.27.nea), Portuguese dogfish (cyo.27.nea) and red seabream (sbr.27.6-8). An increase in the available evidence with an improved stock assessment will be an indicator of the effectiveness of this plan for the above stocks.

The goals within the FMP have their own indicators but the overall indicator that will determine the effectiveness of this FMP is maintaining fishing pressure within sustainable levels.

Further reviews may also be required if new opportunities present themselves to improve the effectiveness of the plan. The FMP will take advantage of future datasets as set out in section 3.2.10 of the JFS, which outlines that a range of data and information will be gathered, including social, from sources such as fisheries-dependent sampling. The monitoring and evaluation framework for the FMP will continue to be developed and supported by the independent program evaluation of the FMP Program, which will produce a framework for evaluation of individual FMPs by the end of 2024.

In addition to the monitoring set out in the FMP, monitoring of the environmental effects of implementing the FMP's policies and actions will be undertaken by fisheries managers (Defra and Welsh Government, MMO, and IFCAs). These actions may include.

- monitoring changes in fishing activity e.g. changes in effort or the spatial and/or temporal patterns of fishing, resulting from the implementation of the FMP
- monitoring of potential environmental effects could be built into the wider FMP process
- if any negative impacts are identified, fisheries managers should consider adjusting CSWCD fisheries management

Details of the monitoring activity will be developed as part of the FMP's implementation process. Any monitoring data will be shared with those reporting on the achievement of good environmental status as required by Marine Strategy Regulations or other relevant assessment programmes.

Environmental Impacts

MPAs

The conservation status of conservation sites, including SACs, SPAs, and MCZs is monitored by the SNCBs, and is reported under the Habitats Regulations and Marine and Coastal Access Act. While MPA designated features are not explicitly monitored through the FMP, findings from existing monitoring programmes could be used to help inform potential risks or impacts associated with fishing activity being managed through the FMP. FMPs could act on this evidence to amend its policies and actions to reduce or avoid these risks or impacts. Findings from these monitoring activities could also be used to indicate where FMP policies and actions are having a positive effect.

UK MS

The UK MS monitors and assesses the state of the marine environment against 11 descriptors. See section above for details on how monitoring the FMP will link into future assessments under the UK MS.

Atmospheric emissions

The Climate Change Committee (CCC) was set up under the Climate Change Act 2008 to support the strategic aims of Defra and Welsh Government, as well as the devolved administrations to independently assess how the UK can optimally achieve its emissions reductions goals. The Committee advises on the level of carbon budgets and submits annual reports to Parliament on the UK's progress towards

targets and budgets. Evidence on the contribution of the UK the CSWCD fishing fleets has been considered in this ER and would continue to be reviewed against the FMP goals as part of monitoring.

Review

The Fisheries Act 2020 requires the draft CSWCD FMP to be reviewed at least every six years; the Act requires a report on the FMP's progress to be included in the report on the JFS every three years. The formal review will assess how the FMP has contributed to the CSWCD fisheries harvesting within sustainable limits and the Fisheries Act objectives.

The results of monitoring the effectiveness of the draft CSWCD FMP will also contribute to the legally required process to review the JFS. The JFS report will set out the extent to which each FMP has been implemented and has affected stock levels in the UK.

Additional reviews can be conducted at any point within these time scales if relevant evidence, international obligations, or wider events require a change in the policies set out in the FMP.

The findings of these reviews will inform the development of subsequent iterations of the draft CSWCD FMP. As part of the reporting and wider review processes, alternatives to management can be identified to ensure the draft CSWCD FMP delivers on its objectives and wider environmental obligations.

The SEA Environmental Report will be periodically updated to reflect how the implementation of FMP policies and actions affect the environment. Such updating will ensure that the SEA remains up to date throughout the ongoing FMP process into the future.

Appendix A: Eleven Descriptors of the UK MS

D1 - Biological diversity (cetaceans, seals, birds, fish, and benthic habitats)

D2 - Non-indigenous species

D3 - Commercially exploited fish and shellfish

D4 - Food webs (cetaceans, seals, birds, and fish)

D5 - Eutrophication

D6 - Sea-floor integrity (benthic habitats)

D7 - Hydrographical conditions

D8 - Contaminants

D9 - Contaminants in fish and other seafood for human consumption

D10 - Litter

D11 - Introduction of energy, including underwater noise

Appendix B: Additional Baseline Information

D1 and D4 – Cetaceans

Cetaceans (whales and dolphins) are an important marine ecosystem component that contributes to overall levels of biodiversity (D1). In addition, as top predators, the abundance of cetaceans can also provide some understanding on how the food web is functioning (D4).

To meet Good Environmental Status, the high-level objective is that 'the population abundance of cetaceans indicates health populations that are not significantly affected by human activities'. However, according to the 2019 updated Marine Strategy Part One: UK updated assessment and Good Environmental Status, the overall status of cetaceans in the North Sea and Celtic Seas is currently uncertain. The baseline environmental condition with respect to cetaceans is therefore one where some degree of recovery is potentially required to meet GES. For more information, read UK MS Cetaceans assessment.

A summary of the status is shown in Table A1. When considering the detailed targets and indicators used to make the assessment, the data suggests some are in line with GES in some geographic areas. But for many others, the results are either unclear or insufficient data is available to make an assessment. It should be noted that the indicators used do not always cover the entire breadth of what is set out in the target. For instance, the bycatch assessment is currently primarily driven by looking at harbour porpoise. The indicators can be developed in the future as more evidence is available.

Table A1. Detail from the 2019 UK MS assessment on descriptor D1; D4: Cetaceans. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Target	Indicator	North Sea	Celtic Seas
The long-term viability of cetacean populations is not threatened by incidental bycatch	Harbour porpoise bycatch	GES achieved	GES status uncertain

Target	Indicator	North Sea	Celtic Seas
There should be no significant decrease in abundance caused by human activities	Abundance and distribution of coastal bottlenose dolphins	GES achieved	GES status uncertain
There should be no significant decrease in abundance caused by human activities	Abundance and distribution of cetaceans other than coastal bottlenose dolphins	GES partially achieved	GES status uncertain
Population range is not significantly lower than the favourable reference value for the species	Abundance and distribution of coastal bottlenose dolphins	GES achieved	GES status uncertain
Population range is not significantly lower than the favourable reference value for the species	Abundance and distribution of cetaceans other than coastal bottlenose dolphins	GES partially achieved	GES status uncertain

Current impact of fisheries on the baseline condition

Fishing is one of several anthropogenic activities that are considered relevant to this ecosystem component. Other pressures include noise impacts from offshore infrastructure such as renewable energy and pollution from a range of sources. More information on relevant pressures is provided in section 2.6.1 of the Marine Strategy Part One: UK updated assessment and Good Environmental Status.

Cetacean bycatch

There is a specific target associated with the impact of bycatch from fisheries on the viability of cetacean populations. In the 2019 UK MS assessment, only data on the bycatch of harbour porpoise was used. This estimated that bycatch in the North Sea was below the precautionary threshold of 1% of the population estimate (and

therefore meeting the indicator target), but above this threshold for the Celtic Seas. It was, however, below the less precautionary 1.7% of population estimate. Whether the target was being met in the Celtic Seas was therefore uncertain. For more detail on the assessment, read UK MS harbour porpoise bycatch assessment.

More recent analysis for the 2023 OSPAR quality status report (which uses the same indicator as the UK MS) shows that bycatch of harbour porpoise in the Greater North Sea and Irish & Celtic seas are exceeding the threshold. Bycatch of common dolphin is also exceeding the threshold. For more details, read OSPAR Marine Mammal By-catch assessment. As this is a common indicator for both OSPAR and UK MS, that suggests that an updated UK MS assessment would no longer be seen as meeting this target.

Using the latest evidence from the UK Bycatch Monitoring Programme by Kingston et al (2021)[30], it is specifically net fisheries (for example, gill nets, tangle nets etc) that are largely responsible for both harbour porpoise and common dolphin bycatch.

Cetacean abundance and range targets

For coastal bottlenose dolphins, the indicator target of 'no statistically significant decrease in abundance' was met in the Greater North Sea and for the largest group in the Celtic Seas (in the Coastal Wales assessment unit). No assessment has been possible for the other two smaller Celtic Seas Groups (in the West Coast assessment unit and Coastal Southwest assessment unit). For more information, read UK MS Abundance and distribution of coastal bottlenose dolphins assessment.

For species other than coastal bottlenose dolphins, the indicator target of 'no significant decline' was met for some species in some areas (minke whale in the Greater North Sea), but for most species and all of the Celtic Seas, there was insufficient evidence to make an assessment. For more information, read UK MS Abundance and distribution of cetaceans other than coastal bottlenose dolphins assessment.

Without this information, it is difficult to understand the potential impact fisheries could currently be having (alongside impacts from other industries or factors such as pollution) and if fisheries impacts are a scale of concern. Aside from bycatch (which is considered separately), the mechanism by which certain fisheries could theoretically be impacting on abundance and distribution would be through the removal of prey species important to cetacean species. At high levels, this could potentially lead to population-level impacts.

30 Kingston, A., Thomas, I. and Northridge, S. (2021) UK Bycatch Monitoring Programme Report for 2019. Sea Mammal Research Unit.

Cetacean summary

The status of cetaceans with both the North Sea and Celtic Sea is mixed. While there are some aspects that are in line with the achievement of GES, much of the picture is unclear. The impact of various net fisheries is leading to bycatch that, in places, might be impacting long term population viability of harbour porpoise.

Other than for a limited number of coastal bottlenose dolphin populations, it is unclear whether the abundance and range of most cetacean species can be considered in line with GES. Fisheries and the removal of prey species is one of several activities / pressures that have the potential to result in changes in cetacean abundance and distribution.

D1 and D4 – Seals

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 most 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.

Seals are an important marine ecosystem component that contributes to overall levels of biodiversity (D1). In addition, as top predators, seal productivity can also provide some understanding and insight as to how the food web is functioning (D4).

To meet Good Environmental Status, the high-level objective is that 'the population abundance and demography of seals indicate healthy populations that are not significantly affected by human activities'. According to the Marine Strategy Part One: UK updated assessment and Good Environmental Status, the UK has achieved its aim for GES for grey seals in the Greater North Sea and Celtic Seas. For harbour seals, there has been a significant increase in abundance in West Scotland where most harbour seals are located but their status is uncertain in other parts of the Celtic Seas and below what is required for GES in the Greater North Seas. For more information, read, UK MS seal biodiversity assessment.

A summary of the current status is shown in Table A2. It should be noted that the current indicators used do not always cover the entire breadth of what is set out in the targets. For instance, there was no indicator developed or used as part of the 2019 assessment for bycatch.

Table A2. Detail from the 2019 UK MS assessment on descriptor D1; D4: Seals. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Table notes:
Note 1: For this indicator, read OSPAR Marine Mammal By-catch assessment 2023.

Target	Indicator	North Sea	Celtic Seas
The long-term viability of seal populations is not threatened by incidental bycatch.	Marine mammal bycatch (OSPAR)Note1	Not applicable	Not applicable
Population abundance and distribution are consistent with favourable conservation status.	Grey seal abundance and distribution	GES achieved	GES achieved
Population abundance and distribution are consistent with favourable conservation status.	Harbour seal abundance and distribution	GES not achieved	GES status uncertain
Grey seal pup production does not decline substantially in the short or long-term.	Grey seal pup production (OSPAR)	GES achieved	GES achieved

Current impact of fisheries on the baseline condition

Fishing is one of several anthropogenic activities that are considered relevant to marine mammals. Other pressures include noise impacts from offshore infrastructure such as renewable energy and pollution from a range of sources. More information on relevant pressures is provided in section 2.6.1 of the Marine Strategy Part One: UK updated assessment and Good Environmental Status.

Seal bycatch

The 2019 UK MS assessment suggests a new target on bycatch mortality will be used in the future. Seal bycatch was not considered within the 2019 assessment.

Grey seals are one of the three marine mammal species regularly recorded during the UK Bycatch Monitoring programme. Figures for seals (grey and harbour) are combined but the majority are thought to be greys. In the 2018 report[31] the authors were fairly confident that all seals observed in gillnets were greys. Harbour seals (referred to as common seals in the report) are rarely caught and numbers are too low to generate a useful bycatch estimate separately. The gears that pose the most risk to grey seals appears to be tangle and trammel nets, which was estimated to account for over 90% of seal bycatch in 2019[32].

The most recent OSPAR quality status reports assessment on marine mammal bycatch[33] (which is likely to feed into the next round of UK MS assessments), concludes that although grey seal bycatch is high, bycatch in 2020 was below the threshold value set and therefore not thought to be demographically significant. This suggests that in an updated UK MS assessment, seal bycatch is not likely to be threatening the long-term viability of the population, and the bycatch target will be met.

Seal abundance and production

The 2019 UK MS assessment reports that grey seal numbers have continued to increase. Increases in grey seal pup production has slowed since the rapid increase following the end of culling in the 1970s but still shows a positive trend. This is line with GES. Harbour seal abundance has increased over both the short and long term in the English Channel and along the East Coast of England. But there have been short-term and long-term declines in parts of Scotland. The cause of the declines is not currently known. For more information, read UK MS seal biodiversity assessment.

Seals summary

Grey seals populations and productivity continues to increase, and targets are being met. Bycatch (largely in tangle and trammel nets) is occurring but not at levels that threaten population viability. For harbour seals, the status is not in line with GES where population declines have occurred in some areas. The cause is unknown. It is not thought to be linked to bycatch as occurrences are rare and there is no indication that it is linked to other pressures associated with fishing.

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31 Northridge, S., Kingston, A. and Thomas, I. (2019) Annual report on the implementation of Council Regulation (EC) No 812/2004 during 2018. Sea Mammal Research Unit).

32 Kingston, A., Thomas, I. and Northridge, S. (2021) UK Bycatch Monitoring Programme Report for 2019. Sea Mammal Research Unit.

33 Marine Mammal By-catch

D1 and D4 – Birds

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.

Seabirds are well monitored and are an important marine ecosystem component that contributes to overall biodiversity (D1). In addition, as top predators, the abundance of birds can also provide some understanding and insight as to how the wider food web is functioning (D4).

To meet Good Environmental Status, the high-level objective is that 'the abundance and demography of marine bird species indicate healthy populations that are not significantly affected by human activities. According to the Marine Strategy Part One: UK updated assessment and Good Environmental Status, GES has not been achieved for seabirds in the Greater North Sea and the Celtic Seas and the situation is declining, evidenced by increasing breeding failure rates. The baseline environmental condition with respect to birds is therefore one where some recovery is required to meet GES. For more information, read UK MS marine bird biodiversity assessment.

A summary of the current status is shown in Table A3. It should be noted that the current indicators used do not always cover the entire breadth of what is set out in the targets. For instance, although there are plans for target about bycatch, there was no indicator developed or used as part of the 2019 assessment.

Table A3. Detail from the 2019 UK MS assessment on descriptor D1; D4: Birds. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Table notes:
Note 1: For this indicator, read OSPAR Pilot Assessment of Marine Bird Bycatch 2023.

Target	Indicator	North Sea	Celtic Seas
The long-term viability of marine bird populations is not threatened by deaths caused by incidental bycatch catch in mobile and static fishing gear.	Under development (Note1)	Data not available	Data not available
The population size of species has not declined	Marine bird abundance	GES not achieved	GES not achieved

Target	Indicator	North Sea	Celtic Seas
substantially since 1992 as a result of human activities.			
Widespread lack of breeding success in marine birds caused by human activities should occur in no more than three years in six.	Marine bird breeding success/failure	GES not achieved	GES partially achieved
Widespread lack of breeding success in marine birds caused by human activities should occur in no more than three years in six.	Kittiwake breeding success[34]	GES not achieved	Not assessed
There is no significant change or reduction in population distribution caused by human activities.	Distribution of breeding and non-breeding marine birds	Not assessed	Not assessed
There is no significant change or reduction in population distribution caused by human activities.	Invasive mammal presence on island seabird colonies	Not assessed	Not assessed

Current impact of fisheries on the baseline condition

Fishing is one of several anthropogenic activities that are considered relevant to this ecosystem component, including incidental bycatch and competition for resources (for example, sandeel fishing). Other pressures include mortality due to renewables, disturbance from a range of activities, oil pollution, and transfer of non-indigenous species to islands from ships. More information on relevant pressures is provided in section 2.6.1 of the Marine Strategy Part One: UK updated assessment and Good Environmental Status.

34 Kittiwake breeding success has only been achieved for the English mainland colonies. GES for Kittiwake breeding success has not been achieved for the entire North Sea region due to breeding failures in Orkney and Shetland.

Bird populations size and breeding success

In the 2019 UK MS assessment, population targets were met for non-breeding water birds in the Greater North Sea but not in the Celtic Seas. Population targets for breeding seabirds were not met for breeding seabirds in either sub-region. In both sub-regions, a quarter or more species showed frequent and widespread breeding failures. Surface-feeding species that predominantly prey on small fish are often subject to greater ecological pressures compared to others. This would suggest that the surface feeding availability of small forage fish species including lesser sandeel and sprat is limiting the breeding success of surface-feeding species such as black-legged kittiwake. Reductions in food availability could be a result of climate change or due to past and present fisheries, or a combination of both. For more information, read, UK MS marine bird biodiversity assessment.

The recent avian influenza outbreak Is likely to have had a strong negative effect on seabird population sizes for some species. It is not yet clear what the extent of the impact is, but it has the potential to move the baseline further away from meeting GES targets.

Bird bycatch

The 2019 UK MS assessment suggests a new target on bycatch mortality that will be used in the future. It is well recognised that certain fishing gears can pose a high bycatch risk to seabirds. Anderson et al[35] (2022) identifies the UK offshore demersal longline fishery and the <10m static net fishery as the fleets that pose the highest risk to birds.

Mortality estimates are not produced routinely for birds using data available from the UK Bycatch Monitoring Programme. Preliminary estimates using the available data suggests that UK vessels in longline, gillnet and midwater trawls may account for thousands of seabird mortalities each year covering several species, with fulmar and cormorant being the most affected species in terms of possible population impacts with a further five species (great northern diver, gannet, shag, guillemot and razorbill) having an estimated bycatch mortality that exceeded 1% of total adult mortality

35 Anderson, O.R.J., Thompson, D. & Parsons, M. (2022). Seabird bycatch mitigation: evidence base for possible UK application and research. JNCC Report No. 717, JNCC, Peterborough. ISSN 0963-8091.

(Northridge et al 2020[36] and Miles et al 2020[37]). However, these estimates have high uncertainty in part because sample sizes are low and possibly unrepresentative of the fleet.

Bird summary

Seabird populations are currently below the level that is considered to meet GES and the situation is deteriorating. Some declines in breeding success have been linked to prey availability caused by climate change and / or past and present fisheries. Invasive predatory mammals are also known to impact breeding success on island colonies. The impact of bycatch will be included in future assessments and current evidence suggests that some longline and static net fisheries could be having possible population level impacts on certain species.

D1 and D4 – Fish and D3 – Commercially exploited fish and shellfish

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

The UK has achieved its aim of GES for some commercially exploited fish. Most national shellfish stocks have either not yet achieved GES or their status is uncertain. The percentage of quota stocks fished below MSY and the proportion of marine fish spawning stock biomasses capable of producing MSY have increased significantly since 1990.

Fish are an important ecosystem component that contributes to overall levels of biodiversity (D1). In addition, fish of different species have a significant role in marine food webs (D4), acting as both predators and prey. Some fish species are commercially exploited, and only a proportion of these have managed quotas. Over exploitation can lead to a decline in stocks (D3) which can reduce both future commercial opportunities and have wider ecological impacts.

In order to meet Good Environmental Status, the high-level objective for fish is that ‘the abundance and demography of fish indicate healthy populations that are not

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36 Northridge. S., Kinston. A. and Coram. A. (2020). Preliminary estimates of seabird bycatch by UK vessels in UK and adjacent waters. Scottish Ocean Institute, University of St Andrews. Final report to JNCC

37 Miles, J., Parsons, M. and O’Brien, S. (2020). Preliminary assessment of seabird population response to potential bycatch mitigation in the UK-registered fishing fleet. Report prepared for the Department for Environment Food and Rural Affairs (Project Code ME6024).

significantly affected by human activities. For stocks of commercial fish, the high-level objective is that 'Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock'.

According to the Marine Strategy Part One: UK updated assessment and Good Environmental Status, neither of these objectives are currently being met, although there are signs of improvement. The baseline environmental condition with respect to fish is therefore one where recovery is required to meet GES. For more information, read, UK MS fish biodiversity assessment and UK MS commercial fish and shellfish assessment.

The 2019 assessment used a limited number of indicators. More indictors are being included in future assessments. A summary of the current status and indicators is shown in Table A4a and A4b.

Table A4a. Detail from the 2019 UK MS assessment on fish D1; D4: Fish. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Target	Indicator	North Sea	Celtic Seas
The size structure of fish communities is indicative of a healthy marine food web.	Size composition in fish communities	GES not achieved	GES not achieved
The size structure of fish communities is indicative of a healthy marine food web.	Proportion of large fish (Large Fish Index)	GES not achieved	GES partially achieved
The size structure of fish communities is indicative of a healthy marine food web.	Mean maximum length of fish.	GES not achieved	GES not achieved
Incidental bycatch is below levels which threaten long-term viability and recovery of fish populations.	Under development	Not assessed	Not assessed

Target	Indicator	North Sea	Celtic Seas
The population abundance of sensitive species is not decreasing due to anthropogenic activities and long-term viability is ensured.	Recovery in the population abundance of sensitive fish species	GES not achieved	GES achieved
For fish species in the Habitats and Birds Directive population abundance and geographic distribution meets established favourable reference values.	UK assessments of listed fish species	Not assessed	Not assessed
For listed fish species, the area and the quality of the habitat is sufficient.	UK assessments of listed fish species	Not assessed	Not assessed

Table A4b. Detail from the 2019 UK MS assessment D3: commercial fish and shellfish. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Target	Indicator	North Sea	Celtic Seas
The Fishing mortality rate of populations of commercially exploited species is at or below levels which can produce the maximum sustainable yield.	Commercial fishing pressure for stocks of UK interest	GES partially achieved	GES partially achieved
The Spawning Stock Biomass of populations of	Reproductive capacity of commercially	GES partially achieved	GES partially achieved

Target	Indicator	North Sea	Celtic Seas
commercially exploited species are above biomass levels capable of producing the maximum sustainable yield.	exploited stocks of UK interest		

Current impact of fisheries on the baseline condition

The status of commercial fish stocks (D3) primarily relates to exploitation rates so is predominantly influenced by fishing activities. For commercial fish some (53% of quota stocks) were being exploited at or below MSY in 2015, but this was not the case for all stocks. Out of a suite of 79 TACs which can be reported across multiple years, 32 of the 79 baseline TACs were consistent with ICES' advice (40%) in 2023 compared to 27 TACs (34%) in 2022 (Bell et al.2023[38]). Most non-quota stocks are unassessed, and do not have MSY or a suitable proxy in place despite being a significant proportion of UK landings. Most shellfish stocks have either not met the requirement, or their status is uncertain. For more information, read UK MS commercial fish and shellfish assessment.

Fish as part of the ecosystem (D1 and D4) encompasses a much wider range of species, including those not commercially targeted. Both the removal of targeted species and bycatch of non-targeted / non-commercial fish species is relevant. While fishing is considered the main anthropogenic activity that is relevant to this ecosystem component, other pressures such as noise from renewable infrastructure and hydrodynamic changes brought about from coastal defence are also relevant in some instances. More information on relevant pressures is provided in section 2.6.1 of the Marine Strategy Part One: UK updated assessment and Good Environmental Status.

Recovery from past over-exploitation by fisheries does appear to be occurring in some areas. Demersal fish biodiversity is recovering from a history of over-exploitation, but GES has not been achieved in either the Greater North Sea or the Celtic Sea. A partial assessment of pelagic shelf fish status did not provide a clear result. For more information, read UK MS fish biodiversity assessment.

Fish summary

The current status of fish communities in the UK is primarily shaped by historical over-exploitation by fisheries, while ongoing over-exploitation continues to be a notable contributing factor. Improved fisheries management since the 1990s has resulted in more stocks being fished at or below MSY levels so, although the target is not yet met, there is a positive trend. Improved fisheries management has also resulted in some positive trend in fish communities beyond the targeted stocks.

38 Bell ED, Nash RMD, Garnacho E, De Oliveira J, Hanin M, Gilmour F, O'Brien CM 2023. Assessing the sustainability of negotiated fisheries catch limits by the UK for 2023. Cefas project report for Defra and Welsh Government.

D1 and D6 – Benthic Habitats

The levels of physical damage to soft sediment habitats are 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. For sublittoral rock and biogenic habitats GES has not yet been achieved. Descriptor also relevant to Geodiversity (geology and sediments).

Benthic habitats are an important ecosystem component that contributes to overall levels of biodiversity (D1). It is also important to ensure the structure and function of the benthic ecosystems is adequately safeguarded by considering seafloor integrity (D6).

To meet Good Environmental Status, the high-level objective is that 'the health of seabed habitats is not significantly adversely affected by human activities'. However, according to the Marine Strategy Part One: UK updated assessment and Good Environmental Status, GES has not been achieved. This states that the main problem is caused by physical disruption of the seabed from fishing gear (demersal towed gear). The baseline environmental condition with respect to benthic habitats is therefore one which is required to meet GES. For more information, read UK MS benthic biodiversity and seafloor habitats assessment.

A summary of the current status is shown in Table A5. Most indicators focussing on intertidal benthic habitat are consistent with GES (except for saltmarsh in the North Sea), but subtidal habitats are not consistent with GES.

Table A5. Detail from the 2019 UK MS assessment on D1; D6: Benthic habitats. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Table notes:
Note 1: The benthic communities' indicator (OSPAR BH2) is currently in the pilot stage of development.

Target	Indicator	North Sea	Celtic Seas
The physical loss of each seabed habitat type caused by human activities is minimised and where possible reversed.	Physical loss of predicted habitats	GES not achieved	GES not achieved
The extent of habitat types adversely affected by physical disturbance caused	Extent of Physical damage indicator to predominant	GES not achieved	GES not achieved

Target	Indicator	North Sea	Celtic Seas
by human activity should be minimised.	and special habitats		
The extent of habitat types adversely affected by physical disturbance caused by human activity should be minimised.	Benthic communities' indicator[Note1]	Not assessed	Not assessed
Habitat loss of sensitive, fragile, or important habitats caused by human activities is prevented, and where feasible reversed.	Physical loss of predicted habitats indicator	GES not achieved	GES not achieved
The extent of adverse effects caused by human activities on the condition, function and ecosystem processes of habitats is minimised.	Benthic communities' indicator	Not assessed	Not assessed
The extent of adverse effects caused by human activities on the condition, function and ecosystem processes of habitats is minimised.	Aggregated Infaunal Quality Index	GES not achieved	GES partially achieved
The extent of adverse effects caused by human activities on the condition, function and ecosystem processes of habitats is minimised.	Aggregated Saltmarsh Tool	GES not achieved	GES achieved
The extent of adverse effects caused by human activities on the condition, function and ecosystem processes of habitats is minimised.	Aggregated Rocky Shore Macroalgal Index	GES achieved	GES achieved

Target	Indicator	North Sea	Celtic Seas
The extent of adverse effects caused by human activities on the condition, function and ecosystem processes of habitats is minimised.	Aggregated Intertidal Seagrass Tool	GES achieved	GES achieved
The extent of adverse effects caused by human activities on the condition, function and ecosystem processes of habitats is minimised.	Intertidal rock community change indicator (MarClim)	GES status uncertain	GES status uncertain

Current impact of fisheries on the baseline condition

Fishing is one of several anthropogenic activities that are considered relevant to this ecosystem component. Other pressures include physical loss from renewable energy generation and oil extraction, coastal defence and the input and spread on invasive non-native species. But the main barrier to the achievement of GES is caused by physical disruption of the seabed from fishing. More information on relevant pressures is provided in section 2.6.1 of the Marine Strategy Part One: UK updated assessment and Good Environmental Status.

Physical disturbance of seabed

Fishing is considered to be the main driver of physical disturbance and occurs when gear is towed across the seafloor. The degree of disturbance depends on factors such as the size of the gear, the activity level (for example, number of tows per year) how fragile the benthic species present are and how quickly they can recover. The use of demersal towed gears is widely distributed. Using available VMS data and benthic habitat data available, the 2019 UK MS assessment concluded that seabed disturbance targets were not being met within the Greater North Sea and Celtic Seas. As the analysis combined the VMS of all towed gear metiers together, it is not yet possible to determine the relative contribution of different gear types to the current levels of seabed disturbance. Other activities, such as aggregate extraction, have yet to be included within the analysis, but the spatial extents of these are considerably smaller than fishing activity. For more information and detail of the analysis, read UK MS Extent of physical damage to predominant seafloor habitats assessment and UK MS Extent of Physical Damage to Predominant and Special Habitats assessment.

Habitat loss

UK MS assessments on a limited range of highly sensitive habitats (seagrass beds and horse mussel reefs), suggest that a loss of areas of potential habitat has occurred up to 2016. This was based on modelled data. The main causes were not thought to be due to fishing as these impacts are generally considered reversable. Irreversible loss has been predicted to have come about from aquaculture, navigational dredging and dredge spoil disposal, recreational activity, and coastal development. For more information, read UK MS Potential physical loss of predicted seafloor habitats assessment. There are instances where fishing can result in permanent habitat loss (for instance, heavy bottom towed gear over softer, rocky reef habitats), but fishing is generally considered to lead to habitat disturbance and degradation rather than loss.

Benthic habitat summary

There is widespread disturbance of seabed habitats by demersal towed gear that is contributing to the failure to achieve GES. Other impacts from non-fisheries activities may also be having an influence, but to a much lesser degree.

D4 – Food webs

Food webs (D4) are the network of predator-prey relationships that occur in the marine environment, from phytoplankton to top predators such as birds or seals. Fish communities are a key component of food webs. Knowledge of food webs allow understanding of how changes at one trophic level can impact those above and below it.

To meet Good Environmental Status, the high-level objective for food webs is that 'the health of the marine food web is not significantly affected by human activities'. According to the Marine Strategy Part One: UK updated assessment and Good Environmental Status, the extent to which good environmental status has been achieved is uncertain. Plankton communities are changing, some fish communities are recovering from past overexploitation, but others are not, breeding seabirds are in decline, and grey seal numbers are increasing. It is known that the components of the marine food webs are changing but it is not always clear how they are affecting each other. For more information, read UK MS food webs assessment.

A summary of the current status is shown in Table A6.

Table A6. Detail from the 2019 UK MS assessment on D4: food webs. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Target	Indicator	North Sea	Celtic Seas
The species composition and relative abundance of representative feeding guilds are indicative of a healthy marine food web.	Mean maximum length of fish	GES not achieved	GES not achieved
The species composition and relative abundance of representative feeding guilds are indicative of a healthy marine food web.	Selected plankton lifeforms pairs (for example, large vs small zooplankton)	GES status uncertain	GES status uncertain
The species composition and relative abundance of representative feeding guilds are indicative of a healthy marine food web.	Abundance and distribution of coastal bottlenose dolphins	GES achieved	GES status uncertain
The species composition and relative abundance of representative feeding guilds are indicative of a healthy marine food web.	Abundance and distribution of cetaceans other than coastal bottlenose dolphins	GES partially achieved	GES status uncertain
The species composition and relative abundance of representative feeding guilds are indicative of a healthy marine food web.	Marine bird abundance	GES not achieved	GES not achieved

Target	Indicator	North Sea	Celtic Seas
The balance of abundance between representative feeding guilds is indicative of a healthy marine food web.	TBC	Not assessed	Not assessed
The size structure of fish communities is indicative of a healthy marine food web.	Size composition in fish communities	GES not achieved	GES partially achieved
Productivity of the representative feeding guilds, characterised by key species, is indicative of a healthy marine food web.	Grey seal pup production	GES achieved	GES achieved
Productivity of the representative feeding guilds, characterised by key species, is indicative of a healthy marine food web.	Marine bird breeding success/failure	GES not achieved	GES partially achieved
Productivity of the representative feeding guilds, characterised by key species, is indicative of a healthy marine food web.	Kittiwake breeding success[39]	GES achieved	Not assessed

Current impact of fisheries on the baseline condition

39 Kittiwake breeding success has only been achieved for the English mainland colonies. GES for Kittiwake breeding success has not been achieved for the entire North Sea region due to breeding failures in Orkney and Shetland.

Anthropogenic impacts on the marine food web are multiple and complex. As fish communities are a key component of food webs, pressure from fisheries can have a significant impact. The removal of forage fish (i.e., species at a low trophic level that contribute significantly to the diets of other fish, marine mammals, or seabirds) has the potential to impact higher tropic levels. For instance, reduction in the availability of small forage fish is likely to be contributing to the breeding success of some marine birds. Climatically driven changes in plankton will also have a strong influence on the rest of the food web. More detail is given under the individual faunal group sections. For more information, read UK MS food webs assessment.

Food webs summary

Historic fishing activity has had a large impact on fish community structure which is a key component of marine food webs. With improved fisheries management focusing on stocks, some recovery is occurring. However, the management of fish stocks solely to safeguard future fisheries will not necessarily lead to all food web targets being met. Changes in plankton are likely driven by prevailing environmental conditions, but other impacts cannot be ruled out.

D10 – Marine Litter

To achieve Good Environmental Status for marine litter, the high-level objective is that 'the amount of litter and its degradation products on coastlines and in the marine environment is reducing and levels do not pose a significant risk to the environment and marine life.' According to the Marine Strategy Part One: UK updated assessment and Good Environmental Status, GES has not been achieved for marine litter, and it remains a significant pressure on marine ecosystems. The baseline environmental condition with respect to marine litter is therefore one where improvement is required to meet GES. For more information, read UK MS litter assessment. A summary of the current status is shown in Table A7.

Table A7. Detail from the 2019 UK MS assessment on D10 Marine Litter Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Target	Indicator	North Sea	Celtic Seas
A decrease in the total amount of the most common categories of	Presence of litter (beaches)	GES not achieved	GES not achieved

Target	Indicator	North Sea	Celtic Seas
litter found on surveyed beaches.			
A decrease in the number of items of litter on the seabed.	Presence of litter (seabed)	GES status uncertain	GES status uncertain
A downward trend in the number of northern fulmars with more than 0.1g of plastic particles in their stomach.	Presence of floating litter	GES status uncertain	GES status uncertain
Develop an appropriate indicator to measure micro-litter in the marine environment.	In development	Not assessed	Not assessed

Current impact of fisheries on the baseline condition

Fishing activities can contribute to marine litter through discarded or lost fishing gear, including nets, lines, and traps. This type of litter, also known as "ghost gear", can persist in the environment, entangling marine life, smothering benthic habitats, and introducing microplastics into the marine food chain. In addition, waste generated onboard fishing vessels, such as packaging materials and food waste, can also contribute to marine litter when not disposed of properly.

Marine litter summary

Marine litter, including from fishing activities, is a significant pressure on marine ecosystems and water quality. 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. Waste fishing material is a component of beach litter. Both floating litter and seafloor litter remain an issue, with plastic the predominant material. Achieving GES for marine litter requires improved waste management practices, the reduction of lost or discarded fishing gear, and increased awareness and monitoring of the issue.

D11 – Underwater noise

To achieve Good Environmental Status for underwater noise, the high-level objective is that 'loud, low and mid frequency impulsive sounds and continuous low frequency sounds introduced into the marine environment through human activities are managed to the extent that they do not have adverse effects on marine ecosystems and animals at the population level.' Marine Strategy Part One: UK updated assessment and Good Environmental Status, indicates that data on underwater noise is limited, making it difficult to determine whether GES has been achieved. However, increasing awareness of the issue has led to further research and monitoring efforts. For more information, read UK MS underwater noise assessment. A summary of the current status is shown in Table A8.

Table A8. Detail from the 2019 UK MS assessment on D11 Underwater noise. Taken from Marine Strategy Part One: UK updated assessment and Good Environmental Status and the UK MS Marine Online Assessment Tool.

Target 2019	Indicator	North Sea	Celtic Seas
Levels of anthropogenic impulsive sound sources do not exceed levels that adversely affect populations of marine animals.		GES status uncertain	GES status uncertain
Levels of anthropogenic continuous low-frequency sound do not exceed the levels that adversely affect populations of marine animals	Safe levels of low anthropogenic continuous low frequency sound	GES status uncertain	GES status uncertain

Current impact of fisheries on the baseline condition

Fishing activities can generate underwater noise through the use of engines, sonar, and other equipment. Although fisheries are not the primary source of anthropogenic underwater noise (shipping, construction, and energy production are major contributors), they can still contribute to the overall noise pollution in the marine

environment. This noise can impact marine species that rely on sound for communication, navigation, and foraging, leading to changes in behaviour, stress, and potential displacement from preferred habitats.

Summary

Underwater noise from fisheries, while not the primary source, can still contribute to the overall noise pollution in the marine environment. Fishing vessels will contribute to underwater noise through sonar, engine noise, gear interacting with seabed and deploying and retrieving gear. 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. However, achieving GES for underwater noise will require better understanding and monitoring of the issue, as well as the development and implementation of strategies to manage noise pollution from various sources.

Appendix C: UK MPA designations

1. Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017
    - Special Protection Areas (SPAs) - England, Scotland, Wales
    - Special Areas of Conservation (SACs) - England, Scotland, Wales
2. Marine and Coastal Access Act 2009
    - Marine Conservation Zones (MCZs) – England, Wales
3. Natural Environment and Rural Communities Act 2006 (Part 4)
    - Sites of Special Scientific Interest (SSSI) – England, Scotland, Wales
4. Convention on Wetlands of International Importance
    - Ramsar Sites (Wetland of International Importance under the Convention on Wetlands of International Importance Especially as Waterfowl Habitat)

Appendix D: Marine Plans – Specific detail within the UK

England

Marine plans put into practice the objectives for the marine environment that are identified in the MPS alongside the National Planning Policy Framework (NPPF) and the Localism Act 2011. The MMO is responsible for preparing marine plans in England, and published the North East, North West, South West, South East, South and East marine plans. The marine plans include policies to support a sustainable fishing industry and a healthy marine environment.

Wales

The first Welsh National Marine Plan was introduced in 2019, providing a statutory policy framework to help guide the sustainable development of the Welsh marine area. It was prepared and adopted under the MCAA to conform with the UK MPS. Under the MCAA, the Welsh Ministers are the marine plan authority for the Welsh marine planning area and the Welsh Marine Plan covers both the inshore and offshore areas. The Marine Plan includes specific policies in relation to commercial fisheries alongside cross-cutting environmental and socio-economic policies.

Appendix E: Glossary

Biodiversity: The variety of all life on earth, including the diversity within and between all plant and animal species and the diversity of ecosystems.

Blue carbon: Carbon captured by the world's oceans and coastal ecosystems. Blue carbon habitats are the habitats where it is stored.

Bycatch: Defined in section 52 of the Fisheries Act 2020 means (a) fish that are caught while fishing for fish of a different description, or (b) animals other than fish that are caught in the course of fishing.

Climate change: Referring to human-induced climate change driven by greenhouse gas emissions. It includes global warming, warming oceans, greater risks of flooding, droughts, and heat waves.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): CITES is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.

Convention on the Conservation of Migratory Species of Wild Animals (CMS): The Convention on the Conservation of Migratory Species of Wild Animals, also known as the Convention on Migratory Species (CMS) is an international agreement that aims to conserve migratory species throughout their ranges. The agreement was signed under the auspices of the United Nations Environment Programme and is concerned with conservation of wildlife and habitats on a global scale.

Descriptors (UK Marine Strategy): Descriptors are elements within the environment that provide the means to assess general status or condition of that environment. This can be done through the establishment of indicators or targets for each descriptor.

Ecosystem: A biological community which consists of all the organisms and the physical environment with which they interact.

Ecosystem-based approach: Defined in section 1(10) of the Fisheries Act 2020 as an approach which (a) ensures that the collective pressure of human activities is kept within levels compatible with the achievement of good environmental status (within the meaning of the Marine Strategy Regulations 2010 (S.I. 2010/1627)), and (b) does not compromise the capacity of marine ecosystems to respond to human-induced changes.

Findspots: The place where one or more artefacts have been found. May prove to be associated with a site, other finds, natural features etc., or isolated (no apparent relationship).

Fish: Marine and estuarine finfish and shellfish, including migratory species such as European eel and salmon.

Fisheries: The commercial or recreational capture of wild marine organisms (fish and shellfish); commercial fishing can use a variety of mobile and static gear, vessels and locations.

Fisheries Framework (Fisheries Management and Support Framework): Outlines the legislation and policies for the sustainable management of fisheries and the wider seafood sector. It covers the catching, processing and supply industries, including access to fishing opportunities, licensing, stock recovery, enforcement, data collection, aquaculture, recreational sea angling, and areas of collaboration and common principles. It includes governance structures and ways of working.

Fisheries Management Plan (FMP): A document, prepared and published under the Fisheries Act 2020, that sets out policies designed to restore one or more stocks of sea fish to, or maintain them at, sustainable levels.

Fisheries policy authorities: As defined by section 52 of the Fisheries Act 2020, “fisheries policy authorities” means (a) the Secretary of State, (b) the Scottish Ministers, (c) the Welsh Ministers, and (d) the Northern Ireland department.

Fishermen’s fasteners: Places where fishermen have snagged their fishing gear.

Food webs: The natural interconnection of food chains and a graphical representation of what eats what in an ecological community.

Good Environmental Status (GES): A qualitative description of the state of the seas that the Marine Strategy Regulations 2010 requires authorities to achieve or maintain by the year 2020. Achieving GES is about protecting the marine environment, preventing its deterioration, and restoring it where practical, while allowing sustainable use of marine resources.

Inshore: 0 to 12 nautical miles from the UK’s territorial sea baselines.

Inshore Fisheries and Conservation Authorities (IFCAs): IFCAs are responsible for the management of fishing activities in English coastal waters out to six nautical miles from territorial sea baselines. The 10 IFCAs have a shared vision to lead, champion and manage a sustainable marine environment and inshore fisheries.

International Council for the Exploration of the Sea (ICES): Coordinates and promotes marine research on oceanography, the marine environment, the marine ecosystem, and on living marine resources in the North Atlantic.

Joint Fisheries Statement (JFS): As defined by section 2(1) of the Fisheries Act 2020, a document which sets out the policies of the fisheries policy authorities for achieving, or contributing to the achievement of, the fisheries objectives in the Fisheries Act 2020.

Marine environment: Includes (a) the natural beauty or amenity of marine or coastal areas, or of inland waters or waterside areas, (b) features of archaeological or historic interest in those areas, and c) flora and fauna which are dependent on, or associated with, a marine or coastal, or aquatic or waterside, environment.

Marine litter: Any solid material which has been deliberately discarded or unintentionally lost on beaches, on shores or at sea. It includes any persistent, manufactured or processed solid material.

Marine Management Organisation (MMO): An executive non-departmental public body in the United Kingdom established under the Marine and Coastal Access Act 2009, with responsibility for planning and licensing of activities in English waters from 0-200 nautical miles, with IFCAs being the primary authority within 0-6nm. The MMO also has some wider UK responsibilities.

Marine Protected Areas (MPA): Areas of the sea protected by law for nature conservation purposes.

Marine Plans: A marine plan is a document which has been prepared and adopted for a marine plan area by the appropriate marine plan authority in accordance with Schedule 6 of the Marine and Coastal Access Act 2009, and which states the authority's policies for and in connection with the sustainable development of the area.

Maximum Sustainable Yield (MSY): Defined in the Fisheries Act 2020 as the highest theoretical equilibrium yield that can be continuously taken on average from a marine stock under existing environmental conditions without significantly affecting recruitment.

National fisheries authorities: As defined by section 25(4) of the Fisheries Act 2020, these are (a) the Secretary of State, (b) the Marine Management Organisation, (c) the Scottish Ministers, (d) the Welsh Ministers, and (e) the Northern Ireland department. The term ‘national fisheries authorities’ differs from ‘fisheries policies authorities’ in including the MMO.

Non-quota stocks (NQS): Species that are not managed through TACs (quota limits). They include some finfish, most commercial shellfish species, and various other species.

Offshore: 12 to 200 nautical miles from the UK's territorial sea baselines.

Precautionary approach to fisheries management: Defined in section 1(10) of the Fisheries Act 2020 as an approach in which the absence of sufficient scientific information is not used to justify postponing or failing to take management measures to conserve target species, associated or dependent species, non-target species or their environment.

Processing: As defined by section 52 of the Fisheries Act 2020: in relation to fish or any other aquatic organism, includes preserving or preparing the organism, or producing any substance or article from it, by any method for human or animal consumption.

Ramsar Convention: The convention emphasises the special value of wetland, particularly as a key habitat for waterfowl. The Convention resulted in the designation of sites known as Ramsar Sites for management and conservation at an international level.

Recreational sea fishing: An umbrella term for a variety of recreational activities including recreational sea angling, spear fishing, recreational netters/potters, and charter boats.

Regional Fisheries Management Organisation (RFMO): A multilateral international body or agreement set up to manage and conserve fish stocks in a particular region.

Remote Electronic Monitoring (REM): Integrated on-board systems that may include cameras, gear sensors, video storage, and Global Positioning System units, which capture comprehensive videos and are used to monitor fishing activity with associated sensor and positional information.

Resilience: The ability of an ecosystem, species, habitat, or industry to respond, recover or adapt to either changes or disturbances within a reasonable timeframe without permanent loss or damage.

Sensitive species: As defined in section 52 of the Fisheries Act 2020, sensitive species means: (a) any species of animal or plant listed in Annex II or IV of Directive 92/43/EEC of the Council of the European Communities on the conservation of natural habitats and of wild flora and fauna (as amended from time to time), (b) any other species of animal or plant, other than a species of fish, whose habitat, distribution, population size or population condition is adversely affected by pressures arising from fishing or other human activities, or (c) any species of bird.

Shellfish: As defined in section 52 of the Fisheries Act 2020, shellfish includes molluscs and crustaceans of any kind found in the sea or inland waters.

Statutory Nature Conservation Bodies (SNCBs): The Statutory Nature Conservation Bodies (SNCBs) are Natural England, Natural Resources Wales, NatureScot, the Northern Ireland Environment Agency, the Joint Nature Conservation Committee, and the Department of Agriculture, Environment and Rural Affairs (DAERA) statutory advisory body, the Council for Nature Conservation and the Countryside.

Sustainable Development: As defined by the Brundtland report (1987), sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable fishing: Sustainable fisheries protect their stocks and the wider environment whilst delivering social and economic prosperity. Fisheries management decisions should balance environmental, economic and social considerations to create sustainable fisheries that benefit present and future generations. It means ensuring that fish stocks can be fished commercially and recreationally, both now and in the future. Both the short-term and the long-term impacts of decisions managing fishing activity to protect stocks and on the fishing industry should be considered, while any short-term decisions to give social or economic benefit should not significantly compromise the long-term health of the marine environment. These decisions should recognise the cultural importance of fishing through maintaining and, where possible, strengthening coastal communities and livelihoods alongside the requirement for fish stocks to reach and maintain sustainable levels.

Territorial sea: The waters under the jurisdiction of a state, defined by UNCLOS as up to 12 nautical miles from the baseline or low-water line along the coast.

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR): An international agreement for cooperation for the protection of the marine environment of the North-East Atlantic. Work under the Convention is managed by the OSPAR Commission, made up of representatives of the Governments of 15 Contracting Parties and the European Commission, representing the European Union. Work to implement the OSPAR Convention is taken forward through the adoption of decisions, which are legally binding on the Contracting Parties, recommendations, and other agreements.

Total Allowable Catch (TAC): The total allowable catch (TAC) is a catch limit set for a particular fishery or stock, generally for a year or a fishing season. TACs are usually expressed in tonnes of live weight equivalent but are sometimes set in terms of numbers of fish.

Trade and Cooperation Agreement (TCA): The Trade and Cooperation Agreement between the United Kingdom of Great Britain and Northern Ireland, of the one part, and the European Union and the European Atomic Energy Community of the other part. This agreement governs the relationship between the UK and the EU. It was signed in December 2020, applied from 1 January 2021 and was ratified (in a slightly amended form) in April 2021.

UK Marine Policy Statement (UKMPS): The UK policy framework for preparing marine plans and taking decisions that affect the marine environment in the UK.

UK Marine Strategy (UK MS): The UK Marine Strategy provides the framework for delivering marine policy at the UK level and sets out how we will achieve the vision of clean, healthy, safe, productive, and biologically diverse oceans and seas.

UN Convention on Biological Diversity (CBD): The international legal instrument for the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

UN Convention on the Law of the Sea (UNCLOS): A multilateral international agreement that lays down a comprehensive regime of law and order in the world's oceans and seas, establishing rules governing all uses of the oceans and their resources. It was signed in 1982 and came into force in 1994.

UN Sustainable Development Goals: 17 United Nations goals ‘to transform our world’ and promote prosperity whilst protecting the planet. Goal 14 is to conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Water quality: A measure of the condition of water and its suitability to sustain a range of uses for both biotic and human benefits.

Appendix F: Statutory Consultee Consultation Responses

As required by the 2004 Act, we have sought the views of our statutory consultees on this SEA and associated ER and their responses are detailed below.

Natural England Response

Ref	Document section	Comment
1	Entire Document	In all four documents, Natural England agrees with the outcomes of the screening exercise and welcomes the commitment to progress an environmental assessment of each FMP in line with The Regulations.
2	Entire Document	Natural England also agrees that each scoping report has correctly identified the issues to be taken forward for further consideration in an Environment Report.
3		The Celtic Sea and Western Channel Demersal FMP has largely identified the correct risks to consider. However, in Table 2, whilst bycatch risks to UK MS descriptors for D1 (biodiversity) and D4 (foodwebs) have been correctly identified, the moderate risk to these descriptors from prey depletion has not been scoped in correctly. Cod and whiting can be considered forage fish whilst in their juvenile stages. They may be an important food source for the designated features of MPAs, including harbour porpoise and their depletion also poses a risk to UK MS descriptors D1 and D4 and SNCB advice highlighted risks to these descriptors which require further consideration.

How the consultation response was considered

Point #	How point was considered
1	Point noted
2	Point noted
3	The moderate risk to the descriptors for D1 (biodiversity) and D4 (foodwebs) from prey depletion will be scoped into the

	Celtic Sea and Western Channel Demersal FMP Environmental report and will be considered as part of the assessment.

JNCC Response

Ref	Document section	Comment
1	Entire Document	The potential environmental effects of the fisheries have been reasonably well defined across the reports, however, for the Celtic Sea and Western Channel Demersal FMP and Celtic Sea and Western Channel Pelagic FMP the risk from prey depletion does not appear to have been scoped in for consideration against the UKMS descriptors D1 and D4. These risks were highlighted in the SNCB advice, and we recommend they are considered further in the SEAs.

How the consultation response was considered

Point #	How point was considered
1	The moderate risk to the descriptors for D1 (biodiversity) and D4 (food webs) from prey depletion will be scoped into the Environmental report, and will be considered as part of the assessment.

Historic England Response

Ref	Document section	Comment
1	Relevant Plans, Programmes and Environmental Protection Objectives	We note that the Celtic Sea and Western Channel Pelagic FMP acknowledges the Convention for the Protection of the Archaeological Heritage of Europe among the international obligations relevant to the FMP SEA, as have Scoping Reports for previous FMPs. However, we are puzzled as to

Ref	Document section	Comment
		why this instrument has been omitted from the other three Tranche 4 Scoping Reports.
2	Relevant Plans, Programmes and Environmental Protection Objectives	Furthermore, the acknowledgement of the European Landscape Convention appears to have slipped from all four Tranche 4 SMPs and should be reinstated.
3	Relevant Plans, Programmes and Environmental Protection Objectives	We would also like to draw attention to the UK's ratification in April 2024 of the 2003 UNESCO Convention for Safeguarding of the Intangible Cultural Heritage: fishing is a rich source of intangible cultural heritage that could actively contribute to delivering FMPs, as well as FMPs having a role in safeguarding the intangible heritage of each fishery.
4	Scoping	We would also like to underline the potential of fishing activity targeting these fisheries to cause input of litter. The impact of fishing activity on the environment through marine litter is less clearly acknowledged in the Tranche 4 FMP Scoping Reports than in previous FMP Scoping Reports.
5	Scoping	The Tranche 4 Scoping Reports variously refer to features such as seagrass beds, eelgrass beds and rocky reefs as warranting particular consideration: to these, the SEAs should add submerged prehistoric land surfaces that often comprise organic deposits (such as peat) and other former terrestrial fine-grained deposits (muds and silts) containing organic material.

Ref	Document section	Comment
6		Consequently, we welcome the inclusion in the Celtic Sea and Western Channel Pelagic FMP of an express objective on culture: 'Better understand the cultural significance of these fisheries and consider this in developing FMP actions and measures'. This is an important step reflecting comments we have made previously: the cultural significance of these pelagic fisheries is reflected in numerous Listed Buildings along the coasts of south west England (e.g. Porthmeor Pilchard Cellars and Studios; Former Pilchard Net Fishing Cellars and Winches; Fish Cellars South East of the Old Cellars) and we would welcome further discussion with Defra on how this objective can best be implemented.
7	Draft CSWCD FMP Goals and Actions	We would strongly encourage the inclusion of equivalent objectives on the cultural importance of fishing in the other three Tranche 4 FMPs. These three FMPs have objectives on better understanding, optimising and realising economic and social benefits, which we would expect to encompass cultural benefits: but express objectives on culture would provide greater stimulus to delivery. We would also like to underline the role that greater recognition of the proud history and heritage of fishing would play in delivering objectives on partnerships and collaborative working relationships. We would welcome conversations with Defra about how greater attention to the cultural heritage of fishing could contribute to sustainable fisheries and strengthened coastal communities.
8	Assessment of Environmental Effects	We look forward to the Environmental Reports evaluating the potential effects (negative and positive) of all four Tranche 4 fisheries on cultural heritage and landscape/seascape. In light of comments above, we would expect each Environmental Report to address: • Interactions between fishing gear and marine heritage assets on the seabed. • Impacts on heritage arising from physical disturbance to the seabed. • Impacts on heritage from the input of litter (ALDFG).

Ref	Document section	Comment
		• Impacts on landscape/seascape including prehistoric seabed formations, blue carbon habitats, and seabed carbon dynamics. • Potential to enhance the cultural heritage of these fisheries and the contribution it makes to coastal communities and places.
9	Landscape and Seascape	We look forward to discussing with Defra the evidence required to achieve this with respect to cultural heritage and landscape/seascape. It would be helpful to know what evidence has already been collated on fishing, cultural heritage, and landscape/seascape through a) existing and current programmes on MPAs, b) Defra's Revised Approach to fisheries management programme, c) the MMO's Fishery Assessment programme, and d) the UK Marine Strategy (UK MS – and see below).
10	Landscape and Seascape	We appreciate again the acknowledgement that cultural heritage and landscape/seascape are not considered under the UK MS assessment process. We would be very pleased to discuss with Defra how they might be brought within that process, and/or how suitable indicators and monitoring measures can be developed for cultural heritage and landscape/seascape alongside UK MS.
11	Environmental Impacts	We look forward to the FMPs proposing new measures and interventions to mitigate negative effects (and enhance positive effects) arising from interactions between the Tranche 4 fisheries and cultural heritage and landscape/seascape. We also look forward to proposals for future monitoring of the effects of the Tranche 4 FMPs on cultural heritage and landscape/seascape. We would, of course, be very pleased to discuss with Defra these new measures, interventions, and monitoring proposals in the course of their development.
12	Relevant Plans, Programmes and Environmental	Accordingly, we think it would be appropriate to involve Historic England in the Benthic Impacts Working Group

Ref	Document section	Comment
	Protection Objectives	currently in development as part of other FMPs, as noted in the Tranche 4 Scoping Reports.
13	Environmental Baseline – Cultural Heritage	We would also suggest that prior to formal consultation, Defra goes beyond the SNCBs in seeking and considering advice on the impacts of fishing activity, including ALBs such as Historic England that can provide relevant advice on such impacts. Framing advice from statutory consultees in terms of MPAs and UK MS descriptors – which are acknowledged in the Scoping Reports as not encompassing the full scope of SEA – will clearly allow only partial assessments.

How the consultation response was considered

Point #	How point was considered
1.	Reference to the Convention for the Protection of the Archaeological Heritage of Europe will be included in the Environmental Reports for the following FMPs; • Celtic Sea and Western Channel Demersal • Wrasse Complex • Seabream
2.	Reference to the European Landscape Convention will be made in all four Environmental Reports.
3.	Reference to the 2003 UNESCO Convention for Safeguarding of the Intangible Cultural Heritage will be made in all four Environmental Reports.
4.	SNCB advice provided to Defra indicated that there is a moderate risk to UK MS D10 marine litter for all fishing gears used in fisheries covering the T4 FMPs. Marine litter will be assessed in the Environmental Reports.
5.	Environmental Reports will reference submerged prehistoric land surfaces that often comprise organic deposits (such as peat) and other

Point #	How point was considered
	former terrestrial fine-grained deposits (muds and silts) containing organic material.
6.	Noted. Defra would welcome further discussions with HE to consider this point.
7.	Defra will consider the inclusion of equivalent objectives on the cultural importance of fishing in the other three Tranche 4 FMPs.
8.	Defra will consider in the Environmental reports the points raised by HE.
9.	Noted. Defra would welcome further discussions with HE to consider this point.
10.	Noted. Defra would welcome further discussions with HE to consider this point.
11.	Noted. Defra would welcome further discussions with HE to consider this point.
12.	Point noted. Defra/DAs will consider HE's involvement in the Benthic Impacts Working Group.
13.	The Environmental Reports will include reference to the Fishing and the Historic Environment report produced by Historic England, which will be used as the primary source of information on the interactions between commercial fishing and the marine historic environment in English waters. Defra would welcome discussions with HE to further consider the impacts of fishing activity on the marine historic environment.

Environment Agency Response

No response received.

How the consultation response was considered

Point #	How point was considered
N/A	N/A

Cadw Response

We have read the SEA scoping report and note that cultural heritage is not considered under the UK Marine Strategy assessment process, therefore no predetermined sub-sections are available: However, the interaction between fishing gear and marine heritage assets has been identified as a potentially relevant impact related to fishing activity and therefore this issue has been specifically scoped into the SEA. We concur that this is an issue that should be included in the SEA.

Note: The same response was provided for both the Celtic Sea and Western Channel (CSWC) Demersal and Celtic Sea and Western Channel (CSWC) Pelagic FMPs.

How the consultation response was considered

Point #	How point was considered
However, the interaction between fishing gear and marine heritage assets has been identified as a potentially relevant impact related to fishing activity and therefore this issue has been specifically scoped into the SEA. We concur that this is an issue that should be included in the SEA.	Cultural heritage has been scoped into the Celtic Sea and Western Channel (CSWC) Demersal FMP and Celtic Sea and Western Channel (CSWC) Pelagic ERs.

Natural Resources Wales Response

Natural Resources Wales
Cathays Park
Cardiff CF10 3NQ

17 January 2025

By e-mail

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) SCOPING REPORT FOR THE CELTIC SEA AND WESTERN CHANNEL DEMERSAL FISHERIES MANAGEMENT PLAN (FMP)

Thank you for consulting Natural Resources Wales (NRW) on the SEA Scoping Report for the Celtic Sea and Western Channel Demersal FMP.

We welcome the FMP programme, and the opportunity these FMP SEA Scoping Reports provide to advise on the sustainable development and management of fisheries where relevant to Welsh waters.

The statutory purpose of NRW is set out by the Environment (Wales) Act 2016. In the exercise of its functions NRW must pursue sustainable management of natural resources in relation to all its work in Wales and apply the principles of sustainable management of natural resources as far as that is consistent with the proper exercise of it functions.

NRW's duty (in common with the other public bodies covered by the Well-Being of Future Generation (Wales) Act 2015) is to carry out sustainable development. This means, in general terms, looking after air, land, water, wildlife, plants, and soil to improve Wales' well-being, and provide a better future for everyone. NRW are also advisors to the Welsh Government on the natural heritage and resources of Wales and its coastal waters.

Under the Environmental Assessment of Plans and Programmes Regulations 2004 (as amended) (the SEA Regulations), NRW is a statutory consultee for all plans, programmes & strategies (PPS) within Wales and for those outside Wales whose effects could extend in to and have effects upon the environment of Wales. NRW is

also the appropriate nature conservation body (ANCB) for Wales under the Conservation of Habitats and Species Regulations 2017 (as amended) in relation to sites within twelve nautical miles of the coast. NRW has fisheries management duties under the Salmon and Freshwater Fisheries Act 1975 within six nautical miles of the coast. Our comments are therefore provided in the context of all these responsibilities.

SEA scoping process

The purpose of undertaking an SEA for the FMP is to prevent, reduce and as fully as possible offset any significant adverse impacts on the environment from the proposed objectives, policies and management interventions before the FMP is introduced.

Undertaking an SEA (and also a plan-level Habitats Regulations Assessment) is a key step in ensuring the FMP delivers sustainable management of marine natural resources, as it will allow an evidence based understanding of the effect of implementing the FMP on the environment, and the opportunity to mitigate and manage any negative effects.

It is apparent from the seven FMP SEA Scoping Reports that we have commented upon, including this Scoping Report, that the content is extremely high level and follows a similar pattern of deferring the provision of detail to the Environmental Reports. Unfortunately, no drafts of the relevant FMPs have been provided alongside the Scoping Reports for reference. Without this information it is challenging for consultees to provide meaningful advice on the scope of the SEA or to identify potential effects, mitigation or wider management that may be required in advance of the Environmental Report.

We welcome the intention of the SEA to assess the nature and extent of likely effects of the draft Celtic Sea and Western Channel Demersal FMP. Including the potential positive and negative environmental effects of its policies, goals, and measures, on the environmental issues scoped into the SEA. Setting out in broad terms how the FMP will seek to avoid, reduce, or at least mitigate significant negative effects.

We also welcome the intention for FMPs to propose new interventions to contribute to the mitigation of negative environmental effects from fishing activities not currently assessed or being managed, for instance those that occur outside MPAs in England and those that occur both within and outside MPAs in Wales. Please see points 1 to 5 in the Annex to this letter.

Plan-level Habitats Regulations Assessment (HRA) under the Conservation of Habitats and Species Regulations 2017 (as amended)

To date, all of the FMP SEA Scoping Reports we have commented upon have clearly relied upon the Test of Likely Significant Effect (TLSE) screening process under Regulation 63 of The Conservation of Habitats and Species Regulations 2017 to determine if an SEA is required.

In section 5.1 of the Celtic Sea and Western Channel Demersal FMP, Defra concludes that:

“It is not possible to rule out actions arising from the draft Celtic Sea and Western Channel Demersal FMP having a likely significant effect on…Special Area[s] of Conservation or a Special Protection Area[s]” And Defra’s screening exercise for the Celtic Sea and Western Channel Demersal FMP:

“indicated that fishing activities covered by the Celtic Sea and Western Channel Demersal FMP have the potential to affect multiple UK Marine Conservation Zones (MCZs) and Special Areas for Conservation (SACs), plus the wider marine environment. Therefore, [the] Defra will need to assess the implications of the FMP for those site(s) in light of its/their conservation goals.”

So far, all the FMP SEA Scoping Reports we have commented upon have concluded their respective TLSEs have been unable to rule out likely significant effects from the actions arising or activities covered by the FMP concerned on features of European marine sites or European offshore marine sites (now collectively referred to as EMS).

As the FMPs are not directly connected with or necessary for the management of any EMS then Regulations 63(1)(a) and 63(3) of the Conservation of Habitats and Species Regulations 2017 apply. The Fisheries Policy Authorities (FPAs) (as the competent authority) “must make an appropriate assessment of the implications of the plan or project for that site in view of that site’s conservation objectives“ and “must for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority specifies”.

We agree with your conclusions and as your ANCB we welcome the provision of the respective plan-level HRAs for statutory consultation.

Similarly to SEA, the assessment of plans under the Conservation of Habitats and Species Regulations 2017 are a useful strategic assessment of potential impacts. It is worth noting that plan-level HRA is narrower than SEA and focusses on whether there could be adverse effects to the relevant habitat and species features of EMS within scope of the plan area.

Adverse effects on features of EMS could be identified from ongoing activities, from the introduction of the FMPs or from management changes introduced later etc. While it is often appropriate to defer consideration of adverse effects to a later date

when a more specific and detailed ‘project-level’ HRA is conducted, the usefulness of a plan-level HRA is to provide an opportunity to identify, mitigate or rule out those potential and strategic impacts. This provides FPAs with advance notice of project-level issues before they arise and to develop programmes to fill evidence gaps.

For the purposes of a plan-level HRA, please be advised that programmes of fisheries assessment and management in England including Defra’s completed Revised Approach to fisheries management programme (inside 6nm) and the MMO’s ongoing Fishery Assessment programme (outside 6nm), cannot be relied upon in Wales. Welsh Government has not instigated a systematic programme of fisheries assessment and management therefore the effects of demersal fishing should be considered both within and outside of MPAs within a plan-level HRA. Please see points 1 to 5 in the Annex to this letter.

Further advice

We have provided further detailed comments on the Celtic Sea and Western Channel Demersal FMP Scoping Report in an Annex to this letter. In our detailed comments we highlight information that we consider necessary to ensure that the Environmental Report is comprehensive and addresses the effects of implementing the Celtic Sea and Western Channel Demersal FMP.

Annex

This annex provides more detailed comments on the Celtic Sea and Western Channel Demersal FMP SEA Scoping Report. It has been prepared with reference to NRW’s internal SEA Scoping Response Guidance. We have highlighted information that we consider necessary to ensure that the Environmental Report is comprehensive and addresses the effects of implementing the Celtic Sea and Western Channel Demersal FMP.

Environmental report content

1. We support the inclusion of assessments mentioned in Section 5.3 of the Scoping Report, which have already been conducted or are ongoing as part of the UK’s obligations under legislation relating to MPAs. These assessments include Defra’s completed Revised Approach to fisheries management programme (inside 6nm) and the MMO’s ongoing Fishery Assessment programme (outside 6nm).

2. However, both these fisheries assessment and management measures programmes are geographically limited to English waters.

3. Unfortunately, there is no equivalent structured programme of assessment and management of fisheries activities (with features of MPAs) in the

Welsh Zone to rely on for the Environmental Report and plan-level HRA. Therefore, Welsh Government will need to consider the potential effects from all relevant fishing activities on the habitat features of MPAs throughout the Welsh Zone and on the species features of MPAs wherever they are within the Welsh Zone.

4. JNCC will provide nature conservation advice to Welsh Government on the impacts to features outside of 12nm of the coast in the Welsh Zone in relation to this SEA Scoping Report, the future FMP Environmental Report, and the plan-level HRA.
5. The NRW Assessing Welsh Fisheries Activities (AWFA) Project provides generic evidence based assessments of fishing gear interactions with protected features of EMS but the project outputs do not assess the impacts from specific Welsh fisheries, or propose, or introduce management measures.
6. The potential effects of the fishery on the Favourable Conservation Status of Annex 1[40] habitats outside of sites at a national level should also be considered in the Environmental Report.
7. SSSIs are intertidal and so are unlikely to be affected by the fishing activities unless they occur on high tides in shallow inshore or intertidal waters.
8. Skomer is currently the only Marine Conservation Zone (MCZ) in Wales. The impacts from the FMP objectives, policies and management interventions will therefore need to be assessed in relation to the MCZ.
9. WFD water bodies in Wales may also be affected by the demersal fisheries considered as fish species are a quality element of transitional water bodies.
10. Welsh Government should also consider their duties under the Environment Act (Wales) 2016 within the Environmental Report. Section 6 of the Act requires that 'public authorities must seek to maintain and enhance biodiversity [of the Section 7 habitats and species] as far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems'.
11. The Environmental Report should consider the impacts on ecosystem resilience through impacts on its four measurable attributes – Diversity, Extent, Condition & Connectivity of Ecosystems Assessment (DECCA)2[41].
12. It is important the Environmental Report reflects the two-way nature of links and effects of the PPS considered. The PPS could be affected by the FMP and might also affect it.
13. The Welsh National Marine Plan should be included in the Environmental Report.
14. Ireland's marine planning process should be included in the Environmental Report.

[40] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31992L0043

[41] Ecosystem Resilience in a Nutshell 1: what is ecosystem resilience?

15. The Environment (Wales) Act 2016 and the Wellbeing of Future Generations (Wales) Act 2015 should be included in the Environmental Report.
16. The Environmental Report should also consider the Welsh Natural Resources Policy, and the relevant marine parts of Welsh Area Statements produced under the Environment (Wales) Act 2016.
17. Welsh Government should be asked for a complete list of relevant Welsh Statutory Instruments that apply to the fishing activities considered under this FMP in the Welsh Zone for inclusion in the Environmental Report.
18. Relevant North Wales Welsh Government Fisheries Byelaws and South Wales Welsh Government Fisheries Byelaws should be included in the Environmental Report.
19. 'Securing a Sustainable Future: Environmental Principles, Governance and Biodiversity targets for a Greener Wales' consultation 2024 should be included in the Environmental Report.
20. The AWFA project should be considered as a PPS. AWFA is different from Defra's completed Revised Approach to fisheries management programme (inside 6nm) and the MMO's ongoing Fishery Assessment programme (outside 6nm) which deliver management measures. The AWFA project only delivers generic evidence- based assessments of fishery interactions with protected EMS features.
21. Section 4 does not make any linkages with PPS associated with other maritime sectors for example Offshore energy and Defra's Marine Spatial Prioritisation (MSPri) work programme.
22. The Environmental Report should consider the possibility of in-combination or cumulative impacts of the FMP with other marine sectors such as offshore energy (oil, gas, renewables), cabling, aggregate extraction etc.
23. The Environmental Report should assess the impacts from spatial squeeze caused by MPAs or offshore renewables alongside the potential displacement of fisheries due to any relevant FMP policy, action, or management measures.
24. The Environmental Report should identify any key evidence gaps to be considered when designing future monitoring of the FMP mentioned in Section 7 of the Scoping Report.
25. The final FMP text will need to consider and address any negative effects of the draft FMP assessed through the Environmental Report (and plan-level HRA).
26. It is not clear how any additional measures to address risks or impacts mentioned in the Scoping Report will be determined, or how these will be secured and delivered. For example, will mitigation identified in an Environmental Report (and plan-level HRA) be written into the final FMP as part of an iterative development process?
27. The Environmental Report should include UK Marine Strategy Descriptor D2, there are risks posed by the introduction and/or spread of marine INNS by fishing boats and gears moving areas.
28. We advise that the assessment of marine litter under UK Marine Strategy Descriptor 10 includes lost fishing gear and vessel flotsam and jetsam.
29. The Environmental report should also include UK Marine Strategy Descriptor D9 'contaminants in fish and other seafood for human

consumption' due to risk of microplastics entering the food chain from degrading fishing gear lost as litter.

30. We agree with the scoping out of contaminants by fishing boats e.g. oil or fuel spills under UK Marine Strategy Descriptor D8 as this impact pathway is managed by other competent authorities such as the Maritime and Coastguard Agency, and legislation such as MARPOL, rather than the FMP.

Environmental baseline

31. No baseline environmental information has been provided within the Scoping Report. This is a missed opportunity to scope this content before producing the Environmental Report.
32. The proposed use of the UKMS descriptors alone to define the baseline environment condition is likely to be insufficient. The UKMS descriptors are high level and broad. The Environmental Report should describe the environmental baseline, at a scale and level of detail appropriate to identify any existing environmental issues, challenges, or tensions with the proposed baseline.
33. The marine environment is subject to a range of pressures derived from multiple human activities. It is important that the environmental baseline differentiates between the influence of other marine activities and the fishing activities being considered.
34. In addition, the baseline needs to sufficiently reflect regional issues due to the effect of the fishing activity acting on local receptors in those areas. The actual status of the marine environment or baseline in areas where demersal fishing is occurring (or may occur in the future) may be significantly different to the generalised UK-wide UKMS descriptor assessment summary.
35. The Environmental Report should identify future trends in the environmental baseline in the absence of the FMP.

Receptor advice

36. We welcome the Scoping Report including the assessment of effects upon 'Biodiversity, fauna and flora' in Table 2. However, no detail of the methodologies to be used in the Environmental Report assessment have been provided and therefore it is not possible for us to provide more detailed advice on whether the report will sufficiently assess all the relevant effects of the FMP on the relevant receptors.
37. Several of the fish species included in this FMP are classified by the IUCN as endangered or critically endangered such as roundnose grenadier, sandy ray, common blue skate, white skate, birdbeak dogfish, gulper shark, leafscale gulper shark and kitefin shark, or ICES assessments have indicated depleted populations in the Celtic Sea for species such as cod, whiting and plaice. The Environmental Report should clearly set out how these species will be managed by the FMP to restore them to MSY.
38. The mobile species risk assessments in Table 2 'Biodiversity, fauna and

flora' do not include impacts to Annex 2[42] fish (lamprey, shad, salmon) species, these should be included within the Environmental Report.

39. The mobile species risk assessment conclusions in Table 2 for 'Biodiversity, fauna and flora' apply to English waters only.
40. We are currently producing equivalent demersal gear risk assessments for the Welsh Zone for both habitats and mobile species of MPAs. Risk Assessments should be complete by April 2025. These high-level risk assessments can be used to inform the FMP Environmental Report and the plan-level HRA.
41. The Environmental Report should consider the impacts from fishing activities on habitat and mobile species features (birds, mammals and fish) both within and outside of Welsh MPAs as there is no equivalent to Defra's completed Revised Approach to fisheries management programme (inside 6nm) and the MMO's ongoing Fishery Assessment programme (outside 6nm) in the Welsh Zone to rely on. See points 1 to 5 of this Annex.
42. The Environmental Report should fully consider and assesses the positive and negative effects that the FMP could have on relevant protected features in the Welsh Zone, for example, through changes to fishing effort (increased effort, spatial changes in effort, displacement of effort), or changes to fishing methods etc. from implementing the FMP.
43. Information on sensitive habitats and their resilience and recovery rates from impacts resulting from the FMP should be included in the Environmental Report. Potential negative effects resulting from the FMP on marine habitats features in Welsh waters could include, for example, habitat loss, degradation or disturbance and impacts related to the ingress and spread of INNS.
44. Information on sensitive species in the Welsh Zone and how they could be affected by measures proposed in the FMP should be included in the Environmental Report. Potential negative effects resulting from the FMP on species features in Welsh Zone could include, for example, increased bycatch or collisions, increased disturbance, impacts to prey habitat, and reduced prey availability.

Additional comments

45. Consideration within the Scoping Report in relation to cultural heritage is limited to marine heritage assets. This is at odds with the emphasis placed on cultural importance in Section 1.2 which states that 'decisions should recognise the cultural importance of fishing through maintaining and, where possible, strengthening coastal communities and livelihoods alongside the requirement for fish stocks to reach and maintain sustainable levels.'
46. In relation to Welsh Government's Well-being of Future Generations Act 2015 responsibilities, the view of cultural heritage is too narrow, Welsh Government should also consider the impacts of the FMP on Welsh

[42] eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31992L0043

coastal communities and the Welsh language in the Environmental Report.

47. Table 2 Population – Welsh Government may also want to consider scoping in ‘population’ as rural coastal fishing/crofting includes economic and societal factors that could affect or change remote coastal populations that rely on fishing and could be impacted by the FMP.
48. The current description of seascapes used within the Scoping Report is not accurate. A seascapes assessment refers to the potential impact of the assessed activity on the visual character of the area. Any interaction between fishing gear and the substrate will be considered in MSFD Descriptor D6 Sea-floor integrity assessment.

How the consultation response was considered

Welsh Government and DEFRA have consulted with statutory nature conservation advisors including Natural Resources Wales (NRW) with regards to the scope and level of detail the Celtic Sea and Western Channel Demersal SEA environmental report (ER). Some comments provided by NRW, as part of the consultation in preparation of the ER, have already been addressed by the ER. Outstanding comments/advice including the timing of Habitats Regulations Assessments (HRA) are considered below.

The FMP follows a high-level strategic assessment framework using UK Marine Strategy descriptors as benchmarks for environmental assessment.

An assessment of the FMP goals are set out in section 5 of the ER. Many of the FMP goals have the potential to recommend subsequent inshore and offshore management measures which may change the characteristics of the relevant fisheries in some way and a reasonable summary of positive and negative effects are provided.

Changes to the fishery could be spatial, temporal or effort linked. However, it is important to draw the distinction between the possible effects of high-level strategic objectives being met and any resulting recommended management measure being adopted.

For example, Goals 1a and 1b. suggest Defra and Welsh Government seek to improve evidence for gadoid stocks. In both statutory and practical terms, until management measures are identified through this process, any effects cannot be reliably identified and assessed. In this example, Goals 1 are to seek rather than to implement the actions. Until these actions have been considered and suitable management actions identified it would not be possible to attempt to assess the type or scale of resultant impacts or effects on relevant MPAs and associated protected habitats and species.

Before any recommended management change is implemented, changes to fishery regulations controlling the existing fishery would be required. This legislative change would provide the appropriate opportunity to fully assess the then known scope and potential impacts or effects of the new management change in line with the Conservation of Habitats and Species Regulations 2017 and address any outstanding advice provided by NRW. Before this point, no real-world changes which may subsequently be caused (and assessed via HRA) as a result of a potential management change could be transmitted through to any protected Welsh MPAs, habitats or species because the FMP itself is not making any management changes or implementing new management measures.