Department for Environment Food & Rural Affairs

The Scottish Government
Riaghaltas na h-Alba

North Sea and Channel sprat fisheries management plan

Strategic environmental assessment environmental report

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Contents

Non-technical summary

The North Sea and Channel sprat fisheries management plan (FMP) has been prepared to meet the requirements of the Fisheries Act 2020. It sets out the policies and proposed measures, Defra and the Marine Directorate will use to manage sprat fishing activity, so stocks are harvested within sustainable levels.

Alongside these measures, the North Sea and Channel sprat FMP also sets out management to help support wider social, economic and environmental aspects of the fishery.

This environmental report has been produced in accordance with The Environmental Assessment of Plans and Programmes Regulations 2004 (Strategic Environmental Assessment (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

This assessment focuses on how the policies and actions in the North Sea and Channel sprat FMP could 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.

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

This report sets out those plans, programmes and environmental protection objectives, both international and domestic, that Defra and the Marine Directorate consider relevant to the North Sea and Channel sprat FMP.

This report considers and acknowledges the existing environmental effects of sprat fishing on those issues scoped into this assessment, in relation to:

- marine protected areas (MPAs)

- the UK MS descriptors of good environmental status (GES) for the wider marine environment
- climatic factors

The potential positive and negative environmental effects of the North Sea and Channel sprat FMP's policies and proposed measures alone and in-combination have also been assessed.

The strategic environmental assessment (SEA) has concluded that beyond the direct impact on targeted stocks, the fishery has an impact on the marine environment. This is primarily through bycatch of unwanted or protected species and prey reduction. The contribution of fishing related litter was also identified as a potential impact associated with sprat fishing. The contribution of sprat fishing to climate change related issues and cultural heritage was also identified as a potential impact.

The North Sea and Channel sprat 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, measures and actions. The policies, measures and actions will, where appropriate, be developed to avoid any potential negative effects identified by the assessment process. The environmental effects of implementing the North Sea and Channel sprat FMP policies and measures will also be monitored to identify unforeseen adverse effects at an early stage. This is so that appropriate remedial action can be undertaken.

This assessment recommends that future iterations of the North Sea and Channel sprat FMP should consider:

- how they can develop the cultural heritage of each fishery
- how fisheries management can contribute to reducing potential negative interactions with marine heritage assets

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. 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 benefits 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: see 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.

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

[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.

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 requires 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 measures 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, or proxy, 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 GES under the 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 FMP applies to European sprat (*Sprattus sprattus,* hereafter 'sprat') only in English and Scottish waters (North Sea and English Channel; International Council for the Exploration of the Sea (ICES) Sub area 4 and divisions 7.d-e). The North Sea and Channel sprat FMP applies in English waters[2] and Scottish waters[3], covering inshore and offshore areas where fishing activity for sprat takes place.

North Sea and Channel sprat FMP goals

The FMP seeks to create a roadmap for the effective management of relevant sprat stocks in English and Scottish waters over the next six years, to allow this valuable natural resource to benefit a diverse range of environmental, commercial, recreational and social interests whilst ensuring stocks remain sustainable. Sprat management should aim to be flexible, adaptive, and ecosystem based.

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

Five goals, set out below, have been identified to help further achieve the overall vision stated for the FMP, and link to the Act objectives.

Each goal includes a rationale alongside short term (one to two years) and medium-long term (two years and onwards) actions to deliver the goals.

The North Sea and Channel sprat FMP goals

Goal theme: Sustainable fisheries

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

Goal theme: Evidence

Goal: Identify and address evidence gaps required for improved stock assessments

Goal theme: Management approach

Goal: Identify ecosystem-based fisheries management approaches appropriate to sprat fisheries

Goal theme: Social and economic

Goal: Deliver a framework to support the role of the FMP in realising sustainable marine economies

Goal theme: Climate change

Goal: Develop strategies to adapt to the impact of climate change on sprat fisheries

Goal 1: Harvest sprat stocks sustainably, with biomasses maintained above the level capable of producing MSY

Rationale

The primary aim of FMPs, set out in the Act and JFS, and reflected in the vision of this FMP, is to ensure that the stocks in scope are harvested sustainably. This is to ensure the long-term viability of the stocks and the fisheries that prosecute them. The sprat stocks covered by this FMP are currently being fished sustainably with respect to MSY, therefore the actions for this goal are to maintain the current approach. The actions also reflect that this stock is managed internationally,

therefore maintaining the stocks above the levels capable of producing MSY is a result of the joint management.

How to maintain this:

- continue to determine fishing opportunities guided by the best available scientific advice
- continue to work with coastal State partners in accordance with the policies in the JFS including the Principles of International Fisheries Negotiations with the aim of maintaining the sustainable harvesting of the stock through international negotiations

Goal 2: Identify and address evidence gaps required for improved stock assessments

Rationale

While current ICES stock assessments are considered sufficiently robust to inform management decisions, improvements in the understanding of biology, ecology and stock structure will lead to more accurate assessments and advice. ICES notes that there is uncertainty around some stock boundaries. Actions across all FMPs will be appropriately prioritised. These actions are ways in which we can enhance existing management to meet the vision of the FMP.

How could this be achieved: short term

- establish which factors within current sprat stock assessments have the greatest influence on assessment outcomes and identify factors with the greatest uncertainty

How could this be achieved: medium-long term

- develop a research plan to fill evidence or data gaps required for improved stock assessments, including improved understanding of stock structure and boundaries of sprat populations in English and Scottish waters, for example the potential linkages between stocks in and outside scope of this FMP
- explore options to move away from single-species models, including extending and where necessary developing multispecies/ecosystem models to incorporate sprat fisheries

Goal 3: Identify ecosystem-based fisheries management approaches appropriate to sprat fisheries

Rationale

A thriving fishing industry is underpinned by healthy and productive seas. As set out in the JFS and the Act, the UK and Scottish Governments are committed to an ecosystem-based approach to fisheries management that will account for, and seek

to minimise, impacts on non-commercial species and the marine environment. This also links to existing initiatives such as the Bycatch Mitigation Initiative and Clean Catch UK.

How could this be achieved: short term

- collate existing information into a report on the ecosystem role of sprat
- support participation in fishery-science partnership schemes to address evidence and knowledge gaps on the ecosystem role of sprat utilising the experience held within the fisheries

How could this be achieved: medium-long term

- consider how to undertake additional targeted evidence collection (including self-reporting and the potential for remote electronic monitoring (REM) programmes) to improve estimates of bycatch of marine mammals, seabirds and designated fish for gear types used to target sprat
- research how an ecosystem-based approach could be incorporated into future iterations of the North Sea and Channel sprat FMP and where these might align with comparable approaches for other species
- consider development of policy aiming to minimise or eliminate any impact of sprat fisheries on the designated features of MPAs and wider seas, to contribute towards achieving GES in the North Sea and English Channel, compatible with targets set by the UK Marine Strategy (UKMS)

Goal 4: Deliver a framework to support the role of the FMP in realising sustainable marine economies

Rationale

As set out in the JFS and the Act, the UK and Scottish Governments hold an ambition to support a modern, resilient, and environmentally responsible fishing industry. This includes managing our fisheries sustainably by balancing environmental, economic, and social considerations, and so that the capacity of fleets is such that they are economically viable, but do not overexploit marine stocks. The JFS notes that the scope of an FMP may be extended as appropriate, to consider wider fisheries management issues covering environmental, social, and economic concerns.

Stakeholder engagement has highlighted two areas of concern that are currently impacting the economic viability of the fishery:

1. The Channel sprat fishery is not currently active and therefore potential economic benefits of the resource are not being realised.
2. Changes to minimum mesh size regulations (move to 50mm; see above current technical measures) have impacted the traditional drift-net winter fishery for sprat in the North Sea.

How could this be achieved: short term

- conduct an economic feasibility assessment of the fisheries with the aim of helping to identify barriers to the realisation of economic viability to coastal communities within the FMP area
- review current technical measures affecting sprat fisheries and consider the impact of potential modifications to these measures both for sprat and other species
- consider if a pilot fishery for drift-netting at a smaller mesh size could be developed as a method to assess the impact of amending technical measures affecting sprat fisheries. Any pilot fishery developed is expected to be industry-led in collaboration with government and subject to appropriate assessments

How could this be achieved: medium-long term

- consider how to adapt the FMP to reflect relevant findings from an economic assessment and when new or improved measures are developed as appropriate

Goal 5: Develop strategies to adapt to the impact of climate change on sprat fisheries

Rationale

The climate change objective of the Act requires that adverse effects of fisheries on climate change are minimised and that fishery activities should adapt to climate change. As stated in the climate change section of this FMP, climate change is likely to impact sprat stocks with a potential to affect factors such as production, distribution, and predation. The nature and extent of any possible changes and the ability for intervention is unknown. The development of adaptive management strategies will require the filling of evidence gaps therefore this policy goal considers what evidence might support adaptation.

How could this be achieved: short term

- seek to ensure that wider research to identify the likely impacts of climate change on fisheries considers sprat and their links within the wider ecosystem

- explore how best to maintain collaboration and involvement across government, industry, and academic sectors in initiatives to reduce environmental impacts of sprat fisheries (including CO2 emissions)

How could this be achieved: medium-long term

- consider exploration of the impacts that sprat fisheries have on the marine environment (including CO2 emissions) through collaborative studies, should sprat fishing by UK vessels increase in the future.
- explore how ecosystem-based fisheries management approaches that are robust to the effects of climate variability can be used for managing sprat fishing.

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. FMPs are plans that fall within the definition in Regulation 2.

Defra and the Marine Directorate consider that regulation 3(2)(b) of the SEA Regulations 2004 applies to the North Sea and sprat FMP as the plan relates to England and Scotland.

In accordance with the SEA Regulations 2004, Defra and the Marine Directorate carried out a screening exercise which determined that the proposed policies in the North Sea and Channel sprat FMP may have likely significant effect (either positive or negative) on a European site or a European offshore marine site and they are not directly connected with or necessary to the management of such sites.

The screening exercise used Defra's Magic Map Application to identify whether the geographical scope of the FMP overlaps with any European sites or European offshore marine sites. 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 sprat has the potential to impact these sites and interest features. For example, sprat fishing has the potential to result in the extraction of, or mortality/injury to wild species.

The screening also judged that actions arising from the North Sea and Channel sprat FMP have the potential to affect multiple European marine sites and the wider marine environment.

Based on the outcome of the screening, Defra and the Marine Directorate concluded that the FMP, falls within the description of a plan in regulation 5(3) of the SEA Regulations 2004, and, 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 the Marine Directorate carried out a scoping exercise to identify the scope and level of detail of the assessment that will be documented in the ER environmental report. Regulation 12(5) requires that when deciding on the content of 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 North Sea and Channel sprat FMP was provided to the following Consultation Bodies:

- Historic England
- Natural England
- Environment Agency
- Historic Scotland
- Nature Scot
- Scottish Environment Protection Agency
- JNCC

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

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

Sections of this report 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 goals of the plan or programme, and of its relationship with other relevant plans and programmes

Section: 4 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 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, [European Union] 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

- 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: 7

- 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: 8

- 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 of 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 ER environmental report.

Defra and Marine Directorate propose that the ER environmental report will address the effects on the following issues:

- biodiversity, fauna and flora: Including the following sub-sections: cetaceans, seals, birds, fish, commercially exploited fish, pelagic habitats, food webs
- water: Including the following sub-sections: marine litter and underwater noise
- climatic factors: Including the following sub-sections: vessel emission
- cultural Heritage: Including the following sub-section: interactions between fishing gear and marine heritage assets

Conversely, Defra and Marine Directorate scoped the following issues out of the assessment, and will not be covered in the ER environmental report:

- geology and sediments (soil)
- population (human)
- human health
- air
- material assets
- landscape and seascape

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 North Sea and Channel sprat FMP. Geology and sediments (soil), and landscape and seascape were screened out as it was considered that this issue would not be significantly affected by the North Sea and Channel sprat FMP. This decision is based on the premise that pelagic gear is used mid water and rarely comes into contact with the seabed. It is therefore unlikely to have an impact on the geological or sediment features and at a broader landscape/seascape scale. Issues such as Population, Human Health, Air and Material Assets were also scoped out of this assessment as it was considered that they would not be significantly affected by the North Sea and Channel sprat 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 ER environmental report with the environmental baseline (see section 4), 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. 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 have a significant enough contribution 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 were identified as the most relevant issue related to fishing activity that is 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 with this issue heading

Results of the scoping exercise to determine those environmental issues likely to be significantly affected by the North Sea and Channel sprat FMP and thus scoped into the SEA[4]

Environmental issues likely to be significantly affected by the FMP:

- **biodiversity, fauna and flora (UK MS descriptors D1, D3, D4, D6)** - Fishing activity for sprat has the potential to result in the extraction of, or

4 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.

mortality/injury to/disturbance to, both target and non-target wild species. These issues are within the scope of this SEA

- **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
- **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. This issue is within the scope of this SEA
- **cultural heritage** - Fishing activity for sprat 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

Environmental issues not likely to be significantly affected by the FMP:

- **geology and sediments (soil) (UK MS descriptor D6)** - Fishing activity for sprat does not interact with the seabed as it uses pelagic gear targeting a pelagic species. Sprat fishing will not result in any significant physical disturbance to the seabed and substrates. This issue is beyond the scope of this SEA
- **population (human)** - The FMP would not result in significant increases, decreases or both in human population numbers, or changes to in-migration or out-migration. This issue is beyond the scope of this SEA
- **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.

- **landscape or seascape** - The FMP is unlikely to significantly alter the current effects of fishing practices on the landscape and or seascape in the UK. This issue is beyond the scope of this SEA.

Assessment methodology

This SEA reflects the geographical scope (section 1) and fishing activity covered by the FMP. It considers the objectives of the North Sea and Channel sprat FMP and the measures (section 1) it sets out to achieve these objectives.

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 North Sea and Channel sprat FMP (including its policies and measures) on those environmental issues scoped into the assessment and where applicable their associated UK MS descriptors identified in below.

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 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 fisheries management programme (Inshore Fisheries and Conservation Authority (IFCA) 0-6 nautical miles, Marine Management Organisation (MMO) 6-12 nautical miles)
- the MMO's ongoing Fishery Assessment programme (outside 12 nautical miles) in England

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

Nevertheless, this ER environmental report acknowledges the potential significant effects associated with fishing activity being managed through the North Sea and Channel sprat 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 North Sea and Channel sprat FMP, advice from Statutory Nature Conservation Bodies (SNCBs) (Natural England, NatureScot and

JNCC) on the impacts of fishing activity in relation to MPAs and UK MS descriptors was considered. This environmental report will review how this advice has been reflected in the FMP and proposed policies and action are likely to change the baseline.

It is important to note the North Sea and Channel sprat 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 measures of the FMP at the present time.

This assessment acknowledges the North Sea and Channel sprat FMP sets outs objectives to develop the evidence base for the sprat fishery. Our assessment used the best available evidence at the present time to reach a judgement on the environmental effects of the North Sea and Channel sprat 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 measures.

It is likely that without the proposed FMP, those issues which are contributing to the current state of the marine environment will likely continue to have an influence. The proposed FMP seeks to promote the management of the fisheries in a more coherent and coordinated manner that considers wider environmental issues. The FMP therefore has the potential to improve the current state of the environment set out below, both where no improvement has been observed, and where positive trends have been identified. Section 6 and 7 considers how the implementation of the FMP's proposed policies and actions could change the baseline.

Biodiversity, flora, fauna and geodiversity[5] (geology and sediments)[6]

The primary source of information on the current state of the UK marine environment came from the UK MS 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 MS 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 MS 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.

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 seal populations and productivity continue 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 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.

D1 and D4 – birds

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

Birds 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.

D1 and D4 – fish and D3 – commercially exploited fish and shellfish

Fish and commercially exploited fish and shellfish 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 trend in fish communities beyond the targeted stocks.

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 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.

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.

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 the 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.

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) (formally known as Department for Business, Energy & Industrial Strategy (BEIS), 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)[7], or 0.66% of the UK's domestic transport emissions (122 Mt CO_2e)[8]. To put this into context, estimated emissions by the UK fishing fleet would have been equivalent to 1.7% of

7 BEIS (Department for Business, Energy & Industrial Strategy) (2021b) 2019 UK Greenhouse Gas Emissions: Final Figures – Statistical Summary. https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2019

8 DfT (Department for Transport) (2021) Statistical Release: Transport and Environment Statistics 2021 Annual Report, 11 May 2021. https://www.gov.uk/government/statistics/transport-and-environment-statistics-2021

total agricultural emissions in 2019 (46.3 Mt CO_2e). Recent analysis has shown that the total UK pelagic trawl fleet segment (which comprises of 26 active vessels) produced 15.7% (132kt CO_2e) of the total at sea carbon emissions annually across the UK's fishing fleets[9]. Note that the majority of pelagic fishing is conducted by large vessels targeting mackerel, the sprat directed fishery is conducted by a low number of small vessels. Data available from Seafish show that, in 2019, sprat make a small contribution to the overall pelagic fleet uptake.

Climate change impacts on sprat stocks and fisheries

Climate change and warming oceans are changing the distribution of commercially important species[10]. Sprat is considered a cold-water species and has shown a long-term decline in the southern North Sea and Baltic Sea[11]. The exact mechanisms through which climate change may impact sprat are not known although sprat favour cool spawning conditions and are positively correlated with cold water plankton species[12]. The observed increasing presence of warm water pelagic fish in the area[13] is predicted to continue[14] and is likely to also affect future sprat abundance due to competition[15]. Model-based predicted impacts of climate change on future pelagic fisheries, including those targeting sprat, are mixed with catches forecasted to increase in northern areas but decrease in the south[16].

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.

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9 Engelhard, G.H., Harrod, O.L., Pinnegar, J.K. (2022) Carbon emissions in UK fisheries: recent trends, current levels, and pathways to Net Zero Final report for Defra project C8118. Centre for Environment, Fisheries & Aquaculture Science (Cefas), Lowestoft, UK.
10 Mieszkowska, N., Burrows, M. and Sugden, H. (2020) Impacts of climate change on intertidal habitats relevant to the coastal and marine environment around the UK. MCCIP Science Review 2020, 256–271.
11 Montero-Serra,I., Edwards, M., & Genner, M. J. (2015). Warming shelf seas drive the subtropicalization of European pelagic fish communities. Global Change Biology, 21(1), 144–153.
12 Montero-Serra,I., Edwards, M., & Genner, M. J. (2015). Warming shelf seas drive the subtropicalization of European pelagic fish communities. Global Change Biology, 21(1), 144–153.
13 Beare, D. J., Burns, F., Greig, A., Jones, E. G., Peach, K., Kienzle, M., McKenzie, E., & Reid, D. G. (2004). Long-term increases in prevalence of North Sea fishes having southern biogeographic affinities. Marine Ecology Progress Series, 284, 269–278.
14 Townhill, B. L., Couce, E., Tinker, J., Kay, S., & Pinnegar, J. K. 2023. Climate change projections of commercial fish distribution and suitable habitat around north western Europe. Fish and Fisheries, 00, 1–15.
15 Hunter A, Speirs DC, Heath MR (2019) Population density and temperature correlate withvlong-term trends in somatic growth rates and maturation schedules of herring and sprat. PLoSONE 14(3): e0212176.
16 Fernandes, J. A., Frolicher, T. L., Rutterford, L. A., Erauskin-Extramiana, M., & Cheung, W. W. L. (2020). Changes of potential catches for north-East Atlantic small pelagic fisheries under climate change scenarios. Regional Environmental Change, 20, 116. 01698 -3

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

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[17]:

- pelagic towed gear, mid-water trawls and purse seines are unlikely to encounter marine heritage assets and therefore interactions are not anticipated, except for incidental gear loss

The report identifies several potential and evidenced interactions between commercial fishing and marine heritage assets, although the predominant use of pelagic trawls in sprat fisheries, this is not likely to be a significant issue. 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 waters and Scottish waters.

In Scotland, Historic Marine Protected Areas (HMPAs) are marine historic assets of national importance which survive in Scottish territorial waters (out to 12 miles offshore) that are protected by law. Further information and datasets on Scotland's Marine historic environment and cultural heritage can be found at Historic environment and cultural heritage | Scotland's Marine Assessment 2020.

Existing environmental effects of sprat fishing

The North Sea and Channel sprat FMP focuses on achieving the sustainable harvesting of sprat stocks. This focus reduces the environmental risks linked to over-fishing these stocks, thereby giving positive benefit to environmental status over the long term.

Nevertheless, fishing within sustainable limits for the target stocks (MSY or appropriate proxies) may reduce but will not eliminate some of the negative impacts of that fishing activity on the wider marine environment. These impacts are identified in the sections below.

As described in section 2, this Environmental Report focuses on assessing how the policies, measures and actions in the North Sea and Channel sprat FMP are likely to

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

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 fisheries management programme (IFCA 0-6 nautical miles, MMO 6-12 nautical miles)
- the MMO's ongoing Fishery Assessment programme (outside 12 nautical miles) in England

Nevertheless, this environmental report acknowledges the likely significant effects associated with fishing activity being managed through the North Sea and Channel sprat 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 water quality

Environmental effects associated with MPAs

Advice provided to Defra and Marine Directorate by our SNCBs gives more detail on the risks associated with sprat fishing in relation to the designated features of MPAs in English and Scottish waters.

The main environmental pressures on MPA features are associated with sprat pelagic trawl fishing activity, notably the removal of target and non-target species.

In England the assessments of the impact of sprat fishing activities inside MPAs are undertaken by the IFCAs within six nautical miles and the MMO outside six nautical miles. Figure 1 shows the distribution of English MPAs relevant to the North Sea and Channel sprat FMP. Stakeholders have worked closely with regulators to help develop measures to mitigate impacts within inshore and offshore 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 are detailed on the MMO and Association of IFCAs websites.

Figure 1. England's MPA network

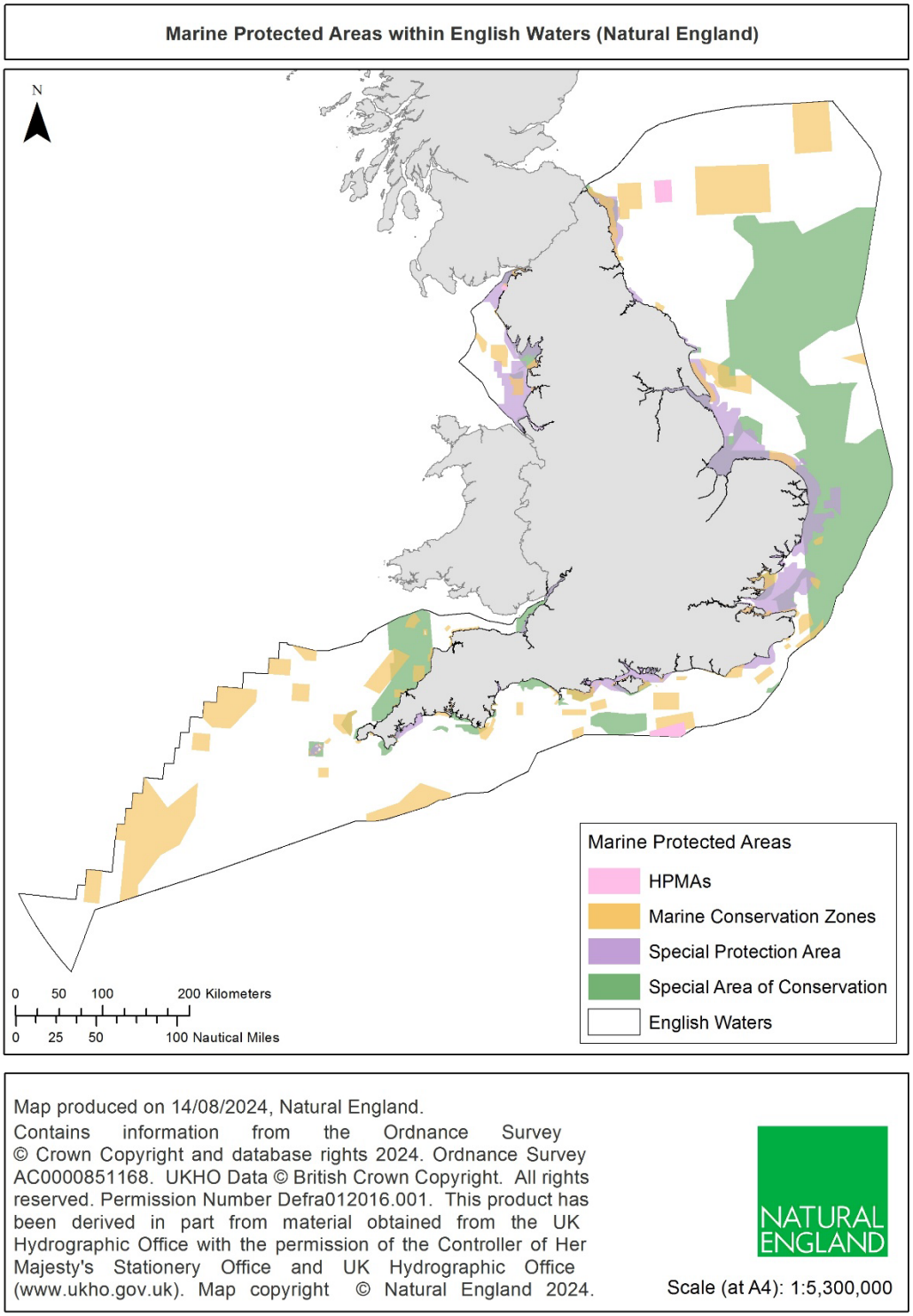

Figure 1 description: a map showing the location of marine protected areas within English waters. The map includes marine conservation zones, special areas of conservation, special protection areas highly protected marine areas.

- MPAs hug much of the English coastline, especially around ecologically rich areas such as estuaries, salt marshes, and rocky shores. Clusters exist near places like Cornwall, Devon, Dorset, and the Northumberland coast
- large offshore MPAs spread across the North Sea, English Channel, and parts of the Celtic Sea
- the southwest contains a number of MPAs up against the boundary of the UK exclusive economic zone

Inside the boundaries of Scottish MPAs, the Marine Directorate assess human activities that could interact with the designated features of MPAs, seek the advice of SNCBs and introduce management where required. Stakeholders have worked closely with regulators to help develop measures to mitigate impacts within inshore and offshore MPAs. Therefore, appropriate management should either be in place or introduced soon to ensure any fishing within MPAs is compatible with the MPA's conservation objectives. Current MPA monitoring strategy for Scottish waters is detailed at MPA monitoring strategy - Marine environment. Figure 2 shows the distribution of MPAs relevant to the North Sea and Channel sprat FMP.

Figure 2. Scotland's MPA network

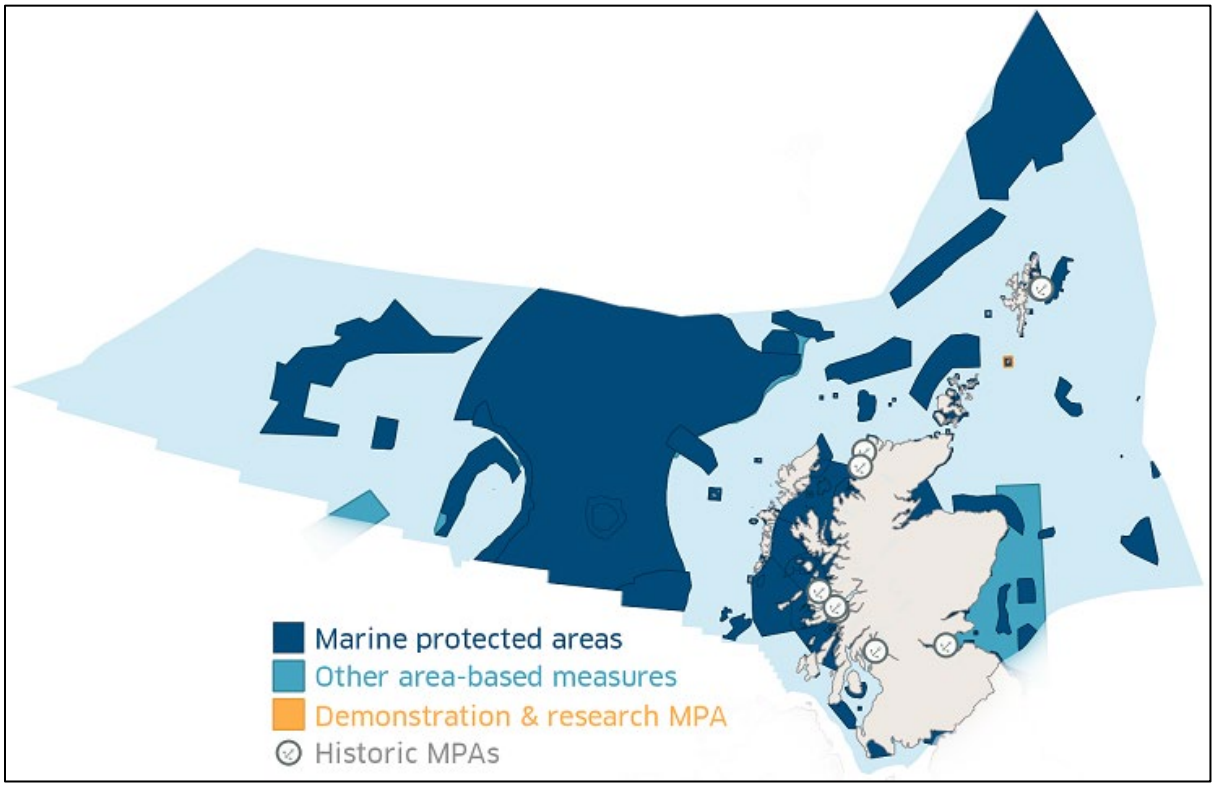

Figure 2 description: a map showing the location of marine protected areas within Scottish waters. The map includes:

- marine protected areas, scattered around the area but concentrated away from the land to the west

- other area-based measures, concentrated on the eastern coast
- demonstration and research MPAs, which in this case are only around Fair Isle
- historic MPAs, in 5 locations on the western coast and one in the Forth estuary

Whilst MPA site management considers fishing activity that occurs within the site's boundaries, there remains the potential for fishing activity occurring outside an MPA to still have impacts on the features protected within the MPA. These impacts can happen when either the pressure exerted by the fishery impacts protected features beyond the spatial footprint of a particular fishing activity (such as prey depletion) or when the feature of an MPA is mobile and travels outside the site.

Advice provided to Defra and the Marine Directorate by the SNCBs on outside MPA boundary impacts of sprat fishing activities identified the following risk levels[18]:

- there is a moderate risk of bycatch of mobile species that are designated features of MPAs in pelagic trawls (English and Scottish waters); ringnets, purse seines and pelagic drift nets (English waters)
- there is a moderate risk to the designated species of MPAs from reductions in their prey through the targeted sprat fishery

Environmental effects associated with UK MS Descriptors

Advice provided to Defra by the SNCBs gives more detail on the key risks to UK MS descriptors arising from sprat fishing and their likely impact on achieving GES (Appendix A).

18 Risk ratings were assigned as follows:

Low Risk MPAs: Although there might be a theoretical impact 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.

The following potential issues and their associated risk level[19] have been identified for sprat fishing on UK MS descriptors:

- **the impact of bycatch of species on D1 biodiversity:** As well as presenting a risk to species associated with MPAs (considered earlier in this document), pelagic gear such as pelagic trawls (English and Scottish waters); ring nets, purse seines and drift nets (English waters) poses a bycatch risk to other sensitive species. The risk to sensitive fish/bird/mammal species is moderate. This will require consideration. Note that as well as being relevant to GES, the Fisheries Act 2020 Ecosystem Objective requires that 'incidental catches of sensitive species are minimised and, where possible, eliminated'
- **the impact of reductions of prey species on D4 food webs:** There is a moderate risk to UK MS D1, D4 cetaceans, D1, D4 seals, D1, D4 seabirds through targeted removal of sprat, an important prey species. These risks are also relevant to the bycatch objective of the Fisheries Act 2020, and any management brought in to meet this objective could contribute to achieving GES targets for D3 commercial fish and D4 food webs
- **the contribution to fishing related litter:** Loss of gear such as pelagic trawls (English and Scottish waters) and drift nets (English waters) will add to overall levels of fishing related litter within the sea and can have unintended consequences such as ghost fishing. Consideration of how best to avoid or minimise loss and achieve sustainable end of life disposal is important. This risk is considered moderate

Sprat fishing was not considered to have an impact on the indicators for D1 and D4 Biodiversity and Food webs for cetaceans, seals and birds, or D4 food webs beyond those issues already considered through bycatch and reductions of prey species.

Risks to Scottish priority marine features

Scottish Priority Marine Features (PMFs) in Scotland represent a selection of habitats and species identified for their conservation importance. These 81 features are acknowledged for their national significance and the role they play in supporting marine biodiversity. The purpose behind identifying PMFs is to focus conservation efforts, guide management actions, and ensure the protection and enhancement of marine biodiversity within Scottish waters. Scotland's National Marine Plan policy GEN 9 states that the development and use of the marine environment must not result in significant impact on the national status of PMFs.

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

The main risks to PMFs in Scottish waters arising from the North Sea sprat fishery are:

- there is a moderate risk to PMFs through bycatch
- there is a moderate risk to PMFs through the reduction in the availability of sprats as prey

A summary of risks to PMFs from the North Sea sprat fishery is provide below:

- **bycatch – mammals**
  - **PMFs:** Grey seal, Harbour seal, Harbour porpoise, bottlenose dolphin, Risso's dolphin, Short beaked common dolphin, White-beaked dolphin
  - **FMP Risk rating:** Moderate
  - **additional comments on risks:** Pelagic trawls are not expected to pose a substantial risk of bycatch; however, evidence gaps remain resulting in a precautionary rating.
- **prey availability**
  - **PMFs:** Minkie whale, Harbour porpoise, Grey seal, Harbour seal, Sea trout, River Lamprey
  - **FMP Risk rating:** Moderate
  - **Additional comments on risks:** A variety of PMF predators are known to predate heavily on sprat, although the degree to which they are dependent on this relationship is not currently clear.
- **bycatch - fish**
  - **PMFs:** Herring, Mackerel, Horse mackerel, Salmon, Sea trout Sparling
  - **FMP Risk rating:**
  - **additional comments on risks:** Little is known about fish bycatch rates in the Scottish sprat fishery, and UK bycatch monitoring programme held no records of catches in pelagic trawls. Whilst there is potential for the bycatch of PMF pelagic fish species, likely incidents in the sprat fishery are not thought to be at a scale which risk feature status.

    Aggregations of juvenile herring and sprat can often be mixed, which increases the potential for bycatch. Historically, concerns regarding high levels of juvenile herring bycatch in the Firth of Forth Fishery culminated in the closure of the fishery in 1982.

    Alongside this, a minimum mesh size of 50mm for pelagic drift nets was implemented across the North Sea to mitigate herring bycatch, making the drift net fishery for sprat the North Sea unviable. Should this mitigation be modified, a reassessment of the risk from the fishery to herring populations would be required.

Climatic factors

Vessels fishing for sprat 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 sprat fishing on organic carbon stocks and the impacts will depend on the gears used to target sprat now and in the future.

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 (for example 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.

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.

4. Relevant plans, programmes and environmental protection objectives

The North Sea and Channel sprat FMP has broad application since it covers an activity that occurs across English waters and Scottish 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 North Sea and Channel sprat FMP applies to English waters and Scottish 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 Marine Directorate consider relevant to the implementation of the North Sea and Channel sprat FMP. The North Sea and Channel sprat 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 North Sea and Channel sprat FMP has had regard to the commitments the UK has made under the following international agreements and declarations during its preparation:

- Trade and Cooperation Agreement (TCA) between the EU and the UK
- UN Convention on the Law of the Sea (UNCLOS)
- UN Sustainable Development Goals
- UN Convention on Biological Diversity (CBD)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- RAMSAR Convention
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR)
- Regional Fisheries Management Organisations (RFMOs): The UK is an independent a Contracting Party to the following RFMOs relevant to stocks being managed through the FMP Programme:
    - NEAFC – North East Atlantic Fisheries Commission
    - ICCAT – International Commission for the Conservation of Atlantic Tunas
    - NAFO – Northwest Atlantic Fisheries Organisation
- Convention for the Protection of the Archaeological Heritage of Europe

Domestic

The North Sea and Channel sprat FMP has had regard to the following national legislation, plans and programmes during 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, known as the Habitats Regulations. Marine Conservation Zones (MCZs) are protected by the Marine and Coastal Access Act 2009. Additionally, in Scotland Nature Conservation

Marine Protected Areas (NCMPAs) are designated and protected by the Marine (Scotland) Act 2010 and Marine and Coastal Access Act 2009.

The MPA network covers 38% of UK waters. 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. The North Sea and Channel sprat FMP will support the management of fishing activity in MPAs. When implementing any actions arising from the FMP that overlap with European Marine Sites (SACs and SPAs), MCZs and Nature Conservation MPAs, 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.

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
- North East of Farnes Deep
- Dolphin Head

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

No HPMAs are planned for Scottish waters.

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 be made to the 2017 Regulations to ensure the regulations operate effectively in English and Welsh waters. The North Sea and Channel sprat 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 North Sea and Channel sprat 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 North

Sea and Channel sprat 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. Further information on the marine plans in England and Scotland are 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 North Sea and Channel sprat FMP will have due regard to these principles. Further details of the environmental principles can be found at Environmental Principles .

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 North Sea and Channel sprat FMP will deliver measures to secure healthy stocks that will be fished in an environmentally sustainable manner.

The Environment Act also makes provision for legally binding targets of which the targets for biodiversity and MPAs 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 North Sea and Channel sprat FMP will comply with the biodiversity duty.

The Environmental Targets (Biodiversity) (England) Regulations 2023

The Environmental Targets (Biodiversity) Regulations 2023 sets out legally binding targets to halt species decline by 2030, reverse species decline by 2042 and restore or create over 500,000 hectares of wildlife-rich habitat by 2042. sprat is included in Schedule 2 as a species for which data are included in the relative species abundance indices. The North Sea and Channel sprat FMP will support the achievement of the targets set out in the regulations as appropriate.

The Environmental Targets (Marine Protected Areas) Regulations 2023 – England

The Environmental Targets (Marine Protected Areas) Regulations 2023 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 MPAs. These Regulations specify the standard to be achieved in respect of the target and the date by which it must be achieved. The Regulation specifically sets a legally binding target for at least 70% of protected features in marine protected areas to be in favourable condition by the end of 2042, with the remaining features to be in a recovering condition.

The North Sea and Channel sprat FMP will support the achievement of 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 North Sea and Channel sprat FMP will support policies to meet targets to achieve net zero by 2050 as set out in the legislation.

Marine wildlife bycatch mitigation initiative

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 North Sea and Channel Sprat 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 Scotland) 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 and Scotland. The North Sea and Channel sprat FMP will support the achievement of the targets for water quality set out in the regulations.

Biodiversity strategy - Scotland

By managing fishing activity so our stocks are harvested within sustainable limits, FMPs will have a positive impact on fish stocks and consequently a positive impact

on biodiversity and the wider ecosystem. Fisheries Management Plans will contribute to achieving the aims of the Biodiversity Strategy by supporting a healthy marine environment; connecting people with the natural world; involving stakeholders more in the decision-making process; and maximising the benefits of a diverse natural environment and the services it provides, whilst contributing to sustainable economic growth for Scotland.

Future fisheries: management strategy - 2020 to 2030 - Scotland

Scotland's Fisheries Management Strategy sets the overall strategic framework for fisheries management in Scotland. It contains a 12-point action plan intended to deliver a range of policies and improvements to support responsible and sustainable fisheries management in Scotland. These actions will be delivered over the course of the ten-year timeframe for the Strategy. Supporting policies such as the Future Catching Policy (FCP) and introduction of REM to key parts of the fishing fleet, will deliver the outcomes contained within the Strategy. The FMPs will be another element in delivering the Strategy in Scotland.

Seabird bycatch plan of action

The Seabird Plan of Action (PoA) develops an approach to understand and where necessary reduce seabird bycatch in UK fisheries, through engagement and dialogue with all interested parties and the implementation of subsequent recommendations. The North Sea and Channel sprat FMP will support this initiative by contributing to mitigating the negative impacts of fishing activity as appropriate.

Other FMPs

Defra, Marine Directorate and our delivery partners considered the interaction between the published FMPs and this tranche of plans whilst drafting this FMP. The North Sea and Channel sprat FMP will interact with the following other FMPs; Celtic Sea and Western Channel Pelagic FMP, North Sea Whiting FMP, Northern Shelf Mackerel FMP, Atlanto-Scandian Herring FMP, North Sea Herring FMP, West Coast of Scotland (and Clyde) Herring FMP, North Sea Greater Silver Smelt FMP, Northern Shelf Blue Whiting FMP, North Sea Horse Mackerel FMP. The interaction between FMPs will be further considered when monitoring the effectiveness of plans. Any necessary adaptations would be built into the plan’s ongoing implementation and adjusted in future revisions of the FMP.

Other localised plans

Explore Marine Plans (EMP) is an online interactive tool developed by the MMO to allow a user to 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 North Sea and Channel sprat 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.

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 environmental effects when considered in combination with other processes and activities.

Section 5 assesses the environmental effects of the policies and actions of the North Sea and Channel sprat FMP in relation to the environmental issues screened into this SEA, and where applicable their associated UK MS descriptors.

Overview of the potential positive and negative environmental effects of the goals and actions of the North Sea and Channel sprat FMP

The potential positive and negative environmental effects of implementing the North Sea and Channel sprat FMP goals, as set out in section 1 of this environmental report, have been identified below.

High-level assessment of the positive and negative environmental effects of the North Sea and Channel sprat FMP goals

Goal 1

Harvest Sprat stocks sustainably, with biomasses maintained above the level capable of producing MSY

Actions to achieve goals:

- continue to determine fishing opportunities guided by the best available scientific advice
- continue to work with coastal State partners in accordance with the policies in the JFS including the Principles of International Fisheries Negotiations with

the aim of maintaining the sustainable harvesting of the stock through international negotiations

Positive effects

These actions will ensure that sprat stocks are fished within sustainable limits. Improvements to the stock assessment data and process will reduce uncertainty and inherent risks associated with setting sustainable catch limits.

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

Negative effects

Levels of realised fishing effort may fluctuate in response to changes in catch limits. Increased fishing effort may incur additional impacts on the wider environment.

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

Goal 2

Identify and address evidence gaps required for improved stock assessments

Actions to achieve goals:

- establish which factors within current sprat stock assessments have the greatest influence on assessment outcomes and identify factors with the greatest uncertainty
- develop a research plan to fill evidence or data gaps required for improved stock assessments, including improved understanding of stock structure and boundaries of sprat populations in English and Scottish waters, for example the potential linkages between stocks in and outside scope of this FMP
- explore options to move away from single-species models, including extending and where necessary developing multispecies/ecosystem models to incorporate sprat fisheries

Positive effects

While current ICES advice for forage fish species does include ecosystem effects on the assessed stocks through both variable predation mortality and qualitative ecosystem considerations, these activities will further develop evidence to inform improvements to stock assessments. The provision of better data will contribute to the sustainable management of sprat fisheries; enable better evaluations of the impact of fishing on those stocks; and improve the collection of biological and environmental data. This will support monitoring and evaluation of any impacts of the fishery on the wider environment. The policies and actions arising from this objective may contribute to sprat stocks being sustainably harvested.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Water (UK MS descriptors D10, D11); Climatic factors; Cultural Heritage.

Negative effects

Any resulting new or enhanced dedicated field surveys (for monitoring and data collection) could result in further unwanted effects on the marine environment if environmental impacts are not considered during the development of the data collection programme.

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

Goal 3

Identify ecosystem-based fisheries management approaches appropriate to sprat fisheries

Actions to achieve goals:

- collate existing information into a report on the ecosystem role of sprat
- support participation in fishery-science partnership schemes to address evidence and knowledge gaps on the ecosystem role of sprat utilising the experience held within the fisheries
- consider how to undertake additional targeted evidence collection (including self-reporting and the potential for remote electronic monitoring (REM) programmes) to improve estimates of bycatch of marine mammals, seabirds and designated fish for gear types used to target sprat
- research how an ecosystem-based approach could be incorporated into future iterations of the North Sea and Channel sprat FMP and where these might align with comparable approaches for other species
- consider development of policy aiming to minimise or eliminate any impact of sprat fisheries on the designated features of MPAs and wider seas, to contribute towards achieving GES in the North Sea and English Channel, compatible with targets set by the UK Marine Strategy (UKMS)

Positive effects

A better understanding of bycatch will allow for appropriate mitigation measures to be designed where required. If then implemented, this will have a positive effect on biodiversity and, in some cases, MPA condition.

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

Negative effects

No immediate negative effects are anticipated. If this eventually leads to management that reduces opportunities, it may lead to spatial changes in fishing effort that increases fishing pressure elsewhere. Data collection needs to be

considered alongside proposed management actions as it will not stop the associated fisheries from declining further if overfishing is taking place.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Water (UK MS descriptors D10, D11); Cultural heritage; Climatic factors.

Goal 4

Deliver a framework to support the role of the FMP in realising sustainable marine economies

Actions to achieve goals:

- conduct an economic feasibility assessment of the fisheries with the aim of helping to identify barriers to the realisation of economic viability to coastal communities within the FMP area
- review current technical measures affecting sprat fisheries and consider the impact of potential modifications to these measures both for sprat and other species
- consider if a pilot fishery for drift-netting at a smaller mesh size could be developed as a method to assess the impact of amending technical measures affecting sprat fisheries. Any pilot fishery developed is expected to be industry-led in collaboration with government and subject to appropriate assessments
- consider how to adapt the FMP to reflect relevant findings from an economic assessment and when new or improved measures are developed as appropriate

Positive effects

This objective will consider how best to enable fisheries to continue to deliver social, economic and cultural benefits of fishing to fishers and coastal communities. The policies and actions arising from this objective will contribute to sprat stocks being sustainably harvested.

Negative effects

Activities proposed under this goal will have no immediate environmental effect. The proposed reviews will themselves identify potential positive and negative effects of any changes to management measures.

Introducing a new drift-net fishery could potentially result in negative environmental impacts related to bycatch of unwanted and sensitive mobile species (marine mammals and seabirds), as well as entanglement of benthic features (both biotic and abiotic) as a result of lost nets. Lost nets also have the potential to contribute to fishing related litter. In addition, the smaller mesh size could impact marine mammals and seabirds through increased prey removal. The use of smaller mesh

nets could impact the structure of sprat populations through removal of smaller individuals, which in turn could lead to recruitment overfishing issues. A full assessment of the potential environmental impacts of a drift-netting fishery with smaller mesh size should be undertaken prior to the establishment of any fishery.

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

Goal 5

Develop strategies to adapt to the impact of climate change on sprat fisheries

Actions to achieve goals:

- seek to ensure that wider research to identify the likely impacts of climate change on fisheries considers sprat and their links within the wider ecosystem
- explore how best to maintain collaboration and involvement across government, industry, and academic sectors in initiatives to reduce environmental impacts of sprat fisheries (including CO2 emissions)
- consider exploration of the impacts that sprat fisheries have on the marine environment (including CO2 emissions) through collaborative studies, should sprat fishing by UK vessels increase in the future.
- explore how ecosystem-based fisheries management approaches that are robust to the effects of climate variability can be used for managing sprat fishing.

Positive effects

Although this action will have no immediate positive effects on the environment, the increased understanding will ultimately support better management which will help achieve sustainability goals.

This goal will support the development of climate change mitigation and adaptation measures for sprat fisheries. This will improve understanding of the contribution to climate change impacts the sprat fishery has, helping to reduce the impact that sprat vessels have on the marine environment.

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

Negative effects

No negative effects are anticipated. Therefore, this objective is considered to pose a low risk. Any unintended reduction in fishing opportunities could lead to spatial changes in fishing effort and increased fishing pressure elsewhere. Any change in fishing practices as mitigation could introduce a different set of pressures that may have negative effects.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, 3, D4, D6); Water (UK MS descriptors D10, D11); Climatic factors.

Overview of potential positive environmental effects of the FMP

Biodiversity, flora, fauna, water quality, climatic factors, cultural heritage

The overarching aim of the North Sea and Channel sprat FMP (the FMP) is to deliver long-term sustainable management of sprat stocks. The North Sea and Channel sprat has the following goals to help achieve this aim:

1. Harvest sprat stocks sustainably, with biomasses maintained above the level capable of producing MSY.
2. Identify and address evidence gaps required for improved stock assessments.
3. Identify ecosystem-based fisheries management approaches appropriate to sprat fisheries.
4. Deliver a framework to support the role of the FMP in realising sustainable marine economies.
5. Develop strategies to adapt to the impact of climate change on sprat fisheries.

Securing the long-term sustainable harvesting of sprat stocks across the North Sea and Channel through achieving the above goals could:

- help reduce the risk of sprat stocks being overexploited
- manage fishing-related mortality which may help sprat populations become more resilient to environmental change which could benefit marine ecosystem function and biodiversity
- help control species removal from food webs

The FMP includes measures to continue existing management. These already contribute to managing the impact of sprat fishing on sprat stocks and the wider environment. It also contains a number of actions to improve research which will allow the further development of management with lower environmental impacts over time.

There are already stock assessments in place for the two relevant sprat management units, North Sea sprat and English Channel sprat, so the FMP sets a short-term goal in continuing to determine fishing opportunities guided by the best available scientific advice. This will continue to benefit sprat stocks and the wider environment.

The FMP acknowledges the impact sprat fisheries have on achieving UK MS descriptors D1 and D4 for seabirds and marine mammals and to designated highly

mobile species primarily through bycatch in pelagic nets. The FMP considers a number of research actions within each of the goals. It also links the FMP to existing initiatives such as the Bycatch Mitigation Initiative and Clean Catch UK.

The 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 SNCB advice.

The FMP outlines a number of additional actions to consider, consistent with an ecosystem-based approach, including undertaking additional research on what an ecosystem-based approach to sprat fisheries management could consider. Importantly, social, economic and cultural goals are generally framed within the wider context of stock sustainability, to remove conflict between FMP goals. This will contribute to achieving UK MS descriptors D1 and D4 for seabirds and marine mammals in relation to prey reduction.

The FMP supports policy development to reduce the contribution of fisheries activities to climate change and support the adaptation of the fishery to climate change, contributing to achieving the climate change objective in the Fisheries Act 2020. Such policies will help identify opportunities to decarbonise the fleet and move towards net zero, making vessels more fuel efficient and generally less polluting.

The FMP sets out actions to incorporate new data into management of sprat fisheries, and to move towards a more flexible and adaptive management approach. This data will also help the sprat fishery adapt to climate driven changes, contributing to the climate objective in the Fisheries Act 2020.

While the FMP is not intended to focus on mitigating the impacts of fishing on marine heritage assets, 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. A degree of fishing disturbance can lead to some heritage assets being revealed and investigated, thereby improving the knowledge base.

Fisheries management that applies the ecosystem-based fisheries management approach to reduce adverse effects on the environment, for example through gear design, spatial management or reducing fishing related marine litter, could indirectly help to conserve both known and unknown marine heritage assets.

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.

The SEA process will highlight to fisheries policy authorities how sprat fisheries management policies and measures could support measures that protect the historic marine environment and improve early reporting of previously unknown sites.

Overview of potential negative environmental effects of the FMP

Biodiversity, flora, fauna, water quality, climatic factors, cultural heritage

Acknowledging that the proposed policies, measures and actions are at the beginning stages of their development, the assessment of likely negative effects generally identified a low risk of significant adverse effects on the biodiversity, flora, fauna, water quality, climatic factors and cultural heritage from implementing individual policies, measures and actions. The introduction of a new drift-net fishery using a smaller mesh size may increase the risk of negative environmental impacts. It is essential to conduct a comprehensive environmental impact assessment prior to initiating the pilot fishery. This will ensure that any potential risks to the environment are thoroughly evaluated and that appropriate measures are taken to avoid or mitigate them.

However, there remains uncertainty. In particular, we do not yet know the potential environmental effects of implementing the combination of measures and actions set out in the North Sea and Channel sprat FMP. Given that it proposes to continue existing management measures, we do not expect significant additional environmental effects of implementing the combination of policies and fisheries management measures set out in the North Sea and Channel sprat 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. From an MPA perspective, any changes in management will be subject to MPA assessments which will ensure MPA features are protected inside and outside sites.

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. Where unintended consequences arise and modifications to the FMP cannot solve the issue, it may be appropriate for other FMPs to consider this issue. Or, if areas beyond English 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, actions and measures. Due to the policies, actions and measures 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 or measures. Changes to fishing activity resulting from the implementation of the FMP objectives and measures will be monitored as part of the process of evaluating the effectiveness of FMPs. Tools such as iVMS and VMS will improve our ability to monitor spatial and temporal changes in fishing activity. Such monitoring would help identify any unintended consequences on the environment and indicate whether the implementation of these measures 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. The development of more adaptive and flexible management approaches proposed within the North Sea and Channel sprat FMP should enable management intervention in a timely manner to mitigate any risks.

In-combination effects

The North Sea and Channel sprat 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 (for England) and the Biodiversity Strategy (for Scotland) during policy development will further ensure the environment is 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 measures being at an early stage of development. The assessment of the likely negative effects of the individual policies, measures 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 effects 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 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 plan'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 North Sea and Channel sprat FMP, where necessary, all new measures will be subject to Habitats Regulations Assessments, MCZ assessments or other appropriate MPA assessment. Such assessments will consider the potential in-combination effects with other plans and projects that are occurring or will occur within an MPA. These assessments will also identify where any specific interactions exist.

The combined effect of implementing the polices and measures 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 (section 8).

Conclusions

Sprat fishing is an ongoing activity that poses some risks to the status of the marine environment. The overarching aim of the North Sea and Channel sprat FMP is to benefit a diverse range of environmental, commercial, recreational and social interests. A focus throughout the FMP on stock sustainability is likely to result in positive benefits to the 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 contribution to the sustainability objective.

The FMP may result in positive and/or negative effects on the environment in the short term. However, 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.

The FMP sets out how the issues of bycatch, prey reduction and litter will be addressed through the FMP.

The 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.

6. Measures to reduce significant negative effects

Existing negative effects of sprat fishing

This environmental report 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 known impacts of sprat fishing include bycatch of sensitive and/or non-target species, prey reduction, litter/ghost gear affecting habitats and species, vessel emissions on climate, and the impact on cultural heritage sites.

Biodiversity, flora, fauna, water quality

The measures currently being implemented to manage sprat fishing (set out in the North Sea and Channel sprat FMP - Fishery management measures) include Total Allowable Catches (TACs) and byelaws. These measures will be part of the overall sprat management strategy and will make a contribution to the conservation of stocks and the wider environment.

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

Impacts within MPAs

The MPA network (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. These activities are mainly controlled through the powers vested in the IFCAs, the MMO and the Marine Directorate to make bylaws.

IFCAs, the MMO and relevant advisors within Marine Directorate were involved in the development of the FMP to ensure measures proposed through the FMP would improve existing MPA management.

Before Defra or Marine Directorate implement any new interventions proposed in the North Sea and Channel sprat FMP, those interventions will be screened for likely significant effects on any European site or European offshore sites that overlap with the geographical scope of the measure and, where necessary, a further appropriate assessment will be 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 MCZ Assessment will also be completed before any new management measure is implemented that may significantly hinder the conservation objectives of an MCZ. Additionally, Nature Conservation Marine Protected Areas (NCMPAs) are designated and protected by the Marine (Scotland) Act 2010 and Marine and Coastal Access Act 2009. An MPA assessment will be completed as required, to ensure any actions or measures before being implemented.

The points above will ensure the impacts of sprat fishing activity and the FMP's policies, actions and measures will 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 in England.

Impacts outside MPAs

The marine environment outside of MPAs but within the spatial boundaries of this FMP may potentially be negatively impacted by sprat fishing activities. SNCB advice highlighted the risk of bycatch of highly mobile species (marine mammals, seabirds, and fish) that are designated features of MPAs where they occur outside site boundaries. This bycatch was classified as moderate risk. Information regarding bycatches of endangered and threatened species is sparse but indicates relatively few interactions of such species with the main fishing gears. However, the assessment has a degree of precaution as substantial data gaps exist. The advice also acknowledged the lack of high-quality bycatch data, which severely restricted both the ability to draw firm conclusions on mobile bycatch risks, MPA features beyond site boundaries, and the ability to identify specific mitigation. The focus within the FMP will be on improved data collection on highly mobile species (marine mammals, seabirds and fish) bycatch, including the longer-term actions to incentivise sprat fisheries to join REM projects. These will support a higher-resolution assessment of risk and the design of appropriate mitigation, where necessary. The North Sea and Channel sprat FMP also links specific data collection initiatives to wider bycatch monitoring and mitigation programmes such as Clean Catch UK, which will ensure a joined-up approach. Such an approach has the potential to appropriately mitigate risks associated with highly mobile MPA features (marine mammals, seabirds and designated fish).

The SNCB advice also highlighted the risk of prey reduction, through catching sprat which is considered an important prey species. The North Sea and Channel sprat FMP outlines a number of additional actions to consider, which would be considered

consistent with an ecosystem-based approach, including undertaking additional research on what else an ecosystem-based approach to sprat fisheries management could consider. For example, explore options to move away from single-species models, including extending and where necessary developing multispecies/ecosystem models to incorporate sprat and sprat fisheries (Goal 2), and undertake additional targeted evidence collection to improve estimates of bycatch of marine mammals, seabirds and designated fish for gear types used to target sprat (Goal 3).

UK MS descriptors impacts

Litter

The North Sea and Channel sprat FMP will support existing UK policies to protect the marine environment from marine litter, by taking a whole-life cycle approach to prevent and divert material from becoming a source of litter.

The implementation of OSPAR's second 'Regional Action Plan on Marine Litter', will include actions to tackle marine litter from fishing. The FMP will also support the continuation of monitoring programmes to assess seafloor litter, surface litter and beach litter- and ongoing research initiatives to support the reuse and repurpose of end-of-life fishing gear back into the fishing industry. These proposed measures should help the North Sea and Channel sprat FMP support the achievement of GES for UK MS Descriptor 11 – Litter, thereby having a positive effect on the current baseline status.

Bycatch

SNCB advice highlighted risks associated with bycatch in nets, this time in relation to where there may be a risk of population-level impacts on some UK MS descriptors, including cetaceans (D1, D4), seals (D1, D4) birds (D1, D4) or fish (D1, D4). As discussed in the above, the focus within the North Sea and Channel sprat FMP on improved data collection on highly mobile species bycatch, especially the longer-term actions to incentivise sprat fisheries to join REM projects, will support a higher-resolution assessment of risk and the design of appropriate mitigation, where necessary. The North Sea and Channel sprat FMP also links specific data collection initiatives to wider bycatch monitoring and mitigation programmes such as Clean Catch UK, which will ensure a joined-up approach. Such an approach has the potential to have a significant positive effect on the current baseline status where research leads to new or improved mitigation and management.

Prey reduction

SNCB advice highlighted the moderate risk to the UK MS descriptors D1, D4 cetaceans, D1, D4 seals, D1, D4 seabirds through targeted removal of sprat, an important prey species. The North Sea and Channel sprat FMP sets out the goal to continue to determine fishing opportunities in line with the MSY approach and in

accordance with the best available scientific advice. Should MSY based advice not be available, fishing opportunities should be determined in accordance with a precautionary approach and the best available scientific advice.

The North Sea and Channel sprat FMP seeks to fill evidence and data gaps required for improved stock assessments and the understanding of the role of sprat in the wider ecosystem, including by developing multispecies/ecosystem models. Considering sprat and sprat fisheries, including in relation to MPAs, in ecosystem models has the potential to positively contribute towards achieving GES for descriptors D1, D4.

PMFs

SNCB advice highlighted a moderate risk to Priority Marine Features (PMFs) through bycatch of mobile species (marine mammals, birds and fish) in MPAs and a reduction in the availability of sprat as forage fish species.

The North Sea and Channel sprat FMP sets out a goal to undertake additional targeted evidence collection (including self-reporting and the potential for REM programmes) to improve evidence of bycatch of marine mammals, seabirds and designated fish for gear types used to target sprat. This will support high-resolution assessments of impacts and provide the evidence base to consider appropriate mitigation measures. The North Sea and Channel sprat FMP also links specific data collection initiatives to wider bycatch monitoring and mitigation programmes such as the UK Bycatch Mitigation Initiative and Clean Catch UK, which will ensure a joined-up approach. Such an approach has the potential to have a significant positive effect on the current baseline status where research leads to new or improved mitigation and management.

The North Sea and Channel sprat FMP also seeks to fill evidence and data gaps required for improved stock assessments and the understanding of the role of sprat in the wider ecosystem, including by developing multispecies/ecosystem models. This approach is considered consistent to progress contribution towards achieving GES for multiple descriptors in the North Sea, compatible with targets set by the UK MS.

Climate change

Vessel emissions

In the short-term, the North Sea and Channel sprat FMP will increase the understanding of the carbon footprint of the sprat fishery and identify options for reductions. In the medium-long term, it will support industry to decarbonise, contributing to UK Government commitments to Net Zero.

Climate change impacts on sprat stocks and fisheries

The North Sea and Channel sprat FMP identifies a number of actions to understand and mitigate climate change impacts. Short term goals focus on research on the impacts of climate change on sprat distribution, abundance and recruitment. Consideration of improving opportunities for adaptive management are identified, including moving catch limits into licence conditions and the integration of new evidence into future iterations of the sprat FMP.

Cultural heritage

The North Sea and Channel sprat FMP does not explicitly consider the potential impacts of sprat fishing 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 Marine Directorate should work with agencies such as Historic England and Historic Environment Scotland 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.

Effects identified by this assessment

The assessment of the likely negative effects of the individual policies, measures and actions in section 5 generally identified a low risk of significant adverse effects on the environment from implementing individual policies, measures and actions. Therefore, no changes to the proposed goals, policies and measures are needed ahead of publishing the FMP. Where appropriate, the policies, measures 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 FMP's policies, measures and actions individually or combined can be further reduced. Given the uncertainty as to the negative effects of implementing the individual policies, measures 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 any negative environmental effects developing.

General

The UK is committed to using marine resources sustainably and reducing the impacts of fishing on the marine environment to comply with its international and domestic obligations. The North Sea and Channel sprat FMP seeks to support these commitments by providing the tools (FMP goals and actions) to deliver the sustainable harvesting of sprat stocks.

The range of environmental issues identified through this assessment have been largely considered by the North Sea and Channel sprat FMP. The FMP acknowledges that the evidence base is not sufficiently comprehensive at present to fully address some 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 measures as new evidence on potential impacts of sprat fishing emerge, particularly in relation to climate change.

This environmental report 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, measures and actions. This environmental report 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 North Sea and Channel sprat FMP. A reasonable alternative has been defined as 'an activity that could feasibly attain or approximate the FMP's objectives at a lower environmental cost or decreased level of environmental degradation'[20].

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 North Sea and Channel sprat FMP. This listing creates a legal requirement to prepare and publish the North Sea and Channel sprat 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)[21] of the Fisheries Act, applies; we are not aware of any information that would invoke these circumstances.

The North Sea and Channel sprat FMP, alongside the other 43 FMPs, was agreed by the fisheries policy authorities through the process to publish the JFS. Engagement across administrations took place via the processes outlined in the Fisheries Framework. Regular scrutiny of the emerging list of FMPs was built into

20 Reasonable alternatives definition
21 Fisheries Act 2020 (legislation.gov.uk)

every step of the JFS policy formation, and through this process credible alternatives to managing stocks without an FMP were considered. The list of proposed FMPs, including an FMP for sprat, 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 sprat.

The sprat fishery is an ongoing activity, and management already exists which is considered broadly appropriate. The North Sea and Channel sprat FMP seeks to further develop management of the fisheries 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 North Sea and Channel sprat FMP policies and measures were developed to specifically address those fisheries management issues identified within the sprat fishery.

A range of environmental issues (for example, through SNCB advice, evidence relating to climatic change impacts) have been considered during the development of the current proposed policies and measures 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 measures. 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 is provided below.

Assessment of alternatives to proposed North Sea and Channel Sprat goals

Goal: harvest sprat stocks sustainably, with biomasses maintained above the level capable of producing MSY

Goal theme: sustainable fisheries

Alternatives:

- harvesting sprat stocks in line with scientific advice is required to ensure the stocks are fished sustainably
- no reasonable alternative is available

Goal: identify and address evidence gaps required for improved stock assessments

Goal theme: evidence

Alternatives:

- continue to base management decisions on data collected from existing programmes e.g., national/ local stock assessments, which would likely inform more precautionary type measures (given more evidence required). Management would be unlikely to be as effective
- increased use of existing data gathered by fishers. Management would improve but unlikely to be as effective as coverage is not comprehensive

Goal: identify ecosystem-based fisheries management approaches appropriate to sprat fisheries

Goal theme: management approach

Alternatives:

- continuing with the current management approach is required to ensure the stocks are fished sustainably and the impact of sprat fishing activity on the marine environment is managed effectively.
- no reasonable alternatives have been identified at this stage

Goal: deliver a framework to support the role of the FMP in realising sustainable marine economies

Goal theme: Social and economic

Alternatives:

- this is considered a requirement for making the sprat fishery economically sustainable.
- no reasonable alternatives have been identified at this stage

Goal: develop strategies to adapt to the impact of climate change on sprat fisheries

Goal theme: Climate change

Alternatives:

- considering climate change issues is required to ensure the industry contributes to reducing its impact on the environment and is ready to adapt to the environmental impacts of climate change
- no reasonable alternative is available

Assessment

The proposed policies and measures set out in the FMP are therefore considered to be the most appropriate for this stage in the FMP's development.

The North Sea and Channel sprat 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 North Sea and Channel sprat FMP, alongside the consultation of this environmental report. These consultations will provide stakeholders with the opportunity to review proposed measures and present alternatives if available.

8. Monitoring and review

Monitoring

Regulation 17 of the SEA Regulations 2004 requires Defra and the Marine Directorate to monitor the significant environmental effects of the implementation of the North Sea and Channel sprat FMP policies and measures 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 objectives and measures
- 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 North Sea and Channel sprat FMP.

The North Sea and Channel sprat FMP identifies actions for each of its five goals (see section 1).

Delivery of the actions and measures for this FMP will be monitored. There is currently sufficient evidence to assess stock status and provide advice in relation to

MSY approaches for both sprat stocks covered by this FMP and to assess the sustainability of these stocks. Maintaining the approach of using best available scientific evidence to guide management decisions and continuing to work effectively with Coastal State partners to ensure sustainable harvesting will indicate the effectiveness of this plan. This recognises the limitations of the UK in the joint management of a stock where maintaining overall biomass may be beyond our control and also reflects the potential future variation as a result of climate change.

Each year ICES produces stock assessments for both stocks covered by this FMP that are likely to be the best available evidence regarding stock status and exploitation rates. Key biological indicators are provided as reference points, informing on fishing pressure, spawning stock biomass and MSY. This advice will continue to be monitored, and management approaches considered as part of annual negotiations on TAC stocks.

Further reviews may also be required if new opportunities present themselves to improve the effectiveness of the plan.

In addition to the monitoring set out in the FMP, monitoring of the environmental effects of implementing the FMP's policies, actions and measures will be undertaken by fisheries managers (Defra, MMO, 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

If any negative impacts are identified, fisheries managers should consider adjusting sprat fishery management.

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. Findings from these monitoring activities could be used to help indicate where potential risks or impacts associated with fishing activity being managed through the FMP are occurring. FMPs could act on this evidence to amend its policies and measures to reduce or avoid these risks or impacts. Findings from these monitoring activities could also be used to indicate where FMP policies and measures 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 the devolved administrations and 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 North Sea and Channel sprat fishing fleet has been considered in this SEA and would continue to be reviewed against the FMP objectives as part of monitoring.

Review and revising of the FMP

The Fisheries Act 2020 requires the North Sea and Channel sprat 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 North Sea and Channel sprat fishery harvesting within sustainable limits and the Fisheries Act objectives.

The results of monitoring the effectiveness of the North Sea and Channel sprat 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 how it 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 North Sea and Channel sprat FMP. As part of the reporting and wider review processes, management alternatives can be identified to ensure the North Sea and Channel sprat FMP delivers on its objectives and wider environmental obligations.

The SEA environmental report will be periodically updated to reflect how the implementation of proposed FMP policies and actions affect the environment and ensuring it remains up to date throughout the ongoing FMP process and into the future.

Appendix A: 11 descriptors of the UK MS

D1 – Biological diversity (cetaceans, seals, birds, fish, and pelagic 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 healthy 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
There should be no significant decrease in abundance caused by human activities	Abundance and distribution of coastal bottlenose dolphins	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 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)[22], 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.

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.

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

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[23] 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[24].

The most recent OSPAR quality status reports assessment on marine mammal bycatch[25] (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 in 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 continue 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.

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.

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23 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).
24 Kingston, A., Thomas, I. and Northridge, S. (2021) UK Bycatch Monitoring Programme Report for 2019. Sea Mammal Research Unit.
25 Marine Mammal By-catch

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).

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 substantially since 1992 as a result of human activities.	Marine bird abundance	GES not achieved	GES not achieved
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

Target	Indicator	North Sea	Celtic Seas
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[26]	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.

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.

26 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.

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[27] (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 (Northridge et al 2020[28] and Miles et al 2020[29]). 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.

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27 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.

28 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

29 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).

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 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
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 commercially exploited species are above biomass levels capable of producing the maximum sustainable yield.	Reproductive capacity of commercially exploited stocks of UK interest	GES partially achieved	GES partially achieved

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[30]). 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.

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

30 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.

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 by human activity should be minimised.	Extent of Physical damage indicator to predominant and special habitats	GES not achieved	GES not achieved

Target	Indicator	North Sea	Celtic Seas
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
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

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.	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 of 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

Target	Indicator	North Sea	Celtic Seas
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
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

Target	Indicator	North Sea	Celtic Seas
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[31]	GES achieved	Not assessed

Current impact of fisheries on the baseline condition

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

31 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.

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 litter found on surveyed beaches.	Presence of litter (beaches)	GES not achieved	GES not achieved
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

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

Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended)

- Special Protection Areas (SPAs) – Northern Ireland
- Special Areas of Conservation (SACs) – Northern Ireland

Marine and Coastal Access Act 2009

- Marine Conservation Zones (MCZs) – England, Wales
- Nature Conservation Marine Protected Areas (NCMPAs), offshore waters – Scotland

Marine (Scotland) Act 2010

- Nature Conservation Marine Protected Areas (NCMPAs), inshore waters – Scotland

Marine Act (Northern Ireland) 2013

- Marine Conservation Zones (MCZs) – Northern Ireland

Natural Environment and Rural Communities Act 2006 (Part 4)

- Sites of Special Scientific Interest (SSSI) – England, Scotland, Wales

The Environment (Northern Ireland) Order 2002

- Coastal Areas of Special Scientific Interest (ASSIs)–- Northern Ireland

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 – country specific detail

England

Marine plans put into practice the goals for the marine environment that are identified in the MPS alongside the National Planning Policy Framework (NPPF) and the Localism Act 2011. The Marine Management Organisation (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.

Scotland

Scotland's first National Marine Plan was adopted in 2015 and provides a statutory policy framework to guide the sustainable development and management of marine activities and resources in Scotland's marine area. The plan was developed and adopted in accordance with the requirements set out in the Marine and Coastal Access Act (MCAA) 2009 and Marine (Scotland) Act 2010 (the 'Marine Acts') and in conformity with the UK Marine Policy Statement. Under the MCAA, Scottish Ministers are the marine plan authority, and the plan covers both Scottish inshore and offshore waters and applies to the exercise of both reserved and devolved functions. The plan sets out specific national and regional policies and objectives relating to commercial fisheries, alongside cross-cutting general policies on environment and ecosystem conservation, sustainable development and climate change mitigation and adaptation.

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 (GES) (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 0-200nm, save fisheries activities within 0-6nm which are the responsibility of the IFCAs. The MMO also has some 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 recreational netters 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 DAERA's 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. The post-2020 global biodiversity framework, containing the latest set of global goals and targets, is currently under negotiation and is due to be agreed and adopted at the fifteenth Conference of Parties (COP15) to the CBD in December 2022.

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 environmental report and their responses are detailed below.

Natural England response

BY EMAIL ONLY 12th January 2024

Re: Strategic Environmental Assessment Scoping Reports – Cockle Fisheries Management Plan, Southern North Sea and Channel Skates and Rays Fisheries Management Plan, Southern North Sea Non-Quota Demersal Fisheries Management Plan, North Sea and Channel Sprat Fisheries Management Plan.

Thank you for your consultation email dated the 7th of December 2023 seeking our views on whether the proposed scope of the Strategic Environmental Assessments for the above FMPs are appropriate.

We have reviewed the reports provided. 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 SEA Regulations 2004.

NE also agree that each scoping report has correctly identified the issues to be taken forward for further consideration in an Environment Report. Whilst very high-level, we also agree with the suggested assessment methodology.

FMP specific comments can be found in Annex 2. Some very minor editorial comments are included in the accompanying email. Please don't hesitate to contact me if you require any further information on our comment.

Annex 2

Southern North Sea and Channel Skates and Rays FMP SEA scoping report

In section 5.3, bullet 4 the scoping report refers to 'Defra's completed Revised Approach to fisheries management programme (inside 6nm)'. NE would suggest changing the wording to reflect the ongoing nature of this work

How the consultation response was considered

Point	How point was considered
1. In section 5.3, bullet 4 the scoping report refers to 'Defra's completed Revised Approach to fisheries management programme (inside 6nm)'. NE would suggest changing the wording to reflect the ongoing nature of this work.	Wording change will be actioned in Environmental report.
2. North Sea and Channel Sprat FMP SEA scoping report page 8, section 3.1, bullet #4 erroneously refers to demersal ray species.	Error will be addressed in Environmental report.
3. Southern North Sea Non-Quota FMP SEA scoping report page 11, section 5.2, bullet #4 erroneously refers to cockle FMP.	Error will be addressed in Environmental report.

JNCC response

Joint Nature Conservation Committee

Inverdee House Baxter Street, Aberdeen,

AB11 9QA

https://jncc.gov.uk/

12th January 2024.

BY EMAIL ONLY

Subject: Fisheries Management Plan Strategic Environmental Assessments – JNCC Consultation Response

Thank you for the opportunity to consult on the SEA Scoping Reports for the Sprat, SouthernNorth Sea Non-Quota Species, Skates and Rays, and Cockle Fisheries Management Plans (FMPs), as per your email dated 9th December 2023. Joint Nature Conservation Committee (JNCC) acknowledges the importance of these assessments and appreciates the comprehensive effort undertaken in these producing these reports which meet requirements.

Our review of the reports indicates a comprehensive approach to identifying the potential environmental effects of the fisheries and the methodologies outlined for assessing these effects. The use of UK Marine Strategy (UK MS) descriptors as a framework is particularly appropriate, offering a robust structure for ensuring the wide range of environmental pressures associated with fishing activities are considered.

In line with our commitment to continuous improvement and adding maximum value, we would like to offer some suggestions that could further enrich the scoping reports:

1. **Refinement of Environmental Baseline Information**: While the current approach using UK MS descriptors provides a strong foundation, supplementing this with more detailed data on marine environmental conditions and trends could offer additional insights, enriching the assessments.
2. **Detailing FMP Objectives and Measures**: Delving into the specific policies and measures intended to achieve the FMP objectives would enable a more detailed evaluation of their environmental impacts.
3. **Broadened Assessment of Effects**: Expanding on the predicted impacts, both positive and negative, would add clarity and depth to the understanding of potential environmental implications.

4. **In-depth Discussion on Alternatives**: We note the scoping report's intention to address alternatives in the Environmental Report. Providing an early insight into these aspects, even if preliminary, could be beneficial for a more comprehensive understanding at the scoping stage.
5. **Comprehensive Mitigation and Monitoring Strategies**: While the scoping report indicates these strategies will be detailed in the Environmental Report, enhancing the scoping report with early consideration of potential mitigation and monitoring approaches at the scoping phase would help in anticipating and planning for environmental management challenges.
6. **Exploration of Cumulative and Transboundary Effects**: Considering the FMPs' roles in a wider environmental context, particularly regarding cumulative and transboundary effects, would be a valuable addition.

We acknowledge and appreciate the efforts that have gone into meeting the statutory requirements in the current scoping reports. Our suggestions are intended to complement these efforts, ensuring a holistic and evidence-based approach to environmental assessment. We are ready to provide more detailed feedback as the SEA process progresses and look forward to our continued collaboration in refining these important assessments.

How the consultation response was considered

Point	How point was considered
1.	Additional evidence on marine condition will be considered as appropriate.
2.	Where appropriate, future Environmental Reports will assess all specific FMP policies and measures.
3.	Where appropriate, future Environmental Reports will provide additional information on predicted impact.
4.	Point noted.
5.	Point noted.
6.	Point noted.

Historic England response

Dear Sir/Madam

Historic England is pleased to offer its comments in response to Defra seeking views on the scope and level of detail of Strategic Environmental Assessment (SEA) of this third tranche of four Fisheries Management Plans (FMPs): for common cockle; for Southern North Sea and Channel skates and rays; for Southern North Sea non-quota species (SNS NQS); and for sprat.

As previously we note that one of these FMPs – for sprat – is joint with another devolved administration, in this case Marine Directorate. We would welcome confirmation that the views of Historic Environment Scotland have also been sought.

Historic England (HE) is the Government's advisor on all aspects of the historic environment in England. HE's general powers under section 33 of the National Heritage Act 1983 were extended via the National Heritage Act 2002 to modify our functions to include securing the preservation of monuments in, on, or under the seabed within the seaward limits of the UK Territorial Sea adjacent to England. HE also provides advice in relation to English marine plan areas (inshore and offshore) as defined by the Marine and Coastal Access Act (MCAA) 2009.

HE is pleased to see that cultural heritage is regarded as being within the scope of all four SEAs. We note that fishing activities for cockles, skates and rays, and SNS NQS are all likely to cause physical disturbance to the seabed and, consequently, to heritage assets in and on the seabed. We agree that the interaction between fishing gear and marine heritage assets is a potentially significant impact of all four fisheries, including from pelagic gear used in fishing for sprat. In the case of sprat, although pelagic gear may not physically disturb the seabed, there is still potential for pelagic gear to snag heritage assets such as wrecks protruding up into the water column.

We also note the acknowledgement that fishing activity targeting all four fisheries has the potential to cause input of litter. As we have flagged previously, Abandoned, Lost or Discarded Fishing Gear (ALDFG) can snag and accumulates on historic wrecks, adding to the stress on their structures, obscuring them, and creating a risk to visiting divers (including archaeologists, volunteers, and recreational divers). We would ask that the contribution of these fisheries to the input of litter and the consequent impact of ALDFG on heritage assets are assessed in all four SEAs: Historic England has funded the removal of ALDFG from several designated heritage assets, which underscores the impact of fishing-derived litter on heritage.

HE is also pleased to see that landscape/seascape is regarded as being within scope of three of the SEAs and look forward to seeing it assessed. We accept that the FMP for sprat is unlikely to have a significant effect on landscape/seascape as pelagic fishing for this species is unlikely to cause physical disturbance to the seabed.

As fishing for cockles, skates and rays, and SNS NQS are all likely to result in physical disturbance to the seabed, we concur that all three have the potential to disturb blue carbon habitats and affect seabed carbon dynamics. There is a close relation between seabed carbon and now-submerged prehistoric land surfaces, which often comprise organic deposits (such as peat) and other former terrestrial fine-grained deposits (muds and silts) containing organic material. Archaeological records and approaches are attuned to identifying organic and other fine-grained deposits, hence there may be scope for heritage to contribute to the assessment of fishing impacts on blue carbon. We think that this aspect of the impact of fisheries on landscapes should receive particular attention as the SEAs develop.

We have underlined previously the positive interactions that arise between fishing and cultural heritage, including the importance of the cultural heritage of fishing acknowledged in the opening sentence of the Joint Fisheries Statement (JFS). We have previously suggested that FMPs be given a specific objective on developing the cultural heritage of each fishery. Unfortunately, the language of the objectives in each of the Scoping Reports in this tranche are inconsistent and partial in this regard: Objective 4 for cockles recognises their contribution to coastal communities, but this contribution is not elucidated; Objective 1.4 for skates and rays and for SNS NQS includes better understanding and optimising social benefits, but again they are not elucidated; and there appears to be no social/community objective for sprat. As a minimum – reflecting the weight placed on culture in the JFS – we would welcome express social /community objectives in each FMP that make direct refence to enhancing culture and heritage and the contribution they make to coastal places.

Turning to the methodologies proposed for developing the FMPs – including SEAs and Environmental Reports – and then implementing the FMPs, we would like to make the following observations:

We welcome the acknowledgement that harvesting within sustainable limits may not remove all potential negative impacts on the wider environment – including heritage – and agree that additional measures will be required to address risks and impacts. We look forward to discussing these with Defra.

We look forward to the Environmental Report for each FMP evaluating the potential effects, both negative and positive, on cultural heritage and landscape/seascape. In light of comments above, we would expect the Environmental Reports for each FMP to address:

- Interactions between fishing gear and marine heritage assets on the seabed and in the water column.
- Impacts on heritage arising from physical disturbance to the seabed.
- Impacts on heritage from the input of litter (ALDFG).
- Heritage and blue carbon habitats / seabed carbon dynamics.
- Social, economic and community benefits of cultural heritage.

We note that assessments will review existing evidence on the current state of the marine environment. 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 c) the UK Marine Strategy (UK MS – and see below).

We are pleased to see 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.

We note that the Environmental Reports will acknowledge pressures not currently being managed, which we presume will consider pressures from fishing on cultural heritage and landscape/seascape. We look forward to each FMP proposing new measures and interventions to mitigating negative effects (and enhancing positive effects) arising from interactions between each fishery and cultural heritage and landscape/seascape. We also look forward to the proposals for future monitoring of the effects of each FMP on cultural heritage and landscape/seascape. We would, of course, be very pleased to discuss with Defra these new measures / interactions and monitoring proposals in the course of their preparation.

Thank you again for seeking HE's views on this tranche of FMP SEAs. HE would be very pleased to continue conversations with Defra about how cultural heritage can best strengthen the effectiveness of the FMPs in contributing to sustainable and well managed UK fisheries. Any queries regarding this response or further dialogue can be addressed to me via the contact details below. We are happy for this response to be made public.

How the consultation response was considered

Point	How point was considered
1. We would welcome confirmation that the views of Historic Environment Scotland have also been sought.	Marine Directorate will seek views from Historic Environment Scotland.
2. We would ask that the contribution of these fisheries to the input of litter and the consequent impact of ALDFG on heritage assets are assessed in all four SEAs.	The impact of litter will be considered through UK MS descriptor D10.

Point	How point was considered
3. Archaeological records and approaches are attuned to identifying organic and other fine-grained deposits, hence there may be scope for heritage to contribute to the assessment of fishing impacts on blue carbon. We think that this aspect of the impact of fisheries on landscapes should receive particular attention as the SEAs develop.	The FMPs will consider the impact the effects of fishing on blue carbon habitats.
4. Unfortunately, the language of the objectives in each of the Scoping Reports in this tranche are inconsistent and partial in this regard: Objective 4 for cockles recognises their contribution to coastal communities, but this contribution is not elucidated; Objective 1.4 for skates and rays and for SNS NQS includes better understanding and optimising social benefits, but again they are not elucidated; and there appears to be no social/community objective for sprat. As a minimum – reflecting the weight placed on culture in the JFS – we would welcome express social /community objectives in each FMP that make direct refence to enhancing culture and heritage and the contribution they make to coastal places.	Objectives addressing social issues will be include in the Environmental Reports. Defra will consider the suggestion for developing a specific objective for cultural heritage of each fishery, in future iterations of the FMP.
5. We welcome the acknowledgement that harvesting within sustainable limits may not remove all potential negative impacts on the wider environment – including heritage – and agree that additional measures will be required to address risks and impacts. We look forward to discussing these with Defra.	Point noted.

Point	How point was considered
6. We look forward to the Environmental Report for each FMP evaluating the potential effects, both negative and positive, on cultural heritage and landscape/seascape. In light of comments above, we would expect the Environmental Reports for each FMP to address: • Interactions between fishing gear and marine heritage assets on the seabed and in the water column. • Impacts on heritage arising from physical disturbance to the seabed. • Impacts on heritage from the input of litter (ALDFG). • Heritage and blue carbon habitats / seabed carbon dynamics. • Social, economic and community benefits of cultural heritage.	The Environmental Reports focuses on how the policies and actions in the FMPs could give rise to both significant positive and negative environmental effects. However, the Environmental Reports also acknowledge existing environmental effects of fishing activity and set out policies and actions to address them, where appropriate.
7. 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 c) the UK Marine Strategy (UK MS – and see below).	The Environmental Reports will set out the evidence used to for the environmental baseline. Defra would welcome further discussions with HE to consider this point.

Point	How point was considered
8. We are pleased to see 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.	Defra would welcome further discussions with HE to consider this point.
9. We note that the Environmental Reports will acknowledge pressures not currently being managed, which we presume will consider pressures from fishing on cultural heritage and landscape/seascape. We look forward to each FMP proposing new measures and interventions to mitigating negative effects (and enhancing positive effects) arising from interactions between each fishery and cultural heritage and landscape/seascape. We also look forward to the proposals for future monitoring of the effects of each FMP on cultural heritage and landscape/seascape. We would, of course, be very pleased to discuss with Defra these new measures / interactions and monitoring proposals in the course of their preparation.	Environmental Reports will provide recommendations on how FMPs could consider fishing, cultural heritage and landscape/seascape. Defra would welcome further discussions with HE to consider this point.

Environment Agency response

No response received.

How the consultation response was considered

Point	How point was considered
N/A	N/A

Nature Scot response

27 February 2024

Our ref: SEA01859sco

ENVIRONMENTAL ASSESSMENT (SCOTLAND) ACT 2005

01856 –THE SCOTTISH GOVERNMENT – PROPOSED FISHERIES MANAGEMENT MEASURES FOR INSHORE MARINE PROTECTED AREAS AND PRIORITY MARINE FEATURES IN SCOTTISH WATERS – SCOPING REPORT

Thank you for your Scoping Report consultation which NatureScot received via the Scottish Government SEA Gateway. In our role as a Consultation Authority, in accordance with section 15(2) of the Environmental Assessment (Scotland) Act 2005, we have reviewed the report with regard to the potential for significant environmental effects that are within our remit.

We have the following comments:

Section 3 Environmental Baseline

We agree with the proposed content and the level of detail to be included in the environmental baseline.

Section 4 Relevant Plans, Programmes and Environmental Protection Objectives

Section 4.2. Domestic

The scoping report refers to the 'Biodiversity Strategy – Scotland', with a link to the former draft strategy. Please note that the Strategy has now been published (September 2023) and the correct link to the published Strategy is https://www.gov.scot/publications/scottish-biodiversity-strategy- 2045-tackling-nature-emergency-scotland-2/

Section 5.2: Scoping

With respect to the Defra and Scottish Government's proposals, we agree with the issues to be addressed in the Environmental Report, and with the justifications for the SEA topics as summarised in Table 2.

Section 5.3 Assessment Methodology

Bullet 7 refers to advice from the Statutory Nature Conservation Bodies. Please note that JNCC and NatureScot provided corresponding advice for the Scottish waters covered by the plan in February 2024.

Section 8 Consultation

We would consider a minimum 6 week period for consultation on the draft Fishery Management Plan and the SEA environment report to be appropriate.

Should you wish to discuss any of our comments on this scoping consultation, please do not hesitate to contact me using the email address below or via our SEA Gateway at sea_gateway@nature.scot.

How the consultation response was considered

Point	How point was considered
1. Section 3 Environmental Baseline We agree with the proposed content and the level of detail to be included in the environmental baseline.	Point noted.
2. Section 4.2. Domestic The scoping report refers to the 'Biodiversity Strategy – Scotland', with a link to the former draft strategy. Please note that the Strategy has now been published (September 2023) and the correct link to the published Strategy is https://www.gov.scot/publications/scottish-biodiversity-strategy- 2045-tackling-nature-emergency-scotland-2/	The Environmental Report will include the correct link.
3. Section 5.2: Scoping With respect to the Defra and Scottish Government's proposals, we agree with the issues to be addressed in the Environmental Report, and with the justifications for the SEA topics as summarised in Table 2.	Point noted.
4. Section 5.3 Assessment Methodology Bullet 7 refers to advice from the Statutory Nature Conservation Bodies. Please note that JNCC and NatureScot provided corresponding advice for the Scottish waters covered by the plan in February 2024.	The Environmental Report will be updated to include reference to NatureScot.
5. Section 8 Consultation We would consider a minimum 6-week period for consultation on the draft Fishery Management Plan and the SEA environment report to be appropriate.	Point noted

Historic Environment Scotland response

Longmore House
Salisbury Place
Edinburgh
EH9 1SH
Enquiry Line: 0131-668-8716
Switchboard: 0131 668 8600
HMConsultations@hes.scot

Our case ID: 300070729
Your ref: 01859

By email to: sea_gateway@gov.scot

20 February 2024

Environmental Assessment of Plans and Programmes Regulations 2004
01859 – DEFRA / The Scottish Government - Fisheries Management Plans Tranche 3 North Sea and Channel Sprat Fisheries Management Plan

Scoping Report

Thank you for your consultation which we received on 23 January 2024 about the above scoping report. We have reviewed this in our role as a Consultation Authority under the above regulations. This letter contains our views on the scope and level of detail of the information to be included in the Environmental Report. Please note that our view is based on our main area of interest for the historic environment in Scotland.

Scope and level of detail
It is our understanding that this Fisheries Management Plan will set the vision and objectives for the sustainable management of North Sea and Channel sprat and will apply to all areas in English and Scottish waters where fishing activity for sprat takes place.

We note that the historic environment has been scoped into the assessment as you consider that fishing activity has the potential to interact with marine heritage assets, specifically through damage from fishing gear. On the basis of the information provided, we are content with this approach and are satisfied with the scope and level of detail proposed for the assessment, subject to the detailed comments provided below.

Assessment Methodology
While there is little detail at this stage on the assessment methodology we understand that the assessment will consider the potential effects (both positive and negative) of the management plan, including its policies and actions on cultural heritage and identify mitigation and monitoring where significant effects are identified.

Environmental Baseline
In terms of baseline sources for cultural heritage **Historic Marine Protected Areas** (HMPAs) are marine historic assets of national importance which survive in Scottish territorial waters (out to 12 miles offshore) that are protected by law. https://portal.historicenvironment.scot/downloads/hmpas

Further information and datasets on Scotland's Marine historic environment and cultural heritage can be found at Historic environment and cultural heritage | Scotland's Marine Assessment 2020.

Consultation period for the Environmental Report
We note that it is intended to consult on the Environmental Report in the Summer of 2024. While no specific timescale is given we would advise a minimum of 6 weeks for this period of consultation. Please note that, for administrative purposes, we consider that the consultation period commences on receipt of the relevant documents by the SEA Gateway.

We hope this is helpful. Please contact us if you have any questions about this response. The officer managing this case is Andrew Stevenson who can be contacted by phone on 0131 668 8960 or by email on andrew.stevenson2@hes.scot.

Yours sincerely
Historic Environment Scotland

How the consultation response was considered

Point	How point was considered
1. We note that the historic environment has been scoped into the assessment as you consider that fishing activity has the potential to interact with marine heritage assets, specifically through damage from fishing gear. On the basis of the information provided, we are content with this approach and are satisfied with the scope and level of detail proposed for the assessment, subject to the detailed comments provided below.	Point noted.
2. Assessment Methodology While there is little detail at this stage on the assessment methodology we understand that the assessment will consider the potential effects (both positive and negative) of the management plan, including its policies and actions on cultural heritage and identify mitigation and monitoring where significant effects are identified.	Point noted.
3. Environmental Baseline In terms of baseline sources for cultural heritage Historic Marine Protected Areas (HMPAs) are marine historic assets of national importance which survive in Scottish territorial waters (out to 12 miles offshore) that are protected by law. https://portal.historicenvironment.scot/downloads/hmpas	This information will be added to the 3. Environmental Baseline section in the Environmental Report.
4. Further information and datasets on Scotland's Marine historic environment and cultural heritage can be found at Historic environment and cultural heritage | Scotland's Marine Assessment 2020.	This information will be added to the 3. Environmental Baseline section in the Environmental Report.
5. Consultation period for the Environmental Report. We note that it is intended to consult on the Environmental Report in the Summer of 2024. While no specific timescale is given, we would advise a minimum of 6 weeks for this period of consultation. Please note that, for administrative purposes, we consider that the consultation period commences on receipt of the relevant documents by the SEA Gateway.	Point noted.

Scottish Environment Protection Agency response

Planning Department
SEA Gateway

By email only to:
sea.gateway@gov.scot

Our Ref: PCS-PERMS2-11673
Your Ref: SEA01859

SEPA Email Contact:
sea.gateway@sepa.org.uk

26 February 2024

Environmental Assessment (Scotland) Act 2005

Fisheries Management Plans Tranche 3 - Scoping Consultation

Thank you for your Scoping consultation submitted under the above Act. This was received by SEPA via the Scottish Government SEA Gateway on 24 January 2024 in relation to the above application.

As required under section 15(2) of the Act, we have considered the document submitted and comment as follows in respect of the scope and level of detail to be included in the Environmental Report (ER). We agree with the proposed scope of the assessment and are satisfied with the proposed assessment methodology.

The Scottish Government SEA Guidance provides guidance to Responsible Authorities about the type of information that is expected to be provided at each SEA stage; we have also produced SEA topic guidance for those issues which fall within our remit.

On completion, the Environmental Report and the plan to which it relates should be submitted to the Scottish Government SEA Gateway (SEA_Gateway@gov.scot) which will forward it to the Consultation Authorities.

In this case we will not be providing a detailed assessment of the Environmental Report.

If you have queries relating to this letter, please contact us via our SEA Gateway at sea.gateway@sepa.org.uk including our reference number in the email subject.

How the consultation response was considered

Point	How point was considered
1. As required under section 15(2) of the Act, we have considered the document submitted and comment as follows in respect of the scope and level of detail to be included in the Environmental Report (ER). We agree with the proposed scope of the assessment and are satisfied with the proposed assessment methodology.	Point noted
2. On completion, the Environmental Report and the plan to which it relates should be submitted to the Scottish Government SEA Gateway (SEA_Gateway@gov.scot) which will forward it to the Consultation Authorities.	Point noted
3. In this case we will not be providing a detailed assessment of the Environmental Report.	Point noted