



Department
for Environment
Food & Rural Affairs

Southern North Sea and Eastern Channel Mixed Flatfish Fisheries Management Plan

Strategic Environmental Assessment Environmental Report

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Non-technical Summary

The Southern North Sea and Eastern Channel Mixed Flatfish Fisheries Management Plan (FMP) has been prepared to meet the requirements of [the Fisheries Act 2020](#). It sets out the policies and proposed actions Defra will use to manage flatfish fishing activity, so stocks are harvested within sustainable levels. Alongside these actions, the Southern North Sea and Eastern Channel mixed flatfish FMP also sets out management to help support wider social, economic and environmental aspects of the fishery.

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

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

This assessment focuses on how the policies and actions in the Southern North Sea and Eastern Channel mixed flatfish FMP are likely to give rise to both significant positive and negative environmental effects. The findings of this assessment have been used to inform the development of the FMP.

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

This report sets out those plans, programmes and environmental protection objectives, both international and domestic that Defra consider relevant to the Southern North Sea and Eastern Channel mixed flatfish FMP.

This report considers and acknowledges the existing environmental effects of flatfish fishing using towed gear on those issues scoped into this assessment, in relation to Marine Protected Areas (MPAs), the UK MS descriptors and the wider environment. The potential positive and negative environmental effects of the Southern North Sea and Eastern Channel mixed flatfish FMP's policies and proposed actions alone and in combination have also been assessed.

This Strategic Environmental Assessment (SEA) concluded that current evidence shows the Southern North Sea and Eastern Channel mixed flatfish fishery has an impact on the marine environment primarily through seabed disturbance. The impact of flatfish fishing in MPAs is managed in the 0-12 nautical miles zone in English waters. Management in MPAs beyond the 12 nautical mile limit is in development. Further work is required to reduce the impact of flatfish fishing on habitats beyond MPAs to ensure GES targets for seabed integrity (D6) are achieved. The contribution of flatfish fishing to climate change related issues and its interactions with cultural heritage, through structural damage for example, were also identified as potential impacts.

The Southern North Sea and Eastern Channel mixed flatfish FMP has considered these impacts and sets out proposals to monitor, and where required, introduce mitigation to address these impacts.

The assessment of likely negative effects identified a low risk of significant adverse effects on the environment from implementing individual policies and actions. The policies and actions, will, where appropriate, be developed to avoid any potential negative effects identified by the assessment progress. The environmental effects of implementing the Southern North Sea and Eastern Channel mixed flatfish FMP policies and actions will also be monitored to identify unforeseen adverse effects at an early stage, so appropriate remedial action can be undertaken.

Additionally, this assessment recommends that future iterations of the Southern North Sea and Eastern Channel mixed flatfish FMP should consider:

- how to develop the cultural heritage of each fishery and how fisheries management can contribute to reducing potential negative interactions with submerged prehistoric landscapes or seascapes
- how fisheries management can contribute to reducing potential negative interactions with submerged prehistoric landscapes or seascapes.

1. Introduction

Fisheries Management Plans – context and background

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

The [Fisheries Act 2020](#) requires the fisheries policy authorities¹ in the UK to publish Fisheries Management Plans (FMPs) as set out in the [Joint Fisheries Statement \(JFS\)](#), to manage fishing activity so the harvesting of fish stocks remains within sustainable levels.

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

UK fisheries policy authorities identified 43 FMPs in the JFS. A timetable for the preparation and publication of the FMPs can be found in Annex A of [the JFS](#) and summarised on Gov.UK: see [the List of FMPs](#).

All FMPs must contain the information set out in [Section 6](#) of the Fisheries Act 2020. In summary, a 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.

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

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

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

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

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

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

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

Delivering Sustainable Management of Fisheries and FMPs

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

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

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

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

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

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

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

Scope of the FMP

This FMP applies to plaice (*Pleuronectes platessa*), common sole (*Solea solea*), turbot (*Scophthalmus maximus*), brill (*Scophthalmus rhombus*), lemon sole (*Microstomus kitt*), witch (*Glyptocephalus cynoglossus*), dab (*Limanda limanda*), flounder (*Platichthys flesus*) and halibut (*Hippoglossus hippoglossus*) fisheries in English waters. The flatfish fisheries covered by this FMP occur in International Council for the Exploration of the Sea (ICES) areas 4b & c (North Sea) and 7d (Eastern Channel).

The Southern North Sea and Eastern Channel mixed flatfish FMP applies to English waters², covering inshore and offshore areas where fishing activity for flatfish takes place.

Southern North Sea and Eastern Channel Mixed Flatfish FMP Goals and Actions

The vision of the FMP is to introduce long term sustainable management for flatfish species fisheries in the Southern North Sea and Eastern Channel. The management of these fisheries in English waters will aim to achieve environmental sustainability, by working towards an ecosystem-based approach to fisheries management, to ensure the wider effects of fishing activities on the marine environment are considered and minimised. The FMP will consider the social and economic potential of the fisheries and aim to contribute to social and economic sustainability within fishing communities.

Goal 1: Develop an improved evidence base for quota and non-quota stocks in the FMP.

Rationale: having robust data available allows for evidence-based decisions to be made in fisheries management. This is central to achieving the sustainability and scientific objectives outlined in the Act. Whilst ICES currently provide assessments that are considered to be sufficient to advise on MSY approaches for all of the stocks, with the exception of halibut, several of the stocks are considered to be data limited. Additionally, concerns regarding discard rates of dab have been identified, and further evidence is required to properly assess this. With regard to halibut, actions proposed below set out the steps necessary to collate existing information to support a future stock assessment using an MSY approach.

Actions:

Short term

- Establish what evidence is currently available in the Evidence Statement and identify what additional evidence is required to meet the goals of the FMP within the evidence plan.
- Establish what the current and upcoming opportunities are to improve the evidence base (see supporting Evidence Plan).
- For all stocks that are data poor and consequentially unable to be assessed for stock status and MSY, seek to improve datasets to allow for assessment.

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](#).

- Encourage and support the establishment of reference points for stocks in the Southern North Sea and Eastern Channel mixed flatfish FMP where these do not currently exist or need improvement (see supporting Evidence Statement).
- Consider re-opening the survey for common sole in the Eastern Channel to address the evidence gaps around recruitment.

Medium to long term

- Commission data collation to better understand the status of halibut within this FMP. Such work could be undertaken by the relevant ICES working group to better identify the stock unit.
- Following the identification of the stock unit, commission ICES to develop a stock assessment.

Goal 2: Deliver effective management of the stocks within the FMP.

Rationale: effective management will support delivery of sustainable stock levels across both quota and non-quota stocks, and restoration or maintenance of fisheries at sustainable levels.

The UK Government lays out a shared ambition in the JFS. This ambition is to deliver ‘world class, sustainable management of our sea fisheries and aquaculture across the UK, and to play our part in supporting delivery of this globally’ and ‘as part of being an independent coastal State, the fisheries policy authorities will work together to support a vibrant, profitable, and sustainable fishing and aquaculture sector supported by a healthy marine environment that is resilient to climate change’. This ambition is managed in line with numerous domestic and international policy drivers that oblige action to consider and mitigate for the wider adverse environmental impacts of fishing activity.

The actions within this goal will develop a harvest strategy and seek to improve datasets to allow for assessment of stocks’ maximum sustainable yield (MSY). Better data and TAC setting by aligning with an MSY approach or use of the mixed fisheries scenarios provided by ICES will help to ensure that the harvesting of flatfish and fishing pressure is kept to sustainable levels.

Lemon sole, turbot, and brill were highlighted as species requiring protection during the juvenile life stages of their development. Evidence underpinning the minimum conservation reference size was gathered and expert advice sought on whether introducing a MCRS would meet the intended outcome of protecting juvenile individuals up to the size of maturity and reproduction.

It is important that these measures align where possible with other MCRS in the Channel, noting that specific adjustments may be required to meet specific sustainability requirements for individual species, and the fishery as a whole.

As discussed above, management changes for lemon sole, witch, turbot and brill have been achieved in 2024 through an interim measure since the draft of the FMP was published. This has realigned the stocks to correspond better with the ICES management areas and ensures that stocks are not overexploited. We will continue to pursue longer-term recognition of these stocks through individual TACs corresponding to their known spatial distribution in a future UK-EU agreement.

This goal is central to achieving the sustainability and precautionary objectives outlined in the Act.

Actions:

Short-term

- Implement a MCRS for lemon sole, turbot and brill.
- Review the TAC management areas for lemon sole, witch, turbot and brill, and seek full realignment of these with the stock management areas.
- Follow HSS guidance to progress towards more sustainable fisheries.
- Implement a precautionary approach when robust data is not yet available.
- Use this FMP to increase the number of stocks fished at MSY, consistent with the best available scientific advice and taking into account best available evidence on the effects of fishing activity.

Medium to long-term

- Deliver a mixed and multi-species management approach where applicable for the fisheries within the Southern North Sea and Eastern Channel mixed flatfish FMP.
- Following the identification of the stock unit for halibut in goal 1, commission ICES to develop a stock assessment.
- Explore the impacts of increasing the MCRS for lemon sole, turbot and brill in 7d.

Goal 3: Support and deliver wider environmental sustainability by understanding how the fishing activities within this FMP impact on the wider marine environment and identify options to minimise negative impacts.

Rationale: a thriving fishing industry is underpinned by a healthy marine environment and the Government is committed to an ecosystem approach to fisheries management which will account for, and seek to minimise, impacts on non-commercial species and the marine environment generally (Environmental Improvement Plan and JFS). The ecosystem objective of the Fisheries Act 2020 further articulates that an ecosystem-based approach to fisheries management is an approach which: (a) ensures that the

collective pressure of human activities is kept within levels compatible with the achievement of good environmental status (within the meaning of the Marine Strategy Regulations 2010 (S.I. 2010/1627)); and (b) which does not compromise the capacity of marine ecosystems to respond to human-induced changes.

Concerns have been raised by stakeholders regarding the impact of towed gears on inshore stocks, and the subsequent impact this has on the fishers and dependent communities. Additional evidence is required to understand the how gear restrictions such as those to engine power and additional selectivity measures, might be used to enhance stock sustainability for the benefit of the whole sector. This includes measures that may support the successful management of MCRS introductions that are proposed as part of this FMP. This evidence must include consideration of the potential impact of any proposals on vessels; benefits measures might have on the sustainable of inshore stocks and benthic habitats; and to understand the impact of displacement on the marine environment beyond 12nm. Consideration will also need to be given to the principles outlined in the TCA when considering this measure.

Evidence from ICES suggests high discards of dab. By better understanding the impact of fishing gear interactions within the marine environment and working to minimise any of the negative impacts of fishing on non-target species, marine habitats and ecosystems, this will also contribute to the achievement of domestic and international targets. This rationale is central to achieving the sustainability, ecosystem, climate change and bycatch objectives outlined in the Act.

Actions:

Medium to long-term

- Explore impacts of introducing an increased mesh size of 100mm for all towed gears in 7.d to improve the selectivity of juvenile catch and compatibility with proposed MCRS.
- Consider gathering evidence on potential options for enhanced management of towed gears within area 7.d, in particular within the 0-12nm limit.
- Investigate and understand the key issues in protected species bycatch within the fishery and develop appropriate mitigation.
- Better understand the impact of fishing gear interactions with the marine environment in flatfish fisheries and develop appropriate mitigation.
- Work to understand and minimise bycatch of unwanted stocks and minimise discarding.
- Incentivise participation in scientific trials to improve data collection on discards.
- Better understand any contribution of the mixed flatfish fisheries to marine litter and explore mitigations to address impact on the marine environment.

Goal 4: Better understand and effectively manage the social and economic value of the fisheries to the coastal communities within the FMP area.

Rationale: the UK Government holds an ambition to enable fisheries to continue to deliver social and economic benefit to coastal communities to benefit present and future generations. The UK Government also continues to further its understanding of the social and cultural benefits of fishing to fishers and coastal communities. Therefore, the FMP has established an overarching goal which falls under the social and economic benefits of the fishery. The goal will consider social and economic matters holistically in order to understand the social and economic value of the fisheries and optimise any benefits identified to ensure that the industry continues to operate for future generations. The current available social and economic evidence can be found within the [Evidence Statement](#).

Flatfish species are highly valuable and, if managed effectively, flatfish fishing has the potential to generate substantial social and economic benefits for local coastal communities, including through recreational fishing. This ambition is driven by the Fisheries Act 2020 and contributes to the sustainability, equal access and national benefit objectives.

Actions:

Short-term

- Identify the communities reliant upon the fisheries within this FMP, including building understanding of recreational activity for flatfish species.
- Identify the social and economic data available on the species covered by this FMP including any gaps.
- Encourage and support industry in any initiatives to promote the consumption and value of stocks and improve economic efficiency within the FMP.
- Seek ways to integrate and develop social and economic indicators to monitor social and economic impacts and investigate how this information could be gathered.

Medium to long-term

- Identify new ways of gathering social and economic data and adapt the FMP when new or improved methods are developed to fill any evidence gaps.
- Update the FMP as necessary when socioeconomic evidence relevant to FMP measures is available.

Goal 5: Explore options to mitigate against and adapt to the impact of climate change within the fishery.

Rationale: The changing climatic conditions hold the potential to impact the fishing industry and the wider environment. The anthropogenic emissions of CO₂ associated with fossil fuel usage drives climate change, leading to increased sea surface temperature, ocean acidification, and fluctuations within large-scale weather and climate patterns that can impact ecological baselines. Under the Fisheries Act 2020 climate objective, and Net Zero ambitions, the UK Government is committed to reducing CO₂ emissions within the fishing fleet, and to improving resilience to climate-driven impacts across the sector. By mitigating and reducing the impacts from changing climatic conditions, this will contribute to the climate change, ecosystem and national benefit objectives outlined in the Fisheries Act 2020. Even though delivery of mitigation strategies for climate change is not within scope of this first iteration of this FMP, it holds a longer-term goal which is set out below.

The impact of climate change on fish stocks, and therefore the fishing industry, will also likely increase in future. Through the FMP, management should support industry in adapting to the impact of climate change on flatfish stocks, as well as in contributing to climate mitigation efforts to meet Net Zero wherever possible, for example through technological, managerial, and behavioural changes to increase energy efficiency, transition to alternative fuels and energy sources, and reducing the direct impact of fisheries on marine carbon stores. The Climate Change Act 2008 (amended in 2019) sets a legally binding target of achieving net-zero greenhouse gas emissions (GHGe) by 2050 across the UK economy, with an ambition of a 78% reduction by 2035. To support these targets, all sectors including the UK seafood sector must develop pathways to reduce their GHGe and utilise alternative clean energy sources to contribute to meeting the Net Zero target.

Actions:

Medium to long-term

- Work to understand the impacts of changing climate conditions in the mixed flatfish fisheries.
- Encourage industry participation in initiatives to reduce CO₂ emissions.
- Support industry's adaptation to the impacts of climate change.
- Adapt and change this FMP as research into climate change develops and new methods to address climatic challenges arise.

Southern North Sea and Eastern Channel Mixed Flatfish FMP Technical Measures

Measure 1: Introduction of minimum conservation reference sizes (MCRS) measures.

Rationale: The introduction of MCRS measures in division 7d for lemon sole, turbot, and brill, is a precautionary approach that aims to protect juvenile fish from being landed, improving recruitment and stock health. However, without changing mesh sizes to accommodate for the introduction of MCRS, juveniles may still be caught. Therefore, the FMP also proposes exploring possible increases in mesh size to 100mm for all towed gears to support compatibility with the introduction of MCRS, reducing catches of juveniles.

The landing obligation applies to catches of lemon sole and brill in 7d. Individuals caught below the MCRS must be landed but are not permitted to be sold for human consumption. There is insufficient evidence on the discard survivability of these species to consider additional landing obligation exemptions at this stage. This is an evidence gap that has been identified and the measures will be reviewed for effectiveness as part of the FMP evaluation. Turbot in 7d is a non-quota stock, therefore the landing obligation does not apply.

These measures are proposed for 7d only, to be implemented via a staged approach. First, in the short-term, measures will align with existing regulation. Subsequent medium to long-term measures are recommended to reflect evidence of the size of maturity for each species. There are currently no plans to implement MCRS for any of the FMP stocks in area 4.

Short-term measures

These management measures align with the MCRS set out in the Channel demersal NQS FMP, which also covers lemon sole, turbot and brill in 7d. This is consistent with existing MCRS that Cornwall and Southern IFCA's have in place.

- MCRS for lemon sole – 25cm
- MCRS for turbot – 30cm
- MCRS for brill – 30cm

Medium- to long-term measures

In the medium-long term, we will consider aligning MCRS to size of maturity. The MCRS below have been derived from 2022 data on the size at which 50% of the population of each species are thought to be at maturity. Recognising that males for species of turbot and brill mature earlier than females, the measure has been recommended for the size of maturity for females. Fishing below this can create a

selection bias, potentially removing spawning females from the population and negatively impacting the stock. Further work to explore the impacts of an increased MCRS on the stocks and fishery is required.

- MCRS for lemon sole – 25cm
- MCRS for turbot – 40cm
- MCRS for brill – 35cm

2. Approach to Strategic Environmental Assessment

Screening

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

Defra considers that Regulation 3(2)(a) of the SEA Regulations 2004 applies to the Southern North Sea and Eastern Channel mixed flatfish FMP as the plan relates to England only.

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

The screening exercise used [Defra's Magic Map Application](#) to identify whether the geographical scope of the FMP overlaps with any Special Areas of Conservation or Special Protection Areas. 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 flatfish has the potential to impact these sites and interest features. For example, flatfish harvesting has the potential to result in the extraction of, or mortality/injury to, wild species and cause physical disturbance of benthic habitats.

The screening concluded that the proposed policies in the Southern North Sea and Eastern Channel mixed flatfish FMP have the potential to affect multiple Special Areas of Conservation or Special Protection Areas and the wider marine environment.

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

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

Scoping Process

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

A Scoping Report identifying the scope and level of detail of the assessment of the Southern North Sea and Eastern Channel mixed flatfish FMP was provided to the following Consultation Bodies:

- Historic England
- Natural England
- Environment Agency
- Joint Nature Conservation Committee (JNCC)

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

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

Sections: 1 and 4

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

Section: 3 and 7

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

Section: 3

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

Section: 3

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

Section: 4

- Paragraph 5: The environmental protection objectives, established at international, [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.

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

Scope of the Assessment

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

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

- Biodiversity, fauna and flora including the following sub-sections: cetaceans, seals, birds, fish, benthic habitats, commercially exploited fish and shellfish, food webs.
- Geology and sediments (soil) including the following sub-section: benthic habitats.
- Water including the following sub-sections: marine litter and underwater noise.
- Climatic factors including the following sub-sections: vessel emission, blue carbon.
- Cultural Heritage including the following sub-section: interactions between fishing gear and marine heritage assets.
- Landscape/seascape including the following sub-section: interactions between fishing gear and seabed formations, benthic habitats.

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

- Population (Human)
- Human health
- Air
- Material assets

Fishing activity being managed through the FMP has the potential to have some level of interaction with all the issues from Schedule 2 paragraph 6, however the scoping exercise considered and scoped in those environmental issues that would be significantly affected by the Southern North Sea and Eastern Channel mixed flatfish FMP. Issues such as Population, Human Health, Air and Material Assets were scoped

out of this assessment as it was considered that they would not be significantly affected by the FMP. We provide the justification behind this decision and additional rationale behind why sub-sections were considered below.

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

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

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

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

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

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

Landscapes / seascapes are not considered under the UK MS; therefore, no predetermined sub-sections are available. The interaction between fishing gear and seabed formations was identified as the most relevant impact related to fishing activity that is associated this issue heading. The assessment of benthic habitats will also be relevant when considering the impact of flatfish fishing on seabed formations. Where specific impacts are known they will also be considered.

Results of the scoping exercise to determine those environmental issues likely to be significantly affected by the Southern North Sea and Eastern Channel Mixed Flatfish FMP and thus scoped into the SEA³

Environmental issues likely to be significantly affected by the FMP

- **Biodiversity, fauna and flora (UK MS descriptors D1, D3, D4, D6)** - Fishing activity for flatfish has the potential to result in the cause physical disturbance to the seabed and the extraction of, or mortality of/injury to/disturbance to, both target and non-target wild species.
- **Geology and sediments (soil) (UK MS descriptor D6)** - Fishing activity for flatfish has the potential to result in physical disturbance to the seabed and substrates. This issue is 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 flatfish has the potential to interact with marine heritage assets. While the FMP is not intended to focus on mitigating the impacts of fishing on the marine historic environment, there is potential for fisheries management to have a positive effect on safeguarding cultural heritage features. This issue is within the scope of this SEA.
- **Landscape Seascape** - Flatfish fishing, through physical disturbance of the seabed, has the potential to affect seascape features. This issue is within the scope of this SEA.

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

Environmental issues not likely to be significantly affected by the FMP

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

Assessment Methodology

This SEA reflects the geographical scope (section 1) and type of fishing covered by the FMP. It considers the goals of the Southern North Sea and Eastern Channel mixed flatfish FMP and the actions (section 1) it sets out to achieve these goals.

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

It assessed the nature and extent of likely effects of the Southern North Sea and Eastern Channel mixed flatfish FMP (including its policies and actions) on those environmental issues scoped into the assessment and where applicable their associated UK MS descriptors identified in the above section.

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

More detailed fisheries 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 Marine Management Organisation’s (MMO) ongoing Fishery Assessment programme (outside 12 nautical miles) in England.

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

Nevertheless, this ER acknowledges the likely significant effects associated with fishing activity being managed through the Southern North Sea and Eastern Channel mixed flatfish 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 Southern North Sea and Eastern Channel mixed flatfish FMP, advice from Statutory Nature Conservation Bodies (SNCBs) (Natural England and JNCC) on the impacts of fishing activity in relation to MPAs and UK MS descriptors was considered. This ER reviews how this advice has been reflected in the FMP, and how the proposed policies and actions could change the baseline.

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

This assessment acknowledges the Southern North Sea and Eastern Channel mixed flatfish FMP sets out goals to develop the evidence base around the flatfish fisheries. Our assessment used the best available evidence at the present time to reach a judgement on the environmental effects of the Southern North Sea and Eastern Channel mixed flatfish FMP.

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

3. Environmental Baseline

Summary of the Current State of the UK Marine Environment

Section 3 provides a summary of the current state of the UK marine environment for each of the environmental issues screened into this SEA, and where applicable their associated UK MS descriptors. The SEA has been conducted against the environmental baseline set out in these sources of existing information. We

acknowledge that there are some uncertainties and evidence gaps in the environmental baseline. However, we consider that this environmental baseline provides a comprehensive level of information to undertake an effective assessment and provide informed evidence-based recommendations. Where required, further detailed assessments using additional evidence will be completed ahead of the implementation of FMP actions.

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

Biodiversity, Flora, Fauna and Geodiversity⁴ (Geology and sediments)⁵

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.

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

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

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

D1 and D4 – Seals

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

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

D1 and D4 – Birds

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

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

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

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

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

D1 & D6 – Benthic Habitats

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

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

D4 – Food webs

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

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

Water Quality

D10 – Marine Litter

Marine litter, including from fishing activities, is a significant pressure on marine ecosystems and water quality. The UK has not yet achieved its aim of GES for litter. Beach litter levels in the Celtic Seas have remained largely stable since the

assessment in 2012, whilst beach litter levels in the Greater North Sea have slightly increased. Waste fishing material is a component of beach litter. Both floating litter and seafloor litter remain an issue, with plastic the predominant material. Achieving GES for marine litter requires improved waste management practices, the reduction of lost or discarded fishing gear, and increased awareness and monitoring of the issue. For more information, read [UK MS litter assessment](#).

D11 – Underwater noise

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

The achievement of GES for underwater noise in the UK is uncertain. Research and monitoring programmes established since 2012 have provided an improved understanding of the impacts of sound on marine ecosystems. However, achieving GES for underwater noise will require better understanding and monitoring of the issue, as well as the development and implementation of strategies to manage noise pollution from various sources. For more information, read [UK MS underwater noise assessment](#).

Climatic Factors

Climate change impacts are not part of the UK MS, therefore evidence from other sources were used to provide baseline information in relation to this issue. Statistics from the Department for 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 CO₂e) would have represented 0.18% of the UK's total territorial emissions (455 Mt CO₂e)⁶, or 0.66% of the UK's domestic transport emissions (122 Mt CO₂e)⁷. To put this into context, estimated emissions by the UK fishing fleet would have been equivalent to 1.7% of total agricultural emissions in 2019 (46.3 Mt CO₂e).

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

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

The stocks within the North Sea and Channel Flatfish FMP are primarily caught by demersal trawls (witch; >95%, turbot; 55-65%, plaice; 64-83%, lemon sole; 68%, halibut; 98%, flounder; 40-63%, dab; 62-86%), as well as drift and fixed nets and beam trawls.

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

Blue Carbon

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

Climate change impacts on flatfish stocks and fisheries

Under future climate change, modification of temperature and salinity are expected to result in shifts to distributions of marine organisms, including commercial fish species⁸. In an analysis of 50 abundant species in the waters around the United Kingdom and Ireland, 72% of the fish species were shown to have responded to warming in the region already, by changing distribution and abundance⁹. Specifically, warm-water species have increased in abundance while cold-water species have decreased, with

8 Townhill, B., Couce, E., Rutterford., L., & Pinnegar, J. (2018). Future projections of commercial fish distribution and habitat suitability around the British Isles. Report of BX006 work package: Long-term distribution shifts and zonal attachment. CEFAS, Lowestoft.

9 Simpson, S.D., Jennings, S., Johnson, M.P., Blanchard, J.L., Schön, P.J., Sims, D.W. and Genner, M.J., 2011. Continental shelf-wide response of a fish assemblage to rapid warming of the sea. *Current Biology*, 21(18), pp.1565-1570.

these trends expected to continue in the future¹⁰. Future distributional shifts for the FMP species (flounder was not included in this analysis) have been predicted, and it has been found that waters around the UK are predicted to become more suitable in the future for sole, brill, turbot and witch, but less suitable for dab, plaice, halibut, and lemon sole. For all FMP species, apart from halibut with a southward shift, there was a predicted northward shift in habitat suitability by 2060¹¹. Plaice and dab were some of the species with the greatest projected northward shift.

Cultural Heritage

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

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

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

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

The following interactions between fishing gear and marine heritage assets can occur¹²:

- Interactions with drift nets and pelagic long lines have a low significance resulting from entanglement and snagging on marine heritage assets.
- Demersal trawl and dredge gears are widely used and are most likely to interact with marine heritage assets. Direct interactions with heavy bottom gears, are likely to be significant. However, some archaeological resources may not be discovered without interactions with fishing gear and therefore, significance of

10 Poloczanska, E.S., Burrows, M.T., Brown, C.J., García Molinos, J., Halpern, B.S., Hoegh-Guldberg, O., Kappel, C.V., Moore, P.J., Richardson, A.J., Schoeman, D.S. and Sydeman, W.J., 2016. Responses of marine organisms to climate change across oceans. *Frontiers in Marine Science*, p.62.

11 Townhill, B., Couce, E., Rutterford., L., & Pinnegar, J. (2018). Future projections of commercial fish distribution and habitat suitability around the British Isles. Report of BX006 work package: Long-term distribution shifts and zonal attachment. CEFAS, Lowestoft.

12 Information derived from [Fishing and the Historic Environment](#), page 44.

the interaction with findspots¹³ is moderate because of both positive and negative impacts.

- Interactions with demersal seine netting may have a low to moderate significance resulting from limited interaction with the seabed by the ropes used to haul the seine net.
- Interactions with static/passive demersal nets and long lines may have a low to moderate significance resulting from a higher likelihood of entanglement and snagging, and anchoring impacts.

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

Landscape and Seascape

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

The ‘value’ of many of the UK’s seascapes is reflected in the range of designations which relate in whole or in part to the scenic character of a particular area (e.g. AONB, Heritage Coast, National Scenic Area), however the ELC and MPS (and most recently seascape assessments covering the English Marine Plan regions) define landscape and how they are to be considered in more general terms, acknowledging the value of all landscapes whether or not they are subject to designation¹⁴.

The seascape constitutes of a suite of different characteristics that include natural factors, cultural and social factors, and cultural associations. Under these character headings exists a number of subheadings that include Geology, Seabed, Tides and Coastal processes (natural factors); Surface water features, Sunken and Buried

13 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).

14 UK Offshore Energy Strategic Environmental Assessment – scoping.

Features, and Use of Coast and Sea (cultural and social factors); Media, People, Writers (cultural associations)¹⁵.

Fishing and commercial fishing vessels are considered as seascape features and activities. Fishing ports and related fishing infrastructure are considered as landscape features¹⁶. Fishing therefore is an important component of the overall landscape and seascape character.

Fishing activity using demersal towed gear has been identified to damage submerged peaty deposits known as moorlog¹⁷. However, a comprehensive assessment of the extent of interactions and their impacts, is currently not available for English waters. Conserving moorlog, as potential blue carbon habitats might contribute to climate change mitigation and adaptation.

Existing Environmental Effects of Flatfish Fishing

Fishing using mobile demersal fishing gear, which includes flatfish fishing gear, is considered to be one of the main drivers of physical disturbance of the seabed in UK waters. It has been identified to have a significant influence on the current baseline and is a contributing factor in the failure for the UK to reach GES for descriptor D6 Seabed Integrity (section 3).

Drift and fixed nets have been identified as presenting a significant bycatch risk. They are potentially impacting mobile MPA species (birds, marine mammals and fish) and contributing to failure for the UK to reach GES for descriptor D1 biodiversity (section 3).

The Southern North Sea and Eastern Channel mixed flatfish FMP focuses on achieving the sustainable harvesting of flatfish stocks. This focus seeks to reduce the environmental risks linked to over-fishing these stocks, thereby giving positive benefits to environmental status.

Nevertheless, fishing within sustainable limits for the target stocks (MSY or appropriate proxies) may reduce but will not eliminate 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 and actions in the Southern North Sea and Eastern Channel mixed flatfish

15 Figure 1, Page 9. [seascape-character-assessment.pdf](#)

16 Figure 2, Page 10. [seascape-character-assessment.pdf](#)

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

FMP are likely to give rise to both significant positive and negative environmental effects. More detailed fisheries assessments which consider current activity are already in progress or have been completed. These assessments may be used to inform the FMP actions as they are delivered, and include:

- Defra's Revised Approach to fisheries management programme (IFCA 0-6 nautical miles, MMO 6-12 nautical miles).
- The Marine Management Organisation's (MMO) ongoing Fishery Assessment programme (outside 12 nautical miles) in England.

Nevertheless, this ER acknowledges the potential significant effects associated with fishing activity being managed through the Southern North Sea and Eastern Channel mixed flatfish FMP and sets out in broad terms how the FMP will seek to avoid, reduce, or at least mitigate significant negative effects.

Biodiversity, Flora, Fauna and Geodiversity, Water quality

Environmental Effects Associated with MPAs

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

In England the assessments of the impact of flatfish fishing activities inside MPAs are undertaken by the IFCAs within 6 nautical miles and the MMO outside 6 nautical miles. Figure 1 shows the distribution of English MPAs relevant to the Southern North Sea and Eastern Channel mixed flatfish FMP. Stakeholders have worked closely with regulators to help develop measures to mitigate impacts within inshore and offshore MPAs. Appropriate management is in place to ensure any fishing within MPAs is compatible with the MPA's conservation objectives. Current management measures already in place related to the use of bottom towed gear is detailed on the [MMO](#) and [Association of IFCAs](#) websites.

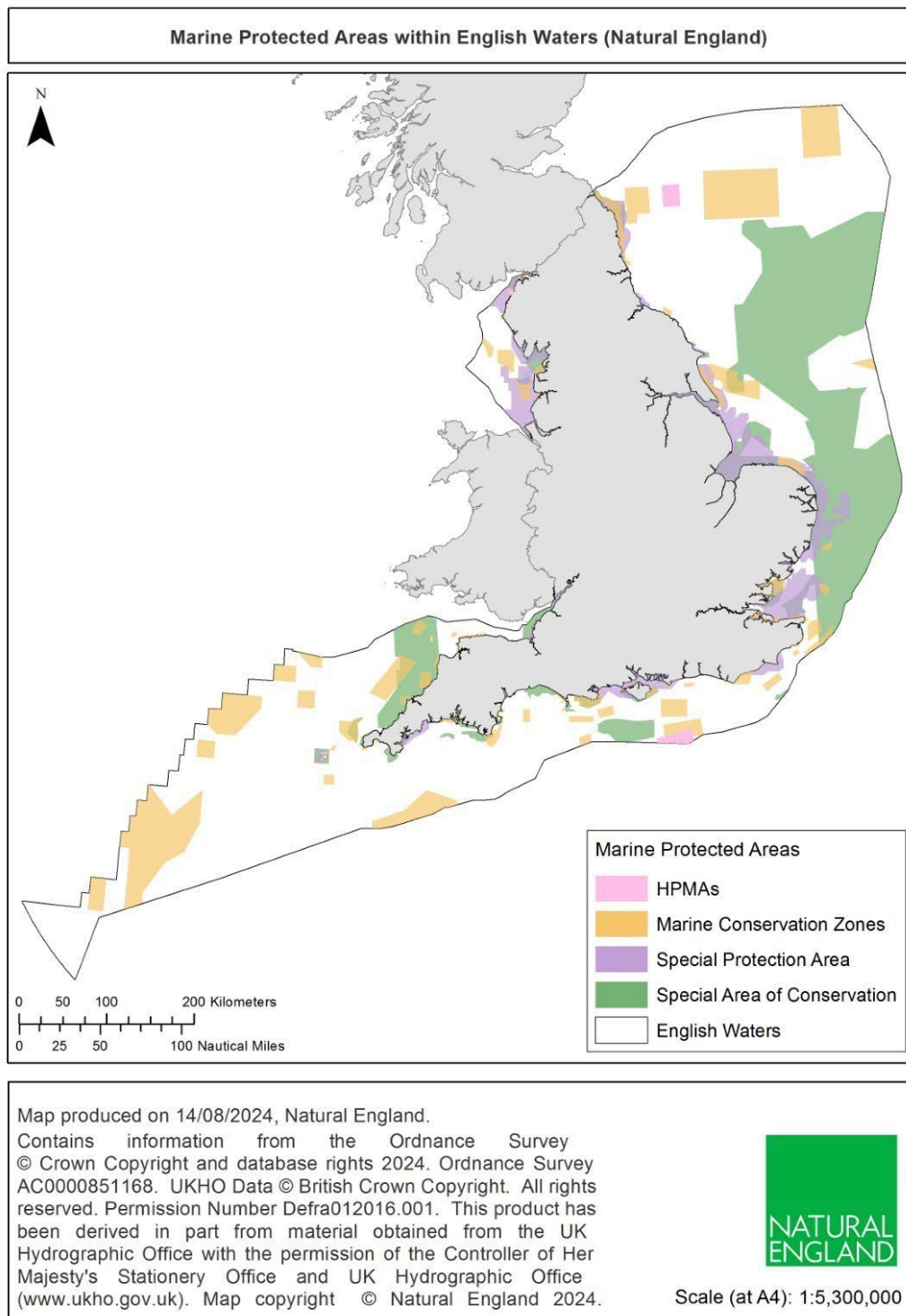


Figure 1. England's MPA network

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 and special protection areas.

Whilst existing MPA site management considers fishing activity that occurs within the site's boundaries, there remains the potential for fishing activity outside MPAs to have impacts on the features protected within the MPA. These impacts can occur when either the pressure exerted by the fishery impacts protected features beyond the spatial footprint of a particular fishing activity (e.g. noise) or when the feature of an MPA is mobile and travels outside the site.

Advice provided to Defra by the SNCBs on the impact of fishing activity outside the boundary of MPAs on MPA features concluded that:

- The Southern North Sea and Eastern Channel mixed flatfish fishery that uses bottom towed gear risks impacting shad species that are designated features of several Special Areas of Conservation (SACs). The current data are not sufficient to understand the scale or the spatial resolution of bycatch and the impact that this may be having on the conservation objectives of the SAC. Improving reporting pathways (for both fishermen and fisheries managers) and bycatch monitoring programmes will further improve our understanding.
- The bycatch of certain Special Protection Area bird species by bottom towed gear outside of sites may be occurring. Despite problems with data inadequacies preventing firm conclusions, it is not thought that the use of bottom towed gear in this fishery presents a high bycatch risk or is having a significant impact. An improved monitoring regime may be needed to fill current data gaps to reduce uncertainties. This could potentially be done by adapting or expanding existing observer programmes, or through the use of Remote Electronic Monitoring (REM).
- Bycatch of harbour porpoise (or other marine mammal) may occur, but current understanding is that bycatch from towed demersal gear outside of site boundaries it is unlikely to be at a level that could impact MPA conservation objectives.
- A small proportion of landings of flatfish species (lemon sole) are caught in drift or fixed nets. This gear is considered to have a much higher bycatch risk associated with it on certain mobile fish species, birds and marine mammals that are features of MPAs. Although just making up a small proportion of landings, the use of nets in the lemon sole fishery may be contributing to bycatch in nets which is of a scale that could be having impact on SAC conservation objectives. Better data is required on levels of bycatch in order to understand what or where mitigation may be required.

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 Southern North Sea and Eastern Channel Mixed flatfish fishing and their likely impact on achieving Good Environmental Status (GES) (Appendix A).

Benthic disturbance related pressures associated with towed demersal gear:

There is a concern around benthic disturbance and the contribution to current failure to meet targets for D6 seafloor integrity. This will also have associated impacts on D1 biodiversity and D4 food webs. This is considered a high-risk issue as there is a clear link between activity and failure to meet GES indicator targets¹⁸.

The impact of bycatch of species on D1 biodiversity and its relation to D4 food webs: The risk to both other fish species and bird / mammal / sensitive fish species is currently unclear. A better understanding of the actual risk posed by this fishery will require a closer look at the bycatch associated with this activity. Note that as well as being relevant to GES, the Fisheries Act Ecosystem Objective requires that 'incidental catches of sensitive species are minimised and, where possible, eliminated'. The risk to commercial fish species is also relevant to the bycatch objective of the Fisheries Act, and management brought in to meet this objective should contribute to achieving GES targets for D3 commercial fish and D4 food webs.

The contribution to fishing related litter (D10): Loss of gear such as trawls and nets 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.

Developing and implementing measures to achieve sustainable harvesting of flatfish stocks reduces the risks associated with achieving targets for D3 Commercial fish.

Subsequent, detailed advice from SNCBs confirmed that the main outstanding risks to UK MS descriptors arising from gears used in Southern North Sea and Eastern Channel mixed flatfish fisheries were impacts to D1, D6 seafloor integrity; bycatch impacts on D1 and D4 for marine mammals, seabirds and designated fish, especially from netting; impacts relating to D10 marine litter.

Climatic Factors

Vessels fishing for flatfish 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.

18 Read [Extent of physical damage to predominant seafloor habitats](#) but note these figures will be revised soon as a fresh assessment by JNCC has been undertaken.

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

Cultural Heritage

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

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

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

Landscape and Seascape

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

Fishing activity using demersal towed gear has the potential to cause physical disturbance of the seabed, and therefore could impact deposits associated with prehistoric landscapes that are now submerged by sea-level rise. These former landscapes, referred to as moorlog, are often represented by peaty and other fine-

grained deposits. Examples of these prehistoric landscapes and deposits can be found in the Dogger Bank region¹⁹.

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

4. Relevant Plans, Programmes and Environmental Protection Objectives

The Southern North Sea and Eastern Channel mixed flatfish FMP has broad application since it covers an activity that occurs across English 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 Southern North Sea and Eastern Channel mixed flatfish FMP applies to English 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 considers relevant to the implementation of the Southern North Sea and Eastern Channel mixed flatfish FMP. This FMP could interact with other relevant plans and projects. Any cumulative impacts will also be considered in any future assessments ahead of implementing measures.

International

The Southern North Sea and Eastern Channel mixed flatfish 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 Fish Stocks Agreement 1995](#)
- [EU Western Waters Multi-Annual Plan - REGULATION \(EU\) 2019/472 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL](#)
- [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](#)

¹⁹ Coles, Bryony J. "Doggerland: a speculative survey." *Proceedings of the Prehistoric Society*. Vol. 64. Cambridge University Press, 1998.

- [Convention on International Trade in Endangered Species of Wild Fauna and Flora \(CITES\)](#)
- [Convention for the Protection of the Marine Environment of the Northeast Atlantic \(OSPAR\)](#)
 - The OSPAR Quality Status Report is a key resource when looking at the environmental impact of fisheries in the Northeast Atlantic.
- Regional Fisheries Management Organisations (RFMOs): The UK is an independent Contracting Party to [NEAFC – Northeast Atlantic Fisheries Commission](#) relevant to stocks being managed through the FMP:
- [Convention for the Protection of the Archaeological Heritage of Europe](#)
- [Council of Europe Landscape Convention](#)

Domestic

The Southern North Sea and Eastern Channel mixed flatfish FMP has had regard to the following national legislation, plans and programmes during its preparation:

Marine Protected Areas

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

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

Highly Protected Marine Areas

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

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

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

The three sites are:

- Allonby Bay
- Northeast of Farnes Deep
- Dolphin Head

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

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

The [Conservation of Habitats and Species Regulations 2017](#) include provisions for: protecting sites that are internationally important for threatened habitats and species (European marine sites) and provide a legal framework for species requiring protection (European protected species). [The Conservation of Habitats and Species \(Amendment\) \(EU Exit\) Regulations 2019](#) sets out changes to made to the 2017 Regulations to ensure the regulations operate effectively in English and Welsh waters. The Southern North Sea and Eastern Channel mixed flatfish 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 Southern North Sea and Eastern Channel mixed flatfish 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 Good Environmental Status (GES) in UK waters. The UK Marine Strategy (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 [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 Southern North Sea and Eastern Channel mixed flatfish 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 is provided in Appendix D.

The Environment Act 2021 – UK Wide

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

The Environment Act 2021 also requires the government to publish an [Environmental Improvement Plan \(EIP\)](#) for England. The EIP published in 2023 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 Southern North Sea and Eastern Channel mixed flatfish FMP will deliver measures to secure healthy stocks that will be fished in an environmentally sustainable manner.

The Environment Act 2021 also makes provision for legally binding targets of which the targets for biodiversity and Marine Protected Areas will relate to FMPs. In addition, public authorities who operate in England must consider what actions they can take to conserve and enhance biodiversity in England. This obligation is the strengthened '[biodiversity duty](#)' that the Environment Act 2021 introduced. The Southern North Sea and Eastern Channel mixed flatfish FMP will comply with the biodiversity duty.

The Environmental Targets (Biodiversity) Regulations 2023 - England

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

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

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

Climate Change Act 2008 – UK Wide

The [Climate Change Act 2008](#) is the basis for the UK's approach to tackling and responding to climate change. It requires that emissions of carbon dioxide and other greenhouse gases are reduced and that climate change risks are adapted to. The Act also establishes the framework to deliver on these requirements. The Southern North

Sea and Eastern Channel mixed flatfish FMP will support policies to meet targets to achieve net zero by 2050 as set out in the legislation.

Marine wildlife bycatch mitigation initiative – UK Wide

The [Marine wildlife bycatch mitigation initiative](#) outlines how the UK will achieve its ambitions to minimise and, where possible, eliminate the bycatch of sensitive marine species. This initiative brings together, and builds on, existing work such as the UK Bycatch Monitoring Programme and [Clean Catch UK](#), recognising that further actions need to be taken if we are to achieve our objectives. The Southern North Sea and Eastern Channel mixed flatfish 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 & Wales) Regulations 2017 (referred to as the WFD Regulations) provide a framework for assessing and managing the water environment, which includes estuaries and coastal waters in England. The Southern North Sea and Eastern Channel mixed flatfish FMP will support achieving the targets for water quality set out in the regulations.

[River Basin Management Plans \(RBMPs\)](#) produced under the Water Environment Regulations provide the overarching framework for to help protect and improve our water environment. RBMPs extend out to 1 nautical mile from the baseline into the marine environment and seek to maintain or restore Good Ecological Status²⁰. The Southern North Sea and Eastern Channel mixed flatfish FMP will support the objectives in the relevant RBMPs to meet Good Ecological Status.

Project UK European plaice & lemon sole Fisheries Improvement Project

Fishery Improvement Projects (FIPs) are multi-stakeholder initiatives that aim to help fisheries work towards sustainability and MSC certification. The Southern North Sea and Eastern Channel mixed flatfish FMP will support the UK European plaice & lemon sole FIP.

²⁰ Good ecological status (GES) is a metric for assessing the health of the water environment. It is assigned using various water flow, habitat and biological quality tests. Failure to meet any one individual test means that the whole water body fails to achieve good ecological status. Source: Department for Environment, Food and Rural Affairs (DEFRA) ([WQR0028](#))

Other FMPs

The Channel Non-Quota Demersal FMP overlaps with the Southern North Sea flatfish FMP for the management of lemon sole, turbot and brill between ICES areas 7d and 4c.

There are no other FMPs published at the present time so we are unable to make any formal assessment of how the Southern North Sea and Eastern Channel mixed flatfish FMP will interact with other plans. Defra and our delivery partners considered the interaction between the current tranche of plans whilst drafting the FMP. We will review interactions again as the final versions are prepared and adjust the FMP as appropriate. The interaction between FMPs will be 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 Marine Management Organisation (MMO) to allow a user find and view spatial marine activity data for the English marine area, information on marine planning licences relating to a specific area, and marine plan policy information.

The Southern North Sea and Eastern Channel mixed flatfish 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 marine environment directly. Fishing can also contribute to other environmental effects when considered in combination with other processes and activities.

Section 5 assesses the environmental effects of the policies and actions of the Southern North Sea and Eastern Channel mixed flatfish 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, Actions and Measures of the Southern North Sea and Eastern Channel Mixed Flatfish FMP

The potential positive and negative environmental effects of implementing goals (considering the actions that sit under them) and measures of the Southern North Sea and Eastern Channel mixed flatfish FMP have been identified in below.

- **Goal 1:** Develop an improved evidence base for quota and non-quota stocks in the FMP.

Positive Effects: This objective will develop evidence that will inform the establishment of reference points for stocks in the Southern North Sea and Eastern Channel mixed flatfish FMP, where these do not currently exist or need improvement. The provision of better data will contribute to the sustainable management of mixed flatfish 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 flatfish stocks being sustainably harvested, and reduce wider environmental impacts.

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

Negative Effects: No negative effects are anticipated, therefore this objective is considered to be a low risk.

- **Goal 2:** Deliver effective management of the stocks within the FMP.

Positive Effects: This objective will develop a Harvest Strategy and seek to improve datasets to allow for assessment of the stock's maximum sustainable yield (MSY). Better data and TAC setting by aligning with MSY approach or use of the mixed fisheries scenarios provided by ICES will help to ensure that the harvesting of flatfish and fishing pressure is kept to sustainable levels. The delivery of a mixed and multi-species management approach, where applicable, for the fisheries could contribute to ensuring fishing effort is responsive to status of stocks. The policies and actions arising from this objective may contribute flatfish stocks being sustainably harvested. Alternative harvest strategies which prioritise ecosystem benefits have the potential to contribute to many aspects of GES. See assessment of measure 1 – introduction of MCRS.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Geology/sediments (UK MS - D6); Landscape and Seascape; Water (UK MS descriptors D10, D11).

Negative Effects: Stock assessments could indicate a higher level of fishing is possible with could lead to increased impacts on the wider environment. This objective could lead to spatial changes in fishing effort. Any increase in fishing activity could put pressure on marine systems resulting in increased bycatch and seabed disturbance as well as potentially increasing carbon dioxide emissions. See assessment of measure 1 – introduction of MCRS.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Geology/sediments (UK MS - D6); Landscape and Seascape; Water (UK MS descriptors D10, D11); Climatic Factors.

- **Goal 3:** Support and deliver wider environmental sustainability by understanding how the fishing activities within this FMP impact on the wider marine environment and identify options to minimise negative impacts.

Positive Effects: Increasing mesh size should increase the minimum size of all catch. This will have positive benefits to the stocks themselves and the wider ecosystem (biodiversity and food webs) and could promote ecosystem recovery. Enhanced management of towed gears within area 7.d within the 0-12 nautical mile limit could enhance stock sustainability and deliver social and economic benefits to the whole sector. Ensuring compatibility with MCRS measures may further reduce the impact on juvenile fish. The possible associated long-term benefits of this measure for all species, are based on allowing them to grow to the size of maturity before being caught, and thereby benefiting the fishery through more populous higher value individuals. Reducing fishing pressure within 12 nm, could potentially act to mitigate environmental impacts on benthic habitat integrity.

This goal will assess the interactions with the marine environment and potential impacts associated with flatfish fisheries and develop appropriate mitigation. Actions under this goal will improve understanding of the wider environmental interactions of flatfish fishing activities (including marine litter, bycatch, MPAs, fishing gear interactions, non-target species, marine habitats and ecosystems) and allow solutions to be developed to minimise negative impacts contributing to more sustainable management, which may help protect the marine environment.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Geology/sediments (UK MS - D6); Landscape and Seascape; Water (UK MS descriptors D10, D11).

Negative Effects: The introduction of new gear measures could change fishing behaviour and patterns of bycatch and discards. Such measures could also lead to

spatial and/or temporal changes in effort, through displacement, which could introduce a different set of pressures that may have negative effects. If this leads to management that reduces fishing opportunities, it may lead to spatial changes in fishing effort and increase fishing pressure elsewhere.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Geology/sediments (UK MS - D6); Landscape and Seascape; Water (UK MS descriptors D10, D11); Climatic Factors.

- **Goal 4:** Better understand and effectively manage the social and economic value of the fisheries to the coastal communities within the FMP area.

Positive Effects: This objective will identify relevant social and economic data and data gaps, as well as seek ways to develop social and economic indicators to monitor social and economic impacts. Including social, economic and cultural importance in flatfish fisheries management is consistent with ecosystem-based approaches and can lead to improved governance and environmental outcomes.

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

Negative Effects: If social, economic and cultural importance are considered in isolation, fisheries management approaches may have negative environmental consequences. Promoting the consumption and value of stocks could lead to increased effort in order to land more fish to meet demand. The application of this action must be in line with stock and environmental management measures to ensure fishing activity does not increase the risk of negative impacts.

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

- **Goal 5:** Explore options to mitigate against and adapt to the impact of climate change within the fishery.

Positive Effects: This objective will develop climate change mitigation and adaptation measures for Southern North Sea and Eastern Channel mixed flatfish fisheries. This can improve understanding of the contribution to climate change impacts the flatfish fishery has, helping to reduce the impact that flatfish vessels have on the marine environment.

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

Negative Effects: Any unintended reduction in fishing opportunities could lead to spatial changes in 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, D3, D4, D6); Geology/sediments (UK MS - D6); Landscape and Seascape; Water (UK MS descriptors D10, D11); Climatic Factors.

- **Measure 1:** Introduction of minimum conservation reference sizes (MCRS) measures.

Positive Effects: This proposed measure for introducing MCRS for lemon sole (25 cm), turbot (30 cm) and brill (30 cm) is intended to protect juvenile fish from being landed through prohibition of landings, thereby by making it undesirable to target this size class of individuals. The introduction of MCRS can help protect juvenile fish from being caught and landed, which will allow them to reach maturity and reproduce, thereby contributing to the stock health and sustainability. With the introduction of larger mesh sizes, smaller, juvenile fish are less likely to be caught as bycatch, further reducing pressure on their populations. Actions which review changes to size-based measures may lead to improved stock sustainability and may have benefits for food webs, biodiversity and ecosystems where those reviews result in new or improved mitigation.

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

Negative Effects: Could lead to illegal discarding of undersized fish or increases in landings in an effort to fill any financial shortfall. This negative impact can be mitigated in part by combining this measure with increased mesh size. Changes in MCRS or the introduction of a slot size could change fishing behaviour and patterns of bycatch and discards. Such measures could also lead to spatial and/or temporal changes in effort which could introduce a different set of pressures that may have negative effects.

Relevant SEA Issues: Biodiversity, fauna, flora (UK MS - D1, D3, D4, D6); Geology/sediments (UK MS - D6); Landscape and Seascape; Water (UK MS descriptors D10, D11); Climatic Factors.

Overview of Potential Positive Environmental Effects of the FMP

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

The overarching aim of the Southern North Sea and Eastern Channel mixed flatfish FMP is to deliver long-term sustainable management of flatfish fisheries in the International Council for the Exploration of the Sea (ICES) areas 4b, 4c and 7d in English waters over the long-term.

Securing the long-term sustainable harvesting of flatfish stocks across English waters, with the long-term aim of fishing within sustainable limits (MSY or appropriate proxies) could:

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

The Southern North Sea and Eastern Channel mixed flatfish FMP includes policies seeking to better assess the interactions with the marine environment and potential impacts associated with flatfish fisheries and develop an action plan to reduce damaging impacts. This will allow evidence-based measures to be developed to mitigate impacts.

The Southern North Sea and Eastern Channel mixed flatfish FMP acknowledges the impact demersal towed gear has on achieving UK MS descriptor D6 - Seafloor integrity and recognises the need for strong engagement in a strategic approach to reducing the impacts of fishing on the seafloor. The FMP aims to support a partnership approach to delivering a reduction in benthic impacts around England from flatfish fisheries.

The Southern North Sea and Eastern Channel mixed flatfish FMP includes policies seeking to better assess bycatch associated with the fishery, which should allow the introduction of measures to reduce bycatch of non-target and protected species over the long-term if required.

The Southern North Sea and Eastern Channel mixed flatfish FMP includes policies to better assess the contribution of flatfish fishing to marine litter and identifies strategic actions to help reduce fishing related to marine litter.

Contribution of measures to manage harvesting of flatfish within sustainable limits in England (set out on in section 1 and assessed in section 5), will help contribute to the achievement of GES for Commercial fish (D3) for the UK MS by seeking to ensure that target stocks are harvested sustainably. The FMP's proposed interventions to develop better evidence on bycatch and the contribution of flatfish fishing related litter should positively contribute to achieving GES for descriptors D1, D4, D6 and D10.

The authors of the Southern North Sea and Eastern Channel mixed flatfish FMP considered advice from SNCBs on the risks posed by fishing for flatfish when developing and implementing the management measures set out in the FMP. Considering the wider impacts on the marine environment at the FMP preparation stage should lead to more informed management interventions that could have a positive effect on the environment.

The Southern North Sea and Eastern Channel mixed flatfish FMP adopts 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 Southern North Sea and Eastern Channel mixed flatfish FMP supports policy development to reduce the contribution of fisheries activities to climate change, contributing to achieving the climate change objective in 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 Southern North Sea and Eastern Channel mixed flatfish FMP will contribute to building an improved understanding of how climate change is influencing flatfish stocks range and the physical and biological characteristics of flatfish species. This will help the flatfish fishery adapt to climate driven changes in the distribution of stocks, contributing to the climate objective in the Fisheries Act 2020.

The Southern North Sea and Eastern Channel mixed flatfish FMP acknowledges the climate change impacts on flatfish stocks and fisheries and signposts to existing national programmes to that collect data on the effects of climate change. In addition, the FMP sets out policies to address existing evidence gaps related to climate changes on flatfish and how it proposes to move towards climate adaptive management.

While the FMP is not intended to focus on mitigating the impacts of fishing on marine heritage assets, or submerged prehistoric landscapes or seascapes, fisheries management could contribute to safeguarding these assets and their locations.

In addition, there is the potential for positive interactions to arise between fishing and cultural heritage and submerged prehistoric landscapes or seascapes. A degree of fishing disturbance can lead to some heritage assets being revealed and investigated, thereby improving the knowledge base.

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

Managing stocks so they are harvested in a sustainable way can have environmental, social and economic benefits. Ensuring a fishery is environmentally, socially and economically sustainable over the long term could help promote the cultural importance of scallop 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 scallop 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, Geology and Sediments, Water quality, Climatic factors, Cultural heritage, Landscape and Seascape

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

There is the potential for factors such as the spatial footprint, intensity, type of gear and fishing methods of the flatfish fishery to alter through publishing the FMP and implementing its policies and actions. We recognise that management interventions brought in through FMPs may solve one issue, but unintended and unpredictable issues could arise because of the measures being implemented. For example, it is acknowledged that some of the proposed precautionary management measures and actions to support the FMP goals may, through interventions intended to have a positive effect, lead to displacement of fishing activity to other locations or into fisheries. This may result in negative environmental effects that fall outside the scope (area or species) of this FMP. Where an FMP cannot solve an issue, it may be appropriate for other FMPs to consider this issue. 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 and actions. Due to the policies and actions being at an early stage of development it is difficult to systematically set out their

magnitude and significance, without further detail on the nature, timing, duration, scale or location of the proposed actions. Changes to fishing activity resulting from the implementation of the FMP goals and actions should be monitored as part of the process of evaluating the effectiveness of FMPs. Tools such as iVMS and VMS greatly improve, or could improve, our ability to monitor spatial and temporal changes in fishing effort. Such monitoring would help identify any unintended consequences on the environment and indicate whether the implementation of these actions could lead to any significant environmental effects if unmanaged. Mitigating action could then be considered where any significant negative effects are identified, that are related to those issues scoped into this assessment.

In-combination Effects

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

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

The FMP could facilitate the in-combination assessment with Marine Plans in this SEA, 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.

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

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

Conclusions

Flatfish fishing is an ongoing activity that poses some risks to the quality status of the marine environment. The Southern North Sea and Eastern Channel mixed flatfish FMP focuses on achieving the sustainable harvesting of flatfish stocks and therefore will reduce the risks to the future status of Southern North Sea and Eastern Channel mixed flatfish stocks in the long-term giving positive benefits to the environment.

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

The Fisheries Objectives (in the Fisheries Act 2020) require FMPs to integrate environmental, social and economic aspects of a fishery when introducing interventions to control fishing activity within sustainable levels. Achieving the balance between these three elements will be a central component of making a positive contribution to the sustainability objective.

The Southern North Sea and Eastern Channel mixed flatfish FMP takes a precautionary approach to fisheries management and adopts a balanced and proportionate approach towards delivering the fisheries objectives.

The Southern North Sea and Eastern Channel mixed flatfish FMP may result in positive and negative effects on the environment in the short term, with the overall ambition to have a positive effect on the environment over the long term through the implementation of the ecosystem-based approach to fisheries management.

The Southern North Sea and Eastern Channel mixed flatfish FMP sets out how the issues of seabed disturbance, bycatch and litter will be addressed through the FMP.

The Southern North Sea and Eastern Channel mixed flatfish FMP does not specifically consider the impacts of fishing on marine heritage assets. However, fisheries management aimed at reducing wider environmental effects could indirectly help to conserve both known and unknown marine heritage assets. This iteration of the FMP

focuses on setting out actions to achieve sustainable harvesting of flatfish stocks but there is scope for future iterations of the FMP to address this wider issue.

The Southern North Sea and Eastern Channel mixed flatfish FMP does not specifically consider the impacts of fishing on submerged prehistoric landscapes or seascapes. However, fisheries management aimed at reducing the impact on seabed integrity could indirectly help to conserve submerged prehistoric landscapes or seascapes. This iteration of the FMP focuses on setting out actions to achieve sustainable harvesting of flatfish stocks but there is scope for future iterations of the FMP to address this wider issue.

6. Proposed Measures to Reduce Significant Negative Effects

Existing Negative Effects of Flatfish Fishing

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

The known impacts of this FMPs fishing activity include bycatch of sensitive, mobile, and/or non-target species, impact on seabed integrity from towed gear, litter/ghost gear affecting habitats and species, vessel emissions on climate, and the impact on cultural heritage sites.

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

Measures currently being implemented to manage flatfish fishing (set out in the Southern North Sea and Eastern Channel mixed flatfish FMP - Current fishery management) include fishing activity/effort limits, technical measures and protection of juvenile/ spawning flatfish through MCRS. These measures will be part of the overall management strategy and will make a contribution to the conservation of stocks and the wider environment.

For stock assessments, of the nine species under scope of this FMP, eight are assessed by ICES. Of these assessments, witch, turbot, sole (North Sea and Eastern Channel) and plaice (North Sea and Eastern Channel) are category 1 advice. Lemon sole, flounder, dab and brill are category 3. Atlantic halibut is currently not assessed by ICES. The Southern North Sea and Eastern Channel mixed flatfish FMP proposes a series of short- and long-term technical measures to achieve MSY. This plan brings together all existing management measures for flatfish along with all available science and evidence, and highlights where gaps exist and what is required to fill those gaps to

enable the necessary protection for stocks now and in the long term. This approach aims to achieve sustainable harvesting of flatfish stocks, which will benefit the wider marine environment.

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

IFCAs and the MMO were involved in the development of the FMP to ensure measures proposed through the FMP are compatible with existing MPA management.

Before Defra implement any new management interventions proposed in the Southern North Sea and Eastern Channel mixed flatfish FMP, those interventions will be screened for likely significant effects on any Special Areas of Conservation or Special Protection Areas that overlap with the geographical scope of the measure and, where necessary, a further appropriate assessment completed in accordance with the Conservation of Habitats and Species Regulations 2017 or the Conservation of Offshore Habitats and Species Regulations 2017. In accordance with the Marine and Coastal Access Act 2009, a Marine Conservation Zone (MCZ) assessments will also be completed before any new management measure is implemented that may significantly hinder the conservation objectives of an MCZ.

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

Impacts outside MPAs

The marine environment outside of MPAs but within the spatial boundaries of this FMP may potentially be negatively impacted by fishing activities. SNCB advice highlighted the risk of bycatch of mobile species (birds, mammals e.g., harbour porpoise and fish e.g., shad) that are designated features of MPAs where they occur out with sites. This bycatch was classified as moderate risk due to the impacts of bottom towed gear primarily. It was noted that other fishing methods for flatfish such as static nets also posed a risk, however their use is lower compared to towed gear. The risk of prey

species by-catch was also identified although the direct risk to seabirds and marine mammals is likely to be low. The advice 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 Southern North Sea and Eastern Channel mixed flatfish FMP links specific data collection initiatives to wider bycatch monitoring and mitigation programmes such as Clean Catch UK, which has the potential to appropriately mitigate risks associated with highly mobile MPA features.

UK MS Descriptors Impacts

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

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

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

There is also ongoing work focusing on understanding and mitigating the impact of bycatch on the wider population being progressed through Defra's Marine wildlife bycatch mitigation initiative (BMI) and the Clean Catch UK programme. Further development of these programmes to ensure coverage of risks identified through this FMP are the most suitable route to mitigation.

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

Collaborative working between Defra, ALBs and regulators to provide more detailed advice on contributions of different mobile demersal gears within the geographic context of FMPs is required. Detailed consideration of mitigation options should draw on a wide range of stakeholder expertise.

The FMP could set out how the goals of the FMP will contribute to achieving GES for the relevant UK MS descriptors. In addition, the FMP should consider setting out more detailed measures to mitigate the impacts of towed fishing gear, where appropriate.

Climate Change

Vessel Emissions

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

Blue Carbon

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

Climate Change Impacts on Flatfish Stocks and Fisheries

Over the next three to five years, the Southern North Sea and Eastern Channel mixed flatfish FMP will work to understand and address impacts of changing climate

conditions as highlighted in the climate change committee's climate risk independent assessment, through mechanisms such as the Marine Climate Change Impacts Partnership. Another component of the FMP will be to support the industry's adaptation to the impacts of climate change in addition to encouraging industry participation in initiatives to reduce CO2 emissions. Future iterations of the FMP will be adapted as research into climate change develops and new methods to address climatic challenges arise.

Cultural Heritage

The Southern North Sea and Eastern Channel mixed flatfish FMP does not explicitly consider the potential impacts of flatfish 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 should work with agencies such as Historic England to consider how measures that could protect the marine historic environment could be incorporated into fisheries management for future iterations. Considering appropriate measures to reduce negative interactions with marine heritage assets could strengthen the positive interactions between FMPs and cultural heritage and has the potential for the FMP to contribute to having a positive effect on the current baseline. In addition, by working with Historic England to better understand the extent of prehistoric deposits like moorlog and how they are changing, efforts to conserve them from the impacts of fishing them might contribute to climate change mitigation and adaptation.

Landscapes and Seascapes

The Southern North Sea and Eastern Channel mixed flatfish FMP does not explicitly consider the potential impacts of flatfish fishing activity on submerged prehistoric landscapes or seascapes.

The FMP has considered the impact of flatfish fishing activity on seabed integrity which may could indirectly help to conserve submerged prehistoric landscapes or seascapes.

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

Effects identified by this assessment

The assessment of the likely negative effects of the individual policies and actions in section 5 identified a low risk of significant adverse effects on the environment from implementing individual policies and actions. Therefore, no changes to the proposed goals, policies and actions are needed ahead of publishing the FMP. Where appropriate, the policies and actions will be developed and implemented to mitigate any potential negative effects identified by the current assessment.

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

General

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

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

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

7. Reasonable Alternatives

Regulation 12(2)(b) of the SEA Regulations 2004 requires the fisheries policy authorities to consider reasonable alternatives to the Southern North Sea and Eastern Channel mixed flatfish FMP. A reasonable alternative has been defined as ‘an activity that could feasibly attain or approximate the FMP’s goals at a lower environmental cost or decreased level of environmental degradation’²¹.

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 Southern North Sea and Eastern Channel mixed flatfish FMP. This listing creates a legal requirement to prepare and publish the Southern North Sea and Eastern Channel mixed flatfish FMP and does not allow for a reasonable alternative to producing a FMP unless a ‘relevant change of circumstances’, as set out in section 7 (7)²² of the Fisheries Act applies; we are not aware of any information that would invoke these circumstances.

The Southern North Sea and Eastern Channel mixed flatfish FMP, alongside the other 42 FMPs was agreed by the fisheries policy authorities through the JFS publication process. Engagement across administrations took place via the processes outlined in the [Fisheries Framework](#). Regular scrutiny of the emerging list of FMPs was built into every step of the JFS policy formation, and through this process credible alternatives to managing stocks without a FMP were considered. The list of FMPs, which included a FMP for Southern North Sea and Eastern Channel mixed flatfish, was part of the public consultation on the Joint Fisheries Statement in early 2022. There were no comments on the inclusion of a FMP for Southern North Sea and Eastern Channel mixed flatfish.

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

²¹ [Reasonable alternatives definition](#)

²² [Fisheries Act 2020 \(legislation.gov.uk\)](#)

The Southern North Sea and Eastern Channel mixed flatfish FMP policies and actions were developed to specifically address those fisheries management issues identified within the flatfish fishery.

The interventions adopt a precautionary approach as required by the Fisheries Act 2020 and are intended to safeguard stocks and the fishery in the short term whilst more information is gathered to inform evidence-based adaptive management in the future.

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

Assessment of alternatives to proposed flatfish goals and measures.

- **Goal 1:** Develop an improved evidence base for quota and non-quota stocks in the FMP.

Alternatives: Better data is required to make evidence-based management decisions. Accurate information on stock status and the establishment of reference points for stocks is required to make evidence-based management decisions to protect against over-exploitation. No reasonable alternative is available.

- **Goal 2:** Deliver effective management of the stocks within the FMP.

Alternatives: The establishment of comprehensive TAC (quota) sharing underpinned by the ICES MSY advice is required for responsive, evidence-based management to protect flatfish stocks against over-exploitation. No reasonable alternative is available.

- **Goal 3:** Support and deliver wider environmental sustainability by understanding how the fishing activities within this FMP impact on the wider marine environment and identify options to minimise negative impacts.

Alternatives: Better understanding how flatfish fishing activity impacts the marine environment is required to minimise negative interactions and ensure the fishery is sustainable. No reasonable alternative is available.

- **Goal 4:** Better understand and effectively manage the social and economic value of the fisheries to the coastal communities within the FMP area.

Alternatives: Including social, economic and cultural importance in flatfish fisheries management is consistent with ecosystem-based approaches and can lead to improved governance and environmental outcomes. No reasonable alternative is available.

- **Goal 5:** Explore options to mitigate against and adapt to the impact of climate change within the fishery.

Alternatives: Exploring climate change mitigation and adaptation measures for flatfish species is required to improve understanding of the contribution to climate change impacts the fishery has, as well as helping to reduce the impact that flatfish vessels have on the marine environment. No reasonable alternative is available.

- **Measure 1:** Introduction of minimum conservation reference sizes (MCRS) measures.

Alternatives: These measures have been proposed to limit catches of juvenile fish. Reducing the MCRS would not follow the evidence currently available. They are part of a suite of different measures to protect stocks, improve stock sustainability and reduce the effects on the wider environment. No reasonable alternatives have been identified at this stage. Other alternatives will be considered in future iterations of the FMP as the evidence base develops.

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

The Southern North Sea and Eastern Channel mixed flatfish 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 Southern North Sea and Eastern Channel mixed flatfish FMP, alongside the consultation of this ER. These consultations will provide stakeholders with the opportunity to review proposed actions and present alternatives if available.

8. Monitoring and Review

Monitoring

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

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

- Monitoring the effectiveness of FMP goals and actions
- Environmental impacts monitoring

Monitoring effectiveness of the FMP

Section 6 of the Fisheries Act 2020 requires the FMP to identify appropriate monitoring against specified indicators to assess the effectiveness of the Southern North Sea and Eastern Channel mixed flatfish FMP.

Delivery of the actions and measures in this FMP will be monitored. There is sufficient evidence to determine MSY for turbot, witch, North Sea and eastern English Channel sole, and North Sea and eastern English Channel plaice and to assess the sustainability of these stocks.

Maintenance of fishing for these stocks at sustainable levels, and an increase in the number of stocks fished at sustainable levels, will indicate the effectiveness of this plan for these stocks.

For lemon sole, flounder, dab and brill a reduced level of stock assessment data is available, however there is sufficient evidence to determine a proxy for MSY and to assess the sustainability of these stocks. Maintenance of fishing at sustainable levels will indicate the effectiveness of this plan for these stocks.

For Atlantic Halibut there is insufficient evidence to determine MSY or a proxy for MSY. This FMP sets out the proposed steps to build the evidence base for these data limited stocks (lemon sole, flounder, dab, and Atlantic halibut) to support progress towards defining and measuring stock status and reporting on stock sustainability. An increase in the available evidence to define and measure stock status will be an indicator of the effectiveness of this plan for these stocks.

As part of annual negotiations, annual reviews will be undertaken of the stocks to analyse how they are performing against these reference points, and any other reference points provided within the advice. Maintaining the approach of using best available scientific advice 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 joint management of stocks where maintaining overall biomass may be beyond our control and reflects potential future variation as a result of climate change.

Another indicator to measure the effectiveness of the policies for restoring, or maintaining these stocks at sustainable levels is the introduction of an MCRS for lemon sole, turbot and brill catches in 7d.

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

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

- Monitoring changes in fishing activity e.g. changes in effort or the spatial and/or temporal patterns of fishing, resulting from the implementation of the FMP.

If any negative impacts are identified, fisheries managers should consider adjusting flatfish 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 actions to reduce or avoid these risks or impacts. Findings from these monitoring activities could also be used to indicate where FMP policies and actions are having a positive effect.

UK MS

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

Atmospheric emissions

The Climate Change Committee (CCC) was set up under the Climate Change Act 2008 to support the strategic aims of Defra and 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 UK flatfish fishing fleet has been considered in this SEA and would continue to be reviewed against the FMP goals as part of monitoring.

Review

The Fisheries Act 2020 requires the Southern North Sea and Eastern Channel mixed flatfish 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 flatfish fishery harvesting within sustainable limits and the Fisheries Act objectives.

The results of monitoring the effectiveness of the Southern North Sea and Eastern Channel mixed flatfish FMP will also contribute to the legally required process to review the JFS. The JFS report will set out the extent to which each FMP has been implemented and has affected stock levels in the UK.

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

The findings of these reviews will inform the development of subsequent iterations of the Southern North Sea and Eastern Channel mixed flatfish FMP. As part of the reporting and wider review processes, alternatives to management can be identified to ensure the Southern North Sea and Eastern Channel mixed flatfish FMP delivers on its objectives and wider environmental obligations.

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

Appendix A: Eleven Descriptors of the UK MS

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

D2 - Non-indigenous species

D3 - Commercially exploited fish and shellfish

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

D5 - Eutrophication

D6 - Sea-floor integrity (benthic habitats)

D7 - Hydrographical conditions

D8 - Contaminants

D9 - Contaminants in fish and other seafood for human consumption

D10 - Litter

D11 - Introduction of energy, including underwater noise

Appendix B: Additional Baseline Information

D1 and D4 – Cetaceans

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

To meet Good Environmental Status, the high-level objective is that 'the population abundance of cetaceans indicates health populations that are not significantly affected by human activities'. In 2019 the [Marine Strategy Part One: UK updated assessment and Good Environmental Status](#) recorded the overall status of cetaceans in the North Sea and Celtic Seas as uncertain. However, the 2023 OSPAR QSR indicator assessment updates have recorded a decline of harbour porpoise within the Celtic Sea. 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 not achieved (based on OSPAR QSR)	GES not achieved (based on OSPAR QSR)

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

Current impact of fisheries on the baseline condition

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

Cetacean bycatch

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

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

However, more recent analysis for the 2023 OSPAR quality status report (which will inform updates to UK MS indicators) 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)²³, it is 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](#).

The recent OSPAR indicator assessment identified a possible decline in abundance of harbour porpoises in the Celtic and Irish Seas assessment unit. If true, this decline would amount to an annual rate of approximately -7%, exceeding the threshold of -1,6% for this species. The OSPAR assessment speculated that this decline may be linked to excessive incidental by-catch.

However, the assessments noted that there remain substantial gaps in coverage resulting in a low data availability for offshore areas and in the winter season in

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

particular. For these reasons, data availability underpinning the assessments was considered to be low to moderate (Geelhoed et al. 2023).

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. The 2023 OSPAR QSR assessment for Abundance and Distribution of cetaceans detected that populations of harbour porpoise in the North Sea are steadily shifting their distribution southwards. Though this assessment also noted that their abundance overall remains steady and that the North Sea population numbers remain stable despite the distribution changes.

Cetacean summary

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

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

D1 and D4 – Seals

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

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

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

and below what is required for GES in the Greater North Seas. For more information, read, [UK MS seal biodiversity assessment](#).

The latest OSPAR assessment, which will inform updates to the UK MS assessments, found that grey seal abundance is largely increasing across the assessed area. Harbour seals abundance trends are mixed within the Greater North Sea. Southern Celtic Seas data were limited, but trends are generally increasing. Distribution appears generally stable for both species. 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}	GES achieved in OSPAR QSR 2023	GES achieved in OSPAR QSR 2023
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 report²⁴ 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 2019²⁵.

The most recent OSPAR quality status reports assessment on marine mammal bycatch²⁶ (which is likely to feed into the next round of UK MS assessments), concludes that although grey seal bycatch is high, bycatch in 2020 was below the threshold value set and therefore not thought to be demographically significant. This suggests that in an updated UK MS assessment, seal bycatch is not likely to be threatening the long-term viability of the population and the bycatch target will be met.

Seal abundance and production

The 2019 UK MS assessment reports that grey seal numbers have continued to increase. Increases in grey seal pup production has slowed since the rapid increase following the end of culling in the 1970s, but still shows a positive trend. This is line with GES. Harbour seal abundance has increased over both the short and long term in the English Channel and along the East Coast of England. But there have been short-

24 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).

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

26 [Marine Mammal By-catch](#)

term and long-term declines in parts of Scotland. The cause of the declines is not currently known. For more information, read [UK MS seal biodiversity assessment](#).

Seals summary

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

D1 and D4 – Birds

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

Seabirds are a relatively well monitored group 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 not achieved
Widespread lack of breeding success in marine birds caused by human activities should occur in no more than three years in six.	Kittiwake breeding success²⁷	GES achieved (except Northern Isles)	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

27 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.

Target	Indicator	North Sea	Celtic Seas
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](#).

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.

The recent OSPAR QSR indicator assessments for marine birds show that they are in poor status and declining in most of the OSPAR Maritime Area. This mainly refers to birds feeding at the water surface, diving to the seafloor or foraging in shallow water / on mudflats. Seabirds which are water column feeders are above thresholds in some areas. This is thought to be because water-column feeders have access to a wider range of prey at different depths compared to surface and benthic feeders. The

availability of small forage fish species at the surface was considered to be limiting the breeding success or the annual survival of some surface-feeding species.

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 al²⁸ (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 2020²⁹ and Miles et al 2020³⁰). However, these estimates have high uncertainty in part because sample sizes are low and possibly unrepresentative of the fleet.

A new indicator for seabird bycatch was trialled for the OSPAR QSR, but no results were presented.

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

28 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.

29 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

30 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).

suggests that some longline and static net fisheries could be having possible population level impacts on certain species.

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

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

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

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

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

Target	Indicator	North Sea	Celtic Seas
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.2023³¹). 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.

31 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.

D1 and D6 – Benthic Habitats

The levels of physical damage to soft sediment habitats are consistent with the achievement of GES in UK waters to the west of the Celtic Seas, but not in the Celtic Seas or in the Greater North Sea. For sublittoral rock and biogenic habitats GES has not yet been achieved. Descriptor also relevant to Geodiversity (geology and sediments).

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

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

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

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

Table notes:

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

Target	Indicator	North Sea	Celtic Seas
The physical loss of each seabed habitat type caused by human activities is minimised and where possible reversed.	Physical loss of predicted habitats	GES not achieved	GES not achieved

Target	Indicator	North Sea	Celtic Seas
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
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

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

Current impact of fisheries on the baseline condition

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

Physical disturbance of seabed

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

to be included within the analysis, but the spatial extents of these are considerably smaller than fishing activity. For more information and detail of the analysis, read [UK MS Extent of physical damage to predominant seafloor habitats assessment](#) and [UK MS Extent of Physical Damage to Predominant and Special Habitats assessment](#).

Habitat loss

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

Benthic habitat summary

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

D4 – Food webs

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

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

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

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

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

Target	Indicator	North Sea	Celtic Seas
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
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 not 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.	Kittiwake breeding success ³²	GES achieved (except Northern Isles)	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 trophic levels. For instance, reduction in the availability of small forage fish is likely to be contributing to the breeding success of some marine birds. Climatically driven changes in plankton will also have a strong influence on the rest of the food web. More detail is given under the individual faunal group sections. For more information, read [UK MS food webs assessment](#).

Food webs summary

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

D10 – Marine Litter

To achieve Good Environmental Status for marine litter, the high-level objective is that ‘the amount of litter and its degradation products on coastlines and in the marine environment is reducing and levels do not pose a significant risk to the environment and marine life.’ According to the [Marine Strategy Part One: UK updated assessment](#)

32 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.

[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

Target 2019	Indicator	North Sea	Celtic Seas
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		

Current impact of fisheries on the baseline condition

Fishing activities can generate underwater noise through the use of engines, sonar, and other equipment. Although fisheries are not the primary source of anthropogenic underwater noise (shipping, construction, and energy production are major contributors), they can still contribute to the overall noise pollution in the marine environment. This noise can impact marine species that rely on sound for communication, navigation, and foraging, leading to changes in behaviour, stress, and potential displacement from preferred habitats.

Summary

Underwater noise from fisheries, while not the primary source, can still contribute to the overall noise pollution in the marine environment. Fishing vessels will contribute to underwater noise through sonar, engine noise, gear interacting with seabed and deploying and retrieving gear. The achievement of GES for underwater noise in the UK is uncertain. Research and monitoring programmes established since 2012 have provided an improved understanding of the impacts of sound on marine ecosystems. However, achieving GES for underwater noise will require better understanding and monitoring of the issue, as well as the development and implementation of strategies to manage noise pollution from various sources.

Appendix C: UK MPA designations

1. [Conservation of Habitats and Species Regulations 2017](#) and [The Conservation of Offshore Marine Habitats and Species Regulations 2017](#)
 - Special Protection Areas (SPAs) - England, Scotland, Wales
 - Special Areas of Conservation (SACs) - England, Scotland, Wales
2. [Conservation \(Natural Habitats, etc.\) Regulations \(Northern Ireland\) 1995 \(as amended\)](#)
 - A. Special Protection Areas (SPAs) – Northern Ireland
 - B. Special Areas of Conservation (SACs) – Northern Ireland
3. [Marine and Coastal Access Act 2009](#)
 - Marine Conservation Zones (MCZs) – England, Wales
 - Nature Conservation Marine Protected Areas (NCMPAs), offshore waters – Scotland
4. [Marine \(Scotland\) Act 2010](#)
 - Nature Conservation Marine Protected Areas (NCMPAs), inshore waters – Scotland
5. [Marine Act \(Northern Ireland\) 2013](#)
 - Marine Conservation Zones (MCZs) – Northern Ireland
6. [Natural Environment and Rural Communities Act 2006 \(Part 4\)](#)
 - Sites of Special Scientific Interest (SSSI) – England, Scotland, Wales
7. [The Environment \(Northern Ireland\) Order 2002](#)
 - Coastal Areas of Special Scientific Interest (ASSIs) - Northern Ireland
8. [Convention on Wetlands of International Importance](#)
 - Ramsar Sites (Wetland of International Importance under the Convention on Wetlands of International Importance Especially as Waterfowl Habitat)

Appendix D: Marine Plans – Specific detail within the UK

England

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

Appendix E: Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Joint Fisheries Statement (JFS): As defined by section 2(1) of the Fisheries Act 2020, a document which sets out the policies of the fisheries policy authorities for

achieving, or contributing to the achievement of, the fisheries objectives in the Fisheries Act 2020.

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

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

Marine Management Organisation (MMO): An executive non-departmental public body in the United Kingdom established under the Marine and Coastal Access Act 2009, with responsibility for planning and licensing of activities in English waters from 0-200 nautical miles, 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 the Department of Agriculture, Environment and Rural Affairs (DAERA) statutory advisory body, the Council for Nature Conservation and the Countryside.

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

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

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

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

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

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

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

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

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

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

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

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

Appendix F: Statutory Consultee Consultation Responses

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

Natural England Response

26/05/23

Our refs: NESEASR260323DV



By email only

Re: – Strategic Environmental Assessments Scoping Report – Draft Sea Bass, Channel non-quota demersal and Southern North Sea and Eastern Channel Mixed Flatfish Fisheries Management Plans

Thank you for your consultation email dated the 12th of May 2023 seeking our views on whether the proposed scope and level detail of your Strategic Environmental Assessments (SEA) are appropriate.

In our response (dated 12th March 2023) to a similar request to provide comments on the proposed scope and level of detail for the SEAs to be produced for the Scallop, Whelk Crab and Lobster Fisheries Management Plans we set out our advice. We note the subsequent helpful email from Defra (22nd May) setting out how our comments have been considered and how the most recent set of documents reflect these comments.

We have reviewed the three reports provided. In all three documents, the proposed scope includes the main high-level topics we would want to see covered within the SEAs. In terms of whether the level of detail of the proposed assessment is appropriate, that is more difficult to say with certainty at this stage as the scoping document is relatively high-level.

We would like to draw your attention to the recently introduced Environmental Principles (via the Environmental Act 2021). It may be helpful to set out in the SEAs, how these principles have been considered.

The SEA Scoping Reports set out “*The marine environment is subject to a range of pressures derived from human activities. Fishing-related activities form only part of how these pressures affect the current state of our marine environment.*” Whilst correct, this underplays the significant role that fishing has had, and continues to have, on the state of the marine environment. Fishing is identified as one of the predominant activities responsible for both past and current pressures. It is therefore important that FMPs are used effectively to not only improve the state and management of stocks but aid both the protection and recovery of the marine environment.

We have several other comments that we wish to raise at this stage. These can be found in a table appended to this letter below. We would welcome further discussion on these issues.

Ref	Document section	Comment
1	All documents 1.3	It is important to consider climate change both in terms of its impact on stocks i.e., what, where and how much will be available to fish and how the impact of fishing relates to climate change. The delivery of the Climate Change Fisheries Objective is especially important in relation to this.
2	Sea Bass 1.4 but potentially relevant for all documents	We note that the Management Approach sets out equitable access to the commercial SeaBass fishery – one may wish to consider the recreational elements of each fishery.
3	All documents, Section 1.4	<i>The goal of this FMP is to review bass management in England and Wales to ensure that the bass stock is sufficiently protected and that the benefits of bass fishing can be realised for the communities that depend on it. We note the word review.</i> FMPs are intended to be one of, if not the key mechanisms to deliver both healthy stocks but wider fisheries objectives i.e., FMPs should deliver management.
4	All documents, section 1.4	We note the grouping of social and economic objectives. Natural England’s understanding is that there is work underway across the Defra group to increase differentiation between these elements.

Ref	Document section	Comment
5	All documents, section 3	We understand the names of the Governmental departments have recently altered. BEIS existed until 2023 when it was split to form the Department for Business and Trade (DBT), the Department for Energy Security and Net Zero (DESNZ) and the Department for Science, Innovation and Technology (DSIT). Responsibility for national security and investment policy has gone to the Cabinet Office.
6	All documents, section 3.1	<i>The marine environment is subject to a range of pressures derived from human activities. Fishing-related activities form only part of how these pressures affect the current state of our marine environment.</i> Whilst correct fishing is identified as one of the predominant activities responsible for both past and current pressures.
7	All documents, section 4.1	This list is incomplete – additional conventions/legislation/policy to be considered: UN Fish Stock Agreements, Western Waters Multi Annual Plan. North Atlantic Salmon Conservation Organisation (NASCO).
8	All documents, section 4.2	Marine Plans – increased specificity may be helpful.
9	All documents, section 4.2	Correct nomenclature: Environmental Improvement Plan 2023.

How the consultation response was considered

Point #	How point was considered
1	The ERs will consider climate change in terms of its impact on stocks and how the impact of fishing relates to climate change.

2	We will pass this suggestion onto the Bass FMP Policy team to consider.
3	We will pass this suggestion onto the Bass FMP Policy team to consider.
4	Point noted.
5	Point noted.
6	Point noted. The environmental baseline used for the assessment considers fishing as part of the baseline.
7	The additional conventions/legislation/policy will be considered and added to the ERs where appropriate.
8	Further detail on the marine plans across the UK will be provided in the ERs.
9	Nomenclature will be up amended.
10. We would like to draw your attention to the recently introduced Environmental Principles (via the Environmental Act 2021). It may be helpful to set out in the SEAs, how these principles have been considered.	Point noted. We consider including this information in the ER.

JNCC Response



Joint Nature Conservation Committee
Inverdee House Baxter Street, Aberdeen,
AB11 9QA

19th May 2023

Subject: Strategic Environmental Assessments – Bass Fisheries Management Plan, Channel Non- Quota Demersal Species Fisheries Management Plan, Southern North Sea and Eastern Channel Flatfish Fisheries Management Plan

Thank you for your consultation email dated 12th May 2023 regarding the aforementioned scoping reports. We at JNCC appreciate the opportunity to provide advice on the proposed scope and level of detail of the assessments. Given the similarities among the three Strategic Environmental Assessment Scoping Reports, we have consolidated our feedback into a single response.

We support the comprehensive approach taken in the scoping reports, particularly the detailed consideration of the environmental baseline and the identification of relevant plans, programmes, and environmental protection objectives. The potential environmental effects of the fishery have been well identified, and we consider the outlined methodology suitable for assessing these factors.

We are in agreement that all three FMPs are likely to have significant environmental effects on the receptors that have been scoped into the assessment. The decision to exclude the receptors Population, Human Health, Air, and Material Assets from all plans appears appropriate, although other consultees may offer more expertise in these areas. The decision to include Landscape/Seascape in the Southern North Sea Flatfish FMP and the Channel Non-Quota Species FMP, and to exclude it from the Bass FMP, seems justified based on the gear types used in the respective fisheries.

We note that the scoping report does not detail proposals for mitigation and monitoring. Including these would provide a clearer understanding of how potential negative impacts could be minimised or avoided. However, we understand that these will be included and appropriately detailed in the forthcoming Environmental Report.

We hope you find our advice clear and helpful. Should you have any queries regarding our response or require further clarification, please do not hesitate to contact us.

How the consultation response was considered

Point #	How point was considered
<p>We note that the scoping report does not detail proposals for mitigation and monitoring. Including these would provide a clearer understanding of how potential negative impacts could be minimised or avoided. However, we understand that these will be included and appropriately detailed in the forthcoming Environmental Report.</p>	<p>Point acknowledged. As stated, details of the mitigation and monitoring will be included in the Environmental Reports.</p>

Historic England Response

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 second tranche of three Fisheries Management Plans (FMPs): for Channel Demersal Non-Quota Species; for Southern North Sea and Eastern Channel Mixed Flatfish; and for Seabass.

Noting that the Seabass FMP is joint with Welsh Government, it would be helpful to know if Defra has also sought views from Cadw and the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW)?

As noted previously, 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 these three SEAs. We concur that all three fisheries involve methods that can have negative interactions with marine heritage assets, notably through the use of towed gear, fixed nets, drift nets, and pots and traps. Whilst fishing activity that targets seabass using hook and line fishing gear is less likely to pose a risk to marine heritage assets, hook and line gear may contribute to Abandoned, Lost or Discarded Fishing Gear (ALDFG) that snags and accumulates on historic wrecks, obscuring them and creating a risk to visiting divers in addition to the hazards it creates for marine life.

HE is also pleased to see that landscape and seascape are also regarded as within the scope of the SEAs on Channel Demersal Non-Quota Species and Southern North Sea and Eastern Channel Mixed Flatfish fisheries. As above, this is welcome and fully warranted.

We note that landscape and seascape are regarded as beyond the scope of the SEA on seabass. Whilst this is understandable in the case of hook and line gear, we would welcome reassurance that the methods and scale of fishing for seabass using fixed nets is unlikely to have significant effects on landscape/seascape.

There are several points we have made in respect of previous SEA scoping reports for FMPs that we would like to keep on the agenda:

First, HE would like to underline the positive interactions between fishing and cultural heritage in addition to potential negatives, including the importance of the cultural heritage of fishing acknowledged in the Joint Fisheries Statement. We have previously

suggested that FMPs be given a specific objective on developing the cultural heritage of each fishery: at the very least, we would welcome express acknowledgement that the social and economic objectives of each FMP encompass cultural heritage.

Second, we have flagged that former prehistoric landscapes now submerged by sea-level rise are often represented by peaty horizons and other fine-grained deposits that act as an important carbon store. As such we would expect the SEAs to clearly articulate the importance of these deposits as ‘blue carbon habitats’, and to address how cultural heritage is a potential source of data and understanding of the extent of these deposits, how they are changing, and how their conservation might contribute to climate change mitigation and adaptation.

Third, we are pleased to see 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.

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.

How the consultation response was considered

Point #	How point was considered
1. Noting that the Seabass FMP is joint with Welsh Government, it would be helpful to know if Defra has also sought views from Cadw and the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW)?	Welsh Government have sought views from the Cadw.
2. Whilst this is understandable in the case of hook and line gear, we would welcome reassurance that the methods and scale of fishing for seabass using fixed nets is unlikely to have significant effects on landscape/seascape.	Clarification will be provided in the Environmental Reports (ER).

Point #	How point was considered
<p>3. We have previously suggested that FMPs be given a specific objective on developing the cultural heritage of each fishery: at the very least, we would welcome express acknowledgement that the social and economic objectives of each FMP encompass cultural heritage.</p>	<p>Point acknowledged, Environmental Reports (ER) will provide recommendations on how FMPs could consider fishing and cultural heritage.</p> <p>Defra will consider the suggestion for developing a specific objective for cultural heritage of each fishery, in future iterations of the FMP.</p>
<p>4. As such we would expect the SEAs to clearly articulate the importance of these deposits as 'blue carbon habitats', and to address how cultural heritage is a potential source of data and understanding of the extent of these deposits, how they are changing, and how their conservation might contribute to climate change mitigation and adaptation.</p>	<p>The ERs will consider this suggestion.</p>
<p>5. 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.</p>	<p>Defra would welcome further discussions with HE to consider this point.</p>

Environment Agency Response

The attached response sent for the previous shellfish FMPs covered a more general comment across all the FMPs, so I don't have anything more specific to add. I note that these latest plans mention the UK Marine Strategy indicators as a baseline and the environmental effects of bottom-towed gear on the seabed.

No further comments.

How the consultation response was considered

Point #	How point was considered
N/A	No further points to consider.